OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
June 1, 1965 Volume 815 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of April 1965

Examiner affirmed	261
Examiner affirmed in part	46
Examiner reversed	95
Total	402

Consolidation

Effective May 1, 1965, former Groups 320 and 330 were consolidated as Group 320, Group Manager, Mr. N. Berger.

Former Groups 410 and 480 were consolidated as Group 410, Group Manager, Mr. A. Ruegg.

Mr. A. M. Horton is now Manager of Group 340.

Communications directed to former Groups 330 and 480 should now be addressed to Groups 320 and 410, respectively.

RICHARD A. WAHL,
Superintendent, Patent Examining Corps.

May 2, 1965.

Annual Index of Trademarks

The 1964 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.50.

International Convention for the Protection of Industrial Property

Accession by Southern Rhodesia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by Southern Rhodesia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

International Convention for the Protection of Industrial Property

Accession by Zambia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by the Republic of Zambia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

New Applications Received During April 1965

Patents	7918
Designs	504
Plant Patents	9
Reissues	18
Total	8449

Disclaimers

2,762,359.—*Gerhard B. Entz*, Oklahoma City, Okla. STONE CUTTING MACHINE. Patent dated Sept. 11, 1956. Disclaimer filed Feb. 23, 1965, by the assignee, *Floyd W. Trindle*.

Hereby enters this disclaimer to claims 4, 5, 6, 7, 13 and 14 of said patent.

2,929,827.—*Thomas F. Carruthers*, South Charleston, W. Va. LACTONE ADDUCTS. Patent dated Mar. 22, 1960. Disclaimer filed Feb. 15, 1965, by the assignee, *Union Carbide Corporation*.

Hereby enters this disclaimer to claims 1 to 20 inclusive of said patent.

3,085,136.—*Robert L. Boyles*, Wayland, Mass. TIME SWITCH. Patent dated Apr. 9, 1963. Disclaimer filed Jan. 28, 1965, by the assignee, *General Electric Company*.

Hereby enters this disclaimer to claims 1, 2 and 3 of said patent.

3,169,945.—*Fritz Hostettler*, Charleston, W. Va. and *Donald M. Young*, New York, N.Y. LACTONE POLYESTERS. Patent dated Feb. 16, 1965. Disclaimer filed Feb. 15, 1965, by the inventors: the assignee, *Union Carbide Corporation* assenting.

Hereby enter this disclaimer to the terminal portion of said patent subsequent to Mar. 22, 1977.

Patents Available for Licensing or Sale

2,895,159. ELECTRIC DOOR MAT. Henry J. Ostrow, 218 E. Thomas St., Arlington Heights, Ill.

2,926,710. METHOD OF AND APPARATUS FOR STRAIGHTENING VIOLIN BOWS. W. H. Gentile, 1349 50th St., Sacramento 19, Calif.

2,977,118. GYMNASTIC APPARATUS. Lucien L. Farkas, 7001 Cane Hills Circle, Orlando, Fla., 32805.

Issue—June 1, 1965

Patents	1338	No. 3,186,004 to No. 3,187,341,	incl.
Designs	32	No. 201,239 to No. 201,270,	incl.
Plant Patents	6	No. 2,522 to No. 2,527,	incl.
Reissues	6	No. 25,785 to No. 25,790,	incl.
Total	1382		

3,048,398. BOWLING PIN HANDLING MACHINE. Robert E. Weber, % Video Engineering Co., Inc., Riggs Road at 1st Place, NE., Washington, D.C., 20011.

3,105,435. APPARATUS FOR COMPACTING REFUSE. Bart Kendsia, 1441 NW. 1st Court, Boca Raton, Fla.

3,175,899. METHOD OF OPERATING STEEL WORKS WHEREIN OXYGEN OR AIR ENRICHED WITH OXYGEN IS USED AS A REFINING MEANS. Dipl. Ing. Roland Kemmetmuller, Pittsburgh, Pa., 15219. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

General Electric Company is prepared to grant nonexclusive licenses under the following 17 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 2 patents may be addressed to: Patent Counsel, Metallurgical Products Department, General Electric Company, Box 237 GPO, Detroit, Mich., 48232.

2,609,470. RESISTANCE MATERIALS AND ELEMENTS.

3,138,686. THERMAL SWITCH DEVICE.

Applications for license under the following 15 patents may be addressed to: Patent Counsel, Major Appliance Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,005,595. WASTE DISPOSAL APPARATUS.

3,005,596. WASTE DISPOSAL APPARATUS.

3,067,759. DISHWASHING APPARATUS.

3,071,329. FOOD WASTE DISPOSAL APPARATUS.

3,077,200. MULTIPLE SPRAY STRUCTURE FOR DISHWASHERS AND THE LIKE.

3,079,094. COMMINUTING MEANS FOR LIQUID SPRAYING SYSTEM OF DISHWASHERS.

3,082,964. SINK CONNECTION SUPPORT FOR WASTE DISPOSAL APPARATUS.

3,084,701. PUMPING MECHANISM AND PUMP INLET COVER FOR USE THEREIN.

3,084,702. FRONT OPENING DISHWASHER WITH IMPROVED DISH RACK ARRANGEMENT.

3,091,675. COMBINATION LATCHING AND SWITCH CONTROL ARRANGEMENT FOR ELECTRICAL APPLIANCES.

3,124,145. DRAIN CONTROL SYSTEM FOR A WASHING MACHINE.

3,124,146. DRAIN CONTROL SYSTEM FOR A WASHING MACHINE.

3,169,540. WASHING MACHINE HAVING IMPROVED CLOSURE MEMBER SEALING MEANS.

3,169,541. WASHING MACHINE HAVING IMPROVED CLOSURE MEMBER SEALING MEANS.

3,176,474. AIR CONDITIONING UNIT.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Fees and Charges

The following amendments are made to take effect thirty days after publication in the Federal Register. Notice and public procedure are deemed unnecessary as the changes relate to minor adjustment of fee items.

1. In § 1.21 amend paragraphs (a), (g), (h), (l), (n), and (q), as follows:

§ 1.21 *Patent and miscellaneous fees and charges.*

(a) For typewritten copies of records, for each page produced (double-spaced) or fraction thereof--- $1.50

(g) For translations from foreign languages into English, made only of references cited in applications or of papers filed in the Patent Office insofar as facilities may be available: Written translations, for every 100 words of the original language, or fraction thereof ---------- 5.00

(h) For registration of an attorney, agent or firm:
For admission to examination for registration to practice, fee payable upon application ---------- $15.00
On registration to practice ---------- 10.00
On application for registration of a firm -------- 5.00

(l) For the mounting of unmounted drawings and photoprints received with patent applications, provided they are of approved permanency ----- 2.00

(n) Search of Patent Office records for purposes not otherwise specified in this rule, per half-hour of search or fraction thereof ---------- 3.00

(q) List of U.S. Patents:
All patents in a subclass, per sheet (containing 100 patent numbers or less) ---------- .50
Minimum charge per order ---------- 1.00
Patents in a subclass, limited by date or patent number, per sheet (containing 50 patent numbers or less) ---------- .50
Minimum charge per order ---------- 1.00

2. In § 1.341 amend paragraphs (c) and (d) by inserting sentences so that the amended paragraphs read as follows:

§ 1.341 *Registration of attorneys and agents.*

(c) *Requirements for registration.* No person will be admitted to practice and registered unless he shall apply to the Commissioner of Patents in writing on a prescribed form supplied by the Commissioner and furnish all requested information and material; and shall establish to the satisfaction of the Commissioner that he is of good moral character and of good repute and possessed of the legal and scientific and technical qualifications necessary to enable him to render applicants for patents valuable service, and is otherwise competent to advise and assist them in the presentation and prosecution of their applications before the Patent Office. In order that the Commissioner may determine whether a person seeking to have his name placed upon either of the registers has the qualifications specified, satisfactory proof of good moral character and repute, and of sufficient basic training in scientific and technical matters must be submitted and an examination which is held from time to time must be taken and passed. Each application for admission to the examination for registration must be accompanied by the prescribed fee (see § 1.21). The taking of an examination may be waived in the case of any person who has actively served for four years in the examining corps of the Patent Office.

(d) *Registration of firms.* Any firm, the individual members of which are each registered on the register of attorneys, may have its name entered upon the register of attorneys. Any firm, one of the individual members of which is registered on the register of agents and each of the remaining individual members are registered either on the register of attorneys or the register of agents, may have its name entered on the register of agents. If the membership of the firm is changed, application must be made for registration of the firm as changed. Every application must be accompanied by the prescribed fee for registration of a firm (see § 1.21).

(Sec. 1, 66 Stat. 793,795; 35 U.S.C. 6, 31. Interprets or applies sec. 1, 66 Stat. 796; 35 U.S.C. 41)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: May 3, 1965.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 65-4815; Filed, May 6, 1965; 8:46 a.m.]

Published in 30 F.R. 6391, May 7, 1965

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF MAY 1, 1965.

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 3-62	9-15-58
PETROLEUM CHEMISTRY, GROUP 130—J. R. GIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	5-14-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	1-22-59
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-20-62	8- 7-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	7- 1-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	5- 2-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	4-15-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	1-19-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	5-26-58
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	1- 5-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	1-18-63	7- 6-60

Total number of pending applications (excluding Designs)	198,013
Total number of Design applications pending	5,327
Total number of applications awaiting action (excluding Designs)	143,033
Total number of Design applications awaiting action	1,913
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during June 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ---------- Numbers 2,442,330 to 2,444,411, inclusive
Plant Patents ---------- None

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-10-63	12- 1-60
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Founding; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	7-27-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	9-29-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	3-24-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	2- 1-63	8-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	3-25-63	7-18-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-27-62	11-19-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-13-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	5-14-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-56
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	8- 7-64	4- 9-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ANTON W. TEDESCO AND WILLIAM F. RICHARDSON

No. 7319. Decided February 4, 1965

[52 CCPA —; 340 F.2d 969; 144 USPQ 356]

1. CLAIM—INDEFINITENESS—NEBULOUS STANDARD OF COMPARISON.

Where appellants contended that the Board of Appeals committed error in holding that the "substantial" length of the unwoven ends of the reinforcing wires, in appellants' mat of a burlap sheet, was indefinite and not patentably distinguishing in the claims, arguing that the "substantial" length of said ends are comparative to the "major intermediate portions" woven into the sheet and that it connotes "at least several times the length of the * * * woven parts of the wires on one side of the fabric," *Held* that "'Several stitch lengths' or 'several times the length of the woven parts of the wires' is a nebulous and indefinite base or standard of comparison"; that "Other standards may well be just as apt"; and that "Appellants' disclosure, as pointed out by the Solicitor, 'does not insure a definite threshold or lower limit for "substantial,"' nor is there any disclosure that the unwoven ends of the wires are critical for any purpose."

2. PATENTABILITY—CRITICALITY—ALTERNATE EMBODIMENT MILITATES AGAINST CRITICALITY.

"* * * appellants' alternate embodiment shows wires woven through the sheet without any additional lengths of unwoven wire. We agree with the Solicitor that this factor militates against any disclosure of criticality for additional lengths of unwoven wire."

3. SAME—COMBINING REFERENCES—OBVIOUSNESS—OBVIOUS ASSEMBLAGE OF OLD ELEMENTS.

"* * * we are of the opinion that one of ordinary skill in the subject art, with the references before him, at the time of the claimed invention, would find it obvious to create the structure here claimed by appellants. We agree * * * with the Solicitor that appellants' claims represent no more than an assemblage of old spring cushion features in an obvious manner."

4. SAME—PARTICULAR SUBJECT MATTER—"SPRING CUSHION ASSEMBLY AND MATS THEREFOR."

The refusal of the claims in an application entitled "Spring Cushion Assembly and Mats Therefor," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 799,570.

AFFIRMED.

Otis A. Earl, Earl & Webb (*Austin A. Webb* of counsel) for appellants.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, and ALMOND, JR., *Associate Judges*

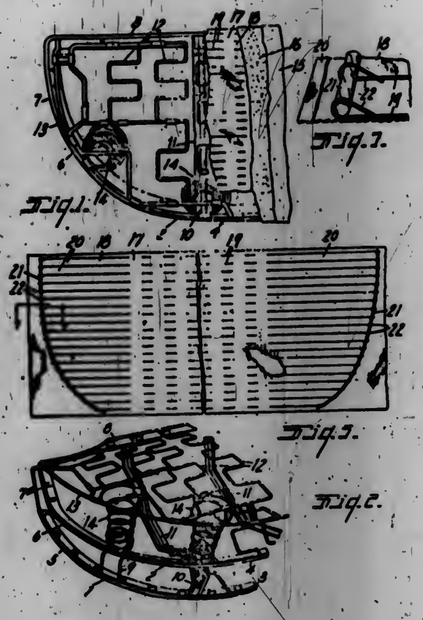
ALMOND, *J.*, delivered the opinion of the court.

Tedesco and Richardson appeal from the decision of the Board of Appeals affirming the Examiner's rejection under 35 U.S.C. 103 of appellants' claims 1–8 in their application[1] for "Spring Cushion Assembly and Mats Therefor." No claim has been allowed.

The claimed invention relates to a mat or wire-reinforced burlap sheet used in a seat cushion to keep the padding material separated from the springs. The mat is placed upon bowed zigzag springs 12

[1] Serial No. 799,570, filed March 16, 1959.

of a seat cushion and is substantially represented by the drawings reproduced below:



Straight reinforcing parallel wires 19 are woven through burlap sheet 18 with their ends tightly bent over connecting cords 21. The length of the wires may vary, so that the reinforced area of the sheet may correspond to the upper surface of an automobile seat cushion having curved ends. Clips are used to fasten cords 21 to top border wire 13 of the spring assembly. The ends of wires 19 overlie the sheet. Padding 16 is placed upon the secured mat and the upholstery is secured thereupon.

Claim 1 is reproduced as illustrative:

An upholstery supporting mat for use in spring cushion assemblies comprising a front top member and end top member curvedly merging into the front top member, and a plurality of laterally spaced arcuately curved zigzag spring elements extending from front to rear of the cushion, the mat being supportedly disposed upon the spring element and comprising substantially rectangular sheet of fabric of a length corresponding approximately to the length of the cushion assembly and of a width corresponding approximately to the length of said spring elements, a plurality of spaced parallel wire strands extending longitudinally of the cushion assembly and disposed in transverse bridging relation to said zigzag spring elements and having major central portions thereof woven into the said sheet of fabric with *portions of the strands of substantial length at both ends thereof in non-interwoven but in overlying supported relation to said fabric sheet*, a plurality of said strands being of varying length with the length thereof increasing from the front rearwardly of the mat, and pliant cords to which *the non-interwoven ends of the strands* are fixedly connected and held in spaced parallel relation to each other, such *unwoven end portions* of the strands and said connecting cords therefor being in superimposed supported relation to the fabric with the ends of the fabric projecting beyond the said cord connected ends of the strands. [Emphasis added.]

Appellants rely on features of the reinforcing mat in the claims for patentability. Each claim calls for parallel wire strands interwoven with a sheet of fabric, and "pliant cords" or "flexible end members" connected to the ends of the strands. With the exception of 4 and 6, the claims call for "a plurality of said strands being of varying length with the length thereof increasing from the front rearwardly of the mat." This feature relates to adaptation to a curved end spring assembly. Claims 1–6 call for "portions of the strands of substantial length at both ends thereof in non-interwoven but in overlying supported relation to said fabric sheet" while claims 7 and 8 more broadly call for the strands "having at least the major portion thereof interwoven with the fabric." In claims 1–4, 7 and 8 the mat is "supportedly disposed upon the spring element."

The references relied upon below are:

Young (1), 2,260,596, October 28, 1941.
Young (2), 2,283,116, May 12, 1942.
Shockey, 2,423,159, July 1, 1947.
Reed, 2,906,320, September 29, 1959.

Young (1) discloses an upholstery supporting mat comprising a number of units sewed together. Each unit comprises a sheet of fabric with reinforcing wire strands drawn therethrough. The wires are in parallel relation to each other and are disposed lengthwise of the cushion assembly. The ends of the wires overlie the sheets and are clamped around flexible nonresilient cords or tie members. The patent states that "these parts are fixedly secured together, and there is no slipping of the strands on the tie members." The strands terminate in spaced relation to the edges of the sheets of fabric providing edge flaps. It is stated that "the reinforcing strands are so spaced that a plurality of them extends across the top coil of each spring"; the mat construction "is readily adaptable for use with other types of springs" including "bowed" or their equivalents and is "very desirable for use in the smaller spring units such as automobile cushion springs, furniture springs and the like." The substantially continuous reinforcement of the mat is such "that the upholstery padding * * * cannot sag down between the springs."

Young (2) shows a somewhat similar mat for a seat cushion. The parallel wire reinforcing strands extend continuously over the length of the burlap sheet except for the end margins. The tie member is not disclosed as flexible. Young (2) states that his wire members "are designed to run from the front to the rear of the cushion." The Solicitor points out, however, that

FIG. 3 [and 5] clearly shows * * * wire 43 woven through fabric 42 and crimped at its end about tie member 44. Judging from the section line 3—3 in FIG. 1, the wire members 43 are actually illustrated as extending longitudinally of the seat cushion, notwithstanding Young's statement to the contrary.

It is noted in this connection that Young (2) states that the "spring wire members may run from side to side of the cushion * * *." Young (2) shows his tie members secured to the spring assembly border member by clips as similarly shown by appellants.

Shockey shows reinforcing wires for the mat of the upright back of an automobile seat. The wires are not woven through the mat but may be attached to the mat by "stitching or the like." Thus, the major portion of the wire overlies the surface of the mat in contact with the padding.

Reed discloses a wire-reinforced upholstery spring mat designed for an automobile seat having curved ends. The wires are in parallel relation and vary in length to conform to the arc of the seat. The wires are helices spun or screwed through the fabric. It is stated that "the helical reinforcing strand portions or sections are less likely to bend or kink over the upholstery springs than are the straight wire sections which are commonly used."

The Examiner rejected claims 1–6 as unpatentable over Young (2) in view of Young (1), Reed and Shockey, expressing the view that it would be obvious to modify the insulator sheet of Young (2), adaptable to a rectangular cushion, to fit a cushion with rounded corners by varying the length of the wire strands therein as taught by the varying length strands in the rounded corner cushion of Reed. The Examiner pointed out that Shockey shows his wires extending a substantial distance beyond the intermediate "woven portion" of his sheet and that it would not be unobvious to further modify the sheet and end wires of Young (2) by extending the end unwoven portions of the wires a "substantial" length at both ends of the woven portion of his sheet. The Examiner further noted that the wires of Young (2) extend beyond the woven portion of his sheet speculating that the amount of the extension might well be a "substantial" distance as required by the claims. He also noted that appellants disclose an alternate embodiment of their invention with wires woven through the sheet without any additional lengths of unwoven wire, "which is very close to the weave pattern shown in the insulator sheet of Young (2)"; that it would be "within the expected skill of the art" to substitute for the resilient member of Young (2), to which the ends of his wires are clamped, the pliant cord members of Young (1) which are clamped by wire members and to substitute for the coil springs of Young (2) "the old and well known arcuately curved zigzag springs."

The Examiner rejected claims 7 and 8 on "Young [1 and 2] and Reed" for the reasons applied in the rejection of claims 1–6.

The Board regarded the two features relied on for patentability as:

(1) the varying length of the strands whereby a mat suitable for a curved or other non-rectangular contour is formed; (2) the substantial length of non-interwoven strands at both ends of the mat.

As to (1), the Board held, in agreement with the Examiner, that the reinforcing members of varying length so that a mat may be provided for a seat of curved contour, as shown by Reed, would suggest to one skilled in the art that reinforcing wires of varying length could be used in either of the two Young structures for the same purpose.

As to (2), the Board stated that it did not consider the Examiner in error in the application of Shockey to show this feature. The Board was of the opinion that:

* * * as broadly claimed this feature is shown in the Young patents. The claim language * * * is expressed as "portions of the strands of substantial length." "Substantial" is of broad and indefinite meaning which, in our opinion, does not patentably distinguish over the end portions of the Young patents which extend from the last interwoven portion to the cords to which the wires are attached.

Appellants contend that the Board committed error in holding that the "substantial" length of the unwoven ends of the reinforcing wires was indefinite and not patentably distinguishing in the claims. It is argued that the "substantial" length of said ends are comparative to the "major intermediate portions" woven into the sheet and that it connotes "at least several times the length of the * * * woven parts of the wires on one side of the fabric."

We find merit in the Solicitor's response to this contention. [1] "Several stitch lengths" or "several times the length of the woven parts of the wires" is a nebulous and indefinite base or standard of comparison. Other standards may well be just as apt. Appellants' disclosure, as pointed out by the Solicitor, "does not insure a definite threshold or lower limit for 'substantial,'" nor is there any disclosure that the unwoven ends of the wires are critical for any purpose. In this connection it is noted that appellants' specification does state that:

The free ends of the strands or the ends of the fabric being free from the ends of the strands permit and facilitate the assembling manipulation so that the clips may be positioned as desired and at the same time the unwoven ends of the strands are effectively supported and effectively support the upholstery superimposed thereon.

We note, however, that Young (2) discloses "free ends of strands" which, in our view, would "facilitate the assembling manipulation so that the clips may be positioned as desired." It is further noted that Young (1) shows direct securement of the fabric to the edge of the spring assembly while the claims at bar fail to mention any securement of the mat to the spring assembly.

[2] As we pointed out in our analysis of the Examiner's treatment of the instant matter, appellants' alternate embodiment shows wires woven through the sheet without any additional lengths of unwoven wire. We agree with the Solicitor that this factor militates against any disclosure of criticality for additional lengths of unwoven wire.

In support of the alleged new function of appellants' structure, it is asserted that abrasion between the padding and the metal springs is minimized by reason of the substantial length of the unwoven ends of the reinforcing wires in that they provide runners or smooth rail-like supports that permit the padding to yield and slide longitudinally under the forces applied upon entering or leaving compact cars.

Since the application does not specify that the ends are of a length sufficient to provide that advantage and the term "substantial" does not inherently require such a length, we do not find that argument convincing.

We do not deem it necessary to analyze further the cited references in relation to their applicability to comprehensive claim 1. [3] Suffice it to say that we are of the opinion that one of ordinary skill in the subject art with the references before him, at the time of the claimed invention, would find it obvious to create the structure here claimed by appellants. We agree with the Board that claim 1 is dispositive of the other claims and with the Solicitor that appellants' claims represent no more than an assemblage of old spring cushion features in an obvious manner.

[4] The decision of the Board of Appeals is affirmed.

AFFIRMED.

SMITH, *J.*, took no part in the decision of this case.

U.S. Court of Customs and Patent Appeals

THE MAGNAVOX COMPANY *v.* MULTIVOX CORPORATION OF AMERICA

No. 7321. Decided February 18, 1965

[52 CCPA —; 341 F.2d 139; 144 USPQ 501]

1. TRADEMARK—CONFUSING SIMILARITY—"MAGNAVOX" AND "MULTIVOX."

On the issue of confusing similarity between applicant's mark, "MULTIVOX," for electric organs, and opposer's mark, "MAGNAVOX," in use on a large variety of electrical apparatus and sound amplifying equipment, *Held* that "* * * the concurrent use of the two marks on the various goods of the two parties is likely to cause confusion, mistake or deception as to the source of the goods carrying the mark 'MULTIVOX.'"

2. SAME—SAME—PERCEPTION OF MARKS AS A WHOLE—"MAGNAVOX" AND "MULTIVOX."

"Insofar as the marks themselves are concerned, both begin with the letter 'M'; both have eight letters, and the suffix of both is 'VOX,' which is, in our opinion, the dominant feature of the marks. They present in their entirety the same general appearance to the purchaser such that confusion, mistake or deception is likely. As has often been noted by this court in considering likelihood of confusion, it is a question of the perception of the marks as a whole. It is for this reason that we reject the approach of the appellee, which dissects the mark into the parts 'MULTI' and 'VOX' and then argues the latter part to be of 'no trademark significance' while the 'prefix' part is significantly different."

3. SAME—DESCRIPTIVENESS—SUGGESTIVENESS—"VOX" IN "MULTIVOX" FOR ELECTRIC ORGANS.

"We think the Board erred in considering the identical terminal portion of the marks ["MAGNAVOX" and "MULTIVOX"], 'VOX,' as being 'merely descriptive' of the goods. While 'vox' is a dictionary term connoting voice, it is a term of Latin origin not of common use in the English language. We agree that it connotes 'voice' and in that sense is suggestive. Even taking it as clearly meaning 'voice' to the common purchaser, it alone or as part of the mark cannot be said to be descriptive of the goods, electric reed organs."

4. SAME—CONFUSING SIMILARITY—EVIDENCE—THIRD PARTY REGISTRATIONS.

"While third party registrations to the identical mark in its entirety on different goods may tend to show the mark is a weak one, that is not conclusive, * * * particularly here where the commonly used portion forms only a part of the mark, and none of the registrations allege use prior to appellant's mark, or are proof of current use."

5. SAME—SAME—SAME—SAME—MARKS MUST BE CONSIDERED AS A WHOLE—"VOX" AS PART OF TRADEMARKS.

"The many third party registrations demonstrate only that 'VOX' has been used in many ways as a part of trademarks. This factor may be considered in judging the degree of significance of the dominance of the suffix 'VOX' in the entire mark. Even assuming some 'weakness' is imparted to the mark by a common suffix, it merely deemphasizes 'VOX' somewhat and reinforces our view that the marks ["MAGNAVOX" and "MULTIVOX"] must be considered in their entireties."

6. SAME—SAME—EVIDENCE—OPPOSITION—FAILURE TO OPPOSE PRIOR REGISTRATION TO THIRD PARTY.

"Appellee argued below that appellant's failure to oppose the registration of 'MULTI-VOX' for 'complete equipment of an intercommunication system' shows that appellant will not be damaged by the instant registration of 'MULTIVOX' for electric organs. The Board ruled that failure to oppose was no estoppel, and we agree. Appellee does not argue estoppel here, but urges that the failure to oppose should be 'at least of more than passing interest' in our consideration. We fail to see precisely what relation, conclusive of an opposite result, that matter has in this opposition. * * * appellee was not in privity with the applicant which registered 'MULTI-VOX,' and thus that registration can avail appellee nothing here."

7. SAME—OPPOSITION—PROTECTION SHOULD ENCOMPASS GROWTH OF BUSINESS.

"In deciding this appeal we have considered the right of appellant in protecting its prior subsisting marks to do so by opposing registration of a mark on goods which, although no identical, are reasonably related. A reasonable enlargement of appellant's business could include electric organs, and we believe that appellant's protection should encompass such growth that would permit inclusion of this product."

APPEAL from the Patent Office. Opposition No. 40,159.

REVERSED.

Ralph B. Stewart, Solon B. Kemon, for appellant.

Davidson & Jacobi, Herbert J. Jacobi, Samuel L. Davidson, Donald A. Kaul, for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*.

MARTIN, *J.*, delivered the opinion of the court.

The Multivox Corporation of America (hereinafter Multivox) filed an application, Serial No. 88,163 on December 29, 1959, to register "MULTIVOX" for electric organs, use since February 20, 1959 being alleged. That application was opposed by The Magnavox Company (hereinafter Magnavox) as confusingly similar to its mark "MAGNAVOX," used on goods hereinafter enumerated. Both parties took testimony. The opposition, No. 40,159 was dismissed by the Trademark Trial and Appeal Board (138 USPQ 692), and appellant seeks review of that decision.

Appellee was incorporated in New York in 1952 under the name "Multivox Corporation of America" and is engaged in the business of importing, manufacturing and selling musical instruments and accessories. Since early 1959 it has used the mark "MULTIVOX" to identify certain of its products, specifically electric organs for which registration is sought, as well as accessories therefor, such as organ benches, and instruction and song books.

From the record it is evident that appellee's electric organ is basically an accordion made in the form of a portable organ, with a small piano type keyboard and stops, to which an electric motor is added to supply air to the reeds. The retail prices for the "MULTIVOX" reed organs range from about $90 to $380, with a majority being in the $100–$200 range. Sales between 1959 and 1961 totaled 9,500 units, and were made primarily to music studios and music stores which handle and teach music.

Opposer-appellant Magnavox and its predecessors have continuously used the mark "MAGNAVOX" in connection with a large variety of electrical apparatus and sound amplifying equipment, including special types of telephones and associated equipment, radios, phonographs and combinations of the two, loud speakers, public address systems and components therefor, television sets, vacuum tubes, electrolytic capacitors, dry cell batteries, and digital computers and data processing systems including digital converters.[1] Various dates of first use of the marks consisting of or containing "MAGNAVOX" are noted in the record, the first being May 1915, but for this appeal it is important only that the use of "MAGNAVOX" occurred prior to the use of "MULTIVOX" on the respective goods.

The products of appellant are sold through more than 2500 dealers, the total sales since 1931 being over $665,000,000, including somewhat

[1] Opposer is the owner of eight registrations for the mark "MAGNAVOX" for its many products. Registration Nos. 138,059, issued Dec. 14, 1920 and twice renewed; 193,292, issued Dec. 23, 1924 and renewed; 306,179, issued Sept. 12, 1933 and renewed; 402,829, issued Aug. 17, 1943; 433 882, issued Nov. 4, 1947; 443,819, issued Mar. 7, 1950; 536,242, issued Jan. 9, 1951 and renewed; 648,587, issued July 16, 1947. It also owns registrations for the marks "MAGNAVOX PLAYFELLOW," Reg. No. 339,460, issued Oct. 6, 1936 and renewed; "MAGNAVOX CONCERTO," Reg. No. 342,490, issued Jan. 19, 1937; "MAGNAVOX DUETTE," Reg. No. 368,572, issued June 27, 1939 and renewed.

in excess of three million radios, phonographs, televisions and combinations thereof during the period from 1949 through 1960. Advertising expenditures in all types of media have amounted, since 1931, to over thirty million dollars or approximately five percent of the dollar sales of the goods.

Concerning the channels of trade, the Board noted that the dealers handling the products of appellant include department stores which offer for sale radios, phonographs and television sets, and also "electrical appliances and musical instruments including, in some instances, electrically operated organs." Further, it is admitted by appellee that some of its customers who sell its electric reed organs also sell radio and television receivers.

Although not directly stated, it is evident that the Board considered the channels of trade to be the same or substantially similar. The Board stated:

> Opposer's "MAGNAVOX" phonographs, television receivers and like goods and applicant's "MULTIVOX" organs are products which are generally sold to the same class of purchasers, and since admittedly some dealers in applicant's organs also sell television and radio receivers, it is not unlikely that such purchasers will encounter the products of both parties in the same retail establishments under the respective marks "MAGNAVOX" and "MULTIVOX." * * * [Footnote omitted.]

The goods of both parties, although not identical, are certainly closely related, and are clearly likely to be found in the same channels of trade. In that statement the Board also concluded that the class of purchasers were the same. We agree that the class of purchasers, if not the same, is substantially similar.

The issue thus is considerably narrowed and was accurately stated by the Board:

> * * * The only question for determination herein is whether or not in view of opposer's prior and extensive use of "MAGNAVOX" for its various products purchasers encountering applicant's "MULTIVOX" organs are likely to assume that they are produced by or in some way originate with opposer.

The Board found no likelihood of confusion, stating:

> * * * These marks are, as opposer has pointed out, alike in that the terminal portions of the marks are identical and that the prefixes both commence with the letter "M." This common feature "Vox" is, however, a dictionary term connoting voice, and as such has a merely descriptive significance as applied to the goods of the parties, and considering that the initial portions "MULTI" and "MAGNA" are readily distinguishable terms with well known meanings, it is concluded that "MAGNAVOX" and "MULTIVOX" are sufficiently different that confusion in trade as to the source of the goods sold thereunder is not reasonably likely to occur.

[1] We cannot agree, and feel that the concurrent use of the two marks on the various goods of the two parties is likely to cause confusion, mistake or deception as to the source of the goods carrying the mark "MULTIVOX."

[2] Insofar as the marks themselves are concerned, both begin with the letter "M"; both have eight letters, and the suffix of both is "VOX," which is, in our opinion, the dominant feature of the marks. They present in their entirety the same general appearance to the purchaser such that confusion, mistake or deception is likely. As has often been noted by this court in considering likelihood of confusion, it is a question of the perception of the marks as a whole. It is for this reason that we reject the approach of the appellee, which dissects the mark into the parts "MULTI" and "VOX" and

then argues the latter part to be of "no trademark significance" while the "prefix" part is significantly different.

[3] We think the Board erred in considering the identical terminal portion of the marks, "VOX," as being "merely descriptive" of the goods. While "vox" is a dictionary term connoting voice, it is a term of Latin origin not of common use in the English language. We agree that it connotes "voice" and in that sense is suggestive. Even taking it as clearly meaning "voice" to the common purchaser, it alone or as part of the mark cannot be said to be descriptive of the goods, electric reed organs.

In urging the correctness of the Board's conclusion that "VOX" is merely descriptive, appellee cites thirty-three trademark registrations to third parties having the term "VOX" as the suffix or terminal portion. Appellee notes that:

> * * * Moreover, there are trademark registrations having "VOX" suffixes for the *exact* goods of each of the parties. * * *

As examples of the marks for electric organs, appellee has introduced in evidence registrations for "ORGAVOX" and "ElTronoVox."[2]

[4] While third party registrations may tend to show the mark is a weak one, that is not conclusive, *The Conde Nast Publications, Inc.* v. *American Greetings Corp.*, 51 CCPA 1176, 329 F.2d 1012, 141 USPQ 249, entirety on different goods may tend to show the mark is a weak one, particularly here where the commonly used portion forms only a part of the mark, and none of the registrations allege use prior to appellant's mark, or are proof of current use.

[5] The many third party registrations demonstrate only that "VOX" has been used in many ways as a part of trademarks. This factor may be considered in judging the degree of significance of the dominance of the suffix "VOX" in the entire mark. Even assuming some "weakness" is imparted to the mark by a common suffix, it merely de-emphasizes "VOX" somewhat and reinforces our view that the marks must be considered in their entireties.

As well as pointing to the fact that "Multi" means many and "Magna" means big, appellee also relies heavily on *New Castle Products, Inc.* v. *American Door Co.*, 48 CCPA 1036, 291 F.2d 954, 130 USPQ 167, to support its proposition that "MULTI" and "MAGNA" are not likely to cause confusion here. In that case this court dismissed an opposition involving the marks "MAGNAFOLD" and "MODERNFOLD" on identical goods, folding doors. As distinct from the case here, the suffix "FOLD" in the *New Castle* case was held to be descriptive, and the differences in the remainder of the marks so dominated each as a whole that no confusion was likely. We do not see that case controlling since we do not agree that the instant marks are merely descriptive of the goods, or that we can consider the marks here in other than their entireties. For the same reasons we do not find *Air Products, Inc.* v. *Marquette Manufacturing Co.*, 49 CCPA 973, 301 F.2d 348, 133 USPQ 192, involving the marks "REDI-SET" and "REDI-ARC" for similar items of welding equipment, to advance appellee's position.

[6] Appellee argued below that appellant's failure to oppose the registration of "MULTI-VOX"[3] for "complete equipment of an intercommunication system" shows that appellant will not be damaged

[2] "ORGAVOX," Reg. No. 444,170, issued Aug. 22, 1950 to the Orgavox Organ Company, and "ElTronoVox," Reg. No. 605,833, issued May 10, 1955 to El-Tronics, Inc., a Pennsylvania corporation.

[3] Reg. No. 687,866, issued Nov. 10, 1959 to Multi-Vox Ltd.-Multi-Vox Ltee. a Canadian corporation.

by the instant registration of "MULTIVOX" for electric organs. The Board ruled that failure to oppose was no estoppel, and we agree. Appellee does not argue estoppel here, but urges that the failure to oppose should be "at least of more than passing interest" in our consideration. We fail to see precisely what relation, conclusive of an opposite result, that matter has in this opposition. As the Board noted, appellee was not in privity with the applicant which registered "MULTI-VOX," and thus that registration can avail appellee nothing here.

[7] In deciding this appeal we have considered the right of appellant in protecting its prior subsisting marks to do so by opposing registration of a mark on goods which, although not identical, are reasonably related. A reasonable enlargement of appellant's business could include electric organs, and we believe that appellant's protection should encompass such growth that would permit inclusion of this product.[4] *Contour Chair-Lounge Co.* v. *Englander Co.*, 51 CCPA 833, 324 F.2d 186, 139 USPQ 285.

For these reasons we reverse the decision of the Board.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

[4] We consider appellant's application to register "MAGNAVOX" for electric organs, although filed after the taking of testimony in this case, and which application alleges a use subsequent to that of appellee's mark for electric organs, to be indicative of the reasonableness of our opinion that appellant's business could be expected to be enlarged to encompass such a related product, *Contour Chair-Lounge Co.* v. *Englander Co.*, supra.

U.S. Court of Customs and Patent Appeals

POLAROID CORPORATION v. PHOTO-PLASTICS, INC.

No. 7322. Decided March 4, 1965

[52 CCPA —; 341 F.2d 936; 144 USPQ 585]

1. TRADEMARK—DESCRIPTIVENESS—"PRINT-TOTER"—LANHAM ACT, SECTION 2(e).

"In its brief here, Polaroid states: 'Webster's New International Dictionary (second edition) defines 'tote' as meaning 'to carry' and 'toter' as 'one who or that which totes.' A tote-box is a box for storing, handling and transporting materials and appellee's Print-Toter is a box for handling, storing and carrying photographic prints. We agree with that reasoning, and note also that the same dictionary defines 'carry' as 'to support; to sustain,' terms which appear to be particularly applicable to applicant's device as described by the Board. Accordingly, we think that 'PRINT-TOTER' is 'merely descriptive' of the goods within the meaning of section 2(e) of the Lanham Act, and that the Board erred in dismissing the opposition."

APPEAL from the Patent Office. Opposition No. 40,932.

REVERSED.

Donald L. Brown for appellant.

Submitted on record by appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Polaroid appeals from the decision of the Trademark Trial and Appeal Board dismissing its opposition to an application[1] of Photo-Plastics for registration of "PRINT-TOTER" for "A Device for Holding a Photographic Print While a Chemical Coating Is Being Applied Thereto and for Storing it While Drying and After it has Dried."

[1] Serial No. 108,136, filed November 9, 1960.

The matter has been briefed and argued before us by counsel for Polaroid. Photo-Plastics has not filed a brief or appeared by counsel, submitting only on the record.

Polaroid markets the Polaroid Land camera and film, which produces a finished photographic print shortly after exposure of the negative. Each roll of film includes an applicator described as a "print coater" used to coat the print after removal from the camera, the purpose being to remove residue and provide a protective layer against exposure to the atmosphere.

A specimen submitted with the application, showing the use of applicant's alleged trademark, includes, under the term "Print-Toter," the expression "For Use With Polaroid Type 30 Series Land Film."

Applicant's device is described by the Board:

It appears from an exhibit introduced by opposer that applicant's product is a small rectangular compartmental box-like apparatus which can be held in the hand. The topside thereof is perforated and has guide rails thereon. There is attached thereto a device to hold opposer's print coating product, and on one end of the box-like contraption there is a hinged door leading to three compartments.

The purchaser of applicant's device is instructed to hold the device with hinged doors toward him, to insert the print by holding the tab, to slide the print towards him under the guide rails, to then coat the print in accordance with instructions given by Polaroid Corp., to open the hinged door and guide print, with coated side up, into the top drying compartment, to repeat the process with the next coated print using the second drying compartment, and to place the prints when fully dried in the lower storage compartment.

One ground of opposition is that "PRINT-TOTER" is descriptive of a device which "totes" or carries prints. The Board observed that a "toter" is "one that carries," but concluded that "PRINT-TOTER" is not descriptive of applicant's goods.

[1] In its brief here, Polaroid states:

Webster's New International Dictionary (second edition) defines "tote" as meaning "to carry" and "toter" as "one who or that which totes." A tote-box is a box for storing, handling and transporting materials and appellee's Print-Toter is a box for handling, storing and carrying photographic prints.

We agree with that reasoning, and note also that the same dictionary defines "carry" as "to support; to sustain," terms which appear to be particularly applicable to applicant's device as described by the Board. Accordingly, we think that "PRINT-TOTER" is "merely descriptive" of the goods within the meaning of section 2(e) of the Lanham Act, and that the Board erred in dismissing the opposition.

The decision is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE JOHN C. NYGARD

No. 7324. Decided March 4, 1965

[52 CCPA —; 341 F.2d 924; 144 USPQ 586]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—NEW GROUNDS OF REJECTION.

"The Solicitor has laid emphasis on the breadth of the claims but there is no objection to them on that ground, and he has noted that the thyratron is not 'claimed' by which we suppose he means not included or mentioned in the claims, but we see no reason why it should be. The novelty of the circuit resides exclusively in the changed form of the inductor. He has also speculated on the possibility of the prior art using in pulsers other forms of inductor cores such as cores of certain alloys and cores with segments of less cross-sectional areas and has included in his brief several more 'references' or extracts from the literature, which were not mentioned

by the Board, in support of these arguments. These, however, are new arguments never used in making the rejection and if they are to be relied on we think they should be made in the Patent Office where appellant has the opportunity to answer them as contemplated by the statute, 35 U.S.C. 132, and the rules, Rule 104(b), and not presented to him for the first time in this court. This court is a court of *review* and reasons for rejection not made in the Patent Office are not properly before us."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"NON-LINEAR INDUCTANCE."

The decision of the Board of Appeals, refusing all claims in an application entitled "Non-Linear Inductance" as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 782,708.

REVERSED.

Henry C. Nields, Dos T. Hatfield for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals rejecting all claims, 1–5, of appellant's application Serial No. 782,708, filed December 24, 1958, entitled "Non-Linear Inductance."

The Invention

The invention is in the field of electronics and, notwithstanding the title of the application, is claimed as "A charging circuit for a pulse-forming network." The "inductance" referred to in the title is part of that charging circuit. The specification does not disclose the use of the pulses produced by the network which is charged by the charging circuit nor does appellant's brief enlighten us in that regard, but one use would appear to be in radar.

The pulseforming and charging circuit is schematically represented in the specification in highly simplified form in FIG. 1, thus:

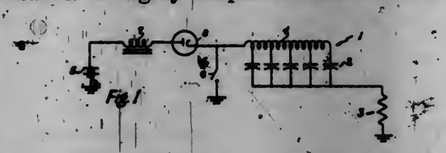


Fig. 1

This shows a pulseforming network 1 comprising a series of capacitors 2 arranged in parallel between load 3 and various points on an inductance 4. A thyratron, which is a gas-filled three-element electron tube, is schematically represented as a switch 6 connected between the high-voltage end of network 1 and ground so that when the thyratron 6 is triggered it grounds the network, whereupon the capacitors discharge through the inductance 4, providing a current pulse through the load 3 which may be a square wave current pulse.

The charging circuit for the pulse-forming network comprises a D.C. voltage source 5 connected to the network 4 through an inductance 7 and a diode or rectifier 8. It is said to operate according to the principles of resonance charging, which appears to be a known phenomenon which is thus described in appellant's brief:

• • • The unidirectional property of the diode [8] and the characteristics of the reactor [7] which oppose any change in current flow combine to effect charging of the capacitors to a voltage equal to twice the voltage of the direct current source. • • •

All of the foregoing appears to have been known in the art. However, a problem existed which is described in appellant's brief as follows:

• • • Reliable switching in such a system becomes a problem, however. In order for a thyratron switch to change from a conducting to a non-conducting state, its plate current must fall below a given threshold value; a condition which does not necessarily exist after each switching operation of the prior art pulse forming network. • • •

The reason for the lack of reliability is described in the specification as follows:

• • • It will be apparent that as soon as the pulse-forming network is fully discharged the valve tube [8] will act to initiate the charging from the D.C. voltage source, and frequently the result is that the pulse-forming network will start to be charged before the thyratron [6] switch mechanism has returned to the necessary original state. • • •

Appellant's invention is a change in the characteristics of inductance 7, which is also known as the "charging reactor," whereby the charging of the pulse-forming network 1 is delayed sufficiently to assure that the thyratron 6 *has* returned to its stable or open-circuit state before charging starts, presumably so that the charging circuit will not be connected to ground through the thyratron in a conducting state.

One way of doing this is described in the specification and drawing thus:

In accordance with the invention a non-linearity is introduced into the inductance 7 as shown in FIG. 3.

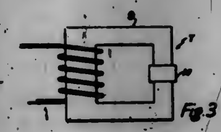


Fig. 3

For example, said inductance 7 may comprise an iron core 9 including as a part of its magnetic circuit a saturable material 10, such as ferrite or some similar product. As a result, at low currents the iron core 9 has a high inductance, but as higher currents are reached, so that the ferrite or other material saturates, the iron core acts as though it had an air gap in it, since the ferrite is no longer acting as part of the low-reluctance magnetic circuit. The inductance at these higher-current values would then be inversely proportional to the length of the high-reluctance "gap." The effect of providing such a saturable material in the iron core 9 of the inductance 7 is shown by the broken line in the graph of FIG. 2 [which shows a time delay in the rise of charging voltage]. At first the inductance in the iron core 9 is relatively high, thereby opposing the flow of current so that the current remains low. However, when the saturable material 10 becomes saturated, the inductance is decreased by an amount which is proportional to the thickness of the saturable material 10. As a result of this reduction in inductance, the current flow is permitted to increase in the normal manner. The overall effect of the addition of the non-linear inductance is to delay the charging of the pulse-forming network 1, thereby permitting the thyratron switch 6 to return to its stable state.

Appellant discloses a second embodiment of his invention wherein he uses, instead of the FIG. 3 core with ferrite insert, an inductance with two coils in series each having its own core, one core reaching saturation at an early point in the cycle while the other does not, thus producing the same effect with different means.

The Rejections

The Examiner rejected the claims for reasons unknown to us, citing

as references three prior United States patents which are not in the record before us and which we need not consider because the Board disagreed with the Examiner and refused to sustain his rejection. For this reason the record contains no Examiner's actions and no Examiner's answer; the appellant prevailed before the Board in having the Examiner reversed.

In his brief before the Board, appellant called attention to "page 12 of vol. 5 of the Radiation Laboratory Series concerning resonance charging of pulse forming networks," as stated in the Board's opinion. The Board cited a new reference as follows:

> Reference cited by the Board of Appeals:
>
> Pulse Generators, vol. 5, Radiation Laboratory Series, page 341 and pages 364, 365 and 366.

This is the only prior art of record before us—four pages of what appears to be a book of several hundred pages. That book, as such, is not of record nor have we been furnished a copy.

After citing and discussing the four pages above mentioned, the Board made the following rejection:

> • • • Therefore, under the provisions of Rule 196(b) we hold that claims 1 to 5, inclusive are unpatentable over the disclosure in vol. 5 of the Radiation Laboratory Series.
>
> The decision of the Examiner is reversed.
>
> A new rejection of claims 1 to 5, inclusive, under the provisions of Rule 196(b) is made.

Appellant filed a request for reconsideration and argument but the Board fully adhered to its position.

The Claims

Claim 1 reads:

> 1. A charging circuit for a pulse-forming network, comprising, in combination with a pulse-forming network: a source of D.C. voltage and an inductor linking magnetic material *comprising two components which saturate at mutually different applied magnetomotive forces* [*x*] connected in series between said D.C. voltage and said pulse-forming network [*y*], the inductance of said inductor having a non-linearity such that said inductance is less at currents approximating the maximum current delivered to the pulse-forming network during the charging operation than at lower currents delivered to the pulse-forming network during the charging operation. [Emphasis ours.]

Claims 2, 3, and 4 all depend from claim 1 and add limitations thereto. Claim 5 is another independent claim which is the same as claim 1 except for the insertion therein at [*x*] of "and a diode" and at [*y*] of "in such a way as to provide resonance charging of said pulse-forming network." While these two additions make claim 5 more specific, it appears to us that neither addition has anything to do with what appellant invented, both being features of the acknowledged prior art. The principal feature of the claims on which reliance is placed for patentability is the clause we have italicized which gives rise to the "non-linearity" characteristic described in the concluding clause of claim 1. These claim limitations are common to all claims.

Opinion

In the first Board opinion, wherein the only rejection before us was made, the Board acknowledged that the claims distinguish from the sole reference on which it relied. The Board said:

> Claim 5, the most specific claim, is readable on the above disclosure of vol. 5 *except for* the statement of "two components which saturate at mutually different applied magnetomotive forces." • • • [Emphasis ours.]

However, the Board was of the view that appellant was urging patentability on the basis of using "a charging reactor 7 which saturates at some point during the charging cycle," further concluding, in view of appellant's specification disclosure of two different core arrangements for accomplishing his purpose, that "There then appears to be *no significance* in the *type* of saturable reactor used in the charging circuit." [Our emphasis.] Because the Board found in the reference pages relied on reference to "approximately linear inductors" and a statement that "Large variations in the charging inductance produced by saturation of the iron core are *usually* not permissible . . ." (Board's emphasis), it concluded that the reference would suggest the use of "non-linear reactors" (i.e. inductances) and the use of them *at core saturation*, whereby large variations in charging inductance *would* be permissible. The gist of its rejection appears to be in its concluding statement that the use of *two* core components which saturate at mutually different applied magnetomotive forces "appears to have no significance different from a [single] core that saturates."

Appellant strenuously argued in its petition for reconsideration that the Board's view was erroneous and does likewise in this court.

For the several reasons discussed below, we cannot agree with the opinion of the Board.

First, we think the Board oversimplified the claimed invention in treating it as the use of an inductance with a core "which saturates at some point during the charging cycle" and in assuming that the *type* of saturable reactor used is without significance. All inductor cores can be saturated and when they are the value of the inductance changes radically. If appellant's invention means anything, it means that he was not satisfied to use the prior art single core inductors which were capable of saturation. His answer to the Board in his petition was as follows (our emphasis):

> Compare now the nature of the *single* saturation point non-linear inductor of the prior art as described above with appellant's device • • •. The *composite* structure of appellant's inductor successively introduces two different values of inductance into the charging circuit. The *first value* of inductance, *being large*, opposes the flow of current and thereby *delays any appreciable charging* to the pulse forming circuit. • • • When one *portion* of the composite inductor saturates, the second value of inductance is introduced into the circuit. This second value of inductance, being appreciably less than said first value of inductance, permits the current flow "to *increase in the normal manner*" • • •. By "increase in the normal manner" is meant in the substantially *linear* fashion recommended in the cited reference • • •. Thus, the charging current in appellant's device operates substantially as the charging currents in the preferred prior art device *with the exception that*, by means of the novel inductor element, *a time delay is introduced* that makes possible the various advantages enumerated in the specification.
>
> • • • • • • • •
>
> In summary then, appellant wishes to stress the following points: (*a*) The type of saturable reactor used in the present invention *is significant* • • • [Original emphasis.]

Second, the reference, which admittedly does not show appellant's composite core inductor, and particularly in the passages relied on by the Board, clearly teaches that the *single* core inductors under discussion are *not* to be so used in pulse-formers that they operate at or near saturation, or near the "knee" of the saturation curve, as the Solicitor suggested in his argument in this court. In fact, after a rather detailed discussion of the problem, the reference makes the flat statement, "This occurrence indicates a high degree of saturation

and, of course, is not permissible in practice." At another point, after extensive discussion of the importance of linearity and some necessary compromises with it to save weight and size, within rather narrow limits, we find the following statement:

> • • • When weight is not an important factor, the majority of charging reactors for pulsers designed at the Radiation Laboratory satisfy the following conditions for linearity • • •.
>
> 1. Linearity. The inductance shall not change by more than 5 percent measured at rated full-load and at half the rated full-load direct current.

We agree with appellant "That the teaching of the reference is in direct contradiction to the teaching of the appellant's patent application • • •."

Third, upon consideration of all that the reference pages disclose, we are unable to find therein the slightest suggestion of the claimed invention. All we find is description of the acknowledged prior art pulser on which appellant's invention is an improvement.

While the Board has not so characterized it, its rejection is necessarily one for obviousness under 35 U.S.C. 103 since it admitted the claims are not met by the reference so as to be rejectable for want of novelty under section 102. We can see no reasonable basis in the reference for holding the invention to be obvious. In fact, we do not even find an indication of the existence of the thyratron switching problem which the invention allegedly solves, or any other reason for so constructing the charging inductor as to delay the initiation of charging current.

[1] The Solicitor has laid emphasis on the breadth of the claims but there is no objection to them on that ground, and he has noted that the thyratron is not "claimed" by which we suppose he means not included or mentioned in the claims, but we see no reason why it should be. The novelty of the circuit resides exclusively in the changed form of the inductor. He has also speculated on the possibility of the prior art using in pulsers other forms of inductor cores such as cores of certain alloys and cores with segments of less cross-sectional areas and has included in his brief several more "references" or extracts from the literature, which were not mentioned by the Board, in support of these arguments. These, however, are new arguments never used in making the rejection and if they are to be relied on we think they should be made in the Patent Office where appellant has the opportunity to answer them as contemplated by the statute, 35 U.S.C, 132, and the rules, Rule 104(b), and not presented to him for the first time in this court. This court is a court of *review* and reasons for rejection not made in the Patent Office are not properly before us.

[2] The decision of the Board is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE MARCEL LEVECQUE AND PAUL PIOT

No. 7331. Decided March 4, 1965

[52 CCPA —; 341 F.2d 929; 144 USPQ 591]

1. PATENTABILITY—CRITICALITY—RATE OF HEATING.

In the consideration of claims including limitations to the application of heat to the mattress being formed at stated and successive different rates, *Held* that "There is no reference in the claims as to the length of time each rate of heating is applied," and that the "rate of heat application conveys little or no meaning without indication of the various periods of time that the rates are in effect and the specification contains no indication of the significance of the rates."

2. SAME—PARTICULAR SUBJECT MATTER—METHOD AND APPARATUS FOR MANUFACTURING MATS FROM THERMOPLASTIC FIBERS.

The refusal of claims to a method and an apparatus for forming mats from fibers of thermoplastic material, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 771,404.

AFFIRMED.

John L. Seymour for appellant.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Levecque and Piot appeal from a decision of the Board of Appeals affirming the Examiner's rejection of claims 16 to 23 of their application [1] for a patent on a method and apparatus for the manufacture of mats, more fully described in the application as "sheets, plaques, or mats from fibers of thermoplastic material, particularly fibers of mineral material." No claims were allowed.

Claims 16, 17, 18, 22 and 23 are directed to processes, while claims 19, 20 and 21 are directed to the apparatus. Claims 16 and 19 are illustrative:

> 16. A method of forming mats, plaques, and sheets from thermally self-bonding fibers, especially mineral fibers such as glass, which comprises forming a loose, thick starting mattress of said fibers laid at random, heating the opposite faces of said mattress to temperatures which collapse the mattress and join the fibers at their points of contact, calendering the collapsed mattress at a speed which subjects the mattress to longitudinal tension, cooling the mattress, and subjecting the mattress to longitudinal tension as it is being cooled.
>
> 19. Apparatus for forming thermally self-bonding mats comprising an elongated heating tunnel, means to support a mattress of random laid fibers in the tunnel so that both sides are exposed, means to heat both sides of the mattress to bonding temperature, calender rolls, means to drive them so as to put the hot mattress under longitudinal tension, coolers beyond the calender rolls, and means to put the calendered mat under tension as it issues from the calenders.

The drawing reproduced below is further illustrative of the claimed invention:

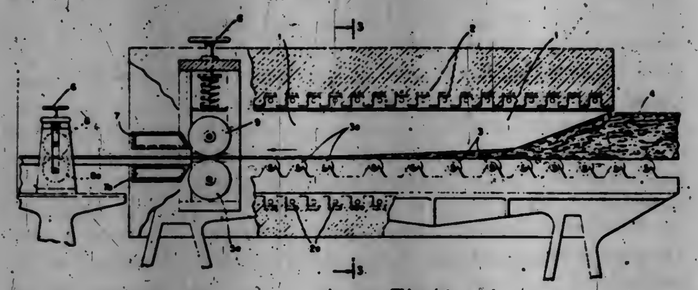


Fig. 1

The material or fibers are laid down at random in a loose thick mattress 4. Rollers 3 and 3*a* (motor driven) carry the mattress

[1] Serial No. 771,404, filed November 8, 1958.

through a tunnel furnace 1. Elements 2 and 2*a* above and below the conveyor apply heat causing the fibers to slump or collapse in the direction of its thickness. Motor actuated rolls 5 and 5*a* function as calendering means on the fiber passing therebetween to smooth and compact same. The rolls are driven at such a speed as to apply tension to the sheet to prevent its shrinkage longitudinally. Cooling chambers 7 and 7*a* serve to cool the sheet as its passage proceeds therebetween. The sheet is then engaged between rolls 8 and 8*a* which are operated so as to apply tension to the sheet. Tension is adjustable through manipulation of elements 6.

The references are:

Thomas, 2,016,401, October 8, 1935.
Powers, 2,518,997, August 15, 1950.

Thomas discloses a method and apparatus for treating glass wool. A wool mat is formed by a blower depositing same on an inclined carrier, thence by the carrier to a vertical chute for deposit on an open work belt. As the wool passes beyond the chute, it passes beneath a motor driven roll which serves to compress and compact the material, so that a blanket of wool of predetermined thickness and density is laid on the conveyor, wherefrom the wool is conveyed into a heating chamber where heat is applied to the sheet by hot air passing from a furnace through the sheet and into exhaust pipes. The chamber may be heated electrically. As the wool passes through the heat chamber, it is brought to a softened or plastic condition and to a more compact and dense form in which the fibers are fused together. The caked wool then passes through an "annealing leer" before it has cooled.

Powers relates to a process and apparatus for producing porous mats from mineral wool such as glass and rock wool. The fibers, "though necessarily somewhat criss-crossed, * * * are arranged generally lengthwise of the strip," and are laid down in a horizontal blanket which is drawn vertically through a heating chamber by opposed rollers. Heat is applied to both sides of the blanket by hot air from burners and by electrical heating elements. "The hot gases penetrate the wool, and * * * heat is radiated directly into the sides of the blanket by the electrical units * * *." During its passage through the heating chamber, the wool in the blanket is softened and the thickness of the blanket reduced from 2½ inches to about 1 inch "by heat, cohesion and tension." The rolls impart the final thickness "between the ribs of about 0.04 inch to 0.08 inch." The wool passes through guide plates to a suitable cutting means. Cooling pipes are provided in the heating chamber to prevent excessive heating of the edges of the blanket.

The Examiner found all claims unpatentable over the combined disclosures of Powers and Thomas. The Board affirmed this holding and further found the apparatus claims unpatentable over Powers alone. In holding claim 16 unpatentable, the Examiner noted that the Powers blanket of mineral fibers is heated on opposite sides. The heat softening of the fibers would produce some collapse of the blanket and the fibers are joined at the points of contact as called for by the claim. The Examiner further noted that the rolls of Powers served as calendering rolls and applied tension to the collapsed blanket and that the rolls operated at a lower temperature than the furnace temperature and to that extent would function as coolers.

The Examiner, noting that the annealing leer of Thomas was "definitely a cooling zone," considered that it would be obvious in view of the teachings of Thomas to add a leer to the Powers apparatus if such be deemed desirable. As for the final step of applying tension to the mat while cooling, not shown in either reference, it was pointed out that the specification ascribed no critical function to the step and that its purpose was apparently merely to prevent accumulation of the mattress, and therefore of no patentable significance.

Appellants place strong emphasis on the word "collapse" as used in the claims, contending that the tribunals below broadened the specific word to give it a general connotation, thus stripping the claims of their limiting terms. As hereinabove noted, Powers specifically states that the thickness of his blanket is reduced in the heating chamber from about 2½ inches to about one inch by "heat, cohesion and tension." Appellants rely on Webster's New International Dictionary (2d ed. 1934) [1] to sustain the construction which they contend for the word "collapse."

Powers clearly teaches that his blanket does "fall into a flattened shape" and that it is "reduced to a more compact form" by its reduction in thickness from 2½ inches to one inch. Appellants' position is not sustained by the definition of "collapse" upon which they rely. In view of "collapse" as defined, we are not persuaded by appellants' argument that collapse could not take place in a vertically moving blanket or under the impact of tension forces as shown in Powers. In addition, it is pertinent to point out here that in appellants' brief submitted to the Board, it is admitted that Thomas discloses that his blanket undergoes a collapse.

Appellants contend that Powers does not show his fibers laid at random. As pointed out in our analysis of the Powers' reference, it is disclosed that the fibers are "criss-crossed" and that they are only "generally" lengthwise of the strip.

The obvious purpose of random or criss-cross laying of fibers in appellants' process as well as in the Powers' process is to increase the number of junctions, thus to enhance the strength of the mat. The vertical bin and the conveyor of Thomas clearly show the fibers introduced to the conveyor in a random manner. If Powers be deficient in this respect, then Thomas clearly suggests the remedy.

In their specification appellants refer to their pinch rolls 8, 8*a* as "preferably driven" so as to apply a certain degree of tension to the cooled mat. No purpose is set forth for this step. Appellants in their brief denominate this step as "cold drawing." Neither this phrase nor its synonym is to be found either in the specification or claims, nor do we find any suggestion that it in anywise affects the final product. The Examiner noted that apparently this step served to prevent accumulation of the mattress in this zone or to prevent contact with the cooling members. If there should be need for such a step to prevent buckling of the moving mattress either in the Powers or Thomas process, the need of itself would suggest the obvious remedy of a simple discharge assisting step.

The essential difference between claim 17 and claim 16 is that the former provides that the mattress move "horizontally into a heating

[1] collapse 1. To fall or shrink together abruptly, as the sides of a hollow vessel; *to cave in; to fall into a flattened*, wrecked, distorted, or disorganized *state*; often, with the idea of design; to fall into, or to be *reduced to, a more compact form*, as for convenience in transportation; as, boats made to collapse for ready portage. 2. To break down or fail abruptly and utterly; to go to pieces; as, his health and plans collapsed together. [Emphasis added.]

zone" and that edges be "heated to a lesser degree than the central portion." Powers provides coolers to prevent excessive heating of the edges. Thomas shows movement of the blanket horizontally to and through the heating zone. It would seem clearly obvious to combine this step with the heating and calendering steps of Powers.

Claims 18, 22 and 23 include limitations to the application of heat to the mattress at stated and successive different rates.[3] These limitations are not disclosed in Powers or Thomas. The Examiner pointed out that the duration of the heating in each amount is entirely absent, reasoning that intense heat for a very short time would have an entirely different effect on glass fibers from the same heat for a longer time and that the nature of the glass used would materially alter the results and that the recited conditions constitute merely a matter of choice and differ from those of the references merely in degree.

We are inclined to agree with the reasoning advanced by the Examiner. [1] There is no reference in the claims as to the length of time each rate of heating is applied. The rate of heat application conveys little or no meaning without indication of the various periods of time that the rates are in effect and the specification contains no indication of the significance of the rates.

As we have noted, the apparatus claims 19, 20 and 21 were rejected by the Examiner as unpatentable over Powers in view of Thomas, while the Board deemed Powers alone sufficient upon which to predicate a rejection. The Board found that:

> Rolls 22 and 23 of Powers provide means to support the mattress and also serve as means to place the hot material under longitudinal tension. Coolers beyond the calender rolls, as claimed, read on atmospheric cooling of Powers, and * * * it would be obvious to provide pulling means to remove the product from the furnace. Dependent claim 20 adds no structure to claim 19 and the heating means with a plurality of controllable sections of dependent claim 21 is found in Powers * * *.

Appellants contend that the rolls in Powers are not calendering rolls. The Solicitor cites Webster's New International Dictionary (3d ed. 1961), defining "calender" as

> to press (as cloth, rubber, paper) between rollers or plates in order to make smooth and glossy or glazed or to thin into sheets.

There can be little doubt that the rolls of Powers "thin into sheets" the mattress as it passes therebetween.

The space above the plates exposes the mat to atmospheric cooling. Thomas cooled by providing an "annealing leer." While appellants contend that an annealing leer does not cool, Webster's New International Dictionary (3d ed. 1961) defines the word "anneal" as follows:

> 2 *a*: to heat and then cool usu. for softening and rendering less brittle, gradual cooling being required for some materials (as steel and glass) * * * *b*: to process (structural-clay products) by slow cooling after subjection to heat in order to prevent checking, cracking, and warping * * * brick 3: STRENGTHEN, TOUGHEN * * *

It would seem, therefore, that annealing includes cooling in a controlled manner and that it would follow that an annealing leer is a cooler as well as a heater.

[3] The claim states that the mat "is initially subjected to about 34000 kg. cal. h./m.², is thereafter subjected to about 42000 kg. cal. h./m.², is thereafter subjected to 30000 kg. cal. h./m.² * * *" Although the units specified are unfamiliar to us, we will accept the appellants' and Examiner's determination that they specify a rate of heating.

Claim 20, dependent on claim 19, states that "the heating means is concentrated inward of the edges of the mat." This limitation would seem to be met by the structure of coolers in Powers to absorb or reduce the heat near the edges of the mat.

Claim 21 adds the limitation of "a plurality of controllable sections aligned with the length of the mat." Powers describes "sections of refractory supported * * * heating elements" and "exact control of the temperature inside the furnace," thus indicating anticipation of this feature of claim 21.

After due consideration of the arguments advanced by appellant and for the reasons stated, we find no reversible error in the decision of the Board holding the claims in issue unpatentable over the Powers and Thomas disclosures.

[2] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE SIDNEY LIPSCHUTZ, EDWARD H. BARNETT AND SALVATORE AQUINO

No. 7332. Decided March 4, 1965

[52 CCPA —; 341 F.2d 937; 144 USPQ 596]

1. PATENTABILITY—EVIDENCE—COMMERCIAL SUCCESS.

"We have considered the Lipschutz affidavit which indicates approximate yearly total sales of the tap of as high as $41,763.75. This evidence of patentability has been taken into account but is not persuasive here because the evidence as a whole clearly indicates that the invention is obvious within the meaning of 35 U.S.C. 103."

2. SAME—PARTICULAR SUBJECT MATTER—"TAP FOR PACKAGED ELECTROLYTE."

The decision of the Board of Appeals, refusing the claims in an application entitled "Tap for Packaged Electrolyte," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 845,851.

AFFIRMED.

A. D. Caesar (*Alan H. Bernstein, Stanley H. Cohen*, of counsel) for appellants.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

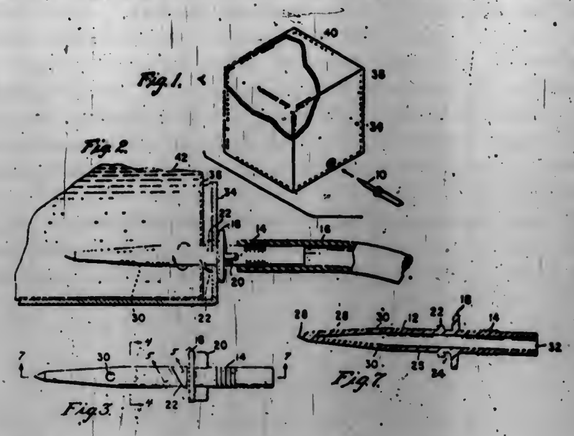
ALMOND, *J.*, delivered the opinion of the court.

Sidney Lipschutz et al. appeal from the decision of the Board of Appeals affirming the Examiner's rejection on prior art of claim 10 of appellants' application [1] entitled "Tap for Packaged Electrolyte." No claim has been allowed.

The object of the claimed invention is to obviate the problems encountered in the process of filling "dry charge" batteries with acid or electrolyte supplied in a package consisting of a rigid outer container such as a cardboard box and a flexible inner container such as a polyethylene bag. Storing and handling problems are reduced and the necessity of opening or inverting the electrolyte package is eliminated.

[1] Serial No. 845,851, filed October 12, 1959.

The drawings reproduced below portray the claimed invention:



Claim 10, applied to the drawing, is as follows:

In combination, an outer box (36), an inner flexible bag (40) containing an electrolyte and a tap (10) for dispensing said electrolyte directly therefrom, said box having relatively rigid cardboard walls (34) of suitable thickness, said flexible bag being positioned within said box, said tap penetrating through one of said walls of said box and said flexible bag adjacent the bottom edge thereof, said tap being of a noncorrosive rigid material and comprising an elongated body member (12) having an internal bore (32), a shoulder member (18) positioned on the exterior surface of said body member, at least one aperture (30) in said body member communicating with said bore (32), and thread means (22) formed on the exterior surface of said body member and being interposed between said shoulder and said aperture, said aperture being spaced a substantial distance from said thread means, said thread means being positioned adjacent said shoulder to create a narrow recess (24) which lockingly receives a portion of said one of said walls when said tap has penetrated through said one wall and into said flexible bag so that said one wall of said box is interposed between said thread means and said shoulder, said thread means are interposed between said one wall of said box and the exterior surface of said flexible bag, and said aperture is positioned within said flexible bag.

The pertinent references relied upon are:

McFarland, 344,538, June 29, 1886.
Manning, 2,751,119, June 19, 1956.
Brookshier, 2,925,199, February 16, 1960.
Bretschneider (German), 394,520, April 24, 1924.

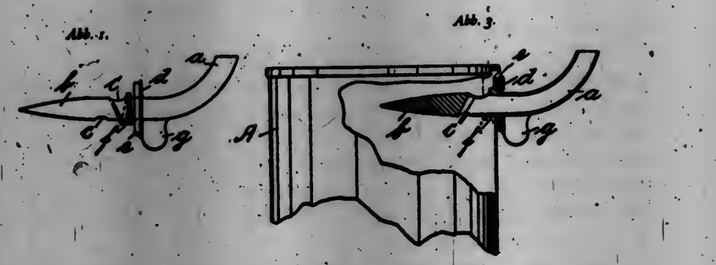
McFarland, relating to a lamp-filling attachment for oil cans, discloses a tap comprising a tube having threads spaced from the shoulder, a gasket and a container piercing point. The tap is attached to the bottom of the can, and a similar tap is attached at the top to serve as a vent.

Manning shows a tap formed of metal, plastic or any other suitable material. The tap is designated as a milk bottle tap. The Examiner relied on Manning "solely for the teaching of constructing a tap from a noncorrosive plastic material."

Brookshier discloses a plastic film container, such as a polyethylene bag, housed in an outer container formed from corrugated board. The tapping device shows a piercing tap and a lock nut. The outer container shows a tear-open flap which when opened exposes the plastic bag. When the tap penetrates the bag, a portion of the bag

is thrust inwardly and the pressure of the fluid on the torn plastic flaps holds them in sealed relationship with the piercing tap. Upon withdrawal of the tap from the plastic container, the flaps are reversed in their contact relationship with the tap. Thereafter, the locking nut is threaded forwardly against the flaps at the interface between the threaded elements of the locking nut and the piercing tap.

Bretschneider relates to a device for pouring liquid from closed metal cans as illustrated below.



The device may be applied to puncture the body, cover or bottom of the can to be emptied. After insertion, the device may be turned like a screw so that the edge of the hole engages the projection thread. When turning is completed, the edge of the hole rests firmly between the projection and the packing ring.

The Examiner held the claim in issue unpatentable over McFarland, Bretschneider, Brookshier and Manning.

The Board pointed out that Brookshier shows an outer container made of relatively rigid material with a flexible bag therein for containing a liquid; that instead of piercing the inner and outer containers, Brookshier provided a tear flap to expose a portion of the flexible bag and the tap is thrust through the exposed wall of the bag, and that Bretschneider, however, shows a tap similar to appellants' tap for piercing the wall of a metal container to draw liquid therefrom. The Board concluded that it would be obvious to a person skilled in the art to use a tap of the type shown in Bretschneider to pierce both walls in Brookshier.

The claim calls for thread means adjacent the shoulder "to create a narrow recess which lockingly receives a portion of said one of said walls when said tap has penetrated through said one wall and into said flexible bag so that one wall of said box is interposed between said thread means and said shoulder." The Board pointed out that if the tap in Bretschneider were inserted through both walls of the Brookshier container, the threaded portion of the Bretschneider tap terminating a short distance from the shoulder would create a "narrow recess" which would lockingly receive a portion of one of the walls.

With reference to the limitation in the claim that the thread means be interposed between the wall of the box and the exterior surface of the flexible bag, the Board held that this limitation would be met if the tap of Bretschneider were substituted for the tap of Brookshier and inserted through both of the walls of Brookshier.

The claim calls for the aperture to be positioned within the flexible bag. If the tap of Bretschneider were employed as suggested by the Board, one of the apertures would not be positioned in the bag. The Board concluded that it would be obvious to a person skilled

in the art to so locate the apertures in Bretschneider so that both would be within the bag as shown in Brookshier. We agree, and further note that it would also be obvious to eliminate one of the apertures to make the tap operable.

The Board noted appellants' argument that if the Bretschneider tap were used in the Brookshier container, there would be a gasket between the shoulder and the wall of the container. However, the Board observed that the claim contained no limitation preclusive of such a gasket and, if included, the limitation of the claim that one wall of the box be interposed between the thread means and the shoulder would be met.

Apellants contend that because the bag is made of polyethylene, or some similar material which possesses a "memory," the bag forms a tight seal around the tap thereby preventing any leakage from the bag into the outer container. With such arrangement, appellants state that they have eliminated the use of a gasket while retaining its function. The specification attributes "memory" to the bag because it "is made of polyethylene." The Board noted that the bag in Brookshier is made of the same material and that the claim does not define the characteristics of the bag or other factors which provide the "plastic memory."

Our analysis of the Board's opinion, in the light of the claimed invention and the references herein discussed and applied by the Board, impels the conclusion that the Board has correctly decided the issue of obviousness here presented.

[1] We have considered the Lipschutz affidavit which indicates approximate yearly total sales of the tap of as high as $41,763.75. This evidence of patentability has been taken into account but is not persuasive here because the evidence as a whole clearly indicates that the invention is obvious within the meaning of 35 U.S.C. 103.

[2] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

PET MILK COMPANY *v.* KNUDSEN CREAMERY CO. OF CALIFORNIA

No. 7327. Decided March 4, 1965

[52 CCPA —; 341 F.2d 941; 144 USPQ 590]

1. TRADEMARK—CONFUSING SIMILARITY—"PET" AND "PETITE."

"The sole issue is whether use of 'Petite' on the goods named in appellee's application [liquid milk, yogurt, and cottage cheese] would be likely to cause confusion, mistake, or deception. In a well-reasoned opinion the Board held it would not and we agree. The Board properly concluded that the marks of opposer and applicant are unlike in sound, meaning, and appearance. As to appearance, 'PET' is registered and has become known to the public in the form of rather heavy block letters all of the same size. 'Petite' as shown in the application and specimens is in a rather spindly script with a capital 'P,' the remaining letters being lowercase."

2. SAME—SAME—INCLUSION OF ONE MARK IN ANOTHER—"PET" AND "PETITE."

"Much argument is predicated on the alleged complete incorporation of the 'word' PET in Petite. We do not see the *word* as incorporated nor do we think the purchasing public would be likely to see it. This is not a game of anagrams but a question of meaning conveyed to the beholder upon seeing common English words. 'Pet' conveys one meaning, which scarcely requires a definition from us, and 'Petite' conveys an entirely different meaning and hence produces a different reaction. As usually pronounced, 'petite' does not even include the sound of the word 'pet.' • • • The nature of the inclusion and the effect, if any, on the mind of the beholder in suggesting a connection with opposer has much to do with its legal effect. We do not feel that 'Petite' suggests any connection with 'PET.'"

APPEAL from the Patent Office. Opposition No. 41,437.

AFFIRMED.

Roy A. Lieder, Joseph J. Gravely, James W. Dent for appellant.

E. H. Mosher, Elwood S. Kendrick, John P. Scholl for appellee.

Before RICH *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board, one member dissenting, dismissing the opposition by Pet Milk Company to registration on the Principal Register of the trademark "Petite" for liquid milk, yogurt, and cottage cheese, application Serial No. 111,195, filed January 3, 1961. The Board's opinion is reported in full at 138 USPQ 532 where applicant's mark is reproduced.

Opposer-appellant relies on prior use (priority being conceded) of "PET" as a trademark on goods identical, at least in part, with those named in the application and on several registrations thereof all set forth in the Board's opinion. Its prior use and registration of "PET-LAC" on milk powder is also conceded. Some reliance is also placed on the mark "PET-RITZ" but this is for frozen pies of fruit, chicken, turkey, or meat.

Unquestionably opposer's "PET" mark is exceptionally well-known as the result of the sale of some three billion dollars worth of milk products thereunder since 1894 with the aid of a hundred million dollars worth of advertising.

[1] The sole issue is whether use of "Petite" on the goods named in appellee's application would be likely to cause confusion, mistake, or deception. In a well-reasoned opinion the Board held it would not and we agree. The Board properly concluded that the marks of opposer and applicant are unlike in sound, meaning, and appearance. As to appearance, "PET" is registered and has become known to the public in the form of rather heavy block letters all of the same size. "Petite" as shown in the application and specimens is in a rather spindly script with a capital "P," the remaining letters being lowercase.

[2] Much argument is predicated on the alleged complete incorporation of the "word" PET in Petite. We do not see the *word* as incorporated nor do we think the purchasing public would be likely to see it. This is not a game of anagrams but a question of meaning conveyed to the beholder upon seeing common English words. "Pet" conveys one meaning, which scarcely requires a definition from us, and "Petite" conveys an entirely different meaning and hence produces a different reaction. As usually pronounced, "petite" does not even include the sound of the word "pet." On this subject of inclusion, see our decisions in *Purex Corp., Ltd.* v. *United Drug Co.*, 21 CCPA 753, 67 F.2d 918, 20 USPQ 69 (PUREX registrable over REX marks), *United Drug Co.* v. *The Mercirex Co.*, 37 CCPA 1063, 182 F.2d 222, 86 USPQ 112 (MERCIREX registrable over REX, REXALL, etc.), and *Clayton Mark & Co.* v. *Keystone Brass & Rubber Co.*, 47 CCPA 1069, 279 F.2d 279, 126 USPQ 259 (SUMARK reg-

istrable over MARK). Compare *Commerce Drug Co., Inc.* v. *Boyle & Co.*, 51 CCPA 1134, 329 F.2d 1020, 141 USPQ 244 (BOYLENE not registrable over BOYLE). The nature of the inclusion and the effect, if any, on the mind of the beholder in suggesting a connection with opposer has much to do with its legal effect. We do not feel that "Petite" suggests any connection with "PET."

The record here shows that appellee adopted and used "Petite" on dairy products appealing to purchasers interested in reducing weight and the idea behind the mark is that it would "immediately conjure up in their minds the result they would attain in their own physiques by consuming these foods," as appellee's advertising manager testified. This is consonant with the dictionary meaning: "small and trim of figure: LITTLE—usu. used of a woman *syn* see SMALL" (Webster's Seventh New Collegiate Dictionary) and also with the copy on the specimen labels used with the mark. There we find expressions such as "Diet-ized non-fat milk," "for healthful weight control," an illustration of a woman standing on a scale, and a silhouette of a woman aptly described as small and trim of figure.

While, of course, the description of the goods in the application does not limit the use of the mark to the environment shown by the specimens, we do think that the specimens negative any inference which might be drawn that there is any purpose to suggest appellant or its products or to plant in a purchaser's mind any thought of a connection with the source of "PET" products.

The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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3,116,045. (See 3,115,753.)

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Des. 194,290. (See Des. 194,063.)

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Des. 197,268. (See Des. 197,267.)

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REISSUES

JUNE 1, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,785

PROCESS FOR PREPARING A NUCLEIC ACID

Roland F. Beers, Jr., 1406 Carrollton Ave., Baltimore, Md.

No Drawing. Original No. 3,001,913, dated Sept. 26, 1961, Ser. No. 722,627, Mar. 20, 1958. Application for reissue Apr. 1, 1963, Ser. No. 270,141
7 Claims. (Cl. 195—29)

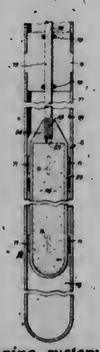
1. A process for preparing deoxyribonucleic acid which comprises the steps of lysing cells of Micrococcus lysodeikticus in the presence of lysozyme and orthophosphate ions at a pH within the range of 8.3 to 8.7, incubating the mixture at a temperature of from 30 to 40° for from 30 to 60 minutes, adding to the heated mixture sodium chloride and water, raising the temperature to one within the range of from 85 to 95° C. and maintaining that temperature for from 20 to 30 minutes, separating the residue from the mixture at room temperature, precipitating the deoxyribonucleic acid from the solution obtained with a material selected from the group of ethanol and acetone, and purifying the deoxyribonucleic acid thus obtained.

25,786

DEEP WELL PUMPING SYSTEM

Forrest E. Chancellor and Robert O. Chancellor, both of 2917 Pierce Road, Bakersfield, Calif.

Original No. 3,044,414, dated July 17, 1962, Ser. No. 110,194, May 15, 1961. Application for reissue July 10, 1964, Ser. No. 393,801
11 Claims. (Cl. 103—179)



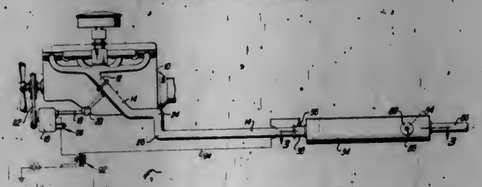
2. In a well pumping system the combination of: a string of production tubing reaching down from the top of the well; a pump barrel secured to the lower end of said tubing string; a plunger reciprocable in said barrel; a string of sucker rods connected at its lower end to said plunger and extending upwardly through said tubing string; a reciprocator at the top of the well on which reciprocator said rod string is suspended and by which said plunger is reciprocated in said barrel; a head connected to and closing the lower end of said barrel; standing valve means in said head, there being an axial bore in said head; a shaft suspended from said plunger and slidable in said bore with a substantially fluid-tight fit; a weight suspended on the lower end of said shaft to accelerate the downward stroke of said plunger; [A combination as in claim 1 in which] a perforated casing [is] connected to the lower end of said head; a second head connected to the lower end of said casing, said second head having an axial bore through which said shaft slidably extends with a fluid-tight fit; *and* an imperforate tubular shell closed against the admission of fluid at the lower end and connected at its upper end to said second head to form a *substantially fluid* tight chamber for the exclusion of fluid from entering said shell, said weight being freely slidable in said chamber as said plunger reciprocates.

25,787

CATALYTIC CONVERTER SYSTEM FOR INTERNAL COMBUSTION ENGINES

Wright W. Gary, 2317 Kimbridge Road, Beverly Hills, Calif.

Original No. 3,065,595, dated Nov. 27, 1962, Ser. No. 27,721, May 9, 1960. Application for reissue May 27, 1964, Ser. No. 381,604
4 Claims. (Cl. 60—30)



2. In a combination of an internal combustion engine, an exhaust system directly associated with said engine and embodying exhaust conduit means providing a closed path of flow of exhaust ingredients from the cylinders of the engine to a muffler, said system developing a back pressure varying under differing engine operating conditions and having a zone therein within which oxidation promoting conditions obtain for oxidizing exhaust ingredients not previously completely oxidized, and means including an air pump for introducing air into said exhaust system at a point where said air will improve the oxidation promoting conditions in said zone, the improvement which comprises a slip clutch operatively connecting the engine to said air pump for driving the pump, said slip clutch being responsive to back pressure in said exhaust system whereby under relatively low back pressure said slip clutch operates said pump for delivery of a relatively large percentage of air in relation to the exhaust volume and under relatively high back pressure said slip clutch operates said pump for delivery of a relatively small percentage of air in relation to the exhaust volume.

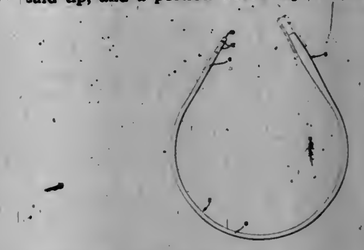
25,788

MEDICO-SURGICAL TUBES HAVING INTEGRAL CONNECTORS FORMED IN THEIR ENDS

David S. Sheridan, P.O. Box 147, Argyle, N.Y.

Original No. 3,042,045, dated July 3, 1962, Ser. No. 746,134, July 2, 1958. Application for reissue June 30, 1964, Ser. No. 391,351
5 Claims. (Cl. 128—348)

1. An extruded, seamless, non-fibrous, flexible medico-surgical tube formed of waterproof, flexible, plastic material with smooth inside and outside walls comprising *an* [a ported distal] end, a connector formed as an integral part on the [proximal] *opposite* end, and a longitudinally extended tubular section joining the [distal] *first said* end with said connector, said connector being defined by an open-end tip, a portion which extends distally of said tip and tapers outwardly to a widest part having an outside diameter between about 1.2 and 2 times as large as the outside diameter of said tip, said widest part being between about ½ and 2 inches from said tip, and a portion which tapers inwardly from said



widest part joining said connector to said tubular section, the inside diameter of said connector being greater at said widest part than the inside diameter of said tip and said tubular section, said connector having a controlled rigidity as compared to the remainder of said tube by controlled thickness of the walls which are proportional in thickness to the outside diameter of the connector.

25,789

METHOD AND COMPOSITION FOR BRIGHTENING ALUMINUM

Marion D. Barnes, Glendale, Mo., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original No. 3,094,489, dated June 18, 1963, Ser. No. 836,942, Aug. 31, 1959. Application for reissue Jan. 30, 1964, Ser. No. 353,310
9 Claims. (Cl. 252—79.2)

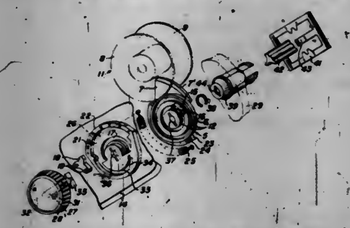
1. A liquid concentrated phosphoric acid useful, when intermixed with from about 0.5 to about 50 weight percent, based on the weight of said concentrated phosphoric acid, of nitric acid, for inhibiting the normal tendency of the resulting composition to evolve nitric oxide fumes when the ionic ratio of NH_4^+/NO_3^- in said resulting composition is at least about 0.8, and when it is utilized for brightening surfaces of metallic aluminum and aluminum alloys; said concentrated phosphoric acid containing less than about [25] *15* weight percent of water, and said acid having intermixed therewith a material selected from the group consisting of ammonia, ammonium hydroxide and ammonium salts in an amount sufficient to produce an ammonium ion concentration between about 0.25 and about [4] *2* weight percent.

25,790

CAMERA COVER LOCK AND FOOTAGE INDICATOR MECHANISM

Walter C. Miller and Henry O. Schmitt, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Original No. 3,062,117, dated Nov. 6, 1962, Ser. No. 41,939, July 11, 1960. Application for reissue Feb. 20, 1963, Ser. No. 260,354
10 Claims. (Cl. 95—31)



1. In a combined cover lock and footage indicator mechanism for a roll film camera, the combination comprising: a camera body supporting a latching receptacle and adapted to receive such roll of film to be exposed; a cover for said body having an arcuate slot therethrough, a first arcuate groove adjacent said slot, and a footage scale adjacent said first groove; a spindle rotatably supported by said cover and having a control knob at one end and a latching element at the opposite end adapted to cooperate with said latching receptacle for releasably locking said cover to said camera body upon moving said knob from an open position in which said cover is unlatched from said body to a latched position; a unitary indicator member rotatably mounted on said spindle and having an arm, said indicator member being movable by a spring from an inoperative position in which said arm is disengaged from the periphery of said roll of film to an operative position in which said arm is responsive to the change in diameter of said roll of film as it is being exposed, said indicator member further having a projection extending through said slot; an indicator needle mounted on said projection for movement in said first groove and cooperating with said footage scale to indicate the footage of unexposed film in said camera; and a lug formed by said control knob extending into said slot and adapted to engage said projection and urge said indicator member into its inoperative position against the bias of said spring upon movement of said knob into its open position unlatching said cover from said body, said knob when moved into its latched position to lock said cover to said body, withdrawing said lug from said projection whereby said spring urges said arm into engagement with the periphery of said roll of film.

PLANT PATENTS

GRANTED JUNE 1, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,522

ROSE PLANT

Arthur P. Howard, Sierra Madre, Calif., assignor to Great Western Rose Company, Inc., Pomona, Calif., a corporation of California

Filed Nov. 4, 1963, Ser. No. 327,859
1 Claim. (Cl. Plt.—14)

The new and distinct variety of rose plant of the class designated as hybrid tea roses, substantially as herein shown and described, characterized particularly as to novelty by the distinctive pure white flowers borne singly on long stems, the exceptionally strong fragrance for a white rose, the medium size of the blooms and abundance of flowers throughout the growing season, the prolonged longevity of the blooms after they are cut, and its tall vigorous upright growth.

2,523
ROSE PLANT
Arthur P. Howard, Sierra Madre, Calif., assignor to Great Western Rose Company, Inc., Pomona, Calif., a corporation of California
Filed Nov. 4, 1963, Ser. No. 327,860
1 Claim. (Cl. Plt.—11)

The new and distinct variety of rose plant of the class designated as hybrid tea roses, substantially as herein shown and described, characterized particularly as to novelty by the unusual red-yellow flowers borne on long stems, the strong fruity fragrance of the flowers, the coppery colored stems, the small number of prickles, the longevity of the flowers after they have been cut, and the vigorous upright growth of the plant.

2,524
ROSE PLANT
Arthur P. Howard, Sierra Madre, Calif., assignor to Great Western Rose Company, Inc., Pomona, Calif., a corporation of California
Filed Nov. 4, 1963, Ser. No. 327,861
1 Claim. (Cl. Plt.—11)

The new and distinct variety of rose plant of the class designated as hybrid tea roses, substantially as herein shown and described, characterized particularly as to novelty by the distinctive rose-yellow flowers with a pronounced coppery tone, borne singly on long stems, the good fragrance of the flowers, the unique property of the plant in growing a new stem to replace one that was cut off, the new stem starting from the side of the stem at a point immediately below the point where the stem was cut and continuing in the direction of the former stem, the unusual height that the plant reaches, the abundance of flowers throughout the unusually long growing season, and the prolonged longevity of the flowers after they are cut.

2,525
ROSE PLANT
Ralph S. Moore, 2519 E. Mineral King, Visalia, Calif.
Filed Mar. 2, 1964, Ser. No. 348,890
1 Claim. (Cl. Plt.—1)

A new and distinct variety of rose plant of hardy, upright, much branched, bush type, as illustrated and described, charcterized by buds and flowers resembling the Pinocchio (Plant Patent 484) in size and general form but with a more high-centered flower, more pointed bud, not so many petals and more pink color; the plant being more upright than Pinocchio, resembling in its upright growth habit the variety Floradora, but being more branched with thinner more wiry branches and canes; the bush more resembling the Little Buckaroo (Plant Patent 1,726) in general growth structure but being taller, more vigorous, with larger, lighter green leaves, larger flowers; and further characterized by a plant easy to propagate from cuttings, with abundant, medium-small, glossy, medium green foliage; an abundance of bloom with flowers of cut flower quality borne several to a stem in loose clusters—often from ten to twenty or more flowers in each cluster or spray.

2,526
ROSE PLANT
Walter Edward Lammerts, Livermore, Calif., assignor to Amling-Devor Nurseries, Inc., Livermore, Calif., a corporation of California
Filed Jan. 15, 1964, Ser. No. 337,965
1 Claim. (Cl. Plt.—20)

A new and distinct variety of rose plant, substantially as herein shown and described, particularly characterized by the distinctive luminescent red rose color of its blooms which includes an undertone of geranium red, by the uniform color of the bloom which is the same throughout the petals and on both sides of the petals, by the resitsance of the bloom to fading and the very small color change before the petals drop, and by the clasping sepals on the maturing bud and the long silvery hairs which appear on the outer petals of the bud as they develop and the bud elongates.

2,527
PEAR TREE
Charles Lyle Kinney, 211 N. Berkeley Way, Medford, Oreg.
Filed Dec. 13, 1963, Ser. No. 330,214
1 Claim. (Cl. Plt.—36)

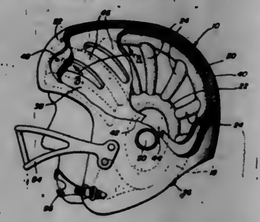
A new and distinct variety of pear tree substantially as shown and described, characterized as to novelty by its similarity to its parent variety Doyenné Du Comice, but distinguished therefrom by bearing fruit having an overall reddish skin having a slight purplish tint when the fruit is ripe and having said overall reddish skin with a mottled greenish-yellow undercoat, immediately prior to its attaining a stage of ripeness.

PATENTS

GRANTED JUNE 1, 1965

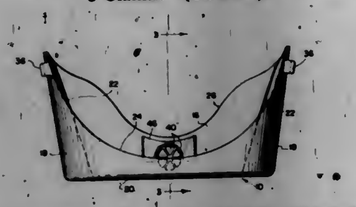
GENERAL AND MECHANICAL

3,186,004
PROTECTIVE HELMET
Richard E. Carlini, 386 Cumberland Parkway, Des Plaines, Ill.
Filed June 7, 1962, Ser. No. 200,829
4 Claims. (Cl. 2—3)



1. A protective helmet comprising, in combination, a vented resilient casing; a rigid vented skeleton positioned within said casing; and an inflatable inner supporting liner for engagement with a wearer's head positioned in engagement with the interior of the skeleton to provide a cushion between the wearer's head and the skeleton, said liner having a flexible peripheral tube, a center tube having one end connected to and communicating with a forward portion of the peripheral tube and the other end connected to and communicating with a rearward portion of the peripheral tube to divide the peripheral tube into two halves, a pair of ear doughnut tubes connected to and communicating with opposite sides of the peripheral tube, and a plurality of finger tubes connected to and communicating with the center tube and the doughnut tubes.

3,186,005
UNDERWATER FACE MASK
Robert Gentile, Woburn, Mass., assignor to Sea-All, Inc., Billerica, Mass., a corporation of Massachusetts
Filed Aug. 2, 1962, Ser. No. 214,376
3 Claims. (Cl. 2—9)



1. A face mask to be worn underwater to provide substantially unrestricted vision, said mask, having an upper and lower portion, comprising, in combination; a lens unit formed of a transparent polymeric material;

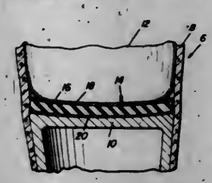
said lens unit including a substantially planar face plate and an integral skirt joining said face plate at the edges thereof and terminating in a continuous rear edge shaped to conform to the facial structure of the wearer in surrounding relation to the eyes and nose;

said skirt including an upper section and a lower section, said upper section including an upper portion having a rear edge curved to conform to the forehead of the wearer and side portions extending rearwardly to conform to the temples of the wearer, said lower section having a rear edge shaped to conform to the facial structure of the wearer between his nose and upper lip, said lower section being substantially deeper than said upper portion causing said face plate to be inclined with respect to the face of the wearer;

a continuous lip of a pliant, elastomeric material attached to said skirt at the rear edge thereof to provide a water tight seal between said skirt and the face of the wearer;

a medial pad provided on the lower portion of said mask for engaging and closing the nostrils of the wearer; and means secured to said skirt at the sides thereof for retaining said mask against the face of the wearer.

3,186,006
ARTIFICIAL LIMB CUSHIONING PAD
Bertha E. Miller, 611½ 3rd Ave., Sterling, Ill.
Filed July 11, 1962, Ser. No. 209,072
1 Claim. (Cl. 3—19)

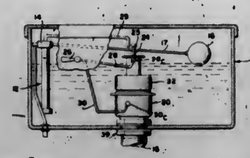


An orthopedic appliance embodying an artificial limb provided with a vertically elongated stump receiving and confining socket having a rigid closed bottom wall; and in combination with said artificial limb, an end thrust compensating, friction minimizing, pain relieving cushion conformably lodged in said stump socket, covering said bottom wall and removable when its pupose has been served; the improvement being in said cushion which comprises a circular compressibly resilient pad having planar parallel top and bottom surfaces, said pad being of uniform cross-sectional thickness throughout, a layer of moisture absorbing cotton of the same shape affixed to the top surface of said pad, and adhesive media covering the bottom surface and retentively but removably securing the pad in place.

3,186,007
SELECTIVELY OPERATED STACKED COLUMNS FOR CONTROLLING AMOUNT OF DISCHARGE FROM FLUSH TANK
Vincent L. Falotico, 309 Eelter Ave., Woodmere, N.Y.
Filed Mar. 4, 1963, Ser. No. 262,503
6 Claims. (Cl. 4—37)

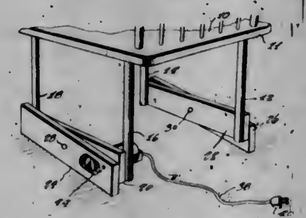
1. A flush tank comprising means defining a discharge opening at the bottom thereof, lower and upper columns having flow passages therethrough, the lower column in its lowermost position being removably seated in sealing engagement on a surface surrounding the discharge opening and entrapping a quantity of water within the tank to the full height of the lower column, and the upper column in its lowermost position being removably seated in sealing engagement with the lower column and entrapping a

quantity of water within the tank to the height of the two columns in end-to-end relation, actuating means outside the tank, and means operably coupling the actuating means to both of said columns, said actuating means being selec-



tively operable to lift either the upper column to permit a discharge of water of the tank through the lower column and the discharge opening or to lift both columns to permit a maximum discharge of water from the tank.

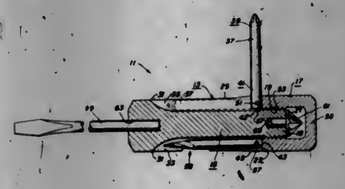
3,186,008
MECHANISM FOR ROCKING CRADLES, CHAIRS AND THE LIKE
John W. Fuller, Box 323, Wilmington, Vt.
Filed Sept. 6, 1961, Ser. No. 136,249
1 Claim. (Cl. 5—109)



In a rocking chair, cradle or the like, having a pair of front legs and a pair of rear legs, a rocking structure comprising a pair of laterally spaced opposed stationary base members having floor engaging surfaces along the full length of each thereof, a pair of movable support members, each secured to the lower ends of a front and rear leg of each pair, and in horizontal alignment, each support member disposed adjacent an inside face of a base member, and coextensive therewith, means substantially at the center of each support member pivotally connecting the same to its associated base member, an electric motor mounted at the rear end of one support member and on the inside face thereof, a power shaft on said motor extending through an opening in said one support member, an elongated slot in the base member adjacent to said one support member having upper and lower straight parallel sides defining a raceway with which said shaft projects, and a cam disc positioned in said slot having its periphery in rolling engagement with said parallel sides of said raceway and eccentrically mounted on the projecting end of said power shaft, whereby rotation of said cam disc will impart up and down swinging movement of said one support member about its pivotal connection to effect the desired rocking action of said chair, cradle, or the like.

3,186,009
MULTI-PURPOSE HAND TOOL
Rufus P. Simmons, 3598 Mimosa Ave., Memphis, Tenn.
Filed Nov. 19, 1962, Ser. No. 238,392
3 Claims. (Cl. 7—16)

1. A multi-purpose hand tool comprising a cylindrical body having an externally threaded end portion and including a plurality of equi-angularly spaced grooves extending longitudinally in said cylindrical body, a like plurality of tool-bits having shank portions with each of said shank portions having a lateral surface and an end surface, means pivotally connecting said shank portions of said tool-bits to said cylindrical body for foldable movement of each of said tool-bits to an open or a closed position, each of said tool-bits being perpendicular to said cylindrical body in said open position and being received in and contiguous with said grooves in said closed position, and a retainer member having an interior portion thereof



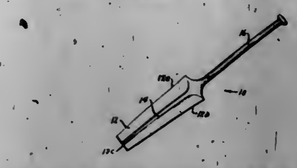
provided with internal threads and including an annular face perpendicular to the axis of said retainer member, said retainer member threadedly engaging said threaded end portion of said body and axially movable thereon with said annular face of said retainer member engaging said lateral surface or said end surface of each of said shank portions of said tool-bits for selectively securing each of said tool-bits in a respectively open or closed position.

3,186,010
BOAT
Lester T. McDonnell, 5390 Cecilia Ann Ave., Clarkston, Mich., and Axel A. Johnson, 2166 Kurtz Road, Holly, Mich.
Filed Aug. 28, 1963, Ser. No. 305,038
12 Claims. (Cl. 9—6)



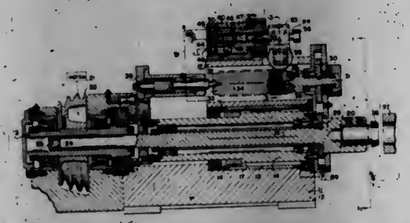
1. A boat comprising
two elongated hollow floats disposed in laterally-spaced parallel relationship,
and a boat hull having a substantially horizontal bottom structure resting upon, and structurally interconnecting said floats and defining with said floats a longitudinal tunnel extending between said floats and beneath said bottom structure substantially from bow to stern of said hull,
said hull having a pair of side structures disposed vertically in laterally-spaced substantially parallel relationship above said bottom structure,
a bow structure extending between said side structures and rising from the forward end of said bottom structure,
a stern structure extending between said side structures and rising from the rearward portion of said bottom structure,
and elongated channel coupling members having channels receiving and spaced flanges engaging and connecting the adjacent edge portions of certain of said structures to one another,
said channel coupling members extending longitudinally along substantially the entire lengths of the structures which they interconnect.

3,186,011
BOATING PADDLE
John T. Decker, 521 N. 5th St., Vincennes, Ind.
Filed Dec. 26, 1962, Ser. No. 246,921
1 Claim. (Cl. 9—24)



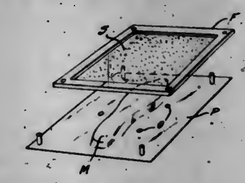
A boating paddle of one-piece construction, comprising:
an elongated handle portion, and an elongated water-engaging member,
said member having oppositely disposed water-contacting surfaces defined by a generally trapezoidal periphery comprised of:
a first end adjacent said handle,
a free end of lesser transverse dimension terminated by
a straight edge substantially perpendicular to an extension of the longitudinal axis of said handle, and
two side each beginning at said one end and gradually tapering toward said free end,
first and second non-separable ribs disposed oppositely and respectively along the longitudinal lengths of said surfaces in the plane of said longitudinally axis and having
a combined first dimension transverse to said surfaces substantially equal to the diameter of said handle, throughout the length of the water-engaging member
said ribs having sides spaced apart their greatest amount at said handle end and gradually converging at said free end.

3,186,012
FLUID MOTOR DRIVE MECHANISM AND CONTROL THEREFOR
Harry W. Brown, Sr., Willowick, Ohio, assignor to The National Acme Company, a corporation of Ohio
Filed Dec. 17, 1962, Ser. No. 245,007
13 Claims. (Cl. 10—139)



1. A drive mechanism, comprising in combination,
a servomotor,
a master thread journaled for rotation,
a movable element movable in translation,
a worm wheel journaled on said movable element and with the teeth thereof in threaded engagement with said master thread,
brake means disposed to act on said worm wheel,
means to rotate said master thread,
means to release said brake means to permit said worm wheel to rotate freely as said master thread is rotated,
means to engage said brake means to lock said worm wheel against rotation and accordingly rotation of said master thread causes translation of said worm wheel and of said movable element,
and control means connected to control said servomotor in response to translation of said movable element.

3,186,013
METHOD OF MAKING SHOE SOLES
Joel Glassman, Gilbert F. Jonas, and Andrew L. Bass, Jr., Nashville, and Stephen H. Pate, Hendersonville, Tenn., assignors to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee
Filed July 9, 1962, Ser. No. 208,305
2 Claims. (Cl. 12—146)

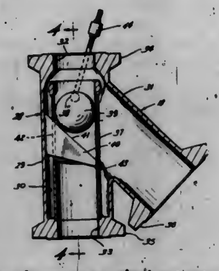


1. In the manufacture of shoe components having a plantar portion and an upstanding marginal portion surrounding the plantar portion, the process comprising:
(a) providing a sheet of thermoplastic synthetic polymer capable of being rendered pliable by heat, conformed while hot to the shape of a mold, and permanently set to the conformed shape,
(b) providing a vented mold having a plantar surface corresponding substantially to the size and peripheral contour of a last bottom, and having side walls extending substantially perpendicularly from the peripheral margin of said plantar surface, said side walls having a height substantially greater than the thickness of said sheet of synthetic polymer,
(c) heating the sheet of synthetic polymer to an extent sufficient to render it pliable, and extending the sheet across the plantar surface of, and the vent in, said mold with the edges of the sheet extending beyond the periphery of said plantar surface and overhanging said side walls for a substantial distance,
(d) applying vacuum on the mold-side of the pliable sheet while maintaining atmospheric pressure on the reverse side thereof to draw the pliable sheet into contiguity with the plantar surface and side walls of said mold, and maintaining said vacuum until the sheet has lost its pliability and has set into conformity with the mold,
(e) and then trimming away any excess of the sheet outwardly of the portions thereof conformed to the side walls of said mold.

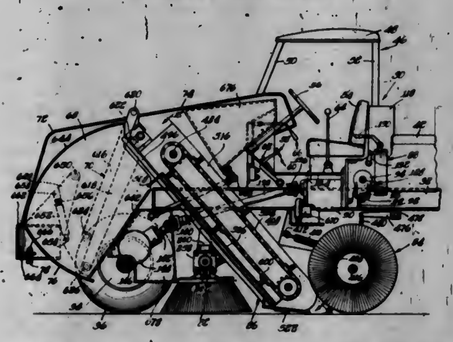
3,186,014
DEVICE FOR DIVERTING A PIPELINE SEPARATOR OR LIKE OBJECT
Herbert Allen, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex., a corporation of Texas
Filed July 19, 1963, Ser. No. 296,893
8 Claims. (Cl. 15—3.51)

1. A device for diverting a separator or like object from within a pipeline, comprising a body having a flowway therethrough with an inlet and outlet for connection in the pipeline and having a conduit connecting with the flowway intermediate the inlet and outlet, a sleeve, means mounting the sleeve on the body for swinging between a first position within the flowway for confining substantially all of the flow from the inlet to the outlet thereof and receiving a separator from the inlet and a second position for permitting a separator received in the sleeve to pass therefrom into said conduit, means on the body to engage a separator received within the sleeve to cause said sleeve to be swung from said first to said second position, said sleeve being swingable from said second to said

first position when the separator has passed out of it, and a counterweight connected to the sleeve mounting means for swinging between positions on opposite sides of a plane passing through the axis of the flowway and axis of rotation of the sleeve mounting means, so as to yieldably urge said sleeve into each of said first and second positions during the latter portion of the swinging of the sleeve toward each said position.



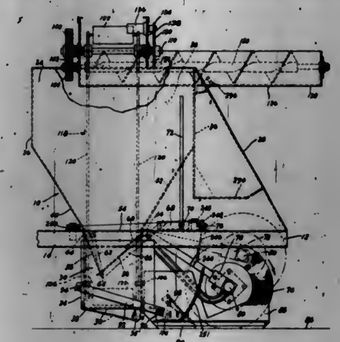
3,186,015
STREET SWEEPER
Ralph L. Beyerstedt, Libertyville, Ill., assignor, by mesne assignments, to Elgin Sweeper Company, Elgin, Ill., a corporation of Delaware
Filed July 6, 1951, Ser. No. 235,403
19 Claims. (Cl. 15—84)



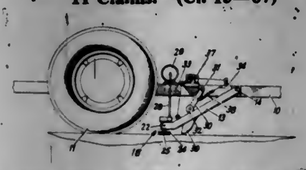
7. In a street sweeper having a frame, the combination comprising a dust box adapted to receive dirt and the like at a position well above street level, brush means for sweeping dirt and the like from the street, an elevator for raising the swept dirt from street level to discharge said dirt into said dust box, an axle extending transversely of said frame and having a driving connection intermediate the ends thereof, driving wheels on said axle, an engine carried by said frame on the opposite side of said elevator from said axle, and a drive shaft extending through said elevator from said engine to said drive connection on said axle for driving said sweeper.

3,186,016
STREET SWEEPING MACHINE
Roland P. Gehman and Eugene G. Martin, Stevens, and Edgar H. Smith, New Holland, Pa., assignors to MGS, Inc., Reamstown, Pa., a corporation of Pennsylvania
Filed Mar. 21, 1963, Ser. No. 266,951
11 Claims. (Cl. 15—85)

1. A street sweeper having wheel means to support the same for mobile operation and comprising in combination, a pickup brush supported transversely of said sweeper, means to rotate said brush, means to receive sweepings from said brush, receptacle means to hold accumulated sweepings, conveyor means to move sweepings from said receiving means to said receptacle means, discharge means operable to unload accumulated sweepings from said sweeper, and power means operable selectively to drive said conveyor means to move sweepings from said receiving means to said receptacle means or operate said discharge means to unload accumulated sweepings from said receptacle means.



3,186,017
SAFETY DEVICE FOR VEHICLES
Artie F. Bolt, 3327 Greenbush Ave., Groesbeck, Cincinnati 36, Ohio
Filed June 25, 1963, Ser. No. 290,433
11 Claims. (Cl. 15—87)



1. A safety device, for vehicles having driving wheels, comprising means for clearing a path directly in front of said driving wheels; means for mounting said path clearing means for pivotal movement about an axis angularly disposed with respect to the horizontal, whereby said path clearing means is movable from a retracted inoperative position disposed inside said path to be cleared, to an extended, operative position directly in front of said driving wheels; and means for raising and lowering said clearing means; said first named means comprising a mounting bracket, a shaft journaled for rotational movement about a vertical axis in said bracket, a disc secured to one end of said shaft and carrying a plurality of blades; said last named means including a fluid cylinder having a piston, a pair of cables effective to transmit motion of said piston to said bracket, one of said cables arranged to extend said bracket as said piston moves in one direction, and the other of said cables being arranged to retract said bracket as said piston moves in the opposite direction.

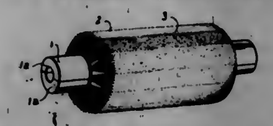
3,186,018
BRUSH CONSTRUCTION
Gilbert Shaw, Middlebury, Vt.
Original application Aug. 15, 1962, Ser. No. 217,000. Divided and this application May 1, 1963, Ser. No. 283,654
14 Claims. (Cl. 15—159)

1. A brush comprising: a family of synthetic brush fibers of a compressive nature which are increasingly spatulated along at least part of their length to provide increasingly spatulated portions, each increasingly spatulated portion of each increasingly spatulated fiber having a varying cross-sectional shape along the length of the fiber and having a progressively decreasing thickness,



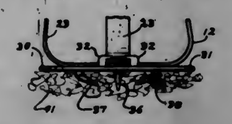
a corresponding increasing width and a corresponding decrease in stiffness in a direction normal to the longitudinal axis of the fiber; said fibers being supported at one common end.

3,186,019
CIRCULAR BRUSH
Ryosuke Hattori, 2-20 Ooza-Nishiimashuku, Aza-Gonai, Jimokuji-Machi, Ama-gun, Aichi-ken, Japan
Filed Dec. 13, 1963, Ser. No. 330,332
Claims priority, application Japan, May 19, 1961, (utility models) 36/25,114, 36/25,115
9 Claims. (Cl. 15—179)



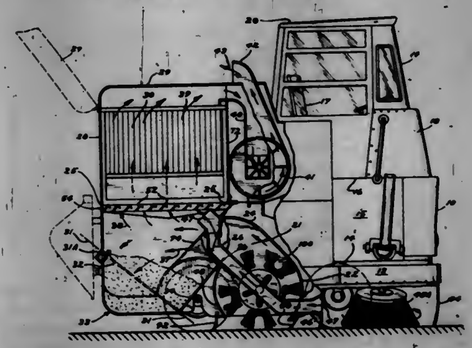
1. A high-speed cylinder roller brush for comber cylinders, capable of rotational speeds independent therefrom, comprising, in combination, a cylindrical core having a solid and unbroken surface; clusters of bristles uniformly affixed to the entire said surface; said clusters being composed of pliant and elastically bending natural fibers of equal length and thickness, standing at substantially right angles to said surface and extending radially therefrom; and of at least one row of straight metal wire bristles of like dimensions as said natural fiber bristles and standing in the same position as the latter; the entire cylinder brush thus having a substantially cylindrical shape, said metal wire bristles forming a pattern of at least one continuous row within said natural bristles, following the rotational axis of said cylindrical core; the outer extremities of all bristles being essentially equidistant relative to each other.

3,186,020
CLEANING ATTACHMENT FOR MIXERS
Paul H. Redfield, R.R. 3, Madison, S. Dak.
Filed Feb. 14, 1963, Ser. No. 258,966
5 Claims. (Cl. 15—230.19)



5. An attachment for a power rotatable mixer having a beater, said attachment comprising:
a substantially flat disc made of a flexible material,
means for attaching said flat disc in driving relationship to said beater,
a plurality of prongs fixedly attached to the bottom surface of said flat disc and extending downwardly therefrom, at least some of said prongs having lower end portions thereof bent in direction to form a hook shape, said prongs being oriented so that as said beater rotates the lower end portions of at least some of said hook-shaped prongs rotationally lead the upper portions of the same prongs,
and an abrasive pad engaged with the hook portions of at least some of said prongs and driven by said beater.

3,186,021
POWER SWEEPER
Keith N. Krier and Ralph C. Peabody, Minneapolis, Minn., assignors to G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 20, 1959, Ser. No. 794,762
13 Claims. (Cl. 15—340)

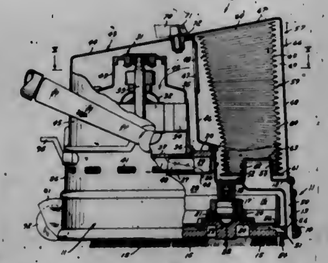


1. A power sweeper comprising a mobile frame having a longitudinal axis for normal straight forward motion, front and rear wheel means on the frame for propelling and steering the frame, the front wheel means being located on the longitudinal axis of the sweeper, power means connected through a transmission to at least some of said wheel means for operating the same, a main enclosure on the frame and a vacuum blower connected to the power means so as to be driven thereby and connected to the main enclosure for partially evacuating the main enclosure, said main enclosure having a main opening in the bottom thereof and located between the wheel means, said opening extending transversely across the frame, a substantially horizontal axis cylindrical brush and drive means connecting it to the power means, said brush being mounted on the frame for brushing engagement through said opening against the surface on which the sweeper moves, said sweeper also having thereon at least one gathering brush connected to the power means so as to be rotated thereby and mounted for rotation about a generally upright axis at a location along a side of the machine and in a position in advance of the cylindrical brush when the sweeper moves forward, and a separate open bottomed enclosure around said gathering brush, said separate enclosure being closed except at the bottom and connected to the main enclosure so as to be partially evacuated when the main enclosure is partially evacuated, said gathering brush and front wheel means both being located in said separate enclosure.

3,186,022
SURFACE TREATING APPARATUS
Åke Emil Forsland, Hagersten, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Apr. 4, 1961, Ser. No. 102,684
Claims priority, application Sweden, Apr. 9, 1960, 3,544/60
8 Claims. (Cl. 15—345)

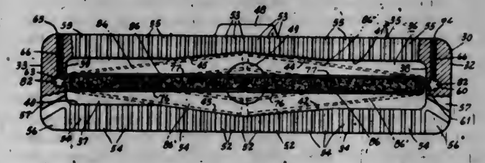
1. In a surface treating apparatus of the described character; the combination of a downwardly opening base, rotatable surface treating means mounted within

said base and projecting downwardly from the latter for contact with a surface to be treated, a motor-fan unit on said base having air inlet means at a side of said unit and air outlet means, said motor-fan unit being operative to drive said surface treating means and to produce a decreased pressure at said air inlet means for inducing an air flow into the latter, said base having a suction passage opening at the bottom of the base, connection means on said base located adjacent said side of the motor-fan unit and communicating with said suction passage, dust collecting means including a porous receptacle having a mouth engaged with said connection means and a cover



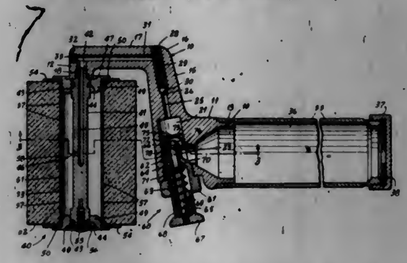
removably mounted on said base to define a chamber enclosing said receptacle and communicating with said air inlet means of the motor-fan unit so that the decreased pressure produced at the air inlet means causes air flow into said suction passage and through said porous receptacle in the compartment with dust entrained by said air flow being filtered and collected in said porous receptacle, and said air outlet means of the motor-fan unit opening, at least in part, into said base so that, upon operation of said motor-fan unit, air under pressure exhausted from the latter is discharged downwardly around said surface treating means to blow dust away from the latter.

3,186,023
VACUUM RUG CLEANER ATTACHMENT
Harold W. McCulloch, Mesquite, Tex., assignor to John E. Mitchell Company, Dallas, Tex., a corporation of Missouri
Filed Oct. 7, 1963, Ser. No. 314,188
1 Claim. (Cl. 15—364)



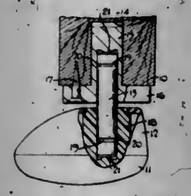
An attachment tool for a vacuum cleaner comprising a body, a suction recess in the lower side of the body, means to communicate the suction recess with a source of sub-atmospheric pressure, a pair of cleaning shoes within the recess, means at diametrically opposite sides of the suction recess for mounting the shoes with the lower sides of the shoes projecting below the lower sides of the body, so that the shoes can swing within the recess, each mounting means comprising a pin fixed to an end of the shoe, a recess in the lower side of the body for receiving a pin, a movable detent in the body, spring means biasing the detent toward the pin, an annular groove in the pin for receiving the detent to releasably lock the pin in the recess while permitting the pin to rotate, whereby shoes can be removed and replaced by different kinds of substitute shoes without the use of tools, and a plurality of rigid downwardly projecting teeth surrounding the recess, the spacing being greater between the teeth that are positioned relatively more remote from the suction recess communicating means so that an even cleaning action is attained in all areas of the suction recess.

3,186,024
FOUNTAIN ROLLER
Terrell R. McLemore, Belleville, Ill., assignor to Marsh Stencil Machine Company, Belleville, Ill., a corporation of Illinois
Filed Oct. 26, 1961, Ser. No. 147,930
1 Claim. (Cl. 15—547)



A fountain roller comprising a porous roller having a cylindrical outer surface, an opening through the center of the roller defining an inner surface thereof, a shaft, means for supporting the roller upon the shaft with the shaft extending into the opening, a passage within the shaft, a single orifice through the side of the shaft to communicate the shaft passage with the opening in the roller, a fluid reservoir, passage means for communicating the fluid reservoir with the shaft passage, pump means for pumping fluid from the reservoir to the shaft passage, and a substantially rigid sleeve within the opening and bearing against the inner surface of the roller, the sleeve having a plurality of ports through it for transmitting fluid from the shaft orifice to the roller, but having an imperforate wall opposite the shaft orifice to disperse fluid sprayed against the sleeve through the orifice.

3,186,025
FLOOR-ENGAGING MEMBERS FOR ARTICLES OF FURNITURE AND THE LIKE
Henry M. Kesterton, Wroxall, England, assignor to Howard Clayton-Wright Limited, Warwick, England, a British company
Filed Oct. 10, 1962, Ser. No. 229,599
Claims priority, application Great Britain, Oct. 19, 1961, 37,452/61
7 Claims. (Cl. 16—18)



1. A floor engaging member of the castor type comprising, in combination:

(a) a castor body having a contact face for engagement with a floor, and a top face opposite said contact face; and

(b) swivel means on said castor body and projecting from said top face for rotatably connecting said castor body to an article of furniture,

(1) said swivel means including means defining an axis of relative rotation of said castor body and of a connected piece of furniture,

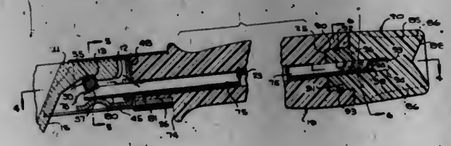
(2) said axis defining means including bearing means fixed on said castor body and said swivel means further including a swivel pin projecting from said top face, said pin being received in said bearing means for rotation about said axis,

(3) said axis intersecting an element of said contact face at an oblique angle and being fixed with respect to said contact face element,

(4) a plane at right angles to said axis being tangential with respect to another element of said contact face radially spaced from said axis, and

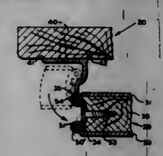
(5) said contact face being of convex arcuate cross section in all planes perpendicular to said tangential plane in said other face element.

3,186,026
DETACHABLE HANDLE APPARATUS
James W. Serio, Hillcrest Road, Elmira, N.Y.
Filed Oct. 4, 1962, Ser. No. 229,777
15 Claims. (Cl. 16—114)



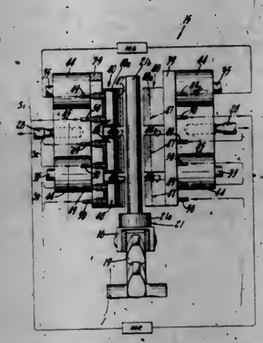
4. Detachable handle apparatus comprising a body means, a clamping pin, guide means having guide slots formed therein, said guide slots receiving spaced portions of said clamping pin for guiding movement of said clamping pin into and out of clamping position, actuating means including an actuating shaft reciprocably supported by a portion of said body means, means for producing reciprocatory movement of said actuating shaft, said shaft having a cam surface formed thereon for engaging and moving said clamping pin into clamping position.

3,186,027
CABINET HAVING REVERSIBLE DOORS AND PANELS AND HARDWARE THEREFOR
Orville D. Merillat, 780 Harkness Drive, Adrian, Mich.
Filed Aug. 1, 1961, Ser. No. 128,415
3 Claims. (Cl. 16—170)



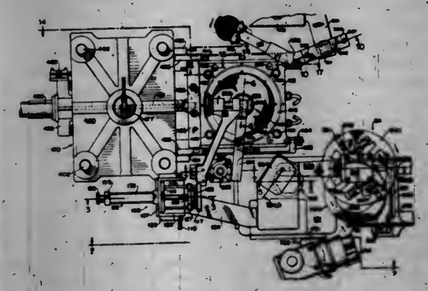
1. A reversible hinge for flush mounting a lightweight door on a door casing, said hinge comprising a swinging member for engaging an edge of said door and having a pair of spaced apertures formed therein, each aperture extending through one end of said swinging member, and a standing member having a base for engaging said casing and an arm for pivotally supporting said swinging member for movement along a curved path, said arm extending outwardly from one end of said base and having aligned openings along the outermost edge thereof, and a pin selectively receivable within said aligned openings and one of said spaced apertures whereby said swinging member may be reversed and pivotally supported by said arm for movement along the same curved path by positioning said pin in the other of said spaced apertures.

3,186,028
APPARATUS FOR THERMALLY CONDITIONING BLOW MOLDING MACHINE ELEMENTS
Walter James Dobbins, Lake Zurich, Oscar Frederick Ecklund, Barrington, and Eugen Franz Polka, Algonquin, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 31, 1962, Ser. No. 234,437
6 Claims. (Cl. 18—5)



1. Apparatus for thermally conditioning an elongated mold core comprising means supporting said core in normal position, a plurality of heat conductive elements disposed in surrounding relationship to said core, each of said elements being opposite another similar element on the opposite side of said core to form an element pair, each of said element pairs being spaced a finite distance from the next adjacent pair, said element pairs all being simultaneously movable laterally of said core to contact select peripheral surfaces thereof spaced apart by said finite distance, and means operable to maintain said element pairs at different temperatures for a predetermined period of time to impose on said core a thermal gradient.

3,186,029
MACHINE FOR MAKING DISK PHONOGRAPH RECORDS
William Joseph, Livingston, N.J., assignor to Metro-Goldwyn-Mayer Inc., New York, N.Y., a corporation of New York
Filed Aug. 23, 1962, Ser. No. 219,011
16 Claims. (Cl. 18—5.3)



6. In an automatic machine for making disk phonograph records, in combination, a press, separable mold members adapted to enter said press, means for supplying a label to each said mold member, means for supplying record material to one of said mold members, means for causing said mold members to enter said press with said labels and material in position between said mold members, means for causing said press to operate through a cycle of operation to press a record, means to move

said mold members out of said press upon completion of a pressing operation, means to separate said mold members, means to retain a pressed record on a predetermined one of said mold members during said separation comprising a plurality of pins fixed in said mold member outside the finished record area, said pins being spaced about the circumference of a circle the diameter of which is greater than the diameter of a finished record, said pins thus lying in the path of flash which flows around said pins as said record is pressed, whereby said record is retained upon said mold member when the mold members separate, and means to remove the pressed record from said one mold member.

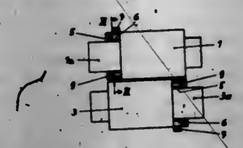
3,186,030
APPARATUS FOR ROLLING SECTIONS FROM METAL POWDER
Kurt Claus, Lintorf, near Dusseldorf, and Felix Pollmeier, Dusseldorf, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Mar. 22, 1962, Ser. No. 181,764
Claims priority, application Germany, Apr. 1, 1961, Sch 29,490
2 Claims. (Cl. 18—12)



1. An apparatus for forming an elongated structural shape from metal powder, said shape having a thin section and a thicker section transversely spaced from said thin section, said apparatus comprising a first pair of opposed rolls, means for feeding metal powder between said rolls, the distance between a portion of said rolls being equal to the finished thickness of said thin section, the distance between another portion of said rolls being greater than the finished thickness of said thicker section but small enough to provide for partial compaction of the powder in said thicker section, a second pair of opposed rolls, the distance between a portion of said second rolls being equal to the finished thickness of said thin section, the distance between another portion of said second rolls being less than the distance between said other portion of said first rolls but greater than the finished thickness of said thicker section to provide for further compaction of the powder only in said thicker section, and a third pair of opposed rolls, the distance between a portion of said third rolls being equal to the finished thickness of said thin section, the distance between another portion of said third rolls being equal to the finished thickness of said thicker portion, whereby said thin section is formed to finished thickness between said first rolls and said thicker section is progressively formed between said first, second and third rolls while maintaining the finished thickness of said thin section.

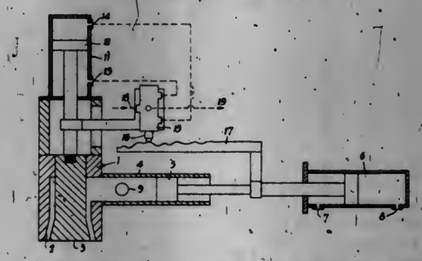
3,186,031
ROLLING MILLS FOR PRODUCING STRIP FROM GRANULAR AND PULVERULENT MATERIAL
Ulf Geier, Osterrath-Bovert, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Dec. 4, 1963, Ser. No. 327,950
Claims priority, application Germany, Dec. 24, 1962, Sch 32,518
5 Claims. (Cl. 18—9)

1. For the production of bands and strips from granular and pulverulent materials, particularly metals, a rolling mill, comprising: rolls forming a roll pass, a boundary ring on one end of one roll and a similar boundary ring on the opposite end of the other roll, the boundary ring on each roll bearing against the body of the other roll, thus closing the roll pass at the ends and thereby limiting the breadth of the band to be rolled, and the rolls being



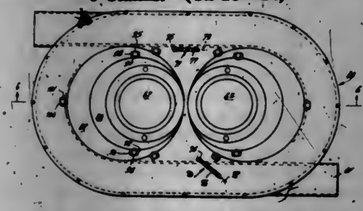
axially adjustable relatively to one another so as to vary the breadth of the band to be rolled.

3,186,032
VARIABLE AREA CROSS-HEAD
Norman Frederick Harwood, Kingston-on-Thames, Surrey, England, assignor to Baker Perkins Granbuli Limited, Surrey, England, a British company
Filed Aug. 17, 1962, Ser. No. 217,673
Claims priority, application Great Britain, Aug. 23, 1961, 30,444/61
2 Claims. (Cl. 18—14)



1. In a machine for extruding plastic material, a variable area cross-head including an outer nozzle, an inner relatively movable mandrel defining with said nozzle a variable outlet orifice, an injection cylinder opening into said nozzle, an inlet for extrusion material in said cylinder, an injection piston within said injecton cylinder, means for operating said injection piston when said injection cylinder is charged to force said material past said mandrel and through said outlet orifice, a hydraulic piston and cylinder assembly operative to displace said mandrel relative to said nozzle to vary the size of said outlet orifice, means for supplying said hydraulic assembly with actuating fluid and a linear cam movable with said injection piston for controlling said hydraulic assembly supply means throughout each extrusion.

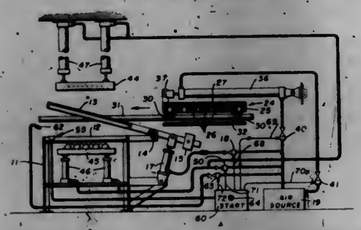
3,186,033
ADJUSTABLE AIR RING
James B. Newman, Jr., Shortsville, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Oct. 23, 1962, Ser. No. 232,369
6 Claims. (Cl. 18—14)



2. In combination; a first and second extrusion die mounted on and connected to a common extruder and a first and second air ring for receiving and cooling the film

extruded by said first and second extrusion dies respectively; a common air receiving frame; said first and second air rings being adjustably mounted on said common frame; said common frame defining air supply channel means for supplying air under pressure around the periphery of each of said first and second air rings; said first and second air rings being movable toward and away from one another whereby the center to center distance of said first and second air rings is adjustable.

3,186,034
APPARATUS FOR CONTROLLING THE APPLICATION OF HEAT
Ernest A. Taylor, Jr., Decatur, Ala., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware
Original application June 12, 1964, Ser. No. 116,536, now Patent No. 3,127,494, dated Mar. 31, 1964. Divided and this application Mar. 6, 1964, Ser. No. 350,022
4 Claims. (Cl. 18—19)



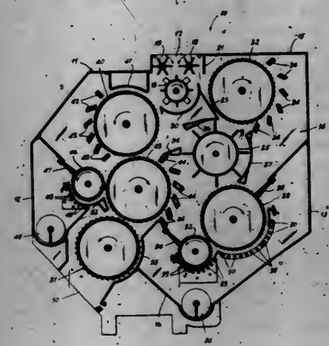
1. An apparatus for molding a thermoplastic sheet, comprising a frame for holding the sheet, means mounted on the frame for molding the sheet, means on the frame for heating the sheet, and means on the frame for sensing the heat output of the heating means and for stopping the application of heat to the sheet when said heating means has applied a predetermined amount of heat to said sensing means regardless of the temperature of the heater.

3,186,035
APPARATUS FOR THE CONTINUOUS CASTING OF SOLID PROPELLANT ROCKET MOTORS
Garland K. Grace, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,819
4 Claims. (Cl. 18—26)



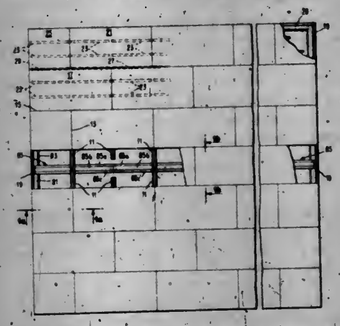
1, An apparatus for use in casting an uncured propellant in the motor case of a solid propellant rocket motor comprising a guide means extending longitudinally of the motor case, a core means slidably mounted on said guide means, hoisting means connected to said core means for withdrawing said core means from the motor case and a flexible plastic barrier surrounding said guide means and said core means to prevent contact thereof with the uncured propellant being cast into the motor case.

3,186,036
COTTON CLEANING MACHINE
Harry C. Word, Dallas, Tex., assignor to John E. Mitchell Company, Dallas, Tex., a corporation of Missouri
Filed Mar. 26, 1962, Ser. No. 182,453
10 Claims. (Cl. 19—203)



1. A cotton cleaning machine comprising a housing, separate cleaning stations within the housing each comprising at least one cleaning saw cylinder with means associated with each cleaning station to separate sticks and trash from cotton, an inlet into the housing for the introduction of cotton along with sticks and trash, and means to divide the cotton, sticks and trash into two streams each directed toward one of the cleaning stations, the last-named means comprising a high speed impeller for causing one stream to have a substantially greater amount of sticks and trash and a substantially lesser amount of cotton than the other stream.

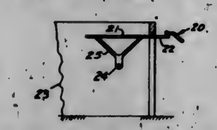
3,186,037
FLOOR OR ROOF STRUCTURE
Herbert Sklaroff, 8212 High School Road, Elkins Park, Pa.
Filed Dec. 26, 1961, Ser. No. 161,842
2 Claims. (Cl. 20—6)



1. A floor or roof structure to be used with a prefabricated building comprising in combination: a plurality of full beams each having a pair of substantially rectangular recesses, one on each side, and along the length thereof to form first and second L-shaped sides; a pair of end beams each having a substantially rectangular

recess to form an L-shaped side and disposed on opposite ends of said structure with the L-shaped sides facing inward, the L-shaped side of said end beams being identical to the L-shaped side of said full beams; a plurality of prefabricated panel sections each having at least first and second sets of parallel spaced stringers with a section of sheathing secured thereto, said first and second sets of stringers being separated from one another to form a first locking space which is the width of the top of one of said full beams and each of said stringers formed so that its end away from said locking space is short of the end of said sheathing section by one-half the width of said first locking space thereby enabling two adjacent panels to form a second locking space at their abutting edges which lie perpendicular to their respective stringers, said second locking space being equal in width to said first locking space; said stringer members having a depth dimension substantially equal to the inside surface of said L-shaped side; and said panels disposed in juxtaposition with one another in such a fashion that each of said second locking spaces is in line with at least one of said first locking spaces of a third panel to lend structural strength to said structure by enabling an integral third panel to be secured to a beam whereat two adjacent panels are joined, said panels overlayed on said full beams and said end beams with the respective tops of said full beams fitting into both said first and second locking spaces of associated panels, while said stringers rest on the shelf portions of the L-shaped sides of both said full beams and said end beams.

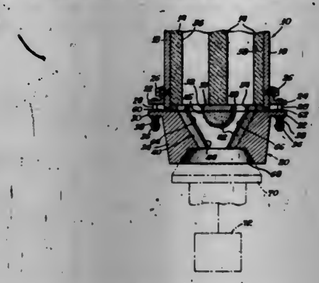
3,186,038
OVERHEAD DOOR OPERATOR
Ralston E. Bear, 2281 E. Mountain, Pasadena, Calif.
Filed Apr. 30, 1963, Ser. No. 276,936
5 Claims. (Cl. 20—16)



1. In combination: an overhead door which has an outwardly directed face that pivots around a horizontal axis between a substantially vertical and a substantially horizontal position, and an operator for said door comprising: a bracket attached to said outwardly directed face adjacent to an edge thereof, said bracket including a pair of side plates, each side plate having a hole therethrough; an extended handle element having a central bight, a pair of substantially parallel arms adapted to overhang said edge, one extending from each end of the bight, and a stub shaft at the end of each of said arms, the stub shafts passing through the holes, thereby to journal the handle element to the bracket; and retention means interengaging the handle element and bracket so as to retain the handle in a selected position.

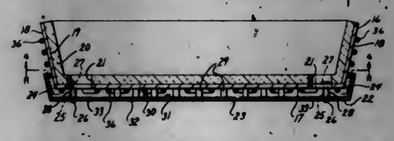
3,186,039
CASTING INGATE ARRANGEMENT
Edmund Q. Sylvester, Shaker Heights, Ohio (% Amsted Research Laboratory, P.O. Box 567, 340 County Line Road, Bensenville, Ill.)
Filed Sept. 26, 1962, Ser. No. 226,283
6 Claims. (Cl. 22—69)

1. A pressure casting arrangement, comprising a mold assembly, a plurality of independent mold cavities formed within said mold assembly, an ingate assembly connected to said mold assembly, said ingate assembly comprising a body, a cavity formed within said body, a refractory insert received within said cavity and having formed therethrough a plurality of branch conduits each having a discharge orifice at one end and terminating at their other ends in a common single inlet orifice, a recess formed within said body generally about said inlet orifice for the reception of a ladle pouring tube, a cut-off slide member slidably received between said body and mold assembly, and a plurality of passages formed through said slide



member and located so as to simultaneously complete communication between said discharge orifices and said mold cavities respectively, said slide member being effective to at times terminate said communication whenever said slide member is moved to a position whereat said passages are moved out of alignment with said discharge orifices of said conduit portions.

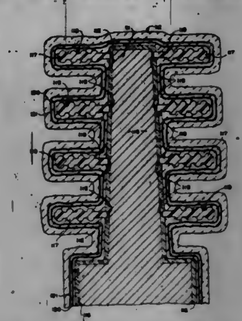
3,186,040
METHOD AND APPARATUS FOR DISTRIBUTING MOLTEN METAL AND THE LIKE
Robert John Adamo, Grandville, and Edward Albert Greger, Grand Rapids, Mich., and Fred William Pierson, 1147 Wheeler SW., and Fred William Pierson, Jr., 3815 Byron Center Road SW., both of Grand Rapids, Mich., assignors, by direct and mesne assignments, to said Fred W. Pierson and said Fred W. Pierson, Jr.
Filed Dec. 1, 1960, Ser. No. 72,903
15 Claims. (Cl. 22—80)



1. A distribution pan for dispensing molten metal and the like comprising a first cup-shaped metal member having heat insulating means lining the interior thereof, a second cup-shaped metal member telescopically disposed in said first member and having heat insulating means lining the interior thereof to be contacted by said molten metal, said members having aligned passage means for interconnecting the interior of said second member with the exterior of said first member to permit molten metal disposed in said second member to flow through said passage means, and means for absorbing heat from said second metal member.

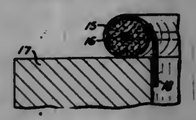
3,186,041
CERAMIC SHELL MOLD AND METHOD OF FORMING SAME
Robert A. Horton, Chesterland, Ohio, assignor to Precision Metalsmiths, Inc.
Filed Nov. 14, 1961, Ser. No. 152,241
16 Claims. (Cl. 22—129)

1. In a process of building a shell mold around a disposable pattern formed of a soluble synthetic resin and then removing the pattern from the mold, the steps of embedding said pattern in a porous shell of refractory material, treating said shell to render it impervious to a solvent for the synthetic resin so that the solvent cannot penetrate through the walls of said mold, providing access to a portion of said pattern, and exposing said shell and



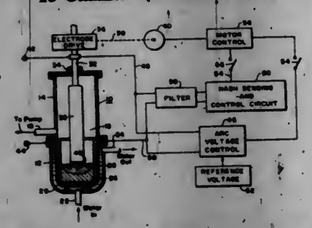
embedded pattern to a pattern liquid solvent for the synthetic resin until said pattern is substantially completely dissolved.

3,186,042
HOT TOP GASKET
Robert E. Daley, 8355 Remington Drive, Pittsburgh, Pa.
Filed Dec. 26, 1962, Ser. No. 247,109
1 Claim. (Cl. 277—11)



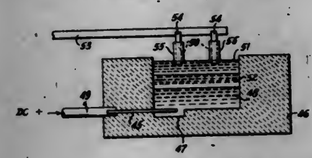
A hot top gasket adapted to support a hot top on an ingot mold, the gasket comprising a horizontal compressible plastic refractory ring that is substantially circular in vertical cross section, a central stiffening core completely embedded in the ring to hold it in a predetermined shape, and a plurality of circumferentially spaced wires wrapped around the ring, one end of each wire projecting from the ring downwardly adjacent the inner periphery of the ring substantially parallel to its axis, and the other end of each wire extending substantially radially into the plastic refractory to hold the wire against rotation around the ring.

3,186,043
METALLURGICAL FURNACE CONTROL
James B. Murtland, Jr., and Charles F. Rebbun, Natrona Heights, Pa., and Harold S. Jackson, Troy, N.Y., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Apr. 2, 1963, Ser. No. 270,088
13 Claims. (Cl. 22—200)



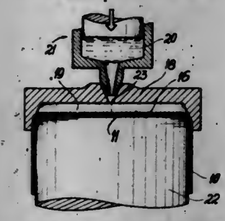
1. In the process of consumable-electrode-forming a cast metal ingot, the steps comprising placing an end of an electrode to be melted within a mold, passing an electrical current between the electrode and the mold whereby the electrode is progressively melted from said end and is deposited in the bottom of said mold, the molten metal deposited in the mold progressively solidifying to build up an ingot, electrically filtering from the voltage gradient existing between the mold and the electrode those recurring voltage fluctuations which recur beneath about thirty cycles per second, the resulting filtered voltage being the true voltage gradient existing between the electrode and the ingot, integrating those recurring voltage fluctuations which recur beneath about thirty cycles per second, producing a voltage which varies in proportion to the integrated recurring voltage fluctuations, electrically subtracting said last-named voltage from the filtered true voltage gradient to produce an output control voltage, and positioning said electrode with respect to said ingot as a function of said control voltage.

3,186,044
METHOD OF PRODUCING CURRENT CONDUCTING ELEMENTS
Charles Eric Ransley, Chesham, Bois, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain
Original application May 23, 1957, Ser. No. 660,994, now Patent No. 3,028,324, dated Apr. 3, 1962. Divided and this application June 12, 1961, Ser. No. 125,317
Claims priority, application Great Britain, May 4, 1951, 10,548/51, 10,549/51
17 Claims. (Cl. 22—202)



15. A method of producing a current conducting element which comprises coating with a firmly adherent film of metal, a bar consisting essentially of a mixture of at least one of the chemical compounds from the group consisting of carbides and borides of titanium, tantalum, zirconium and niobium in a manner to bond said film to said bar and then casting an aluminum sheath onto said bar under conditions such that said sheath will alloy with said metal film.

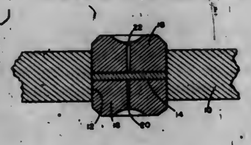
3,186,045
METHOD OF CASTING COMPOSITE COOKING VESSEL
Adriano Lagostina, 7 Via Borgogna, Milan, Italy
Filed Nov. 29, 1960, Ser. No. 72,388
Claims priority, application Italy, Dec. 3, 1959, 621,223
4 Claims. (Cl. 22—204)



1. A method of forming a heat-conductive coating on the outer surface of the bottom portion of a stainless steel cooking vessel, comprising the steps of cleaning the outer surface of said bottom portion; preheating at least said bottom portion of said cooking vessel to a temperature ranging from 450° C. to 500° C.; spraying said outer surface of said bottom portion with an alumi-

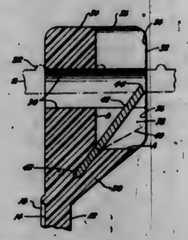
num-containing metal selected from the group consisting of aluminum and aluminum alloys so as to produce an initial relatively thin, aluminum containing coating thereon; and die-casting under pressure on said initially coated surface a layer of a greater thickness, and of aluminum-containing metal selected from the group consisting of aluminum and aluminum alloys.

3,186,046
APPARATUS FOR THE PREPARATION OF ALLOY CONTACTS
Walter Otto Ramser, Nurnberg, Germany, assignor to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 10, 1959, Ser. No. 819,364
8 Claims. (Cl. 22—216)



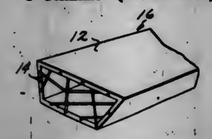
1. Apparatus for forming a P-N junction alloyed region on a semiconductor wafer, comprising: a plate of heat resistant material having at least one substantially cylindrical aperture extending therethrough substantially perpendicularly to its major surfaces and adapted to receive a semiconductor wafer disposed in a plane parallel to said major surfaces; and a flat disk composed of corundum and having a coaxial bore therein adapted to be coaxially received in said aperture in engagement with one surface of the wafer, the bore in said disk substantially corresponding in diameter to the alloy region to be formed on the wafer.

3,186,047
SELF CLINCHING BUNDLING STRAP
Daniel P. Schwester, East Orange, Harold B. Martin, Roselle, and Francis A. O'Loughlin, Scotch Plains, N.J., assignors to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 14, 1962, Ser. No. 216,865
3 Claims. (Cl. 24—16)



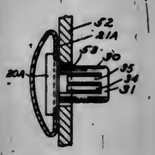
3. A self clinching bundling strap comprising a head-end portion, a tapered tail-end portion and a body portion therebetween, said head-end portion having a transverse aperture therethrough including an eyelet portion projecting axially from one side thereof with a gusset therebetween on the strap side of said eyelet portion, said eyelet portion having a rectangular slot in the end face thereof in alignment with said gusset, said slot extending into said gusset and forming therewith a rectangular recess within said eyelet portion in communication with the aperture through the head-end portion of said strap, and a flat resilient metallic tongue having a substantially symmetrical pointed end portion thereof imbedded in said gusset with its opposite end portion extending through said recess into said aperture at least to the axial center thereof at an acute angle thereto and presenting a bevelled end face defining a knife edge transversely of the axial center of said aperture adapted for engaging and locking the body portion of said strap in minute increments of adjustment against relative reverse movement when looped upon itself through said aperture.

3,186,048
SELF-TIGHTENING CONNECTOR
David Tann, 333 Covington Road, Detroit, Mich.
Filed July 3, 1963, Ser. No. 292,603
5 Claims. (Cl. 24—31)



1. A self-tightening connector adapted to be fitted over adjacent ends of elements to connect them together comprising oppositely wound helical strands which contract when pulled in a manner to grip the ends of the elements to be connected together and release their grip on the ends when expanded, and a loose mesh woven sleeve which can expand and contract with said strands, said strands being interwoven with said sleeve throughout their lengths so as to be supported and positioned relative to one another by said woven sleeve, the tensile strength of said strands being greater than the tensile strength of said woven sleeve.

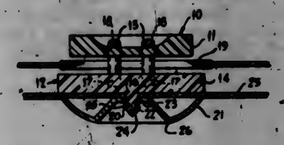
3,186,049
FASTENER
Theodore E. Fiddler, 1200 Cedar Ave., Birmingham, Mich.
Filed Jan. 11, 1962, Ser. No. 165,605
5 Claims. (Cl. 24—73)



4. A device having sheet metal attachment means made of springable material comprising,
a head,
a hollow stem extending from said head and having an opening extending therethrough between two opposite sides thereof and closed at the end portion thereof, and paired tangs supported on said end portions, said end portion and said tangs being resilient, and said tangs having the greater portions thereof located within said stem opening and having their sides substantially radial with respect to the stem axis, and each of a pair of said tangs extending outwardly from said opening and oppositely to the other of said pair of tangs, said tangs having extending side edges, each of said side edges having paired opposed leading and following oppositely angling camming surfaces meeting at a radial high point midway in the tang side edges thereof;
said stem closed end portion being first insertable in a sheet metal opening with said tangs leading camming side edges on the opposite sides of said stems engaging the side walls of the sheet metal opening and compressing same, so as to spring load said tangs,
said spring load on said tangs springing said stem end portion in opposite directions,

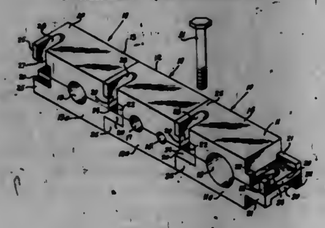
whereupon, said radially high points of said tangs passing the side walls of said opening, the spring loaded tangs following cam surfaces press outwardly against the sheet material opening side walls, camming said stem further through in an axial direction, so as to pull said head against the opposite side of the sheet metal in abutting relationship thereto, and to attach said device to the sheet metal.

3,186,050
BUTTON DEVICE
Robert B. Moise, P.O. Box 1442, Sumter, S.C.
Filed Sept. 18, 1963, Ser. No. 309,718
5 Claims. (Cl. 24—105)



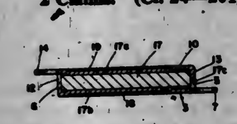
1. A button device attachable to a garment adjacent one margin thereof opposite another margin thereof having a buttonhole therein, comprising, a carrier disc positionable on the outer surface of a garment adjacent one margin thereof and having a prong adapted to penetrate the garment material, a clamp disc positionable on the inner surface of the garment and having an aperture for receiving the prong and securing the clamp disc on the prong with the garment material tightly clamped between the two discs, a button adapted to be passed through a buttonhole and having a configuration including at least four apertures therethrough, and means attaching the button to the carrier disc in a manner enabling manipulation of the button relative to the carrier disc and through the buttonhole including at least two spaced strands of flexible thread each including a loop passing through two button apertures and about the button material between the apertures and end portions anchored in said carrier disc and of a length spacing the button from the carrier disc.

3,186,051
TUBE CLAMP
Jessie A. Waddell, 1314 Gallatin Road, South Madison, Tenn.
Filed Jan. 2, 1964, Ser. No. 335,023
3 Claims. (Cl. 24—125)



1. A tube clamp comprised of a pair of identical half sections, each section comprising a generally rectangular block have a smooth confronting face with at least one semi-circular opening therein whereby, when said confronting faces are juxtaposed, at least one circular tube clamping opening is provided, and a smooth opposite face, a tongue of approximately one-half of the thickness of the block having a smooth face aligned with the smooth confronting face of the block extending from one end of the block, said tongue having marginal ridges along each side, and a transverse bolt receiving slot extending through said tongue in and opening through one of said ridges through the side thereof, a second tongue having a smooth face aligned with the smooth opposite face of the block and having marginal grooves along each side for the reception of the ridges of an aligned tongue in an adjacent block, said second tongue having a transverse slot extending therethrough intersecting one of said grooves, and opening through the side of the tongue in the same direction as the bolt receiving slot in the other tongue, whereby when two of said blocks are juxtaposed to align the semi-circular openings through the slots both tongues of one section open through the same side of the assembly and both tongues of the confronting section open through the opposite side of the assembly, each slot being of a length in excess of half the width of its associated tongue whereby when the opposite sections are juxtaposed bolt holes are formed through the aligned slots, the tongues having smooth faces aligned with the confronting faces lying together to form a male member and the tongues having smooth faces aligned with the opposite faces of the block being spaced apart to form a female member for receiving the male member of an adjacent clamp, the bolt holes in said male and female members being aligned when-adjacent members are interfitted.

3,186,052
MAGNETIC CONNECTOR
Abraham D. Bobrow, Rego Park, N.Y., assignor to Cole National Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 1, 1962, Ser. No. 170,416
2 Claims. (Cl. 24—201)

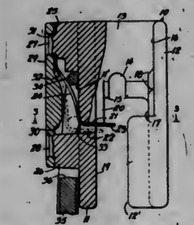


1. A separatble connector for joining two parts comprising in combination, two metal stampings of substantially rectangular, identical size and shape, each of said stampings including a base portion having inner and outer generally planar faces, a discontinuous flange upstanding from the inner face along the major portion of the periphery thereof, and being interrupted at a portion thereof by an ear means coplanar with the base and extending outwardly therefrom and adapted for attachment to a part to be joined, a magnetic plate having a thickness equal to twice the flange depth, attached to the base of one of said stampings and substantially filling the cavity formed between the inner faces of the bases of said stampings when same are disposed in contiguous superposed relationship with respect to one another with said flanges disposed in edge abutting relationship and said ear means extending outwardly in opposite directions from the respective bases, said flanges being in engagement with the peripheral edge of said magnet to prevent lateral shifting of the stampings with respect to each other, said ear means defining further an opening means in conjunction with said flanges, whereby, when a twisting couple is applied thereto, the portion of the respective flanges disposed generally at a right angle to the ears will act as a fulcrum permitting pivoted separation of the remaining portion of the flanges so that said stampings may be disengaged from the edge of said magnet and separated by further pulling forces.

3,186,053
LOCK SLIDER
Louis H. Morin, 125 Beechwood Ave., Bronx, N.Y.
Filed Nov. 2, 1962, Ser. No. 235,062
4 Claims. (Cl. 24—205.14)

1. A slider for semi-invisible separable fasteners having tapes with scoops mounted on only one side thereof, comprising a body having spaced walls joined at the wide

end in a connecting web, one wall adapted to engage the tape of said separable fastener and not the scoops thereof and having spaced raised platforms joined by a plate fixed to said platform, said plate having a cam-like projection on the inner surface thereof intermediate said platform, said wall intermediate the platform having an aperture opening into a channel portion of the slider body, a spring lock fixed to one of said platforms and adapted when in its inoperative position to bear against said cam-like projection for support, said lock having a lock element operating in the aperture of said wall and adapted to extend between the edges of the tape of disengaged stringers into the channel of the slider body and engaging scoops mounted only on the side of said stringer



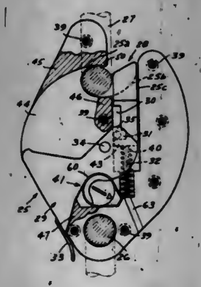
tapes opposite to said one wall of the slider in retaining the slider against movement on said stringers, the outer surface of said wall intermediate the platform having a transverse recess adjacent the aperture in said wall, a pull longitudinally movable of the slider body having a pivot end arranged between the outer surface of said wall and the inner surface of said plate and operatively engaging said spring lock in movement of the lock element from an operative position to an inoperative hold-open position, the pivot end of said pull operating in the recess of said wall in retaining the spring lock and the lock element thereof in said hold-open position and the other wall of the slider body having side flanges partially defining the scoop channel of the slider body.

3,186,054
SAFETY LOCK FOR A SAFETY BELT
Arnold Selnes, Huitfeldtsgate 28, Oslo, Norway
Filed Oct. 21, 1963, Ser. No. 317,517
5 Claims. (Cl. 24—230)



1. A quick release mechanism comprising a base plate having opposite upstanding parallel side walls, a cover plate overlying said base plate and pivotally mounted at a first end on said side walls to swing about a pivot axis substantially parallel to and spaced from said base plate so that a second end of said cover plate is swingable toward and away from said cover plate to urge said second end toward the base plate to a closed position, a first aperture in said base plate under an intermediate portion of said cover plate, a flat tongue member insertable between said base plate and cover plate in a first direction from said pivotally mounted first end of said cover plate toward said second end and formed with a second aperture located to be aligned with said first aperture when said tongue member is inserted a predetermined distance, a locking device pivotally carried on the under side of said cover for rotation about a second axis parallel to said first axis and dimensioned and located to extend downwardly into both said first and second apertures when said apertures are aligned, second spring means biasing said locking device to swing away from said first axis, and stop means limiting the swinging movement of said locking device away from said first axis to a position approximately normal to said cover plate, said locking device being swingable about said second axis against the bias of said second spring means by withdrawal movement of said tongue member in a direction to move said second aperture toward said first axis to release said tongue member when said second end of said cover plate is moving away from said base plate sufficiently to withdraw said locking device from said first aperture.

3,186,055
SHACKLE COUPLING
Henry J. Modrey, Stamford, Conn., assignor to Norco, Inc., Georgetown, Conn., a corporation of Connecticut
Filed May 8, 1963, Ser. No. 278,945
8 Claims. (Cl. 24—241)

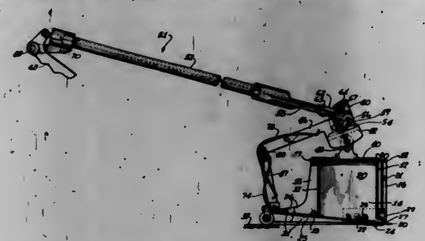


1. A coupling comprising a body member formed with a hook portion, a guideway leading into the mouth of said hook portion for guiding a member to be coupled into and out of a position retained by said hook portion, and a slideway issuing into said guideway; a slide slidable in said slideway between a locking position locking said guideway and a release position clearing said guideway; spring means biasing said slide into its locking position; a tripping means for moving the slide into its release position, said tripping means including an actuating lever pivotally mounted on said body member and transmission means between said lever and said slide so as to translate a pivotal lever movement into a linear slide movement, said transmission means freeing said slide in a first pivotal position for movement of the slide into its locking position by the action of said spring means and withdrawing the slide into its release position upon pivoting the lever into a second pivotal position; and an ejecting means movable into and out of a position protruding into the hook portion and joined to said actuating lever for movement of the ejecting means into said ejecting position upon continued pivoting of the actuating lever into a third position whereby a coupled member received in the hook portion is ejected therefrom.

3,186,056
PLASTIC COMPOSITION APPLYING TOOL
Julian C. Hoveland, Edmonton, Alberta, Canada, assignor, by mesne assignments, to Merrill D. Muttart, Edmonton, Alberta, Canada
Filed May 29, 1963, Ser. No. 284,185
6 Claims. (Cl. 25—164.5)

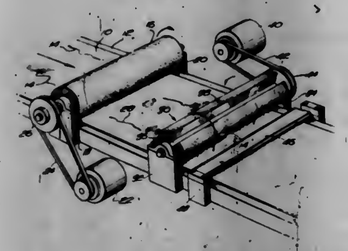
1. A plastic composition applicator which comprises a base wall, forward, rearward and end walls mounted on said base wall and forming a rectangular plastic composition-receiving chamber, said forward and rearward walls being parallel and said end walls being parallel and extending at right angles to said forward

and rearward walls, said base wall being disposed at an angle of about 90° to 95° to said forward wall, said base wall having a portion constituting a bottom wall for said chamber and having a plastic composition-ejecting opening therein adjoining said rearward wall and extending from one to the other of said end walls, a trowelling blade carried by said rearward wall and having an edge extending from one to the other of said end walls and constituting an edge of said opening, a pressure plate slidably mounted in said chamber for movement in a direction normal to the interior surfaces of said chamber-forming walls, said pressure plate having



a continuous edge surface in engagement throughout its extent with said interior surfaces, and means for applying pressure on said plate to move it in said direction comprising a bracket pivotally mounted on said plate about an axis in the plane of the longitudinal axis of said chamber, a pair of links pivotally mounted on said base wall exteriorly and forwardly of said chamber, an arm pivotally connecting each of said links with said bracket, a spring mounted on each said arm and urging it in a direction outwardly of said chamber, and a spring mounted on each said link and urging it in a direction forwardly of said chamber.

3,186,057
THREAD TRIMMING METHOD
Wilfred N. Hadley, Springfield, Vt., assignor to Hadley Company, Inc., Springfield, Vt., a corporation of Vermont
Filed Nov. 21, 1963, Ser. No. 325,407
7 Claims. (Cl. 26—7)



1. A method for trimming relatively long threads attached at one end to a woven web, comprising the steps of
(A) moving said web in a direction lying in the plane of said web,
(B) brushing said threads generally lengthwise of the direction of web travel with the attached end leading the free end thereof,
(C) brushing said thread forwardly and outwardly of said web at a speed in excess of said web and
(D) severing said threads while said threads are directed in a direction generally normal to the plane of said web.

3,186,058
SWAGED BULLET FORMING APPARATUS
Glen L. Mittelstaedt, Waseca, Minn., assignor to Herter's Inc., Waseca, Minn., a corporation of Minnesota
Filed June 12, 1963, Ser. No. 287,381
1 Claim. (Cl. 29—1.2)



A bullet swaging die apparatus,
comprising a female die having a die opening with a generally cylindrical inner periphery for receiving a quantity of lead to be swaged into a bullet,
said inner periphery having a band of inwardly projecting and longitudinally extending parallel ribs spaced from each other therearound and defining a plurality of lead-receiving grooves therebetween, said inner periphery having a first diameter at the bottom of said grooves and also having a second diameter at the inner faces of said ribs and being less than said first diameter,
said inner periphery also defining a first cylindrical die surface adjacent one end of said ribs and lying flush with the bottoms of said grooves, said first cylindrical die surface having said first diameter,
said inner periphery also including a second cylindrical die surface at the other end of said ribs and having a diameter not greater than said second diameter,
a nose-forming die disposed adjacent said second cylindrical die surface and obstructing the die opening, said nose-forming die having a clearance fit with said second cylindrical die surface to permit movement of the nose-forming die therealong,
means mounting said nose-forming die and permitting sliding movement thereof toward and along said ribs and said first cylindrical die surface to permit ejection of a swaged bullet, said means preventing movement of said nose-forming die in the opposite direction,
and a male die having a clearance fit with said first cylindrical die surface and slidable within said opening to force the lead into the opening and nose-forming die.

3,186,059
METHOD OF ROLL-FORMING METAL PRODUCT
William N. Fletcher, Lathrup Village, Mich., assignor to Ternes Steel Company, Roseville, Mich., a corporation of Michigan
Original application Oct. 27, 1961, Ser. No. 148,229. Divided and this application Aug. 2, 1963, Ser. No. 299,649
6 Claims. (Cl. 29—11)

1. A method of manufacture of a hinge element or the like having a plurality of separate oppositely bent circumferentially extending flanges simultaneously formed in a

strip of coil stock by roll-forming and comprising, in series, the steps of:

(1) slotting the coil stock to provide said separate flanges;

(2) forming an outwardly curved flap on one corner of alternate flanges;

(3) wedging adjacent flanges in opposite directions to define an acute angle therebetween by inserting wedge means along the curve surface of said curved flap;

(4) gradually and progressively enlarging the angle



between alternate flanges by successive wedging operations;

(5) moving said coil stock along back up means secured outwardly of and extending inwardly between said flanges and having an inner curved surface abuttingly engaged therewith;

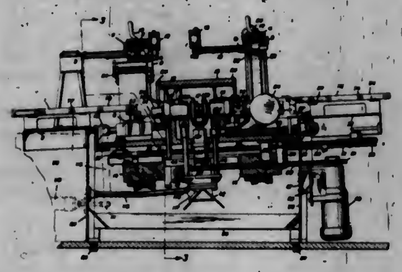
(6) progressively changing said back up means to a tapered rod having circular cross sections of decreasing diameter and located completely within and between the confines of said flanges; and

(7) progressively rolling said flanges about said back up means until said alternate flanges extend in opposite directions substantially 360° to define a continuous coaxial cavity.

3,186,060

PREREGISTERING OF CURVED STEREOTYPE PRINTING PLATES

Hans H. Riddervold, Gullkroken 5, Oslo, Norway
Filed May 7, 1962, Ser. No. 192,666
7 Claims. (Cl. 29—21)

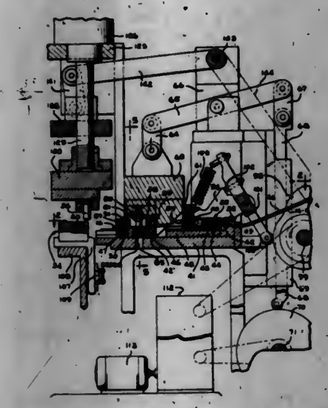


1. A curved stereotype plate registering and trimming machine comprising a central unit, a plate carrying support in said unit, means for raising and lowering said plate from and to said support, vacuum means cooperating with said support for securing a curved stereotype plate to said support, four cutters mounted movably on said unit, means for operating each of said cutters simultaneously each along one side of said plate, a plurality of projector units fixed to spaced points of said unit, each including means for projecting an image of a mark onto a plate on said support, and means for adjustably moving each of said projector units relative to said unit.

3,186,061

FORMING AND ASSEMBLING APPARATUS

Conrad S. Beyer and Arden L. Van Nest, Indianapolis, Ind., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 2, 1962, Ser. No. 191,953
4 Claims. (Cl. 29—33)



1. An apparatus for forming a plurality of elongated members of different lengths and assemblying them to an article comprising feed means for advancing a plurality of such members of indefinite length through a predetermined distance along a path in fixed and laterally spaced relation to each other, transfer means mounted in the path of movement of said elongated members for releasably supporting the leading end portions of the members thereon, punch and die means disposed between said feed means and said transfer means and having cooperating cutting edges in spaced relation to one another for shearing sections of different lengths from intermediate portions of the members to form severed end sections of the members of different predetermined lengths, means for supporting an article in the path of movement of the elongated members, and means for advancing said transfer means to carry the severed end sections of the members into assembled relation with the article.

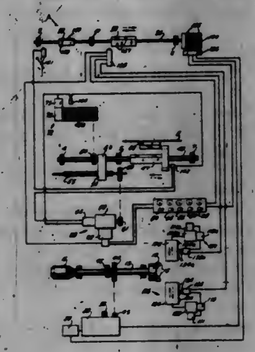
3,186,062

SINGLE-SPINDLE CHUCKING AUTOMATIC

Paul O. H. Lange and Paul Regul, Bielefeld, Germany, assignors to Werkzeugmaschinenfabrik Gildemeister & Comp., Akt.-Ges., Bielefeld, Germany
Filed Oct. 26, 1961, Ser. No. 147,965
Claims priority, application Germany, July 14, 1959, W 26,002; July 18, 1959, W 26,041
8 Claims. (Cl. 29—38)

1. In a single-spindle chucking automatic, in combination, a multi-face main tool holder; a shaft coaxially connected with said tool holder; means supporting said shaft for axial and angular movements with said tool holder; means connected with said shaft for angularly displacing said tool holder; electromechanical drive means operatively connected with said shaft for axially reciprocating said tool holder; at least one side tool holder; carriage means for supporting said side tool holder so that the latter is movable in directions transverse to the axis of said shaft; electromechanical drive means for moving said side tool holder in said carriage means; and a control system for said first and last mentioned electromechanical drive means, said control system comprising a control rod, bearing means for supporting said control rod for axial and angular displacements and in parallelism with said shaft, means for drivingly connecting said shaft with said control

rod so that the control rod participates in angular displacements of said shaft, means for connecting said control rod with said shaft so that said control rod participates in axial movements of said shaft, said last mentioned connecting means comprising resilient means connected with said control rod for permanentl y biasing said rod into an end position and means connected with said rod and adapted to be entrained by said shaft for moving the control rod from said end position against the bias of said

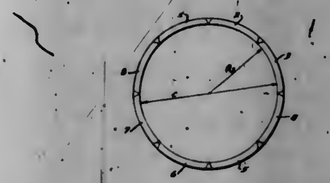


resilient means, a plurality of control drums connected with said control rod so that each control drum participates at least in angular displacements of said control rod, trip means adjustably connected with each of said control drums, and switch means mounted in the path of said trip means and connected in the circuit of said first and last mentioned electromechanical drive means for operating said drive means in a predetermined sequence when said control rod is moved with said shaft.

3,186,063

METHOD OF CONSTRUCTING ROLL SHELLS

Homer Rodger Dopp, 1835 Sherwood Drive, Beloit, Wis.
Filed Oct. 2, 1961, Ser. No. 142,389
14 Claims. (Cl. 29—148.4)



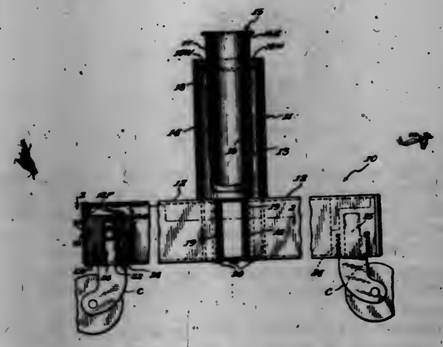
1. The method of constructing large diameter roll shells which comprises the steps of casting two cylinders of smaller radii than the required radius of a finished shell, cutting each cylinder into at least one shell section, increasing the radii of the shell sections to the required radius of the finished shell, and then welding the sections to the required radius.

3,186,064

METHOD OF MAKING A CHAIR BASE

Bruce Owen Buhrmaster, North Aurora, Ill., assignor to All-Steel Equipment Inc., a corporation of Illinois
Original application June 19, 1963, Ser. No. 288,948. Divided and this application May 11, 1964, Ser. No. 366,363
2 Claims. (Cl. 29—159)

1. The method of making a chair base for swivel chairs which consists in preplating an inner tubular shell, assembling and securing to said shell in radial directions, four, substantially rectilinear, preplated leg elements each having a substantially rectangular cross-sectional shape with the inner ends of said leg elements abutting said shell and with parallel vertical welds at juncture lines between the leg elements and the shell, mounting a preplated slotted outer shell over said inner shell and leg

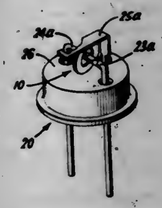


assembly in radially spaced relation to the inner shell with the slots of the outer shell opening downwardly and being shaped and spaced to receive the rectangular leg elements in close fitting relationship to thereby mask the welds, and then securing the outer shell to the inner shell and leg assembly in said radially spaced relation.

3,186,065

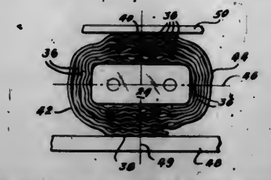
SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURE

Robert E. Hunt, Reading, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 10, 1960, Ser. No. 35,364
3 Claims. (Cl. 29—155.5)



1. The method of attaching a semiconductor body having two opposite parallel surfaces with an electrode concentrically arranged on each of said opposite surfaces to a base section having two contact leads including portions disposed along a line and extending toward each other with their ends spaced apart a distance slightly greater than the thickness of said semiconductor body and electrodes, and having a contact member with a portion thereof disposed in the region of the ends of said leads, each of said leads and said contact member being electrically insulated from the others, said method including the steps of placing the semiconductor body and electrodes between the ends of said leads with the body making electrical contact to said contact member and with each of the electrodes adjacent the end of a different one of the leads and with one of the electrodes spaced from its adjacent lead; and reducing the cross section of a lead in said portion of the lead to advance the end of that lead and force the electrodes and leads into electrical contact.

3,186,066
METHOD OF MAKING MAGNETIC CORES
James L. Metzger, Jr., St. Louis, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Dec. 11, 1961, Ser. No. 158,208
3 Claims. (Cl. 29—155.57)



2. The method of making a wound type magnetic core for a preformed inductive winding from a strip of magnetic material having a predetermined length and thickness and a width greater than the thickness thereof, said strip being defined in thickness by a pair of opposed surfaces and in width by a pair of opposed side edges which respectively intersect with said surfaces, comprising the steps of

transversely bending said strip successively in different directions to produce a plurality of parallel alternating ridges and valleys substantially throughout the entire length of said strip with each extending substantially normal to said side edges continuously across the entire width of said strip to predeterminately shorten said strip and prevent deleterious stretching of said strip,

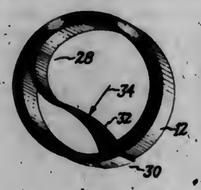
winding the shortened strip onto a mandrel to form an oblong generally rectangular closed coil having a plurality of superposed layers of said strip, the coil having opposed relatively long sides and opposed relatively short ends with substantially all of the layers in at least said opposed sides spaced from each other by said ridges and valleys,

annealing the coil by positioning said coil while on the mandrel in an annealing oven on one of said sides with the other of said sides above said one side, and weighting said other side, so that said ridges and valleys are substantially removed and the layers in said sides are lengthened by the force of gravity while in the oven to provide spacing between layers in said ends of the coil,

unwinding said annealed strip from the mandrel,

and reassembling the annealed strip into a coil surrounding a portion of a preformed inductive winding to form said magnetic core.

3,186,067
METHOD OF MAKING SINGLE TURN CORE FOR TRANSFORMER OR THE LIKE
Gareth G. Somerville, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Aug. 2, 1963, Ser. No. 299,597
5 Claims. (Cl. 29—155.57)



4. A method of making a single turn staggered joint magnetic core comprising:

(a) forming a core by spirally winding a plurality of layers of magnetic material,

(b) clamping the wound layers of said core,

(c) lifting the end portion of the outer layer of said formed core, then cutting said formed core along a single radial line below said end portion of said outer layer,

(d) opening said formed core causing the free ends of said layers opposite said clamp to become offset with respect to each other, relaxing said clamp about said layers,

(e) removing said outer layer from said core,

(1) forming said outer layer into a desired size having a lapped joint and securing said lapped joint,

(f) removing a group of layers from the outer portion of said remaining layers,

(1) assembling said group of layers within said outer layer, with the ends forming staggered butt joints,

(g) removing the next single outer layer from said remaining layers,

(1) assembling said single layer within said group of layers with the cutt ends of said single layer forming a butt joint spaced from the staggered butt joints of said group of layers,

(h) removing another group of layers from said remaining layers,

(1) assembling said another group within said single layer with the cut ends of said another group forming staggered butt joints adjacent to said staggered butt joints of said group of layers,

(i) removing another single layer from the outer portion of said remaining layers,

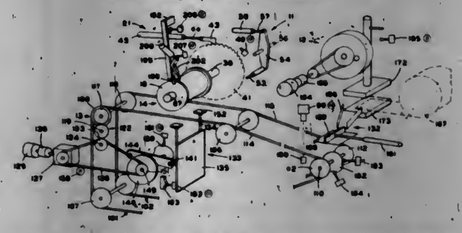
(1) assembling said another single layer within said another group of layers with the cut ends of said single layer forming a butt joint spaced from said staggered butt joints of said another group of layers,

(j) continuing alternately to assemble groups of layers and single layers until all layers have been assembled within said outer layer,

(k) shaping said assembled core to the desired core shape, and

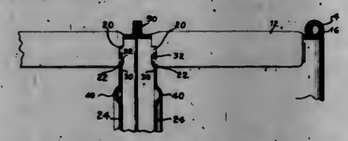
(l) annealing said shaped assembled core.

3,186,068
METHOD FOR ASSEMBLING A CENTRIFUGAL BLOWER WHEEL
Harold A. Austin, Kalamazoo, Mich., and Arthur M. Waldo, Toledo, Ohio, assignors to The Brundage Company, Kalamazoo, Mich., a corporation of Michigan
Filed Aug. 1, 1961, Ser. No. 129,498
5 Claims. (Cl. 29—156.8)



2. In a process for automatically assembling blower wheels for centrifugal blowers by the use of heat inducing means, each wheel having a pair of end rings, a central structure and a plurality of curved blades, the assembly being subject to warpage by heat concentration, the steps comprising: supporting said central structure coaxially between, and spaced from, said end rings for rotation around a common axis while said central structure and rings are in a loading station; simultaneously moving said central structure and rings from said loading station into an assembly station while maintaining the same spaced and coaxial relationship therebetween; supplying a plurality of said blades to a source; advancing said blades sequentially, uniformly and intermittently from said source to a location near said assembly station; intermittently and simultaneously rotating said central structure and rings about their common axis wherein the angles swept by said intermittent rotations comprise uniform and even multiples of at least twice the angular distance between a pair of adjacent assembly positions; sequentially and intermittently moving some of said blades one at a time from said location into a first group of assembly positions closely adjacent said central structure and rings, said movement of said blades into said assembly positions being effected between said intermittent rotations; intermittently securing said blades by said heat inducing means in said first group of assembly positions one at a time to said end rings between intermittent rotations of said central structure and said rings, while a second group of said blades is being sequentially and simultaneously moved, one at a time, into a second group of assembly positions intermittent the first group of assembly positions closely adjacent said pair of said end rings, and thereafter securing said second group of blades to said pair of end rings while said end rings remain in said assembly station; moving said central structure, said rings and the blades secured thereto into said loading station; and releasing the support of said central structure and said rings, whereby the intermittent securing prevents heat concentration and minimizes warpage.

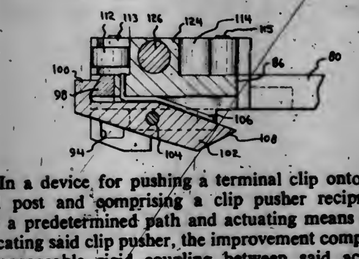
3,186,069
METHOD OF BLOWER WHEEL MANUFACTURE
Robert A. Mayne, deceased, late of Oakwood, Ohio, by Ruth D. Mayne, executrix, Oakwood, Ohio (145 Collingwood Ave., Dayton 19, Ohio)
Continuation of application Ser. No. 738,689, May 29, 1958. This application Apr. 25, 1962, Ser. No. 193,644
2 Claims. (Cl. 29—156.8)



1. The method of mounting a central support disc to a blower wheel having a plurality of equally spaced parallel blades, the ends of said blades being integral with a pair of end rings holding the blades in a cylindrical arrangement, said method including the steps of forming tangs on the ends of said blades, the outer edge of each of the tangs being inclined radially and outwardly to form a seat, forming a plurality of equally spaced apertures in the periphery of the central support disc, moving the disc and the blower wheel relatively to each other to insert the tangs through the apertures in the disc and permanently forming a rib portion in said disc near the periphery thereof so as to draw the holes into the seats formed by the tangs whereby the disc firmly and positively engage the tang on the ends of said blades to thereby support the blower wheel upon the disc.

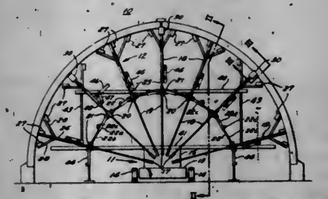
3,186,070
PROTECTIVE COATINGS AND PROCESS FOR PRODUCING THE SAME
Gordon D. Oxx, Jr., Shaker Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed July 3, 1961, Ser. No. 121,419
11 Claims. (Cl. 29—194)

1. An article of manufacture comprising, a body formed of a metal from the group consisting of columbium and columbium-base alloys, and a protective coating consisting essentially of the compounds Cb_3Al and Cb_2Al



integral with an exposed surface of said body to protect it against oxidation.

3,186,071
APPARATUS FOR ERECTING A SELF-SUPPORTING BUILDING AND THE LIKE
Mitchell F. Huff, Trowbridge Township, Allegan County, Mich., assignor to Gordon W. Hueschen, Kalamazoo, Mich.
Filed July 16, 1962, Ser. No. 210,268
15 Claims. (Cl. 29—200)



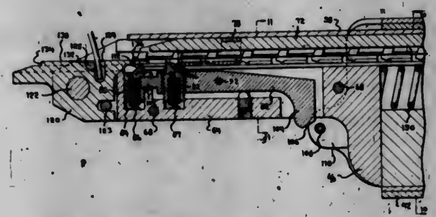
1. Apparatus useful in the erection of a building comprising a base, a plurality of radial arms, each being adjustable lengthwise and mounted at its proximal end on said base, a plurality of adjustable chord members connecting the radial arms together at a point of each radial arm intermediate the ends thereof, and means carried by the distal ends of said radial arms for supporting a pair of arcuate beams of the building.

3,186,072
APPARATUS FOR MAKING ELECTRICAL CONNECTIONS
Robert F. Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 19, 1963, Ser. No. 302,896
8 Claims. (Cl. 29—203)

1. In a device for pushing a terminal clip onto a terminal post and comprising a clip pusher reciprocable along a predetermined path and actuating means for reciprocating said clip pusher, the improvement comprising: a disengageable rigid coupling between said actuating means and said clip pusher, an overload release coupling between said actuating means and said clip pusher, said couplings being in parallel relationship to each other relative to the path of transmission of thrust from said actuating means to said clip pusher whereby, said clip

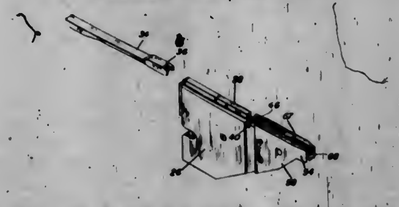
pusher and said actuating means are positively coupled while said disengageable rigid coupling is engaged, and means for disengaging said rigid coupling during forward movement of said clip pusher while a clip is being pushed onto a terminal post whereby, during a final portion of said forward stroke of said clip pusher, said pusher is coupled to said actuating means only by said overload release couplings, said clip pusher being automatically disengageable from said actuator when the resistance to movement of said clip exceeds the disengaging force of said overload release coupling.

3,186,073
TOOL FOR MAKING ELECTRICAL CONNECTIONS
Robert Franklin Cobaugh, Hershey, and Robert Alvin Long, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 12, 1964, Ser. No. 344,304
5 Claims. (Cl. 29—203)



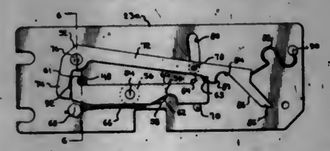
1. In a tool of the type intended for applying a terminal clip to a terminal post and including a mandrel conforming to the internal cross-section of said clip whereby said clip can be moved over said mandrel, past a conductor extending transversely of the axis of said mandrel and onto said post to drag said conductor onto said post, the improvement comprising: a first clip pushing means for pushing said clip over, and beyond the end of, said mandrel until said clip projects beyond the end of said mandrel, and a second clip pushing means for pushing said clip a further distance along the axis of, and beyond the end of, said mandrel whereby, during movement of said clip under the influence of said first clip pushing means said clip engages said conductor and drags said conductor over said mandrel, and said tool can be positioned in alignment with said terminal post with the end of said post being received within said projecting portion of said clip, and said clip can be thereafter moved onto said post by said second clip pushing means.

3,186,074
APPARATUS FOR MAKING ELECTRICAL CONNECTIONS
Robert Franklin Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 8, 1964, Ser. No. 358,261
6 Claims. (Cl. 29—203)



1. Apparatus of the type intended for applying a terminal clip to a terminal post to form an electrical connection between said post and an electrical conductor, said clip having an open seam extending axially along one side thereof, said apparatus comprising, a mandrel conforming to the internal cross-section of said clip, clip moving means for moving said clip over said mandrel, past a transversely extending conductor, and onto said post, means for spreading said clip along said open seam during movement thereof over said mandrel and prior to engagement of said clip with said conductor, clip reforming means for closing said seam after engagement of said clip with said conductor, said clip reforming means comprising convergent surfaces on opposite sides of said mandrel and being disposed downstream, relative to the direction of clip movement, from said spreading means whereby, upon movement of a clip past said spreading means, said clip is spread apart along said open seam and said clip moves straddling past said conductor and drags said conductor over said mandrel, and upon movement of said clip past said convergent surfaces of said clip reforming means, said open seam is at least partially closed to set said clip in conforming embracing relationship to said conductor and said post thereby to establish a low resistance electrical connection between said conductor and said post.

3,186,075
APPARATUS FOR MAKING ELECTRICAL CONNECTIONS
John Roy Vickery, Jr., York, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 13, 1964, Ser. No. 359,143
4 Claims. (Cl. 29—203)

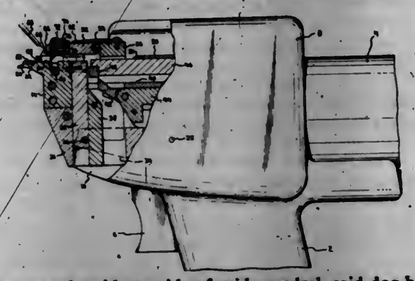


1. A tool for pushing a terminal clip onto a terminal post to form an electrical connection between said post and an electrical conductor, said tool comprising, a mandrel conforming to the internal cross-section of said terminal clip, a clip pusher, power means having a stroke of predetermined amplitude for moving said clip pusher along a path extending over, and beyond the end of, said mandrel, stop means for stopping movement of said clip pusher at an intermediate stage of its forward stroke and after said clip has been pushed to the end of said mandrel, and means for disengaging said stop means from said clip pusher thereby to permit completion of the stroke of said clip pusher whereby, the initial portion of the stroke of said clip pusher can be effected while said tool is held in a convenient manner, and the final portion of the stroke of said clip pusher during which said clip is pushed onto said post is carried out as a separate operation.

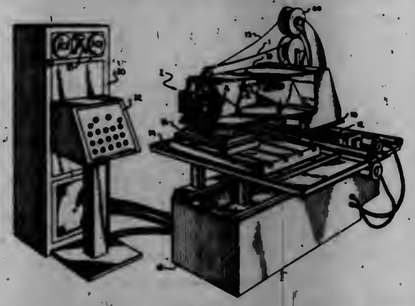
3,186,076
APPARATUS FOR CONNECTING WIRES TO TERMINAL POSTS
Robert F. Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 7, 1963, Ser. No. 300,542
4 Claims. (Cl. 29—203)

1. Apparatus for forming an electrical connection between a wire and a terminal post by means of a terminal clip having a web and sidewalls on two opposite sides thereof, said clip being adapted to embrace said post and to hold said wire against the surface thereof, said apparatus comprising: a mandrel having a cross section conforming to the cross section of said clip and having one side for supporting said web of said clip, means for moving said clip over said mandrel and onto a terminal post, a recess extending into said one side of said mandrel for

reception of said wire, an arm extending parallel to and beside said one side of said mandrel and past said recess, the one end of said arm which is adjacent to said recess having an axial slot extending inwardly therefrom, the opposite end of said arm being pivotally mounted thereby to permit said one end to move away from said one side, a dog pivotally mounted in said slot in said arm and extending towards said one side of said mandrel, said dog being resiliently biased towards said one end of said arm, whereby, upon insertion of said wire through said slot, past said dog, and into said recess, said dog is resiliently deflected by said wire and clamps said wire against said mandrel thereby to retain said wire in said recess until said clip moves past said recess.

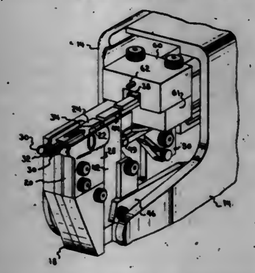


3,186,077
APPARATUS FOR WIRING PANELBOARDS
John R. Vickery, Jr., York, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed July 9, 1963, Ser. No. 293,602
13 Claims. (Cl. 29—203)



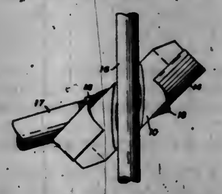
1. Apparatus for connecting conductor extending from a substantially endless source to at least two terminal posts by means of terminal clips having a web portion and having upstanding, post-embracing sidewalls on two opposite sides of said web, said clips being adapted to hold said conductor against the surface of said post, said apparatus comprising: means for positioning the leading end of said conductor adjacent to the end of a first post with its axis oriented transversely of the axis of said post, means for positioning a terminal clip in axial alignment with said post and oriented with respect to said conductor such that said leading end extends through the plane of the web of said clip, thence transversely of the axis of said post with the tip of said leading end disposed on the opposite side of said post from said web, means for moving said clip along a predetermined path onto said first terminal post whereby, said leading end is dragged by said clip over the surface of said post and electrically connected thereto, means for positioning a remote portion of said conductor which is between said leading end and said endless source adjacent to, and with its axis oriented transversely of the axis of, a second terminal post, means for positioning a second terminal clip in alignment with said second terminal post in an orientation such that said remote portion extends through the plane of said web, thence transversely of the axis of said post and thence to said source, and means for moving said second clip onto said second post whereby said remote portion is dragged by said clip over the surface of said second post and electrically connected thereto.

3,186,078
APPARATUS FOR MAKING ELECTRICAL CONNECTIONS
Robert F. Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 21, 1963, Ser. No. 282,092
7 Claims. (Cl. 29—203)



1. Apparatus for making an electrical connection between a terminal post and a wire by means of a terminal clip which is adapted to embrace said post and to hold said wire against the surface of said post, said apparatus comprising: a mandrel for internally supporting said clip, means for pushing said clip along said mandrel and from said mandrel onto a terminal post, a recess extending into said mandrel for reception of a wire end, a groove extending along said mandrel from said recess, and parting means in said groove for axially parting the insulation of said wire whereby, upon movement of said clip past said recess, said wire is dragged from said recess and along said groove, and the insulation of said wire is axially parted by said parting means, said wire being thereafter dragged over said mandrel and onto said post whereby the insulation of said wire is compressed against said post and the conducting core of said wire is exposed and pressed against the surface of said post.

3,186,079
ROD GUIDE APPLICATORS
Glen H. Harris, 1309 N. Fielder, Arlington, Tex., and Donald E. Sable, 4413 Windsor, Dallas, Tex.
Filed Feb. 26, 1963, Ser. No. 261,141
4 Claims. (Cl. 29—236)



2. An applicator for snapping a guide on a rod, comprising:

a cradle of generally tubular shape and having an axial opening through it sized to receive the guide, the cradle having side walls and having a transverse slot therethrough, and having axial slots therein

extending from the transverse slot respectively to the opposite ends of the cradle and on opposite sides thereof; and

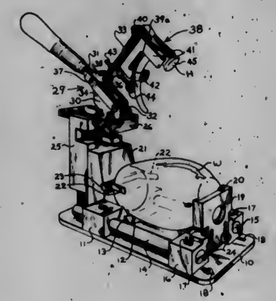
a handle lying in a plane substantially parallel to the axis of the cradle and connected to an intermediate side-wall portion of the latter out of alignment with said slots.

3,186,080

CHUCK APPARATUS

James D. Mallory, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Oct. 25, 1962, Ser. No. 233,122
4 Claims. (Cl. 29—238)



1. A chuck for supporting a handle and article to which the handle is to be applied comprising, a base, article locating members connected to said base and extending generally vertically therefrom, an elongated arm mounted on said base, said arm adapted to pivot in a plane parallel to the longitudinal axis of the article into substantially horizontal, overlying relationship with respect to the article and base, a clamp for supporting and orienting a generally C-shaped handle comprising, two pairs of spaced apart spring-like members extending parallel to each other and having handle engageable faces at the ends thereof, means for connecting said clamp to said extending arm, first locating means connected to said arm and extending into the area between one pair of said spring-like members to limit the positioning of a handle placed in said clamp in a first direction, second locating means fixed to said arm and extending downwardly therefrom adapted to abut a handle to limit the position of the handle in the clamp in a direction opposite to said first direction and means connected to said arm for moving said arm to place a handle into abutting relationship with respect to the article.

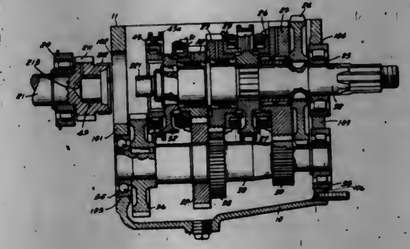
3,186,081

METHOD OF ASSEMBLING A TRANSMISSION

Leonhard Barisch, Ludwigsburg, Wurttemberg, Germany, assignor to Getrag Getriebe- und Zahnradfabrik G.m.b.H., Ludwigsburg, Wurttemberg, Germany

Original application July 11, 1960, Ser. No. 41,845. Divided and this application Apr. 3, 1962, Ser. No. 184,707
Claims priority, application Germany, July 10, 1959, G 27,485
6 Claims. (Cl. 29—434)

1. A method of assembling the counter-shaft and other parts contained in the case of a synchromesh transmission of the type in which the main drive gear is axially shiftable for mounting on and for movement off the rear end of the input shaft and wherein the case has an open upper end, a pair of coaxially aligned bores for receiving front and rear countershaft bearings, and a pair of coaxially aligned bores for receiving input shaft and main shaft bearings, respectively, said method comprising the steps of assembling the countershaft with all parts normally mounted thereon prior to insertion of the countershaft into the transmission case; inserting the countershaft through the open upper end of the transmission case in such a way that the ends of the countershaft are loosely received in the bores provided in the transmission case for the front and rear countershaft bearings, at least one of the parts mounted on the countershaft having a diameter larger than either of the bores; assembling the main shaft with all parts normally mounted thereon prior to insertion of the main shaft into the transmission case including mounting the main drive gear on the forward end of the main shaft, the main drive gear having a diameter larger than the input shaft bearing receiving bore; inserting the main shaft through the open upper end of the transmission case in such manner that the rear end



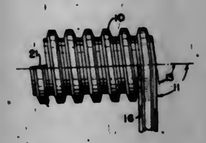
of the main shaft is loosely received in the bore provided in the transmission case for the main shaft rear bearing, which bore has a diameter which is smaller than at least one of the parts mounted on the main shaft; introducing the input shaft through the bore provided in the transmission case for the input shaft bearing; rotatably connecting the forward end of the main shaft with the rear end of the input shaft; transferring the main drive gear from the forward end of the main shaft onto the rear end of the input shaft; inserting the input shaft bearing and the main shaft rear bearing into their respective bores and at the same time placing these bearings around the respective shafts; and inserting the front and rear countershaft bearings into their respective bores and at the same time placing these bearings around the front and rear ends, respectively, of the countershaft.

3,186,082

METHOD OF FORMING A COIL AND MOUNTING ON A SHAFT

Bernhard Ulrich, Jr., and Philip Ulrich, Corpus Christi, Tex., assignors to Ulrich Bros., Inc., Corpus Christi, Tex., a corporation of Texas

Filed Nov. 3, 1961, Ser. No. 150,026
2 Claims. (Cl. 29—156)



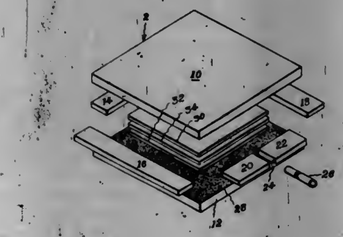
2. The process of forming a coil for mounting on a shaft to form a worm from a bar having a base with oppositely directed flanges and an upstanding rib comprising cold-working the bottom surface of said base to form a concave curvature with the outer transverse edges of said flanges being tapered downwardly and inwardly, coiling said bar to form a predetermined number of equally pitched helical convolutions having the tangent to the helix form a predetermined angle to the axis of said convolution, subjecting said bar during coiling to sufficient tension for deflecting the transverse edges of said flanges into generally perpendicular relation to the axis of said coil, axially pretensioning said coil by maintaining the length of said bar material preceding coiling at an angle to the axis of said coil greater than the pitch angle of the coil, forming the inner diameter of said convolutions slightly smaller than the outer diameter of said shaft and providing a generally uniform cylindrical surface.

3,186,083

METHOD AND PARTING COMPOUND FOR PRODUCING TITANIUM CLAD STAINLESS STEEL

Charles Wright, Jr., Coatesville, Pa., assignor to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania

Filed May 15, 1961, Ser. No. 109,895
7 Claims. (Cl. 29—470.9)



1. A process for producing a composite titanium clad product including a metal base layer of stainless steel having at least about 11.5% chromium and at least one layer of titanium cladding which comprises forming a pack of said layers, forming an inclosure for said pack by providing cover plates and filler bars, providing a parting compound of sodium silicate water vehicle, magnesium oxide and magnesium silicofluoride on the facing surfaces of said cover plates, hermetically sealing said bars and cover plates to each other, evacuating the interior of said inclosure, heating the inclosure and pack in a furnace to give a pack temperature range of between 1680° F. to 1720° F. for about one-half hour per inch of pack thickness, effecting a metallurgical bond between the titanium and backing layers by subjecting the pack to heat and pressure at a temperature of between 1650° F. to 1675° F., cooling to room temperature and removing said strip from said inclosure.

3. A parting composition adapted for the hot pack working of a plurality of metal members in the production of titanium clad stainless steel strips comprising an aqueous vehicle having a concentration of about 2–8% sodium silicate wherein the silicate has a ratio of about

$$Na_2O:SiO_2—1:3.22$$

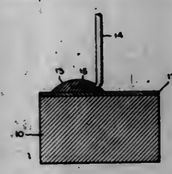
(N type sodium silicate), powdered MgO filler wherein the volume ratio of MgO to silicate vehicle is about 1–2:1, respectively, said parting compound having about 1% by weight of magnesium silicofluoride, said silicofluoride being added to the MgO filler before mixing with the vehicle.

3,186,084

PROCESS FOR SECURING A CONDUCTOR TO A SEMICONDUCTOR

Walter Betteridge, Park Langley, Beckenham, and Hamish Carmichael Angus, Pinner, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 22, 1961, Ser. No. 118,914
Claims priority, application Great Britain, June 24, 1960, 22,225/60
4 Claims. (Cl. 29—472.9)



1. A process for securing a platinum-group metal conductor to a semiconductor comprising coating at least a portion of a surface of said semiconductor with the reaction product of chloroplatinic acid and di-iso-propyl ether concentrated in the presence of nitric acid, thereafter slowly heating the coated surface of the semiconductor to about 450° C. in a non-oxidizing atmosphere to decompose said reaction product and to provide a platinum layer firmly adherent to said semiconductor surface, cooling said layer to about room temperature, connecting the end of a platinum-group metal conductor having a flattened end to said platinum layer by coating said layer with a paste-like dispersion of platinum-group metal powder in a liquid, thermally decomposable compound selected from the group consisting of (a) alkaline condensed methanol methyl cyclohexane polymer in 2-ethoxy ethanol, (b) the reaction product of chloroplatinic acid and di-iso-propyl ether concentrated in the presence of nitric acid and (c) a solution of gold-tertiary-dodecylmercaptan in heptane containing 30% gold, embedding said flattened end in said coating to completely cover said flattened conductor end, and thereafter slowly heating the thus formed assembly to a temperature in the range from about 400° C. to about 450° C. in a non-oxidizing atmosphere to decompose said reaction product and to form an adherent metal mass which secures said conductor to said platinum layer.

3,186,085

MULTIPLE TOOL LATHES

William C. E. Coate, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 21, 1962, Ser. No. 218,324
26 Claims. (Cl. 29—568)

1. In tool changing and supporting apparatus for a machine tool having a bed, turret apparatus for supporting a tool during a working operation comprising:

a base section connected with the machine bed;

a head section disposed on said base section;

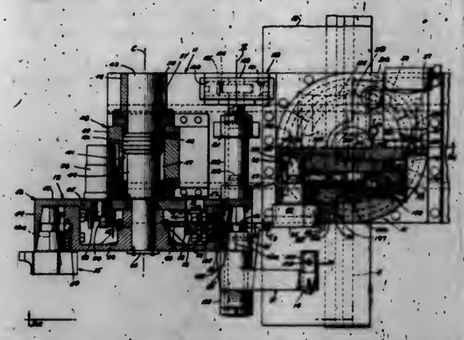
means rotatably mounting said head section on said base section for rotation about an axis relative to the base section;

a tool holder mount on said head section and movable therewith, the mount being formed with a socket;

a tool holder removably mounted in said socket;

head drive means to rotate said head section about said axis to locate the tool holder mount in a work position or in a charge position, the work and charge positions being spaced from one another about the head rotational axis, in the work position the mount supporting the tool holder for its tool to perform a working operation and in the charge position the mount supporting the tool holder for removal from

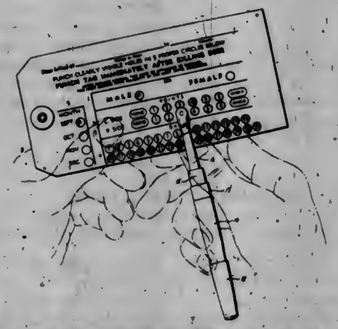
the mount and further in the charge position the mount being positioned to accept a tool holder to replace first said tool holder;



means on said head section rotatably mounting said tool holder mount on the head section for rotation about an axis as between an active and an inactive position, in the active position the mount orienting the tool holder in position for its tool to perform a working operation and for the holder to be removed from the mount and in the inactive position orienting the holder to extend at an angle to its active position; and

drive means on said head section to rotate said mount as between said active and inactive positions.

3,186,086
POCKET INSTRUMENT
Louis J. Saffores, 819 Reichert Ave., Novato, Calif.
Filed July 17, 1963, Ser. No. 295,723
2 Claims. (Cl. 30—358)



1. A pocket instrument for filling out forms requiring handwritten and punched hole data comprising a cylindrical holder adapted to carry a writing element at one end of said holder, a ferrule carried at the other end of said holder, said ferrule being formed to include a hollow cylindrical portion extending therefrom and open at one end, a pair of elongated punch members pivotally mounted interiorly of and extending from the open end of said portion, male and female dies carried by the distal ends of said members respectively, means resiliently urging the free ends of said members apart to receive material to be punched therebetween, a hollow cap for sheathing said punch members, the exterior surface of said ferrule portion being formed and adapted to snugly receive one end of said cap and form a seat for same, each of said punch members being formed to provide a cap engaging pressure point in the region of the free end of each and pivoted continuously free after insertion into said cap to yieldingly and slidably continuously bear against said cap via said pressure points at a position remote from the pivoted end of each to retain said cap when out of engagement with the exterior surface of the ferrule and to permit pivotal aligning movement of the cap with respect to the seat at both ends of said members during placement of said cap onto said exterior surface.

3,186,087
ELECTRIC SHAVER HAVING A MOTOR DRIVEN ENDLESS CHAIN OF LINKS EACH HAVING A PLURALITY OF BLADE ELEMENTS
Samuel Kahn, 333 Grovers Ave., Bridgeport 5, Conn.
Filed May 8, 1963, Ser. No. 278,913
4 Claims. (Cl. 30—43.1)

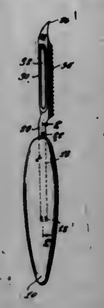


1. An electric shaver comprising a handle part, a shaving part on said handle part, and a shearing head carried by said shaving part and exposed therethrough, said shearing head comprising an apertured shear plate mounted in said shaving part and having one side exposed from said shaving part, spaced rotary elements mounted in said shaving part on the other side of said shear plate for rotation about axes generally parallel to said shear plate, a plurality of inner cutters arranged in end-to-end articulately connected relation to define an endless chain, and trained about said rotary elements in an endless path having one run adjacent to and in shearing relation with said shear plate, said inner cutters being movable along said path upon rotation of said rotary elements, and motive means in said handle part and operatively connected to at least one of said rotary elements for rotating the same, said innet cutters each comprising an open link, a hook extending from one end of said link engagement in the next adjacent inner cutter, and blade elements carried by said links for movement in said shearing relation, said inner cutters each being integrally fabricated of a single sheet of metal and comprising a pair of longitudinally spaced lower end walls, a pair of laterally spaced longitudinal side walls each extending between and upstanding from said lower end walls, said hook extending longitudinally outward from one lower end wall, and said blades extending laterally from the upper edges of said side walls.

3,186,088
FRUIT AND VEGETABLE PEELER
Allan J. Lingenfelter, 167 Edward St.,
New Kensington, Pa.
Filed June 13, 1963, Ser. No. 287,670
2 Claims. (Cl. 30—279)

1. A fruit and vegetable peeler comprising an elongated handle having an axially positioned bore extending inwardly from one end of the handle to a point intermediate both ends thereof, a hollow aluminum cylindrical tube open at both ends press-fitted into said bore and having a top end extending beyond the handle, said top end having a portion removed such that the top end assumes the shape of a cut-away half section which in cross-section has the shape of a half circle, a solid shaft

fitted into said tube and having a bottom enlarged end extending between the bottom of the bore and the bottom end of said tube, the top end of said shaft extending above the top end of said tube, a hollow shaft having an open bottom end press-fitted over the top end of said shaft, said bottom end of said hollow shaft having a portion removed such that this bottom end takes the



shape of a cutaway section which in cross-section has the shape of an arc of a circle which is less than 180°, the top end of said tube being in engagement with the bottom end of said hollow shaft whereby the hollow shaft can be rotated clockwise and counter-clockwise over a total arc less than 180°, and a peeler blade secured to the top end of said hollow shaft.

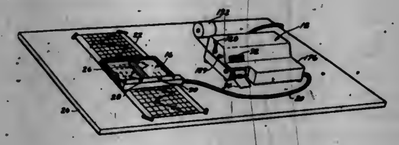
3,186,089
ORTHODONTIC FORCE SYSTEM UTILIZING A FACE BOW AND ARCH WIRE HOOKS
Sidney Asher, Chicago, Ill., assignor to Pages, Inc.,
Chicago, Ill., a corporation of Illinois
Filed June 20, 1962, Ser. No. 203,853
8 Claims. (Cl. 32—14)



1. In a face-bow for transmitting horizontal and vertical components of force to a patient's teeth through an orthodontic arch having hook elements connected thereto, a frame including two rearwardly extending arms each terminating in a hook at one end, U-shaped segments at the other ends of said arms, and an elongated rigid central portion connected to the U-shaped segments, spaced levers connected to the frame adjacent the central portion of said frame and extending rearwardly from said central portion, each of said levers being bent at its free end to form an unobstructed open loop, said loops lying in a plane substantially parallel to the axis of said central portion and substantially normal to the plane in which said levers lie, said loops being adapted to engage said hook elements.

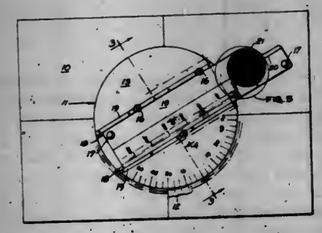
3,186,090
DATA READING APPARATUS
Heinz Joseph Gerber, Hartford, Conn., assignor to The
Gerber Scientific Instrument Company, Windsor, Conn.,
a corporation of Connecticut
Filed Aug. 4, 1960, Ser. No. 47,469
21 Claims. (Cl. 33—1)

1. A data reader for use with a chart sheet held in a fixed position which chart sheet has data in the form of a curve recorded thereon and includes at least one longitudinal reference line thereon, said data reader comprising in combination, a first frame adapted to be located above such a chart sheet, a slide guided for rectilinear movement relative to said frame, an indicator in fixed relationship with said frame and adapted upon adjustment of said frame to register with said reference line and to thereby position the path of said slide in perpendicular relationship with said reference line, a second indicator connected with said slide for movement therewith, a lead screw supported for rotation relative to said frame about an axis parallel to the path of said slide and which screw threadably engages said slide and serves upon rotation to move said slide transversely of the chart to bring said second indicator into registration with a selected point on said curve while said fixed indicator remains in registration with said reference line, a variable scale device connected with said frame in parallel rela-



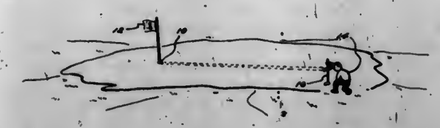
tionship with said second indicator and which device is operable to divide a selected longitudinal extent of said chart sheet into a predetermined number of equal divisions at each of which said curve is to be read, a second frame separate from said first frame, a drive motor mounted on said second frame and having a rotatable output member, drive means connected between said output member and said screw for transmitting rotation of said output member to said screw to cause transverse movement of said indicator, and a mechanism mounted on said second frame and connected with said rotatable output member which mechanism provides a digital readout having a numerical value proportional to the total angular displacement of said output member from a given reference position and which numerical value is thus related to the displacement of said movable indicator from a given position along its path of transverse movement.

3,186,091
TARGET SLIDE PROTRACTOR
Leonard F. Pawlowski, 8353 Brandon Ave., Chicago, Ill.
Filed Feb. 26, 1962, Ser. No. 175,498
10 Claims. (Cl. 33—1)



1. A device for measuring angles and distances and for locating centers of irregular shapes comprising a full circle protractor, a slide that is mounted on the upper surface of said protractor so that the center line of said slide passes over the center point of said protractor, and a target located at one end of said slide comprising a series of concentric circles with the center point of said circles lying on the center line of said slide.

3,186,092
OPTICAL DEVICE FOR READING GOLF GREENS
Charles S. Bertas, 16821 Benbow, Covina, Calif.
Filed Oct. 12, 1962, Ser. No. 230,057
3 Claims. (Cl. 33—64)



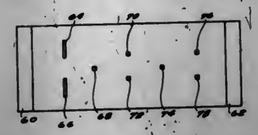
2. A golf green viewing device comprising a flat transparent member, resilient clip means in an intermediate position on said member and extending therefrom, whereby the transparent member may be attached to the shaft of a golf club to be disposed in a vertical plane while the golf club is held suspended in the manner of a pendulum, said transparent member having parallel upper and lower edges, and a horizontal reference line midway between the upper and lower edges, the transparent member when in position on the golf club having portions extending to the right and left of the shaft in position for the golfer to sight through the member while the golf club is held suspended, whereby said reference line may be aligned by the golfer with the hole in the green from a position at the ball to enable the golfer to accurately read the slope of the green between the position of the ball and the hole in the green, said upper and lower edges of said transparent member also defining horizontal reference lines whereby the golfer can orient reading of the green with reference to the surroundings.

3,186,093
INSIDE MICROMETER
Wolfgang Binder, Walden, N.Y., assignor of fifty percent to Gerhard Kersten, Walden, N.Y.
Filed Nov. 13, 1963, Ser. No. 323,392
6 Claims. (Cl. 33—164)



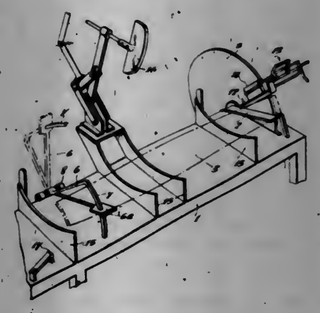
1. An inside micrometer comprising an elongated body defining an internally threaded longitudinally extending sleeve portion at one end portion thereof, a cap telescoped over said sleeve portion and including an externally threaded stud threadedly engaged in said sleeve and rotatable with said cap, oppositely facing abutment means on said other end of said body and said cap, registering indicia formed on said body and cap, elongated handle means projecting outwardly of one side of said body having a longitudinally extending drive shaft journaled therethrough and extending into said body, a gear wheel mounted on said stud inwardly of the threaded portion of said stud and retained against axial shifting relative to said body, said stud being keyed to said gear wheel for rotation therewith and longitudinal shifting relative thereto, and a worm gear mounted on said drive shaft and meshed with said gear wheel.

3,186,094
NON-WRINGING ANVIL
Woodrow L. Hayes and Martin Dotsko, Binghamton, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Jan. 28, 1960, Ser. No. 5,192
3 Claims. (Cl. 33—174)



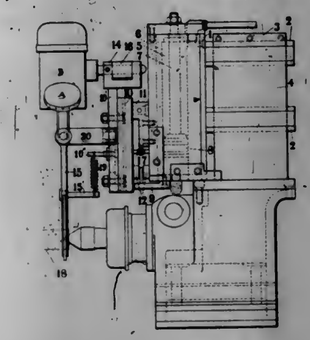
1. An anvil for use with devices for making very accurate measurements of linear distances comprising: a block, a plurality of lands raised a selected distance above a face thereof, said lands defining a plane parallel to said face, at least one of said lands being a small square and at least another of said lands being an elongated rectangle, all of said plurality of lands operative to support an object to be accurately measured, the area of said at least one of said lands not substantially exceeding the square of twice the selected distance between said face and said plane parallel to said face, said lands being so arranged that said object to be measured may be disposed upon said small square and said elongated rectangle, said small square and said elongated rectangle being sufficient to define said plane.

3,186,095
MEANS FOR FACILITATING THE ASSEMBLY OF BARREL STAVES AND HEADS
Thomas W. Woodruffe-Peacock, Wilmslow, England, assignor to William Grant and Sons Limited, a British company of The Glenfiddich Distillery, Dufftown, Banffshire, England
Filed July 28, 1961, Ser. No. 127,728
Claims priority, application Great Britain, July 29, 1960, 26,509
5 Claims. (Cl. 33—174)



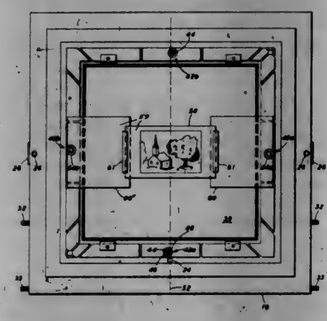
1. A method of matching a set of staves to ensure that the combined lengths of the croze thereof is equal to, or substantially equal to the circumference of a barrel head to be received therein, which consists in supporting one end of a first stave of a set with one end of a croze therein located at a datum line so that the croze extends from said datum line over the edge of a wheel marked with dimensional graduations, engaging a gauge swingable about the axis of said wheel with the edge of the stave opposite the edge on which it is supported and locking the gauge to the wheel, removing said stave and then turning the wheel to bring the gauge in line with said datum line, locking said wheel and releasing said gauge and then repeating the operation for each of the remaining staves except for the last one.

3,186,096
GAUGE UNITS FOR MACHINE TOOLS
George Bishop, Timperley, England, assignor to The Churchill Machine Tool Company Limited, Altrincham, England, a British company
Filed Dec. 11, 1961, Ser. No. 158,516
Claims priority, application Great Britain, Dec. 28, 1960, 44,427/60
5 Claims. (Cl. 33—178)



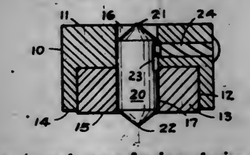
1. Means for actuating a gauge on a machine tool, comprising a slide arranged for straight line movement towards the work axis of the machine tool, means pivotally connected to the slide for supporting the gauge, and means engaging the gauge supporting means towards the end of the straight line movement of the slide for causing the supporting means to pivot and bring the gauge into its operative position.

3,186,097
METHOD AND APPARATUS FOR PHOTOCOMPOSING
Galen D. Potter, Hillsborough, and W Thomas Peterson, San Carlos, Calif., assignors to H. S. Crocker Co., Inc., San Bruno, Calif., a corporation of California
Filed Aug. 8, 1960, Ser. No. 48,234
6 Claims. (Cl. 33—184.5)



1. In a photocomposing apparatus having a main frame adapted to support a photosensitive sheet to be exposed, a generally rectangular film holder mountable on said frame and having a generally flat face thereof adjacent to said sheet and adapted to support a film through which said sheet is to be exposed, and means for adjustably positioning said sheet and said film holder with respect to each other, the improved means for accurately positioning a film in said film holder comprising: a plurality of sockets in said face of said film holder arranged in a predetermined orientation with two of said sockets having different shapes and being positioned so that the line connecting their centers is inclined to the rectangular sides of said film holder, a pin removably mountable in each of said sockets and provided with a flange on one end thereof, a multi-hole punch adapted to punch a set of apertures shaped and arranged in the same manner as said predetermined orientation of sockets, and a film registry member carrying a plurality of registry pins arranged in said predetermined orientation and provided with registry indicia having the same relationship to said pins thereon as the center of said film holder has to said sockets whereby when a film backing sheet may be punched with said multi-hole punch and placed on said registry member and a film attached to said backing sheet in alignment with said indicia and when said backing sheet is then placed on said film holder with said pins extending through apertures in said backing sheet and into said sockets, said film will be centered on said face of said film holder.

3,186,098
CENTER MARK TRANSFERRING DEVICE
Peter J. Fleck, 921 NE. 17th St., Auburn, Wash.
Filed Sept. 20, 1963, Ser. No. 310,364
4 Claims. (Cl. 33—189)



1. A center mark transferring device comprising a member formed at least partly of permanently magnetized material, said member having two substantially parallel spaced apart flat faces and having a straight tubular passageway perpendicular to said flat faces and extending between said flat faces, the magnetic force of said permanently magnetized material being of maximum strength at one of said flat faces; and a centering pin of magnetizable material longitudinally movably supported and guided in said passageway, said centering pin having two coaxial conically pointed ends and the over-all length of said centering pin being greater than the thickness of said member between said two flat faces, said pin being urged by the magnetic force of said permanently magnetized material into a position in which a pointed end of the pin protrudes beyond the flat face at which the magnetic force is of maximum strength.

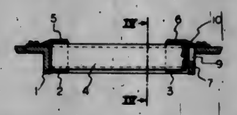
3,186,099
LEVEL WITH MAGNETIC HOLDING MEANS
Nicholas Florko, Jr., 181 Helen St., Buffalo, N.Y.
Filed July 24, 1961, Ser. No. 126,089
1 Claim. (Cl. 33—207)



A tool comprising a hollow sleeve having a flat face on the exterior thereof, and an opening on the side of said

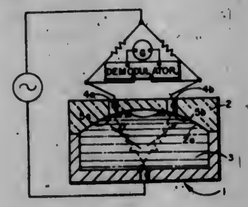
sleeve, a level indicator secured in said sleeve in position to be visible in said opening, a permanent magnet insertable into said hollow sleeve through an open end thereof, whereby said magnet can support said tool on any body of magnetic material to enable the level indicator to be observed without holding said tool by hand on said body, and a detachable connection between said magnet and said sleeve for holding said magnet within said sleeve and for permitting removal of said magnet from said sleeve.

3,186,100
SUPPORTING STRUCTURE OF PIPE-TYPE BUBBLE TUBES
Kiyoshi Nakano, Shinagawa-ku, Tokyo, Japan, assignor to Nippon Kogaku K.K., Shinagawa-ku, Tokyo, Japan, a corporation of Japan
Filed Mar. 26, 1962, Ser. No. 182,448
Claims priority, application Japan, Aug. 18, 1961, 36/41,955
1 Claim. (Cl. 33—211)



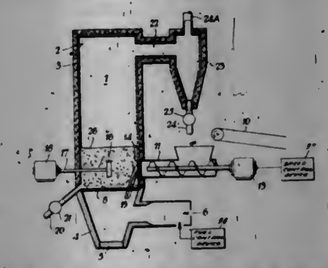
A support for bubble tubes having a projecting sealing tip at one end comprising a rigid channel U-shaped in cross section having in the base of the channel a longitudinal groove in a width less than the diameter of the tube, the side walls of the channel being spaced apart a distance greater than the diameter of the tube and of a height somewhat less than the tube diameter, each end of the channel being formed as a bracket closing the channel ends, one of the brackets being provided with a groove in its upper portion, the width of the bracket groove being somewhat larger than the diameter of the foot portion of the tube sealing tip, an easily deformable cap over each of the tube ends, a plate spring inserted between the cap at the tube end having the sealing tip and the bracket having the groove in its upper portion, and an elastic plate affixed to the top of each bracket and pressing against the upper region of the cap adjacent to the respective bracket.

3,186,101
BUBBLE LEVEL CAP FINAL FIGURING
Raymond A. Wolpert, Long Beach, Calif., assignor to North American Aviation, Inc.
Filed Nov. 22, 1960, Ser. No. 71,007
9 Claims. (Cl. 33—212)



1. A process for forming a curved surface having at least two areas of different hardness and resilience, one being a hard non-resilient electrically non-conductive material and the other being of a resilient less hard, electrically conductive metal, comprising the steps of shaping said surface utilizing a grinding compound and a shaping tool until the harder of said surfaces assumes the desired curvature, whereby said softer area is elastically deformed and not shaped to said curvature; grinding said softer area to within 100 micro-inches of the desired curvature; and then burnishing said softer area by means of a burnishing tool of a material of like hardness as said harder surface.

3,186,102
METHOD OF DRYING AN INSOLUBLE PARTICULATE MATERIAL
Ronald Eric Brocklesby and Victor Hubert Miller, St. Austell, Cornwall, England, assignors to English Clays Lovering Pochin & Company Limited, St. Austell, England, a British company
Filed June 2, 1960, Ser. No. 36,700
Claims priority, application Great Britain, June 2, 1959, 18,870/59
7 Claims. (Cl. 34—10)

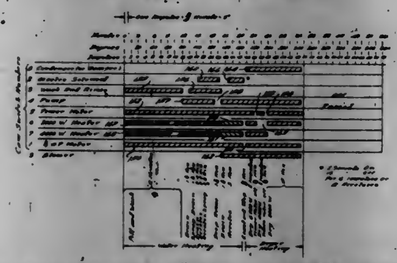


1. A method of drying a suspension of an insoluble, solid particulate material in a liquid to obtain dry granules composed of particles of said material, said method comprising forming a fluidized bed constituted of drying granules of said material by upwardly passing heated gas through said granules to hold said granules suspended in the form of a turbulent mass and wherein the turbulent mass has upper and lower boundaries, causing said suspension to flow in the form of a continuous stream towards said mass in the fluidized bed substantially normal to the upwardly flowing gas at a level between the upper and lower boundaries of the mass and thereby not disturb the boundaries of the mass, extruding the stream into a plurality of small strings just as the stream enters the fluidized bed, the strings having a tendency to dry and break apart into particles in the bed, promoting the breakage of the strings by mechanically engaging the strings within the bed, and permitting said particles to mix with said drying granules thereby to provide further drying granules as the particles of said material in said strings are dried by said gas and continuously removing drying granules which are substantially dust-free from the fluidized bed at the lower boundary of the bed and at approximately the same rate at which the particles in the strings are introduced into said bed to retain a substantially constant mass of drying granules in said fluidized bed, the strings of the divided stream being the only source of particulate material introduced into said bed.

3,186,103
METHOD OF REMOVING LIQUID FROM A FILTER CAKE USED IN A VACUUM PROCESS
Georges Burton, Rixensart, Belgium, assignor to Institut National de l'Industrie Charbonnière, Liege, Belgium
No Drawing. Filed Jan. 16, 1962, Ser. No. 166,712
Claims priority, application Belgium, Sept. 28, 1961, 608,663
1 Claim. (Cl. 34—15)

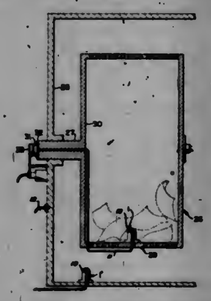
In a method of removing liquid from a filter cake used in a vacuum process employing the said filter cake of approximate thickness of 25 mm., the steps of subjecting said filter cake while under a vacuum of about 700 mm. of Hg to a flow of superheated steam at about 150° C. and condensing the steam in said cake for 30 seconds to cause rapid flowing out of the liquid from the said cake during this period so that the cake contains approximately 10% humidity while at said temperature, and cooling said cake, whereby the humidity of the cake is reduced to about 9%.

3,186,104
CLOTHES DRIER WITH VARIABLE SPEED CENTRIFUGE AND HEAT SUPPLY
William E. Stilwell, Jr., Glendale, Ohio, assignor, by mesne assignments, to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed May 26, 1955, Ser. No. 511,186
24 Claims. (Cl. 34—45)



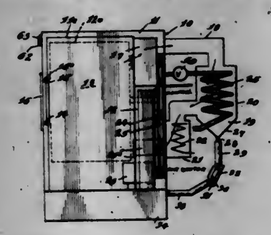
5. In a laundering machine, a rotatable receptacle, means for rotating said receptacle, an air circulatory system for said receptacle, heating elements of high and low rating in said air circulatory system, a motor driven time control device in the circuit of said heaters, thermostatic means in said circuit for energizing the motor of the time control device, and means in said circuit for connecting the heaters for simultaneously producing maximum heat at the beginning of the drying cycle after which the timer motor is interrupted by the motor driven device and re-energized by the thermostatic means after a length of time when the circulated air reaches a predetermined temperature which advances the control device to cut out the heating element of low rating and for stopping the timer motor, which thermostatic means after a length of time again re-energizes the timer motor which cuts out the heater of high rating and cuts in the heater of low rating, permitting the machine to perform a run-out cycle thereafter terminated by the final interruption of the timer motor.

3,186,105
AUTOMATICALLY OPERATED CLOTHES DRIER
Dudley D. Nye, Jr., Fort Lauderdale, Fla., Phillip M. Connaughton, Waterford, N.J., and Jerome H. Milgram, Melrose Park, Pa., assignors to Robertshaw Controls Company, a corporation of Delaware
Filed Oct. 24, 1960, Ser. No. 64,320
6 Claims. (Cl. 34—45)



1. Apparatus for providing an electrical signal dependent on the thermal conductivity of fabrics being dried in the rotating drum of a clothes drier by heated air passing through the drum, said apparatus comprising a first resistance thermometer including a metal sensing member carried by and thermally insulated from said drum and a resistance portion mounted within said sensing member, said sensing member coming in contact with fabrics placed in said drum for drying whereby the resistance of said resistance portion varies with the thermal conductivity of the fabrics; a second resistance thermometer positioned in said clothes drier for sensing the temperature of the air used to dry said fabrics; an electrical circuit including said first resistance thermometer having an electrical output determined by the resistance of said first resistance thermometer; and means connecting said second resistance thermometer in said electrical circuit to compensate for the changes in the resistance of said first resistance thermometer due to variations in the temperature of the drying air.

3,186,106
DRIER HAVING FLOW RATE-RESPONSIVE CONTROL MEANS
Clifton A. Cobb and James T. Williams, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Feb. 6, 1961, Ser. No. 87,160
9 Claims. (Cl. 34—45)

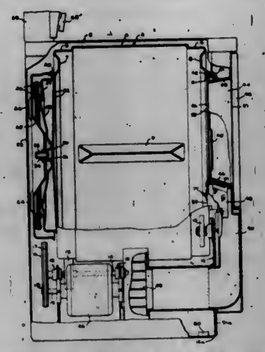


7. A drier for drying cleaning fluid from fabrics and the like comprising, means forming a drying chamber to contain said fabrics, means defining a closed circuit air flow path having an exit from and an entrance into said drying chamber, air translation means in said air flow path for forcing a stream of air therethrough, a first heater in said air flow path to heat said air stream to vaporize the cleaning fluid from said fabrics, a condenser in said air flow path to condense vaporized cleaning fluid passing through said condenser, a cleaning fluid outlet leading from said condenser, and control means in said condenser outlet sensitive to the rate of flow of condensed cleaning fluid through said condenser outlet to de-energize said first heater when the rate of flow of said condensed cleaning fluid passing through said condenser outlet falls below a predetermined value.

3,186,107
CONTROL SYSTEM FOR CLOTHES DRYERS
Howard F. Raley, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 25, 1962, Ser. No. 204,940
4 Claims. (Cl. 34—45)

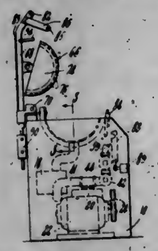
1. A clothes dryer comprising:
(a) a chamber for receiving clothes to be dried;
(b) inlet duct means connecting said chamber to the ambient air;
(c) exhaust duct means from said chamber to the ambient air;
(d) air moving means for moving air to said chamber through said inlet duct means and then out through said exhaust duct means;
(e) a heater upstream of said chamber for heating air passing into said chamber;
(f) a timer;

(g) a heater circuit for causing operation of said heater;
(h) a timer circuit for causing operation of said timer;
(i) a control thermostat positioned to be responsive to clothes temperature, said control thermostat having a first position at relatively low temperatures and moving to a second position upon sensing a predetermined higher temperature, said control thermostat alternatively enabling completion of said heater circuit and of said timer circuit in said first and second positions respectively;



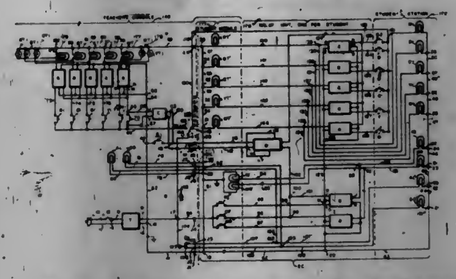
(j) means controlled by said timer for opening both said circuits after a preselected period of operation of said timer;
(k) and bimetal means positioned in said dryer to sense ambient temperature and arranged in said timer circuit to be heated in response to completion of said timer circuit and to open said timer circuit when said bimetal means reaches a predetermined temperature;
(l) whereby the colder the ambient air the longer said timer circuit is competed each time said control thermostat moves to its second position.

3,186,108
SUCTION-TYPE MATRIX DRIER WITH MEANS FOR CONTROLLING DRYING TIME AND SUCTION
George M. Clark, 415 Lowell St., Lynnfield Center, Mass.
Filed Sept. 22, 1960, Ser. No. 57,664
5 Claims. (Cl. 34—53)



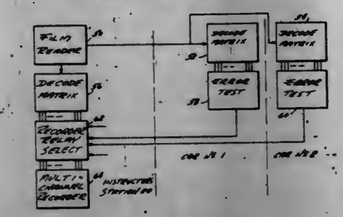
1. Matrix drying mechanism comprising a frame, a suction box on said frame having a perforated wall, a wire screen fitted on said perforated wall, a cover member hinged to said frame and swingable from an open position to a closed position over said screen, a pump for drawing air from said box, a motor operatively connected to said pump, a circuit connecting said motor to a source of power, a normally open microswitch in said circuit; said switch being closable by closing movement of said cover, a manually operable starter switch on said frame, a normally closed microswitch operable by closing movement of said cover connected in series with said manually operable switch, said normally closed switch and manually operable switch being connected in said motor circuit in parallel with said normally open switch.

3,186,109
EDUCATIONAL TESTING SYSTEM
David B. Brinton, 5000 Marilyn Drive, Salt Lake City, Utah
Filed Apr. 26, 1963, Ser. No. 275,856
1 Claim. (Cl. 35—9)



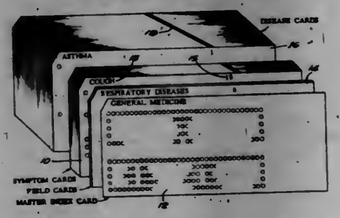
In an educational testing system for simultaneously testing a number of students, and including, in combination, a plural separate students' stations, each of said stations including plural, manually actuatable momentary contact switch means individual returnable actuation of a selected one of which, by students at said stations, effects answer selection to a respective, multiple-choice type question given to said students, a teacher's console physically remote from but electrically connected to each of said students' stations and including student modules corresponding to and electrically connected with respective ones of said students' stations, each of said modules including a series of light means electrically coupled individually to respective ones of said manually actuatable switch means and responsive to the electrical condition thereof for emitting illumination, visual to the person giving the examination, in accordance with answer selection made by the individual students by switch means actuation of said switch means, said console including manually actuatable electrical circuit means for locking answer selection by said students with respect to a particular question, as evidenced by discrete light energization, to remove control of said light means from said students' stations, as desired, an improvement for each of said student stations comprising plural, bi-stable relay means each having first and second input circuits and an output relay contact circuit, each of said bi-stable relay means being so constructed and arranged that said output relay contact circuit is closed and remains closed during and after energization of said first input circuit and said output relay contact circuit is opened and remains open after energization of said second input circuit, a source of electrical power, said momentary contact switch means being respectively coupled between said source of power and said first input circuits, said actuatable electrical circuit means comprising a selection cancelling switch means coupled between said power source and said second input circuits, each of said output relay contact circuits being interposed between said source of power and respective ones of said light means of a respective one of said student modules; and said console manually actuatable electrical circuit means comprising selection locking switch means disposed upon said teacher's console and interposed between said power source and said momentary contact switch means and selection cancelling switch means for selectively disconnecting said power source simultaneously from all of said momentary contact switch means and said selection cancelling switch means of all of said student stations.

3,186,110
TRAINING APPARATUS
Frederick J. Smyth, Binghamton, N.Y., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Mar. 26, 1963, Ser. No. 268,074
8 Claims. (Cl. 35—11)



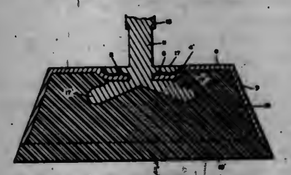
1. A training apparatus comprising,
(a) a trainee's position including a plurality of controls and indicating devices simulating those of an actual vehic e;
(b) a projection screen;
(c) means positioning said screen forward of said trainee's position;
(d) a central station including means for projecting scenes stored on motion picture film onto said screen and a multi-channel recorder;
(e) a first single electrical conductor and a second single electrical conductor;
(f) means coupling said first and second conductors between said central station and said trainee's position;
(g) first means for generating and coupling to said first conductor a sequence of interrogation signals effective to monitor the operation of selected ones of said controls and indicating devices;
(h) second means for generating and coup'ing to said second conductor electrical signals indicative of said monitoring operation; and
(i) said central station including further means responsive to said interrogation signals for selectively conveying each of said electrical signals to a predetermined channel of said multi-channel recorder.

3,186,111
"PEEK-A-BOO" RETRIEVAL SYSTEM
Reed C. Lawlor, San Marino, Calif. (412 W. 6th St., Los Angeles 14, Calif.)
Filed Dec. 6, 1961, Ser. No. 157,409
17 Claims. (Cl. 35—17)



1. In a system for indexing medical information, the combination of
a first deck comprising a plurality of symptom cards, and
a second deck comprising a plurality of medical field cards, and
a master index card,
all of said cards being of the same size and shape whereby selected groups of cards may be stacked in a uniform manner,
all of said symptom cards being semi-transparent,
a plurality of identical coordinate locations on the respective cards being superposable when selected cards are so stacked,
each of said coordinate locations corresponding to a different disease,
said master index card being perforated at each disease location,
a legend located adjacent each of said coordinate locations on said index card for identifying the disease associated with said each location,
each of said symptom cards being perforated at each coordinate position thereupon corresponding to each disease with respect to which the symptom represented by that card is associated,
each of said symptom cards being perforated in a different pattern of coordinate positions than each of the other symptom cards, but some of such symptom cards being perforated in the same positions,
each symptom card bearing a legend identifying the symptom associated with diseases represented by data recorded on that card,
each of said field cards being transparent at a plurality of adjacent coordinate positions corresponding to diseases in a group characteristic of a specific field of medicine,
different field cards being transparent in different locations in different areas of the respective field cards.

3,186,112
HEEL-REINFORCING INSERT
Arthur F. Ball, Haverhill, Mass., assignor to Essex Products, Inc., Haverhill, Mass., a corporation of Massachusetts
Filed Feb. 18, 1963, Ser. No. 259,058
4 Claims. (Cl. 36—34)



1. A reinforcing heel insert comprising a dowel, a frusto-conical cup having a cover with an aperture therethrough, said dowel extending through said aperture and having a locking collar at the upper surface of said cover and depending prong means at the lower surface of said cover, said collar and said prong means gripping said cover therebetween to secure said dowel to said cup, and a frusto-conical lift member conforming to the shape of the inner walls of the cup, secured in said cup to the prong means, and adhered to said inner walls, the slant height of the lift member being greater than that of the cup in order to provide a frusto-conical projection of the lift member below the cup.

3,186,113
ATTACHMENT OF SHOE INSOLES TO LASTS
Milton R. Radcliffe, Marblehead, and Donald L. Bray, Beverly, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Aug. 30, 1962, Ser. No. 220,391
5 Claims. (Cl. 36—43)

1. Shoe insoles adapted to be accurately and securely positioned in predetermined relationship onto the bottoms of shoe lasts having registration holes located at the bottoms thereof, the said insoles having at least the heel seat portions thereof formed of synthetic polymeric material and having integrally formed therewith registration pins projecting upwardly from the top surface there-

of, the said registration pins being located on the top surface of the insole to be in correspondingly disposed



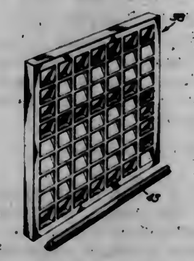
relationship to the registration holes located at the bottoms of the shoe lasts.

3,186,114
LABEL HOLDER FOR LOOSE-LEAF BINDERS
Louis J. Carter, 1529 Walnut St., Philadelphia 2, Pa.
Filed Sept. 18, 1962, Ser. No. 224,487
3 Claims. (Cl. 40—10)



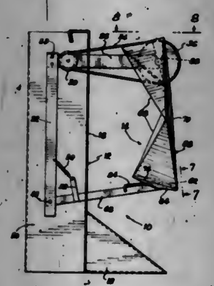
1. A label holder for the back of loose-leaf binders comprising a longitudinally extending main body portion adapted to fit the back of a binder, said main body portion having a longitudinally extending transparent pocket therein, longitudinal extensions on opposite sides of said main body portion, said extensions having holes therein adapted to fit over rings inside all standard sized binders, and an exposed opening for said pocket wherein said labels can be inserted and removed from said pocket when said label holder is connected to a binder.

3,186,115
ELECTRICAL APPARATUS
Joachim H. Todt and Arthur H. Johnson, both of Minneapolis, Minn., assignors to Maico Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed May 31, 1961, Ser. No. 113,851
10 Claims. (Cl. 40—28)



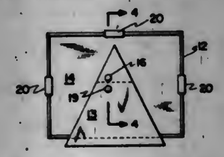
1. A display panel for producing visual images for an observer comprising: a sheet of material having magnetic properties with movable light reflecting elements including supporting members formed therewith; magnetic means disposed adjacent said plurality of movable light reflecting elements and fixedly holding said sheet in sandwiched relation for controlling the position of said light reflecting elements; a plurality of magentizable elements located adjacent said magnetic means and said movable light reflecting elements and adapted to be controlled by an external signal applied thereto to control the movement of said light reflecting elements; a plurality of image forming conductors physically arranged in the shape of the image to be formed for conducting current in a first direction and interconnecting certain of said plurality of magnetizable elements in a predetermined pattern to produce an additional magnetic field to cause said elements to be moved so that light is directed towards such observer whereby images are produced on said panel; and an image erasing conductor interconnecting all of said magnetizable elements for conducting current in a direction opposite to said first direction so that light is directed awhy from such observer whereby images are erased from said panel.

3,186,116
DISPLAY DEVICE
Edward J. Freedman, Glencoe, Ill., assignor to Chicago Show Printing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 24, 1962, Ser. No. 225,797
11 Claims. (Cl. 40—106.3)



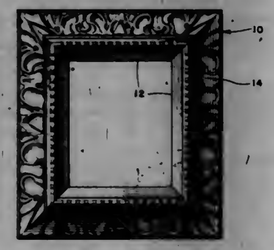
1. A mechanism for movably supporting a display assembly having a plurality of display surfaces, said mechanism comprising a standard means having a rear side and a front side, a rotatable member having opposed faces for attachment of said display assembly thereto, first arm means extending through said standard means and supporting said rotatable member on said front side, drive means associated with said standard means for rotating said member and for thereby moving the assembly attached thereto, said movement of the assembly causing the display surfaces thereof to be periodically exposed to view on at least one side of said mechanism, and a second arm extending through said standard, said second arm rotatably supporting a lower portion of said display assembly.

3,186,117
EASEL-TYPE PICTURE FRAME
Henry Detje, 1566 Valencia, Denver 8, Colo.
Filed July 23, 1962, Ser. No. 211,768
8 Claims. (Cl. 40—152.1)



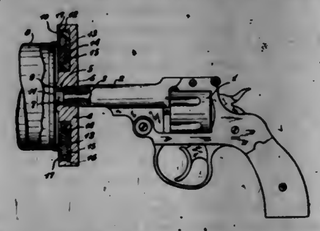
1. An easel-type picture frame, comprising an oblong frame member having recessed portions defining an enclosing support for a picture, a sheet of transparent material fitted in the recess enclosure forwardly of the picture in covering relation thereto, a backing member held in the recess enclosure rearwardly of the picture and pressing the picture in contact with the transparent sheet, a pivot pin secured on said backing member in an off-center position an equal distance in from two adjacent sides of the backing member and projecting from its exposed surface, and a hinged flap member mounted for rotation on the pivot pin so that a flat base portion of the flap extends beyond the frame for an equivalent distance and is centrally disposed at two positions in its rotation for supporting the picture frame in an upright attitude in either of said positions.

3,186,118
MOLDED ARTICLE
George Warren Smith, 4 Inverness Road, Winchester, Mass.
Filed Jan. 25, 1962, Ser. No. 168,617
2 Claims. (Cl. 40—154)



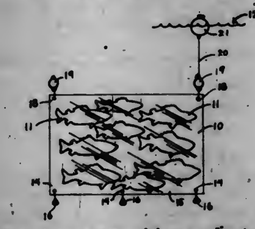
1. A light weight integral frame member comprising a body portion with a back surface portion for mounting against a wall and a substantially impervious sculptured exposed surface portion presenting a design in three dimensions including substantial surface areas at a steep angle to the plane of the back surface, said body portion comprising a continuous interior mass of substantially rigid cellular resin and an integral non-cellular cured resin surface, parts of said body portion having a ratio of length to thickness greater than three to one and a stiff, strong embedment member integrally united to said interior mass of cellular resin and constituting a base for holding supporting means for said article, said embedment member being disposed adjacent the back surface portion and extending substantially the length of said article to reinforce said article, said exposed surface portions being denser and stronger than the interior of said mass of resin and being insoluble in surface finishing compositions applied thereto.

3,186,119
DEVICE FOR PROJECTING AN AERIAL TARGET
Thomas Maras, 315 E. Liberty St., Ashland, Ohio, and Ralph W. Pitcher, R.F.D. 8, Lexington, Ohio
Filed May 22, 1963, Ser. No. 282,309
3 Claims. (Cl. 42—1)



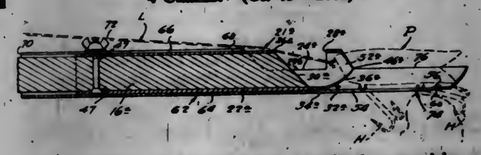
1. A target launching device for projecting a can into the air, said can having a peripheral bead at least on one end and responsive to a magnetic field, said device including a support having a generally flat can supporting surface, said support having a gas conducting opening therethrough in direct communication with a source of gas under pressure and with a wall of said can supported on said surface, means for coupling the support to a source of gas pressure, said supporting surface having a plurality of magnetic areas disposed radially about the can supporting surface to underlie the wall and bead of the can and to magnetically support the can on the said surface in a plurality of selected locations thereon for launching in a selected direction when a blast of gas pressure is directed through the opening and against the said wall of the can.

3,186,120
DECOYS
Alfred M. Layson, 2930 E. Bonnie Brook, Waukegan, Ill.
Filed Dec. 8, 1961, Ser. No. 157,948
2 Claims. (Cl. 43—2)



1. A fishing decoy comprising a sheet of transparent waterproof flexible plastic film having a generally quadrangular shape and a glossy surface with a plurality of fish-like images thereon, weight means affixed to the lower edge of said sheet to hold the same underwater, and float means affixed to the upper edge of said sheet in substantially vertical alignment with said weight means so that said sheet is held in a generally vertical plane upright in the water, the total buoyancy of said sheet, weight means, and float means being less than one so that the decoy remains submerged in the water, said weight and float means being so affixed to the sheet as to permit unimpaired flexure of the sheet due to external forces acting thereon, and said sheet having a thickness within the range of about 0.002 to 0.010 inch so that it is thin and flexible enough to move in response to water currents whereby a life-like rippling movement is imparted to the fish-like images on the sheet.

3,186,121
FISHING TACKLE RETRIEVERS
Jesse J. Jones, R.R. 1, Box 110, La Grange, N.C.
Filed July 5, 1963, Ser. No. 292,953
4 Claims. (Cl. 43—17.2)



1. A device of the character described, comprising a rod, a retriever secured on and extending forwardly beyond the forward end of the rod, said retriever comprising a cylindrical tube having a wall provided with a forward end and a rearward end, the top of said wall between the forward and rearward ends being cut away to define a longitudinally-elongated slot, the bottom of said wall being cut away inwardly from the forward end to define a forwardly-opening notch, the top of said wall being cut away inwardly from the forward end to define a short

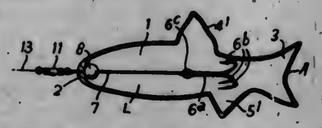
forwardly-opening notch, said notches lying along the longitudinal center line of said tube, the portion of said tube between each of the adjacent sides of said notches forming a wing, the wings being opposed to and laterally-spaced from each other, there being a transversely-elongated line-admitting slot extending inwardly from the notched side of one of said wings to and merging into said slot in the top of said wall, a sleeve having a rear portion slidably and rotatably circumposed on the tube and having a forward portion extending forwardly beyond the forward end of the tube, and means for locking the sleeve in longitudinally adjusted relation to the tube.

3,186,122
SECTIONAL FLY CASTING ROD
Philip T. Clock, Long Beach, Kenneth H. White, Huntington Beach, and Milton J. Green, Long Beach, Calif., assignors to Fenwick Products, Inc., Long Beach, Calif., a corporation of Washington
Filed Mar. 23, 1962, Ser. No. 181,851
2 Claims. (Cl. 43—18)



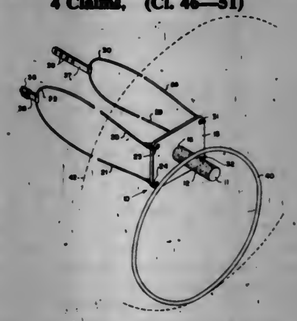
1. A sectional casting rod, comprising:
(a) a plurality of tapered tubular sections formed of a plurality of longitudinally extending fibre glass strands disposed side-by-side and embedded in a resilient polymerized resin, which sections are of such dimensions that a forward end portion of one of said sections slidably and frictionally engages a rear interior end portion of another of said sections with a wedging grip, with each of said sections having its greatest strength when a deforming force applied thereto places said strands under tension, each of which forward end portions possesses sufficient strength in a transverse direction as to remain an integral part of said section with which it is associated when said rod is subjected to the maximum force it will encounter when in use;
(b) a plurality of elongated reinforcing members tightly wound about the exterior surfaces of said rear end portions, with said reinforcing members minimizing the radial expansion of said rear portions to the extent that they retain said wedging grip with said forward portions even when said rod is subjected to said maximum force; and
(c) a plurality of line guide ferrules, each of which includes two aligned oppositely disposed legs, with said elongate member extending over said legs to hold the same in fixed abutting contact with the exterior surfaces of said sections.

3,186,123
LINE-END TACKLE FOR FISHING
George William Freeman, Fen Fringes, Baston, near Peterborough, England
Filed Apr. 8, 1963, Ser. No. 271,321
Claims priority, application Great Britain, Apr. 18, 1962, 14,969/62
2 Claims. (Cl. 43—42.1)



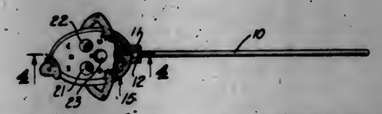
1. In line-end tackle for fishing, an artificial bait comprising a hollow, thin-walled body which is moulded in a resilient and flexible material, said body being in the shape of a fish having a tapered nose, a spatulate tail and at least one fin, at least one barbed fish hook which has a shank, a thin wire attached to said shank and a small bored solid element threaded onto and affixed to said thin wire, means defining an opening in said body, said opening being provided for the insertion of said fish hook and shank therethrough, means defining a hole in said body positioned in said nose for the insertion of said thin wire attached to said shank, said small bored solid element being drawn toward the wall of said nose defining said hole, said nose being thickened or reinforced to prevent pulling of said fish hook and shank through said hole, and said opening being located in the end of said spatulate tail and being defined by the two sides of said spatulate tail, the inside surfaces of said sides of said spatulate tail having an adhesive medium for sealing said opening to prevent liquid or air from passing therethrough, whereby said fish hook and shank is encased within said body and said fish-hook may be readily removed and replaced by any fish hook desired and whereby any body of said shape may be used.

3,186,124
PEG AND HOOP EXERCISING TOY
William C. Voss, 4473 W. 7th Ave., Vancouver, British Columbia, Canada
Filed Nov. 13, 1962, Ser. No. 237,174
4 Claims. (Cl. 46—51)



1. A hoop exercising toy comprising, in combination, a flat base, a peg projecting outwardly from the base and having an unobstructed outer end, securing means connected to the base for holding said base flatly and firmly against the front of a person's body with the peg projecting substantially horizontally outwardly from said body, and a hoop adapted to be hung on said peg in order that the person by manipulating his body may cause the hoop to swing around the peg.

3,186,125
CHANGEABLE APPEARANCE PULL TOY
Ben Orel, Hollywood, Calif.
(2553 E. 7th St., Brooklyn, N.Y.)
Filed Apr. 2, 1963, Ser. No. 269,946
1 Claim. (Cl. 46—104)



A reversible changeable appearance pull toy adapted to be moved along a floor, said toy comprising a body member having a pair of substantially identically formed body portions secured in overlying relationship to each other, said body portions having a pair of substantially

flat oppositely facing horizontal surfaces, a fixed pattern carried by each of said surfaces, said body member having therein a plurality of openings, each of which extends completely through said body member, a spherical ball rotatably and unremovably mounted within each of said openings, each of said balls having at least one pattern on its outer surface, the diameter of each of said balls being somewhat greater than the vertical thickness of said body member, whereby a portion of each of said balls protrudes beyond the horizontal surfaces of said body member and is adapted to engage the floor, each of said body portions having a flange circumscribing each of said openings, said flanges being of slightly smaller diameter than said balls, said balls being adapted to be rotated at random upon the movement of said pull toy along the floor to cause the patterns on said balls to move with respect to said fixed patterns on said body member and change the overall appearance of said toy.

3,186,126
DOLL HAVING AN IMPROVED MOUTH TOGETHER WITH SOUNDING MEANS AND LIP MOVING MECHANISM COOPERABLE THEREWITH
Robert K. Ostrander, 497 Prospect St., Maplewood, N.J.
Filed Mar. 8, 1963, Ser. No. 263,922
18 Claims. (Cl. 46—118)



13. In combination in a doll, a doll's head having a face of soft flexible resilient material, said face including a pair of spread lips and an internal hollowed sac in one piece with the face and having the forward portion thereof integrally joined to the lips, hollow resilient firming insert means within the sac, said insert means being constructed, shaped and dimensioned to engage the top and bottom inner surfaces of the sac from the front to the back thereof so as to spread the sac and thereby impart to the sac a firm bulbous configuration at least in a vertical plane such that the roof and bottom of the sac flare away from one another rearwardly from the lips, said sac having an open end at the lips, a lip actuator including a pair of elements extending transversely across the sac adjacent the inside surfaces of the lips with one of the elements immediately above and one of the elements immediately below the sac, manually manipulatable means interconnected with said elements to move said elements toward and away from one another, said manually manipulatable means being restricted in its element opening movement to space the elements apart a distance less than the maximum vertical height of the sac whereby the elements are captively retained between the inside surfaces of the lips and the maximum vertical height of the sac, and a soundmaker having a sound passageway connected to a portion of the interior of the bulbous sac sac rearwardly of the open end of the sac.

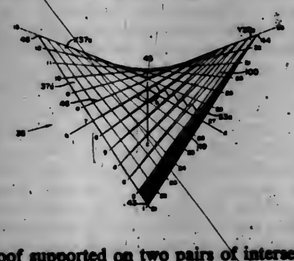
3,186,127
BOTTLE-CAP TOYS
Ralph S. Berendt, Carol D. Berendt, and Murray Bernthal, Syracuse, N.Y., assignors to Capsle, Inc., Buffalo, N.Y., a corporation of New York
Filed Aug. 15, 1961, Ser. No. 131,633
30 Claims. (Cl. 46—151)

1. A toy comprising a bottle crown cap as a support,



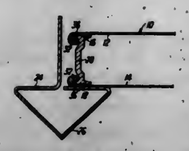
a locking disc fitting snugly within said cap, and a figure extending transversely away from said cap and attached thereto by said locking disc.

3,186,128
HYPERBOLIC PARABOLOIDAL CONSTRUCTION
Harold H. Charles, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 18, 1960, Ser. No. 29,829
8 Claims. (Cl. 50—52)



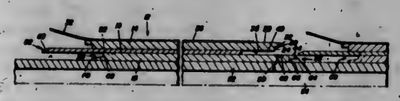
6. A roof supported on two pairs of intersecting opposite side supporting members, said roof having a substantially hyperbolic paraboloidal general surface containing two systems of straight lines, each system being parallel to a different director plane of two director planes which form an angle with each other and in which the intersections of the lines of one of said systems with the lines of the other of said systems establish said general surface of said roof, said roof having a plurality of metal sheet panels with their panel ends secured to one of said pairs of said intersecting side supporting members and with their panel edges forming interlocking joints with the adjacent panel edges of adjacent panels, said joints coinciding with the straight lines of one of said systems of straight lines substantially at the general surface of said roof and said panels being undulated between their ends and edges to compensate for the gradual approach of the edges of each panel toward each other from the ends of each panel to the longitudinal center of each panel, with one of said pairs of intersecting opposite side supporting members including opposite panel and supporting members and the other of said pairs including opposite panel edge supporting members, and with a plurality of said panels being intermediate regular panels intermediate a first special panel and a second special panel, said intermediate regular panels having their ends secured respectively to said panel end supporting members, said first special panel having its ends secured to said panel end supporting members with one of its edges secured to one of said panel edge supporting members and with its other edge secured to and forming one of said joints with one of said intermediate regular panels, said second special panel having its ends secured to said panel and supporting members with one of its edges being secured to the other of said panel edge supporting members and with its other edge secured to and forming one of said joints with another of said intermediate regular panels.

3,186,129
CEILINGS OR WALLS
Peter Bindon Blood, Slough, England, assignor to Isora Illuminating Ceilings Limited, Slough, England, a British company
Filed May 15, 1962, Ser. No. 194,859
Claims priority, application Great Britain, Nov. 15, 1961, 40,871/61
5 Claims. (Cl. 50—267)



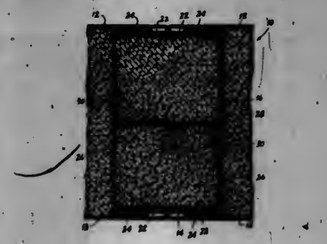
1. A ceiling comprising a strip-metal gridwork having rectangular openings, a plurality of rectangular ceiling panels removably supported on said gridwork with each rectangular opening in said gridwork being closed by one of said panels, said panels each comprising a rectangular metal frame with an outwardly projecting lower peripheral flange extending continuously around said frame and forming a lower surface, the portions of said flange on opposed sides of said rectangular frame extending outwardly in the same plane in opposite directions, a sheet of flexible synthetic plastic material extending across said lower surface of said frame in a state of tension, a thickened synthetic plastic border extending continuously around the periphery of said sheet and containing a continuous groove which opens in a direction parallel with said sheet and is dimensioned to receive said flange, the portions of said continuous groove which extend along opposite edges of said sheet opening towards each other, said continuous flange being received in said continuous groove in the border of said sheet, said sheet of flexible synthetic plastic material and said thickened border portion thereof being readily removable from said frame and having an inherent elasticity whereby said sheet may be stretched across said frame and said grooved border portion snapped on to said lower peripheral edge of said frame.

3,186,130
BUILDING BLOCK SEALING CONSTRUCTION
William C. Gray, 1500 S. 5th St., Lawrenceville, Ill.
Filed July 19, 1961, Ser. No. 125,161
5 Claims. (Cl. 50—370)



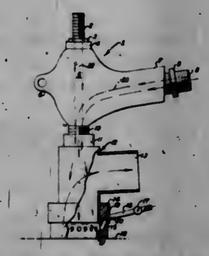
1. A panel wall assembly comprising a plurality of interfitting panels forming a flat wall surface, each panel having generally parallel end edges and side edges normal thereto and including a face panel, a back panel, and a spacing panel disposed between the face panel and back panel, said panels being of substantially the same size, the spacing panel having at least one edge projecting longitudinally beyond the corresponding edge of the face and back panel and at least one edge terminating inwardly of the corresponding edge of the face and back panel thereby defining a groove for receiving a projecting end edge of the spacing panel of an adjacent wall panel, said back panel having one edge projecting beyond a corresponding edge of the face and spacing panel to provide an exposed area for receiving fastening means, said face panel having a peripheral inwardly facing recess in the inner portion of the edge, the perimetrical dimension around the outer extremity of the spacing panel being greater than the perimetrical dimension around the outer extremity of the face panel whereby the peripheral edges of adjacent face panels are spaced from each other to receive cement therebetween when the spacing panels abut, the projecting edge of said spacing panel being defined by a plurality of spaced fingers, the groove between the face panel and back panel communicating with the recess in the edge of the face panel whereby cement may flow into the groove and between the fingers disposed therein.

3,186,131
BUILDING CONSTRUCTION
James M. Denny, Doraville, and Sven Arne Carlsson, Atlanta, Ga., assignors to Manufacturers Aluminum Products of U.S.A., Inc., Chamblee, Ga., a corporation of Georgia
Filed July 10, 1961, Ser. No. 122,910
3 Claims. (Cl. 50—360)



1. In an insulated wall construction,
spaced inner and outer walls, each wall comprising
a plurality of upright metal panels and each panel having
reentrant vertical flanges at the inner sides thereof, the panels in each of said walls being disposed side by side in butting contiguous relation thereby forming joints between adjacent panels in said outer wall being opposite corresponding joints in said inner wall;
panel connecting strips at the inner sides of said walls overlaying the adjacent reentrant flanges of adjacent panels and closing the joints between said panels, said panel connecting strips extending around the edges of said reentrant flanges and having
returned portions disposed behind said flanges and interlocking said strips with said panels;
a plurality of vertically spaced brackets interposed between said walls at each said joint, each of said brackets having a first portion including
a pair of transverse members extending between said walls and spaced from each other longitudinally of said walls, a second portion including
rigid means extending between and rigidly connected with the members of each said pair,
inturned pairs of side flanges at opposite sides thereof also extending behind said reentrant flanges and closely received between said panels and the returned portions of said panel connecting strips, said brackets cooperating with said panel connecting strips to hold the panels in each wall contiguous with each other and butted together and also holding said walls fixedly spaced with respect to each other; and
a continuous rigid insulating mass filling the space between said walls, said insulating mass providing a firm backing for said wall panels and embedding said brackets but shielded and separated from said reentrant flanges and the joints between said panels by said panel connecting strips.

3,186,132
SURFACE TREATING APPARATUS AND METHOD
Leon L. Duncan and Donald L. Temple, Washington, Mo., assignors to Zero Manufacturing Company, Washington, Mo., a company of Missouri
Filed Sept. 16, 1963, Ser. No. 308,985
12 Claims. (Cl. 51—11)

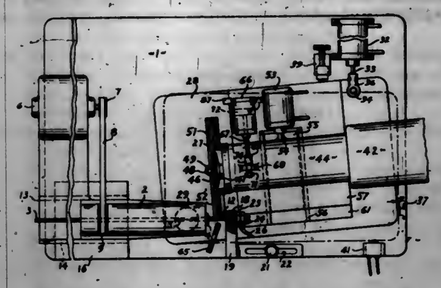


1. A surface treating apparatus comprising a hollow housing, means for admitting a stream of air under pressure at the top of said housing, airtight means for engaging a working surface to form an airtight chamber at the bottom of said housing, a plurality of passageways leading into the side of said housing, said passageways including conduit means for admitting treating material within said housing to said stream of air, an exhaust outlet positioned below said conduit means and air inlet means located in said chamber above said working surface.

9. A method of blasting and peening a surface comprising directing a stream of air under pressure at the surface to be treated, introducing treating material in the air stream and impinging the material on the surface, directing additional air at the surface to cause turbulence, creating a partial vacuum head in the space immediately above the surface being treated by confining the area within an airtight chamber and withdrawing the expended air and material through an exhaust outlet under reduced pressure, the expended air and material being withdrawn at a point above the vacuum head.

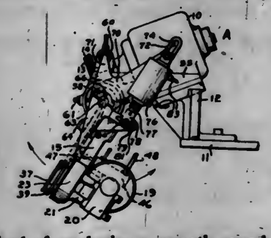
3,186,133
APPARATUS FOR MAKING CONTACT DISCS
William M. Maki, Libertyville, Ill., assignor to Fansteel Metallurgical Corporation, a corporation of New York
Filed May 8, 1961, Ser. No. 108,447
8 Claims. (Cl. 51—105)

1. In an apparatus for cutting a rod into discs including means for rotating and longitudinally moving said rod, means for limiting longitudinal movement of the rod, a base member, a table pivotally mounted on said base member, means for moving said table relative to the base member, a cutting device movably mounted on the table, means for moving said cutting device into cutting engagement with said rod, and control means responsive to the relationship between said rod and said rod limiting means



for controlling the movement of the table and cutting device mounted thereon.

3,186,134
EDGE GRINDING
George E. Beals, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 26, 1962, Ser. No. 175,424
8 Claims. (Cl. 51—283)

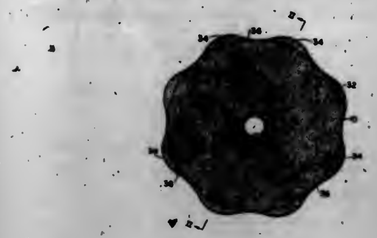


1. A method of producing a smooth rounded edge portion on glass-like articles to be converted into glass ceramic articles which comprises, rotating an article having a substantially circular peripheral surface about an axis passing through a central portion thereof, relatively moving the rotating article into contact with a revolving abrasive member, maintaining peripheral edge portions of the rotating article in constant contact with the revolving abrasive member with a constant predetermined pressure while permitting the axis of rotation of the article to be relatively displaced with respect to the contacted portion of the revolving abrasive member to compensate for irregularities in the peripheral surface of the rotating article, and while in contact with the revolving abrasive member pivoting the article about an axis tangential to the periphery of the rotating article at the point of contact with the revolving abrasive member to a new predetermined position, continuing maintaining the rotating article in contact with the revolving abrasive member while in such new position with the predetermined pressure, and relatively removing the rotating article from contact with the revolving abrasive member.

3,186,135
ABRASIVE DISC
John E. Crean, Willowdale, Ontario, Canada, assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 4, 1962, Ser. No. 184,977
2 Claims. (Cl. 51—394)

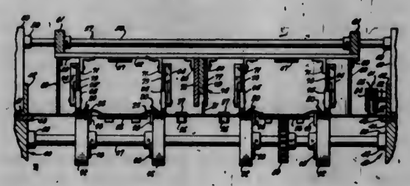
1. An abrasive disc which comprises a continuous, nonsegmented base member and abrasive grain bonded to one surface of said base member, said disc having a central

circular portion and a curved peripheral edge portion, said curved peripheral edge portion being formed of a plurality of radially inwardly curved edge portions and a plurality of radially outwardly curved edge portions, said



radially inwardly curved edge portions forming a smooth junction between said radially outwardly curved edge portions so that said peripheral edge portion is substantially free of sharp pointed corners.

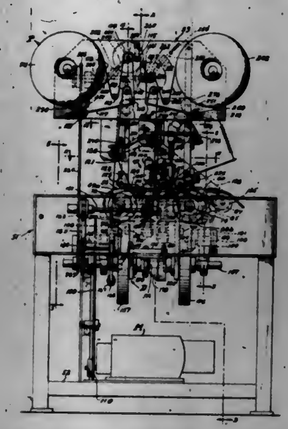
3,186,136
MACHINE AND METHOD FOR PACKAGING ARTICLES
Henry Ganz, Teaneck, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,255
20 Claims. (Cl. 53—3)



19. In the method of applying a carton blank to containers having chimes and wherein the carton blank has cushion tabs with slits and side walls with chime-cuts defining ears with the cushion tabs being foldable into generally overlying relation to the chime cuts, the steps of folding the cushion tabs out of the plane of the carton blank, temporarily locking the cushion tabs with the side walls to hold the cushion tabs in place, and then folding the carton blank around containers and simultaneously releasing the cushion tabs from the side walls.

3,186,137
METHOD AND APPARATUS FOR THE PRODUCTION OF BEVERAGE TAPE
August D. Elzen, Rockville Centre, N.Y., assignor to Rudd-Melikian, Inc., Hatboro, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1960, Ser. No. 57,495
10 Claims. (Cl. 53—24)

9. A method for encapsulating a powdered commodity in a paper package which comprises distorting a first paper strip to form a depression therein, delivering a measured charge of powdered commodity to said depression, said measured charge being sufficient in quantity to overfill the depression, after delivery of the measured charge to said depression, applying pressure thereto to compress the charge and thus form a briquette having a part projecting out of said depression, laying a second strip of paper over said first strip and said briquette, thereafter deforming said second strip of paper to fit around said briquette and thus conform said second strip to the shape of the projecting part of said briquette and sealing said first and second strips of paper together around the perimeter of said briquette.



3,186,138
METHODS OF PREPARING SHEETS OR STRIPS CONTAINING DOSES OF PRODUCTS AND IN PARTICULAR SUPPOSITORIES
Jean Augustin Bodet, 42 Ave. Marechal Douglas Haig, Versailles, France
Filed Oct. 31, 1962, Ser. No. 234,349
Claims priority, application France, Dec. 4, 1961, 880,911
1 Claim. (Cl. 53—37)

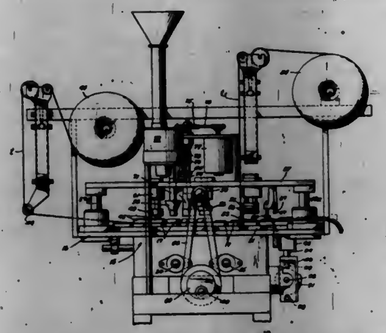


A method of packaging a flowable substance which comprises starting from a receptacle made of a plastic material and comprising at least two cavities communicating with each other through a communication channel and forming together a closed space, with an inlet channel opening directly into one of said cavities and an outlet chamber in direct communication with the other of said cavities, placing said inlet channel in communication with said flowable substance, perforating said outlet chamber by means of a hollow needle, the inside of said needle being placed in communication with a source of vacuum, and, after said flowable substance has filled said cavities and channels closing said channels by sealing.

3,186,139
PACKAGING OF MATERIAL IN POCKETS FORMED BETWEEN TAPE STRIPS
Harry W. Clause, Warminster, Pa., assignor to Rudd-Melikian, Inc., Hatboro, Pa., a corporation of Pennsylvania
Filed May 26, 1961, Ser. No. 112,893
11 Claims. (Cl. 53—124)

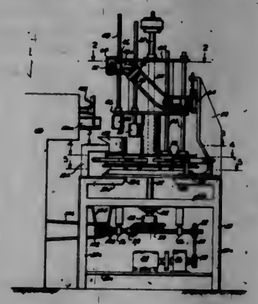
1. Apparatus for packaging material in pockets formed between tape strips comprising a plurality of tape supporting devices mounted for movement in a path from one

operating station to another, means for feeding one tape strip to said devices in said path of movement, mechanism for delivering a compactible material to the tape strip, mechanism for briquetting said material on the tape at said one station, means for feeding a second tape strip to said devices in said path at a point beyond said one station, mechanism for sealing the tape strips together at



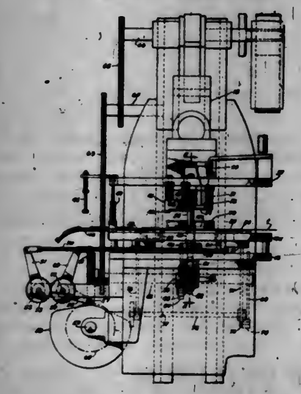
said other station, and for each of said tape supporting devices a material retainer cooperating with the compactible material during briquetting at said one station, said retainer being connected with the tape supporting device to move therewith in said path but being displaceable out of its operating position to clear the second tape strip when the tape supporting device moves in its path from said one station to the other station.

3,186,140
PACKING MACHINES
Joseph M. Bogdanovich, 1132 Dolphin St., San Pedro, Calif.
Filed Feb. 23, 1962, Ser. No. 175,198
3 Claims. (Cl. 53—124)



1. In a machine for packing cans with a predetermined quantity of food material, the combination of:
a frame;
a bottom plate mounted for horizontal rotation on said frame and having a plurality of openings therethrough;
a plurality of cup assemblies on said bottom plate, each cup assembly defining a peripherally continuous chamber in communication with the openings of said bottom plate and each cup assembly including two pairs of cup segments having opposed arcuate faces;
support means on said bottom plate supporting said cup segments for concurrent horizontal movement between an open position wherein food material is dropped into said chambers and a compacting position wherein the opposing arcuate faces of said cup segments define a cylinder corresponding to the size and shape of the interior of said cans, each pair of cup segments moving toward one another in a straight line normal to the direction of movement of the other pair of cup segments;
a stationary plate on said frame below said bottom plate for closing the lower ends of all but one of said chambers, and having a discharge opening therethrough for said one of said chambers;
means for successively positioning cans below said discharge opening;
a plurality of plungers each movable in a downward direction into one of said chambers to compact food material against said faces and said stationary plate to reduce the height of the food material in said chambers;
drive means on said frame for effecting common rotation of said bottom plate and said plungers;
actuating means operatively connected to said plungers and said support means that upon rotation of said bottom plate simultaneously effect downward movement of said plungers and closing movement of said cup segments from their open position to their compacting position to compact food material in said chambers into the shape of the interior of said cans as said chambers approach said discharge opening for discharge therethrough of the food material in that one of said chambers which is aligned with said discharge opening into a can positioned below said discharge opening, said actuating means effecting further downward movement of that one of said plungers aligned with said discharge opening to eject the compacted food material in that one of said chambers into one of said cans positioned below said discharge opening;
and means for dropping a predetermined quantity of food material into said chambers prior to the time said actuating means effects said compacting movement of said plungers and said closing movement of said cup segments.

3,186,141
APPARATUS FOR PRODUCTION OF TAPES HAVING SPACED PACKAGE POCKETS
Hans J. Zimmermann, Philadelphia, Pa., assignor to Rudd-Melikian, Inc., Hatboro, Pa., a corporation of Pennsylvania
Filed June 1, 1961, Ser. No. 114,246
8 Claims. (Cl. 53—184)



1. Apparatus for making tape having spaced pockets containing material to be packaged, comprising a plurality of pocket forming devices arranged to travel in a

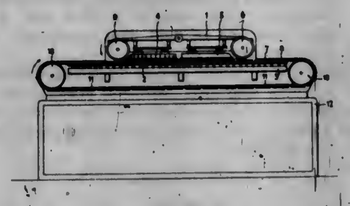
closed circuit having two oppositely moving runs lying generally in the same horizontal plane, each of said devices having an upwardly open cavity for shaping one side of the tape pockets, a separate supply of tape strip for each of said runs arranged to feed the tap strip above and with the forming devices in the direction of movement of said devices in said runs, means for shaping localized areas of the tape strip to the contour of the cavities in the forming device, mechanism for delivering the material to be packaged to the shaped areas of the tape strips in the cavities in said forming devices, a second separate supply of tape strip for each of said runs arranged to feed tape strip above and in the same directions as the other tape strips, and means for sealing the tape strips of the two superimposed pairs to each other in regions surrounding the delivered material to enclose such material in two series of spaced package pockets.

3,186,142

APPARATUS FOR CONTINUOUSLY CLOSING THERMOPLASTIC CONTAINERS BY HEAT SEALING WITH THERMOPLASTIC COVERS

Detta Borgardt, Bremervorde, and Gerd Müller, Hamburg-Bahrenfeld, Germany, assignors to Bebo-Plastik G.m.b.H., Bremervorde, Germany, and Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, both companies of Germany

Filed Apr. 7, 1961, Ser. No. 101,496
Claims priority, application Germany, Apr. 8, 1960, B 57,416; May 19, 1960, B 57,926
8 Claims. (Cl. 53—373)



1. An apparatus for continuously closing thermoplastic containers by welding onto the container a thermoplastic cover adapted to the shape of the container which comprises a driven horizontal endless conveyor, a plurality of spaced plates disposed and supported on said conveyor, openings in said plates in which the containers are suspended, a horizontal driven endless metal band which travels above said conveyor in the same direction as the conveyor, a heating unit disposed between the upper and the lower path of the metal band for heating a portion of the metal band as it travels, a cooling unit also disposed between the upper and lower path of the metal band at a point in the band travel beyond said heating unit for cooling a portion of the traveling band, and a spring-mounted supporting device disposed beneath the upper part of the plate conveyor to urge said plate conveyor upwardly whereby the container and cover are in turn urged against both the heated and cooled portion of said band.

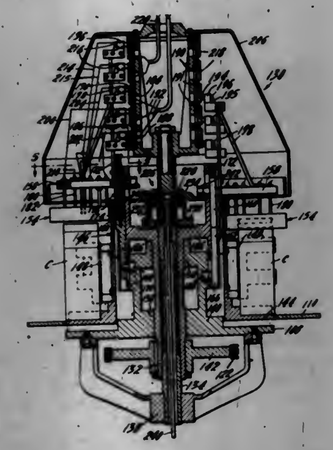
3,186,143

CARTON SEALING MACHINE

Frank Frederick Borkmann, Union, and Hugo Herman Klusener, Elizabeth, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 10, 1962, Ser. No. 216,168
15 Claims. (Cl. 53—379)

1. In a carton treating machine,
a rotary turret,
a plurality of heating heads mounted on said turret, each of said heating heads being mounted on a vertically reciprocable slide,
a cam for reciprocating each of said slides once during each rotation of said turret to lower the heating head carried on said slide to operative position to perform a heating operation in a carton carried on said turret in vertical alignment with said heating head,



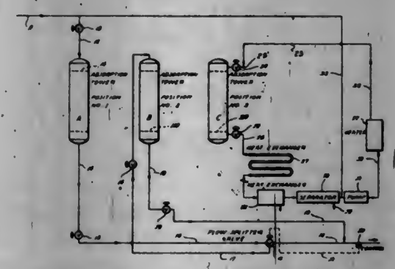
and means for overriding the action of said cam to raise said heating heads when they are in lowered position in the event the machine is stopped to thereby prevent overheating and burning of the cartons.

3,186,144

PROCESSES AND APPARATUS FOR RECOVERING HYDROCARBONS FROM GAS STREAMS

Willard M. Dow, Houston, Tex., assignor, by mesne assignments, to National Tank Company, Tulsa, Okla., a corporation of Nevada

Filed Sept. 4, 1959, Ser. No. 838,275
24 Claims. (Cl. 55—20)



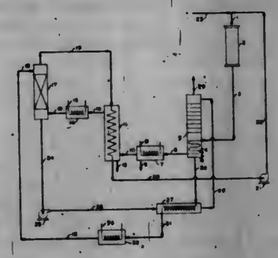
1. The process of recovering hydrocarbon liquid fractions from a main gas stream including, flowing during one complete adsorption cycle a main gas stream through a first adsorption zone which forms a first adsorption stage to remove hydrocarbon fractions from said main gas stream, diverting during the first part of said adsorption cycle a portion of said main gas stream after it has passed through the first adsorption zone through a second adsorption zone to begin cooling of said second zone, continuing the diverting of the main gas stream through said second zone throughout the remainder of the adsorption cycle to complete cooling and to adsorb additional hydrocarbons in said second zone which forms a second adsorption stage, increasing the volume of the diverted gas during the latter portion of the adsorption cycle of the first adsorption zone, recombining the diverted gas after its passage through said second zone with the main gas stream, and simultaneously directing a heated regeneration gas stream through a third adsorption zone to extract hydrocarbon fractions from a third adsorption zone which hydrocarbon fractions were removed from the main gas stream on a preceding adsorption cycle, and thereafter condensing and separating the extracted hydrocarbon fractions to recover the same as a liquid product.

3,186,145

ABSORPTION OF IMPURITIES FROM HYDROGEN-CARBON MONOXIDE SYNTHESIS GAS

Douglas H. Pelton, Wyckoff, N.J., and Basil Powell, Westbury, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 28, 1963, Ser. No. 254,313
3 Claims. (Cl. 55—48)



1. Process for removing gaseous impurity selected from the group consisting of methane, ethane and nitrogen, from the effluent gas stream discharged from the synthesis autoclave of the synthesis loop in the catalytic production of synthetic methanol at a pressure above 50 atmospheres, said effluent gas stream principally containing hydrogen and carbon monoxide, which comprises cooling said autoclave effluent gas stream by a first indirect heat exchange with impurity-laden liquid methanol, further cooling said effluent gas stream to condense and remove product crude synthetic methanol, further cooling the residual synthesis gas stream containing gaseous impurity to a final temperature below 20° C. by a second indirect heat exchange with cold purified synthesis gas stream, scrubbing the impurity-containing synthesis gas stream with liquid methanol, and thereby absorbing said impurity into said liquid methanol, separating the resulting methanol stream containing dissolved impurity from the purified synthesis gas stream, heating said purified synthesis gas stream by said second heat exchange, combining the purified synthesis gas stream with fresh feed gas to form a combined gas stream, passing the combined gas stream to methanol synthesis in the synthesis autoclave of the synthesis loop, heating said liquid methanol stream containing dissolved impurity by a third indirect heat exchange with regenerated liquid methanol, further heating and stripping the methanol stream of dissolved impurity in a distillation zone by said first indirect heat exchange, separating stripped gaseous impurity from the liquid methanol stream as a distillate overhead gas, cooling the regenerated liquid methanol by said third heat exchange, and further cooling and recycling the regenerated liquid methanol to said scrubbing step.

3,186,146

APPARATUS FOR WASHING GASES

Burton F. Latham, Jr., Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed May 21, 1962, Ser. No. 196,288
1 Claim. (Cl. 55—238)



In an apparatus for washing gases, a vertically disposed tubular outer conduit; said vertically disposed tubular outer conduit including, in a downward direction, an upper cylindrical section, an inverted frusto-conical section of substantially the same length as said upper cylindrical section; a relatively short cylindrical Venturi section, an elongate frusto-conical section of materially greater length than said upper cylindrical section and said inverted frusto-conical section and a funnel-shaped bottom section; a substantially cylindrical sleeve; means for mounting said sleeve concentrically in, and spaced from said vertically disposed tubular outer conduit with its lower end substantially above the lower end of the elongate frusto-conical section of said tubular outer conduit; means for closing the space between the upper end of said cylindrical sleeve and the adjacent portion of said tubular outer conduit; a series of inwardly directed sprays positioned in said Venturi section for delivering washing liquid thereinto; a tangentially disposed gas inlet connected to the upper cylindrical section of said tubular outer conduit; said tangentially disposed gas inlet tapering from a cylindrical cross-section into a flattened section; said mounting means including a series of vanes carried on the exterior of the lower end of said substantially cylindrical sleeve for imparting a whirling action; means in said tangentially disposed gas inlet for saturating the gas entering the upper cylindrical section of said tubular outer conduit; and a liquid seal disposed beneath and enveloping the lower end of the funnel-shaped section of said tubular outer conduit.

3,186,147

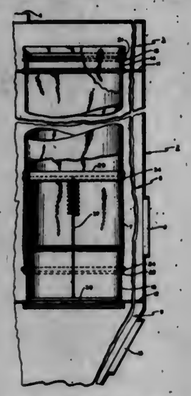
DUST COLLECTOR

Leonard J. O'Dell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Oct. 2, 1961, Ser. No. 142,152
5 Claims. (Cl. 55—374)

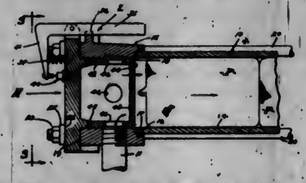
1. A dust collector for collecting contaminant particles from a dirty gas stream comprising: a housing having dirty gas stream inlet means and clean gas stream outlet means, hopper means, a flexible gas pervious tube having opposed opened tube ends disposed within said housing between said gas inlet and gas outlet means to receive and collect contaminant particles from the dirty gas stream, spaced supports in said housing for said tube, said supports extending across said housing in parallel relationship and including apertures communicating respectively with said

dirty gas stream inlet means and said hopper means, and connecting means to connect said tube ends to said apertures of said spaced supports with at least one of said ends of said tube slidable relative the support to which it is connected, said connecting means including clamping means



to clamp said tube around the periphery thereof at a position removed from said support for said slidably connected end, and spring means connected at one end to said clamping means and at the other to said support for said slidably connected end to hold said tube under yieldable tension to said support for said slidably connected end.

3,186,148
RENEWABLE PACK FLUID FILTER
Wallace D. Merrill, 27361 Stanford St., Hemet, Calif., and John A. Haslett, 414 N. Del Mar Ave., San Gabriel, Calif.
Filed July 24, 1961, Ser. No. 126,008
2 Claims. (Cl. 55—387)



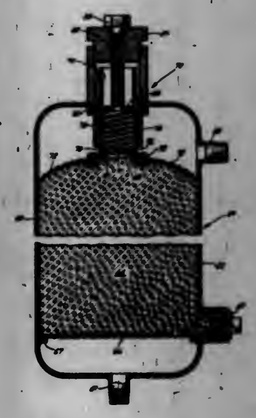
1. A fluid filter having a tubular body with at least one open end, and including, at least one porous bag of granular filtering material slidably entered into the body, inlet and outlet fluid flow lines opening into opposite ends of the body, said fluid flow line at said one open end of the body being disposed laterally of the body and spaced inward from the open end of the body, a removable plate overlying the end of the body, and a tubular liner carried by and projecting inwardly from the plate and entering the body to terminate inwardly of the said flow line, and a screen at the inner end of the liner engaging the bag of filtering material to position the same in the body, there being means to seal the plate with the end of the body outward of said laterally disposed flow line.

3,186,149
FILTER BOX ASSEMBLY
Joseph G. Ayers, Westhampton, N.Y., assignor to Flanders Filters, Inc., Riverhead, N.Y., a corporation of New York
Filed Apr. 19, 1962, Ser. No. 188,682
8 Claims. (Cl. 55—387)

1. A filter box assembly comprising a plurality of similar and stacked filter boxes, each filter box holding granular filter material and adapted to be assembled in stacked relationship with other similar filter boxes in a stream of gaseous material to remove impurities therefrom comprising first and second complementary box members having telescopic engagement with each other and each formed of a transverse end panel and peripheral side walls disposed substantially at right angles thereto with the side walls of one member being spaced a slightly greater distance apart than the side walls of the other member so as to have overlapping sliding engagement with the side walls of the other member and the side walls of one member having recesses formed therein while the corresponding side walls of the other member are made of inherently resilient material and have laterally offset complementary tongues integrally connected to said side walls at one end and being offset at an angle from the planes of said side walls into the planes of the corresponding side walls of said one member and being in registry with the recesses when the members are fully engaged so as to interengage therewith and retain the members in assembled relationship, two opposed side walls of said one member engaging the transverse end panel of the said one member of the neighboring filter box in this stack, and the transverse end panel of each box member having openings therethrough to permit the gaseous material to pass through the granular material.

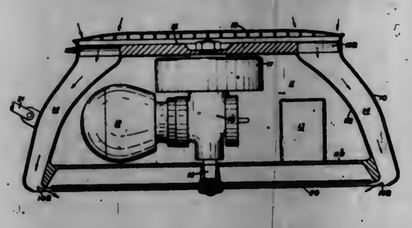


3,186,150
APPARATUS FOR THE TREATMENT OF GASES
Harry E. Zankey, Pittsburgh, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,486
2 Claims. (Cl. 55—387)



2. Apparatus for the treatment of gases comprising a vessel, a quantity of adsorbent particles disposed in said vessel, a first screen means fixedly mounted adjacent one end of said vessel and coextensive with the cross-section thereof to support said adsorbent particles, a second screen means movably disposed in the other end of said vessel, said second screen means being coextensive with the cross-section of said vessel and having a central aperture, said vessel having an opening in the other end thereof, bushing means surrounding said opening, sleeve means slidably mounted in said bushing means and coupled to said second screen means around the aperture therein, removable closure means covering the outer end of said bushing means, spring means disposed in said sleeve means and engaging said second screen means, and means coupled to said removable closure means for compressing said second screen means whereby said second screen means is resiliently urged into high-pressure engagement with said adsorbent particles to compress said particles between said first and second screen means to prevent displacement upon the reversal of the direction of gas flow in said vessel.

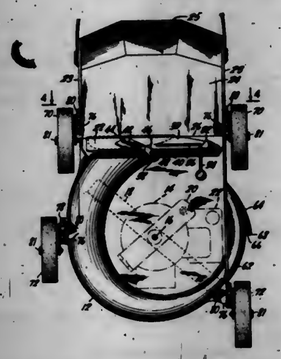
3,186,151
CUTTERS FOR GRASS AND OTHER VEGETABLE MATTER
Bernard S. Hansom, Old Windsor, England, assignor to Wilkinson Sword Limited, London, England, a British company
Filed Jan. 30, 1963, Ser. No. 254,929
3 Claims. (Cl. 56—25.4)



1. A machine for cutting grass and like vegetable matter comprising an outer shell, an inner shell, said inner shell being coaxial with said outer shell and of smaller cross-section to form a passage of annular cross-section between said inner shell and said outer shell, a motor mounted within said inner shell, an air-compresser rotor mounted adjacent the upper end of said passage, said motor being coupled to said air-compressor rotor to rotate said air-compressor rotor for driving air through said annular section passage whereby an annular jet of compressed air is formed at the lower end of said passage providing an air-cushion between the machine and ground, and a rotary cutting member mounted on the underside of said inner shell, said rotary cutting member also being coupled to said motor.

3,186,152
ROTARY MOWER
Isidore Epstein, New Hyde Park, N.Y., assignor to G. W. Davis Corporation, Richmond, Ind., a corporation of Indiana
Filed Oct. 1, 1963, Ser. No. 312,923
2 Claims. (Cl. 56—202)

2. A blade casing having an exiting area, a removable collector including a side surface, said side surface being provided with an opening therein, means attached to said casing for supporting said collector, said collector normally being supported on supporting means with said side surface opening opposite said exiting area of said blade casing, and an adjustable shutter attached to said casing movable between a position opening said exiting area and a position closing said exiting area of said blade casing when said collector is supported on said supporting means whereby the exiting area of said blade casing may be



closed prior to the collector's removal from said supporting means.

3,186,153
TINE AND MOUNTING FOR RAKES AND THE LIKE
Arle E. Breed, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,744
9 Claims. (Cl. 56—400)



8. A tooth for rakes and the like and adapted for mounting on an elongated support of L-shaped section to project outwardly therefrom, comprising: an elastomer mounting element having opposite first and second ends and opposite sides; fastener means of material other than said element and secured to said first end and including at one of said sides an apertured ear part adapted to engage one flange of the support and at said opposite side a hook part adapted to hook over the free edge of the other flange of the support, and a tine of material other than said element and secured to and projecting from the second end of said element.

3,186,154
SPINDLE APPARATUS FOR UNWINDING YARN BUNCH
Eizaburo Negishi, 9—3 Gazuzakazato, Yono-shi, Japan
Filed Feb. 18, 1963, Ser. No. 259,213
Claims priority, application Japan, Oct. 30, 1962, 37/48,183
3 Claims. (Cl. 57—54)

2. A spindle apparatus for unwinding a yarn bunch in spinning machines, comprising a spindle, a bunch cylinder disposed in a freely rotatable manner on said spindle for forming a yarn bunch, an endless knife on said bunch cylinder for cutting the connecting yarn between the yarn bunch and a full bobbin, a wharve for said spindle, a wharve for said bunch cylinder having a slightly greater diameter than that of said wharve for said spindle, and

means including a driving tape stretched commonly over said wharves for driving said bunch cylinder and spindle



in the same direction with a slight mutual difference in rotational speed.

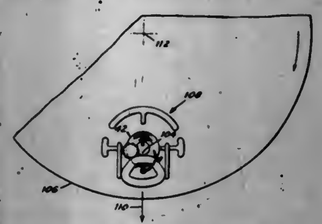
3,186,155
TEXTILE PRODUCT OF SYNTHETIC ORGANIC FILAMENTS HAVING RANDOMLY VARYING TWIST ALONG EACH FILAMENT
Alvin Leonard Breen and Herbert George Lauterbach, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 6, 1963, Ser. No. 287,464
27 Claims. (Cl. 57—140)



6. A monocomponent synthetic organic filament possessing alternate S and Z twist sections throughout its length; having a random number of turns between twist reversals; having a random continuously varying angle of twist along its length; having a random number of twist reversals per inch; having at least one S turn and at least one Z turn per inch which have a twist angle averaging at least 10°; and having a random, persistent, three-dimensional, non-helical, curvilinear, crimped configuration continuously along its length and being substantially free from crunodal loops.

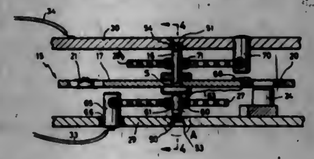
3,186,156
TIMEPIECE MOVEMENT FOR INERTIAL SYSTEM
John O. James, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed May 8, 1962, Ser. No. 193,260
10 Claims. (Cl. 58—28)

1. A balance assembly comprising a self starting movement comprising a housing intended to be rotated in such a manner as to create a centrifugal force on anything therein which is not axially located, a balance assembly non-axially mounted within said housing, said balance assembly comprising a balance mounted on a staff which is associated with a restoring force means, said restoring force means comprising a device having a rest position and capable of exerting a force tending to return to the rest position when moved therefrom, and means associated with said balance assembly to cause the center of gravity of said balance assembly to be spaced from the axis of said staff, said means associated with said balance assembly and said restoring force means being disposed such that said centrifugal force tends to move said means associated with said balance assembly to its outermost position relative to the axis of rotation of said housing,



said rest position being substantially 90 degrees removed therefrom, so that said centrifugal force tenses said restoring force means to create a restoring force which acts to increase the arc of oscillation of said balance assembly when said centrifugal force is reduced.

3,186,157
BALANCE WHEEL ASSEMBLY FOR AN ELECTRIC TIMEPIECE
Maxime A. Favret and Josef Egger, Pforzheim, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed July 25, 1962, Ser. No. 212,264
Claims priority, application Germany, Aug. 24, 1961, U 8,295
4 Claims. (Cl. 58—28)

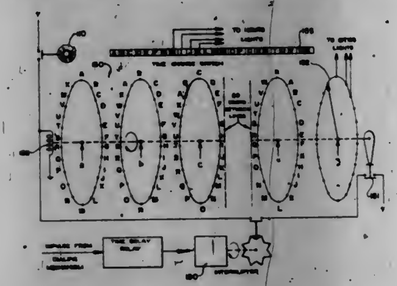


1. In a portable timekeeping apparatus, a balance wheel assembly comprising a swingable balance wheel and shaft, a first stationary support, a flat spiral spring having one of its ends attached to the wheel assembly and its other end attached to the first support, the flat spiral spring being sufficiently strong to normally support the balance wheel against axial and lateral movement and permit the wheel's radial movement about its axis, a pin extending from both sides of the balance wheel shaft along its axis, a second stationary support, limiting means on each support comprising a bushing within which the ends of the pin are positioned, wherein the two ends of the pin are positioned in their respective bushings with sufficient clearance so that the pins contact the walls of the bushings only during shocks to the assembly, whereby the apparatus may be carried and used in any position.

3,186,158
ZONE TIME DISPLAY CLOCK
Mendell E. Miller, 2350 W. 1st Ave., Vancouver, British Columbia, Canada
Filed June 13, 1963, Ser. No. 287,619
10 Claims. (Cl. 58—42.5)

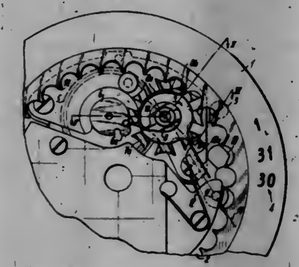
1. A clock for selectively displaying the time in designated localities in a plurality of time zones, comprising minute electrical means for stepping off the time in minutes and indicating the minute time, hour electrical means associated with said minute means for stepping off the time in hours and closing electrical circuits at at least some of the hours in a 24 hour cycle, said electrical circuits being adapted to be connected to an electrical power source, a multiple deck, 24-point rotary stepping switch having

a wiper for each deck, each wiper being connected in one of said circuits of said hour electrical means, the points of each deck of the stepping switch representing 1 to 24 hours and each deck representing a different time zone, means interconnecting the points of the multiple decks so that each successive deck represents a time advance of one hour by the rotational displacement of corresponding connectors by a one contact interval



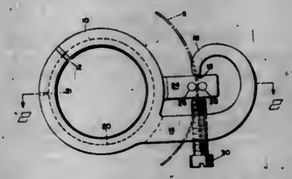
from deck to deck, means connecting corresponding points of the multiple decks to hour indicating means, one set of corresponding points representing the "home" time and the other sets of corresponding points representing the times of different time zones, and a selector switch for operating the rotary stepping switch to advance the wipers thereof selected numbers of points to cause the hour indicating means to indicate hours of selected time zones.

3,186,159
CALENDAR TIMEPIECE
Ali Schneiter, Neuchatel, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland
Filed Apr. 28, 1964, Ser. No. 363,243
Claims priority, application Switzerland, May 6, 1963, 5,657/63
3 Claims. (Cl. 58—58)



1. In a calendar timepiece, in particular an electric timepiece, having a date-indicating member and a resilient jumper acting on the said date-indicating member, in such a timepiece, in combination, a Maltese cross member adapted to be driven intermittently, a resilient date control finger fast with the said Maltese cross member and adapted to act, in one direction of rotation, on the said date-indicating member so as to drive it and adapted to be resiliently retracted in the opposite direction of rotation, without driving the said indicating member, and a finger which controls the said jumper and is fast with the said Maltese cross member, and which is adapted to act on the jumper to disengage it from the said date-indicating member when the said date control finger comes into action, either the jumper or its control finger being resilient so that, in one direction of rotation of the said Maltese cross member, the jumper is lifted by its control finger, thus releasing the date-indicating member so that the said resilient date control finger may drive it easily, whereas in the opposite direction the said resilient element—jumper or control finger— retracts, while a supplementary pressure is exerted on the jumper, additional to that of the jumper spring, which assists in locking the date-indicating member while the resilient date control finger jumps relatively to the said member without driving it.

3,186,160
REGULATOR
Hubert E. Dickerman, 276 Farmington Road, Longmeadow, Mass.
Filed May 11, 1962, Ser. No. 194,020
3 Claims. (Cl. 58—112)

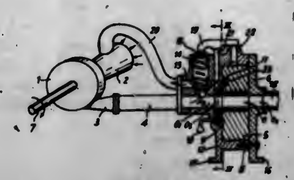


1. Regulator mechanism for regulating the running speed of a time keeping device which includes a coil spring for oscillation of a balance wheel relative to a balance cock comprising, a regulating ring frictionally engageable with and pivotable about the balance cock concentrically to the balance wheel, an adjustment ring concentrically related to and interengageable with said regulating ring for relative rotative movement about the balance cock, said regulating ring having a regulating arm unitary therewith and extending outwardly therefrom and characterized by a main body coplanar with and extending outwardly from said regulating ring and a spring having an inner end secured to and extending outwardly from the main body and an arcuate portion spaced from the inner end, said adjustment ring having an adjustment arm unitary therewith and extending radially outwardly therefrom, the adjustment arm being disposed intermediate the main body and arcuate portion of the spring of the regulating arm, regulating pins carried by and depending from the adjustment arm of said adjustment ring and disposed in the plane of and adjacent opposite faces of a convolution of the coil spring, and adjustment means carried by the regulating arm of said regulating ring and bearable against the adjustment arm for adjusting in extremely exact and fine increments the positioning of the adjustment arm and said regulating pins relative to the coil spring.

3,186,161
DEVICE TO CONTROL THE RATE OF SUPERCHARGING INTERNAL COMBUSTION ENGINES
Constant Bricout, Paris, France, assignor to Les Applications Techniques Industrielles L.A.T.I., Paris, France, a corporation of France
Filed Sept. 10, 1963, Ser. No. 308,006
Claims priority, application France, Sept. 10, 1962, 908,988; Aug. 20, 1963, 945,095
5 Claims. (Cl. 60—13)

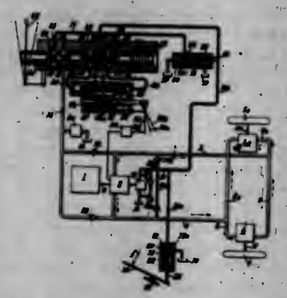
1. A device for controlling the output flow from a compressor for supercharging internal combustion engines comprising, conduit means for delivering pressurized fluid from said compressor to said engine, gating means disposed in said conduit means for controlling the fluid flow therein, valve means disposed in said conduit means upstream of said gating means and adapted to be moved independently therefrom solely by said pressurized fluid to release part thereof from said conduit

means, resilient means for normally urging said valve means into a closed position and tensioning means ac-



tuated by said gating means for varying the force exerted by said resilient means against said valve means.

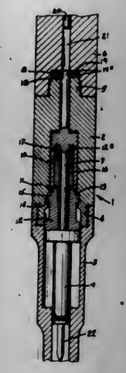
3,186,162
PRIME MOVER SYSTEMS
Louis Pignolet, Lyon, and François Dumas, Villeurbanne, France, assignors to Societe Industrielle Generale de Mecanique Appliquee S.I.G.M.A., Paris, France, a society of France
Filed Sept. 10, 1963, Ser. No. 307,825
2 Claims. (Cl. 60—19)



1. A power plant for actuating a driven member which comprises, in combination: an internal combustion engine, a throttle control member for said engine, at least one main pump driven by said engine, said pump being adjustable so that its delivery per cycle thereof can vary from zero to a maximum, means for controlling the delivery of said pump per cycle thereof, at least one hydraulic motor, operatively connected to the driven member to be actuated by the power plant, a main hydraulic circuit connecting the input of sad hydraulic motor with the delivery of said pump and the output of said hydraulic motor with the input of said pump, a spill circuit branching off from said main hydraulic circuit, a gradual throttling valve in said spill circuit, and means responsive to variations of position of said throttle control member for closing said throttling valve when said throttle control member is moved in the direction producing an increase of the feed rate of fuel to said internal combustion engine and simultaneously operating said means for controlling the delivery of said pump per cycle thereof so as to increase said delivery.

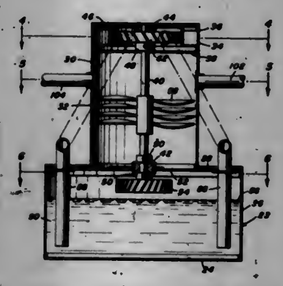
3,186,163
BARREL DETENT
Glenn R. Dixon, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Aug. 30, 1962, Ser. No. 220,480
5 Claims. (Cl. 60—26.1)

1. A detent assembly for automatically releasing a working piston at a predetermined force comprising, a housing, a working piston slidable in said housing from a latched position to a work performing position, cam means fixed to the piston, detent means operative to engage the housing and the piston to lock the piston in said latched position, resilient means disposed in series with the detent means and the piston operative to permit lim-



ited relative movement between the piston and the detent means when a predetermined pressure is applied to said piston, said limited relative movement being effective to permit said cam means to operate the detent to unlatch the piston whereby the piston is free to move to said work performing piston.

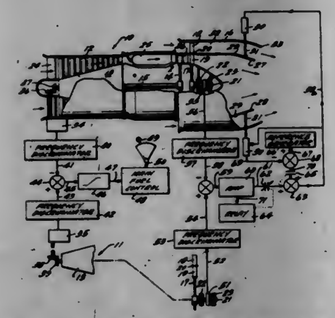
3,186,164
EXHAUST GAS PURIFIER
James J. Dold, Sr., 2750 Arlington Ave., Apt. F, P. O. Box 434, Torrance, Calif.
Filed Sept. 3, 1963, Ser. No. 306,146
9 Claims. (Cl. 60—30)



1. An exhaust gas purifier including a turbine housing having an inlet and an outlet, said inlet adapted to be communicated with a source of exhaust gases under pressure, a rotatable turbine wheel disposed in said housing and operatively communicated with said inlet for rotation by the exhaust gases entering said inlet, a vaccum chamber including an inlet and an outlet, air pump means operatively communicated with said vacuum chamber outlet for pumping air out of said vacuum chamber, a cleansing liquid reservoir including inlet and outlet means disposed below and above the liquid level in said reservoir respectively, means communicating said reservoir outlet means with said vacuum chamber inlet, means adapted

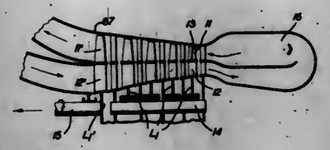
to communicate said reservoir inlet with said source of exhaust gases, said turbine wheel being drivingly connected to said air pump means.

3,186,165
TURBOFAN ENGINE SPEED SYNCHRONIZING ARRANGEMENT
Denis Pierpont Edkins, Lynnfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Nov. 29, 1961, Ser. No. 155,560
2 Claims. (Cl. 60—35.6)



1. In a turbofan engine installation having at least first and second turbofan engines each of the type having a gas generator rotor and a separately mounted fan rotor driven by a free power turbine, a combination speed synchronizing system for the gas generator rotors and the separately mounted fan rotors, respectively, comprising:
(a) tachometer generator means for generating a first speed dependent signal as a function of the fan rotor sped of said first engine,
(b) tachometer generator means for generating a second speed dependent signal as a function of the fan rotor speed of said second engine,
(c) tachometer generator means for generating a third speed dependent signal as a function of the speed of the gas generator rotor of said first engine,
(d) tachometer generator means for generating a fourth speed dependennt signal as a function of the speed of the gas generator rotor of said second engine,
(e) frequency discriminator and signal summing means for deriving a first speed error signal proportional to the difference between said first and second speed dependent signals,
(f) means for varying the area of the discharge nozzle associated with the free power turbine of said first engine responsive to said first speed error signal for adjusting the power output of the free power turbine of said first engine to synchronize the speeds of said first and second engine fan rotors
(g) frequency discriminator and signal summing means for deriving a second speed error signal proportional to the difference between said third and fourth speed dependent signals,
(h) fuel control means associated with at least one of said engines and responsive to said second speed error signal to modulate the fuel flow rate to said one engine to synchronize the speeds of said first and second gas generator rotors, and
(i) control means operable in responsive to a shutdown of said second engine to adjust said power modulating means to a preselected condition, said control means including a reference generator which produces an output signal scheduling said power modulating means to a preselected condition determined by said output signal.

3,186,166
GAS TURBINE DRIVE UNIT
Hubert J. Grieb, Stuttgart-Stammheim, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Nov. 20, 1959, Ser. No. 854,429
Claims priority, application Germany, Nov. 26, 1958, D 29,450
7 Claims. (Cl. 60—39.16)

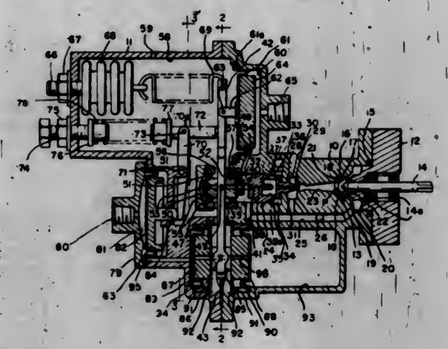


1. A gas turbine drive unit comprising compressor means, combustion chamber means, turbine means including compressor-drive-turbine means for driving said compressor means and output turbine means mechanically separate from said first-mentioned compressor-drive-turbine means, said output turbine means including mechanical output means, said turbine means comprising blade means and wall means, said wall means comprising a portion immediately adjacent the peripheries of said blade means, means effectively establishing a relationship between the axial length of said compressor means and said turbine means and the largest diametrical distance between the peripheries of any diametrically disposed pair of blades of said blade means, in which relationship said axial length is less than said largest diametrical distance, said establishing means comprising an arrangement of said compressor means and said turbine means in which said compressor means and said turbine means are concentrically disposed in nested relationship, said establishing means further comprising a plurality of supersonic stages provided in said compressor means, means operatively connecting said compressor means and turbine means with each other, said compressor means and turbine means being so arranged that the combustion air intended for said compressor means, said combustion chamber means and said turbine means flows through the compressor means in one direction whereas the combustion gases leaving said combustion chamber means flow through said turbine means in the opposite direction, said output turbine means being located on the low pressure side of the unit, and further comprising means for producing a cooling effect for the base portions of the individual turbine stages by supplying compressed air from a higher pressure compressor stage to the connecting means of a relatively lower pressure stage.

3,186,167
CONTROL FOR GAS TURBINE FUEL PUMP SYSTEM
Richard Chute, Huntington Woods, Mich., assignor to Continental Motors Corporation, Detroit and Muskegon, Mich., a corporation of Virginia
Filed Oct. 8, 1962, Ser. No. 229,108
9 Claims. (Cl. 60—39.28)

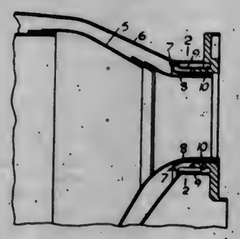
8. In combination with a turbine engine having a turbine driven shaft, a fuel system comprising,
(a) a centrifugal pump having an inlet and an outlet and drivingly carried by said turbine driven shaft,
(b) a jet pump having a first ejector, a second ejector, each having an intake side and a discharge side, and means connecting the discharge side of said first ejector with the intake side of said second ejector,
(c) means connecting the discharge side of said second ejector with said inlet of said centrifugal pump,

(d) means connecting said outlet of said centrifugal pump with the intake side of said first ejector,
(e) a fuel inlet adapted for connection to a fuel reservoir and communicating intermediate the discharge side of said first ejector and the intake side of said second ejector,
(f) means connected with said outlet of said centrifugal pump for delivering fuel to said engine,



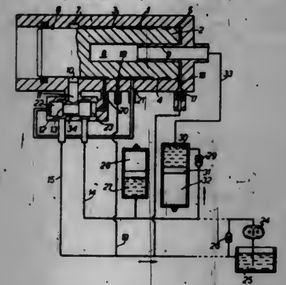
(g) a valve means operable to regulate fuel flow through said first ejector,
(h) a first control means operable to close said valve means upon a predetermined combustor weight flow being produced by said engine, and
(i) a second control means operable to retain said valve means in a closed position until a predetermined compressor outlet pressure has been produced.

3,186,168
MEANS FOR SUPPORTING THE DOWNSTREAM END OF A COMBUSTION CHAMBER IN A GAS TURBINE ENGINE
Alan Ormerod, Oswaldtwistle, near Church, and Arthur S. Kay, Clitheroe, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Sept. 9, 1963, Ser. No. 307,721
Claims priority, application Great Britain, Sept. 11, 1962, 34,650/62
3 Claims. (Cl. 60—39.32)



1. Means for supporting the downstream end of a combustion chamber in a gas turbine engine, comprising a support ring of U-shaped cross-section having an inner limb secured to the combustion chamber and an outer limb slidable in a groove in the turbine casing, said inner limb of the support ring being formed with longitudinally extending corrugations.

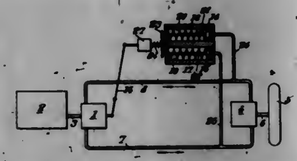
3,186,169
HYDRAULICALLY-OPERATED RECIPROCATING APPARATUS
Johannes Ulrich Hauser, Nussbaumen, Aargau, Switzerland, assignor to Keelavite Hydraulics Limited, Warwickshire, England, a company of Great Britain
Filed Nov. 12, 1963, Ser. No. 322,652
Claims priority, application Great Britain, Dec. 3, 1962, 45,665/62
4 Claims. (Cl. 60—51)



1. Hydraulically operated reciprocating apparatus comprising a main working piston and cylinder assembly including a main working cylinder and a main working piston having a part of larger diameter disposed for reciprocation within the main working cylinder and cooperating therewith to form a first working chamber of larger cross-sectional area, a subsidiary working piston and cylinder assembly comprising a subsidiary working piston and a subsidiary working cylinder arranged for reciprocation relatively to one another, one of such relatively moving parts being rigid with the main working piston while the other is rigid with the main working cylinder, the subsidiary working cylinder opening into the end of the main working cylinder remote from the said working chamber of larger cross-sectional area and being of smaller cross-sectional area than said working chamber of larger cross-sectional area, fluid pressure supply means, passage means connecting said fluid pressure supply means continuously to said working chamber of smaller cross-sectional area, a hydraulic accumulator having its liquid pressure chamber connected to said passage means, a non-return valve between said liquid pressure chamber and the part of said passage means between said fluid pressure supply means and said liquid pressure chamber to permit liquid to flow from said fluid pressure supply means into said liquid pressure chamber but not out of said liquid pressure chamber towards said fluid pressure supply means, while open passage means continuously connect said liquid pressure chamber of said hydraulic accumulator to said subsidiary working cylinder, relief passage means, and valve means operating to connect said working chamber of larger cross-sectional area alternately to said fluid pressure supply means and to said relief passage means.

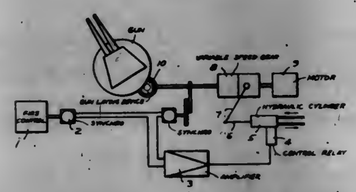
3,186,170
VARIABLE RATIO HYDRAULIC TRANSMISSIONS
Robert Gauthier, Saint-Germain au Mont d'Or, and François Dumas, Villeurbanne, France, assignors to Societe Industrielle Generale de Mecanique Appliquee S.I.G.M.A., Paris, France, a corporation of France
Filed June 24, 1963, Ser. No. 289,965
Claims priority, application France, June 26, 1962, 902,066
2 Claims. (Cl. 60—53)

1. In a system comprising an internal combustion engine and a part to be driven by said engine, the combination of a hydraulic transmission comprising two hydraulic machines, one mechanically coupled with said engine and the other with said part, respectively, two pipes each connecting the output of one of said machines with the input of the other, respectively, so as to form a closed circuit wherein one of said machines works as a pump and the other as a hydraulic motor, movable means for continuously varying the flow rate per revolution of at least one of said machines, two continuously movable members each operatively connected in a unidirectional manner



with said means for the control thereof, two means for transmitting the pressures in said pipes to said members, respectively, in the direction that varies said flow rate in response to an increase of the pressure in the corresponding pipe, so as to reduce the ratio to each other of the respective flow rates per revolution of said pump and of said motor, and resilient means operatively connected with said members for acting thereon in opposition to said pressure operative means.

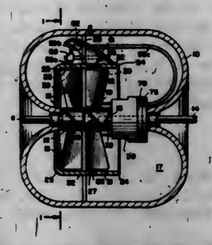
3,186,171
DAMPING DEVICE FOR A SERVO SYSTEM
Nils Olov Johansson, Karlskoga, and Birger Arthur Emil Qvarnström, Hagersten, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a company of Sweden
Filed Jan. 30, 1964, Ser. No. 341,844
Claims priority, application Sweden, Nov. 18, 1960, 10,095/60
2 Claims. (Cl. 60—53)



1. A stabilizing device for damping oscillations in a servo system having a pilot and a follower driven by a power drive means and constituting a high inertia load and in which device a variable speed gear means having an input side and an output side is interposed between the pilot and the follower and controlled by signals from the pilot and signals from the output side of said gear means, said stabilizing device comprising regulating means coupled with said gear means for regulating the speed thereof, said regulating means being controlled by the torque transmitted by the power drive means to the follower, and controlling said regulating means so as to cause a loss of torque in said gear in response to a transmitted torque above a predetermined value while remaining inactive below said predetermined value.

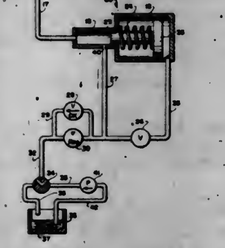
3,186,172
VARIABLE RATIO FLUID DRIVE
James W. Angell, 1136 Fifth Ave., New York 28, N.Y.
Filed Sept. 5, 1963, Ser. No. 306,900
14 Claims. (Cl. 60—54)

3. A fluid drive apparatus comprising a housing containing an impelling fluid, a fluid impelling rotor within said housing for circulating the fluid, a rotor driven by said impelling fluid, a plurality of variable pitch blades carried by one of said rotors, means urging the variable pitch blades toward positions of greater pitch with respect to the path of flow of the impelling fluid, actuatable means



to increase the force urging the variable pitch blades toward positions of greater pitch with respect to the path of flow of the impelling fluid, and control means responsive to an increase in the speed of said driven rotor in relation to the speed of the fluid impelling rotor for rendering operative the said actuatable means.

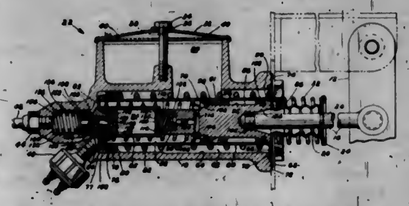
3,186,173
VARIABLE PRESSURE HYDRAULIC SYSTEM
Stanley Thomas Hogg, Merrick, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 15, 1960, Ser. No. 56,165
1 Claim. (Cl. 60—54.5)



In a hydraulic system, a reservoir for hydraulic fluid, said reservoir connected through a source of hydraulic fluid under pressure, a controlled pressure drop mechanism in a line from the source of hydraulic fluid under pressure, a two way valve which in a first position connects the controlled pressure drop mechanism to the source of hydraulic fluid under pressure and in a second position communicates the controlled pressure drop mechanism with the reservoir, a check valve connected across the controlled pressure drop mechanism to permit flow only from the outlet of the controlled pressure drop mechanism to the inlet thereof, said two way valve thus being operable to selectively direct fluid from said source of hydraulic fluid under pressure toward said controlled pressure drop valve and from said check valve to said reservoir, a pressure intensification cylinder having a larger portion and a smaller portion, a piston having a larger portion and a smaller portion reciprocable in said larger portion and said smaller portion of said cylinder, respectively, the smaller portion of the cylinder having a side port, a spring in the pressure intensification cylin-

der biasing the piston to its retracted position, a first conduit communicating the pressure drop mechanism to the side port, said port being in communication with the working chamber of the intensification cylinder when the piston is in the retracted position, and a second conduit communication the pressure drop mechanism to the larger portion of the pressure intensification cylinder, a valve in said second conduit, a hydraulic motor having a piston therein, said motor communicating with the smaller portion of said pressure intensification cylinder, and means normally biasing the piston in said hydraulic motor to its inactive position.

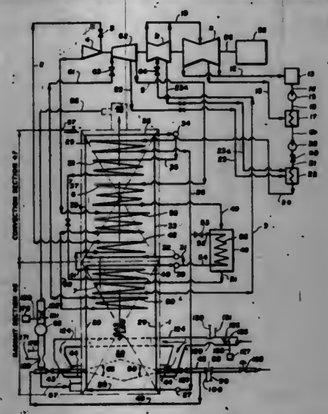
3,186,174
HYDRAULIC MASTER CYLINDER
Dennis J. Hayman, East Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Apr. 30, 1963, Ser. No. 276,766
7 Claims. (Cl. 60—54.6)



1. In a hydraulic vehicle braking system having a foot pedal, an actuating rod, a fluid reservoir, and a line leading to a wheel cylinder, a two-stage master cylinder, said cylinder comprising a low pressure chamber, a high pressure chamber, first valve means for moving the larger volume of fluid from said low pressure chamber, second valve means for limiting the pressure in said line and for limiting the movement of said foot pedal, and means associated with said low pressure chamber for receiving the fluid displaced from said low pressure chamber after said first valve means closes.

3,186,175
HEAT ABSORPTION BALANCING SYSTEM FOR A STEAM GENERATOR HAVING A PRIMARY STEAM CIRCUIT AND A REHEATING STEAM CIRCUIT
Charles Strohmeyer, Jr., Wyomissing, Pa., assignor to Gilbert Associates, Inc., Reading, Pa.
Filed Jan. 14, 1963, Ser. No. 251,358
2 Claims. (Cl. 60—73)

1. A steam-electric generating plant and under variable load conditions comprising a steam generator having a high pressure primary circuit for flowing fluid therethrough, said primary circuit having heat absorption conduits located serially in preheating, generating and superheating sections of said steam generator, a steam consumer turbine for driving electric generating means, conduit means for interconnecting said steam generator primary circuit outlet and said steam consumer turbine, said steam generator including reheating heat absorption conduits, additional conduit means for conveying steam, after partial use in said steam consumer turbine from said steam consumer turbine to said reheating heat absorption conduits and for returning said partially consumed steam, after reheating, to said steam consumer turbine, a combustion furnace for generating hot products of combustion, and duct means arranged serially for conveying said hot products of combustion over and among said steam generator heat absorption conduits, a bypass conduit, said bypass conduit connected to the primary circuit at both ends and bypassing at least a portion of said preheating and generating section heat absorption conduits for establishing hydraulic head to flow a portion of the primary circuit fluid through said bypass conduit from an upstream to downstream point of the primary circuit, an auxiliary heat exchange means located in said additional conduit means and adapted to exchange heat with fluid flowing through said bypass conduit, flow control means in said



bypass conduit, said reheating heat absorption conduits and said auxiliary heat exchange means being adapted for regenerative heating of the primary circuit fluid, said regenerative heating per unit of primary circuit flow continuously increasing throughout at least a portion of the upper load range as said plant load increases and at essentially constant primary circuit and reheating heat absorption conduit fluid temperatures at outlet points.

3,186,176
STEAM TURBINE PLANTS
John Alfred Edmiaston and George Harold Martin, Newcastle upon Tyne, England, assignors to C. A. Parsons & Company Limited, Newcastle upon Tyne, England, a company of Great Britain
Filed Apr. 24, 1963, Ser. No. 275,299
Claims priority, application Great Britain, May 21, 1962, 19,525/62
6 Claims. (Cl. 60—95)

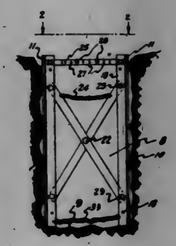


1. A steam turbine plant comprising at least one steam turbine, a removable upper cover for said turbine, at least one condenser arranged alongside said turbine, means defining an exhaust duct providing intercommunication between said turbine and said condenser, said last-mentioned means comprising wall means defining an upper inlet portion and a lower inlet portion, a flexible duct connecting the upper inlet portion to the upper cover of the turbine and means for retracting said flexible duct in the direction of its axis to permit removal of the upper cover.

3,186,177
SAFETY DEVICE FOR EXCAVATIONS
August J. Kannenberg, 219 W. Salem, Indianola, Iowa
Filed Mar. 1, 1962, Ser. No. 176,557
4 Claims. (Cl. 61—41)

1. An adjustable shoring device for temporarily supporting the sides of an excavation, comprising; two side

sheets having top, bottom, and end edges, U shaped channels extending substantially from top to bottom of said sheets, one channel at each end of each sheet, said channels secured to said sheets with the sides of the channels substantially at right angles to the sheets forming grooves, the sheets arranged side by side with said grooves opposite and facing each other, each channel having a hole extending through both sides near the top of the channel, and an identical hole near the bottom of the channel, two pairs of cross struts, the struts of each pair being pivotally secured together near their centers, each strut having a hole through each end, one pair of cross struts located at each end of the pair of sheets with one end of each cross



strut in a groove near the top of said groove, and the other end in the opposite groove, near the bottom of said groove, a plurality of pins, a different pin passing through each hole in each end of a strut and through the corresponding holes in a channel.

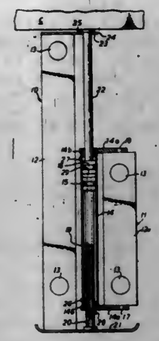
2. The combination of claim 1, which includes extendable safety bars extending between the upper edges of the side sheets.

and causing motion of the carriage along the axis of the bed with rotation of the screw; and

means on said carriage comprising a cross slide guideway, the guideway extending transverse to the axis of the bed and being oriented at an acute angle to the vertical.

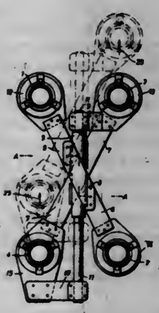
3,186,178
ROOF SUPPORTS FOR MINES
Archelaius D. Allen, Shevington, near Wigan, England, assignor to Gullick Limited, Wigan, England, a British company
Filed July 31, 1961, Ser. No. 127,979
Claims priority, application Great Britain, Sept. 9, 1960, 31,114/60
7 Claims. (Cl. 61—45)

1. A self-advancing mine roof prop comprising a pair of horizontally elongated, longitudinally extending roof support members, a single hydraulic forwardly advancing means connecting said members in side-by-side relation for location adjacent a forwardly positioned conveyor, said advancing means including a longitudinally extending cylinder, a pair of opposed pistons in said cylinder having forwardly and rearwardly extending rods of substantially equal length which protrude from opposite longitudinal ends of the cylinder, said cylinder being operatively connected with one of said roof support members for forward longitudinal movement of said one member relative to the other member and the rearwardly extending rod being operatively connected with the other of said roof support members for independently moving said other member longitudinally forward relative to said one member, the forwardly extending rod being guidingly supported by said other roof support member and having its forward end movable forwardly beyond said other member a selected distance corresponding to the desired forward advance of a conveyor when engaged by said end, and said pistons each



being slidable in said cylinder with a stroke at least equal to said selected distance.

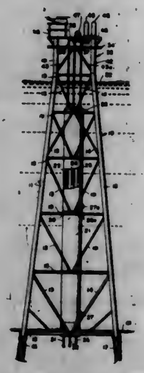
3,186,179
ADVANCEABLE MINING SUPPORT ARRANGEMENT
Wolfgang Vetter, Lunen, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Westphalia, Germany, a German corporation
Filed Apr. 10, 1962, Ser. No. 186,512
Claims priority, application Germany, Sept. 6, 1961, G 33,072
15 Claims. (Cl. 61—45)



1. Advanceable mining support arrangement with adjustable pit prop means for engaging the mine ceiling and mine floor, which comprises moving means having a forward and a rearward end and including a double-acting piston-cylinder arrangement, first prop means positioned adjacent said forward end on one side of said moving means and second prop means positioned adjacent said rearward end on the opposite side of said moving means, said first and second prop means together forming a prop set and being connected with the piston of said moving means for simultaneous forward and rearward movement, and third prop means positioned adjacent said forward end on said opposite side of the moving means and fourth prop means positioned adjacent said rearward end on said one side of said moving means, said third and fourth prop means together forming a prop set and being connected with the cylinder of said moving

means for simultaneous forward and rearward movement alternately with the movement of said first and second prop means.

3,186,180
OFFSHORE WELL DRILLING AND OIL STORAGE PLATFORM
Clifford A. Swanland, Jr., Metairie, La., and Christian H. Stoeckhausen, Jr., Midland, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 25, 1963, Ser. No. 275,607
4 Claims. (Cl. 61—46.5)



1. An offshore platform structure for extending from the bottom of a body of water to above the surface of the water comprising,

a plurality of tubular legs of a length greater than the water depth and cross-braced together in a framework having a configuration with a closed periphery, said tubular legs slanting downwardly and outwardly from a center line through the platform structure whereby the base of the structure encloses a larger area than the top of said structure,

a large-diameter tank extending longitudinally substantially the length of the legs of the structure and cross-braced thereto in the center of the structure entirely within the framework formed by said legs, the top of the tank being below the top of said structure a distance sufficient to be below the most violent wave action when the structure is in position on the bottom of the body of water,

said tank being closed and having a buoyancy sufficient to float the entire structure in a body of water, the interior of the tank being open to movement of fluid in both directions substantially throughout its entire length,

at least one of the tubular legs being closed at the ends thereof providing an outrigger buoyancy tank in contact with the water preventing rotation of said platform structure about its longitudinal axis when floating in water,

a plurality of longitudinally-extending conduits carried in said tank and extending the length thereof,

removable closure means closing both ends of said conduits in a fluidtight manner so that the conduits form auxiliary buoyancy chambers,

said conduits being of a diameter sufficient to carry out well drilling operations therethrough,

port means through the wall of said tank for flooding said tank from the lower end thereof thereby causing the tank and structure to tilt bottom down to a vertical position within a body of water, and

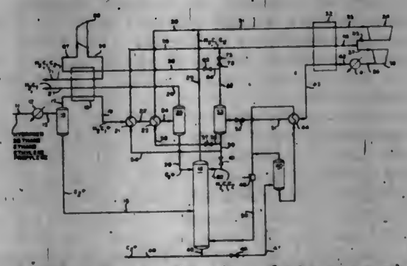
first conduit means for admitting oil to said tank and second conduit means for admitting water to said tank to displace the oil therefrom.

3,186,181
FILLING OF PILE SHELLS WITH CONCRETE
Richard K. Snow, Westwood, George J. Gendron, Oradell, and Lindsey J. Pharez, Butler, N.J., assignors to Raymond International Inc., New York, N.Y., a corporation of New Jersey
Filed Oct. 18, 1962, Ser. No. 231,519
2 Claims. (Cl. 61—53.5)



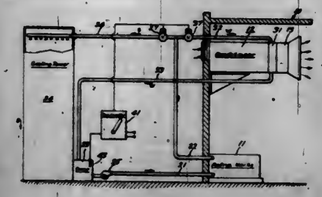
1. Method for introducing concrete into pile shells and the like after same have been installed in the earth and which are of such extensive depth that the rock of the concrete mixture, if poured in at the top, would become excessively segregated from the grout by reason of air turbulence in the shell, said method comprising: first forming a compact slug of the concrete mixture at the upper end of the pile shell, said slug being smaller than the shell in cross-section and being elongated with its lower end as formed at a region spaced from the bottom of the shell by a distance at least several times greater than the length of the slug; then releasing said slug and allowing same to drop, while same remains as an integral compact mass, to the bottom of the shell; and forming and dropping like successive compact slugs until the shell is filled to the desired depth.

3,186,182
LOW-TEMPERATURE, LOW-PRESSURE SEPARATION OF GASES
Ugo C. Grossmann, Seuzach, Zurich, Switzerland, and John J. Moon, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,348
7 Claims. (Cl. 62—26)



1. A method for demethanizing a feed gas comprising methane, ethylene, ethane, propylene and hydrogen, comprising chilling said feed gas in a first indirect heat exchanging zone to a temperature sufficiently low to condense a major portion of the C_2^+ hydrocarbon contained in said feed gas at a superatmospheric pressure and thereby produce a first uncondensed gas stream and a first liquid condensate stream; passing said first liquid condensate stream into a fractionation zone; passing said first uncondensed gas stream through second, third and fourth indirect heat exchanging zones in series and therein chilling said first uncondensed gas stream to a temperature sufficiently low to condense substantially all of the C_2^+ hydrocarbons contained in said first uncondensed gas stream and thereby produce a second uncondensed gas stream and a second liquid condensate stream, passing said second uncondensed gas stream through said second indirect heat exchanging zone in indirect heat exchanging relationship with said first uncondensed gas stream; passing said second liquid condensate stream into said fractionation zone; withdrawing an overhead vapor stream from said fractionation zone; admixing a first heated fluid with said overhead vapor stream to form a first combined stream; passing said combined stream through a fifth indirect heat exchanging zone wherein said combined stream is heated; compressing the thus heated first combined stream in a first compressing zone; admixing with the thus compressed heated first combined stream a second heated fluid to form a second combined stream; compressing said second combined stream in a second compressing zone; passing the thus compressed second combined stream in indirect heat exchange with cooling water and then through said fifth indirect heat exchanging zone in indirect heat exchanging relationship with said first combined stream thereby chilling said compressed second combined stream; withdrawing a bottoms stream from said fractionation zone, passing at least a portion of said bottoms stream in indirect heat exchanging relationship with the thus chilled compressed second combined stream to further cool said thus chilled compressed second combined stream; flashing the thus further cooled compressed second combined stream to produce a third uncondensed gas stream and a third liquid condensate stream; passing a first portion of said third liquid condensate stream through said third indirect heat exchanging zone in indirect heat exchanging relationship with said first uncondensed gas stream; admixing the thus warmed first portion of said third liquid condensate stream with a first portion of said third uncondensed gas stream to form a third combined stream; passing said third combined stream through said fifth indirect heat exchanging zone in indirect heat exchanging relationship with said first combined stream and to the step of admixing with the thus compressed heated first combined stream a second heated fluid as the source of said second heated fluid; flashing a second portion of said third liquid condensate stream; passing the thus flashed second portion through said fourth indirect heat exchanging zone in indirect heat exchanging relationship with said first uncondensed gas stream and then to the step of admixing a first heated fluid with said overhead vapor stream as the source of said first heated fluid; flashing a third portion of said third liquid condensate stream; passing the thus flashed third portion into said fractionation zone as reflux therefor; passing a second portion of said third uncondensed gas stream through said second indirect heat exchanging zone in indirect heat exchanging relationship with said first uncondensed gas stream; expanding the thus heated second portion of said third uncondensed gas stream; passing the thus expanded heated second portion of said third uncondensed gas stream through said second indirect heat exchanging zone in indirect heat exchanging relationship with said first uncondensed gas stream; said bottoms stream comprising substantially all of the C_2^+ hydrocarbons introduced into said fractionation zone; and said third uncondensed gas stream containing substantially all of the methane introduced into said fractionation zone.

3,186,183
AIR CONDITIONING SYSTEM
John P. Murdoch, 204 Glenn Road, Ardmore, Pa.
Filed Nov. 20, 1964, Ser. No. 412,647
4 Claims. (Cl. 62—183)

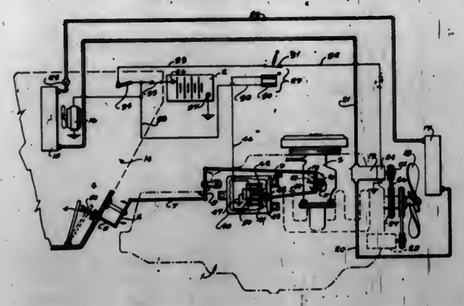


1. In an air conditioning system for use in buildings having refrigerated compartments, equipment, and the like therein, said air conditioning system comprising a conditioner for the air in said building and a blower for discharging the conditioned air into said building, said refrigerated compartments, equipment, and the like having at least one refrigerating unit embodying a condenser operable to be cooled by a liquid coolant, a line to supply liquid coolant to said unit, and a line to discharge the heated coolant from said unit, the improvement comprising a normally-open energizable valve in said discharge line, a first branch line connected to said discharge line intermediate said refrigeration unit and said valve, a second branch line connected to said supply line, a reclaimed-heat coil in said air conditioning system adjacent said blower in the path of the air being discharged into the building by said blower, said coil being connected at one end to said first branch line and connected at the other end to said second branch line to form a loop including said supply line, said refrigeration unit, said discharge line, said first branch line, said coil, and said second branch line, energizable means in said loop operable when energized to afford flow therethrough and operable when de-energized to prevent flow through said loop, a controller operable to simultaneously energize and de-energize both said energizable valve and said energizable means, and a thermostat responsive to the temperature of the coolant flowing through said loop downstream of said coil and upstream of said refrigeration unit and operatively connected to said controller, said thermostat being operable to interrupt energization of both said energizable valve and energizable means to thereby interrupt flow of coolant through said loop when the temperature of said coolant rises above a predetermined safe level and to re-energize both said energizable valve and said energizable means when the temperature of said coolant falls a set amount below said safe level.

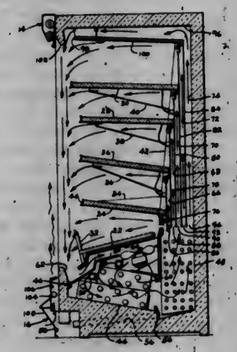
3,186,184
AIR CONDITIONING CONTROL APPARATUS
Cary H. Pruitt, Muskogee, Okla., assignor of one-half to Portable Equipment, Incorporated, Muskogee, Okla., a corporation of Oklahoma
Filed Dec. 23, 1963, Ser. No. 332,772
6 Claims. (Cl. 62—243)

1. A control for mounting on an automobile and the like having an internal combustion engine and a fuel metering device with an engine controlling movable throttle valve, said automobile having refrigeration apparatus including a refrigerant compressor, said control comprising: clutch means for operably connecting said compressor and said engine for selectively driving and declutching said compressor, and control means for operably associating with said throttle valve for moving therewith between an engine idle and engine operative position, said control means being operably associated with said clutch means and responsive to attaining said idle

position for translating said clutch means into declutched condition, said control means being responsive to movement to an engine operative position for translating said clutch means into driving condition.

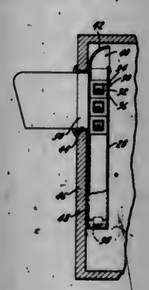


3,186,185
REFRIGERATED DISPLAY UNIT
George K. Beatly and Glenn W. Mathis, Kendallville, Ind., assignors to McCray Refrigerator Company, Inc., Kendallville, Ind., a corporation of Indiana
Filed Jan. 3, 1963, Ser. No. 249,167
10 Claims. (Cl. 62—255)



1. An upright refrigerated display unit comprising a plurality of sections, each of said sections comprising a plurality of vertically spaced shelves, each having uninterrupted upper and lower surfaces, means for removably supporting said shelves above one another and enabling each shelf to be vertically adjusted, means forming a plurality of vertically disposed ducts behind said shelves and forming rear walls for the spaces between said shelves, means forming an orifice for each of said ducts to control flow therethrough, means forming an outlet in the rear wall between each adjacent pair of shelves, each outlet being closer to the upper one of the pair of shelves, all but one of said vertical ducts terminating at separate outlets, each of said outlets including a plurality of vanes directed slightly downwardly and positioned to intercept approximately equal amounts of air flowing through the associated duct, means forming an additional outlet above the front edges of said shelves and connected to the remaining duct to direct a curtain of cold air downwardly in front of said shelves, means forming an inlet at the front edge of the lower shelf, a passage connecting said inlet with said vertical ducts, fan means and cooling means in said passage to move the air from said inlet toward said vertical ducts and to cool the air, drain means communicating with said passage to drain water resulting from melted frost accumulated on said cooling means, a heating device near said drain means to prevent the water from freezing, means forming an upright passage outside said inlet, heating means in said upright passage to establish an upwardly moving curtain of warm air outside the curtain of cold air, a heating element at the lower surface of each of said shelves below which there is a cold air outlet, a price tag molding at the front edges of at least some of said shelves, an additional heating element behind each of said price tag moldings, flexible means to connect said heating elements to an electrical supply outlet in each of said sections for each of said shelves having a heating wire to supply current through the heating elements, whereby each of said shelves can be adjusted vertically without interrupting the electrical connections and can be removed from the section, a roller rotatably supported in front of and above said shelves, and a curtain finer than 100 mesh mounted on said roller for retraction thereon and for movement downwardly in front of said shelves and between the cold and warm air curtains.

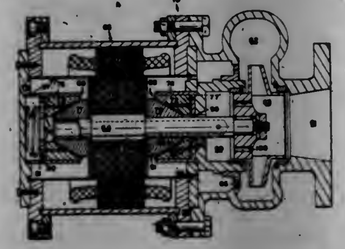
3,186,186
AIR CONDITIONING UNIT FOR VEHICLES
Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Company, Chicago, Ill., a corporation of Illinois
Filed July 12, 1963, Ser. No. 294,672
1 Claim. (Cl. 62—263)



An easily insertable and removable refrigeration unit for storage housings, said refrigeration unit including, in combination,
a condenser assembly,
said condenser assembly being of a size sufficient to be passed outwardly through an aperture in a substantially planar wall from the interior of a storage housing,
a heat exchange assembly,
said heat exchange assembly being operatively connected to and movable with the condenser assembly to thereby form a self-contained unit,
said heat exchange assembly being of a substantially greater cross-sectional area than the condenser assembly to which it is connected,
said heat exchange assembly including an evaporator,
said evaporator being substantially longer and wider than it is thick,

said evaporator being so disposed with respect to the condenser assembly that the minimum thickness of the evaporator is disposed substantially perpendicular to the planar wall to which the assembly is mounted,
said evaporator including air moving means for circulating air in the plane formed by one of the two longest dimensions of the evaporator, and substantially transversely to the minimum dimension of the evaporator,
whereby entrance and exit of air from the evaporator occurs at remote locations and moves along a substantially undeviating path from entrance to exit,
the major portion of said path lying substantially parallel to the wall adjacent the evaporator.

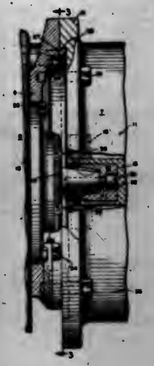
3,186,187
HERMETIC PUMP FOR USE IN REFRIGERATION SYSTEMS
Joseph E. Embury, Memphis, and Louis H. Leonard, Jr., Dewitt, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 184,430
2 Claims. (Cl. 62—483)



1. In an absorption refrigeration system, the combination of an absorber, an evaporator, vapor from the evaporator flowing to the absorber to be absorbed by solution therein, a condenser, a generator, vapor from the generator flowing to the condenser to be condensed therein, condensate from the condenser passing to the evaporator, and means to circulate fluid in said system, said means comprising a pump assembly including a pump housing having an inlet and an outlet, an impeller in said housing, a motor for actuating said impeller, means for directing fluid through said motor to effect cooling thereof, a shaft carrying said impeller and connected to said motor, a bearing supporting the shaft in desired position to permit rotation thereof, said bearing including a fixed member and a spring biased axially movable member secured to said shaft, said members having cooperating tapered surfaces, a plurality of parallel recess means in said fixed member tapered surface, and means communicating said pump outlet with said plural recess means whereby a portion of the fluid pumped is directed to said bearing.

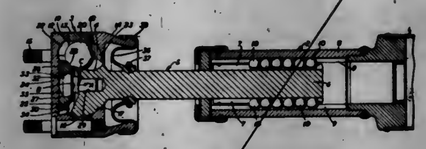
3,186,188
CLOSE-UP COUPLING FOR MOTOR-DRIVEN UNIT
Roy T. Chew, 11322 S. Michigan Ave., Chicago 28, Ill.
Filed Aug. 20, 1962, Ser. No. 217,846
6 Claims. (Cl. 64—4)

1. A close-up coupling for the connection of the aligned shafts of juxtaposed driving and driven units, the end of one of said shafts being axially recessed to receive an end portion of the other shaft, said coupling comprising
(a) a bracket for interposition between the unit housings for connecting one unit housing to the other with the unit shafts in telescoping relation,
(b) a member for concentric telescoping interposition between the opposed ends of the telescoped shafts,
(c) connectors for anchoring the bracket rigidly to the two unit housings, and



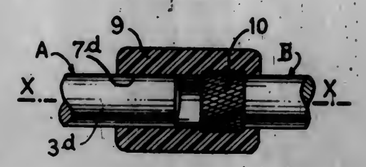
(d) keys drivingly connecting the said member to the respective unit shafts.

3,186,189
UNIVERSAL JOINTS
William Call, Heat Bank, near Lancaster, England, assignor to Birfield Engineering Limited, London, England
Filed Dec. 17, 1962, Ser. No. 245,266
Claims priority, application Great Britain, Dec. 15, 1961, 45,018/61
8 Claims. (Cl. 64—21)



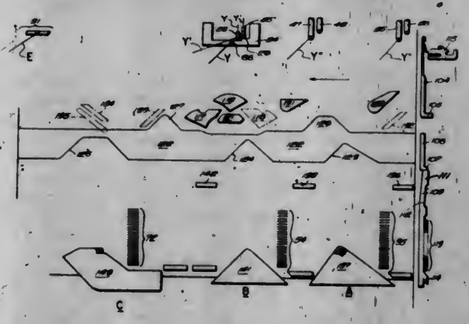
1. A constant velocity universal joint comprising inner and outer joint members having cooperating arcuate ball tracks in which are located torque transmitting balls, means retaining said inner and outer joint members in assembled relationship, said arcuate ball tracks in the inner and outer joint members being respectively centred about different points which are both spaced from and located on opposite sides of the joint centre on the joint axis in the condition of zero joint angle so that the bases of each pair of tracks converge as seen in cross section, whereby the resultant track convergence in use urges the balls on one axial direction, and including a wall member secured to said outer joint member and affording a plane surface perpendicular to the axis of said outer joint member, a guide member which is arranged to slide on said plane surface and which acts on the balls to urge the balls in the axial direction opposite to said one direction to locate the balls axially in relation to the said outer joint member, and guide means connected to said inner joint member and engaging said guide member to position of the latter in accordance with the relative angularity of the inner and outer joint members, and thus maintain the balls in the median plane of the joint.

3,186,190
COUPLING DEVICE
Robert René Maillot, Colombes, France, assignor to Peugeot & Cie, Audincourt, Doubs, France, a corporation of France
Filed Sept. 30, 1963, Ser. No. 312,715
Claims priority, application France, Dec. 20, 1962, 919,265, Patent 1,350,834
2 Claims. (Cl. 64—30)



1. A coupling device for coupling a driving member to a driven member, said device comprising an element of plastics material which is connected to both of said members for the purpose of transmitting a given torque from the driving member to the driven member, the connection between the element and one of said members comprising a smooth cylindrical ground surface on said one of said members and a smooth cylindrical aperture formed in the element which is an interference fit on said ground surface of such class that slip occurs between said one of said members and the element when said given torque is exceeded, the coefficient of expansion of said plastics material being several times greater than that of the material of which said one of said members is composed, whereby when said slip occurs the heat generated by friction causes an expansion of the element which exceeds that of said one of said members and the element progressively uncouples the members as the temperature rises.

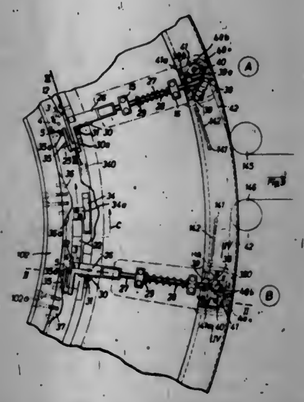
3,186,191
PATTERN MECHANISM FOR CIRCULAR KNITTING MACHINES
Grady E. Garner, High Point, N.C., assignor to Slane Hosiery Mills, Incorporated, High Point, N.C., a corporation of North Carolina
Filed June 10, 1960, Ser. No. 35,214
11 Claims. (Cl. 66—50)



1. In a circular knitting machine having a rotary needle cylinder, a circle of independent needles therein, pattern jacks associated with said needles, a body yarn feed and a set of stitch cams, a needle selecting station adjacent the needle cylinder including, in combination with an elastic yarn feed and a pattern yarn feed, a rise cam for raising selected needles to take the elastic yarn during knitting of a portion of a fabric, a booster cam for raising selected needles to take the pattern yarn during knitting of a different portion of the fabric and a clearing cam to raise the unselected needles to clearing level during knitting of the second mentioned portion of the fabric.

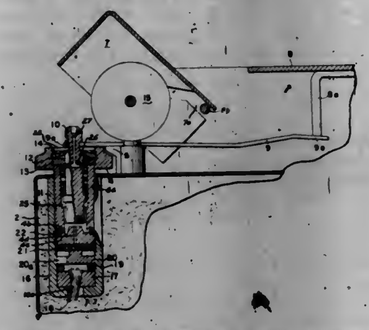
7. In a circular knitting machine having a rotary needle cylinder, a circle of independent needles therein, pattern jacks associated with said needles, a body yarn feed, a pattern yarn feed and a set of stitch cams, yarn clamping and cutting mechanism disposed within the needle circle, said mechanism including body yarn clamping means to clamp inactive body yarns separate from the pattern yarns, yarn cutter means adapted to cut each pattern yarn twice per revolution of the needle cylinder when said yarns are active and pattern yarn clamping means adapted to tension both said body and pattern yarns during cutting of said yarns by the cutting means.

3,186,192
PATTERN SELECTING ARRANGEMENT FOR A CIRCULAR KNITTING MACHINE
Richard Schmidt, Stuttgart-Vaihingen, Germany, assignor to Franz Morat G.m.b.H., Stuttgart, Vaihingen, Germany
Filed May 21, 1962, Ser. No. 196,111
Claims priority, application Germany, June 24, 1958, M 38,032
20 Claims. (Cl. 66—50)



1. A pattern selecting arrangement for a circular knitting machine having a cylinder with cylinder needles, comprising, in combination, lifting cam means shiftable between a plurality of positions for shifting the cylinder needles of the machine to different positions during rotation of the needle cylinder; actuating means shiftable between an inoperative position and a plurality of shifted positions to effect shifting of said lifting cam means between said position of the same; means for moving said actuating means from said inoperative position to said shifted positions; selector means cooperating with said actuating means and being shiftable between a plurality of selecting positions for holding said actuating means in said inoperative position and in each of said shifted positions, respectively; pattern control means for shifting said selector means between said selecting positions thereof; and apparatus adapted to be operated by the needle cylinder of the machine and including a first means for shifting said actuating means to said inoperative position before said pattern control means shifts said selector means, whereupon said actuating means move to one of said shifted positions and are held by said selector means, and a second means for operating said actuating means to shift said lifting cam means to a position corresponding to the selected position of said selector means.

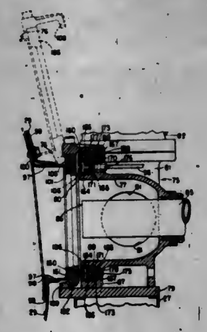
3,186,193
POCKET LIGHTER
Emil Projahn, Nurnberg, Germany, assignor to Gebrüder Köllisch, Nurnberg, Germany
Filed Jan. 2, 1962, Ser. No. 163,846
Claims priority, application Germany, Jan. 12, 1961, K 42,627
3 Claims. (Cl. 67—7.1)



1. In combination in a gas lighter: a tank for receiving fuel which will be gaseous at atmospheric pressure, a nozzle body mounted on said tank threaded internally at its outer end and having a bore at its inner end communicating with the tank, a sleeve threadedly mounted in said body and having a passage therethrough for gas, a nozzle element including a head and a nozzle shank reciprocably mounted in said sleeve, elements of a shut off valve on the inner end of said shank and in the bottom of said sleeve for shutting off gas flow through the sleeve when the nozzle element is pressed inwardly in the sleeve, a spring in the sleeve pressing the nozzle element inwardly therein to close said valve, a passage through said nozzle head and nozzle shank for gas; a dove-tailed recess in the outer end of said sleeve, a diaphragm in said recess sealingly engaging said nozzle head, an ignition wheel carried by the tank adjacent the nozzle head, a press lever on the tank operatively connected with said ignition wheel and movable for actuating said ignition wheel, lever means connected between the nozzle head and said press lever operable for moving said nozzle head and shank against the bias of said spring to open said valve when the press lever is operated to actuate said ignition wheel, means in the nozzle body beneath the inner end of said sleeve adapted for being variably compressed by the sleeve when the sleeve is adjusted in the body to control the rate of gas flow from the tank into the sleeve, a disc on said sleeve outside said body for adjustment of the sleeve in the body, abutment means on the tank on one side of said disc to limit movement thereof in one direction, holding means on the tank for holding said ignition wheel, and second abutment means on said holding means on the other side of said disc to limit the movement thereof in the opposite direction.

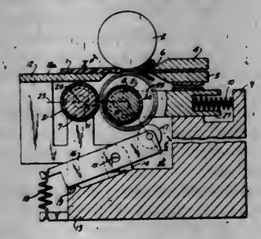
3,186,194
LAUNDRY MACHINE
Hubert C. Ellis, 1210 Lake St., Evanston, Ill.
Filed Apr. 9, 1963, Ser. No. 271,645
2 Claims. (Cl. 68—210)

1. A laundry machine of the self-unloading type comprising a casing within which soiled fabrics are washed in a washing liquid, means for mounting said casing for movement between a first position wherein said washing fluid is introduced into said casing and a second position wherein said fabrics are dumped from said casing, a washing liquid supply conduit having a stationary discharge end, an inlet conduit on said casing in communication with the interior thereof, the outer end of said inlet conduit being in substantial alignment with said discharge end of said supply conduit when said casing is in said first position and being remotely disposed with respect to said discharge end of said supply conduit when said casing is in said second position, said end of one of said conduits having an annular recess therein and extending thereabout and opening outwardly toward said end of the other of said conduits, an annular sealing ring disposed in said recess and including a resilient annular diaphragm extending across the open end of said recess and annular inner and outer legs respectively integral with the inner and outer edges of said diaphragm and extending therefrom into said recess, an annular retaining ring disposed



in said recess between said legs and urging said legs into sealing engagement with the walls of said recess and forming a pressurizable chamber between said sealing ring and said retaining ring, said diaphragm having an outer surface naturally biased into a concave position when unstressed and disposed within said recess and away from said other conduit, and means for alternately pressurizing said chamber to expand said diaphragm forcefully outwardly against the end of said other conduit to provide a liquid-tight seal therebetween and depressurizing said chamber to permit said diaphragm to return to its concave position to permit unobstructed movement of said casing out of said first position and into said second position.

3,186,195
TRANSPORTING ARRANGEMENTS FOR LEATHER AND SIMILAR MATERIALS
Dieter Braun, Stuttgart-Bad Cannstatt, Germany, assignor to Fortuna-Werke Spezialmaschinenfabrik A.G., Stuttgart-Bad Cannstatt, Germany
Filed May 31, 1963, Ser. No. 284,580
Claims priority, application Germany, Dec. 16, 1959, F 30,093
32 Claims. (Cl. 69—10)



1. A transporting arrangement comprising, in combination, an abutment roller; a plurality of rings having outer peripheral surfaces disposed opposite said abutment roller for transporting a workpiece; a first inner drive roll passing through said rings and having an outer diameter smaller than the inner diameter of said rings; a second

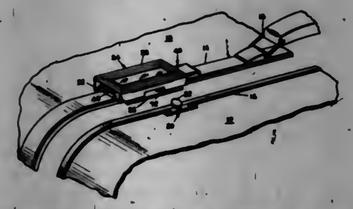
outer drive roll adjacent said outer peripheral surfaces of said rings, at least one of said drive rolls being driven to rotate; first biasing means for urging said first drive roll toward said second drive roll so that said first drive roll engages the innersurfaces of said rings and urges the same against said second drive roll whereby said rings rotate; and a plurality of second biasing means for respectively urging said rings toward said abutment roller whereby a workpiece between said abutment roller and said rings is transported while each ring is capable of yielding to irregularities of said workpiece.

3,186,196
PLUNGER-TYPE LOCK
Sigurd M. Moberg, East Orange, N.J., assignor to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey
Filed Aug. 7, 1963, Ser. No. 300,459
1 Claim. (Cl. 70—34)



A plunger-type lock comprising:
a body element which includes;
a cylindrical shank and
a first enlarged head disposed at the upper end of said shank and formed with a first key-member-receiving coaxial bore extending completely therethrough;
a second enlarged head removably applicable to a lower-end portion of said shank to substantially enclose said lower-end portion;
detent means coacting between said shank and said second head for locking the latter upon said shank;
a plunger formed at its upper end with a cylindrical wall which is slidable in intimate relation to an inside cylindrical surface of said shank to support the plunger for sliding axially between a locking position in which a detent-holding portion of the plunger, located intermediate the plunger's ends, coacts with said detent means to effect the latter's locking of said second head upon said shank and a non-locking position in which a detent-releasing portion of the plunger, also located intermediate the latter's ends, coacts with said detent means to cause the latter to release said second head for removal from said shank,
said plunger being formed with an integral extension at its lower end,
said cylindrical wall defining therewithin a key-member-receiving second coaxial bore therein opening at the plunger's upper end in alignment with said first bore; and
a coil spring extending about said extension and within a lower-end portion of said shank and coacting with the latter and with an abutment on said plunger to urge the latter yieldably toward its said locking position,
said lower-end portion of the shank and said extension and spring being enclosed within the second head when the latter is locked upon the shank to protect said lower-end shank portion against damage, the thickness of the lock between the plunger surface defining said second bore and the outer surface of the shank being limited by the size of the key to be used with the lock and the diameter of an opening in a member with which the lock is to be used, and said thickness being made up solely of said cylindrical wall of the plunger and a wall portion of the shank within which said plunger wall is slidable, and the wall portion of the shank within which said cylindrical wall of the plunger is slidable being reinforced by its intimacy with said cylindrical wall.

3,186,197
LUGGAGE LOCK
Charles S. Gehrie, Montclair, N.J., assignor, by mesne assignments, to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed May 25, 1962, Ser. No. 197,739
9 Claims. (Cl. 70—71)

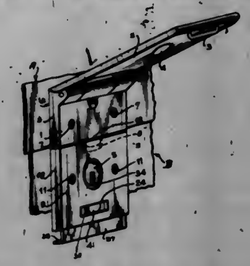


1. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed hasp on the other luggage member, said luggage lock including an elongated tunnel member adapted for fixed mounting along the edge of one luggage member and having a lateral opening for admitting a hasp mounted on the companion luggage member, and a slide longer than the tunnel member captive in said tunnel member and movable longitudinally therein bodily from hasp-retaining position to hasp-releasing position and vice versa, said slide projecting from only one end of the tunnel member when the slide is in hasp-retaining position and projecting from only the opposite end of the tunnel member when the slide is in hasp-releasing position whereby the slide has an externally engageable operating portion in all positions thereof accessible for manual operation, said slide having a hasp-retaining detent fixed thereto for movement across said hasp-admitting opening and being selectively operable by said slide into a hasp-retaining position and a hasp-releasing position.

3,186,198
FASTENER DEVICE FOR BRIEFCASES AND THE LIKE
Ernst Noerrenberg-Sudhaus, Iserlohn, Germany, assignor to Heinrich Sudhaus Soehne, Iserlohn, Germany
Filed Aug. 1, 1962, Ser. No. 213,979
Claims priority, application Germany, Aug. 19, 1961, S 75,376
12 Claims. (Cl. 70—74)

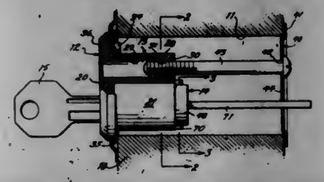
7. A closure device, particularly for use on briefcases and similar receptacles, comprising a hollow housing having an aperture; a spring-biased carrier reciprocably mounted in and having handgrip means extending from said housing, said carrier comprising a staple which tends to assume an operative position of at least partial alignment with said aperture and which is movable by said handgrip means to a retracted position, said carrier further having a portion extending in a direction away from said aperture; a hasp having an eye insertable into said aperture when the staple is retracted to assume a position of registry with the staple so that the latter may move into engagement with the eye; an elastically deformable plate-like catch mounted in said housing and having an

aperture normally receiving said portion of the carrier in the retracted position of said staple to hold the latter against movement to said operative position, said catch normally extending into the path of said eye and being automatically disengaged by the eye from said portion of the carrier when the eye assumes said position of registry



with the staple whereby the staple is free to move to said operative position and engages the eye as soon as the eye is moved into said position of registry with the staple; and key-operated lock means mounted in said housing for locking the carrier when the staple assumes said operative position.

3,186,199
LOCK CONSTRUCTION
Jerome Schwartz, Philadelphia, Pa., assignor to Taylor Lock Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1963, Ser. No. 274,147
6 Claims. (Cl. 70—370)

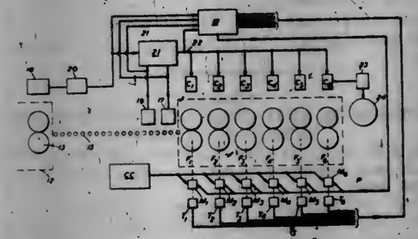


1. In a lock-cylinder construction for installation in a door, the combination comprising a housing having a longitudinally extending cylindrical through bore and at least one longitudinally extending through hole generally parallel to and spaced from said bore and of a length substantially equal to that of said bore, said housing being adapted for location in a door with one housing end adjacent to one side of the door, flange means on said one housing end for retaining relation with said one door side, a rotary plug inserted in said bore through said one housing end and having a portion projecting beyond the other housing end, said plug being fabricated of resiliently distensible material, a pin of constant cross section force fit in said projecting plug portion to resiliently distend the latter and retain said plug in said bore, and threaded tie means in retaining relation with the other door side and extending into threaded engagement within said housing hole, whereby a single length of tie means is usable with a maximum range of door thicknesses.

3,186,200
AUTOMATIC THICKNESS REGULATOR FOR STRIP ROLLING MILLS
Hugh S. Maxwell, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,086
15 Claims. (Cl. 72—8)

1. The combination, for use in a rolling mill in which strips of material are rolled under pressure in succession to reduce the thickness thereof to a desired dimension, of means to measure any variation in thickness of each strip from said desired dimension as the strip leaves the mill, and means to store said variation during periods between the rolling of successive strips for controlling the pressure applied in rolling each strip in response to said variation in thickness of the last previous strip as determined by said last means thereby to maintain successive strips of more uniform thickness.

3,186,201
PRODUCTION OF METAL STRIP
Leslie Carter Ludbrook, Bilton, Rugby, and Raymond Bernard Sims, Sheffield, Yorkshire, England, assignors to Steelworks Automation Limited, a British corporation
Filed June 21, 1961, Ser. No. 118,548
19 Claims. (Cl. 72—9)

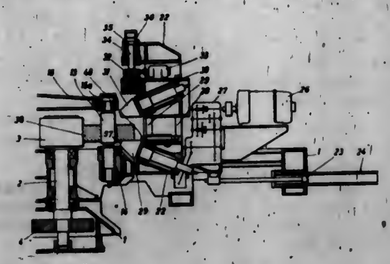


1. For a rolling mill having a plurality of stands, manually operable setting means for each said stand effective to control the roll separation of that stand, and a delay table for receiving the metal to be rolled prior to entry thereof to the first said stand; a control system for setting up said stands prior to entry of said metal to the first said stand comprising means located adjacent said delay table and responsive to the width of said metal, means also located adjacent said delay table and responsive to the temperature of said metal, means responsive to the thickness of said metal on said delay table, means manually settable to assumed values of width, temperature and thickness of said metal, a computing circuit controlled by said width, temperature and thickness responsive means and by said means settable to said assumed values, said computing circuit giving an output signal according to the departures of said width, temperature and thickness from said assumed values, and means controlled by said output signal for altering the roll separations of said stands in dependence on said departures.

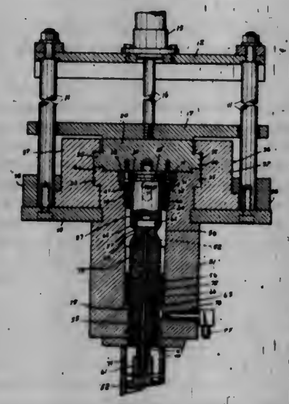
3,186,202
RING ROLLING MACHINE
Otto Ulrych, Dortmund-Hoerde, Germany, assignor to Wagner & Co., Werkzeugmaschinenfabrik, m.b.H., Dortmund, Germany
Filed Dec. 18, 1962, Ser. No. 245,601
Claims priority, application Germany, Dec. 22, 1961, W 31,340
21 Claims. (Cl. 72—10)

1. A ring rolling machine comprising, in combination, first roller means for engaging and rolling the inner and outer peripheral surfaces of an annular blank for increasing the diameter of the same; second roller means for engaging and rolling portions of the axial end faces of the annular blank; supporting means supporting said second roller means for movement in the direction in which said portions of said axial end faces move as the diameter of said annular blank increases due to the rolling action of said roller means; sensing means for engaging one of said peripheral surfaces of said annular blank and being movable so as to be displaced by the blank as the diameter of the same increases; and control means controlled by said sensing means and operatively connected with

said supporting means for causing movement of the same in said direction at different speeds related to the displacement of said sensing means in such a manner that said second roller means move with said portions of axial end faces as the diameter of said annular blank increases.



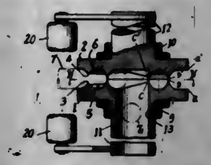
3,186,203
METHOD OF AND APPARATUS FOR FORMING TUBULAR MEMBERS
Francis E. Brady, Jr., and Pearson L. Johnson, Muncie, Ind.; said Johnson assignor, by mesne assignments, to said Brady
Filed May 9, 1960, Ser. No. 27,661
8 Claims. (Cl. 72—56)



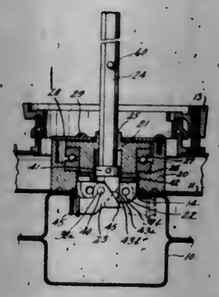
1. A device for forming a neck in a tubular member comprising a mandrel having a cavity opening at one end, a second mandrel having a reduced end portion reciprocably received in said cavity, said mandrels being arranged in such a manner that the tube may be received thereabout, means for exerting pressure on the outer surface of said tube, and means for withdrawing said reduced end portion of said second mandrel from said cavity and for exposing said reduced end portion to the inside of said tubular member.

3,186,204
BALL ROLLING APPARATUS
Takefusa Kikuchi, 372 3-chome, Musashino-shi Sakai, Tokyo-to, Japan
Filed Apr. 4, 1963, Ser. No. 270,711
Claims priority, application Japan, July 26, 1962, 37/31,706
5 Claims. (Cl. 72—89)

1. An apparatus for roll forming balls, comprising a first circular disc having on its working surface a spiral ridge of gradually increasing height and decreasing width from its periphery to the center thereof defining an adjacent spiral groove of gradually increasing depth and increasing width, a second circular disc positioned in facing relationship to said first circular disc, said second disc having the same size and shape as said first disc, means rotatively supporting said discs in facing spaced relationship so that the tips of the highest regions of said spiral ridges approach contact with each other, and means to rotate said discs in opposite directions at equal angular velocities.



3,186,205
SWAGING TOOL
Edward B. Clark, Milford, and William Hamilton III, Monroe, Conn., assignors, by mesne assignments, to Jones and Laughlin Steel Corporation
Filed Nov. 1, 1961, Ser. No. 149,383
12 Claims. (Cl. 72—125)

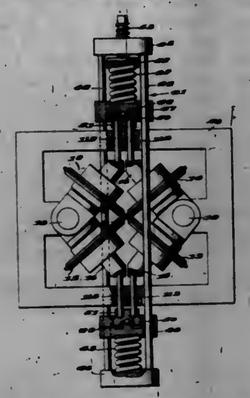


1. A swaging tool comprising: an outer housing, a collar having an opening therein and rotatably supported within said housing, a swaging element having a free end and a cam end, said element pivotally attached between said free end and said cam end to one end of the collar, an axially movable drive shaft extending through and engaging an opening in said collar to drive said collar, and one end of said shaft adapted to engage said swaging element as the shaft is axially moved towards the swaging element to cause the swaging element to be pivoted so that the free end of said element is moved to swaging position.

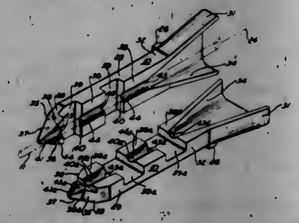
3,186,206
METHOD AND APPARATUS FOR THE MANUFACTURE OF REINFORCING BARS
Johannes Gillberg, Svevagvagen 122, Stockholm, Sweden
Filed June 19, 1961, Ser. No. 118,137
Claims priority, application Germany, June 21, 1960, G 29,905
3 Claims. (Cl. 72—194)

1. Apparatus for making reinforcing bars comprising at least one pair of oppositely disposed cooperating circular and freely rotatable stamp disks adapted to be urged against a steel bar passing therebetween, each stamp disk having circumferentially spaced apart radially protruding stamp dies adapted to engage said bar and form impressions therein, said dies extending obliquely to the circumferences of said disks and said disks being each independently mounted and a feed device positioned behind said stamp disks for pulling a steel bar between said stamp disks, said feed device comprising two oppositely

disposed drive rolls having spaced apart peripheral rounded obliquely extending dogs adapted to engage said bar and said rolls being coupled to be driven at the same peripheral speed.

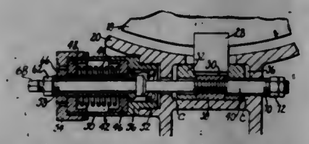


3,186,207
GUIDE FOR ROLLING MILLS
Anthony J. Schmitt, 158 Ida Ave., Donora, Pa.
Filed Feb. 8, 1962, Ser. No. 172,005
8 Claims. (Cl. 72—250)



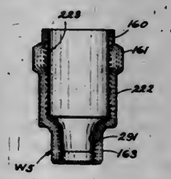
7. A guide for rolling mills or the like having a pass line for rod, wire or bar work, comprising, in combination, a guide member having a guide passage for said work, said passage having bearing surface areas therein on opposite sides of said pass line shaped to conform to the shape of the respective sides of said work, each bearing surface area extending for a relatively short length along said passage, each bearing surface area on each side being alternated longitudinally with a relief space, and the bearing surface areas on one side being opposite to a relief space on the other side of said pass line.

3,186,208
MULTI-CONTAINER PRESSES
Herbert John Samuel, Northbourne, Bournemouth, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain
Filed Mar. 30, 1962, Ser. No. 183,953
4 Claims. (Cl. 72—263)



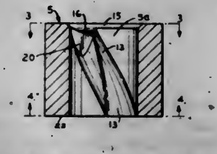
1. A press having containers for receiving heated metal billets, carriers for said containers which are rotatable about an axis parallel to the axis of the containers, housings in said carriers which encircle said containers with radial clearance and means spaced about their circumference to support said containers in their housings, said supporting means comprising members which are radially displaceable relative to the containers and tangentially displaceable relative to said housings.

3,186,209
METHOD OF COLD FORMING AN ELONGATED HOLLOW ARTICLE
Robert G. Friedman, Tiffin, Ohio, assignor to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio
Filed Apr. 14, 1960, Ser. No. 22,142
9 Claims. (Cl. 72—334)



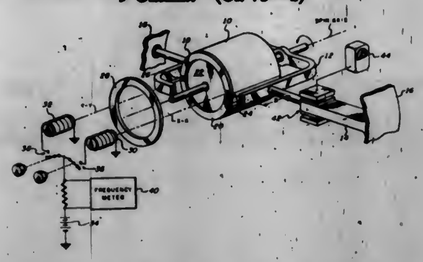
1. The process for making a ferrous metal spark plug shell which comprises cutting a cylindrical blank from rod stock, pressing the cut blank axially in a die having a gradually reduced diameter to partially point one end of the blank, thereafter extruding said partially pointed end of the blank for less than half of the length of the blank and axially pressing the blank from opposite ends to form a recess in the un-extruded end of the blank, thereafter extruding said extruded end of the blank a second time and piercing substantially unworked metal of said blank adjacent the recessed end of the blank outwardly into a hex die, thereafter extruding substantially unworked metal of the blank between that portion which has been spread into a hex die and said extruded end of the blank along an extruding punch to form a cylindrical cup in the major portion of the blank, and thereafter punching out the web from the portion of the blank which was twice extruded.

3,186,210
EXTRUSION DIE
Robert D. Lesher, East Cleveland, Charles W. Clark, Berea, and Richard O. Konopka, Wickliffe, Ohio, assignors to The Cleveland Twist Drill Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 21, 1963, Ser. No. 252,920
5 Claims. (Cl. 72—467)



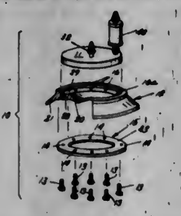
1. An extrusion die comprising a block formed with a central opening extending axially from one end thereof to the other, such opening being interrupted by at least one helical land but being otherwise generally cylindrical in shape; a countersunk entrance leading to said opening, the countersunk portion thereof being faired into the surface defining the proximate end of the land; and a flat, generally U-shaped relief extending along one side of the land from a zone adjacent said countersunk entrance in a direction paralleling the central axis of said opening.

3,186,211
SELF CHECKING GYROSCOPIC APPARATUS
Charles B. Reed and Clair G. Sutter, Phoenix, Ariz., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,780
9 Claims. (Cl. 73—1)



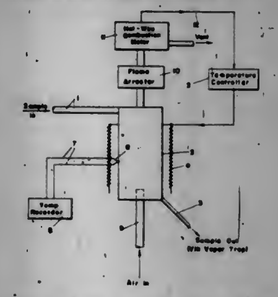
1. Gyroscopic apparatus comprising gimbal means, a rotor supported for rotation by said gimbal means, magnetic material placed in a discrete location on said rotor at a place spaced from the rotor axis of rotation, whereby the reluctance at any point near the rotor is varied periodically as said rotor rotates, conductive material supported by the rotor and disposed to sandwich the magnetic material between the rotor and the conductive material, and electromagnet means the field of which has its axis substantially parallel to but radially displaced from the rotor spin axis, said electromagnet field axis being substantially in a plane other than the plane of the rotor spin axis which is perpendicular to the gimbal axis of rotation, said electromagnet means being adjacent the rotor face having the magnetic material secured thereto whereby excitation of said electromagnet means exerts a torque which tends to rotate the rotor about an axis perpendicular to its spin axis and the current drawn by the electromagnet means is modulated as a function of the rotor speed about its spin axis.

3,186,212
ANNULAR RING SUCTION CUP TESTING AND HOLDING MEANS
Sam Sharko, Bayside, N.Y., assignor to Intercontinental Dynamics Corporation, Englewood, N.J., a corporation of New Jersey
Filed Dec. 15, 1959, Ser. No. 859,652
1 Claim. (Cl. 73—4)



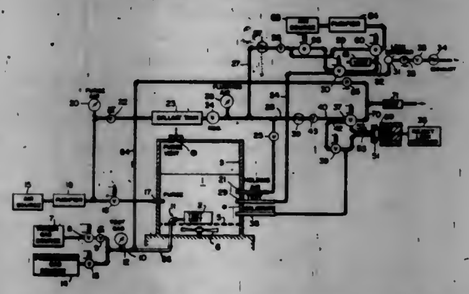
In a device of the class described, a member formed as a closed loop having a trough-like cross-section and constructed of resilient material; said member having an inner wall, an outer wall, and an intermediate wall joining said inner and said outer walls; a rigid disk; means providing a fluid tight connection securing said plate to said member at its said intermediate wall; said disk and said inner wall defining a first region; the walls of said member defining a second region; means secured to said disk and having a passage communicating with said first region and adapted to be connected to a first controlled pressure source; check valve means secured to said disk and including an entrance communicating with said second region; said check valve means also including an exit and a passage interconnecting said exit to said entrance when said check valve means is open; said check valve means being open when pressure within said second region exceeds pressure at said exit; said inner wall being of lesser height than said outer wall to facilitate mounting upon a curved surface; said first and said second walls being oppositely flared and being most widely spaced along their free ends; said second region being of a substantial volume as compared to the volume of the first region.

3,186,213
FLASH POINT ANALYZER
Conard K. Donnell, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Oct. 15, 1963, Ser. No. 316,420
3 Claims. (Cl. 73—36)



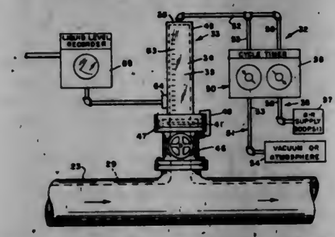
1. A flash point analyzer comprising a sample chamber, means for flowing a sample of a combustible liquid into said chamber, controllable means for heating said chamber to cause it to act as a flash vaporizer for said liquid, a hot-wire combustion meter separate from said chamber and spaced therefrom, means providing a gaseous flow path between said meter and the interior of said chamber; said meter operating to ignite the combustible gaseous mixture reaching the same solely by way of said flow path and to produce a signal proportional to the concentration of combustible vapor in such mixture; and means receptive of said signal for controlling said heating means in dependence upon said signal.

3,186,214
LEAK TEST STATION
John A. Roberts, Lynnfield Center, Mass., assignor to General Electric Company, a corporation of New York
Filed July 29, 1963, Ser. No. 298,118
15 Claims. (Cl. 73—40.7)



7. Apparatus for selectively connecting a tracer-gas detector to a test enclosure which contains a unit under leakage test while maintaining the connecting lines free of accumulations of tracer gas comprising a first source of purified air, an inlet to said test enclosure for extracting samples therefrom, a first line having a first valve operable to a first condition for selectively connecting said source of purified air to said inlet, means for detecting said tracer gas, a second line having a second valve operable to a first condition for selectively connecting said source of purified air to said detector, said second valve having a valve seat, means for coupling said valve seat directly to the purified air traversing said first line intermediate said first valve and said inlet, said first valve being operable to a second condition for disconnecting said source of purified air from said inlet, said second valve being operable to a second condition for selectively disconnecting said detecting means from said source of purified air and connecting it to said valve seat whereby said detector is placed in communication with said inlet of said container when said first and second valves are both in their second condition.

3,186,215
FREENESS TESTING APPARATUS AND METHOD
Donald W. Danforth, Andover, Mass., assignor to John W. Bolton & Sons, Inc., Lawrence, Mass., a corporation of Massachusetts
Filed Mar. 6, 1961, Ser. No. 93,593
17 Claims. (Cl. 73—63)

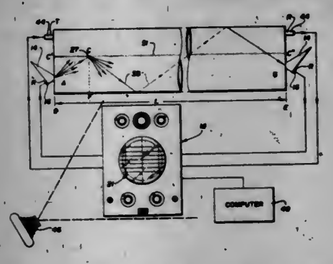


1. Apparatus for testing the freeness of paper stock flowing in a closed paper stock line, said apparatus comprising a vertical standpipe of predetermined height and diameter forming a closed, vertical chamber with an open lower end; means directly connecting the open lower end of said chamber to the interior of said line for incorporating said chamber into said closed paper stock line; a horizontal screen mounted across the base portion of said standpipe chamber for separating the fibres from the liquid of said paper stock; air exhaust means connected to the upper portion of said closed chamber for withdrawing air therefrom to permit liquid from said paper stock line to rise thereinto while said fibres form a mat on said screen; air pressure means connected to the upper portion of said closed chamber for introducing air thereinto to clear said chamber of said liquid and to clear said screen of said matted fibres; automatic cycling means for actuating said air pressure means and said air exhaust means at preselected time intervals, and means, associated with said standpipe, visually comparing the maximum level attained therein by said liquid, during each cycle, with a predetermined liquid level indicia for indicating the relative freeness of said paper stock.

3,186,216
METHOD AND APPARATUS FOR GENERATING AND RECEIVING ULTRASONIC HELICAL WAVES
Ben Wade Oakes Dickinson III, 3290 Jackson St., San Francisco, Calif.
Filed Nov. 9, 1961, Ser. No. 151,331
6 Claims. (Cl. 73—67.5)

1. In a method for the non-destructive testing of tubular objects to determine the existence and location of flaws in the tubular object, introducing an ultrasonic wave train into the wall of the tubular object at an angle to the longitudinal axis and a transverse plane of the tubular object so that the wave train travels in a helical path in the wall of the tubular object, a portion of the ultrasonic wave train introduced into the wall of the tubular object being reflected by the flaw in the tubular object to provide a reflected ultrasonic wave train travelling in the object in a direction or hand which is opposite to the direction of travel of the introduced ultrasonic wave train, scanning the tubular object at a position spaced from the position in which the ultrasonic wave train is introduced into the tubular object until a reflected helical wave train is received, absorbing any unreflected wave trains being received in the vicinity of the reflected wave train, receiving only reflected helical wave trains, and determining the angle at which the reflected wave train is a maximum.

6. In apparatus for use in the non-destructive testing of a tubular object to determine the existence or location of flaws in the tubular object, means for introducing an ultrasonic wave train into the tubular object at an angle to a longitudinal axis and a transverse plane of the tubular object so that the ultrasonic wave train travels in a helical

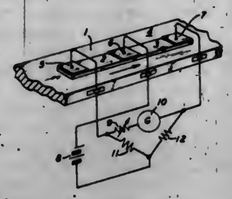


path in the wall of the tubular object, a portion of the ultrasonic wave train introduced into the tubular object being reflected by a flaw in the tubular object to provide a reflected ultrasonic wave train in the object travelling in a direction or hand which is opposite to the direction of travel of the ultrasonic wave train introduced into the tubular object, means for receiving the reflected ultrasonic wave train from the object, means for introducing another wave train into the tubular object which travels substantially parallel to the longitudinal axis of the tubular object, means for receiving the other wave train introduced into the tubular object parallel to the longitudinal axis of the tubular object, means for measuring the length of the tubular object by meausring the elapsed time between the introduction and receipt of the other wave train travelling parallel to the longitudinal axis of the tubular member, and computer means connected to the means for introducing the ultrasonic wave train and the other wave train into the tubular object and to the means for receiving the ultrasonic wave train and the other wave train from the tubular object to compute the position of flaws in the tubular object.

3,186,217
PIEZORESISTIVE STRESS TRANSDUCER
William G. Pfann, Far Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 2, 1960, Ser. No. 73,313
16 Claims. (Cl. 73—88.5)

1. A piezoresistive stress gage comprising at least two active arms of the same piezoresistive semiconductor material and having the same conductivity type, said arms crystallographically oriented in a single gage plane so that for a given single strain direction the piezoresistive coefficient of one of said arms is opposite in sign to the piezoresistive coefficient of the other of said arms, and a

Wheatstone bridge circuit containing each of said arms as an active bridge arm in a bridge relation such that the



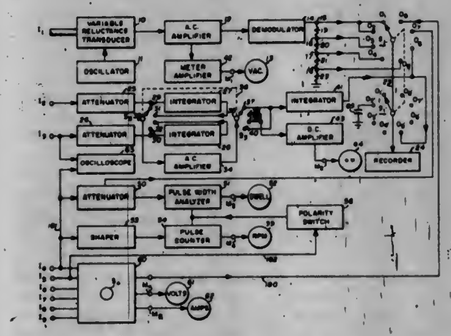
Wheatstone bridge indicates the difference in voltage drops across said arms.

3,186,218

PERFORMANCE TESTING DEVICE AND METHOD FOR INTERNAL COMBUSTION ENGINES

Wilmer B. Hollis, Carmichael, Calif., assignor to Startron Corporation, Mountain View, Calif., a corporation of California

Filed Apr. 9, 1962, Ser. No. 186,831
13 Claims. (Cl. 73—116)



1. A performance testing device for an internal combustion engine to be tested comprising:

(a) variable reluctance transducer means responsive to the instantaneous pressure in the manifold of the engine and operative to provide an electrical pressure signal corresponding to the instantaneous pressure in the manifold, said transducer means having a minimum frequency response equal of the highest anticipated repetition rate of the closing and opening of a valve multiplied by the total number of intake and exhaust valves in the engine.

(b) means responsive to the electrical pulse applied to a selected spark plug of the engine and operative to provide a spark plug signal commensurate in magnitude with the total energy of the pulse and in position with the time of occurrence of the leading edge of the pulse;

(c) means for algebraically adding said electrical pressure signal and said spark plug signal to provide a combined signal; and

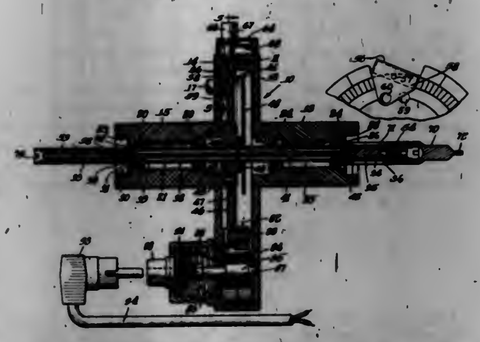
(d) recorder means responsive to said combined signal to provide a continuous visual record of the variations of said combined signal as a characteristic of the engine is changed, said recorder means having frequency response sufficient to provide a visual indication of the pressure changes caused by the opening and closing of the valves of the engine.

3,186,219

TORQUE METER

Edward V. Sundt, 1865 Miner St., Des Plaines, Ill.

Filed Nov. 22, 1960, Ser. No. 71,092
10 Claims. (Cl. 73—136)



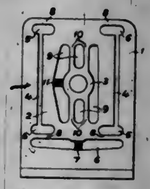
1. A torque meter comprising a stationary supporting means, a driving member rotatably mounted in the supporting means, a driven load member rotatably mounted in the supporting means in alignment with the driving member, a resilient torque transmitting member connected between the driving member and the driven load member for rotating the driven load member upon rotation of the driving member, the angular displacement of the driving member with respect to the driven load member being dependent upon the torque required to drive the driven load member, indicating means including a graduated dial carried by the driving member and a cooperating pointer carried by the driven load member for indicating the angular displacement of the driving member and the driven load member and hence the torque, and a movable stop carried by the disc and engaged on one side or the other thereof by the pointer for zeroing the pointer with respect to the disc and providing for torque measurement for either direction of rotation of the driving member, and damping means including cooperating damping devices carried by the driving member and the driven load member for damping angular oscillations between said members, a stroboscope light for the indicating means, and means controlled by the driving member for firing the stroboscope light upon each revolution of the driving member for stationarily displaying the rotating indicating means.

3,186,220

DEVICE FOR MEASURING FORCES IN TWO OR SEVERAL DIRECTIONS

Rune Flinth, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Feb. 12, 1962, Ser. No. 172,464
Claims priority, application Sweden, Feb. 27, 1961, 2,031/61
3 Claims. (Cl. 73—141)



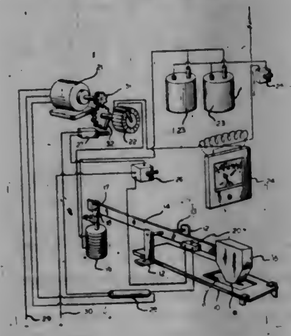
1. Device for measuring forces in at least two directions at angle to each other comprising a holder for supporting an element on which the force to be measured is acting, said holder having a plurality of slots forming an outer portion, an intermediate portion and an inner portion, parts of said holder between said slots forming resilient tongues, said tongues including first tongues supporting said inner portion from said intermediate portion for movement with respect thereto in a first direction, and second tongues supporting said intermediate portion from said outer portion for movement with respect thereto in a second direction perpendicular to said first direction, first force sensitive means engaged between the walls of one of the slots between said inner and intermediate portions, second force sensitive means engaged between the walls of one of the slots between said intermediate portion and said outer portion, said two force sensitive means delivering output signals proportional to the forces acting upon said force sensitive means, said inner portion being provided with means for connection to said element on which the force to be measured is acting.

3,186,221

TAC-METER

Ben R. Stelb, 39 Beach Drive, Pewaukee, Wis.

Filed Sept. 27, 1963, Ser. No. 312,051
1 Claim. (Cl. 73—150)



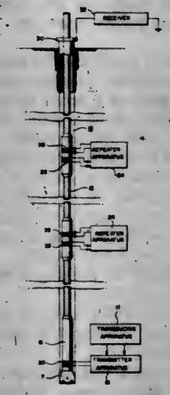
A tac-meter to be used for measuring the cohesive qualities of a liquid comprising: means defining a cavity for holding a sample of liquid of a certain unknown cohesive quality, a pivotally mounted horizontal member having a bead at one end thereof disposed in said cavity, a magnetic coil having a core slidably mounted therein and connected to said horizontal member to pivotally actuate said member to cause said member to raise said head out of said cavity, a rheostat and power means connected in circuit with said magnetic coil to energize said coil, a motor being connected to said rheostat by gear means to vary the resistance offered to current by rotating said rheostat, a first switch means mounted on said pivotally mounted horizontal member and being operatively connected to said motor and power means to turn off said motor and power means when said head is raised from the liquid in said cavity for determining accurately the magnitude of electrical power corresponding to the cohesive qualities of the liquid, a meter coupled in circuit with said coil to measure the amount of power flow through said coil, and a second switch means to reverse the direction of said motor and return said rheostat to its original position, whereby after the amount of power required to energize said coil to raise said head from said liquid is indicated on said meter to measure the cohesive qualities of said liquid, said tac-meter can have its rheostat set to its original position.

3,186,222

WELL SIGNALING SYSTEM

Philip W. Martin, Whittier, Calif. (% McCullough Tool Co., 5820 S. Alameda St., Los Angeles 58, Calif.)

Filed July 28, 1960, Ser. No. 45,857
12 Claims. (Cl. 73—151)



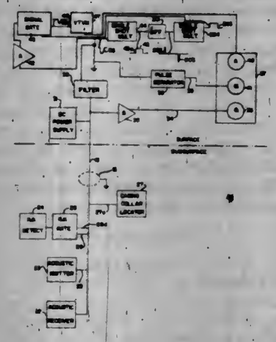
8. In apparatus for oil well logging, while drilling, with a continuous metallic pipe drilling string, a transmiter inductively coupled to said pipe drilling string and disposed at the bottom of said oil well for generating and transmitting successive pulses of alternate polarity each having substantially uniform amplitude, each pulse having a duration that is relatively short compared to the time interval between two successive pulses, said time interval between each two successive pulses being representative in predetermined sequence of different physical data to be transmitted, and amplifier stations disposed along said oil well, each being inductively coupled to said pipe drilling string and including an amplifier responsive to transmitted uniform amplitude pulses having an amplitude exceeding a predetermined threshold level, said amplifier in each repeater station developing an amplified uniform amplitude output pulse in response to a pulse exceeding said threshold level.

3,186,223

COMBINATION LOGGING SYSTEM

John C. Wilson, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed May 12, 1961, Ser. No. 109,637
6 Claims. (Cl. 73—152)



4. In a logging system for making subsurface measurements of a plurality of subsurface conditions, the improvement comprising:

a logging tool adapted to be moved through a borehole;

a sheathed supporting cable connected to said tool, said cable containing a single insulated conductor;

first logging means positioned in said tool for obtaining and transmitting through said conductor a first logging signal as a pulsating direct current signal made up of a series of pulses of one polarity with the amplitude of said pulses providing significant information;

second logging means positioned in said tool for obtaining and transmitting through said conductor a second logging signal as a series of pulsating direct current signals made up of a series of pulses of the opposite polarity, with the frequency of occurrence of the pulses of said second signal being substantially greater than the frequency of pulses of said first signal and with such frequency of occurrence of pulses of said second signal providing significant information;

first receiving means for making a measure of the pulse amplitude of said first signal;

second receiving means for making a measure of the pulse rate of said second signal;

first gating means connected between said conductor and second logging means for interrupting said second logging signal;

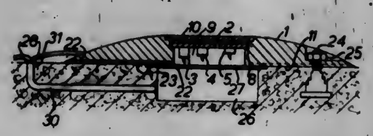
means responsive to said first logging means for actuating said first gating means during transmission of said first logging signal on said conductor.

3,186,224

CONDUCTIVE LIQUID LEVEL SENSING DEVICES

Brian A. Muir, Farnborough, Hants, England, assignor to Inertia Switch Limited, a company of Great Britain

Filed Dec. 31, 1962, Ser. No. 248,473
Claims priority, application Great Britain, Jan. 9, 1962, 853/62
8 Claims. (Cl. 73—304)



1. A conductive liquid level sensing device comprising a domed cover for mounting on a level surface; said cover having a flat electrically conductive bottom surface, a centrally disposed chamber and a plurality of grooves radially extending from said chamber to the outer periphery of said cover to allow ingress of liquid lying on said surface into said chamber, a plurality of sensing elements each having a body portion and a pointed probe secured thereto, means for mounting the elements within said chamber with the points of said probes at successively increasing levels above said bottom surface to permit liquid to creep up the probe point due to surface tension to provide a large area of contact on the probe, and means to adjust the level of each probe above said bottom surface.

3,186,225

MOISTURE SENSING METHOD AND APPARATUS

Donald C. Freeman, Jr., Durham, N.C., and Dennis N. Stainbrer, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed July 29, 1959, Ser. No. 830,349
9 Claims. (Cl. 73—336.5)

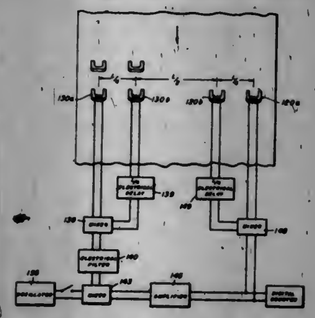
1. A method for measuring the water content of a fluid system which comprises immersing a sensing element formed of a crystalline zeolite material in the fluid system, and measuring the electrical resistance of said sensing element after the moisture content of the sensing element and of the fluid system are in adsorption equilibrium.

3,186,226

APPARATUS FOR DETERMINING THE TEMPERATURE OF TRAVELLING STRIP

James Anthony Milnes, Pitcairn, and William Leslie Roberts, Murrysville, Pa., assignors to United States Steel Corporation, a corporation of New Jersey

Filed June 26, 1961, Ser. No. 119,705
11 Claims. (Cl. 73—339)



1. A device for measuring the temperature of a moving strip of steel, which device comprises in combination, an electromagnetic transmitting transducer positioned adjacent but spaced from one surface of said strip, said transducer being positioned to induce sound waves in said strip, a pickup transducer spaced from said transmitting transducer and from said steel strip and positioned to sense sound waves in said strip, magnet means adjacent to said pickup transducer and positioned to induce magnetic flux in said strip, electric circuit means interconnecting said transmitting transducer and said pickup transducer, said circuit means including means to amplify the sound waves sensed by the pickup transducer and transmit said amplified waves to said transmitting transducer, said circuit including initiating means selectably connectable to said transmitting transducer to initially actuate said transmitting transducer, said circuit including wave frequency measuring means.

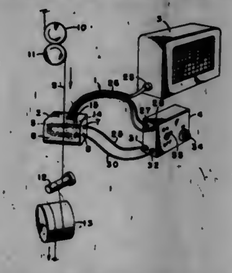
3,186,227

THERMOELECTRIC SENSING APPARATUS

Paul D. Barlow, Pensacola, Fla., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

Filed June 9, 1961, Ser. No. 116,954
1 Claim. (Cl. 73—359)

Thermoelectric sensing apparatus for variously detecting variations in temperature in a heater device, said apparatus comprising, in combination, a thermocouple-thermistor assembly having a hollow probe member open at one end thereof and having a cavity therein filled with cement, a glass shield member fixedly embedded within said cement in said cavity, a thermistor element sealed within said glass shield member, a pair of spaced thermistor lead wires each secured at one end thereof to said thermistor element within said glass shield member and each extending exteriorly of said hollow probe member, first connector means secured at the other end of each of said thermistor lead wires, each of said thermistor lead wires being insulatably covered intermediate its ends thereof, a pair of spaced thermocouple lead wires joined at one end thereof, said joined end of said thermocouple lead wires being sealed within a glass bead fused to said glass shield member adjacent to said thermistor element, said thermocouple lead wires extending exteriorly of said hollow probe member, second connector means secured at the other end of each of said thermocouple lead wires opposite said joined end thereof, each of said thermocouple lead wires being insulatably covered intermediate its end thereof, and a protective flexible sheath closely surrounding said thermistor and thermocouple lead wires intermediate their ends thereof, said flexible sheath being secured at one end thereof to the open end of said hollow probe member and being secured to said thermistor and thermocouple lead wires at the opposite end



thereof; a controlled heater device having a pair of terminals and a recess therein, said hollow probe member of said thermocouple-thermistor assembly being inserted into said recess of said heater device in connected relation therewith; a recorder device for continuously recording the temperature of said heater device, said recorder device being connected to a source of power and having an outlet therein, said second connector means of said thermocouple-thermistor assembly being connected to said recorder outlet; and a controller device for controlling the temperature of said heater device according to signals received from said thermistor element of said thermocouple-thermistor assembly, said controller device being connected to a source of electrical power and having a pair of terminals connected to said first connector means of said thermocouple-thermistor assembly, said controller device being connected to said pair of terminals of said heater device by means of controller lead wires, whereby the temperature recorded by said recorder device accurately reflects the performance of said controller device.

3,186,228

TIME-TEMPERATURE INTEGRATOR

Ray C. Lever, Loveland, Ohio, and Thomas O. Paine, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

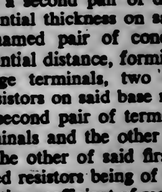
Filed June 30, 1960, Ser. No. 40,062
2 Claims. (Cl. 73—362)

1. A device for measuring a change in a physical parameter of an element exposed to heat which is proportional to a complex integral of time and temperature comprising,

a detector comprised of first and second electrically conductive materials in intimate contact, said materials being selected so that said sensor is subject to a change in resistivity due to diffusion of one of said materials into the other, said resistivity change being proportional to said complex integral of time and temperature,

a heat source of varying output to which said element is exposed,

means to expose said detector to heat from said source, and



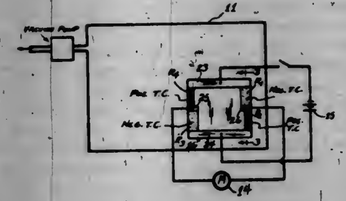
means to measure said change in resistivity of said detector, said measuring means being calibrated such that when a predetermined change in resistivity takes place, it will indicate that said physical parameter of said element has changed a predetermined amount.

3,186,229

TEMPERATURE-SENSITIVE DEVICE

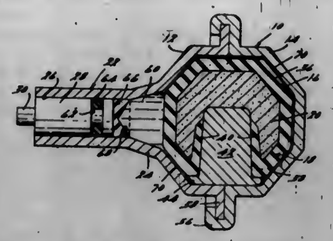
William Liben, 11404 Monticello Ave., Silver Spring, Md.

Filed Sept. 26, 1961, Ser. No. 141,276
4 Claims. (Cl. 73—362)



2. In a vacuum gauge, an enclosure adapted to be evacuated, an insulating supporting base in said enclosure and having a relatively small mass, a pair of elongated spaced deposited metal conductors of substantial thickness on said base and extending substantial distances opposite each other, forming a first pair of Wheatstone bridge terminals, a second pair of deposited metal conductors of substantial thickness on said base located between the first-named pair of conductors and spaced apart by a substantial distance, forming a second pair of Wheatstone bridge terminals, two diagonally opposite film-deposited resistors on said base respectively connecting one of said second pair of terminals to one of said first pair of terminals and the other of said second pair of terminals to the other of said first pair of terminals, said film-deposited resistors being of a first film thickness to provide a negative coefficient of resistance therefor, two additional film-deposited resistors on said base respectively connecting said one of the second pair of terminals to the other of said first pair of terminals and the other of said second pair of terminals to said one of the first pair of terminals, said last-named film-deposited resistors being of a second film thickness to provide a positive temperature coefficient of resistance substantially equal in magnitude to said negative coefficient, a voltage source connected to one pair of said deposited metal conductors, and a current-indicating device connected to the other pair of said deposited metal conductors.

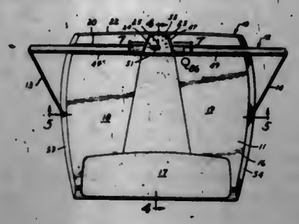
3,186,230
THERMO-ACTUATOR
James F. Scherer, 206 Stanton Ave., Terrace Park, Ohio
Filed Aug. 21, 1961, Ser. No. 132,820
1 Claim. (Cl. 73—368.3)



A temperature responsive device comprising a housing formed with a chamber therein and a hollow extension disposed in communication with said chamber, a resilient capsule at least a portion of which is of a cylindrical configuration movably positioned in said chamber and containing a heat-expansible material therein, said capsule having a contracted volume less than the volume of said chamber providing a clearance space therebetween, said hollow extension comprising a first section having a bore therethrough in which a piston is slidably mounted for reciprocation in a direction transversely of the axis of said capsule, and a second section having a throat therethrough disposed in communication with said bore and said chamber adjacent to said cylindrical portion of said capsule, said throat formed at the end adjacent to said capsule with a cross sectional area greater than the cross sectional area of said bore, a liquid disposed in said throat and said clearance space for transmitting the expanding thrust of said capsule to said piston in response to the expansion of said heat-expansible material contained therein, and sealing means on said piston for preventing leakage of said liquid from said hollow extension, said throat further characterized as having one side wall thereof angularly offset with respect to the axis of said capsule to cause incremental rotation of said capsule about its axis in response to the expansion and contraction of a portion of said capsule into and out of said throat.

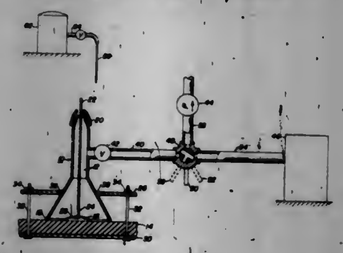
3,186,231
MECHANICAL EXERCISER
Richard W. Sexe, 5901 Vincent Ave. S., and Oliver T. Bogen, 803 Douglas Ave., both of Minneapolis, Minn.
Filed Sept. 20, 1962, Ser. No. 224,931
4 Claims. (Cl. 73—381)

1. An isometric exerciser comprising
(a) a base,
(b) a lifting bar,
(c) a pair of elongated, non-elastic flexible members connected at their inner ends to said base extending outwardly from opposite sides thereof and connected at their outer ends to said lifting bar at longitudinally spaced regions thereof effective so that equal and oppositely directed forces applied along each of said members to said base and bar cause substantially no increase in the distance therebetween along the line of said forces,
(d) means operatively connecting the inner ends of said members to said base for equal extending and retracting movements of said members relative to said base,
(e) means for releasably locking said members in different desired positions of said movements thereof, and
(f) means on said lifting bar responsive to lifting force applied to said lifting bar against resistance of said



members in a locked condition and including a measuring dial to indicate units of said lifting force.

3,186,232
APPARATUS FOR OBTAINING FLUID SAMPLES FROM BLISTERS
Kenneth P. Yates, Robert F. Buhl, and Marion L. Yeagle, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed May 28, 1962, Ser. No. 198,120
11 Claims. (Cl. 73—421.5)



1. An apparatus for obtaining fluid samples from a solid material which consists in an open-ended fluid collecting member, said fluid collecting member being capable of withstanding sub-atmospheric pressure without substantially deforming, the open end being adapted to engage said solid material in fluid-tight relationship, thereby sealing a portion of said solid material within said fluid collecting member from the ambient atmosphere, means for holding said open end against said solid material, means for piercing the surface of said solid material sealed within said fluid collecting member, and valve-controlled conduit means connecting the interior of said fluid collecting member to a fluid analyzing means.

3,186,233
CONTINUOUS SAMPLING DEVICE FOR DRY GROUND MATERIALS
Herbert W. Koger, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,413
1 Claim. (Cl. 73—421)

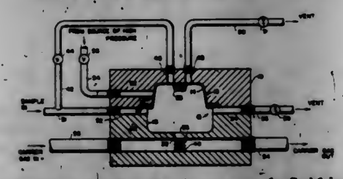
A sampling device for positioning in the flow of dry ground materials comprising a body that is of rectangular, wedge-shaped formation having a slit opening in the apex thereof to receive the dry ground materials therein, a sliding access door for the discharge of the dry ground materials therefrom, means for suspending said body within the flow of the dry ground materials, said means comprising a pair of end brackets having U-shaped mounting clamps on the free ends thereof and having the lower

portions thereof of triangular shape, and said body comprising a pair of side plates having right-angularly dis-



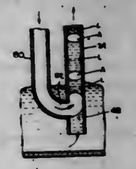
posed side and bottom edge flanges thereon whereby said side plates are secured to said end brackets and the access door for said body is slidably mounted in said body.

3,186,234
SAMPLING VALVE
Robert L. Solnick, Whittier, and Ralph A. Dora, Anaheim, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Sept. 12, 1961, Ser. No. 137,552
3 Claims. (Cl. 73—422)



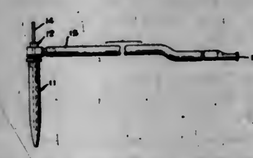
1. Apparatus for introducing a sample fluid into a flowing stream of a carrier gas comprising, in combination; a first valve, said valve comprising a valve body with interior walls defining a cavity therein, a flexible diaphragm located in said cavity and fixedly attached to the walls thereof, a first inlet port to said cavity on one side of said diaphragm, second and third inlet ports to said cavity on the other side of said diaphragm, a first venting port from said cavity on said first side of said diaphragm, a second venting port from said cavity on said other side of said diaphragm, a passageway extending through said body, normally blocked fluid conducting means having one end opening into said passageway and the other end opening into said cavity on said one side of said diaphragm, said diaphragm when in a first position blocking said second and third inlet ports and said second venting port and when in a second position blocking said first inlet port and said first venting port; a first conduit for supplying sample fluid to said first inlet port when said diaphragm is in said first position; a second conduit for supplying sample fluid to said second inlet port when said diaphragm is in said second position; a source of high pressure gas; a third conduit for supplying said high pressure gas to said third inlet port; a second valve located in said third conduit for controlling the supply of said high pressure gas to said third inlet port; a fourth conduit for supplying a stream of carrier gas to said passageway; said diaphragm being in said first position when said second valve prevents high pressure gas from being supplied to said third inlet port; said diaphragm being moved to said second position when said second valve prevents high pressure gas to be supplied to said third inlet port; movement of said diaphragm from said first position to said second position causing the unblocking of said fluid conducting means whereby the sample fluid present in said cavity on said one side of said diaphragm is exhausted into said passageway; and a third valve in said second conduit for controlling the supply of sample fluid through said second conduit when said diaphragm is in said second position and for selectively interrupting flow of sample fluid through said second conduit thereby to permit movement of said diaphragm from said second position back to said first position when said flow of high pressure gas is interrupted through said third conduit.

3,186,235
SAMPLE SUPPLY MEANS FOR ANALYSIS APPARATUS
André Ferrari, Scarsdale, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Apr. 5, 1962, Ser. No. 185,303
6 Claims. (Cl. 73—423)



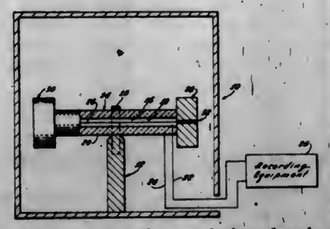
1. Sample supply apparatus, comprising a receptacle for a sample liquid, a take-off tube for the passage of a stream of liquid from said receptacle, said take-off tube being movable into and out of said receptacle and having an inlet for the liquid when said tube is in said receptacle, and means including a part in communication with said tube near said liquid inlet while said tube is in said receptacle for the introduction of an inert gas into said tube for dividing said liquid stream into a series of liquid segments spaced for each other by intervening segments of said gas, said part being movable with said take-off tube into and out of said receptacle.

3,186,236
CAPILLARY TUBE BLOOD COLLECTOR
Frederick M. Cox, 803 Montrose Ave., South Pasadena, Calif.
Filed Jan. 2, 1962, Ser. No. 163,777
1 Claim. (Cl. 73—425.6)



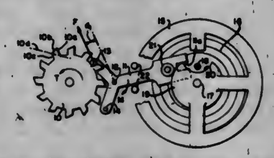
Means for collecting a small sample of blood, comprising an elongated container open at one end, a fitting formed of a resilient material and having a stem removably received in the upper end of said container, said fitting being hollow and having a lateral tubular extension, a suction tube removably attached to said extension, said fitting having a small opening for grippingly receiving a capillary tube and so oriented as to register axially with said stem whereby a tube therein can extend from the exterior of said fitting into the interior of said container, and a capillary tube removably inserted in said small opening of said fitting and extending through the fitting into said container, said fitting providing an open passage between the interior of said container and said suction tube.

3,186,237
PIEZOELECTRIC TRANSDUCER
Lew Forrest, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Oct. 17, 1961, Ser. No. 145,716
6 Claims. (Cl. 73—517)



1. In an accelerometer, an elongated piezoelectric crystal having a bore extending along its longitudinal axis, cantilever type mounting means for supporting the crystal at one of its ends, a mass secured to the other crystal end, a wire extending through the bore and having one end secured to the mass with the other end being secured to the support, and means for exerting a pulling action on the wire for applying a compressive force to the crystal in the direction of its longitudinal axis.

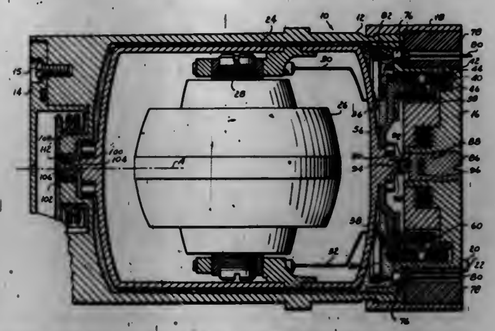
3,186,238
SELF-STARTING TIMING ESCAPEMENT
Robert L. Archer, Woodbury, and Stanley Hirsch, Westbury, N.Y., assignors to Fairchild Camera and Instrument Corporation, a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,553
8 Claims. (Cl. 74—1.5)



1. A self-starting timing escapement comprising:
(a) a driven escapement wheel;
(b) a pivoted pallet slotted at one end and having a pair of spaced driven elements at its other end disposed alternately to engage spaced teeth of said wheel;
(c) a rotatable mechanical oscillating assembly having a predetermined natural period of oscillation;
(d) an impulse element on said assembly disposed to engage said pallet slot during the balance arc thereof and to move beyond and disengage said pallet slot at both extremes of oscillation of said assembly;
(e) a circular lockout element movable with said assembly and having a peripheral recess of an extent substantially equal to said balance arc and centered about the dead-center position thereof;
(f) and an element mounted on said pallet and normally biased into engagement with said lockout element during the portions of the oscillation of said assembly when said impulse element and said pallet slot are disengaged.

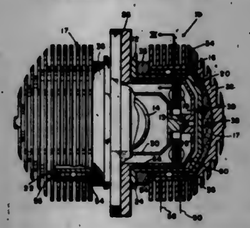
3,186,239
MAGNETIC TORQUE AND BEARING FORCE REGULATOR
Claude L. Emmerich, Scarsdale, N.Y., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 19, 1960, Ser. No. 43,939
5 Claims. (Cl. 74—5)

1. A bearing assembly for mounting a member for rotary movement about an axis on a support including in combination a first interacting magnetic system carried by said member and by said support acting substantially solely in the direction of said axis for holding said member in engagement with said support and a second



interacting magnetic system carried by said member and by said support acting in a direction substantially solely perpendicular to said axis to hold said member in engagement with said support.

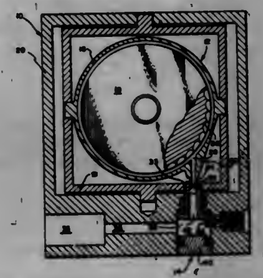
3,186,240
THERMOELECTRICALLY COOLED GYROSCOPE
Henry C. Daubert, Jr., Grand Rapids, Mich., assignor to Lear Siegler, Inc.
Filed Oct. 25, 1962, Ser. No. 233,069
5 Claims. (Cl. 74—5)



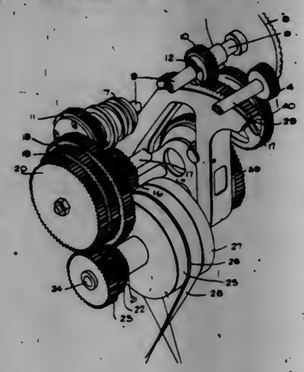
1. A uniform-temperature motion responsive instrument having zones of varying heat output comprising: an instrument housing containing an inertial assembly on a rotational axis and a fluid filled chamber around said assembly; a finned heat transfer shell around said housing and spaced therefrom; a plurality of thermoelectric heat transfer rings between and in thermal contact with said shell and housing, positioned over zones of differing heat output; each of said rings including a first plurality of circumferentially-spaced plates in thermal contact with said housing, thermoelectric elements in contact with said plates and a second plurality of plates in contact with said elements and with said shells; and separate electrical input and control means operatively connected to respective ones of said rings of different heat output zones and including temperature sensing means in said fluid filled chamber to thereby add or subtract heat from each zone in a controlled manner and obtain a uniform, constant instrument temperature.

3,186,241
CAGING SYSTEM FOR GYROSCOPIC DEVICES
Leonard C. Blanding and Christian H. Will, Jr., Grand Rapids, Mich., assignors to Lear Siegler, Inc.
Filed July 12, 1962, Ser. No. 209,346
4 Claims. (Cl. 74—5.12)

1. A caging mechanism for a hot-gas gyro, comprising: a gas connection fixed with respect to said gyro; a piston housing fixed with respect to the axis stabilized by said gyro; a hollow caging piston movable in said housing and engageable with said gas connection; a chamber in said housing; means for discharging gas at high pressure into said chamber; means biasing said caging piston out of engagement with said gas connection; primary lock means disabled by high pressure in said chamber holding said piston in engagement with said gas connection; secondary lock means operatively associated with said caging piston and said primary lock means preventing disabling of said primary lock means until said chamber is subjected to high pressure; said secondary lock means being disabled by movement of said caging piston in a direction toward said gas connection; said piston forming a gas passage to convey said gas from said chamber to said gas connection, and said piston being held in engagement with said gas connection by high pressure in said chamber independently of said lock means.

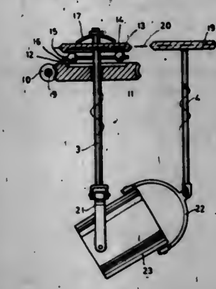


3,186,242
DRIVING MECHANISM OF CIRCULAR KNITTING MACHINES
Frederick E. Deans and Carlyle H. Wainwright, Leicester, England, assignors to The Bentley Engineering Company Limited
Filed Oct. 9, 1962, Ser. No. 229,455
Claims priority, application Great Britain, Oct. 11, 1961, 36,496/61
7 Claims. (Cl. 74—79)



1. A driving mechanism for performing reciprocatory knitting on circular knitting machines comprising an oscillatory gear of hollow form, a shaft on which said oscillatory gear is mounted, a rotatable cam shaft disposed through the hollow form of said oscillatory gear, two complementary cams for oscillating the oscillatory gear in opposite directions mounted thereon within the hollow form, two cam followers cooperative with their respective cams coupled to said oscillatory gear, mounting means supporting the shafts of said oscillatory gear and cams, a first pinion in mesh with said oscillatory gear having a clutch dog on one face, a supported shaft passing through said pinion and clutch dog, a bevel gear attached to one end of said shaft, a second pinion attached to the other end of said shaft and having a clutch dog on one face, a clutch body disposed between said clutch dogs on said shaft and movable to engage one of said clutch dogs, speed change gears, a supported lay shaft on which said speed change gears are mounted, a third pinion mounted on said lay shaft in mesh with said second pinion, drive means connected to said speed change gears, whereby rotary knitting motion is changed to oscillatory knitting motion by disengaging said clutch body from the clutch dog on said second pinion and moving it into engagement with the clutch dog on said first pinion.

3,186,243
ARRANGEMENT FOR BESTOWING A BODY WITH A ROTARY AND WOBBLING MOVEMENT
Adolf Urban, Muttenz, Switzerland, assignor to Willy A. Bachofen, Basel, Switzerland
Filed July 8, 1963, Ser. No. 293,303
Claims priority, application Switzerland, July 13, 1962, 8,481/62
4 Claims. (Cl. 74—86)

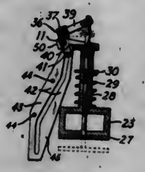


1. An arrangement for bestowing a body with a rotary and wobbling movement comprising a driving motor, a speed-reducing gear driven by said motor, two parallel auxiliary shafts, a driving wheel loosely carried by the auxiliary shaft nearer the driving motor, mechanical means operatively connecting said driving wheel with the speed-reducing gear, compensating gear means coaxial with the first-mentioned shaft and including two parallel rings of which one is driven by the driving wheel, members running between and engaging said rings and driving said first shaft, a chain wheel driven by the other ring of the compensating gear means and loosely carried by said first-mentioned shaft, a chain operatively connecting said chain wheel with the other auxiliary shaft, and links pivotally connecting opposite ends of the body to be bestowed with movement with the corresponding auxiliary shafts.

3,186,244
DRIVE MECHANISM FOR THE PLUNGER OF A PLUNGER-AND-DIE TYPE FOLDING BOX MACHINE
Thomas R. Baker, Los Altos, and Chester J. Pierce, Jr., Palo Alto, Calif., assignors, by mesne assignments, to Bradford Speed Packaging and Development Corp., New York, N.Y., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,430
3 Claims. (Cl. 74—103)

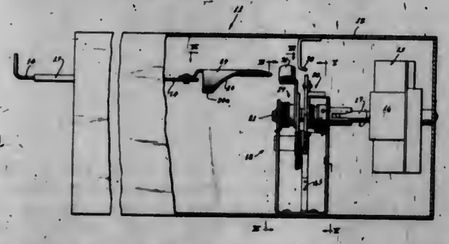
1. Drive mechanism for the plunger device of a plunger-and-die-type folding box machine, the mechanism comprising, in combination, a drive element mounted on the machine frame for substantially straight line motion; power means for imparting a reciprocating motion to said element; a lever means tiltably mounted on said drive ele-

ment, said lever means comprising two arms, one arm being shaped to attach to the plunger device, the other arm being shaped as a cam follower; means forming a longitudinally extended cam track mounted on the machine frame alongside the path of said drive element, said cam track being split lengthwise into two portions, one portion being fixedly mounted, the other portion being



movable with respect to the fixed portion; means for resiliently urging said movable cam portion towards said fixed portion, said cam follower being engaged between said track portions said cam track means being so disposed with respect to the path of the drive element as to oscillate the lever means about its axis as the drive element moves back and forth.

3,186,245
MECHANICAL MOVEMENT FOR A TIMER
Joe Bowman, Greentown, Ind., and Richard H. Jordan, Mansfield, Ohio, assignors to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana
Filed Aug. 31, 1960, Ser. No. 53,151
19 Claims. (Cl. 74—128)



1. An angular drive mechanism for a device comprising in combination: a first rotatably supported means for being rockably advanced; second rotatably supported means so intermittently connected to the first means as to be advanced in an angular increment in a single direction in response to each rocking movement of said first means; connector means adapted to have a rotary drive connection with the device; and lost motion means coactive between said second means and said connector means to drivingly connect said second means to said connector means in response to a predetermined one of the angular increments of said second means.

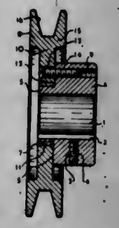
3,186,246
INDEXING MECHANISM
Virgil J. Slinker, 3059 Edgewood Park Court, Union Lake, Mich.
Filed Feb. 11, 1963, Ser. No. 257,381
11 Claims. (Cl. 74—128)

1. In an indexing mechanism, a rotatab'y mounted indexing wheel member having its outer periphery formed with a plurality of circumferentially arranged teeth each having a surface extending general'y tangentially of a circle having a center coincident with the center of the wheel member and a surface extending generally outwardly of the center of the wheel member, a plunger member mounted for movement between a withdrawn position and an extended position in a direction generally tangential to said circle, said plunger member abutting the tangential surface of one of said teeth and the adjacent outwardly extending surface of one of said teeth when said plunger is in its extended position to thereby ock the wheel member against rotary movement when



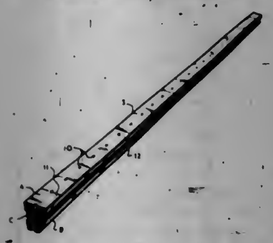
the wheel member is in one of its indexed positions, and means on one of said members to provide wheel rotation inducing contact therebetween when said plunger member is moved from its withdrawn position to its extended position.

3,186,247
SHEAVES
Alfred A. Burrell, 10323 106th St., Edmonton, Alberta, Canada
Filed Mar. 11, 1963, Ser. No. 264,134
4 Claims. (Cl. 74—230.4)



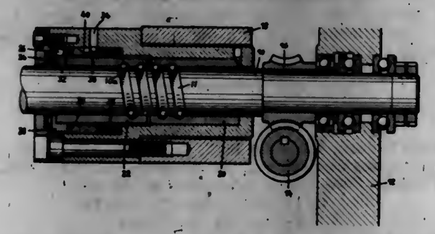
1. A sheave comprising a hub having at one end a flat radial shoulder of substantial area, lying in a plane at right angles to the axis of the hub, with a toothed coaxial projection of reduced diameter extending therefrom; a wheel disk having a central opening with a toothed circumference for axially sliding fit on the toothed projection on the hub; attaching means threaded into said hub tightly securing said disk to the hub shoulder in self-aligning true radial position at right angles to the axis of the hub; and a rim like the crosshead of a T on the periphery of said disk having at least one circumferential belt groove.

3,186,248
BELT AND SPLICE THEREFOR
Alfred A. Burrell, 10323 106th St., Edmonton, Alberta, Canada
Filed Mar. 11, 1963, Ser. No. 264,190
7 Claims. (Cl. 74—233)



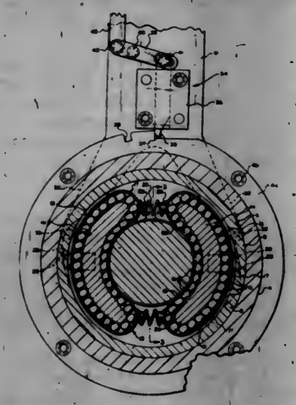
1. A V-type belt of composite belt material comprising three main layers namely a tension section, a compression section and an intermediate neutral axis section, wherein the neutral axis section has a load-carrying member consisting of two wide flat horizontal and separated ribbons of relatively inextensible bondable material with a thin filler tissue therebetween.

3,186,249
CARRIAGE DRIVE FOR MACHINE TOOLS
Horst Leanzenberger, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich Wilhelm Deckel, Zug, Switzerland
Filed May 27, 1963, Ser. No. 283,307
Claims priority, application Germany, May 30, 1962, D 39,053
20 Claims. (Cl. 74—409)



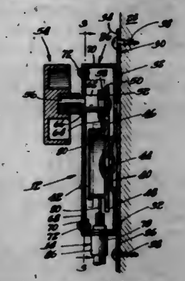
17. A machine tool feed drive free from play, comprising a support and a screw-threaded spindle capable of feeding movement relatively to each other in either direction longitudinally of said spindle, a first nut mounted stationarily in said support and engaging the threads of said spindle, a second nut mounted for limited rotation in said support in axially spaced relation to the first nut and also engaging the threads of said spindle, a thrust bearing operatively interposed between said second nut and said support to limit the extent to which said nuts may move axially relative to each other, and means tending to turn the second nut relative to the support and the first nut in a direction effective to tighten the second nut against said thrust bearing and against the threads of the spindle.

3,186,250
ANTIFRICTION SPLIT-NUT DEVICE
Ernest D. Boutwell, 306 Webber St., Saginaw, Mich.
Filed Nov. 15, 1961, Ser. No. 152,520
3 Claims. (Cl. 74—459)



1. An antifriction split-nut device adapted to traverse a helically threaded shaft, said device comprising an annular sleeve; a pair of arcuate carrier members arranged in end-to-end relation to form an opening adapted to receive said shaft; a plurality of freely rotatable balls supported by said carrier members and projecting therefrom for engagement with the threads of said shaft; means mounting said carrier members in said sleeve for movement radially of said sleeve in either of two directions to decrease or increase the size of said opening for respectively engaging and disengaging said balls with and from the threads of said shaft; oscillatable operating means mounted in said sleeve between the latter and said carrier members; interengageable cam means on said carrier members and said operating means operable in response to oscillation of the latter to move said carrier members in at least one of said directions; manipulatable means connected to said operating means for oscillating the latter; and means reacting between said mounting means and said operating means for limiting oscillating movement of the latter.

3,186,251
REMOTE CONTROL DEVICE
Axel L. Quarfoot, Evanston, Ill., assignor to Arens Controls, Inc., Evanston, Ill., a corporation of Illinois
Filed Oct. 16, 1961, Ser. No. 145,377
2 Claims. (Cl. 74—501)

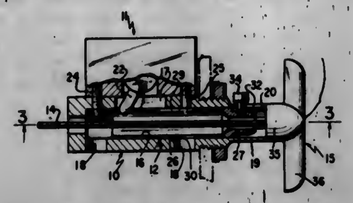


1. A control device comprising: a pivotal control lever; a rotatable member spaced apart from said lever; a manual operating knob; force-multiplying gear means acting between said knob and said rotatable member, including a first gear fixed to said knob for rotation therewith and a second gear meshing with said first gear and coupled to said rotatable member; means for maintaining said gear means in meshing alignment, including a plate member fixed in a plane parallel to the plane of one of said gears and slidably contacting a face of the other of said gears to restrain said other gear against axial movement away from said one gear and out of meshed engagement therewith; first flexible shaft means connected between said rotatable member and a location on said lever on one side of the pivot thereof, a portion of said first shaft means being coiled on said member in one direction; and second flexible shaft means connected between said rotatable member and a location on said lever on the opposite side of the pivot thereof, a portion of said second shaft means being coiled on said member in an opposite direction, said first and second shaft means being progressively lengthenable and shortenable respectively upon rotation of said member in said opposite direction by the manipulation of said knob and vice versa.

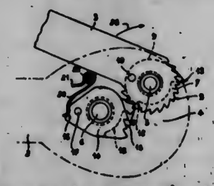
3,186,252
ACTUATOR
John W. Olandt, North Arlington, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed June 25, 1962, Ser. No. 204,882
6 Claims. (Cl. 74—502)

1. An actuator comprising a body having a bore formed with an outer end and having a recess laterally adjacent said bore, a switch operating element in said recess and extending into said bore, a shuttle slidably mounted in said bore having means thereon for operating said switch element and having an outer end, cooperating means on

said body and said shuttle for limiting the extent of movement of said shuttle towards the outer end of said bore, a pull handle, a flexible element connected at one end of said handle for movement therewith and extending through said bore, cooperating means on said handle and said body at the outer end of said bore for releasably locking said handle on said body, and cooperating means on said handle and the outer end of said shuttle for locking said handle on said shuttle and releasing said handle from said shuttle when movement of said shuttle towards the outer end of said bore is stopped, whereby upon pulling of said handle separation of said handle from said body is first effected to allow said handle to move said shuttle to operate said switch element and separation of said handle from said shuttle is then effected to allow said handle to further pull said flexible element.

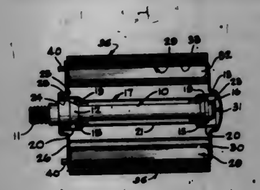


3,186,253
PIVOTAL SYSTEM FOR LEVER ARMS
René Ramillon, 3 Rue Emile Zola, Grenoble, France
Filed Jan. 31, 1962, Ser. No. 170,209
Claims priority, application France, Feb. 15, 1961, 41,234, Patent 1,281,637
1 Claim. (Cl. 74—540)



A pivotal system interconnecting two levers for securing said levers in any relative angular position within a predetermined range, said system comprising a housing rigid with one of the levers, two short spindles secured to the housing, a terminal head rigid with the other of the levers, and rotatably supported on a respective one of said spindles and including along its periphery an arcuate series of sloping teeth coaxial with the corresponding spindle, at least one pair of shorter and longer projections on said head of the other of the levers lying in a plane perpendicular to the respective spindle and spaced from the plane of said series of teeth and extending radially respectively short of the teeth at a point near one end of the arcuate series of teeth and beyond the teeth at a point near the other end of said series of teeth, a cam structure pivotally supported on the other of said spindles for angular movement about an axis, said cam structure including an arcuate series of teeth extending coaxially with respect to the said axis and adapted to mesh with the first-mentioned arcuate series of teeth on the other of the levers for a predetermined angular range of positions of said structure, a boss rigid with the cam structure lying in the plane of the projections on the head to one side of the series of teeth on said structure and adapted to be engaged selectively by said projections at the end of the angular displacement of the other of the levers and of the head carried therewith to be displaced through an angular path corresponding to the extent of the arcuate series of teeth, a recessed extension on said cam structure, a spring secured to the housing normally engaged with the recessed extension to hold the same in a position for which the boss registers with the arcuate series of teeth on the head and the series of teeth on the cam structure lies outside said path of said arcuate series of teeth on the head, the longer projection on the head engaging said boss upon angular movement of the levers carrying the head in a predetermined direction to angularly shift the cam structure about said axis and disengage the spring from the recessed extension while the series of teeth on the head are brought into mesh with the series of teeth on the cam structure, the shorter projection on the head engaging said boss upon angular movement of the last-mentioned lever in the opposite direction to urge the cam structure back into the spring-engaged position thereof and thereby disengage the two series of teeth.

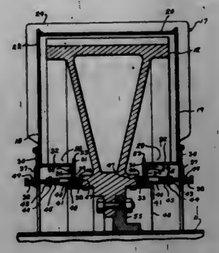
3,186,254
BICYCLE PEDAL CONSTRUCTION
Gerald Golden, Highland Park, and Charles V. Wrobel, Jr., Arlington Heights, Ill., assignors to Excel, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 24, 1962, Ser. No. 189,796
3 Claims. (Cl. 74—594.4)



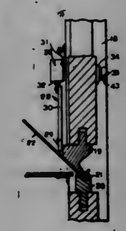
1. A bicycle pedal construction, comprising
a pedal shaft,
a hub rotatably mounted on said pedal shaft,
a cross bar extending from one end of said hub,
a second cross bar extending from the opposite end of said hub,
pedal block supports formed integrally with one of said cross bars and channel-like in cross section and extending from the associated cross bar at right angles with respect thereto to the other of said cross bars,
pedal blocks having hollow interior portions conforming in form to said pedal block supports and mounted on said supports by slidable movement therealong and solely supported on said supports,
means crimped to said supports and to the other of said cross bars.

3,186,255
GEAR DRIVE ENCLOSURE
Walter P. Schmitter, deceased, late of Wauwatosa, Wis., by A. Louise Schmitter, Wauwatosa, Wis., and Robert V. Abendroth, Whitefish Bay, Wis., co-executors, and George P. Maurer, Wauwatosa, Wis., assignors to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 16, 1963, Ser. No. 252,279
12 Claims. (Cl. 74—606)

1. An enclosure for a gear drive of the type including a circumferential wall adapted to surround the teeth of a gear in the drive and also including side walls enshrouding both sides of at least one gear in the drive, said side walls being substantially impervious to dust and fluids and at least a portion of each side wall being of flexible material; sealing means attached to each side wall of the enclosure along said portion thereof which is of flexible material, each sealing means contacting a side of said one gear to form a substantially dust-proof and fluid-proof seal between the side of the gear which it contacts and the side wall to which it is attached; and means attached to the enclosure and adapted to urge each sealing means inwardly into contact with its respective side of the gear.

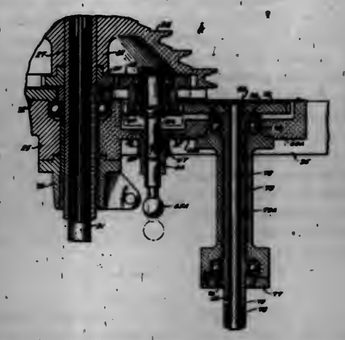


3,186,256
SAFETY GUARDS FOR BRAKES, PUNCH PRESSES AND SIMILAR MACHINES
Louis Reznick, 231 Brightwater Court, Brooklyn, N.Y.
Continuation of application Ser. No. 162,528, Dec. 27, 1961. This application July 22, 1963, Ser. No. 297,733
5 Claims. (Cl. 74—615)



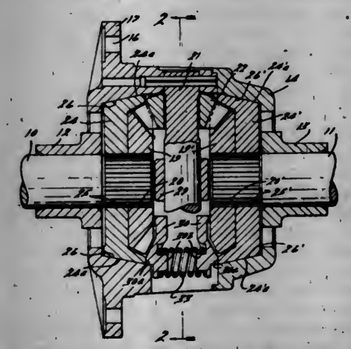
1. In combination with a machine having a die part fixed on a ram which is movable on the machine's frame, downwardly towards and upwardly from a co-operating die part fixed on a fixed bed, a normally upright panel structure safety guard positioned in front of said die parts and extending sufficiently downward to permit the admission of a metal sheet under said safety guard and thence between said die parts, but to exclude the admission of an operator's finger to the die parts when the sheet is out of the machine; said safety guard comprising two sections, one above the other and in hinged relation so that the lower section can be swung only upwardly and forwardly from its normal position and then downwardly rearwardly back to such normal position, a first means including an electrically operated device, and a member movably mounted in relation to the frame, which member is moved in one direction when said device is actuated and in the opposite direction when said device is deactuated, a second means connecting the said member with the upper section of the safety guard, whereby on actuation of said device, the safety guard will be raised and upon deactuation of said device, the safety guard will return to its normal lowered position, an electrical circuit to actuate said device, a switch interposed in said circuit to control the actuation of said device; said switch being fixed on the frame and normally in open condition and an element carried on the ram, adapted to close said switch when the ram is at a predetermined lowered position.

3,186,257
JIG BORER
Michael P. Budney, Berlin, Henry S. Budney and Thaddeus W. Budney, Newington, and Matthew F. Sacuzwa, Wethersfield, Conn., assignors to Atlantic Machine Tool Works, Inc., Newington, Conn.
Filed Jan. 13, 1961, Ser. No. 82,547
3 Claims. (Cl. 74—665)



2. A disconnectable gear train for driving a take-off shaft from a main shaft comprising a driven gear on said take-off shaft and a driving gear mounted on said main shaft, said driven gear and said driving gear being offset vertically and horizontally from each other, a first intermediate gear engageable with said driving gear, a second intermediate gear spaced from said first intermediate gear and engageable with said driven gear, said intermediate gears being fixed together and being rotatable about an axis spaced from said main and take-off shafts, means to shift said intermediate gears selectively axially into and out of engagement with said driving and driven gears, means to limit the axial movement of said intermediate gears, said take-off shaft being tubular and of substantial length, said take-off shaft having keys received within key receiving slots of a cooperating shaft to permit the cooperating shaft to telescope within said tubular take-off shaft.

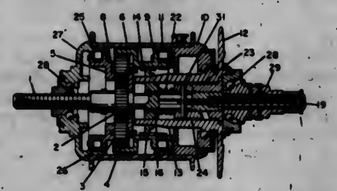
3,186,258
LIMITED SLIP DIFFERENTIAL
Frederic C. Meldola, De Witt, N.Y., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 18, 1961, Ser. No. 110,979
3 Claims. (Cl. 74—710.5)



1. In a differential transmission unit, the combination comprising a rotatable gear case, a power transmission gear train operatively positioned within said gear case and including a compensating gear and a pair of side gears

intermeshing therewith, clutch means operatively disposed between each of said side gears and said gear case for opposing relative rotational movement of said side gears with respect to said gear case, each of said clutch means comprising an annular-like friction member respectively operatively connected to said side gears for rotational movement therewith, a first friction surface of generally conical configuration formed on each of said friction members adapted to respectively frictionally engage second spaced friction surfaces of generally conical configuration carried by said gear case internally thereof, spaced annular-like pressure plates continually engaging portions of said friction members, a plurality of spring members urging said pressure plates in directions causing said first friction surfaces to engage said second friction surfaces, the compensating gear and side gears being meshed in a relationship to provide a component of tooth pressure for urging said side gears axially against said respective friction members in order to increase the force applied to said friction members in proportion to input torque to the transmission.

3,186,259
MULTIPLE SPEED BICYCLE HUB
Eugene A. La Brie, 456 High Ridge Road, Stamford, Conn.
Filed Nov. 19, 1964, Ser. No. 412,381
3 Claims. (Cl. 74—750)



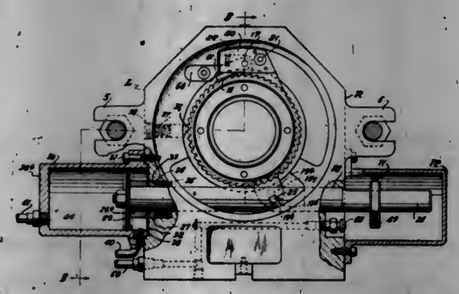
1. In a multiple speed epicyclic gear train which comprises a final driven member, a fixed axle, a sun gear thereon, planet gears rolling therearound, a ring gear, the planets being in a cage provided with driving pins, a driving member having a slotted extension, and a shifting member rotatably mounted on the fixed shaft axle and slidable thereon in the slots of the driving member, said shifting member in one position drivingly engaging the pins of the planet cage and in other positions engaging a member rigidly connected to the ring gear, one way engaging means connected between the ring gear and the final driven member, said engaging means being engaged when said shifting member is in said one position, the planet cage then being drivingly connected to drive final driven member through said one-way engaging means, an overrunning clutch interposed between said cage and said driven member, said clutch overrunning when said shifting member is in said one position, the improvement which comprises,

(a) means for shifting the shifting member laterally toward the pins of the planet cage, said means being actuated by a short reverse rotation of the driving member which connects to the shifting means through an overrunning clutch permitting overrunning on forward rotation of said driving member;

(b) said shifting means comprising a member laterally movable by the short reversed rotation, and axially resilient means abutting against the ends of said laterally movable member and the shifting member so that when the shifting member momentarily strikes the end of a driving pin on the planet cage the resilient means are compressed until the shifting member has passed the pin and then urge the shifting member into driving contact with the pins on the planet cage, and

(c) a sleeve on the fixed axle having means engaging the shifting member and connected to the shifting means for shifting the shifting member so that movement of the shifting means in one direction causes the shifting member to slide with the sleeve and in the other direction to cause compression of the resilient means and consequent relative sliding movement between said shifting member and said sleeve.

3,186,260
AUTOMATIC INDEXING DEVICE
Eddy R. Dugas, 617 Yuma Court, Dallas, Tex.
Filed Jan. 30, 1961, Ser. No. 85,800
6 Claims. (Cl. 74—822)

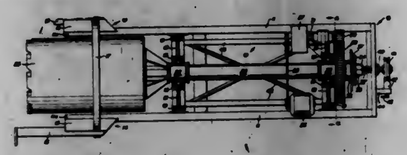


1. An indexing device comprising a support; a spindle rotatably journalled in said support; means mounted on said spindle for holding a workpiece; a ratchet wheel non-rotatably fixed to said spindle and co-axial therewith; a driving member mounted on said spindle for oscillatory movement about the axis of the spindle; a pawl attached to said driving member in operative engagement with said ratchet wheel whereby movement of the driving member on the spindle in one direction will cause the pawl to rotate the ratchet wheel whereby movement of the driving member on the spindle in one direction will cause the pawl to rotate the ratchet wheel therewith and movement of the driving member on the spindle in a second direction opposite said one direction permits said ratchet wheel to remain stationary relative to said driving member; means on said support preventing rotation of said ratchet wheel in said second direction; a rod slidably mounted in said support; first cooperable means on said rod and said driving member for causing said driving member to move in said one direction upon movement of said rod in one axial direction and for causing said driving member to move in said second direction upon movement of said rod in a second axial direction opposite to said one axial direction; means for imparting reciprocatory axial movement to said rod whereby oscillatory motion may be imparted to said driving member to turn the ratchet wheel and spindle in said one direction by a series of steps; a stop member rigid on said support engageable with said pawl for limiting movement of the pawl and said driving member in said one direction of movement; and second cooperable means on the stop member and the pawl for causing the pawl to wedge against the ratchet wheel when urged into engagement with said stop member to lock said ratchet wheel against further rotation in said one direction.

3,186,261
TREPANNING DRILL MACHINE FOR INDUSTRIAL USE
James E. Howard, 5095 Cherokee St., and William I. Gibbs, Rte. 1 S., both of Pocatello, Idaho
Filed July 23, 1962, Ser. No. 211,725
3 Claims. (Cl. 77—13)

1. A drill machine, comprising a carriage; a drill journaled in fixed position on the carriage so as to be advanceable therewith toward and retractable therewith

from the surface to be drilled, said drill having a rearwardly-extending hollow shank; a drill-advancing screw extending axially of and within said shank; threaded means fixedly carried by said shank and arranged to mesh with the screw, said threaded means comprising a split nut having separable sections movable toward and away from one another to engage and disengage, respectively, the threads of the screw; means for moving said sections toward and away from one another to effect



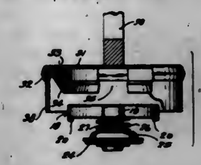
advancement of the drill and to permit retraction of said drill, respectively; stationary means for holding said screw in fixed position, said stationary means including a support journaling the screw, said support being fixed in position relative to the carriage, and overload means exerting on said screw a predetermined degree of resistance to rotation, whereby said screw will rotate with the drill and halt advancement of the drill when the latter meets resistance greater than said predetermined degree; and means for rotating the drill to advance it along the screw.

3,186,262
WIRING DEVICE
John Parstorfer, Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,741
2 Claims. (Cl. 81—3)



1. As a means for wiring miniature circuit units, a generally pen-shaped, pen-sized tool body having a single generally flat platform in its exposed surface, between the ends thereof, said platform being approximately as long and wide as a finger tip; wire storing and wire guiding sections within said tool body, on opposite sides of said platform; channel means interconnecting said sections across said platform and allowing wire to be payed out over the platform into and then from the guiding section; and at least one edge on said platform, constituting an intersection of said channel means with the platform surface, the construction and arrangement of said channel means, edge and platform being such that wire payed out from the storing section into the guiding section, for said wiring, runs over said edge on said platform.

3,186,263
RADIATOR CAP REMOVER
Walter F. Grote, Madison, Ind., assignor to The Grote Manufacturing Company, Madison, Ind., a corporation of Kentucky
Filed July 5, 1963, Ser. No. 292,924
3 Claims. (Cl. 81—3.1)



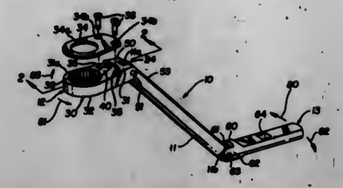
1. In a tool for safely removing a cap from the neck of an automotive radiator containing a hot fluid, the cap having a main portion and ears extending radially therefrom, a resilient member having an interrupted flange providing a socket, receiving and gripping the cap main portion, and providing pockets receiving the cap ears, the resilient member having a flexible skirt peripherally of the flange and pockets and substantially enclosing the neck and cap upon the bearing of the skirt end on the radiator, and a rigid backing member attached to the resilient member for transmitting a torsional force thereto to release the cap from the radiator neck, the backing member having lugs extending into the resilient member pockets for severally bearing on the flange ends and engaging the cap ears for turning the cap on the neck.

3,186,264
TOOLS FOR HOTLINE HARDWARE
Nyle E. Barlow, 409 S. Public Road, Lafayette, Colo.
Filed May 13, 1963, Ser. No. 279,976
2 Claims. (Cl. 81—57)



1. A hotline hardware wrench comprising a hollow tubular handle, a first shaft fixedly mounted for rotation in said handle and having a portion extending beyond one end of said handle for gripping by a user, a bifurcated head releasably mounted on said handle on the end opposite said shaft extension, said first shaft having its end opposite said extending portion recessed from the opening of said handle, a reciprocal insert mounted in said head and arranged to move toward and away from said handle and being spring biased toward said head, a gear train mounted in said head, a socket wrench holder pivotally mounted on said bifurcated head and arranged to angularly pivot in relation to said handle, means for rotatably securing a socket wrench in said socket holder, means interconnecting a first member of said gear train with said socket wrench for rotating the same in said holder, a short second shaft fixedly mounted for rotation in said insert and connected with a second member of said gear train whereby to permit said second member to move into and out of engagement with said gear train, and slip connection means between said second shaft and said first shaft maintaining connection therebetween while permitting said second shaft to move toward and away from said first shaft and thereby engage and disengage said second member from said gear train.

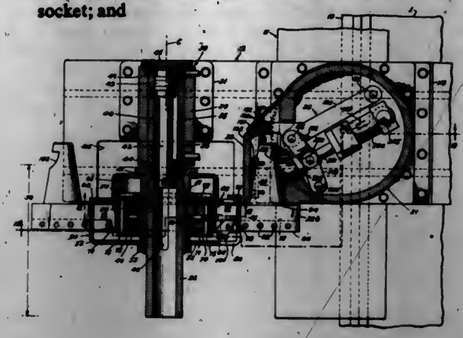
3,186,265
WRENCH HAVING ANGULARLY ADJUSTABLE AUXILIARY HANDLES
Anthony J. Westerine, 9059 Highland Drive, Brecksville 41, Ohio, and Simon R. Rudolph, Akron, Ohio; Juliet P. Rudolph, 552 S. Hawkins Ave., Akron, Ohio, executrix of said Simon Rudolph, deceased
Filed Mar. 29, 1961, Ser. No. 99,250
2 Claims. (Cl. 81—177.9)



1. A torque applying wrench of the character described comprising;
(A) a main elongate handle;
(B) first and second auxiliary handles
(1) pivotally secured to opposed ends of said main handle about parallel axes of support
(a) whereby said first and second auxiliary handles may be disposed in parallel planes;
(C) socket means
(1) carried by one said auxiliary handle and
(2) being rotatable about an axis normal to the plane of said handle on which it is carried and to the planes of the axes of pivotal support of both said auxiliary handles
(a) whereby force applied to said remaining handle along its plane will be transmitted to said wrench normal to its axis when said auxiliary handles are disposed in parallel planes;
(D) said main handle having a series of equally spaced depressions on its opposed ends disposed symmetrically about the longitudinal axis of said main handle in an arc of substantially 90 degrees with said depressions being disposed in corresponding positions on each end; and
(E) detent means
(1) carried by said auxiliary handles adjacent their point of pivotal connection with said main handle for coaction with said depressions on said main handle
(a) whereby said auxiliary handles may be releasably contained in predetermined corresponding angular positions with regard to the longitudinal axis of said main handle.

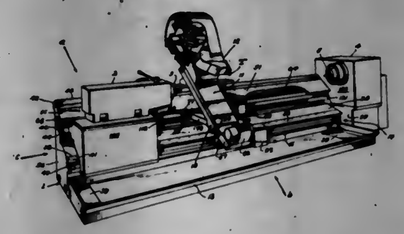
3,186,266
TOOL CHANGER FOR LATHE TOOL HOLDER
William C. E. Conte, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 5, 1961, Ser. No. 143,076
12 Claims. (Cl. 82—1)

1. In a multiple tool, automatically controlled lathe having means for rotatably mounting a workpiece, tool changing and supporting apparatus comprising:
a magazine mounted on the lathe cross slide for rotation and for movement in translation;
means releasably supporting a plurality of tool holders on said magazine, at least some of said tool holders respectively carrying tools for machining a workpiece;
a turret mounted on said cross slide and having a socket for supporting a tool holder, and the turret being rotatable to a position where the socket can receive a tool holder from said magazine, the transfer being effected by the magazine moving up to the turret to deposit a tool holder in the socket and moving away from the turret leaving the holder in place in the socket; and



means connected with said magazine to rotate the same to a position for the transfer of a pre-selected tool holder.

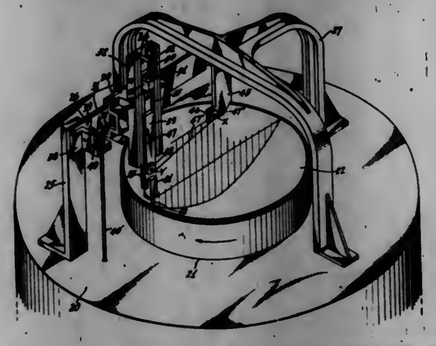
3,186,267
LATHE
Carl F. Pabst and Paul Neumann, Cincinnati, Ohio, assignors to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Continuation of application Ser. No. 202,438, June 14, 1962. This application June 10, 1964, Ser. No. 375,973
10 Claims. (Cl. 82—2)



1. In a lathe:
an elongated, horizontally extending bed having a front and a back with the front being higher in vertical elevation than the back;
an upper way connected adjacent to the top part of said front and extending along the axis of the bed, the way having a bearing surface and the bearing surface extending at an acute angle to the vertical;
a lower way connected to said back and extending along the axis of the bed, the way having a horizontally extending bearing surface, the upper way being at a higher vertical elevation than the lower way and the two ways, in plan, being spaced apart;
an intermediate way connected to and extending along an axis of the bed and the intermediate way, both in elevation and in plan, being disposed between said upper and lower ways, the intermediate way having a pair of guiding and bearing surfaces one of which is vertically oriented and the other oriented at an acute angle to the vertical and the vertical surface facing the back of the lathe and the other surface facing the front of the lathe;
a feed screw rotatably mounted on and extending along the axis of the bed, the screw, both in elevation and in plan, being disposed between said upper way and said intermeditae way;
a carriage disposed over and extending transversely to the axis of the bed;

mechanism on the carriage comprising bearing surfaces respectively engaging the bearing surfaces on said upper and lower ways and also engaging the guiding and bearing surfaces on said intermediate way;
nut means on said carriage engaging said feed screw and causing motion of the carriage along the axis of the bed with rotation of the screw; and
means on said carriage comprising a cross slide guideway, the guideway extending transverse to the axis of the bed and being oriented at an acute angle to the vertical.

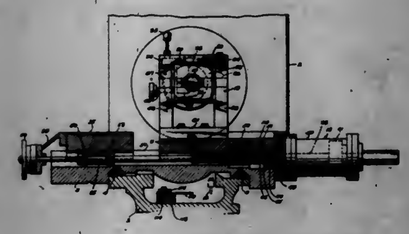
3,186,268
APPARATUS FOR FORMING PARABOLIC SURFACES
Nils Hoglund, 296 Hartshorn Drive, Short Hills, N.J.
Filed May 18, 1961, Ser. No. 111,033
6 Claims. (Cl. 82—11)



1. Apparatus for forming dish-shaped surfaces of parabolic cross section including a base, a rotatable work supporting member on said base, a support member on said base, a slide guide mounted on said support member and extending over said work supporting member, a first slide on said slide guide and movable transversely of said work supporting member, a second slide mounted on said first slide and movable normally of said work supporting member, a tool on said second slide, a second support on said base, a fixed pulley mounted on said second support and having its axis positioned above the axis of rotation of said rotatable work supporting member, a rotatable pulley mounted on said second slide, a flexible cable having one end fixed to said first slide and its other end to said fixed pulley, and having a wrapping engagement with said fixed pulley, an intermediate portion of said flexible cable having a wrapping engagement with said rotatable pulley, means for moving said first slide whereby said second slide moves transversely and normally of said work supporting member along the path of a parabola, said fixed pulley having a decreasing radius.

3,186,269
BORING AND TURNING LATHES
James N. Colebrook, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 3, 1961, Ser. No. 123,360
9 Claims. (Cl. 82—14)

1. For a machine tool having a bed and a headstock to rotatably support a workpiece, mechanism for mounting and moving a boring tool for use in machining the workpiece comprising:
a carriage mounted for reciprocating motion on said bed in a direction along the rotational axis of the workpiece;
a boring tool slide mounted on said carriage for reciprocating motion in a direction normal to the direction of said carriage motion;
a boring tool holder on said boring tool slide;
support means for mounting a boring tool and having pivot connections with said boring tool holder, the pivot connections providing for the support means to be rotated to an operative position where a boring tool on the support is oriented for machining a workpiece and to an inoperative position wherein the tool on the support is substantially spaced from its operative position;
a cylinder connected with said carriage and a piston mounted on the cylinder for reciprocating motion in a direction the same as the direction of motion of said boring tool slide;
a screw;
means connected between said piston and said screw and providing for the screw to be rotatable relative to the piston and for the screw to be displaceable with the piston;

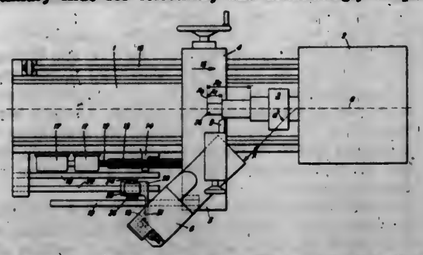


means connecting said tracer slide and said screw and providing for the tracer slide to be displaceable with the screw and for the tracer to be immovable when the screw is rotated;
a tracer slide mounted on said carriage for reciprocating motion in the same direction as the motion of said boring tool slide;
means connecting said screw and said tracer slide and providing for the tracer slide and screw to be fixed against relative movement in a direction the same as the direction of motion of the boring tool slide and also providing for the screw to be rotatable relative to the tracer slide;
means for supporting a tracer valve and stylus the valve being for use in controlling fluid to said cylinder; and
connections between said tracer valve supporting means and said tracer slide providing for the supporting means to be positioned with respect to the tracer slide in a direction the same as the direction of movement of said boring tool slide.

3,186,270
METHOD AND APPARATUS FOR CONTROLLING THE MOVEMENT OF A TOOL MEMBER OF A TOOL MACHINE
Wilhelm Bondy, Rte. des Daillettes 5, Fribourg, Switzerland
Filed July 18, 1962, Ser. No. 210,646
Claims priority, application Switzerland, July 21, 1961, 8,579/61
15 Claims. (Cl. 82—14)

2. In combination, a bed, a saddle mounted for movement on said bed in the direction of the longitudinal axis of said bed, an auxiliary slide, a control surface provided for said auxiliary slide, means movably supporting said

auxiliary slide, and coupling means cooperating with said auxiliary slide for selectively and alternatingly coupling



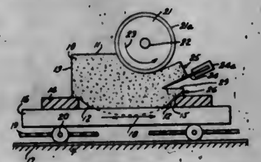
the latter in operable relation with said bed and said saddle.

3,186,271

PROCESS AND APPARATUS FOR THE PRODUCTION OF ONE-PIECE SHAPED ARTICLES OF ELASTICALLY DEFORMABLE MATERIAL

Fritz Kaiser, Ramschied uber Bad Schwalbach, Germany

Filed June 29, 1962, Ser. No. 206,322
Claims priority, application Germany, July 8, 1961, K 44,198
13 Claims. (Cl. 83—4)



1. In an apparatus for manufacturing shaped articles with predetermined outline from elastically deformable workpieces of the type having two opposed surfaces and a peripheral face intermediate such surfaces, in combination, a female die having at least one opening whose outline corresponds to the desired outline of the article and having a flat surface which supports one surface of the workpiece in such a way that said one surface of the workpiece covers said opening; deforming means for applying constant pressure of unchanging magnitude to the other surface of the workpiece whereby that portion of the workpiece which covers said opening yields and penetrates into the interior of said die; and cutter means for forming a slit in the peripheral face and in a cutting plane located between the surfaces of the workpiece parallel to said flat surface of said die while that portion of the workpiece which covers said opening penetrates into said die whereby the workpiece is subdivided into a pair of sections the first of which has said one surface and an additional surface located opposite said one surface and provided with a projection whose outline corresponds to the outline of said opening, and the second of which has said other surface and a second surface located opposite said other surface and provided with a cavity which is complementary to said projection, said deforming means comprising a roller of constant diameter having an axis of rotation parallel with the plane of said slit.

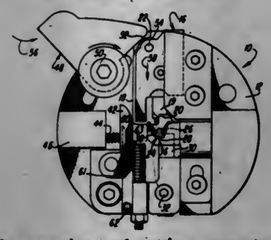
13. In a process for manufacturing shaped articles with predetermined outline from elastically deformable workpieces of the type having two opposed surfaces and a peripheral face intermediate such surfaces, the steps of applying constant pressure of unchanging magnitude to one surface of a workpiece and permitting the other surface to yield to such constant pressure within an outline which corresponds to the desired outline of the article; slitting the workpiece by forming in the peripheral face thereof a cut which divides the workpiece into a pair of sections the first of which has said one surface and a second surface located opposite said one surface and provided with a cavity, and the second of which has said other surface and an additional surface located opposite said other surface and provided with a projection which is complementary to said cavity and whose outline corresponds to the desired outline of the article; applying constant pressure of unchanging magnitude to said other surface of said second section and simultaneously permitting said projection to yield to such constant pressure; and forming a cut in the plane of said additional surface to separate said projection and a portion of the remainder of said second section from said second section.

3,186,272

COIL SPRING CUTTER HAVING RESILIENTLY MOUNTED MEANS TO SEPARATE THE COIL PRIOR TO CUTTING

Robert R. Kaufmann, 2717 W. 83rd St., Chicago 52, Ill.

Filed Oct. 29, 1962, Ser. No. 233,595
14 Claims. (Cl. 83—18)



1. A coil separating and cutting apparatus comprising a nest for supporting a coil to be cut, first and second cutting edges adapted to engage a single helix of said coil for cutting said helix, means for moving said cutting edges relative to each other whereby said cutting edges are adapted to penetrate through the periphery of said coil for cutting said helix, and a separator means, independent of said cutting edges, adapted to move into contact with said coil to separate helices thereof when a point of entry between said helices is encountered to thereby permit said engagement by said cutting edges, said separator means being mounted whereby it will yield when resisted by a helix of said coil, means causing said separator means to ride on the periphery of the resisting helix until said point of entry is encountered, said separator means being mounted whereby it will move into contact with said coil prior to entry of said cutting edges through the periphery of said coil.

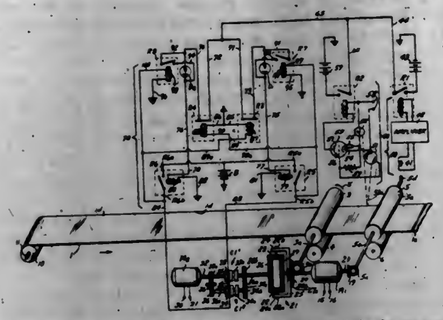
3,186,273

PROPORTIONING CONTROL DEVICE

Victor T. Tomberg, Elmhurst, N.Y., assignor to Topps Chewing Gum, Incorporated, Brooklyn, N.Y., a corporation of New York

Filed Apr. 6, 1961, Ser. No. 101,206
8 Claims. (Cl. 83—74)

1. A web feeding apparatus having drive means for drawing a web at a selected rate of movement, web processing means cyclically shifted into engagement with said web, first detector means spaced along said web from said processing means and arranged to emit a signal responsive to the passage of trigger indicia carried by said web, second detector means associated with said processing means and arranged to emit a signal at a predetermined point in the operating cycle of said processing means, said signals of said first and second detector means having differing characteristics, corrector means operatively associated with said drive means and selectively actuable in the alternative to first and second conditions of operation, respecttively, to increase and decrease the speed of said drive means, discriminator means arranged to receive said signals and to actuate said corrector means to



one of said conditions of operation alternatively responsive to the characteristics of the first received of said signals.

3,186,274

MECHANISM FOR REMOVING WASTE RESULTING FROM CUTTING WINDOW OPENINGS IN SHEET MATERIAL

Richard Winkler, Rengsdorf, near Neuwied, Rhineland, and Kurt Dünnebier, Wollendorf, near Neuwied, Rhineland, Germany, assignors to Berkley Machine Company, Kansas City, Mo., a corporation of Missouri

Filed Nov. 21, 1961, Ser. No. 153,928
Claims priority, application Germany, Mar. 17, 1961, W 29,666
9 Claims. (Cl. 83—103)



1. In combination with a rotatable cylinder having a hard smooth arcuate surface cooperating with a rotatable cylinder having spaced knife means for completing cut of a window opening in a web or the like under movement around the cylinder with the hard surface, a movable needle carried by the knife carrying cylinder and disposed between said spaced knife means and having a point for penetrating the web or the knife while the web overlies the hard surface and is being carried upon said hard surface to pick out waste produced in the window opening incidental to rotation of said cylinders, and spring means resiliently backing the needle and having sufficient strength to permit the needle to be yieldable while allowing penetration into said waste portion.

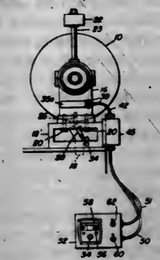
3,186,275

THERMAL EXPANSION MEANS FOR MAINTAINING AND ADJUSTING CUTTER KNIFE CLEARANCE

David Noel Obenshain, Luke, Md., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed July 24, 1963, Ser. No. 297,364
6 Claims. (Cl. 83—170)

1. A web cutting machine comprised of a bed knife, a rotary cutter drum, a fly knife carried in fixed position on the cutter drum and cooperating with said bed knife at a selected clearance therefrom to sever a traveling web passing between said bed knife and said fly knife, journals upon which said drum is carried, and pedestals supporting said journals; characterized in that heating means are mounted on said pedestals for heating said pedestals above the normal maximum temperature of the pedestals attained during running of the machine, temperature sensing means are mounted on said pedestals for measuring the temperature of the pedestals, and control means are associated with the heating means and temperature sensing means for activating said heating means in response to temperature changes of the pedestals



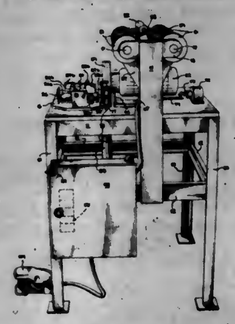
indicated by said temperature sensing means, to maintain a selected temperature of the pedestals, and thereby maintain the selected cutting clearance between the fly knife and the bed knife.

3,186,276

SLUG STRIPPING APPARATUS

Richard B. Thomas, 1516 Quarry Road, Marion, Ind., and Collier A. Elliott, 19 Pell Terrace, Garden City, N.Y.

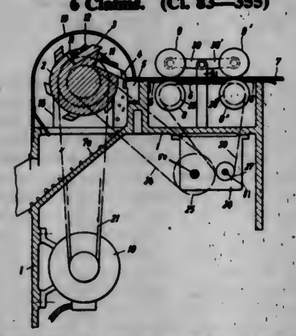
Filed Jan. 7, 1963, Ser. No. 249,956
3 Claims. (Cl. 83—286)



1. An apparatus for stripping the type face from a group of stacked line cast slugs including: a stationary table; an electric motor driven rotary saw; means for supporting the saw in overlying relation to said table and for movement through a linear path across the table; pneumatic power means for moving the saw through said linear path from an initial position, through a cutting position and return to said initial position; a turntable mounted for rotation in closely overlying relation to said table and adjacent said saw path, a plurality of push-up plates disposed in equally spaced relationship about the marginal area of said turntable and extending vertically upwardly therefrom; said push-up plates each being movable radially with relation to the turntable axis of rotation between a retracted position spaced from the marginal edge of the turntable and an extended position at the turntable margin; a pneumatically operated push-up plate power means for each of said push-up plates adapted to move its respective plate between said positions; turntable power means for indexing said turntable through discrete angular increments to thereby sequentially align each of said push-up plates with said saw path; a locating plate mounted on said table and extending upwardly therefrom, said plate having its working face parallel to said saw path and in opposed relation to the adjacent push-up plate, locating plate pneumatic power means for moving said plate between an extended position closely adjacent said saw path and a retracted position spaced therefrom; a slug clamping member mounted for movement between a clamping position and a raised position, power means

for moving said clamping member, the path of movement of said clamping member being generally normal to the plane of said table and disposed between said saw path and the aligned one of said push-up plates; a first pneumatic control means actuated in response to completion of an indexing motion increment of said turntable to actuate said push-up plate power means for said aligned push-up plate and said locating plate power means for movement of said plates into extended position; second pneumatic control means operable in response to movement of said saw out of its said initial position to actuate said last mentioned push-up plate power means and said locating plate power means into retracted position; and electrical control means for actuating said saw moving power means, said turntable power means and said clamping member power means in a sequence such that upon energization of said control means with a group of slugs stacked against the push-up plate to be aligned with said saw path by the next indexing movement of said turntable: (1) said clamp member is moved to raised position and said turntable is indexed to align the slug-loaded push-up plate with said saw path, (2) said locating plate and push-up plate are moved to extended position engaging said stacked slugs and said clamp member is moved to clamping position in engagement with said stacked slugs, (3) said saw begins traversing its path of motion and said push-up and locating plates are moved to retracted position, (4) said saw cuts through the stacked slugs and returns to its said initial position, and (5) said clamp member returns to its said raised position and said turntable is indexed to begin a repetition of the cycle.

3,186,277
GRANULATING APPARATUS FOR PLASTIC SHEET MATERIAL
Eugen Brunner, Birsfelden, Switzerland, assignor to Lonza Electrical and Chemical Works Limited, Gampel, Wallis, Switzerland
Filed Oct. 14, 1960, Ser. No. 62,625
Claims priority, application Switzerland, Oct. 16, 1959, 79,542/59
6 Claims. (Cl. 83—355)



1. Apparatus for cutting a strip of sheet material into separate particles of a size smaller than the strip, comprising

a stationary bed knife having rectangular teeth and individual rectangular recesses between the teeth,

a rotatable knife support arranged axially parallel to said bed knife,

straight knives supported by said knife support in axially and angularly spaced relation for cooperating each with the top of at least two teeth of said stationary bed knife and having a width substantially smaller than the width of said stationary bed knife,

profiled knives supported by said knife support in axially and angularly spaced relation for cooperating each with one of said recesses between said teeth of said stationary bed knife,

a plurality of straight grooves arranged on the surface of said knife support and extending perpendicularly to the axis of rotation thereof in axially and angularly spaced relation,

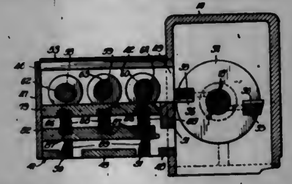
a shaft on each of said straight knives and said profiled knives, each of said shafts being slidable in one of said grooves for adjustment of said knives perpendicularly to the plane containing the axis of said knife support, said shafts of said knives fitting within said grooves without clearance in the direction of the axis of said knife support,

releasable fixing means for securing said shafts in adjusted position on said knife support,

feeding means for continuously feeding a strip of sheet material over said stationary bed knife, and

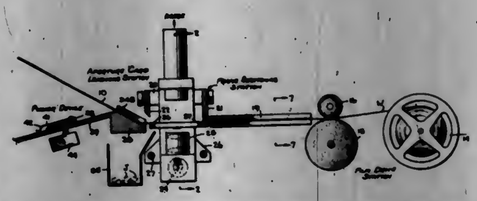
control means for controlling said feeding means in dependence of the rotation of said knife support to advance said strip a distance less than the length of said teeth of said bed knife during the time interval that two equivalent knives of said knife support cooperate with the same point on said stationary bed knife.

3,186,278
STRAP CHOPPER
Herbert Palmleaf, Lake Forest, Ill., assignor to A. J. Gerrard Manufacturing Company, Des Plaines, Ill., a corporation of Illinois
Filed Jan. 2, 1963, Ser. No. 248,924
4 Claims. (Cl. 83—355)



1. A device for chopping strap material of irregular thickness longitudinally thereof, comprising strap cutter means, a plurality of rotatable eccentric feed wheel members adapted to engage one side of strap material for advancing the same toward said strap cutter means, said eccentric feed wheel members having their respective points of maximum radius arranged at non-corresponding circumferential positions, and pad means adapted to be floatingly biased against the other side of strap material whereby to accommodate strap material of irregular thickness longitudinally thereof so that the latter may be continuously fed by said plurality of rotatable eccentric feed wheel members to said strap cutter means without jamming.

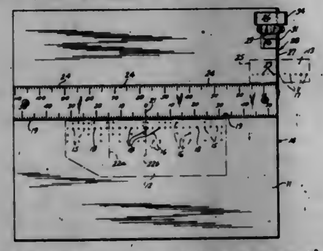
3,186,279
FILM SECTIONING APPARATUS
Fritz Rengel, Flushing, N.Y., assignor to N. B. Jackets Corp., Long Island City, N.Y., a corporation of New York
Filed Feb. 11, 1963, Ser. No. 257,533
3 Claims. (Cl. 83—398)



1. In a film sectioning apparatus for cutting a film web having a series of frames thereon joined together by junc-

tion areas into individual frames from which said areas are removed, a sectioning station including fore and aft spaced blade elements movable in the vertical plane relative to fixed platens, and a track for conducting a film web in a horizontal plane to slide over said platens, said track being displaced from the aft platen to allow for blade movement whereby a gap exists therebetween, said aft blade element being constituted by a plate having a slot to admit said web, the upper edge of said slot being shaped to define a cutting edge, the portion of said plate below said slot constituting a track segment which occupies said gap to maintain track continuity when said web is advanced into said station.

3,186,280
DATA SECTION REPLACEMENT ARRANGEMENT
Herman D. Post, 7 Chester Drive, Great Neck, N.Y.
Filed Feb. 20, 1964, Ser. No. 346,171
14 Claims. (Cl. 83—451)



1. A section replacement arrangement comprising, in combination,

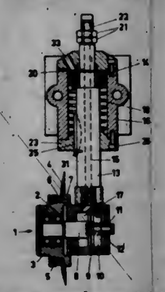
a substantially planar platform adapted to support a first material having a section to be replaced and a second material longer than said section to be replaced for providing a replacement section;

means on said platform for indicating the length of a section of a first material to be replaced;

means on said platform for indicating the length of a replacement section of a second material; and

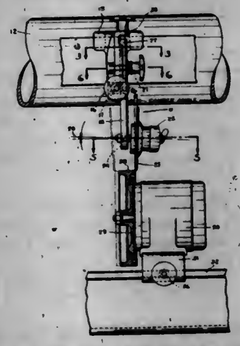
cutting means on said platform for cutting an indicated length off said second material as a replacement section.

3,186,281
KNIFE HOLDER OF ROLLER CUTTING MACHINES
Peter Wingen, Overath, near Cologne, Germany, assignor to Karl Rud. Dienes Fabrikationsgesellschaft für Maschinenersatzteile m.b.H., Vilkerath, near Cologne, Germany, a German concern
Filed July 23, 1962, Ser. No. 211,755
Claims priority, application Germany, Aug. 9, 1961, D 36,769
4 Claims. (Cl. 83—469)



1. A pressure medium-actuated knife holder of a roller cutting machine, said knife holder comprising, in combination with a single circular knife, a hub carrying said knife, a piston rod connected with said hub and extending transversely to said circular knife for the side setting of said knife, a piston connected with said piston rod, a spring engaging said piston, a casing enclosing said piston and said spring and having a pressure chamber, another piston rod connected with said casing and extending substantially perpendicularly to the first-mentioned piston rod, another piston connected with the second-mentioned piston rod and movable from a position of rest for the lowering of said knife, another spring engaging the second-mentioned piston, another casing enclosing the second-mentioned piston and the second-mentioned spring and having a pressure chamber and a single pressure medium inlet communicating with the second-mentioned pressure chamber, the second-mentioned piston rod having an axial bore communicating with the first-mentioned pressure chamber and a radial valve bore communicating with said axial bore, said radial valve bore being devoid of communication with the second-mentioned pressure chamber when the second-mentioned piston rod is in its said position of rest and establishing a communication with the second-mentioned pressure chamber when the second-mentioned piston is lowered from said position of rest to supply the pressure medium through said single inlet to the two pressure chambers, the two springs being of such sttrength that when pressure medium is introduced the lowering of said knife takes place prior to the side setting thereof, while when pressure of the pressure medium is released a reverse side movement of the knife takes place prior to the raising thereof, and at least one plate spring adjustably engaging said knife and said hub.

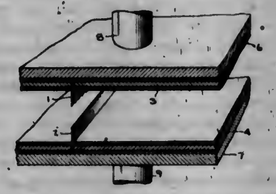
3,186,282
SLITTER FOR PAPER WINDER OR REWINDER
Peter Waterhouse, Montreal, Quebec, Canada, assignor to Dominion Engineering Works Limited
Filed Aug. 16, 1962, Ser. No. 217,429
2 Claims. (Cl. 83—497)



1. A slitter for slitting a web moving in a given direction of motion, said slitter comprising: a circular slitter band mounted for rotation on a first axis located on one side of said web parallel thereto and transverse to said direction of motion, said slitter band having first and second axially spaced outer cutting edges; a circular slitter blade mounted for rotation on a second axis located on the opposite side of said web, said second axis making a shear angle with said first axis, said shear angle being apparent when said slitter is viewed along a line normal to said web, said slitter blade having an outer sharp edge; a fixed mounting bracket having a mounting surface; a mounting post supporting said slitter blade, said mounting post having a first clamping surface on one side and a second clamping surface on the opposite side, said first clamping surface being non-parallel with and at a predetermined angle with said second clamping surface; means for clamping said mounting post with either said

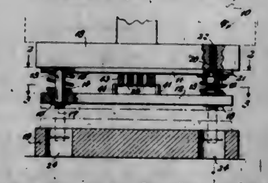
first or said second clamping surface against said mounting surface, said clamping surfaces being so related to said second axis that when said first clamping surface is clamped against said mounting surface, said sharp edge is in shearing cooperation with said first cutting edge and shear angle has a pre-selected magnitude, and when said second clamping surface is clamped against said mounting surface, said sharp edge is in shearing cooperation with said second cutting edge and said shear angle is maintained at said pre-selected magnitude but is reversed in sign.

3,186,283
STEEL RULE DIE CUTTER FOR CUTTING CRUSHABLE MATERIALS
Herbert R. Anderson, Massapequa, N.Y., assignor to Tri-Wall Containers, Inc., New York, N.Y., a corporation of New York
Filed Jan. 25, 1961, Ser. No. 84,832
4 Claims. (Cl. 83—623)



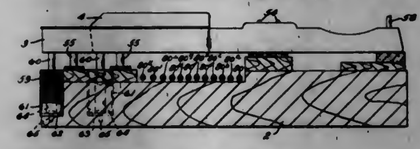
1. A steel rule die cutter comprising mutually opposed and parallelly aligned steel rule dies each having cutting edges formed by a plurality of pointed teeth triangular in form with the teeth of one die meshing with the teeth of the other when said dies are moved to mutually abutting relation, and means for moving said dies linearly towards and from said relation, said cutting edges extending along each edge portion of each of said teeth from one pointed portion to the base portion thereof, said cutting edges of each of said teeth being beveled toward one another, the beveled edges of one die being substantially complementary to those of the other die, and said dies being transversely springy so that they wedge each other transversely apart without substantial damage to each other in the event they overtravel when moved by said means towards said relation.

3,186,284
PUNCHING DIE SET
John H. Bennett, Bridgeport, Conn., assignor to Minnie Punch & Die Company, Inc., Union Township, N.J., a corporation of New Jersey
Filed Nov. 1, 1961, Ser. No. 149,379
7 Claims. (Cl. 83—623)



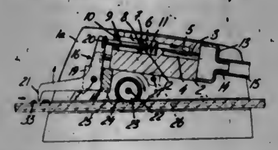
1. A punching die set for forming perforations in relatively thin material comprising a substantially flat punch plate, a substantially flat die plate, means mounting the punch plate and die plate in parallel for movement toward and away from each other, this mounting means including guide pins at diagonal corners of the punch and die plates for alignment of the two plates, at least one aperture formed in the punch plate, a punch mounted in the aperture of the punch plate, said punch including a head, an undercut collar and a stem with the stem having a cross-section approximately that of the aperture and being larger than the collar but smaller than the head, the punch being secured in the punch plate by the head being forced into the punch plate to displace material of the punch plate around and into the undercut collar, said die plate being formed of relatively soft material and said punch being formed of relatively hard prehardened machineable steel alloy material.

3,186,285
PIANO HAVING ELECTRICALLY ACTUATED KEY PLAYING MEANS
Lee L. Von Gunten, Tonawanda, N.Y., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Original application Feb. 24, 1959, Ser. No. 794,902, now Patent No. 3,149,528, dated Sept. 22, 1964. Divided and this application Feb. 28, 1962, Ser. No. 176,241
3 Claims. (Cl. 84—20)



1. In combination with a piano and a chord and run playing mechanism therefor,
a frame for the piano, the keys for the piano being pivotally positioned intermediate the front and back portions thereof,
an individual solenoid coil for each key of several octaves of the piano,
said piano frame being recessed below the front portion of each said key in said octaves and said solenoid coils being positioned therein below the key such solenoid coil is to control,
a rigid solenoid armature rigidly secured to each of said keys in said several octaves and extending downwardly therefrom with its lower end protruding into a said solenoid coil when the key is in its normal released position,
individual energization circuits for said solenoid coils, and normally open switch means in each of said individual energization circuits for said solenoid coils whereby individual keys can be played by closing said switch means when the energization circuit therefor is closed.

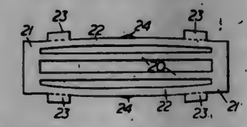
3,186,286
EDUCATIONAL MUSICAL TOYS
Folke Hugo Torsten Svensson, Boras, Sweden (% Lund, Angskarsgatan 6, Stockholm N.O., Sweden)
Filed Feb. 1, 1963, Ser. No. 255,611
4 Claims. (Cl. 84—83)



1. An educational musical toy, characterized therein that it comprises in combination a tone-giving unit, having pipes, strings or the like, adapted to be selectively operated by means of tone operating levers, a note carrying member in the form of a slide, displaceable relative to said unit and having a series of mutually parallel flanges or grooves, constituting the note lines in a system of music, and note members, each comprising a base plate, having at its under side two spaced apart grooves

or flanges for co-operation with two adjacent flanges/grooves of the note carrying member, and on its upper side a projection in form of a note, positioned either vertically above one of said grooves/flanges or intermediate the same and provided with indications such as staples and flags showing the length of the note in question, the note members being adapted to be detachably connected to said flanges or grooves in close relationship relative to each other and in such a manner that the note forming projections may selectively control the tone operating levers of the tone-giving unit, when said note carrying member is displaced relative to said tone-giving unit.

3,186,287
BEARING BUSHES
Christian Henry Wehlau, 288/310 York Way, London, England
Filed June 4, 1964, Ser. No. 374,230
Claims priority, application Great Britain, June 22, 1963, 24,908/63; Feb. 1, 1964, 4,381/64
8 Claims. (Cl. 84—251)



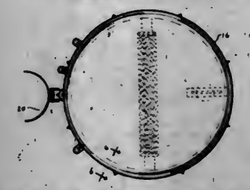
1. A bush in the form of a moulding of synthetic plastics material for use in a pianoforte key, comprising two substantially flat mutually spaced and parallel elements and two end pieces each connected to both of said elements, both of said end pieces extending laterally beyond the outer side surfaces of both of said elements.

3,186,288
STRINGED INSTRUMENT OF THE VIOL TYPE
Gerald H. Finch, Denver, Colo., assignor to Thot Research, Inc., Englewood, Colo., a corporation of Colorado
Filed Mar. 2, 1964, Ser. No. 348,552
7 Claims. (Cl. 84—275)



1. In a stringed instrument of the viol type having a hollow non-jointed resonance box of essentially conventional shape formed as an integral structure and having an intermediate bridge area, said resonance box comprising a molded back portion of conventional shape, a molded belly portion of essentially conventional shape and of greater thickness than the back portion and having a curvature the same as the back portion with a larger arc in the intermediate bridge area than corresponding wooden instruments, and a molded rib portion of conventional shape of lesser thickness than the back portion, said rib portion merging with the belly and back portions throughout the area of contact to produce interconnecting surfaces of essentially uniform molecular structure throughout.

3,186,289
DRUM
Ralph C. Kester, Jr., 202 Lincolnway E., South Bend, Ind.
Filed June 5, 1961, Ser. No. 114,755
7 Claims. (Cl. 84—411)



1. A shell-less drum comprising an annular rim of rigid construction, an annular rib on the internal surface of said rim secured rigidly thereto and spaced inwardly from the two edges thereof, a disc-shaped head, a rigid ring secured to the periphery of said head and seating on one side of said rib, a tensioning ring of smaller diameter than said first mentioned ring contacting the side of said head opposite said rib, a plurality of head tensioning fixtures attached to the inside of said rim, each having an adjustment screw for engaging said tensioning ring for urging the head peripheral ring and tensioning ring apart and thereby increasing the tension on the head, a snare device mounted on said drum including a bar pivotally mounted at one end on said tensioning ring and releasably mounted at the other end of said tensioning ring and extending thereacross, a plurality of snares extending parallel with said bar and supported thereon adjacent the head by a fixture at each end movable toward and away from the head, an adjustment means carried by said bar and contacting said last mentioned fixtures for moving said snares toward and away from said head, and a latch means for releasably retaining said snare device in operating position against said head.

3,186,290
PERCUSSION INSTRUMENT PRACTICE
Ronald Gould, 54 Jefferson St., Garden City, N.Y., and Arnold Goldberg, 115 Falmouth St., Brooklyn, N.Y.
Filed Nov. 13, 1962, Ser. No. 237,102
7 Claims. (Cl. 84—411)

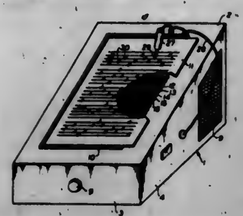


1. Percussion practice means, said means comprising: a frame member having an aperture therein forming a chamber; energy transmitting flexible pad means; flange means relatively thinner than said pad means, said flange means overlying the frame member and cantilevering the pad means over the chamber; and shock absorbing means underlying said flexible pad means to absorb and dissipate any shock load imparted to said pad means upon impingement of a drumstick on the surface thereof, whereby the drumstick will not be bounced.

3,186,291
ELECTRICALLY OPERATED MUSICAL DEVICE
Ernest A. Pedicano, 11 Hertford St., New Rochelle, N.Y.
Original application July 8, 1960, Ser. No. 41,647, now Patent No. 3,115,803, dated Dec. 31, 1963. Divided and this application Apr. 5, 1963, Ser. No. 270,914
3 Claims. (Cl. 84—470)

1. An electrically operated musical device comprising a casing having a top wall and side walls, a frame disposed

on said top wall, said frame being adapted to receive a number carrying five musical lines and a plurality of musical notes thereon, a series of groups of bars disposed parallel to and below said musical lines, one bar of each group of said series being in parallel electrical connection with the corresponding bar of the other of said groups, electrical circuit means for producing a musical sound responsive to the bar selected from one group of said



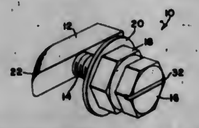
series, said electrical circuit means including a contact member engaging selectively one of said bars in accordance with the musical note carried by said member, and conduit means connecting said contact member with said sound producing means, said contact member comprising a body having a pin-pointed end, adapted to perforate said member carrying musical notes through said notes in order to provide electrical contact between said contact member and the corresponding of said bars.

3,186,292
MUSIC TEACHING DEVICE
Doris E. Burns, 446 N. Queen St., Lancaster, Pa.
Filed Mar. 28, 1963, Ser. No. 268,702
2 Claims. (Cl. 84—470)



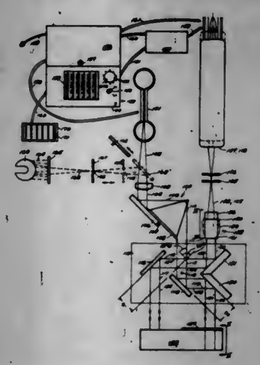
1. A device for teaching music note formation and time comprising a base piece representing a whole note and in the form of an oval or the like of a size adapted to be conveniently held in a child's hand, stem means, attachment means at one end of said stem means to detachably connect the stem means to said base piece, and thereby change the whole note to a half note, a darkening shield substantially the same size as said base piece, and means for detachably mounting said darkening shield on said base piece whereby said half note may be changed in value to a quarter note.

3,186,293
T-BOLT
Bernard A. Curry, 1924 N. Michigan, Davenport, Iowa
Filed Sept. 14, 1962, Ser. No. 223,770
2 Claims. (Cl. 85—9)



1. A T-bolt, comprising: a cross bar; a cylindrical, externally threaded shank rigidly secured at one end to an intermediate portion of said cross bar and extending perpendicularly therefrom to an outer terminal end; a head rigid on said terminal end and shaped as a regular polygon coaxial with and of a diametrical dimension greater than said shank and adapted to receive a wrench; a nut threadedly carried by the shank between said head and cross bar and confined against axial removal from the shank by said head and cross bar and shaped as a regular polygon on the axis of said shank and adapted to receive a wrench, the major radial dimension of the nut being greater than that of the head.

3,186,294
INTERFEROMETRIC GONIOMETER
Robert A. Woodson, Vestal, N.Y., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Oct. 13, 1960, Ser. No. 62,394
9 Claims. (Cl. 88—14)

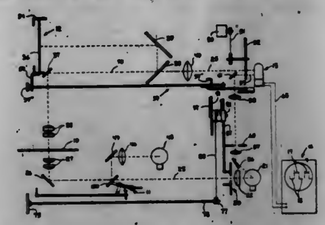


1. Interferometric apparatus comprising,
(a) first means for producing an incident beam of radiation;
(b) single retrodirecting means positioned normal to said incident beam of radiation;
(c) a rotor positioned intermediate said first means and said retrodirecting means;
(d) optical means cooperating with said retrodirecting means fixedly mounted upon said rotor, and rotatable therewith, for splitting said incident beam into a plurality of emergent beams whose relative phase is a function of their wavelength and of the orientation of said rotor with respect to said incident beam, said optical means further operable to recombine the light beams redirected by said retrodirecting means; and
(e) means for detecting the relative phase of selected ones of said emergent beams, whereby said orientation of said rotor with respect to the direction of said incident beam is determined.

3,186,295
IRIS PHOTOGRAPHIC PHOTOMETER
James Cuffey, 522 East Side Drive, Bloomington, Ind.
Filed Apr. 10, 1961, Ser. No. 101,870
6 Claims. (Cl. 88—14)

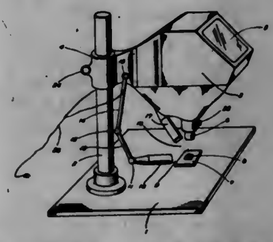
1. A measuring device comprising a first light source, a chopper arranged to alternately permit passage of one or the other of a pair of spaced beams of light, means for channeling light from said light source to said chopper to form one of said beams, an adjustable iris, means for channeling light from said light source through said adjustable iris, thence through an object the transparency of which is to be measured, means for channeling the light from the object to form the other of said beams, a photoelectric cell positioned to sense said beams after they pass through said chopper, and an oscilloscope connected

to said photoelectric cell for comparing the intensity of said beams, a second light source, said latter two channeling means being operable to conduct light from said second source through the object to illuminate a broader area of said object than the first light source, an opaque mirror pivotal between two positions in a first of which said mirror blocks light from said first light source but reflects light from said second light source into said channeling



means, the second position of said opaque mirror being such that light from said first light source is not blocked thereby and light from said second light source is not reflected into said channeling means thereby, toggle means for resiliently holding said opaque mirror in each of said positions, a viewing screen, and a transparent mirror for reflecting a portion of the light passing through said object onto said viewing screen.

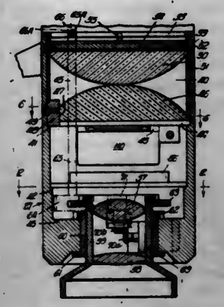
3,186,296
METHOD AND APPARATUS FOR MICROSCOPIC INSPECTION USING COLORED ILLUMINATION
Richard T. Erban, 145—38 Bayside Ave., Flushing, N.Y.
Filed Dec. 9, 1960, Ser. No. 74,836
8 Claims. (Cl. 88—24)



1. The method of increasing the acuity of visual perception of minute irregularities in the surface of an object under microscopic observation which comprises the steps of holding the object suitably positioned with respect to the objective lens of a microscope, illuminating said object simultaneously by a plurality of light beams of differing colors and intensities, and adjusting the angle of incidence of each individual light beam upon the object to achieve a differential illumination of the portions of the surface of said object which are under observation.

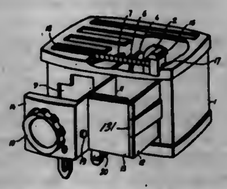
3,186,297
CAMERA-PROJECTOR HAVING FILM GATE MOUNTED ON CONDENSER LENS
Joseph H. Wally, Jr., Shawnee Mission, Kans., assignor to Western Blue Print Company, Kansas City, Mo., a corporation of Missouri
Filed Nov. 30, 1961, Ser. No. 156,965
11 Claims. (Cl. 88—24)

9. In an optical image focusing device, a one piece optical chamber having a cylindrical bore therethrough and a pair of oppositely disposed apertures in the sidewall thereof through which film may be passed, said bore having at least a pair of inwardly directed peripherally disposed lodges, one being located immediately above the apertures in the chamber sidewall, and a condenser lens supported on said one ledge and having a film gate mounted on its side toward said apertures of the chamber sidewall, said film gate having a pair of oppo-



sitely disposed film receiving apertures, and means locating said condenser lens to align said apertures of the film gate to be accessible from the apertures in the sidewall of the chamber.

3,186,298
PORTABLE PROJECTOR WITH A SLIDE MAGAZINE
Arnošt Schlesinger, Bratislava, and Anton Horváth, Nova Ves pri Dunaji, Czechoslovakia, assignors to Meopta, narodni podnik, Prerov, Czechoslovakia
Filed Sept. 29, 1961, Ser. No. 141,805
2 Claims. (Cl. 88—28)



1. A portable slide projector comprising
a casing having a projection aperture located adjacent one end of the front thereof and including
a movable wall element pivotally mounted to swing about an axis located on the front of said casing at the side of said aperture away from said one end for movement between an operative position and a storage and transport position, said wall element having first and second angularly related portions which respectively project forwardly from said front of the casing and extend parallel to said front at a distance from the latter in said operative position, and which respectively cover said aperture and form a side of said casing at said one end in said storage and transport position;
an optical system including means within said casing for projecting a beam of light forwardly through said aperture thereby to illuminate a slide disposed in said aperture, and a projection lens carried by said second portion of the movable wall element to project an image of the illuminated slide when said wall element is in its operative position;
a wall section pivotally mounted at the front of the casing to swing about an axis adjacent the other end of the latter, and being pivotally connected to said wall element to remain parallel to said first portion of the latter so that, when said wall element is in its opera-

tive position, said wall section also projects forwardly from the front of the casing;

a slide carrier movable through the front of said casing between a retracted position in the latter and an extended position intermediate said wall section and said first portion of the wall element in said operative position of the latter so that said wall section and first portion of the wall element act to laterally guide a supply of slides on said carrier;

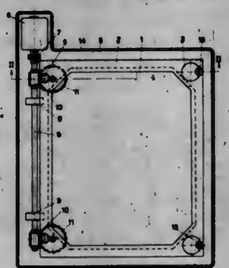
and feeding means operative to move the rearmost slide on said carrier from the latter into said projection aperture.

3,186,299

DEVICE TO INCREASE THE RESOLVING POWER IN PROJECTIONS ON A TRANSLUCENT SCREEN, PARTICULARLY FIT FOR PHOTOGRAMMETRIC APPLIANCES

Gino Parenti, Rome, Italy, assignor to Ottico Meccanica Italiana Soc. p. Az., Rome, Italy

Filed Mar. 21, 1962, Ser. No. 181,247
Claims priority, application Italy, Mar. 22, 1961, 5,018/61
1 Claim. (Cl. 88—28.93)



An optical device, comprising a single translucent screen having a rough surface and adapted to receive a projected image, a frame carrying said screen and having two upper corner portions and two lower corner portions, two symmetrically disposed pivots mounted in said upper corner portions, a supporting plate, a motor carried by said plate, an elongated shaft driven by said motor, two endless screws keyed upon said shaft, two helicoidal wheels meshing with said screws, each of said pivots being eccentrically mounted in a separate helicoidal wheel and being rotatable therewith, said two lower corner portions having circular symmetrically disposed uniform holes, and two pivots mounted in said plate, the two last-mentioned pivots engaging the side walls of said holes and having diameters which are smaller than those of said holes.

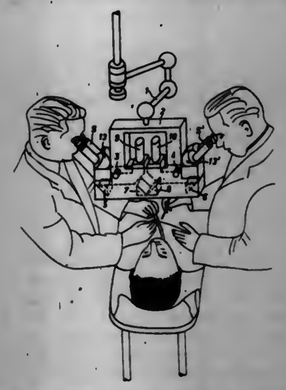
3,186,300

DOUBLE STEREO-MICROSCOPE AND ILLUMINATOR FOR SURGICAL OPERATIONS

Hans Littmann, Heidenheim an der Brenz, Germany, assignor to Carl Zeiss, Oberkochen, Wurttemberg, Germany

Filed July 13, 1961, Ser. No. 123,741
Claims priority, application Germany, Mar. 4, 1961, Z 8,590
3 Claims. (Cl. 88—39)

1. In an optical instrument for surgical use adapted to be positioned above a surgical table to view and magnify a patient's operation from both sides of said table, support means, a supporting housing carried by said support means of a width and length to extend laterally of said table, said housing being provided with a central opening, a pair of stereo magnification tubes slidably and adjustably mounted on each end of said supporting housing, said tubes each being provided at their upper ends with an ocular and being arranged at an obtuse angle with respect to the ends of said supporting housing, an objective in each of said ends of the supporting housing and movable with the magnification tubes, prism means mounted in said supporting housing above said opening and having oppositely arranged upwardly divergent reflecting surfaces for directing image rays in both directions toward said stereo tubes, a pair of light sources



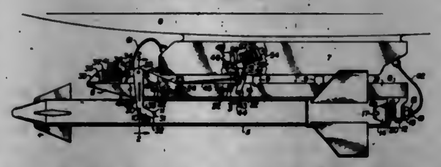
supported on said supporting body, an illumination lens for each light source, reflecting prisms mounted adjacent said stereo tubes for reflecting light rays from said light sources downwardly in the housing, an additional reflecting prism mounted adjacent each end of said housing for directing rays of light inwardly of said housing toward said first named prism means and through said opening in the lower portion of said supporting housing.

3,186,301

MISSILE RELEASE SYSTEM

Herbert H. Buschers, Riderwood, Md., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Apr. 24, 1962, Ser. No. 189,742
9 Claims. (Cl. 89—1.7)



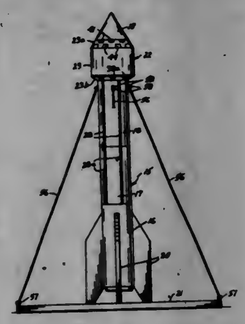
1. A missile release system for the zero length launching of a missile having two sets of pins mounted to the missile body on the opposite sides thereof substantially forward of the center of gravity of said missile and extending beyond the surface thereof, each set of pins consisting of a forward and an aft pin, comprising: a launcher frame; means pivotally mounted to said launcher frame and cooperating with said pins so as to support said missile from movement in any direction normal to the longitudinal axis of said missile prior to the firing of said missile and so as to become disengaged from said pins as said missile moves forward upon being fired without imparting any moment to said missile; a second means for preventing said first means from rotating in either direction prior to the firing of said missile thereby to restrain said missile from movement in a fore or aft direction with respect to said launcher frame, said second means being operable immediately upon firing said missile to permit the forward rotation of said first means; and a third means cooperating with said first means to cause said first means to rotate out of the flight path of the missile tail fins as said missile moves forward upon being fired.

3,186,302

ROCKET-PROPELLED VEHICLE WITH GROUND ANCHORING MEANS

Hollas K. Price, Box 701, Oak Hill, W. Va.

Original application Nov. 23, 1959, Ser. No. 854,884, now Patent No. 3,092,027, dated June 4, 1963. Divided and this application Oct. 29, 1962, Ser. No. 233,960
5 Claims. (Cl. 89—1.7)



1. In a rocket-type vehicle, the combination of a tubular body having a side wall with inner and outer surfaces and provided in said side wall with a slot, and non-yieldable but releasable means for anchoring said body to the ground to facilitate development of substantial rocket thrust prior to take-off, said means comprising a hook pivotally mounted in said slot and swingable from a projected position wherein it protrudes outwardly beyond the outer surface of said side wall to a retracted position wherein it is drawn fully into the slot, an anchoring cable secured at one end thereof to the ground and provided at its other end with an eye, said eye being connected to said hook when the latter is projected and being engageable with the outer surface of said side wall to slidably withdraw said hook from the eye and thus separate said cable from the hook when the latter is retracted, a rotatable locking ring mounted in said tubular body and having its outer marginal edge in contact with the inner surface of said side wall, said ring being disposed and rotatable in a transverse plane of said body, said hook abutting said outer marginal edge of said ring when the hook is projected whereby to lock the hook against movement to its retracted position, the outer marginal edge portion of said ring being provided with a notch for receiving said hook in the retracted position of the latter when said locking ring is rotated in said body to an unlocked position wherein said notch is in radial alignment with said hook, means in said body for rotating said locking ring, and means disposed wholly within said body for retracting said hook into said notch upon rotation of the ring to its unlocked position.

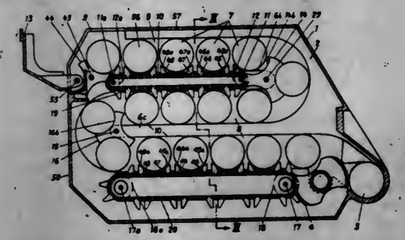
3,186,303

ROCKET PROJECTOR WITH MAGAZINE

Johannes Linke and Eberhard Berek, Zurich, Switzerland, assignors to Machine-Tool Works Oerlikon, Administration Company, Zurich Switzerland

Filed June 4, 1963, Ser. No. 285,524
Claims priority, application Switzerland, June 4, 1962, 6,708/62
16 Claims. (Cl. 89—1.7)

1. A rocket projector comprising in combination: rockets, a magazine having in one part a loading aperture and in another part a loading chamber, said parts lying one above the other, a conveyor drum lying by the side of said loading chamber, a supply device arranged in said magazine and forming for the rockets lying parallel to one another a transport connection between said loading aperture and said conveyor drum, said supply device having zig-zag-shaped curved guides, said conveyer drum feeding in operation said rockets for being fired to said loading chamber, said supply device having further a first and a second endless rocket conveyer chain arranged in the same direction and lying each partly along a loop of said guides, said first chain having an upper and a lower layer and lying on top of said second chain, dogs mounted on and projecting from said chains in operation engaging said rockets, sprocket wheels turning round each of said conveyer chains, a first pair of star wheels arranged in said magazine by the side of said loading aperture parallel to



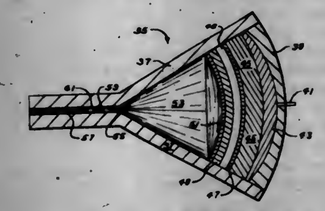
and between the adjacent sprocket wheels of said first and second conveyer chains and transferring in operation the rockets from said first conveyer chain to said second conveyer chain, a second pair of star wheels arranged in said magazine opposite said loading aperture parallel and adjacent in said direction to one of said sprocket wheels of said first conveyor chain and transferring in operation the rockets from said upper layer to said lower layer of said first conveyer chain, a third pair of star wheels arranged in said magazine between said loading aperture and said first chain adjacent and parallel to one of said sprocket wheels by the side of said loading aperture and transmitting the rockets from said loading aperture to said first conveyer chain, and reversible driving means connecting the said pairs of star wheels with said conveyer chains and with said conveyer drum.

3,186,304

HYPERVELOCITY GUN

Arthur T. Biehl, Diablo, Calif., assignor to MB Associates, a corporation of California

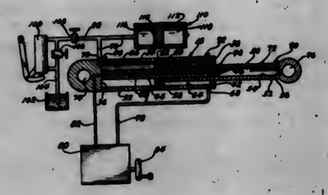
Filed Oct. 22, 1962, Ser. No. 232,314
3 Claims. (Cl. 89—7)



1. A hypervelocity gun comprising a housing which is a spherical sector, a barrel disposed at the apex of said sector, a high explosive material disposed adjacent the base at a radius from the apex of said sector, a projectile disposed in said barrel, a fluid material disposed between said projectile and said explosive material, and a means to ignite said explosive material whereby said explosive material generates a spherical shock wave which propa-

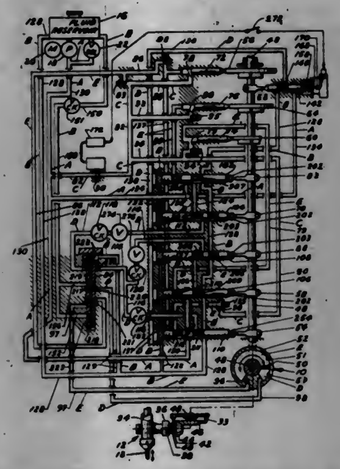
gates in said fluid material heating and compressing said fluid, and which adiabatically compresses said fluid propelling said projectile at hypervelocities.

3,186,305
HYDRAULIC ACTUATOR MECHANISM
John D. Lorimer, Birmingham, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Filed July 2, 1963, Ser. No. 294,792
2 Claims. (Cl. 89—37)



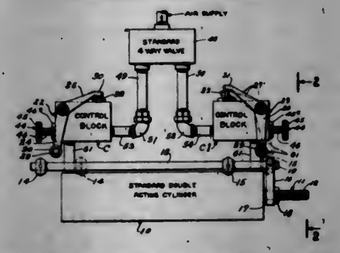
1. A hydraulic actuator having a stroke substantially equal to its length for elevating and depressing a cannon for tipping said cannon substantially between a horizontal position and a vertical position, said actuator being mounted between a fixed support and a pivot point on said cannon and comprising in combination: a first cylinder with an inner bore having a closed end and an open end; an end cap affixed to said open end, said end cap being provided with a bore axially aligned with said first cylinder; a cylindrical projecting member attached to the closed end of said first cylinder and disposed coaxially therein from said closed end to within the bore in said end cap, said cylindrical member thereby defining an annular space within said first cylinder; a second cylinder having an inner bore coaxially and slidably disposed around said cylindrical projecting member and an outer surface slidable through the bore in said end cap, said second cylinder having an open end surrounding said projecting member and a closed end defining a cylindrical chamber situated between the end face of said projecting member and the inner face of the closed end of said second cylinder, said cylindrical chamber being normally filled with substantially uncompressible fluid; an annular piston slidably disposed in the annular space within said first cylinder, said annular piston being affixed to the open end of said second cylinder and defining in said first cylinder a first annular chamber toward the closed end thereof and a second annular chamber toward said end cap and said annular piston having an effective area in said second annular chamber substantially equal to the effective area of the end face of said cylindrical projecting member, said first and second annular chambers being normally filled with substantially uncompressible fluid; means transfering said substantially uncompressible fluid between said second annular chamber and said cylindrical chamber to cause said second cylinder to linearly move in relation to said first cylinder; and conduit means connecting said first annular chamber to a source of variable pressure for constantly substantially balancing the weight of said cannon in any elevation position thereof, said source of variable pressure comprising an accumulator cylinder, a free piston in said cylinder, a normally closed gas filled chamber on one side of said piston and a fluid filled chamber on the other side of said piston, said fluid filled chamber being normally in fluid communication with said first annular chamber to cause fluid transferred between said first annular chamber and said fluid filled chamber to reciprocate said free piston so as to increase and decrease the pressure of the gas contained in said gas filled chamber.

3,186,306
MACHINE CONTROL DEVICE
Carl F. Schoen, Troy, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Nov. 21, 1962, Ser. No. 239,260
9 Claims. (Cl. 91—27)



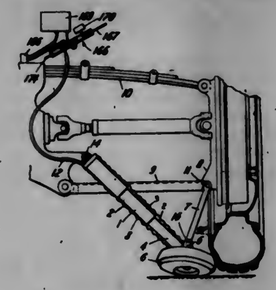
1. A feed control mechanism, comprising a connector means for connection with a machine tool, a shaft associated with said connector means, a rotary motor mounted on said shaft, a plurality of cams mounted on said shaft, each of said cams having means for manual angular adjustment on said shaft, a plurality of pilot valves, each of said pilot valves being adapted to be actuated by one of said plurality of cams, a selector valve, a plurality of conduits communicating between said selector valve and said plurality of pilot valves, a second plurality of conduits communicating between said selector valve and said rotary motor, and a supply of fluid in said first and second plurality of conduits for actuating said rotary motor and said shaft alternately in opposite directions.

3,186,307
CONTROL VALVE SYSTEM FOR PRESSURE FLUID CYLINDER
Alex Ellenbogen, 81 Hillside Ave., Torrington, Conn.
Filed Apr. 17, 1964, Ser. No. 363,051
2 Claims. (Cl. 91—31)



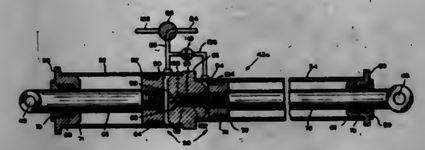
1. In a control system for controlling the operation of a pressure fluid cylinder having a reciprocating piston rod, the combination comprising means defining a first fluid flow path communicating with one side of said cylinder, means defining a restriction in said first flow path, means defining a second fluid flow path by-passing said restriction, means defining a valve chamber in said second flow path having a seat at one end thereof surrounding a port, a valve element in said valve chamber movable between open and closed positions relative to said seat, a cam moved in unison with said piston rod, a follower device engageable with said cam and with said valve element for operating said valve element in response to movement of said cam, said cam being so shaped as to cause said follower device to move said valve element to its closed position when said piston rod passes a given point in moving in one of its directions of reciprocating movement and to positively hold said valve element in said closed position until said piston rod passes said given point in moving in the other direction of its reciprocating movement, means defining a third fluid flow path in parallel with said second flow path and also by-passing said restriction, and a check valve in said third flow path arranged to permit flow therethrough when the pressure in said port exceeds the pressure in said valve chamber.

3,186,308
HYDRAULIC RAMS
Archibald James Butterworth, 7 Grove Garden, Frimley, near Aldershot, England
Filed Dec. 6, 1961, Ser. No. 157,428
Claims priority, application Great Britain, Dec. 7, 1960, 42,051/60
11 Claims. (Cl. 91—169)



1. A hydraulic ram comprising in combination a plurality of nested parts of different cross dimensions arranged to telescope within each other in fluid tight manner, means including a control valve for supplying fluid under pressure to the interior of the ram, mechanical locking means releasably locking together said parts other than the said part of smallest cross dimension whereby when fluid under pressure is supplied to the interior of the ram relative movement takes place at first only between said smallest part and a locked part, mechanical means conditioned by said relative movement and adapted to release said locking means at the end of the relative movement, said nested parts being three relatively movable ram parts of different diameter, the smallest diameter ram part having an external recess at the end which projects into the largest diameter ram part and the intermediate diameter ram part having an internal recess at the end thereof which projects into the other end of the largest diameter ram part and in which a hollow boss encircles the smallest diameter ram part within said largest diameter ram part to one end of which ram part it is fixed, said hollow boss having movably mounted upon it at least one detent, said at least one detent being movable between limits of movement and at one limit of its movement having a portion engageable with said external recess on said smallest diameter ram part and at the other limit of its movement having a part engageable with said internal recess in said intermediate diameter ram part, the interengaging parts of said recesses and said at least one detent being so shaped that when the recesses are opposite one another and relative axial movement takes place between one said ram part and said at least one detent, movement is imparted to said at least one detent so that one part thereof disengages one said recess and another part engages the other said recess.

3,186,309
DUAL SPEED LIFTER FOR MATERIAL HANDLING MACHINES
Clarence E. Killebrew, Coloma, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 18, 1961, Ser. No. 160,129
5 Claims. (Cl. 91—412)



1. A hydraulic actuator comprising a two-part cylinder structure including a smaller cylinder portion and a larger cylinder portion interconnected by a combined support and barrier portion, the said support and barrier portion having an opening therethrough interconnecting the said two cylinder portions, a first piston reciprocable in a first one of the said cylinder portions and forming with the said support and barrier portion a first chamber, a first piston rod connected to the said first piston and extending outwardly of the said first cylinder portion, a second piston reciprocable in the said second cylinder portion and forming with the said support and barrier portion a second chamber, a second piston rod connected to the said second piston and extending outwardly of the said second cylinder portion, connections to a source of pressurized fluid including a valve for controlling fluid flow, a first conduit connecting the said valve with one of the said chambers to supply pressurized fluid selectively thereto, a relief valve in the said opening in the said support and barrier portion allowing the passage of fluid from the said one chamber to the other chamber only upon the occurrence of a predetermined fluid pressure in the said one chamber, a second conduit connecting the said other chamber with the said first conduit, and a check valve in the said second conduit permitting fluid flow therethrough only from the other chamber to the first conduit.

3,186,310
VOLUME CONTROL FOR VARIABLE VOLUME FLUID PRESSURE TRANSLATING DEVICE
Darby B. Neff, Worthington, and Donald F. Rader, Columbus, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Feb. 18, 1963, Ser. No. 258,991
2 Claims. (Cl. 91—414)

1. Control means for a fluid pressure energy translating device of the type having movable means for changing its volumetric capacity, said control means comprising:

fluid motor means for adjusting the position of said movable means,

a lineally actuable servo control valve mechanism controlling the operation of said fluid motor means in accordance with the lineal actuation of said mechanism,

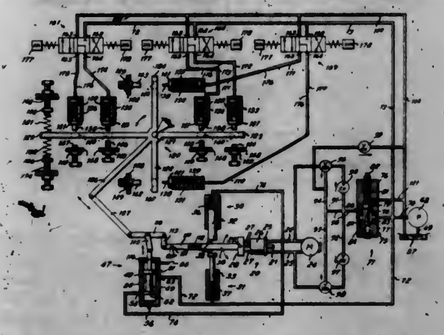
and fluid operated remotely controllable means for lineally actuating said control valve mechanism, said remotely controllable means comprising,

a rotatable cross arm having outwardly extending arms the application of force to which causes said actuator to rotate,

a plurality of fluid operated pistons mounted to rotate said cross arm when actuated,

an individually adjustable stop limiting the stroke of each said piston and thereby limiting the rotation of said cross arm in response thereto,

said arms having openings therethrough in alignment with said pistons through which the ends of said pistons pass when said pistons are actuated, each piston having an abutment thereon of diameter larger than said opening to abut said arm and rotate said

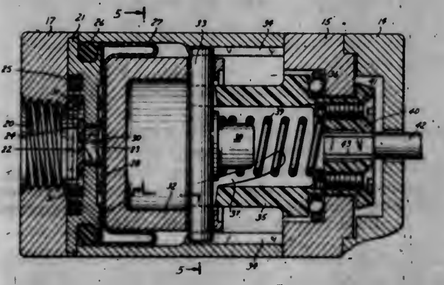


arm upon actuation, each stop being mounted on the opposite side of the arm from its cooperating piston to abut the end of said piston extending into said aperture when said piston is actuated,

a solenoid controlled valve associated with each piston for controlling the application of fluid under pressure thereto,

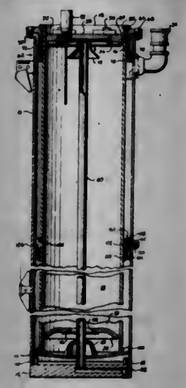
and means translating rotation of said cross arm in response to actuation of any of said pistons into lineal actuation of said control valve mechanism.

3,186,311
AIR IMPULSE COUNTER
Carl M. Carlson, 344 12th St., Crosskill, N.J.
Filed Oct. 3, 1962, Ser. No. 228,095
3 Claims. (Cl. 91—443)



1. In an air impulse counter the combination including a casing, a cylindrical bore formed in said casing, a rotor rotatably supported within said bore, a port communicating said bore externally of said casing, a longitudinally reciprocable piston within said bore between said rotor and said port, a pin transversely supported by said piston, a helical groove formed in said rotor receiving said pin, spring means yieldingly urging said piston toward said port, said port being formed with adjacent longitudinally displaced decreased diameter and increased diameter cylindrical port sections with said decreased diameter port section adjacent said cylindrical bore, an annular shoulder formed by the junction of said increased and decreased diameter port sections, a flapper member within said increased diameter port section and free to move toward and away from said annular shoulder, a central aperture in said flapper member having a diameter less than said decreased diameter port section, a plurality of radially displaced passages in said flapper member spaced from said central aperture on a radius greater than the radius of said decreased diameter port section, abutment members formed on said casing and projecting within said bore, said pin being formed with projecting ends whereby the said air upon ingress through said port forces said flapper against said annular shoulder blocking said radially displaced passages and passes through said central aperture and impinges upon said piston overcoming the force of said spring means and causes said projecting ends to strike said abutment members, and egress of said air upon said spring means urging said piston toward said port and moving said flapper member away from said shoulder allowing said air to egress through said radially displaced flapper passages and said central aperture allowing increased egress area.

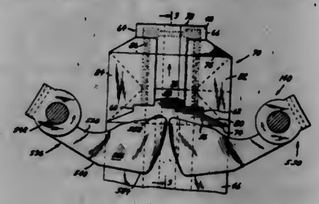
3,186,312
LIFT
Ion V. K. Hott and Robert J. Haddix, Dayton, Ohio, assignors to The Joyce-Cridland Company, Dayton, Ohio, a corporation of Ohio
Filed Apr. 10, 1963, Ser. No. 271,919
3 Claims. (Cl. 92—168)



1. In a vehicle lift having a cylinder and a piston, a bearing structure including a mounting ring connected to said cylinder, a bearing ring having a bearing surface in contact with said piston, said bearing ring being in threaded engagement wtih said mounting ring, detent means supported by said cylinder including a detent member adapted to enter a notch in said bearing ring to lock said bearing ring in a predetermined position, said detent member being removable from said notch.

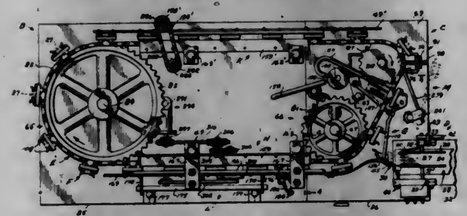
3,186,313
BAG BOTTOM FOLDING MECHANISM
Rudolph Paul Bechle, Wyckoff, N.J., assignor to Potdevin Machine Co., Teterboro, N.J., a corporation of New York
Filed Jan. 31, 1963, Ser. No. 255,257
1 Claim. (Cl. 93—27)

In a bag-making machine for forming a bag blank of predetermined length from a tube formed in turn from a web of sheet material, the improvement of means for forming a bag bottom having a trailing flap on said bag blank to thereby provide a finished bag, said means including a rotatable cylindrical drum on which the bag blank is adapted to travel and a folding means in operative association with said drum for folding the trailing flap upon itself, said trailing flap folding means including at least one wing and actuating means for rotating said wing in a timed relationship with respect to the movement of the bag blank such that, when rotated, the wing is adapted to engage the outer face of the trailing flap to fold the trailing flap upon itself, said actuating means including a rotatably driven shaft coupled with said wing, directing means for directing the sweep of the wing during the folding of the trailing flap such that the sweep approximates the cylindrical path of travel of the bag blank through the trailing flap folding means, said directing means journaling said shaft at an acute angle with



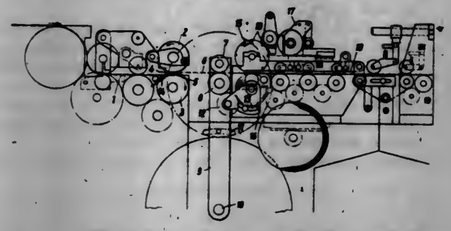
respect to the curved plane of the blank and away from the drum, and said wing including a base section extending substantially normally from said shaft and a flap engaging end diverging from said base section at an acute angle therewith and adapted to travel in a conical path and in a path substantially concentric with the curved plane of the bag blank, said flap engaging end gradually increasing in width from its associated base section to its outer periphery, and the flap engaging end adapted to initially engage said trailing flap at sectors thereof of shorter radius located adjacent the associated base section upon operation of said actuating means whereby rupturing of the trailing flap by the wing is prevented.

3,186,314
CARTONING MACHINE
Marion R. Frazier, 25 Morningside Circle, Little Falls, N.J.
Filed May 16, 1963, Ser. No. 280,982
7 Claims. (Cl. 93—53)



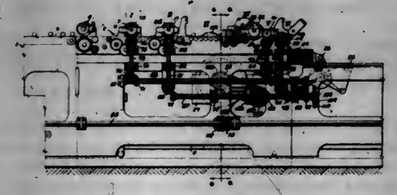
2. In a cartoning machine, the combination of a carton magazine, carton feed means, carton conveying means, and carton closure means, said carton conveying means including endless conveying means and means for supporting, guiding and driving said endless conveying means along a predetermined path, said endless conveying means traversing a path including first and second straight line segments and an angled segment extending between said first and second straight line segments, said angled segment extending from said first straight line segment at an obtuse angle and extending from said second straight line segment at an acute angle, said carton magazine and said carton feed means being disposed in juxtaposition with respect to said angled segment of said endless conveying means whereby to feed and position cartons on said carton conveying means at said angled segment, and said carton closure means being disposed in juxtaposition with respect to said carton conveying means whereby to step-by-step close a carton at said first and second straight line segments.

3,186,315
METHOD AND APPARATUS FOR MANUFACTURING ENVELOPES, BAGS AND LIKE OBJECTS
Bruno Pahlitzsch, Berlin, Germany
Filed Apr. 24, 1963, Ser. No. 275,428
Claims priority, application Germany, May 2, 1962, P 29,300
9 Claims. (Cl. 93—62)



3. In an apparatus for the manufacture of self-sealing envelopes, in combination, first transport means for advancing a section of blanks having each at least one open edge and at least one closing flap extending beyond said edge at a first speed with the flaps of said blanks trailing; second transport means forwardly of said first transport means in the direction of travel of said blanks and operable at a lower speed; shingling means between said first and second transport means for staging said blanks by transferring said blanks from said first transport means to said second transport means with each successive blank overlying a preceding blank and having its respective flap and a marginal zone adjacent its open edge extending rearwardly beyond the preceding blank substantially contiguously with the superposed flap thereof; and gumming means along said second transport means and including an adhesive-applying closed surface rollingly engageable with said blanks and operable at the speed thereof while being formed with discontinuities extending parallel to said open edges and substantially registering therewith whereby a gap in the adhesive is maintained between the adhesive applied to each flap and that applied to the marginal zone of a respective blank.

3,186,316
SCORING AND FOLDING MECHANISMS OF AN ENVELOPE MAKING MACHINE AND DRIVE THEREFOR
James W. Lenk, Shawnee Mission, Kans., assignor to Berkley Machine Company, Kansas City, Mo., a corporation of Missouri
Continuation of application Ser. No. 192,783, May 7, 1962. This application Aug. 14, 1964, Ser. No. 391,356
17 Claims. (Cl. 93—62)

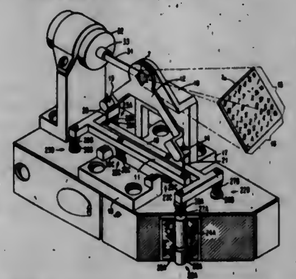


3. In an envelope making machine,

means for advancing blanks through a fixed path, sets of related mechanisms in the path of the blanks to operate upon the blanks,

a driving connection interconnecting the mechanism of one set with its related mechanism,
a separate driving connection interconnecting the mechanism of the other set with its related mechanism,
said driving connections each including a shaft with the shafts for the driving connections being in spaced apart parallel relation,
a gear fixed to one of the shafts,
a complementary gear on the other shaft,
means for selectively connecting and disconnecting the complementary gear to said other shaft,
an idler gear having teeth meshing with teeth of both of said gears,
means fixed to the said other shaft to rotate the said other shaft independently of the one shaft when the complementary gear is loosened for advancing and backing up one of the driving mechanisms relatively to the other for varying spacing between the operations made by the mechanisms of one set with respect to the mechanisms of the other set, and
a common driving means for said driving connections.

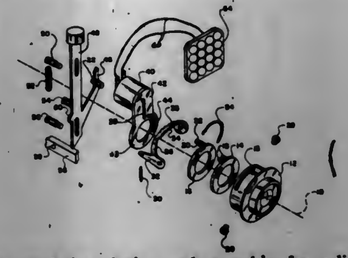
3,186,317
MATRIX POSITIONING DEVICE
Peter Bottz, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1960, Ser. No. 79,301
16 Claims. (Cl. 95—4.5)



1. A positioning device comprising: a movable arm, first, second and third actuators, first, second and third output members respectively operated by said actuators, pivot means individually connecting said output members to said arm at spaced points, a reference point on said arm, said points of connection being related to the movement of the particular actuator whereby each energized actuator produces equal movement at points 1, 2 and 3 distance units from said reference point, and utilization means connected to said arm 9 distance units from said reference point and 6 distance units from said 3 distance unit point.

3,186,318
PHOTOELECTRIC EXPOSURE CONTROL SYSTEMS FOR CAMERAS
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 3, 1962, Ser. No. 241,658
5 Claims. (Cl. 95—10)

1. In a camera having an optical axis and having an adjustable exposure regulating device on said axis, a photoelectric control system for said regulating device, comprising: a photoelectric exposure meter energizable by field light and having an output member positioned in accordance with energization of said meter; a sensing bail pivotally mounted on said camera on opposite sides of said optical axis and forming an arc extending partially around said axis, one side of said arc forming a first sensing surface engageable with said output member to position said bail as a function of the energization of said meter; a second sensing surface formed on a second side of said arc; a sensing member coupled to said



exposure regulating device and movable for adjusting the latter; and means for moving said sensing member into engagement with the second sensing surface on said bail for adjusting said regulating device in accordance with the position of said bail.

3,186,319
CAMERA RELEASE DEVICE
Roland Hochstein, Kiel-Wik, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Aug. 29, 1962, Ser. No. 220,269
Claims priority, application Germany, Sept. 8, 1961, Z 8,959
9 Claims. (Cl. 95—10)

1. In a camera release device, particularly for a motion picture camera provided with a disconnectable automatic exposure mechanism arranged in an electric circuit, a switch in said electric circuit of said exposure mechanism, a camera release means, and a single manually actuated means selectively operable for opening and closing said switch and for controlling said camera release means independently and in unison, said manually actuated means comprising a finger button arranged slidably along a wall of the camera casing and a finger operable plate pivotally mounted in a cavity of said finger button.

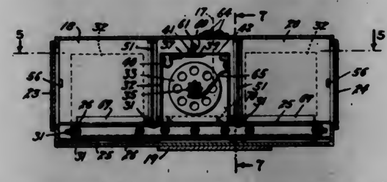
3,186,320
EXPOSURE CONTROL SYSTEM FOR PHOTOGRAPHIC CAMERAS
Allen G. Stimson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 14, 1963, Ser. No. 251,231
4 Claims. (Cl. 95—10)

1. In a camera having an adjustable exposure regulating device, an exposure control system comprising, in combination: a photoelectric cell illuminatable by field light; an electric measuring instrument having a movable coil connected to and energizable by said photocell to generate a first magnetic field as a function of field brightness; a permanent magnet generating a second magnetic field interacting with said first magnetic field for positioning said coil within a predetermined path inside said coil in accordance with the energization of said coil; means for adjusting the position of said magnet for correspondingly adjusting the position of said coil; means



for adjusting said exposure regulating device in conjunction with adjustment of the position of said magnet; and index means movable with said coil for identifying, by the position thereof, the proper adjustment of said exposure regulating device to achieve a predetermined exposure of film in said camera.

3,186,321
EXPOSED FILM MAGAZINES FOR PERIODIC CAMERAS
Kenneth L. Kimrey, 508 Tucson, and Robert L. Dintaman, 410 Lansing, both of Aurora, Colo.
Filed Nov. 29, 1961, Ser. No. 155,606
7 Claims. (Cl. 95—31)

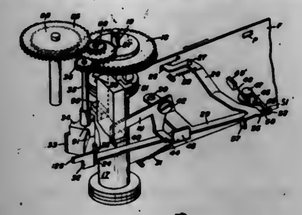


1. An exposed film receiving magazine for a periodic camera comprising:
(a) a completely enclosed, light-tight magazine positioned to continuously receive a strip of exposed film from said camera;
(b) a removable canister in and completely enclosed by said magazine;
(c) a driven film winding spool positioned in said canister so as to receive said film from said magazine through an entrance opening in said canister;
(d) a knife plate movably mounted on said canister to simultaneously cut the film and close said entrance opening;
(e) spring means urging said knife plate toward the closed cutting position;
(f) and stop means releasable from the exterior of said housing for releasing said knife plate to the action of said spring means to sever the film and close said entrance opening to seal the canister for removal from said magazine.

3,186,322
FILM TRANSPORT AND METERING MECHANISM FOR CAMERAS
David E. Beach, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 25, 1963, Ser. No. 260,628
13 Claims. (Cl. 95—31)

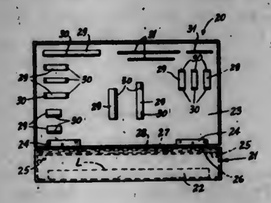
1. In a photographic mechanism for metering the movement of a web adapted to be driven along a predetermined plane, said web being perforated at predetermined metering intervals, the combination comprising:

web driving means; a movable web sensing member normally moved from a first position contacting a surface of said web to a second position traversing said web plane when intercepting one of said web perforations; locking means movable between an operative position in which it locks said web driving means against operation, and an inoperative position wherein it frees said web driving



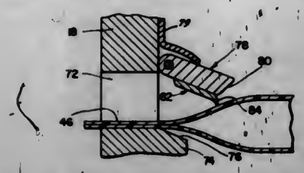
means; means independent of said sensing member normally acting to move said locking means to said operative position; and means associating said sensing member and locking means to one another to make the movement of said locking means to its operative position responsive to movement of said sensing member from said first position to said second position.

3,186,323
VISUAL DISPLAY INSURANCE KIT
Francis C. Niehaus, St. Louis, Mo., assignor to Magic Decorator Company, St. Louis, Mo., a corporation of Missouri
Filed Sept. 7, 1962, Ser. No. 222,027
2 Claims. (Cl. 95—85)



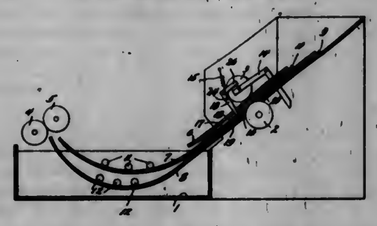
1. A graphic display kit for aiding the sale of insurance and the like comprising a case, a sheet removably supported within the case and having in its construction a material to which magnets are attracted, a sheet of printing paper and a transparent sheet, and a plurality of small transparent plates each having one or more magnets glued to it, the small transparent plates being in different sizes and shapes and bearing different notations for selective use in laying out an insurance program, each small transparent plate being rectangular with a width representing a predetermined value on a first scale and a height representing a predetermined value on a second scale, the magnets glued to the small plates having sufficient magnetic strength to hold the small plates against the transparent sheet when the sheet of printing paper is placed upon the magnetically attractive sheet and the transparent sheet is placed upon the sheet of printing paper, the various dimensions and different notations on the small transparent plates enabling their selective placement upon the transparent sheet to graphically display selective values on the first and second scales, a cover for the case, the cover being removable and the case having lamps in it for exposing the printing paper when the lamps are energized and the case is placed over a display.

3,186,324
PHOTOGRAPHIC APPARATUS
Vaito K. Elorants, Needham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,591
11 Claims. (Cl. 95—89)



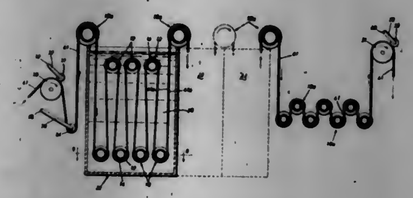
1. In photographic apparatus including a housing formed with an opening for admitting a tubular container, having a liquid-filled portion, into said housing, in combination:
means for compressing said container during withdrawal movement thereof from said housing through said opening, said means including a member mounted adjacent one side of said opening for movement between an inoperative position in which said container is free to move inwardly through said opening without being compressed and an operative position in which said member compresses said liquid-filled portion of said container, said member being movable into said operative position during and in response to the initial withdrawal movement of said container; and
means for puncturing said container at the leading end of said liquid-filled portion during the initial withdrawal movement thereof from said housing through said opening, said means for puncturing said container being mounted on said member for movement into engagement with said container as said member is moved from said inoperative to said operative position during and in response to engagement with said container during said initial withdrawal movement thereof.

3,186,325
DEVELOPING DEVICE
Maurice Hector De Belder, Mechlin, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
Filed Aug. 8, 1962, Ser. No. 215,677
Claims priority, application Belgium, Aug. 9, 1961, 40,872, Patent 607,401
11 Claims. (Cl. 95—89)



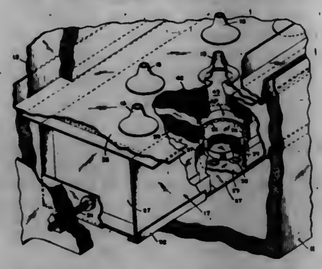
1. In an apparatus for contacting an exposed emulsion support and a receiving support in a diffusion transfer operation and including means defining a developing zone, a plurality of guide plates defining at least one passageway for guiding said supports in generally superposed relationship at least into said zone, and a pair of feed rollers for said supports disposed adjacent the ingress end of such passageway, at least one of said rollers being mounted for bodily movement to and from an operative position cooperating with said other roller to contact said supports and a displaced position for introduction of said supports, and means for positively rotating at least one such roller to advance said supports when said movable roller is in said cooperating position, in combination, the improvement comprising a set of stop fingers mounted on an axis disposed adjacent said plates downstream of said feed rollers for pivotal movement between a closed position at which said fingers project into said passageway to arrest travel of said supports therethrough and an open position at which said fingers are retracted from said passageway to permit free travel of said supports, and bistable biasing means connected to said set of fingers urging the same into either of said two positions after positive movement of said fingers away from the other position and past dead center, whereby said biasing means maintains said set of fingers in closed position to limit the extent of introduction of said supports into said channel, then yields upon positive advance of said supports by said drive rollers and upon movement past dead center transfers said set to open position clear of said supports.

3,186,326
FLUID BEARINGS FOR STRIP MATERIAL
Gunther Schmidt, Scarborough, Ontario, Canada, assignor to Houston Schmidt Limited, Toronto, Ontario, Canada
Filed Mar. 28, 1962, Ser. No. 183,134
20 Claims. (Cl. 95—94)



15. Film strip processing apparatus comprising a tank containing a film strip processing liquid, at least one liquid bearing positioned in said liquid, said bearing comprising a member having an outer surface in contact with said liquid, two spaced apart flange members, said flange members and said outer surface defining a film strip receiving channel, said member having first channels therein communicating in fluid-flow relationship with said film strip receiving channel, and spaced apart liquid bleeding means provided in said flange members for bleeding liquid from said film strip receiving channel, said liquid bleeding means terminating in inlets through which liquid from said film strip receiving channel passes into said liquid bleeding means, said inlets being positioned spaced from and above said outer surface, said inlets and said liquid bleeding means thereby communicating in fluid-flow relationship with said film strip receiving channel at points spaced from and above said outer surface, a film strip having two major surfaces and two side edges, said film strip being positioned in said film strip receiving channel over said first channels with both said major surfaces lying across said film strip receiving channel and both said side edges adjacent said flange members, and means for supplying said liquid under pressure to said first channels, said liquid under pressure passing through said first channels into said film strip receiving channel and raising said film strip above said outer surface, at least a part of said liquid in said film strip receiving channel passing into said tank through said liquid bleeding means.

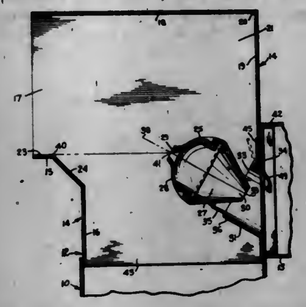
3,186,327
INDUCTION UNIT FOR AIR CONDITIONING SYSTEMS
Angelo C. Giurlando, Iselin, and Hrant H. Yousoufian, Verona, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Feb. 28, 1963, Ser. No. 261,722
9 Claims. (Cl. 98—38)



1. An induction unit for an air conditioning system having a source of pressurized conditioned air, which unit includes:
(a) a casing forming a plenum having an inlet connected with said supply of conditioned air,
(b) a mixing chamber communicated with a source of non-conditioned air,
(c) a throttling and attenuating assembly in said casing including:
(1) an upper wall having nozzle formed therein opening into said mixing chamber,
(2) a lower wall including a valve means having adjustable openings therein for regulating the flow of conditioned air from said plenum to said closed attenuating assembly,
(d) means in said closed attenuating assembly forming a plurality of attenuating passages individually communicating said valve means with each of said nozzles,
(e) said attenuating passages including:
(1) a cushion of a sound absorbing material disposed transversely of said attenuating passages forming upper and lower chambers therein, said upper chamber being in communication with at least one of said nozzles,
(2) passage means in said cushion communicating said lower and said upper chambers respectively for passing streams of air to the latter,
(3) said cushion of sound absorbing material being disposed in substantial alignment with said valve openings to receive streams of air directed against the cushions.

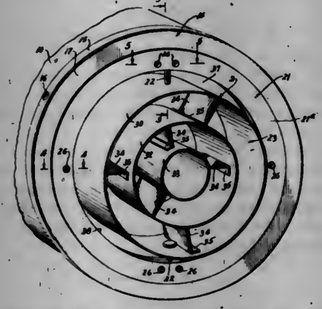
3,186,328
ROOM AIR CIRCULATING SYSTEM
Ben Cones, 6635 E. Washington St., Indianapolis, Ind.
Filed Apr. 17, 1963, Ser. No. 273,671
6 Claims. (Cl. 98—38)

1. In a room ventilating system, the combination with a vertically disposed stack having a lower room air inlet and an upper air discharging outlet; of a head on said stack;
said head having top, back and side walls, a bottom inlet connected to said stack upper outlet; a back wall fresh air intake opening, and an air discharge outlet from between said walls;
a fresh air inlet nipple;
means mounting said nozzle over said intake opening in said back wall;
said nipple being axially inclined upwardly from that intake opening, and directed toward said head discharge opening, the nipple opening into the head;
a nozzle;
means mounting said nozzle on said nipple opening and having its axis extending diagonally toward said head outlet;
said nozzle having a hollow frusto-conical portion with a smaller diameter end entering said nipple opening and defining an annular space therebetween, the smaller diameter end having an intake



opening therethrough, and having a larger diameter end within said head and spaced from said nipple; and said nozzle further having a hollow, semi-spherical portion turned and closing over said major diameter of, and having a discharge opening axially aligned with the said frusto-conical portion intake opening.

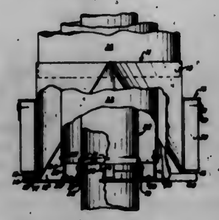
3,186,329
TUBULAR AIR DIFFUSER
Walter W. Kennedy, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed May 21, 1962, Ser. No. 196,366
5 Claims. (Cl. 98—40)



1. In combination with a duct adapted for the flow of air axially therethrough, an annulus adapted to be secured to the end of a duct concentric with the duct axis, an elongated tube extending through the hole defined by the annulus and having an outer peripheral surface radially spaced inwardly from the inner periphery of the annulus, said tube receiving at its inner end air delivered through said duct and discharging a stream of such air from its outer end in a direction determined by the angle included between the axes of said annulus and said tube, and means connecting said annulus and said tube and supporting the latter for turning of the tube about the axis of said annulus and also for swinging about a transverse axis extending diametrically across said hole and lying substantially in the plane of the annulus, said connecting and supporting means including two trunnions projecting radially from opposite sides of the tube along said transverse axis and

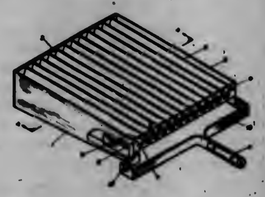
disposed intermediate the ends of said tube whereby to provide, in the different angular positions of the tube about its own axis, for swinging of the tube about said transverse axis as permitted by the space between the annulus and the tube.

3,186,330
SUPPORTING BASE FOR CHIMNEYS
William S. Newbill, Sr., 2227 County St., Portsmouth, Va.
Filed May 1, 1962, Ser. No. 191,492
7 Claims. (Cl. 98—46)



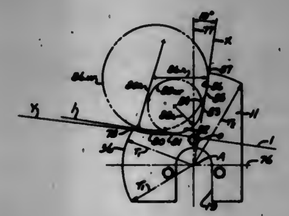
1. In supporting base structures for prefabricated sheet metal chimneys, a horizontal sheet metal base plate having a central opening, means to attach the base plate to a building structure, three sections of sheet metal tubing of progressively greater diameter vertically disposed concentrically with respect to said central opening, said opening being substantially greater than the exterior dimension of the innermost of said metal tubes, means to support said innermost tube in fixed position projecting above and below said base plate, means to support said next larger tube concentrically spaced from the innermost tube and with its lower margin spaced above the base plate, and means to support the outermost tube concentrically spaced from the next larger tube, said last mentioned means including means to circumferentially join said outermost tube with the base plate to form an enclosure for circulating insulating air, whereby the space between the innermost tube and the next larger tube and the space between the next larger tube and the outermost tube will be in communication with each other at their lower ends, and both said spaces will be in communication with the exterior atmosphere through the opening in the base plate, said opening in the base plate being smaller than the cross-section of the intermediate tube, said means to support said innermost tube including an annular horizontally disposed member within which the innermost tube is slidably received, means to attach the annular member to the base plate, and means integrally formed with the innermost tube to limit vertical movement thereof with respect to said annular member.

3,186,331
CHARCOAL GRILLS
Edwin J. Dettling, 271 Banbury Lane, Pittsburgh, Pa.
Filed Apr. 10, 1962, Ser. No. 186,535
2 Claims. (Cl. 99—445)



1. A grill for supporting food exposed to cooking temperatures comprising a plurality of parallel strips having frames for supporting the ends thereof, said strips consisting of double sheets of stainless steel separated by asbestos disposed therebetween to prevent hot spots throughout the length of the strips, said strips having their juxtaposed edges turned in opposite directions with the upper edges turned down and the lower edges turned up, the flat body portion of the strips being disposed at an angle to have the upper turned down portions overlap the lower upturned portions to allow the juices released from the food to accumulate in said upturned portions, said strips being inclined to constitute the upturned portions troughs to run off said juices at one end.

3,186,332
WORKPIECE CONSECUTIVE SELECTION AND ALIGNMENT MACHINE
Arthur H. Long, Columbiana, and Alexander Shashaty, Youngstown, Ohio, assignors to Wm. K. Stamets Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 17, 1963, Ser. No. 273,752
9 Claims. (Cl. 100—7)

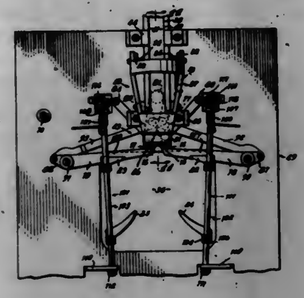


8. A rotary cam for the consecutive selection of cylindrical workpieces of a group of different diameters which consists of a cam body having means to mount the same for rotation, a fundamental cam surface in said body having a substantially horizontal short receiving section in one plane and a substantially vertical long discharge section in another plane with both sections disposed within a quadrant said planes of which are substantially at right angles to each other, said quadrant lies between a pair of lines that intersect with the axis of rotation of the cam body, a selection apex at the end of the short receiving section, a discharge apex at the end of the long discharge section, said fundamental cam surface continuous from one apex to the other, a peripheral convex surface extending from said selection apex to function as a stop, a receding arcuate surface in each of said cam surface sections from each apex, the dimension of said short and long receiving sections from their apices to the plane of the opposite section being greater than the diameter of the smallest workpiece of the group to be selected and greater than the radius of the largest workpiece of the group of workpieces to be selected by the cam.

3,186,333
RUBBER BAND STRETCHING APPARATUS
Henry R. Hoffman and Harry L. Sidenstick, Cincinnati, Ohio, assignors to Kett Tool Co., Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 1, 1963, Ser. No. 320,631
16 Claims. (Cl. 100—9)

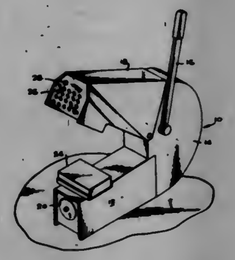
1. A machine for applying elastic bands to articles, said machine comprising a chute for receiving a tube of adherent elastic bands, an expander mechanism comprising a plurality of band engaging expander fingers, means for shifting said expander fingers in a divergent relationship to stretch a band in engagement with said fingers so that the band defines an enlarged central opening, a

feeding mechanism for sequentially feeding bands from said chute around said expander fingers, and a release



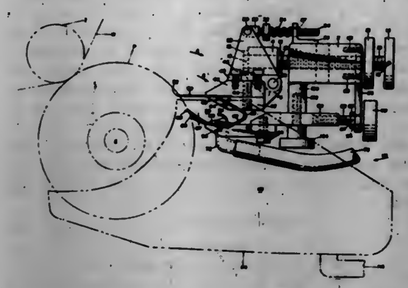
mechanism for forcibly disengaging bands from said expander fingers.

3,186,334
MENDING PRESS
Clarence K. Brown, Long Beach, Calif., assignor to Edwin J. Burns, Inglewood, Los Angeles County, Calif.
Filed May 14, 1963, Ser. No. 280,246
7 Claims. (Cl. 100—51)



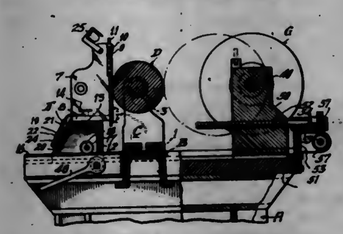
1. An electrically actuated mending press, said press having a circuit comprising:
(a) Means for connecting said circuit to a source of electrical power;
(b) A first electrical path having a platen heater therein;
(c) A thermoswitch positioned in close proximity to said heater, said thermoswitch being operable to disconnect said heater when said heater rises above a predetermined bonding temperature;
(d) A filament lamp;
(e) Means connecting said filament lamp in said path when said heater is at a predetermined temperature thereby lighting said lamp to indicate the heated condition of said heater;
(f) A second electrical path having a limit switch therein;
(g) Manually operated self-locking handle means for moving said platen heater to a bonding position and to close said limit switch;
(h) A solenoid acting against said handle means to open said limit switch and move said heater from said bonding position; and
(i) Thermal delay means for connecting said solenoid in said second path a predetermined time after said limit switch has been closed.

3,186,335
INKING MECHANISM
Joseph Guy Goulin, 65 Langevin Ave., Fairview, Mass.
Filed Dec. 19, 1962, Ser. No. 245,894
3 Claims. (Cl. 101—157)



1. Apparatus for inking the printing surface of a rotating intaglio cylinder comprising, a U-shaped flexible ink containing and distributing member having interconnected upper and lower portions enclosing an open-sided ink reservoir with the open-side extending peripherally-adjacent the printing surface of the cylinder longitudinally of the cylinder and transversely to the direction of movement of the printing surface of the cylinder, the printing surface of the cylinder defining a wall of the reservoir at the open-side thereof, an oscillator bar, means for oscillating said oscillator bar in side-to-side movement relative to the cylinder, a doctor blade coacting with the cylinder, support means pivoted relative to said oscillator bar for supporting said doctor blade in various angular positions with reference to the cylinder, the upper portion of said ink containing and distributing member being supported by said support means and movable therewith, the lower portion of said ink containing and distributing member serving as an apron in fluid-tight adjacency to the cylinder, means for introducing ink to the reservoir of said ink containing and distributing member, apron adjusting means mounted relative to said oscillator bar and supporting the lower portion of said ink containing and distributing member for the movement of said toward and away from sealing engagement with the cylinder independently of the movement of said doctor blade toward and away from the cylinder.

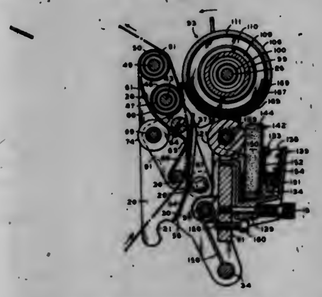
3,186,336
MACHINE FOR MOUNTING AND PROOFING PRINTING PLATES
John F. Kirby, 700 Franklin Turnpike, Allendale, N.J.
Filed Nov. 27, 1962, Ser. No. 240,239
9 Claims. (Cl. 101—216)



1. A machine for mounting and proofing printing plates comprising a main frame, a pair of pillow blocks mounted on the top of said frame and having axially and horizontally aligned shaft bearing seats each to rotatably receive one end of the shaft of a plate cylinder, a printing plate aligning mechanism including a vertical transparent rest

sheet for a printing plate, a support strip to be separably attached to the upper edge of a flexible printing plate, a vertical holder for said support strip and said transparent rest sheet, and means mounting the holder on the top of the frame at one side of the common axis of said bearing seats including a base bar movable horizontally on the top of the frame toward and from the common axis of said bearing seats and on which said holder is mounted for movement longitudinally of said axis, said support strip and said vertical holder having coacting portions for magnetically slidably mounting said support strip on said vertical holder, whereby a printing plate may be suspended from said support strip between said rest plate and a plate cylinder mounted on said pillow blocks for alignment of the printing plate with and application to said plate cylinder.

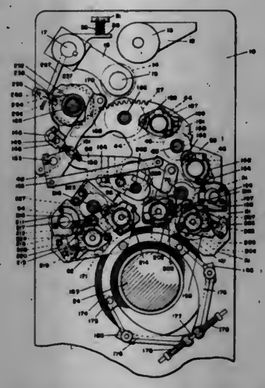
3,186,337
TAPE CODING ATTACHMENT
Forrest G. Hill, East St. Louis, Ill., assignor to Marsh Stencil Machine Company, Belleville, Ill., a corporation of Illinois
Filed Jan. 2, 1962, Ser. No. 163,837
2 Claims. (Cl. 101—228)



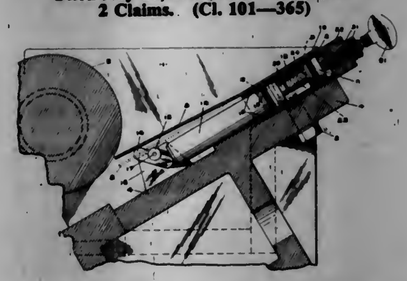
1. A tape coder comprising a frame including spaced side members, a back guide plate supported between the side members, a front guide plate supported between the side members, the front guide plate being spaced from the back guide plate, a guide roller spaced from the back guide plate for directing tape through the tape coder, the guide roller being positioned adjacent the tape entry side of the frame, a platen roller rotatably supported between the side plates and positioned toward the tape exit side of the frame, a tape exit roller positioned adjacent the tape exit side of the frame and rotatably supported by the side plates, a tape guide rod, a pair of longitudinal tape guide plates supported by the tape guide rod, means for adjusting the positions of the longitudinal tape guide plates to accommodate various widths of tape, the longitudinal tape guide plates being positioned adjacent the tape entrance side of the frame, and means for intermittently printing code designations upon the tape as it passes the platen roller.

3,186,338
INKING MECHANISM FOR ROTARY PRINTING PRESS
Henri E. Peyrebrune, River Forest, and Roman L. Kobos, Chicago, Ill., assignors to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,192
31 Claims. (Cl. 101—352)

1. In a printing press, the combination with spaced side frames, of a stud shaft extending inwardly of each frame, a front swing plate mounted on each stud shaft, a rear swing plate also mounted on each stud independently of the front swing plates, a plate cylinder journalled by the side frames, inking mechanism for the plate cylinder including a plurality of rollers, certain of said rollers being supported by the spaced front swing plates, the remaining rollers being supported by the spaced rear swing plates, and means operating automatically for effecting oscillating movement of the front and rear swing plates in directions opposite to each other to lift certain of the rollers from contact with a form on the plate cylinder, said means including a trip shaft adapted to be rotated in one direction only for effecting movement of the front swing plates in advance of movement of the rear swing plates in both directions of oscillation to lift certain of said rollers from contact with the form on the plate cylinder prior to a lifting of the remaining of said rollers and to also return the said rollers to contact in the same sequence.



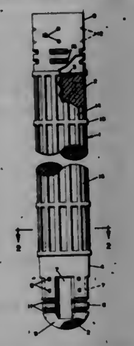
3,186,339
FLUID OPERATED FOUNTAIN BLADE
Charles T. Turner and William F. Ward, Baltimore, Md., assignors to Flynn & Emrich Company, Baltimore, Md., a corporation of Maryland
Filed July 17, 1963, Ser. No. 295,662
2 Claims. (Cl. 101—365)



1. A quick cut-off ink fountain for a printing press comprising a fountain trough having a base and a fountain roller journalled in the trough, a fountain blade on the base normally spaced from and adjustably mounted for wiping contact with the roller when elevated thereto, a fountain strip between the base and blade having therein a plunger passage normal to the blade length, plunger means comprising two coaxial, axially spaced plunger sections in said passage connected to the blade, both plunger sections having fluid seals between them and their passage, and said passage and plunger sections having a fluid entry between the sections and the plunger means including means extending between the sections to transmit mechanical pressure between the sections in the absence of fluid pressure, longitudinal movement of the plunger means adjusting the blade adjacent thereto in

spaced relation to the roller, manual means to effect said movement, means to admit fluid pressure through said entry between the plunger sections, the pressure operating the plunger section adjacent the blade to press the blade into roller contact without disturbing the adjustment of the plunger section remote from the blade.

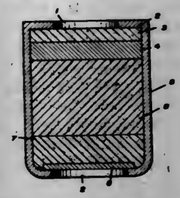
3,186,340
EXPLOSIVE CONTAINER WITH YIELDABLE SEAL
Stephen F. Foster, Hopatcong, N.J., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 10, 1964, Ser. No. 337,089
10 Claims. (Cl. 102—24)



1. A container for explosives adapted for interconnection with like containers to form an explosive column assembly, which comprises:
(a) a thin-wall elongated substantially cylindrical blown plastic container having explosive disposed therein throughout the major length of the container and having a yieldable seal within the container adjacent the explosive,
(b) a male coupling and end closure on one end of the container, said male coupling having at least one peripheral bead interrupted by a plurality of longitudinal slots extending a substantial length of the male coupling,
(c) a female coupling on the other end of the container, said female coupling having a plurality of interrupted peripheral grooves compatible with the bead and the slots of the male coupling, and
(d) locking indentations associated with the male coupling and the female coupling and the end closure of said male coupling having protrusion means to contact and to force the yieldable seal of a like container into the explosive adjacent thereto so that like containers of explosive interconnected by slidable and then rotatable engagement of the beads and the grooves of the male and female couplings and locked upon engagement of their respective indentations form an explosive column assembly having the end closures of the male couplings exerting compressive force on the yieldable seals and adjacent explosive of the female couplings.

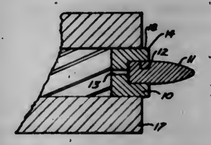
3,186,341
IGNITER WITH SEPARATED LAYERS OF EXPLOSIVE
John Olof Björklund, Helgestavagen 65, Bandhagen, Sweden; John Alex Dorge Eldh, Backaskiftsvagen 68, Enskede, Sweden; and Göste Vilhelm Gustafsson, Satravagen 62, Hagersten, Sweden
Filed Oct. 6, 1961, Ser. No. 143,464
7 Claims. (Cl. 102—86.5)

2. An igniter comprising a sleeve containing a detonating material, a non-explosive partition wall embedded in said detonating material, said partition wall having an area which completely fills the total cross-section of said sleeve to divide the detonating material into a thin layer and a main layer, said thin layer being an initiating charge layer covering one face of said partition wall, said main



layer being thicker than said first layer and being in direct contact with the opposite face of said partition wall whereby the main detonating layer is ignited only after the greater part of the thin detonating layer has been ignited, and said thin layer having a thickness less than the thickness of said partition wall.

3,186,342
TWO-STAGE BULLET
Albert S. Hancock, Jr., 501 3rd St. NE., Orange City, Iowa
Filed Sept. 19, 1962, Ser. No. 225,958
7 Claims. (Cl. 102—93)



1. For firing from a gun having a rifled barrel, a two stage bullet comprising a cup-shaped first stage having walls and a base on said cup stage, and a bullet-shaped second stage, said walls being shaped to hold said second stage releasably in said first stage, said first stage being formed of an elastic material having an actual modulus of elasticity not greater than

$$13.30368\times G\left[\frac{V}{R}(C+B)\right]^2$$

in which G is the specific gravity of the material, V is the muzzle velocity in feet per second, R is the lead in inches per twist of the rifling, C is the outer diameter of the first stage in inches and B is the outer diameter of the second stage in inches, and said material having an actual shear strength in pounds per square inch not less than

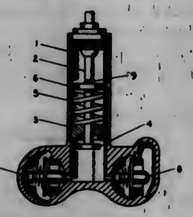
$$\frac{.125P}{TB}\left\{\left[1-\frac{.7854LD(C^2-B^2)}{W+.7854D[TB^2+L(C^2-B^2)]}\right]C^2-B^2\right\}$$

in which B and C are the same dimensions as in the equation for modulus of elasticity, L is the length of the first stage in inches, D is the density of the material in grains per cubic inch, W is the weight in grains of the second stage, T is the thickness of the base of the first stage in inches and P is the effective breech pressure at the base of the first stage in pounds per square inch.

3,186,343
PUMPS AND COMPRESSORS
Charles R. Schneider, Wesleyville, Pa. (U.S.S. Wm. R. Rush (DD-714), Fleet Post Office, New York, N.Y.)
Filed Mar. 25, 1963, Ser. No. 267,453
1 Claim. (Cl. 103—38)

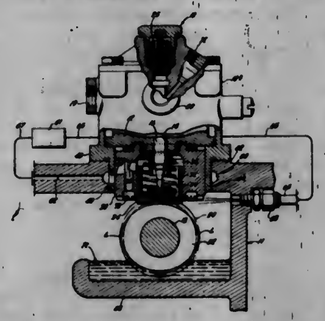
An improved reciprocating pump comprising:
a cylinder,

a piston having an axial bore reciprocable in the cylinder between predetermined limits and in essentially fluid tight relationship with the cylinder,
a piston rod extending through the bore in the piston in sliding engagement therewith and in essentially fluid tight relationship therewith,
piston stop means on one end of said piston rod,
elastic compression means coupling the piston and piston rod for normally urging the piston against the piston stop means and for transmitting a predetermined force from the piston rod to the piston,
the end of said cylinder toward which said elastic compression means urges said piston including an inlet port and an outlet port, the cylinder wall being free of any other ports between said end of the cylinder and the reciprocating limit of the piston remote from said end of the cylinder,



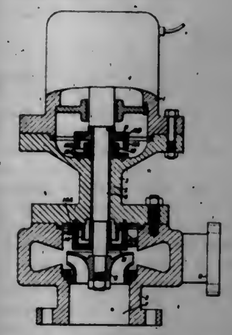
an input line coupled to said input port,
a check valve between the input line and the input port,
an output line coupled to said output port,
a check valve between the output line and the output port,
drive means of sufficient power for reciprocating the piston rod even when there is no flow from the cylinder to the output line, the compression means maintaining the piston in engagement with the stop means during reciprocating of the piston rod except when the pressure between the piston and said end of the cylinder exceeds a predetermined level,
whereby when the pressure between the piston and said end of said cylinder exceeds said predetermined level said piston is slidable along the piston rod to maintain substantially constant pressure in said cylinder.

3,186,344
FUEL INJECTION PUMP
Hans Hogeman, Longmeadow, Mass., assignor to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed Nov. 13, 1963, Ser. No. 323,305
3 Claims. (Cl. 103—54)



1. In combination, an engine including a hollow block having at least one opening therein and a main cam shaft mounted in said block, a fuel injection pump mounted in the opening in said block, said pump including a housing, a head assembly mounted in said housing and having a bore therethrough, fuel inlet and outlet means communicating with said bore, a fuel pumping and distributing member mounted in said bore, a face gear rotatably mounted in the lower portion of said housing connected to said pumping and distributing member to effect rotation thereof in said bore, a hollow tappet assembly mounted interiorly of said face gear adapted for axial movement therein to effect reciprocating axial movement of said pumping and distributing member in said bore, said bore pumping and distributing member upon reciprocating and rotating movement in said bore operable to deliver predetermined quantities of fuel from said fuel inlet to said fuel outlet means, means directly and operatively connecting said fuel pumping and distributing member to said cam shaft whereby actuation of said cam shaft effects reciprocating and rotating movement of said fuel pumping and distributing member through said face gear and said tappet assembly, means defining an annular chamber in the wall of said opening in said engine block, means for delivering a lubricant to said annular chamber, means defining a port in said pump housing communicating with said annular chamber, means defining a radial passageway in said face gear communicating at one end with the interior of said tappet assembly and at its opposite end communicating with said port in the pump housing once during every complete revolution of said face gear whereby lubricant from said annular chamber is fed to the interior of said tappet to lubricate internal parts of the pump.

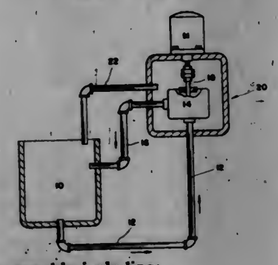
3,186,345
MEANS FOR PREVENTING OR LIMITING INTERCHANGE OF LIQUIDS BETWEEN COMMUNICATING VESSELS
Victor Ivanoff, Harpenden, England, assignor to Hayward Tyler & Company Limited
Filed Apr. 23, 1963, Ser. No. 275,129
Claims priority, application Great Britain, Apr. 26, 1962, 15,950/62
6 Claims. (Cl. 103—87)



1. A submersible electric motor and pump assemblage for pumping liquid, said assemblage comprising a housing including a pump chamber, a motor chamber and a tubular neck portion joining the pump chamber and the motor chamber, a rotary pump within the pump chamber and an electric motor within the motor chamber, said motor having a drive shaft extending through said neck portion with clearance to define an annular passage connecting the two chambers and coupled to the pump for rotating the same, said pump chamber having an inlet and an outlet for liquid to be pumped, the liquid flooding both chambers and the annular passage in the submersed condition of the

assemblage, and a labyrinth means adjacent to one end of said annular passage, said labyrinth means inhibiting an upward flow of convection currents from the pump chamber towards the motor chamber by constraining said current to flow along a tortuous path exposing the same to a cooling action by liquid in the motor chamber prior to entering said motor chamber.

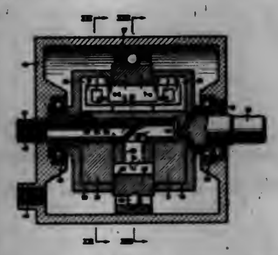
3,186,346
PUMP
Henry Hope, 195 Welsh Road, Huntingdon Valley, Pa.
Filed Nov. 15, 1963, Ser. No. 324,084
1 Claim. (Cl. 103—87)



A pump assembly including:
an outer housing,
a pump casing in said housing,
an impeller in said casing,
a shaft passing through the top wall of said housing and entering said pump casing through the top wall thereof,
a motor without said housing,
said motor shaft being operatively connected to said motor and said impeller,
an intake pipe passing in leak-proof manner through a wall of said housing and through a wall of said casing at the low pressure side of said pump,
a discharge pipe leading from the high pressure side of said pump and passing, in leak-proof manner, through a wall of said pump casing and through a wall of said housing, and
an overflow pipe leading from said housing at a point above the entry of said shaft into said pump casing and below the entry of said shaft through the top of said housing, to keep the impeller submerged and to prevent leakage through the top wall of the housing so as to dispense with packing at the entrance of the shaft into said housing of said casing.

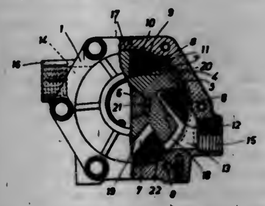
3,186,347
ROTARY VANE MACHINE
Karl Eickmann, 2420 Ishiki Hayama-machi, Miuragun, Kanagawa-ken, Japan
Filed Oct. 10, 1962, Ser. No. 229,566
Claims priority, application Germany, Oct. 17, 1961, E 21,815
20 Claims. (Cl. 103—121)

1. A rotary, vane machine comprising a rotor having a central part, a plurality of substantially radial slots in said central part, vanes mounted in said slots, guide means for guiding said vanes in said slots so that during the rotation of said rotor said vanes carry out a substantially radial movement in said slots, rotor side walls rotatable with and disposed axially at both sides of said central rotor part, said central rotor part, said guide means, said vanes, and said rotor side walls together defining work chambers which are separated from each other by said vanes and are limited in the axial direction by said rotor side walls and periodically increase and decrease in size at each revolution of said rotor, substantially radial slots in said rotor side walls at least partly in alignment with said slots in said central rotor part, said vanes having extensions projecting into said radial slots in said rotor side walls and movable therein in a substantially radial direction, each of said vanes further having a central pressure area at one longitudinal side thereof adjacent to said central rotor part and adapted to receive a pressure medium, said vane extensions having balancing areas at the opposite longitudinal side of each vane adjacent to said rotor side walls and adapted to receive a pressure medium, said balancing areas being closed by said vane extensions relative to said slots in said rotor side walls, communi-



cating means for connecting said central pressure area at one longitudinal side with said balancing areas at the opposite side of said vane, said central pressure area having a radial opening toward and communicating with the work chamber limited by and located at the same longitudinal side of said vane, said opening remaining open even during the movement of said vanes in said slots so that the pressure of said pressure medium acting upon said last longitudinal side of said vane in said work chamber and in said central pressure area remains substantially constant regardless of the increase or decrease of the size of said work chamber.

3,186,348
ROTARY PUMP
Hans Tissot, Gmundnerstrasse 6, Vocklabruck, Austria
Filed Feb. 4, 1963, Ser. No. 255,830
7 Claims. (Cl. 103—135)



1. A rotary pump comprising, in combination:
(a) a housing having a substantially cylindrical internal wall;
(b) a rotor mounted in said housing for rotation about an axis, said axis being eccentric with respect to said wall,
(1) said rotor being formed with a plurality of circumferentially spaced radial recesses and having a leading face and a trailing face in each recess when said rotor rotates in a predetermined direction;
(c) drive means for rotating said rotor in said direction; and
(d) a plurality of circumferentially spaced sealing members at least partly received in respective recesses of said rotor,
(1) each sealing member having the approximate sectional shape of a right-angled triangle in a

radial plane and correspondingly having three axially extending faces,

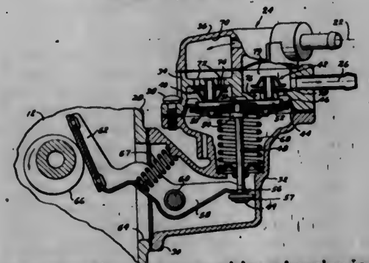
(2) the first of said faces conformingly and slidably engaging said wall,

(3) the second face being arranged opposite said trailing face and abuttingly engaging the same during said rotation of the rotor, and

(4) the third face connecting said first and second faces and being arranged opposite said trailing face,

(5) said first face corresponding to a third side of said triangle which is shorter than the side corresponding to said third face and longer than the side corresponding to the second face.

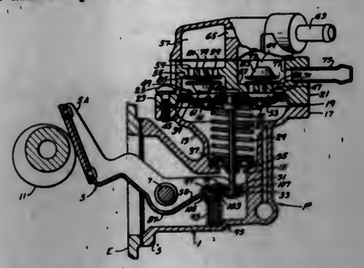
3,186,349
FUEL PUMP
Donald R. Compton, Belleville, Ill., and John B. Fitzgerald, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed July 13, 1962, Ser. No. 210,611
7 Claims. (Cl. 103—150)



1. An automotive pump comprising a housing including a pumping chamber, a movable element forming a wall of said pumping chamber, means forming inlet and outlet passages in fluid communication with said pumping chamber, check valve means in said passages, spring means biasing said movable element in one direction, and means for moving said movable element in an opposite direction against said spring means bias, said last means including a member mounted within said housing for reciprocable movement along a path, an actuating rod connected to said movable element and having a portion biased by said spring means into said path of said reciprocable member, a noise suppressor means fixed to said rod portion and including a mass of resilient plastic material between said rod portion and said reciprocable member to be compressed when said rod portion and said reciprocable member come together, and a generally rigid retainer for said resilient mass formed with a recess in which the resilient mass is seated with a portion of the mass extending from the recess when uncompressed, said recess having a volume greater than the volume of the portion of the resilient mass in the recess when uncompressed and being sufficient to receive the entire mass when compressed by the rod portion and said reciprocable member coming together, said retainer providing a solid connection between said rod portion and said reciprocable member when said resilient mass has been compressed within said recess.

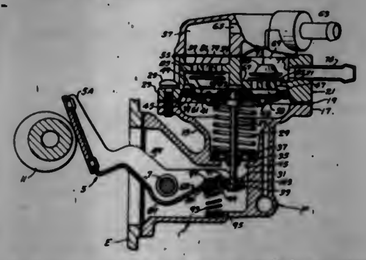
3,186,350
FUEL PUMP
John B. Fitzgerald, St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 29, 1963, Ser. No. 276,470
14 Claims. (Cl. 103—150)

1. In a pump having a pumping chamber, a diaphragm closing said chamber, a housing structure, a rod extending from the diaphragm and having a head on its extending end, a rocker arm for driving the rod and actuating the diaphragm in one direction, and a spring mounted on the rod interposed between the diaphragm and the housing structure for driving the diaphragm and the rod in the opposite direction, a generally rigid member mounted on the arm for pivotal movement relative to the arm and



having a free end normally spaced from the arm and interposed between the arm and the head, and means biasing the free end of the rigid member away from the arm, the free end of the rigid member being engageable with the head and pivoting toward the arm against the bias of said biasing means for muffling the impact of the arm against said head on a driving stroke thereof.

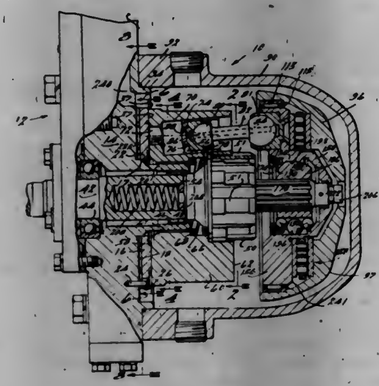
3,186,351
FUEL PUMP
William A. Bradley, Kirkwood, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed May 13, 1963, Ser. No. 279,717
5 Claims. (Cl. 103—150)



1. A fuel pump comprising means defining a pumping chamber, a diaphragm closing the pumping chamber, a housing enclosing the diaphragm, a rocker arm housing extending laterally from the diaphragm housing, a spring member in the diaphragm housing biasing the diaphragm in discharge direction, a diaphragm actuating rod extending from the diaphragm into the rocker arm housing and having a head on its extending end, a rocker arm for driving the rod pivoted in and extending longitudinally of said rocker arm housing, a cam member for actuating said rocker arm, said arm having a bifurcated free end receiving the rod adjacent its head, a second spring member seating against the bottom of the rocker arm housing and against the rocker arm for biasing said rocker arm against said cam, said arm biasing spring member being connected to the arm at a point between said free end and the pivot of said arm, a leaf spring secured to the rocker arm having a bifurcated free end generally in vertical alignment with the bifurcated free end of the rocker arm, the free end of the leaf spring normally being spaced from the arm and interposed between the arm and the head, and engageable with the head to yield toward the arm for muffling the impact of the arm on a driving stroke thereof, and a fastener securing one end of said

second spring member and one end of said leaf spring to said arm, said leaf spring being interposed between the second spring member and the arm.

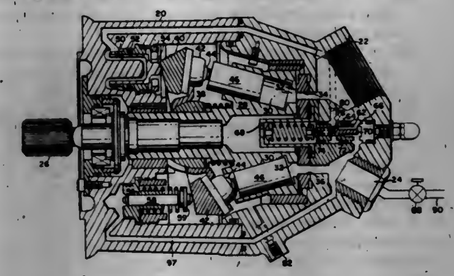
3,186,352
VARIABLE DISPLACEMENT PISTON PUMP
Arthur F. Anderson, Livonia, Mich., assignor to Gar Wood Industries, Inc., Wayne, Mich., a corporation of Michigan
Continuation of application Ser. No. 835,002, Aug. 20, 1959. This application Nov. 22, 1960, Ser. No. 71,033
32 Claims. (Cl. 103—162)



1. A variable displacement piston pump comprising a drive shaft having an axial recess at one end, a tilt box journaled on an axis extending at right angles to the axis of the drive shaft, a driving flange located adjacent said shaft end and rotatably mounted on said tilt box for rotation about an axis at right angles to said journal axis, and a driving connection between said drive shaft and said driving flange including a connecting shaft extending between said drive shaft and said driving flange and a universal joint connecting said drive shaft and said connecting shaft, said journal axis for said tilt box being located at a position spaced from said universal joint so that upon rotation of said tilt box and said driving flange about said tilt box journal axis said connecting shaft moves axially with respect to said drive shaft, said universal joint including a plurality of axially extending ribs formed on the interior of said shaft recess and having their crests disposed on a cylindrical surface concentric with the drive shaft axis, an inner member fixed with respect to said connecting shaft and having an equal number of axially extending external ribs having their crests convexly curved in a direction axially of said connecting shaft and disposed in substantial radial alignment with adjacent crests on said internal ribs, said shaft recess and said inner member having radially aligned mating grooves formed therein on opposite sides of said ribs, and driving balls located in the spaces between adjacent internal and external ribs.

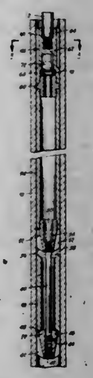
3,186,353
MEANS FOR STABILIZING PUMP PRESSURES
Lael B. Taplin, Livonia, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Continuation of application Ser. No. 52,946, Aug. 30, 1960. This application June 22, 1964, Ser. No. 379,429
10 Claims. (Cl. 103—162)

1. Apparatus comprising
variable volume pumping means having a high pressure region and a low pressure region,
control piston means to vary the volume of said pumping means,
land means,
a metering servo value having at least two edges which are registrable with the land means in a centered position of said valve,
said valve being movable in a first direction so that a first edge moves out of registration with said land means to form a passage between the high pressure region and said control piston,



said valve being movable in a second direction so that a second metering edge moves out of registration with said land means to form a passage between said control piston and the low pressure region,
a separate metering passage for providing a continuous flow between said control piston and said low pressure region thereby keeping said first and second edges in registration with said land means to minimize servo valve dead space and to minimize pump pressure oscillations, pulsing and vibration.

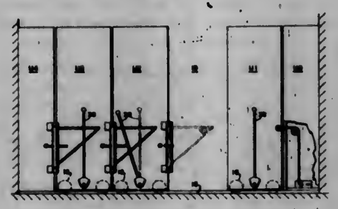
3,186,354
OIL WELL PUMP
Earl R. Mahoney, Oklahoma City, Okla., assignor to Reynolds Oil Well Pumps, Inc., Oklahoma City, Okla., a corporation of Delaware
Filed Mar. 20, 1963, Ser. No. 266,634
6 Claims. (Cl. 103—179)



1. An oil well pump comprising:
(a) a tubular barrel;
(b) a standing valve in the lower end of the barrel to prevent downward flow of oil from the barrel;
(c) at least one tubular sleeve slidingly mounted in said tubular barrel and sealingly engaging at its outer periphery the internal wall of said barrel;

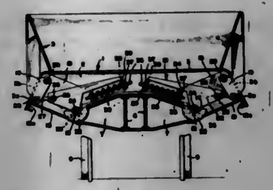
(d) a head positioned in said barrel below said tubular sleeve and adapted to seal the lower end of said tubular sleeve, said head having fluid deflecting grooves therein dimensioned and configured to deflect oil moving upwardly past said head radially outwardly against said barrel;
(e) a valve cage slidingly positioned in said barrel above said tubular sleeve and sealingly engaging at its outer periphery the internal walls of said barrel;
(f) a valve seat in said valve cage;
(g) a valve member above said valve seat in said valve cage and movable in said cage into and out of seating engagement with said valve seat;
(h) a rod of longer axial length than said sleeve interconnecting said valve cage and said head for unitary reciprocating movement in said barrel; and
(i) means connected to said valve cage and cooperating with said head to reciprocate said sleeve in said barrel in a shorter reciprocating stroke than the reciprocating stroke of said valve cage and head during operation of the pump, said means connected to said valve cage including fluid passageway means for permitting fluid flowing upwardly from said tubular sleeve to pass through said valve seat during the upward movement of said rod, valve cage and head.

3,186,355
AUTOMATED STORAGE SYSTEMS
Paul A. Stoll, New Milford, Conn., and Emil Umbricht, Northville, Mich. (both % Epco, Incorporated, P.O. Box 335, Pumpkin Hill, New Milford, Conn.)
Filed Apr. 15, 1960, Ser. No. 22,582
19 Claims. (Cl. 104—162)



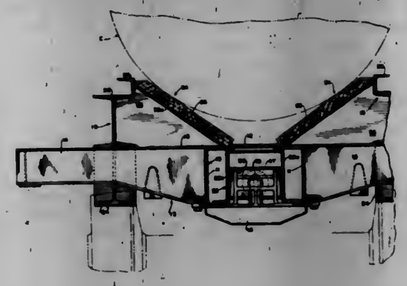
1. An automated storage system comprising a plurality of storage units, means mounting at least certain ones of said storage units for movement along a path to form an aisle space between predetermined adjacent units, motor driven means for moving the movable units in opposite directions along said path, coupling means for coupling selected units to said motor driven means for movement in a desired direction, and control means for rendering operative one of said coupling and motor driven means only upon attempted coupling of selected units for movement toward an open aisle space, said control means comprising first and second relays, conductor means for energizing said relays, switch means responsive to the position of storage units with respect to an open aisle and to actuation of said control means to cause de-energization of said first relay and energization of said second relay; upon attempted coupling of a unit on one side of an aisle, and energization of said first relay and de-energization of said second relay, upon attempted coupling of a unit on the other side of an aisle, and circuit means including contacts of said relays for rendering said coupling means and motor driven means operative simultaneously upon attempted coupling of a unit for movement toward an open aisle, said circuit means rendering inoperative one of said coupling and motor driven means upon attempted coupling of a unit for movement away from an open aisle.

3,186,356
DUMP VEHICLE
Robert Neel Roley, P.O. Box 1, Alexandria, Va.
Filed Dec. 27, 1963, Ser. No. 333,808
9 Claims. (Cl. 105—276)



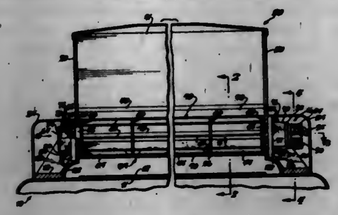
1. A dump vehicle comprising:
a load-carrying body;
said body being tiltable from a neutral position toward either side thereof;
a pair of substantially parallel body-supporting plates disposed on each side of said body and rigidly structally associated to the bottom portion thereof,
dumping doors mounted on each side of said body;
each of said doors having:
a hinge bracket rigidly structurally associated therewith which extends beneath said body and is povotally movably mounted upon the adjacent pair of said supporting plates;
a body underframe comprising:
a center sill, and
bolsters extending generally laterally from said center sill and being rigidly structurally associated therewith;
each of said bolsters having:
an arcuate housing rigidly structurally positioned thereupon defines at its upper surface a generally U-shaped bearing;
an operating lever for each of said doors having:
a sleeve rigidly structurally associated with the bottom portion thereof;
said sleeve being rotatably movably disposed on the U-shaped bolster bearing disposed on the same side of said vehicle body as said sleeve;
a fulcrum pin disposed within said sleeve and being rotatably movably positioned upon the adjacent pair of said supporting plates,
a link pivotally movably positioned upon and extending between one end of each of said operating levers and the adjacent door hinge bracket;
each of said links being so disposed with respect to the adjacent door hinge bracket as to maintain said dumping doors in a closed position with respect to said body when said body is in a neutral position;
the other end of each of said operating levers being provided with a depending flange having:
a slot therein;
an auxiliary arm for each of said operating levers;
said auxiliary arm having a curved portion at one end thereof which is slidably disposed in the arcuate housing of the bolster on the opposite side of said body from said first-named bolster;
the other end of said auxiliary arm being disposed below said other end of said operating lever and being provided with an upstanding flange having a slot therein generally in alignment with said lever slot,
a rod disposed between said operating lever flange and said auxiliary arm flange and extending through said lever slot and said arm slot,
an adjustable stop member positioned upon each end of said rod to limit movement of said lever flange and said arm flange with respect to said rod,
a coil spring surrounding said rod and having one end thereof in mutual co-operative engagement with said lever flange and the other end thereof in mutual co-operative engagement with said arm flange, and
means mounted on said body underframe for selectively tilting said body on said fulcrum pins toward one side thereof;
enabling the presentation, during the tilting of said body to one side thereof for dumping, of relative movement between said body and said operating levers on the dumping side; and
the links on the dumping side being disposed so as to permit rotation of the adjacent door hinge brackets pivotally structurally operatively associated therewith, enabling the opening of the door at the dumping side of said body while the links at the elevated side are so disposed as to preclude opening movement of the door at the elevated side.

3,186,357
RAILWAY CARS FOR TRANSPORTING CYLINDRICAL OBJECTS
Stanley H. Fillion, Scarsdale, N.Y., assignor to Waugh Equipment Company, Salisbury, Md., a corporation of Maryland
Filed Sept. 11, 1962, Ser. No. 222,914
8 Claims. (Cl. 105—367)



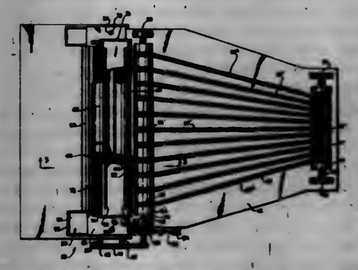
1. A railway car for carrying cylindrical objects with their axes lying lengthwise of the car, which comprises an underframe made up of a hollow longitudinal center sill, bolsters connected to the sill near its ends, filler castings connected to the sill to extend across its bottom at the bolsters, a pair of major side sills lying, respectively, on opposite sides of the center sills and resting on the bolsters inward from their ends, the upper ends of the major side sills lying in a common plane substantially above the level of the top of the center sill, and crossbearers each including a beam extending between and secured to the lower ends of the major side sills and extending across and secured to the bottom of the center sill, each crossbearer having parts extending upward from its beam and lying between and secured rigidly to the opposed faces of each major side sill and the center sill, a cradle mounted on the underframe and including a pair of downwardly convergent longitudinal floor sections extending from the tops of respective major side sills to the tops of the center sill and bolsters, supporting members for the floor sections secured rigidly to the side sills and the center sill, certain of the supporting members acting as cross ties, the upwardly extending parts of the crossbearers having upper end sections engaging and supporting the floor sections, end walls mounted on the center sill at the ends of the floor sections and connecting the side sills, a movable draft and buffing column within the center sill and resting on the filler castings and crossbearers, and long travel cushioning mechanism connected to the center sill and column and resisting the movement of the column relative to the center sills.

3,186,358
FLOUR DROPPER FOR COOKIE MAKING MACHINE
Virgil L. Archer, Cheektowaga, N.Y., assignor to Hunt's Development Co., Inc., Olean, N.Y., a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,418
5 Claims. (Cl. 107—7)



1. In a cookie making machine having a step-by-step conveyer with a progression of transverse rows of cookie stations thereon; the combination therewith of a flour dropper adapted to drop separate pads of flour simultaneously on the cookie stations of each row, comprising a horizontally elongated flour box arranged transversely above said conveyor in spaced relation thereto, the bottom of said flour box being formed by a cylindroidal screen cloth, means blanking off areas of said cylindroidal screen cloth other than a row of open areas along and below the axis of the cylindroidal screen cloth and corresponding to said transverse rows of cookie stations on said conveyor, a reel shaft arranged coaxially of said cylindroidal screen with its ends adjacent the corresponding end walls of said flour box, a reel on said shaft having peripheral projections adapted to contact the concave face of said cylindroidal screen cloth, bearing means supporting each end of said shaft, means oscillating said shaft to oscillate said reel, and spring means biasing each of said bearing means downwardly to provide a spring loaded rubbing contact between said peripheral projections and cylindroidal screen cloth during oscillation of said reel shaft.

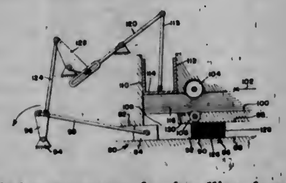
3,186,359
PASTRY DOUGH SPREADING AND ROLLING MACHINE
Eugene Centrone, 108—22 42nd Ave., Corona, N.Y.
Filed Sept. 17, 1962, Ser. No. 223,900
1 Claim. (Cl. 107—9)



A dough forming machine, comprising a stationary support, a pair of horizontally spaced cylindrical rollers rotatably carried by said support, said rollers being axially horizontal and parallel, one of said rollers being longer than the other roller, each of said rollers having axially spaced circumferential grooves therein, the grooves in the longer one roller being spaced further apart than the grooves in the shorter other roller, a plurality of endless belts entrained on the rollers and engaged in the grooves thereof so that upper straight courses of the belts define a horizontal coplanar divergent array between the shorter

and longer rollers, each of said belts being a tensioned coil spring, and drive means operatively connected to either of the rollers for driving the same, whereby a sheet of dough deposited on the belts at the shorter roller is carried by the belts to the longer roller while the diverging belts stretch the dough laterally and thin the same throughout its width, the turns of the coil spring engaging the underside of the dough while it is carried between the rollers so that the dough is stretched and thinned uniformly, each of the grooves in both rollers having opposing frusto-conical walls inclined to the axes of the rollers, the inclinations of the walls increasing progressively from outer ends of the rollers toward the centers, the walls in the grooves of one half of each roller being inclined in the same direction, the walls in the grooves of the other half of each roller being inclined in an opposite direction, so that the belts remain engaged securely in the grooves at all times while the rollers turn.

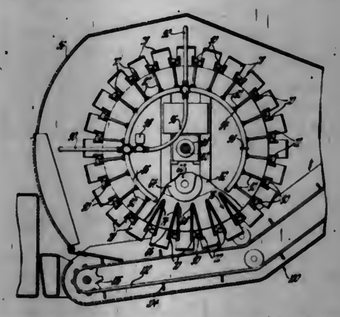
3,186,360
WAFERING APPARATUS
Murray W. Forth and Walter M. Roll, Moline, and Glenn W. Jenkins, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,409
9 Claims. (Cl. 107—14)



2. Wafering apparatus for handling forage and similar material that is made up largely of stalks, stems and the like, including support means; compressor means on the support means, comprising a wall element and a resistor element arranged in opposed relation; means mounting the elements for back and forth movement of one relative to the other along a path generally normal to the wall element and between a material-receiving position in which the spacing between said elements is relatively wide and a material-compressing position in which said spacing is substantially reduced; means for delivering material adjacently to the elements in their receiving position in such condition that the stalks, stems and the like lie predominantly parallel to said path; means for severing from such material a quantity thereof substantially equal in length to said spacing of the elements in their receiving position; feed means for feeding such quantity of material between the elements in their receiving position in such condition that the stalks, stems and the like lie predominantly lengthwise of the path and of such length as to be confined between the elements; and means for effecting movement of said one element to the compressing position and thereby to apply endwise pressure to the stalks, stems and the like for causing same to buckle so that portions thereof become displaced laterally of said path to interlock with portions of adjacent material.

3,186,361
HAY WAFERING METHOD AND APPARATUS
Stanley L. Lawrence, Livonia, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Nov. 5, 1962, Ser. No. 235,471
16 Claims. (Cl. 107—14)

7. In an apparatus for making compressed hay wafers, and of the type having a series of axially open die cells each being adjustably convergent in cross sectional area being adjustably convergent in cross sectional area between axially opposite entrance and exit ends thereof, the entrance ends of said series of die cells being disposed opposite hay compaction means for compacting hay into and through said die cells to form wafers; the improvement comprising means for adjusting the convergent cross sectional areas of first and second groups of die cells of



said series, whereby the die cells of each of said groups may be adjusted to be substantially uniformly convergent in cross sectional area while the substantially uniformly convergent cross sectional areas of each of said groups differ to a predetermined extent to provide a uniform rate of flow of hay through said groups of die cells irrespective of variation in the quantity of hay supplied respectively thereto.

3,186,362
RAPID RAVIOLI MAKER
Daniel A. Iannuzzi, Sr., Willowdale, Ontario, Canada (2901 Jane St., Suite 61, Downsview, Ontario, Canada)
Filed Mar. 25, 1963, Ser. No. 268,514
3 Claims. (Cl. 107—47)

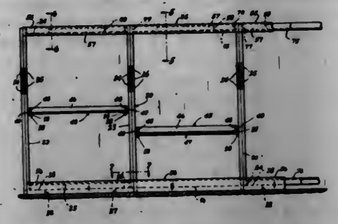


1. A dough cutting device comprising a body member; a plurality of cutting edges disposed about said body member, said cutting edges defining a generally cylindrical configuration; said cutting edges being integral with said body member; sloping sides on said cutting edges, whereby an angled edge greater than 45 degrees is formed on said cutting edges; said cutting edges intersecting to provide a plurality of prismatoidal forms therebetween; and a pair of handles extending from either end of said body member substantially on the axis thereof.

3,186,363
COLLAPSIBLE SHELVING
Harold C. Moore, 1400 Norman Place, Warson Woods, St. Louis 22, Mo.
Filed Oct. 9, 1961, Ser. No. 143,680
3 Claims. (Cl. 108—114)

1. Shelving, comprising a rigid rectangular frame having spaced hollow vertical side columns polygonal in hollow cross section rigidly attached to upper and lower connectors, the hollow columns opening downwardly, and bases having support portions with elongated upstanding elements rigidly mounted on the support portions, the upstanding elements being removably telescoped within the hollow columns along substantial length of the lower ends thereof, with a tight fit that affords a stable base

for the rectangular frame, the upstanding elements of the bosses engaging the interiors of the columns at at least three corners thereof, said upstanding elements being



spaced from said interiors of said columns between said engaged corners to enable other parts to be interlocked with the columns between their corners.

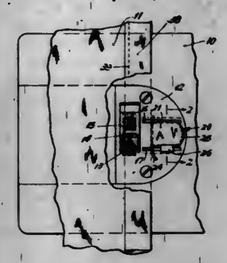
3,186,364
SHELF RETAINING MEANS
Anthony R. Costantini, Philadelphia, and Anthony D. Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Company, doing business as Victory Metal Manufacturing Corporation, Plymouth Meeting, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1962, Ser. No. 185,280
1 Claim. (Cl. 108—146)



An assembly comprising in combination, a pilaster having a row of lengthwise-aligned spaced holes formed in one wall thereof, a pilaster-carried shelf support bracket formed by first and second legs, a hook on said first leg to engage said pilaster through a selected pilaster hole, an extension on said second leg projectable into another pilaster hole and pilaster wall engaging means on said second leg disposed laterally of said extension to support said bracket with said first leg projecting horizontally from said pilaster, a shelf seatable on said bracket first leg, a springwire latching clip positionable about said bracket and a part of said shelf, and means on said clip coacting with said pilaster through a pair of said spaced pilaster holes for locking said shelf and bracket to said pilaster.

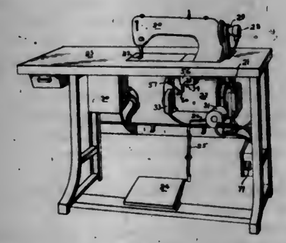
3,186,365
ATTACHMENT FOR SEWING MACHINES
Joseph Chudner, 2907 Brighton Beach 8th St., Brooklyn, N.Y.
Filed Sept. 12, 1962, Ser. No. 223,075
4 Claims. (Cl. 112—153)

1. A seam guide for a sewing machine comprising in combination a needle throat plate disposed beneath the needle mechanism of the machine coplanar with the work supporting surface, said plate having a pair of spaced parallel slots extending transversely of the direction of feed of the work through said needle mechanism, and a seam guide attachment carried by and positionally adjustable on said plate toward and away from said needle mechanism, said attachment having a pair of oppositely projecting quick-detachable self-locking detents respectively engageable in said slots to secure the attachment on said throat plate in adjusted position relatively to said needle mechanism, and means on said attachment at least



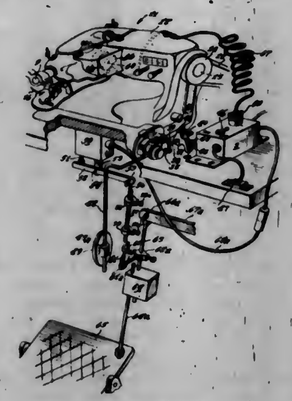
at one end thereof constituting a work guiding face presenting toward said needle mechanism and projecting upwardly from said work supporting surface.

3,186,366
NEEDLE POSITIONING CONTROL MECHANISM
Kenneth C. Haas, Mohnton, and Malcolm Spinrad, Reading, Pa., assignors to American Safety Table Company, Inc., Reading, Pa., a corporation of Pennsylvania
Filed Feb. 6, 1962, Ser. No. 171,524
12 Claims. (Cl. 112—219)



12. For use with a sewing machine having a stitching mechanism which includes a rotatable spindle shaft drivingly coupled to a reciprocable needle bar so that particular positions of the spindle shaft always correspond to particular positions of the needle bar, the combination comprising, means couplable to said spindle shaft for sensing at least two predetermined positions thereof, first and second drive means for non-simultaneously driving said spindle shaft, said first drive means being operable to produce continuous unidirectional motion of said spindle shaft in response to the actuation of first control means, said second drive means including a direct current motor automatically activatable and operable in response to said sensing means to cause said motor to drive said spindle shaft to a particular one of the said at least two sensable predetermined positions by unidirectional motion in the same sense as is produced by said first drive means whenever the sensed position of said spindle shaft is different from said particular one of the said predetermined positions, manually actuatable control means operative when actuated to cause the motor to counter-rotate to drive said spindle shaft in the opposite sense to that produced by said first drive means to drive said first member to another one of the said at least two sensable predetermined positions under the control of said sensing means, said motor in both cases being thereafter dynamically braked to a stop substantially instantaneously by short-circuiting the motor armature winding under the control of said sensing means.

3,186,367
THREAD CUT-OFF DEVICE
Frank Greco, Hasbrouck Heights, N.J., assignor, by mesne assignments, to Singer Company of Canada Ltd., Montreal, Quebec, Canada, a corporation of Quebec
Filed Mar. 7, 1963, Ser. No. 263,651
3 Claims. (Cl. 112—252)



1. In a blind stitch sewing machine having a supporting frame, in combination, stitch-forming instrumentalities, means for operating said stitch-forming instrumentalities, said stitch-forming instrumentalities including a thread carrying needle and cooperating looper, a fixed presser-foot secured to the supporting frame, a thread cutter pivotally mounted on the supporting frame, said thread cutter including a substantially vertically disposed cutter arm, a blade holder connected to said cutter arm and vertically adjustable thereon, a substantially horizontally disposed blade connected to said blade holder and horizontally adjustable thereon, a solenoid mechanically connected to said thread cutter, a solenoid switch electrically connected to said solenoid, a work support pivotally mounted beneath and adjacent to said presser-foot, means for biasing said work support upwardly adjacent said presser-foot, a transverse rotatably movable shaft, a lever arm connected to said shaft, a first dog mounted on said shaft and mechanically connected to said work support, a second dog mounted on said shaft and adapted to actuate said solenoid switch, whereby the movement of said lever arm rotates said shaft to simultaneously move said work support downwardly away from said presser-foot and actuate said solenoid switch to thereby actuate said thread cutter, a normally open selectively operable button switch connected to said solenoid switch, said solenoid switch including a lever connected thereto for selectively preventing the actuation of the solenoid switch, pedal operated means for actuating said switch forming instrumentalities, an interrupting switch mechanically connected to said pedal operated means and electrically connected to said solenoid switch and adapted to prevent the actuation of said solenoid switch when said pedal operated means actuates said stitch-forming instrumentalities.

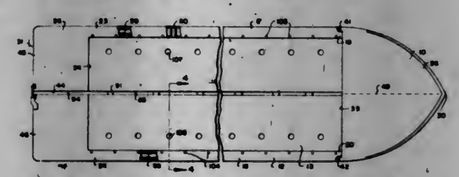
3,186,368
METHOD OF MAKING A CYLINDER BOSS
Albert J. Weatherhead, Jr., Shaker Heights, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Original application Mar. 8, 1962, Ser. No. 178,337, now Patent No. 3,152,718, dated Oct. 13, 1964. Divided and this application May 5, 1964, Ser. No. 364,998
11 Claims. (Cl. 113—121)

1. The method of forming an end cap and integral cylinder boss for a pressurized gas cylinder comprising the steps of drawing a flat circular blank of sheet metal to have a substantially hemispherical center section of a predetermined depth and a flat radial flange, drawing the radially outer portion of said hemispherical section inward toward said radial flange to form a conical portion from which projects a cylindrical outer boss wall and a flattened top wall parallel to said radial flange, the



total depth of said conical portion and cylindrical outer boss wall being substantially equal to said predetermined depth, drawing the center portion of said flattened top wall inward to form an inwardly projecting cup, piercing the bottom portion of said central cup, and finished drawing said radial flange to form a cylindrical section adapted to fit within a cylindrical tank section.

3,186,369
BUOYANT ARTICLE TRANSPORTER
Charles A. McLennan, 3308 Valecourt, and Douglas G. Dixon, 1147 W. 22nd St., both of North Vancouver, British Columbia, Canada
Filed Mar. 25, 1963, Ser. No. 267,707
12 Claims. (Cl. 114—43.5)



1. A buoyant article transporter comprising a floating vertical wall forming a confining wall surrounding a chamber for buoyant articles, said confining wall being divided into two side sections relatively movable in a horizontal direction, said wall when the transporter is in water extending from below the water surface above the latter to protect articles in the chamber from rough surrounding water, confining means connected to the confining wall and extending beneath the chamber to prevent floating articles from getting out of the chamber under said wall, and means throughout the lower portion of the chamber keeping said chamber constantly in communication with the surrounding water to maintain a water level in the chamber substantially the same as the outside water level, whereby buoyant articles in the chamber float in water therein with the water taking at least part of the load from the transporter and a side section of the wall can be moved away from the other side section thereof to permit the articles to float out of the chamber.

3,186,370
WATERCRAFT
James E. Hoyle, 25408 West Highway 66, Barstow, Calif.
Filed Oct. 16, 1963, Ser. No. 316,681
11 Claims. (Cl. 114—66.5)



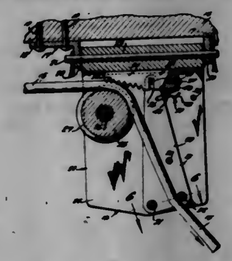
1. A fast, maneuverable watercraft comprising in combination, a hull having a bottom surface, means on said hull providing an elongated planing surface extending longitudinally of said watercraft and spaced from said bottom surface, said planing surface being of relatively small transverse dimension for planing of said craft, and balancing means on said craft, said balancing means being movable about a substantially vertical axis for overcoming the instability of said craft about the longitudinal axis of said planing surface as a result of said relatively small transverse dimension, whereby said craft is caused to be fast and maneuverable when powered.

3,186,371
SPEEDBOAT STABILIZER
George Arlington Moore, New York, N.Y.
(910 Lake Shore Drive, Chicago, Ill.)
Filed Apr. 1, 1964, Ser. No. 356,373
12 Claims. (Cl. 114—125)



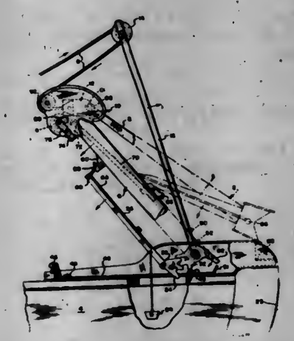
1. A stabilizer for boats comprising a tank adapted to be located in the bow, a pipe connection thereto and extended to a gooseneck-shaped scoop mounted in the stern and adapted to swivel into position below the water line to take in water as the boat moves forward and inject it into the bow tank, and to swivel out of the water to a position to drain water from the bow tank.

3,186,372
SHEET CLEAT
Charles W. Cleveland, Fairhope, Ala., assignor to Sweetco, Incorporated, Fairhope, Ala.
Filed Dec. 20, 1963, Ser. No. 335,457
2 Claims. (Cl. 114—199)



1. In a sailboat of the type that includes a mast, a jib, a main sail, a boom, and a main sheet, the improvement consisting in providing a sheet cleat which comprises a pair of L-shaped brackets secured to the lower surface of said boom intermediate the ends thereof, said brackets each including a horizontally disposed section and a depending vertically disposed section, a rod supported by the vertically disposed sections of said bracket, a support member including an upwardly disposed enlarged top portion interposed between the vertically disposed sections of said brackets and mounted on said rod, a vertically disposed wall portion depending from said top portion, a pulley journaled on said wall portion and said pulley having an annular groove in the outer periphery thereof for engaging said main sheet, a lever including a pair of spaced parallel generally triangular plates pivotally connected to said wall portion, a pair of spaced apart pins extending between the lower portions of said plates, and a portion of said main sheet projecting between said plates and extending between said last named pins, a wedge movably mounted contiguous to the lower surface of the top portion of said support member, and said wedge including a tapered portion having teeth on the lower surface thereof for selectively engaging the portion of the main sheet that is engaging the groove of the pulley, there being a slot in the lower portion of the wedge, a stud connected to the upper ends of said plates and said stud engaging the slot in said wedge, a holding element connected to the wall portion of said support member, and a spring member having a portion thereof affixed to said wedge and said spring member including a section having an offset portion defining a shoulder for selectively engaging said holding element.

3,186,373
ANCHOR HOIST
Mark O. Whitney, 224 Main St., Matawan, N.J.
Filed Aug. 6, 1963, Ser. No. 300,260
5 Claims. (Cl. 114—210)

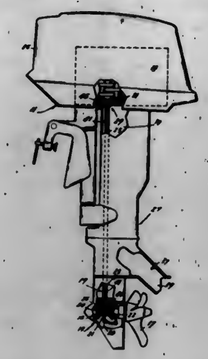


1. An anchor hoist comprising a boom pivotally mounted for rotation between inboard and outboard positions, a mast mounted coaxially with said boom for rotation between a hoisting position and a stowing position, a lever coupled to said mast for rotation therewith in the opposite sense between a stowed position and a buffer position, said boom restoring said lever from buffer to stowed position upon rotation of said boom from outboard to inboard position, movable latch means to hold said lever in stowed position, means responsive to motion of said boom from outboard position to a position of substantial alignment with said mast in hoisting position to disengage said latch means, and means responsive to motion of said boom into inboard position to shift said lever into stowed position and to engage said latch means.

3,186,374
PRESSURE RELIEF MEANS FOR MARINE PROPULSION DEVICE
Richard C. Heidner, Libertyville, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,308
3 Claims. (Cl. 115—17)

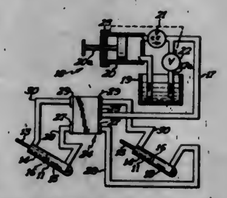
2. A marine propulsion device including a strut which is generally vertically disposed during normal operation, a sealed gear housing at the lower end of said strut, said gear housing being adapted to contain a quantity of lubricant and including a rotatably supported shaft carrying a propeller, power transmission means connected to said propeller shaft and extending in said strut, a conduit communicating with said sealed housing and extending from

said housing in said strut, and valve means connected to said conduit and operative to vent said housing in response to the development of pressure in said housing



above a predetermined valve in excess of the static pressure at said valve means when said propulsion device is inverted.

3,186,375
VALVE APPARATUS FOR TILTING OUTBOARD MOTOR
Lester E. Cass, 731 Cross St., Anoka, Minn.
Filed July 16, 1962, Ser. No. 209,966
5 Claims. (Cl. 115—41)



1. Apparatus for tilting and locking the outboard drive assembly and housing of a power boat at a predetermined angle with respect to the boat transom,

comprising a hydraulic cylinder connectible between the boat transom and drive assembly, said cylinder having a movable piston and an extendible piston rod, said cylinder having first and second fluid chambers at opposite sides of the piston, the piston rod extending through said first chamber to effect tilting of the drive assembly upwardly upon application of hydraulic fluid pressure in the second chamber,

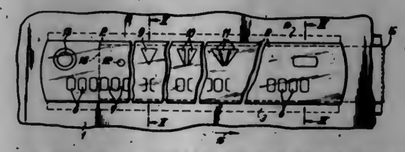
a single hydraulic fluid transmission line,

controllable means selectively applying, retaining and relieving hydraulic fluid pressure in the line,

reservoir means supplying hydraulic fluid to said controllable means,

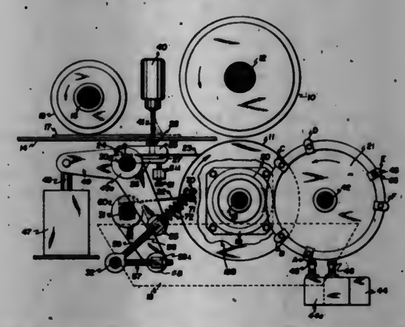
a valve apparatus connected between the line and the cylinder and having an unobstructed fluid transmission passage communicating between the line and the second fluid chamber for cooperating with said controllable means in causing upward tilting of said drive assembly and locking of said drive assembly against downward tilting, said valve apparatus also having a second fluid reservoir therein and a flow channel connecting the bottom of the second reservoir with the first fluid chamber of the cylinder, said valve apparatus having a check valve in said flow channel and obstructing flow from the cylinder to the second reservoir whereby to normally lock the drive assembly against upward tilting, and said valve apparatus having means opening said check valve in response to a predetermined fluid pressure in said passage whereby to permit fluid transmission from the first chamber to the second reservoir when hydraulic fluid pressure is applied in the second chamber for tilting said drive assembly upwardly.

3,186,376
EXPOSURE COUNTER FOR PHOTOGRAPHICAL ROLL-FILM CAMERAS
Walter Zapp, Ebenau, Oberegg, Appenzell Inner Rhoden, Switzerland, assignor to Minox G.m.b.H., Giessen-Heuchelheim, Germany, a German company
Filed June 24, 1963, Ser. No. 290,015
4 Claims. (Cl. 116—114)



1. In a roll-film still camera having a side wall provided with an oblong opening, means for indicating simultaneously the exposed and unexposed lengths of the film in the camera comprising a rectilinear bar of transparent material mounted in said wall opening, said bar having an exposed smooth outer surface and a concealed flat unpolished mat inner surface, the bar being provided along its inner surface with a plurality of closely spaced recesses arranged in a row extending lengthwise of the bar and forming exposure counter windows in the bar, the number of exposure counter windows in said row corresponding to the number of film frames, the inner end wall of each recess having an optical lens-forming curvature, and a longitudinally movable slide in the camera adjacent said inner surface of the bar for covering and uncovering said row of recesses and having an end movable along the row as the film is transported, said slide having a distinctive color visible through the windows that are covered by the slide.

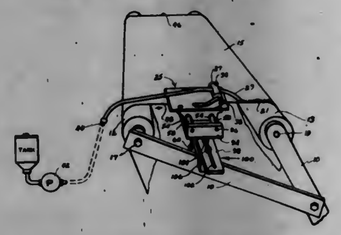
3,186,377
CAM CONTROLLED, DIVERSE, CO-ACTING DOCTORS ON A ROLLER APPLICATOR
Jerome E. Schuessler, 9878 W. 65th Place, Arvada, Colo.
Filed Dec. 4, 1961, Ser. No. 156,788
3 Claims. (Cl. 118—1)



1. In apparatus for applying a patterned fluid coating to a web of material, including an upper roller and a lower applicator roller in spaced but proximate relation to each other, and the applicator roller being in association with a source of fluid to be applied, the improvement comprising first means to selectively wipe spaced portions of the applicator roller to selectively remove fluid including a

flexible strip having a straight continuous edge and adjustable means holding the strip in proximate relation to the periphery of the applicator roller moving out of contact with its associated source of fluid, means inclusive of upper and lower blocks mounted on the rear portion of said strip and spaced thumbscrews across the lateral extent of said strip adapted to impart a regular wavy configuration to the leading edge of the strip by pressure of the thumbscrews on the strip, an integrated, automatic control system including second means arranged to selectively move the strip from wiping contact with the applicator roller, clutch means arranged to selectively rotate with the applicator roller, adjustable cam means in driven engagement with the clutch means, first switch means adapted to cause engagement of the clutch means to drive the cam means when a web to be coated approaches the bite of the upper roller and the lower applicator roller, and second switch means selectively actuated by the cam means, said second switch means adapted to selectively actuate said second means causing the strip to be selectively moved from wiping contact with the applicator roller.

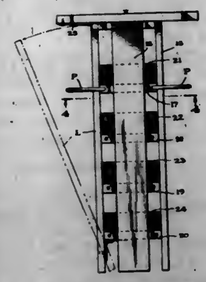
3,186,378
APPARATUS FOR APPLYING A LINE OR BAND OF COATING MATERIAL ALONG A WEB
John S. Davis, Irvington on the Hudson, N.Y., assignor to Equitable Paper Bag Co. Inc., Long Island, N.Y., a corporation of New York
Filed Aug. 30, 1961, Ser. No. 134,901
15 Claims. (Cl. 118—8)



10. An applicator assembly for applying a coating of material to a relatively narrow area along the length of a traveling web and at a constant distance from one edge of the web while leaving the web beyond the area uncoated by said material, said applicator assembly including a nozzle from which the material is applied to the web, a nozzle holder including a connector by which the nozzle is secured to the holder, a support having a bearing extending transversely of the direction of travel of the web and along which the holder is freely slideable on said bearing, an abutment on the holder for contact with an edge of the web to move the holder along said support when the web shifts transversely in one direction, yieldable means remote from the web urging the holder to slide along the bearing when the web shifts transversely in the other direction and with a force insufficient to wrinkle the web, and means for attaching the support to a fixed part.

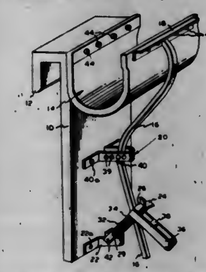
3,186,379
BIRD FEEDER
Michael L. Grella, 451 Fulton Ave., Hempstead, N.Y.
Filed Jan. 7, 1964, Ser. No. 336,220
7 Claims. (Cl. 119—51)

1. In a wild-bird feeder assembly, the combination comprising a series of vertically aligned predeterminately, spaced platforms and spaced, opposed, parallel, elongated members including upper and lower extremities for positioning said platforms in vertical, tiered relation, upstanding bird-feed retaining elements positioned on each of said platforms, means permitting disassembly of at least one of said spaced, opposed, elongated members from said feeder, a roof-like member carried above and in substantially abutted relation to the extremities of said



elongated members, means secured to said roof for suspending said feeder from a support means and means for locking the removable elongated member against inadvertent displacement relative to the assembly.

3,186,380
CLAMP TYPE ANIMAL RESTRAINING DEVICE
George Monroe Roney, R.F.D. 3, Swaledale, Iowa
Filed Nov. 27, 1962, Ser. No. 240,265
1 Claim. (Cl. 119—103)



An animal holding device comprising:

(a) a vertical support member having means to attach the device to a base member such as a fence,

(b) a flexible cradle member having one side thereof attached to said support member,

(c) a laterally movable brace member attached to the side of said cradle member opposite said support member,

(d) said brace member being fixedly attached to the upper end of a lever member which is pivotally attached to said support member whereby said cradle member is suspended between said brace member and said support member,

(e) a locking pedal assembly pivotally attached to the lower end of said support member and including

(1) a pair of bars having slots along the length thereof,

(2) a pedal member laterally attached to both of said bars,

(3) a guide member having holes in the face thereof laterally attached on each of said bars,

(4) a tension bar adapted to ride in said slots and having a pair of legs extending through the holes in said guide members,

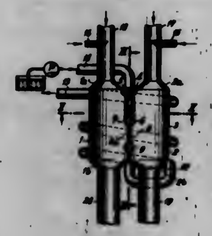
(5) spring members positioned on said legs and adapted to resiliently resist movement of said tension bar toward the axis of said locking pedal assembly,

(f) said locking pedal assembly being positioned so that a downward force on the pedal portion of said

assembly moves said tension bar against said lever member causing pivotal movement thereof and also movement of the cradle brace toward the vertical support member until the angle between said lever member and a line extending through said tension bar and the pivotal axis of said locking pedal assembly is 90°, and

(g) a cross bar attached to said pedal member positioned so as to contact and restrain the lever at a point subsequent to the 90° angle relationship of the lever bar and the line between the tension bar and the pivotal axis of said locking pedal assembly.

3,186,381
MULTIPLE PULSE JET BURNER WITH COOLING MEANS
Franz Haag, Plochingen (Neckar), Germany, assignor to Junkers & Co. G.m.b.H., Wernau (Neckar), Germany
Filed July 24, 1962, Ser. No. 212,048
Claims priority, application Germany, Aug. 2, 1961, J 20,393
11 Claims. (Cl. 122—24)



1. A pulse jet burner arrangement, comprising a hollow tubular mantle; substantially radially extending wall means provided in and subdividing the interior of said mantle into a plurality of substantially segmental combustion chambers, each of said chambers having inlet means comprising an inlet pipe arranged to deliver a supply of air to the respective chamber and a fuel pipe connected to said inlet pipe and arranged to deliver fuel thereto so that the fuel mixes with the air in said inlet pipe to form a combustible mixture which then enters the respective chamber, and outlet means comprising a resonance duct through which products developing during combustion of such mixture are evacuated from the respective chamber, said wall means defining internal coolant-conveying channel means separated from said chambers and said channel means having inlet and outlet means; coolant admitting means connected with said last mentioned inlet means; and coolant receiving means connected with said last mentioned outlet means.

3,186,382
TURBULENT SMELTING CHAMBER WITH AIR SUPPLY COLLARS
Rudolf Wieser, St. Andra im Lavantale, Carinthia, Austria, assignor to Firma Durrwerke Aktiengesellschaft, Ratingen, Austria, a corporation of Austria
Filed Feb. 26, 1962, Ser. No. 175,581
Claims priority, application Austria, Mar. 21, 1961, A 2,293/61
7 Claims. (Cl. 122—235)

1. A turbulence smelting chamber for high-pressure steam boilers and air heater boilers of gas turbines,

said chamber including wall means forming a combustion chamber,

said combustion chamber having an opening at its bottom and comprises a plurality of cooling pipes disposed in a substantially circular arrangement and extending along said wall means substantially vertically mainly on the bottom of said combustion chamber around said opening,

said opening being adapted to discharge slag,

a supply collar projecting from the top of said cooling pipes of said combustion chamber into the latter to operate as a flame outlet,

said supply collar being spaced from said wall means and constituting a means for the supply of air and gas into said combustion chamber,

said supply collar defining a throat at its lower end and being of double-walled construction, the latter including an outer collar wall and an inner collar wall, both said outer collar wall and said inner collar wall terminating at the bottom of said throat,



said supply collar having further at its lower end an annular outlet aperture for air and gas, respectively, both of said walls of said supply collar being formed of cooling pipes,

a ring of outlet nozzles disposed in said outlet aperture of said supply collar,

means for supplying a fuel and air mixture by means of burners,

said burners being disposed tangentially to a combustion circle in said chamber, and

said burners being disposed between said wall means and said collar.

3,186,383
INTERNAL COMBUSTION ENGINES
Martin Cordingley Potter, Overdale, Alstonfield, near Ashbourne, Derbyshire, England, assignor to Potters Insulations Limited, a company of the Queen of Great Britain, Northern Ireland and the Isle of Man
Filed Nov. 28, 1962, Ser. No. 240,548
7 Claims. (Cl. 123—11)



1. A rotary internal combustion engine comprising an output shaft having a forward direction of rotation, an engine body mounted for rotation about the axis of said shaft, a fixed support for said body, at least two arcuate chambers within said body, the axes of curvature of said chambers being coaxial with said shaft, an arcuate piston within each chamber and slidable with respect to said body along the axis of said chamber, each of said pistons having an arcuate length less than the arcuate length of its respective chamber thereby defining a combustion chamber adjacent to each of its ends, piston rods rigidly interconnecting said pistons, a drive element independent of said body mounted for rotation about the axis of said shaft, connection means rigidly connecting said pistons to said drive element, inlet and outlet ports in said combustion chambers through which fuel may be introduced into and products of combustion exhausted from said chambers, a first unidirectional clutch between said body and support and a second unidirectional clutch between said drive element and said support, said clutches permitting rotation of said body and drive element, respectively, in said forward direction but preventing such rotation in the opposite direction, and a third unidirectional clutch between said body and shaft and a fourth unidirectional clutch between said drive element and shaft, said clutches causing said shaft to rotate with said body and drive element, respectively, when said body and drive element rotate in said forward direction but permitting said body and drive element, respectively, to rotate in the opposite direction with respect to said shaft, whereby when fuel burns in the combustion chambers adjacent to the forward ends of said pistons said body is urged in the forward direction of rotation thereby rotating said output shaft with it and when fuel burns in the combustion chambers adjacent to the rearward ends of said pistons said pistons are urged in the forward direction of rotation, thereby rotating said output shaft with it through said connection means and drive element.

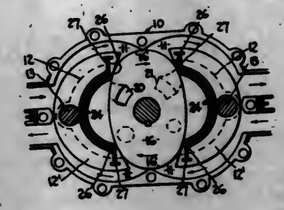
3,186,384
PISTON SEAL FOR ROTARY ENGINES
Ernst Fuhrmann, Burscheid, near Cologne, Germany, assignor to Goetzewerke Friedrich Goltze Aktiengesellschaft, Burscheid, near Cologne, Germany, a corporation of Germany
Filed June 29, 1961, Ser. No. 120,739
Claims priority, application Germany, June 30, 1960, G 29,949
2 Claims. (Cl. 123—8)



1. A piston seal for a rotary engine, comprising, a piston having a groove therein having two parallel faces and a bottom wall, a spacing member positioned centrally of said groove and extending from the bottom of said groove and having two faces spaced from and parallel to said groove faces, said spacing member being of porous material and carrying a lubricant, a plurality of strip-like sealing elements slidably disposed within said groove in mutually parallel relationship, one of said sealing elements intermediate one side of said groove and the adjacent face of said spacing member, and a second of said sealing elements intermediate said other face of said groove and the adjacent face of said sealing member, inner edges of said sealing elements being spaced from said bottom wall of said groove, portions of said elements extending from said piston and forming slide seal surfaces which in transverse section are rounded along lines having a common center point, spaced from the center points of the piston and the cylinder.

3,186,385
ROTARY INTERNAL COMBUSTION ENGINES
Hamilton Walker, Whangarei, Auckland, New Zealand, assignor to Hamilton Walker Rotary Engines Limited
Filed Sept. 8, 1961, Ser. No. 137,487
Claims priority, application New Zealand, Sept. 20, 1960, 127,419
5 Claims. (Cl. 123—15)

1. A rotary internal combustion engine comprising a stator casing, a drive shaft journalled to extend centrally through the casing, a rotor having two noses mounted on the drive shaft, an explosive charge entry means mounted in the housing, an igniting means mounted in the casing, at least one head pivoted in the casing, each head having an arcuate shape and being centrally mounted on a spindle journalled to extend through the casing, each head having ends that engage in a continuous sealed contact with the periphery of the rotor at a location of the explosive charge entry means and the igniting means to provide a combustion chamber formed inside the arcuate shape of the head, an inlet and an outlet provided in the casing connectable with the combustion chamber and an intake



duct and an exhaust duct positioned in the rotor to coincide, during movement of the rotor, respectively with the inlet and the exhaust in the casing for timed entry and discharge of a charge in the combustion chamber, whereby on rotation of the rotor one nose of the rotor will move into the combustion chamber to scavenge exhaust gas and then draw in a fresh explosive charge and then the second nose of the rotor will move into the combustion chamber to compress the charge and then on exploding effect a power stroke.

3,186,386
COMBINED FUEL INJECTION AND IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINES
Hermann Papst, St. Georgen, Black Forest, Germany
Filed Nov. 14, 1962, Ser. No. 237,634
Claims priority, application Germany, Nov. 15, 1961, P 28,233
17 Claims. (Cl. 123—32)

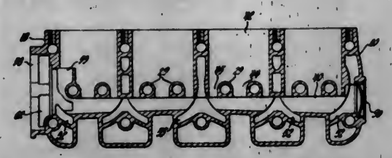


1. A method of igniting the fuel injected into an internal combustion engine comprising the steps of intermittently producing streams of fuel under pressure; feeding one part of each stream into the cylinder of an internal combustion engine and producing with another part of each stream a pressure impulse on a piezo-electric member to thereby produce a high voltage electric current; and feeding the thus produced electric current to the point of entry of said one part of each fuel stream into the cylinder of the internal combustion engine to ignite the fuel stream substantially at the moment of entry.

3,186,387
DIE CASTABLE CYLINDER HEAD CONSTRUCTION

Adelbert E. Kolbe, Berkley, and Leonardas Kutkus, Highland Park, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 9, 1963, Ser. No. 314,967
5 Claims. (Cl. 123—41.74)

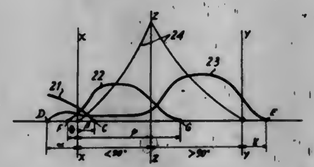


1. A cylinder head having a combustion chamber, intake and exhaust means communicating with the combustion chamber and including valve recess means having a valve seat in the combustion chamber and a valve stem column opening at an exterior surface of the head, water jacket means formed within the head in heat transfer relationship with the combustion chamber and intake and exhaust means, said water jacket means comprising; water manifold passage means formed in the head immediately adjacent said valve recess means and having rectilinear portions opening at opposite sides of the head, said portions being formed in cast structure of the head characterized by having inner passage wall surfaces which open outwardly with respect to the respective axes of said portions and toward the respective opposite sides whereby a pair of cores are made withdrawable in opposite directions through said opposite sides.

3,186,388
FEEDING OF AIR FOR COMBUSTION IN SUPERCHARGED INTERNAL COMBUSTION ENGINES

Constant Bricout, Paris, France, assignor to Les Applications Techniques Industrielles L.A.T.I., Paris, France, a corporation of France

Filed Sept. 10, 1963, Ser. No. 307,980
Claims priority, application France, Sept. 10, 1962, PV 908,989
2 Claims. (Cl. 123—75)

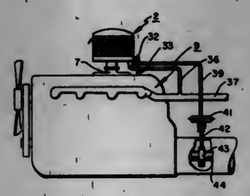


1. In an internal combustion engine of the type including at least one cylinder having a piston therein, a crankshaft, a cam shaft, push rods, driving gear associated with said cam shaft, rocker arms actuated thereby, and suitable intake and exhaust valves associated with each cylinder and actuated by said rocker arms, the combination with said engine comprising a first intake valve disposed in each of said cylinders for introducing pressurized air thereto, a second intake valve disposed in each of said cylinders for introducing atmospheric air thereto, at least one of said air currents containing carburated fuel, means opening said first intake valve not later than simultaneously with said second intake valve before said piston attains its upper dead center prior to its suction stroke, means closing said second valve when the intake vacuum of the atmospheric air at the neck of said second valve substantially equals the pressure within said cylinder, means closing said first valve after the completion of said suction stroke and means insuring the admission of pressurized air and atmospheric air in substantially equal volumes at least for the period when said second valve is in a fully opened position.

3,186,389
ROTARY FILTER APPARATUS

Stig Sylvan, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed May 18, 1962, Ser. No. 195,775
4 Claims. (Cl. 123—119)



3. In a system for supplying clean air to the intake manifold of an internal combustion engine, a continuous rotary air filter for separating contaminant particles from the air stream introduced into said intake manifold comprising:

(a) a filter drum rotatably mounted on said engine and including spaced end plates having an air stream permeable filter medium sheet connected thereto and extending therebetween in pleated endless fashion to define a plurality of dirty air upstream pockets between adjacent pleats and a downstream clean air plenum;

(b) a clean air outlet conduit communicably connecting said clean air plenum of said filter drum with the air intake of said engine;

(c) means connecting a driven shaft of said engine with said filter drum to rotate said drum;

(d) dirty air stream seal plate means extending adjacent the crests of said pleated filter medium, said seal plate means being of sufficient area to successively seal off said upstream pockets for preselected periods of time as said filter drum is rotated; and

(e) reverse air cleaning means including conduit means communicably connecting said upstream pockets directly to said exhaust manifold of said engine to place said pockets under a reverse air stream when they are sealed off removing contaminant particles collected on the walls of said pockets;

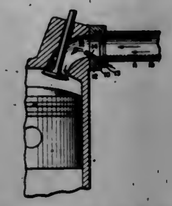
(f) said conduit means including pulsing means to pulsate said reverse air stream and increase contaminant removal efficiency, said pulsing means being connected to said means for rotating said drum to be actuated in a pulsing manner as said drum is rotated.

3,186,390
METHOD OF REDUCING THE CARBON MONOXIDE CONTENT IN EXHAUST GASES OF OTTO CARBURETOR ENGINES

Cvjetko Galic, An der Hauptwache 7–8, Frankfurt am Main, Germany

Filed June 1, 1962, Ser. No. 199,260
Claims priority, application Germany, June 2, 1961, G 32,387
3 Claims. (Cl. 123—119)

1. Method of reducing the carbon monoxide content in exhaust gases of Otto carburetor piston engines in which an atomized and vaporized fuel-air mixture is passed from the carburetor to the engine intake manifold and thence through said intake manifold to the inlet port of a corresponding combustion chamber for combustion in such chamber, which comprises separating the fuel appearing in liquid and condensed state from the fuel-air mixture in the intake manifold at a point in said manifold immediately before the inlet port of said combustion

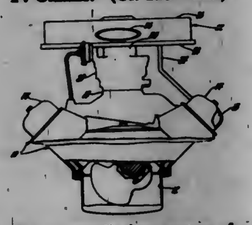


chamber, and instantly reatomizing and revaporizing said separated fuel thereat by introducing additional air into said manifold at said point through only the portion of the periphery thereof where said separated fuel is situated for exerting an instant atomizing and vaporizing effect on said separated fuel, said point being beyond the point at which recondensation is possible.

3,186,391
CRANKCASE VENTILATION

Wallace M. Kennedy, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,935
14 Claims. (Cl. 123—119)



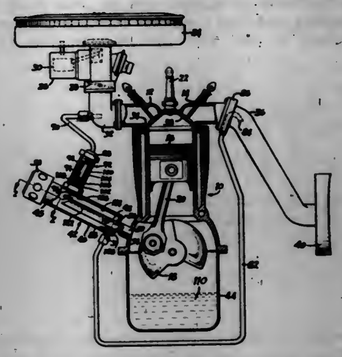
1. In a crankcase ventilating system for an internal combustion engine of the type having a combustion fluid inlet and an air cleaner communicating with said fluid inlet, the improvement comprising filter means in said air cleaner having upstream and downstream portions and means communicating the crankcase of said engine with a portion of said air cleaner between said upstream and downstream portions whereby, during operation, air entering said engine through said filter means will maintain a less than ambient pressure between said upstream and said downstream portions causing a flow of crankcase vapors from said crankcase to said filter means and through said downstream portion thereby to filter contaminants from said crankcase vapors before their delivery to said air inlet and whereby upon stopping said engine said upstream portion of said filter means provides a restriction to deter the escape through said air cleaner to atmosphere of residual crankcase vapors.

3,186,392
APPARATUS AND METHOD FOR IMPROVING COMBUSTION IN AN INTERNAL COMBUSTION ENGINE

Bran F. Gregoric, 3828 4th St., Wayne, Mich.

Filed Dec. 23, 1963, Ser. No. 332,821
11 Claims. (Cl. 123—119)

1. A device for improving combustion in an internal combustion engine comprising a vibrator member responsive to the impingement of gases thereon to vibrate at supersonic frequencies and to cause the impinging gases to vibrate at supersonic frequencies, means for extracting engine exhaust gases and impinging the extracted ex-

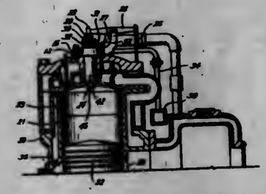


haust gases upon the vibrator member and means for delivering the thus impinged gases to the intake fuel mixture of the engine.

3,186,393
FUEL INJECTION VALVE CAGE FOR GAS BURNING INTERNAL COMBUSTION ENGINES AND ENGINE AND FUEL SYSTEM EMPLOYING SAME

Joseph L. Nell, Pampa, Tex., assignor to Panhandle Industrial Company, Pampa, Tex., a corporation of Delaware

Filed Apr. 30, 1962, Ser. No. 190,948
7 Claims. (Cl. 123—120)



1. A fuel valve cage for a cylinder of an internal combustion engine comprising a body with a tubular conduit portion adapted to extend through a cylinder head and having a valve seat receiving surface on one end and a portion providing a metered volume fuel reservoir on its opposite end and uninterrupted therebetween, said last mentioned portion having a fuel inlet port with a continuously open fuel supply pipe connection to receive fuel therefrom and orifice means interposed in said port for controlling the rate of fuel flow therethrough.

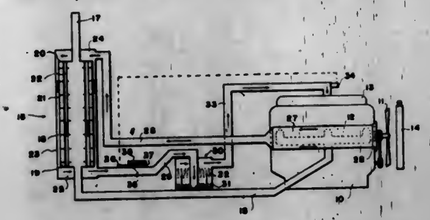
3,186,394
AIR SUPPLY FOR INTERNAL COMBUSTION ENGINES

Michael Rassum, Youngstown, Ohio (50 Orlando Drive, Canfield, Ohio)

Filed Nov. 13, 1963, Ser. No. 323,357
7 Claims. (Cl. 123—122)

1. In an installation for an internal combustion engine having an exhaust manifold, an air-intake manifold, and a cooling fan, the combination of a muffler for receiving and passing the products of combustion from said exhaust manifold, a first air-conducting shroud about said muffler for receiving and passing air in heat exchanging relation to the muffler, a cooling radiator for said engine on the opposite side of said fan from the engine, an elongated second shroud encasing said exhaust manifold and oper-

ative to receive and pass air from said radiator and fan over said exhaust manifold, said second shroud extending substantially coincident with the flow of air through said radiator and fan, a conduit connecting the outlet of said second shroud with the inlet of the first-mentioned



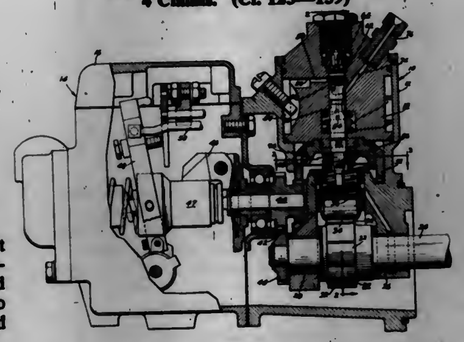
shroud, a second conduit means interconnecting the outlet of the first-mentioned shroud with said air-intake manifold, and an air cleaner of the combined centrifugal and oil bath type interposed in said second conduit means to clean the air passing therethrough prior to entry into said air-intake manifold.

3,186,395
FUEL INJECTION SYSTEM
Vaclav Fuka, 31306 Campbell, Madison Heights, Mich.
Application May 7, 1962, Ser. No. 192,842, now Patent No. 3,124,111, dated Mar. 10, 1964, which is a division of application Ser. No. 138,800, Sept. 18, 1961, now Patent No. 3,101,701, dated Aug. 27, 1963. Divided and this application Sept. 30, 1963, Ser. No. 312,751
3 Claims. (Cl. 123—139)



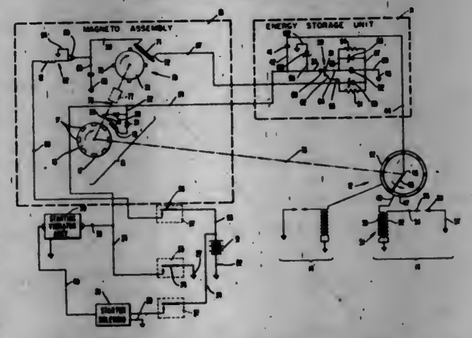
1. A charge forming device for an internal combustion engine comprising a cylinder, a piston slidably mounted in said cylinder, said cylinder including a head portion coacting with said piston to form a combustion chamber, an opening formed in said cylinder in communication with said combustion chamber, and a fuel injection mechanism disposed in said opening, said fuel injection mechanism comprising, a pair of casing members, an elongated plunger slidably supported proximate its ends in said casing members, diaphragm means secured to said plunger, said diaphragm being exposed to the pressure in said combustion chamber, spring means urging said plunger to a seating position against the force of combustion chamber pressure, a fuel chamber, said plunger including ends respectively terminating at said combustion and fuel chambers, a longitudinal passage formed through said plunger and communicating said fuel chamber with said combustion chamber, valve means substantially longitudinally coextensive with and movably disposed within said longitudinal passage and normally biased to a position blocking flow therethrough, movement of said plunger against the force of said spring means being adapted to create a pressure in said fuel chamber sufficient to open said valve means and admit fuel to said combustion chamber, and manually controlled means for limiting the movement of said plunger against said spring to meter the quantity of fuel supplied to said combustion chamber.

3,186,396
APPARATUS FOR PREVENTING REVERSAL OF FUEL INJECTION ENGINES
Carl H. Nystrom, West Springfield, and Leon A. Gallo, Ludlow, Mass., assignors to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed Nov. 5, 1963, Ser. No. 321,496
4 Claims. (Cl. 123—139)



1. In a fuel injection pump including a hydraulic head having a bore therein, a pumping and distributing plunger rotatably and slidably disposed within said bore, plunger drive means for driving said plunger in rotation and reciprocation, said plunger drive means comprising a drive shaft and separate gearing between said drive shaft and said plunger for reciprocating said plunger and for rotating said plunger in a certain phase relation with reciprocation thereof when said drive shaft is operating in one direction, and wherein the rotation of the plunger distributes fuel to outlet passages connected with said bore, the improvement comprising means in said separate gearing for rotating said plunger from said drive shaft to alter the phase relation between reciprocating and rotating motion of said plunger when said drive shaft is operating in the opposite of said one direction.

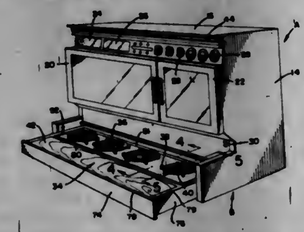
3,186,397
ELECTRICAL APPARATUS
Ronald C. Loudon, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Continuation of application Ser. No. 165,908, Jan. 12, 1962. This application June 19, 1964, Ser. No. 386,474
22 Claims. (Cl. 123—148)



1. Apparatus for generating electrical pulses and distributing the pulses in succession to a plurality of output devices connectable to a common conductor, comprising a storage condenser, a charging circuit including a current source for the condenser, said charging circuit

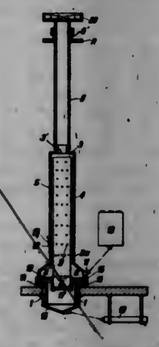
comprising a distributor periodically connecting one terminal of the current source to the common conductor through each of the output devices in succession, circuit means for periodically discharging the condenser through each of the output devices in succession, said discharging circuit means including said distributor and a switching device selectively rendered electrically conductive and non-conductive, and timed triggering means for controlling the switching device.

3,186,398
COVER ASSEMBLY FOR A GAS RANGE
Emery J. Poracki, Downey, Calif., assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed June 28, 1962, Ser. No. 205,993
8 Claims. (Cl. 126—37)



1. In a gas cooking device, a base, a gas burner fixedly mounted on said base, means for controllably supplying gas to said burner, and a cover assembly including a top wall cooperating with said base in forming a cooking top enclosure for the gas burner, means for supporting said top wall for movement horizontally relative to the burner, said top wall having a cooking opening therein and an imperforate portion forwardly thereof, with the top wall being adjustable by such relative movement thereof between one position in which said opening is above the gas burner to expose the same for use and another position in which the imperforate portion of the top wall is above and is sufficient in size to conceal the burner.

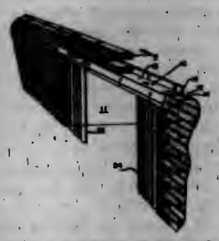
3,186,399
TUBULAR OIL-HEATING FURNACE FOR VEHICLES NOT RUNNING ON RAILS
Josef Peters, Claude-Lorrain-Strasse 9, Munich, Germany
Filed Dec. 7, 1961, Ser. No. 157,624
Claims priority, application Germany, Dec. 16, 1960, P 26,193
4 Claims. (Cl. 126—94)



1. A tubular oil-heating furnace for vehicles or for small rooms having a roof portion comprising

an evaporation chamber having a substantially cylindrical portion and an upwardly tapered down upper portion,
a first, centrally disposed air feeding tube having a plurality of perforations and extending through said evaporation chamber,
a second tube coaxially surrounding said first tube and having an open upper end for the escape of flue gases, the outer wall of said first tube and the inner wall of said second tube defining an annular combustion chamber,
said first air feeding tube being closed at its upper end and open at its lower end,
said evaporation chamber coaxially surrounding said first air feeding tube and said tapered down upper portion of said evaporation chamber extending closely to said first air feeding tube,
a controllable oil feeding conduit terminating in said evaporation chamber,
said second tube being connected to said tapered-down upper portion of said evaporation chamber,
a third tube connected to the upper end of said second tube and adapted to terminate in the free atmosphere in order to provide an escape for the flue gases from said annular combustion chamber,
the lowermost of said perforations of said first air feeding tube being spaced apart from said bottom portion of said evaporation chamber at a predetermined distance to function as air feeding means and also as oil over flow means from said evaporation chamber, said air feeding tube having a diameter which is a multiple of the radial width of said combustion chamber, and the longitudinal axis of said second tube coinciding with the axis of said third tube.

3,186,400
LINTEL MEMBER FOR FIREPLACES
Gordon H. Lunt, 3626 Wallace Road, and Ted K. Clark, 5004 Sonoma Highway, both of Santa Rosa, Calif.
Filed June 20, 1963, Ser. No. 289,203
1 Claim. (Cl. 126—142)

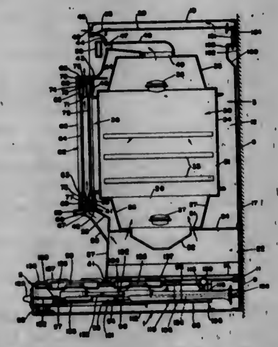


A combination lintel and protective hood device for a masonry fireplace comprising:
a rigid one-piece member including a flat elongated horizontal beam portion adapted to support the masonry above a fireplace opening when the ends of said beam portion are supported on opposite side walls of the fireplace opening;
an integral upturned flange portion extending along an inside edge of said horizontal beam portion;
an outer integral flange portion extending downwardly from an outside edge of said horizontal beam portion on the side thereof opposite from said upturned flange portion, said outer flange portion adapted to extend outwardly from the upper edge of the fireplace opening when the device is installed;
transverse end members extending rearwardly from said outer flange portion and downwardly from said horizontal beam portion, each said end member having an edge substantially perpendicular to the plane of

said horizontal beam portion, the distance between said end member edges and said upturned flange portion being at least as great as the width of the masonry forming the fireplace opening;

whereby said end member edges are adapted to abut the masonry on opposite sides of the fireplace opening, thereby positioning said upturned flange portion to facilitate alignment of the masonry above the fireplace opening.

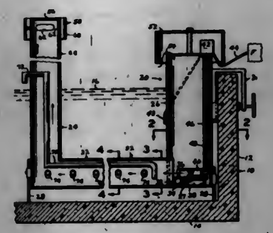
3,186,401
GAS RANGE
Charles M. Mayer, Erwin C. Dalenberg, and Frederick G. Constance, Mansfield, Ohio, assignors to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Original application Feb. 3, 1960, Ser. No. 6,428, now Patent No. 3,130,719, dated Apr. 28, 1964. Divided and this application Aug. 16, 1963, Ser. No. 302,629
2 Claims. (Cl. 126—200)



1. In combination with a cooking oven, a door therefor comprising separately formed inner and outer sections of substantially the same size and shape, said inner and outer sections being normally disposed with their main body portions in laterally spaced opposition in parallel planes, latch means operative between corresponding first sides of said sections for releasably holding the same in such normal disposition thereof, first and second hinge means respectively at corresponding second sides of said sections opposite said first sides of the same, said first and second hinge means cooperating to maintain said second sides of the sections at the lateral spacing in the normal disposition of the sections, the first and second hinge means mounting the sections for both swinging movement together in the normal latched condition and for relative movement when released for angular separation of the sections, an inner transparent panel within the main body portion of the inner section of the door, and an outer transparent panel within the main body portion of the outer door section, the inner and outer transparent sections being of substantially the same size and shape and in spaced register in the normal condition of the door for viewing through the same.

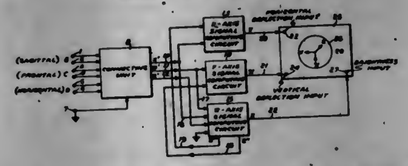
3,186,402
STOCK TANK WATER HEATER
William G. File, Follett, Tex.
Filed Jan. 30, 1964, Ser. No. 341,225
1 Claim. (Cl. 126—360)

A water heater for a stock tank containing water to be heated; a U-shaped tubular member having the bight portion thereof forming a horizontally disposed heat transfer and combustion chamber submerged in said tank adjacent the lower limit of the water, one leg of said U-shape member forming an exhaust for products of combustion, the other leg of said U-shaped member forming an air inlet for mixing air with fuel; a tubular burner positioned at the depending end of said air inlet leg in coaxial alignment with and spaced above the plane of the lowermost inner surface of said heat transfer and combustion chamber; a first tubular member extending longitudinally within said combustion chamber and said exhaust, said first tubular member communicating with



the water in said tank at one end through the wall of said combustion chamber adjacent said air inlet and projecting outwardly at its other end through the wall of said exhaust above the level of the water in said tank; a plurality of other tubular members extending transversely and angularly upward through said combustion chamber in parallel spaced relation forming water passageways; a source of fuel under pressure; and fuel line means connecting said source of fuel with said burner.

3,186,403
PERSPECTIVE VECTORCARDIOSCOPE
Raymond C. Bassett, West Caldwell, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Nov. 13, 1962, Ser. No. 237,062
4 Claims. (Cl. 128—2.06)



1. In an electrocardiographic vector display system for displaying, by means of the indicating spot of a cathode ray tube, the three-coordinate vector which is the resultant of the outputs of three orthogonally related pairs of electrodes, the combination of:

a cathode ray tube,

means including three distinct circuit paths for conveying three electrocardiograph signals representing components of a three-coordinate vector,

means coupled to all three of said circuit paths of said signal conveying means and to said tube for causing the indicating spot of said tube to trace out a curve, in accordance with two of said three signal components, the apparent line thickness of which varies in accordance with the remaining one of said signal components,

means coupled to one of said circuit paths and to the brightness controls of said tube for varying the indicating spot brightness in accordance with said remaining signal component, and hence in conformance with said apparent line thickness variation, and

means coupled to the brightness control of said tube for superimposing reference time marker brightness fluctuations into said curve trace which serve as depth references, and which have a rate of decay tending to introduce a sense of movement in depth—e.g. a

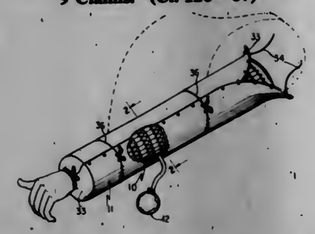
tapering tending to "comet-like" appearance—into the trace, so as to further emphasize and clarify the appearance of depth perspective created by said line thickness and brightness varying means.

3,186,404
PRESSURE DEVICE AND SYSTEM FOR TREATING BODY MEMBERS
William J. Gardner, 2569 Berkshire Road, Cleveland Heights, Ohio
Filed June 21, 1961, Ser. No. 118,681
8 Claims. (Cl. 128—87)



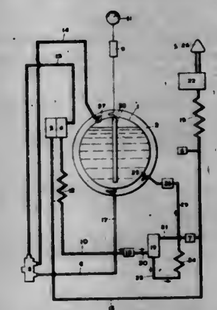
1. A pressure device formed of plastic material and adapted to receive an animal extremity therein, said device comprising a flexible generally non-elastic inner envelope of single wall thickness and a flexible generally non-elastic outer envelope of single wall thickness defining an elongated article which is open at both ends thereof for receiving said animal extremity therethrough, said envelopes being transparent and being sealed together at their ends to provide a single air pressure receiving space therebetween, generally linearly extending means sealing the envelopes together along one whole side thereof to provide a unitary tunnel-like structure for applying a uniform pressure to such extremity throughout the entire area of the extremity received therein, and means for inflating the space between said envelopes, whereby said inner envelope will be compressed tightly against the animal extremity and said outer envelope will become a generally rigid article.

3,186,405
INFLATABLE SPLINT
Robert E. Bailey, Worland, and Richard C. Leaverton, Casper, Wyo.
Filed Nov. 13, 1962, Ser. No. 237,087
9 Claims. (Cl. 128—87)



1. An inflatable splint comprising a plurality of lengthwise extending tubular laterally disconnected flexible inflatable elements arranged side-by-side and having means connecting only the ends thereof to provide a composite generally rectangular pad constructed and arranged to be wrapped about a portion of a body with said elements contacting the body portion, said elements each being divided into a multiplicity of relatively short lengthwise extending cells having restricted passageway means connecting adjacent cells to provide breathing spaces between adjacent cells and certain of said cells having passageway means for providing fluid flow communication between adjacent elements and one of said elements having a valved port for effecting inflation and deflation of said elements, said valved port and said passageway means are at about the midpoint between opposite ends of said pad, means for removably attaching opposite sides of the pad when the pad is wrapped about the body portion, annular means for constricting the pad at an annular zone between an end of said pad and said valved port to prevent inflation of said tubular elements beyond the zone, and a flexible porous cover on the pad for confining and positioning said tubular elements.

3,186,406
BREATHING APPARATUS
Peter W. Fitt and Francis S. Moores, Yeovil, England, assignors to Normalair Limited, Yeovil, England
Filed Feb. 5, 1960, Ser. No. 6,957
Claims priority, application Great Britain, Feb. 21, 1959, 6,045/59
8 Claims. (Cl. 128—186)

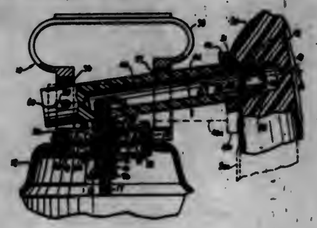


5. Breathing apparatus characterized by a liquid gas converter comprising: an insulated container provided with inlet means and outlet means; a liquid trap having an inlet in communication with said outlet means of said container, and having a first outlet and a second outlet disposed respectively at the upper and at the lower portions of said liquid trap; a supply circuit in communication with said first outlet of said liquid trap; a recirculating circuit connecting said second outlet of said liquid trap to said inlet means of said container and including vaporizing means such that liquid contained within said liquid trap is vaporized by said vaporizing means of said recirculating circuit and returned to said container by way of said inlet means thereof, the gas thus returned being at a higher temperature than gas stored therein, thereby warming as well as mixing with the main volume of liquid gas to disturb said main volume and prevent the formation of warm layers, thereby maintaining sufficient delivery pressure within said container although said container may be inverted or severely shaken.

3,186,407
GAS STORING AND DISPENSING DEVICE
Arthur I. Morrison, deceased, late of Cleveland, Ohio, by Kathryn J. Morrison, administratrix, 432 N. Market St., Loudonville, Ohio
Filed Mar. 23, 1960, Ser. No. 17,131
21 Claims. (Cl. 128—203)

1. A gas dispensing device including in combination, a container for holding gas under pressure, valve means in said container and movable between open and closed positions to respectively permit and prohibit gas passage

from said container, an operating member having first and second end portions, means connecting said first end portion of said operating member to said container in position to actuate said valve means upon movement of said operating member, a face mask, said second end portion



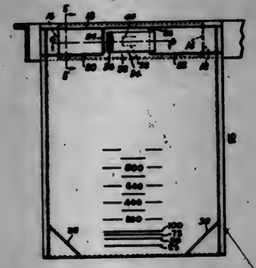
of said operating member being connected to said face mask, and conduit means between said container and said face mask for the passage of gas therebetween and including an elastic member enclosing said valve means and operating member and extending between said container and said face mask.

3,186,408
HYPODERMIC NEEDLE MOUNTING
Ezekiel J. Jacob, Brooklyn, N.Y., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Continuation of application Ser. No. 740,063, June 5, 1958. This application Dec. 29, 1961, Ser. No. 163,123
2 Claims. (Cl. 128—221)



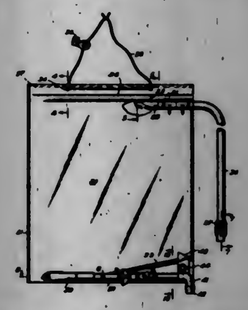
1. In a hypodermic needle mounting adapted for one-time use comprising in combination: a metallic cannula having a pointed outer end and an inner end; a hub body formed of an organic plastic having a bore presenting inner and outer ends and having a diameter throughout a cannula mounting portion thereof greater than the outside diameter of said cannula, the latter having its inner end disposed in said bore with an annular space intervening its outer surface and the bore face, abutment means forming an integral part of said hub body and extending inwardly into said bore adjacent its inner end to provide a stop engageable by the inner cannula end to limit the entry of the cannula into said bore, said bore having at least one annular recess disposed intermediate the ends of said bore and within the zone in which the inner end of said cannula is disposed, and said outer end of the bore being flared outwardly; and an adhesive material filling said annular space short of the inner end of said cannula and said abutment means to assure against said adhesive material entering the lumen of the cannula, said adhesive material also filling said recess and forming a cast sheath surrounding said cannula along the entire inner end zone of the latter to attach the hub to the cannula, said adhesive cast sheath having relatively greater bonding affinity for said cannula than for said hub body, said cast sheath being mechanically locked into said mounting intermediate the ends of the bore at said annular recess whereby its relatively lower bonding affinity for said body is supplemented to provide increased attachment strength between said sheath and said hub, the material of said sheath being unaffected by a temperaturue of substantially 165° F., the material of said hub body becoming distorted when subjected to substantially such temperature.

3,186,409
DRAINAGE BAG
Frank J. Bartz, Plymouth, Mass., assignor to Princeton Laboratories, Incorporated, a corporation of Massachusetts
Filed May 4, 1962, Ser. No. 192,406
2 Claims. (Cl. 128—275)



1. A drainage bag formed of superimposed sheets of flexible plastic material secured together about the edges, one of said sheets having an opening in the upper portion for receiving a drainage tube, a sealing tape disposed over the opening and secured to the surrounding portions of the sheet, said tape being adapted to be peeled away from the sheet to expose the opening, and to be readhered to the sheet to enable it to retain a drainage tube in position in the opening, said sheets also being secured together along a transverse support seal line spaced below the upper edge a distance which is a relatively small proportion of the total height of the bag, and adhesive attaching means disposed on one of the sheets, said adhesive attaching means being transversely disposed over and secured to the portion of the sheet which includes said transverse support seal line and also is disposed over and secured to the portion of the sheet disposed above said seal line, whereby when said adhesive attaching means is adhered to a support, downward forces applied to said sheets is transmitted through said transverse support seal line to the support and substantially no peeling force is applied to the adhesive attaching means at the uppermost portion thereof.

3,186,410
CLOSED SYSTEM URINARY DRAINAGE SET
Frank S. Buono, Garfield, N.J., assignor to Becton, Dickinson and Company, East Rutherford, N.J., a corporation of New Jersey
Filed Aug. 27, 1962, Ser. No. 219,495
6 Claims. (Cl. 128—275)



1. In an assembly of the character described in combination, a receptacle comprising a pair of opposed walls being integrally connected together at their upper, side and base ends, the inside face of one of said walls being roughened to prevent adhesion of areas of one wall to opposed areas of the other, a drainage tube extending laterally through said walls between the receptacle ends and communicating with the receptacle interior, said receptacle having an upper edge zone adjacent the upper end and said zone being formed with a laterally extending passage between the receptacle ends and between the drainage tube and the upper receptacle end, said passage providing an airway communicating the receptacle interior with the outer atmosphere, and a discharge tube disposed at the lower end of the receptacle between the drainage tube and the base receptacle end and being disposed adjacent thereto and extending beyond said base receptacle end, said discharge tube providing a passageway to the receptacle interior, and both said drainage tube and discharge tube being integrally bonded with said receptacle to thereby permanently unite the tubes against separation therefrom and also provide a hermetic seal therewith.

3,186,411
LUMINOUS PACIFIER
William D. Skidmore, Raleigh, N.C.
Filed Apr. 24, 1963, Ser. No. 275,452
1 Claim. (Cl. 128—360)



A pacifier for an infant comprising a shaft having an enlarged portion at one end and a bulbous portion at the opposite end, a handle connected to said enlarged portion, a shield removably carried by said shaft, a hollow translucent imperforate nipple mounted on said bulbous portion and engageable with said shield for retaining said shield on said shaft, a plurality of equally spaced ribs extending substantially the full length of said nipple and integrally formed on the internal periphery thereof, said ribs being constructed of flexible luminescent material which will absorb light during periods of light and will emit light during periods of darkness, said ribs serving to increase the strength and rigidity of said nipple to prevent collapsing thereof, whereby the firmness of said nipple is increased and said pacifier can be located regardless of the absence of an outside source of light.

3,186,412
BRASSIERE WITH ELASTIC SUPPORT TAPES
William Kurland, Great Neck, N.Y., assignor, by mesne assignments, to Lily of France, Inc., New Haven, Conn., a corporation of Connecticut
Filed Sept. 18, 1963, Ser. No. 309,602
2 Claims. (Cl. 128—483)



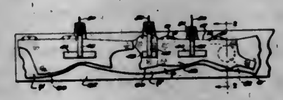
1. A foundation garment of the type generally known as a brassiere, comprising in combination:

(a) a pair of breast receiving pockets disposed generally forwardly thereof, each of said pockets having an upper and inner edge, a lower edge, and an outer perimeter;

(b) a pair of body-encircling bands secured to said breast receiving pockets at the outer perimeter thereof, each of said bands having an outer edge disposed at the rear of said garment, and a bottom edge extending generally annularly from the outer perimeter of the pockets, and terminating at the outer edge of the bands; and

(c) a pair of open mesh elastic tapes, the tapes being secured to the upper edges of the body-encircling bands at the outer edge thereof and serving as an edging thereto, and extending generally upwardly therefrom to define shoulder straps, and the tapes further extending generally downwardly along and secured to the upper inner edges of the breast receiving pockets, crossing one another at the center of the garment and being attached at the crossing point between the pockets, a diaphragm portion secured at its upper edge to the tapes below the crossing point, said tapes interposed between the breast receiving pockets and the diaphragm portion, each of said tapes secured at its upper edge to the lower edge of a breast receiving pocket and at its lower edge to the upper edge of the diaphragm portion, and then along the bottom edges of the bands, terminating generally rearwardly of the garment at the outer edge thereof.

3,186,413
METHOD OF AND MEANS FOR HOLDING FRONT PANELS FOR WOMEN'S KNITTED SWIMSUITS TO BE TRIMMED
Estephan Der Estephanian, Worcester, Mass., assignor to Estebar, Inc., Manchester, N.H., a corporation of New Hampshire
Filed Nov. 19, 1962, Ser. No. 238,617
2 Claims. (Cl. 128—516)



2. A method of assembling and holding for trimming a substantial number of front panels for women's swimsuits having three-dimensional bulges for breast cups, which comprises folding each panel on the vertical median to put one breast cup bulge directly over the other, stacking the folded panels alternately between stiff interleaves, each interleaf having the contour desired for the folded panels including a straight edge portion for the fold and a hole for the breast cups, the stacking operation including arranging each folded panel on an interleaf with the fold flush with the straight edge portion of the interleaf and the breast cup bulges fitted in the hole of the interleaf, and clamping the stacked panels and interleaves together.

3,186,414
RECEPTACLE FOR EXTINGUISHING BURNING CIGARS, CIGARETTES AND THE LIKE
Harold W. Davis, Portland, Oreg.
(2720 SE. 10th St., Milwaukie, Oreg.)
Filed July 5, 1963, Ser. No. 292,842
2 Claims. (Cl. 131—236)

1. A receptacle for extinguishing burning cigars, cigarettes and the like, comprising in combination,

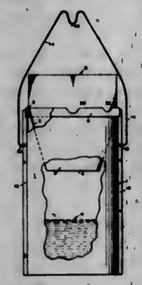
a vertically disposed hollow generally tubular body member having a flat rear wall and open at its top end and closed at its bottom end to thereby contain a quantity of water,

a rigid back panel secured to and coextensive in height with said rear wall of the body member and extending laterally outward therefrom into flanges along the sides thereof,

hanger means comprising an inverted substantially V-shaped bail member made of a single length of bendable wire,

means swingably attaching the hanger means to the flanges of said back panel,

the hanger means extending upwardly from the body member whereby the said member may be suspended from a support,



a funnel-like member open at its top and bottom ends removably disposed within the top end of said body member and having a flat rear wall in abutment with the rear wall of the body member and extending upwardly therefrom into a finger grip,

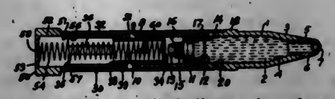
said top end of the funnel-like member having an outwardly and downwardly extending flange extending partially therearound in detachable sprung engagement throughout its length with the top end of said tubular body member.

3,186,415
HAIR CURLER WITH SELECTIVELY ENGAGEABLE FASTENING MEANS
Aram Teopilian, 1056 59th St., New York, N.Y.
Filed Aug. 20, 1962, Ser. No. 218,050
1 Claim. (Cl. 132—42)



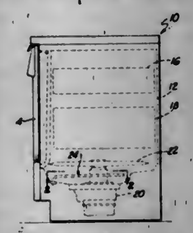
In a hair curler including a main body element and a curl-retaining element, said main body element including a base member having a pair of leg members forming a hair-retaining channel therebetween, said curl-retaining element being of elongated configuration, and being fixed at one end thereof to one end of said body element, and selectively interconnected at a second end thereof to a second end of said body element, the improvement comprising: said second end of said body element having first and second intersecting slots disposed therein and arranged at a mutual right angle, each of said slots having a first outer portion of first relatively narrow width, and a second inner portion of second relatively greater width; said curl-retaining element being of flexible planar configuration, and having a portion of reduced width corresponding to that of said second inner portion of each of said slots, and thickness less than that of said first width, said portion being selectively positionable in either of said slots.

3,186,416
COSMETIC APPLICATOR
Tennies F. Kolts, 26280 Belleporte Ave., Harbor City, Calif.
Filed Dec. 7, 1962, Ser. No. 243,122
5 Claims. (Cl. 132—79)



1. A cosmetic applicator, including: a barrel provided at one end with a ball valve, the opposite end of the barrel being open, a tubular casing in part surrounding the barrel and extending beyond the open end thereof, a floating piston within the barrel, said barrel adapted to hold a flowing cosmetic between the piston and the ball valve, said barrel provided with a cam having an inclined edge and a longitudinal edge, a plunger reciprocal within the barrel, a spring in compression between the plunger and the casing for moving the plunger inwardly of the barrel toward the floating piston, said plunger provided with means engaging the cam under pressure of the compression spring, valve means communicating with the atmosphere, closing upon movement of the plunger toward the floating piston and opening upon reverse movement thereof to atmospherize the space between the floating piston and the plunger, means for axially rotating the plunger to move the first named means on the inclined edge of the cam to move the plunger in one direction to compress the spring and to suddenly release spring compression when the longitudinal cam edge is reached during continued rotation of the plunger to effect sharp percussive plunger movement to compress air between the plunger and the piston.

3,186,417
DISHWASHER HEATING SYSTEM WITH DUAL ELECTRICAL HEATING MEANS
John A. Fay, North Hollywood, Calif., assignor to Waste King Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 27, 1962, Ser. No. 240,222
3 Claims. (Cl. 134—57)



1. In an electrical heating system for a dishwasher which includes a tub adapted to be filled with water to a predetermined static water level and adapted to contain dishes to be washed, rinsed and dried, and which includes timer means for controlling the operating cycle of said dishwasher, the combination of:

(a) low-output electrical resistance heating means in said tub above the bottom thereof and below said static water level;

(b) high-output electrical resistance heating means in said tub above the bottom thereof and below said static water level;

(c) means, including switch means controlled by said timer means, for energizing and de-energizing said low-output heating means;

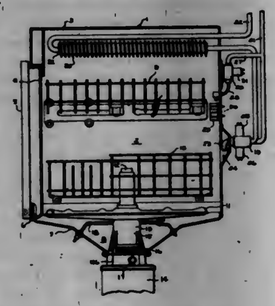
(d) means, including switch means controlled by said timer means, for de-energizing said timer means and for energizing said high-output heating means at a predetermined point in the operating cycle of said dishwasher;

(e) means, including temperature responsive switch means in said tub adjacent the bottom thereof and below said static water level, for re-energizing said timer means and for de-energizing said high-output heating means in response to a predetermined maximum temperature;

(f) said low-output and high-output heating means respectively comprising low-output and high-output electrical resistance heating elements; and

(g) waterproof sheathing means enclosing said heating elements.

3,186,418
APPARATUS FOR MINIMIZING SPOTS ON ARTICLES WASHED IN AUTOMATIC DISHWASHERS
Hansjoerg Stern, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1963, Ser. No. 315,871
2 Claims. (Cl. 134—58)



1. A dishwashing machine comprising:

(a) a compartment,

(b) support means for articles to be washed within said compartment,

(c) water pumping and ejecting means disposed in a lower portion of said compartment to effect washing and rinsing of the articles and removal of wash and rinse water from said compartment,

(d) heating means disposed within a lower portion of said compartment to facilitate drying of the articles upon completion of washing and rinsing,

(e) a timer having a plurality of electrical switching contacts for controlling the washing sequence,

(f) hot and cold water conduits for connection to hot and cold water supplies respectively,

(g) a first electrically-operable valve having hot and cold water inlets connected to said conduits and an outlet within said compartment,

(h) a first set of switching contacts in said timer controlling said valve so that cold water only enters said compartment subsequent to the washing and rinsing sequence,

(i) a second set of switching contacts in said timer energizing said pumping and ejecting means to spray the cold water on the articles and to drain the cold water from said compartment,

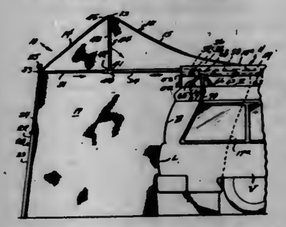
(j) a vaporizer disposed in an upper portion of said compartment,

(k) a second electrically-operable valve to supply water to said vaporizer,

(l) a third set of contacts in said timer energizing said second valve to admit water to said vaporizer, and

(m) a fourth set of switching contacts in said timer energizing said vaporizer when water is admitted thereto to form a mineral-free water vapor which flows about the articles and condenses thereon to dilute any residue of water remaining on the articles to minimize spotting.

3,186,419
AUTOMOBILE SHELTER TENT
Lila K. McCarroll, 1829 Beverly Way, Sacramento 18, Calif.
Filed July 27, 1962, Ser. No. 212,877
5 Claims. (Cl. 135—1)



4. In combination with a motor vehicle having a roof, an open top rectangular storage receptacle adapted to be securely mounted thereon,

a telescoping frame slidably pivoted within the receptacle so as to be longitudinally extensible, said frame including

a first horizontal U-shaped member formed by a pair of longitudinal legs and a transverse bight therebetween, the member having an outwardly directed pin-like lug at the intersection of each leg and said bight,

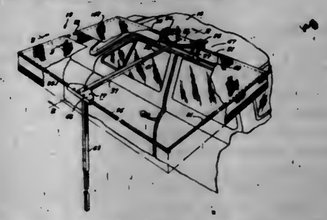
a pair of horizontal tubular members each receiving at one end a leg of the first member and being pivoted within the receptacle to a sliding member,

a second U-shaped member having the free ends of each leg pivoted on each tubular adjacent said one end and movable from a horizontal closed position overlying said tubular member to a vertically upstanding position,

a tent structure including a roof storable in said receptacle and when removed therefrom draped over a rear portion of said receptacle and partially supported by the extending frame including the upstandingly oriented second U-shaped member,

a pair of spaced openings in the tent at the rearmost portion of its roof, said openings receiving said pin-like lugs.

3,186,420
SUPPORT FRAME
Charles Magee, 6731 Lakehurst, Dallas, Tex.
Filed May 10, 1963, Ser. No. 279,430
14 Claims. (Cl. 135—7.1)



1. An auto awning support which comprises:

(a) a hook for engaging the gutter along one side of said auto;

(b) a frame including a bearing means for resting on the roof of said auto above the point of engagement by said hook;

(c) a support for said frame on the side thereof opposite said bearing means; and

(d) resilient coupling means interconnecting said hook and said frame for forcing said hook and frame toward one another as the side of said frame opposite said auto is raised to the height of said support.

3,186,421
COMPACT RAIN SHELTER
Asbury Irwin Wilson, Andersonville, Tenn.
Filed May 15, 1962, Ser. No. 196,556
2 Claims. (Cl. 135—20)



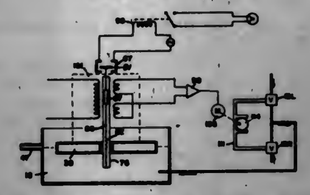
2. An umbrella, comprising: an elongated hollow handle having a rim provided with a plurality of circumferentially spaced slots extending from one end of the handle part way into said rim, an insert slidably fitted in said handle to be movable from a recessed position therein to a position adjacent said rim, a first and a second stop means carried by said handle, respectively imposing upper and lower limits to the travel of said insert within said handle, said first stop means being operative to stop said insert in a position adjacent said slotted rim, a flexible fabric connected to said ribs to be spreadably supported thereby when said ribs are in said spread position, said ribs and said fabric being adapted to form a bundle insertable in said handle, and means between said fabric and said ribs operative on said ribs when in said spread position to restrain them from moving out of said spread position.

3,186,422
FLUID AMPLIFIER
Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,631
10 Claims. (Cl. 137—81.5)



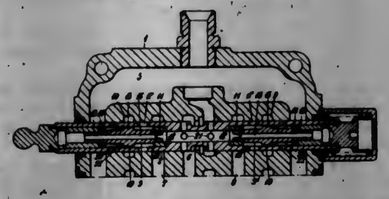
1. The combination of a fixed gain fluid amplifier comprising a first passage means terminating in a fluid flow restrictor for generating a jet of main fluid to be controlled, a plurality of fluid receiving means arranged in two straight rows and disposed downstream from said restrictor for receiving fluid from the main jet, and control passage means each terminating in a fluid flow restrictor for generating a jet of control fluid for controllably deflecting said main jet relative to said receiving means, with a passage means terminating in a fluid flow restrictor for generating a fluid jet for further controllably deflecting said main jet relative to said receiving means, the further deflection being in a direction substantially perpendicular to the deflection produced by said control jet whereby the gain of the fluid amplifier may be varied.

3,186,423
DENSITY CONTROL INSTRUMENT
James P. Davidson and Eugene A. Glassey, Los Altos, Calif., assignors to Exactel Instrument Company, Mountain View, Calif.
Filed May 18, 1962, Ser. No. 195,697
7 Claims. (Cl. 137—91)



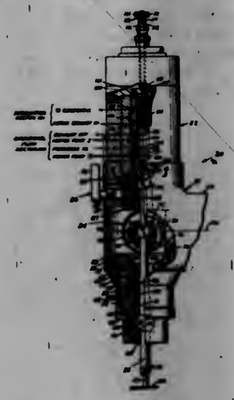
1. In a density sensing control instrument of the type which comprises a tank, at least two tubes discharging into said tank conveying into said tank fluids of different densities and wherein the density of the combined fluid in said tank is dependent upon the relative flow through said tubes, a hydrometer tube suspended in the combined fluid in said tank, an armature movable with said hydrometer tube, a differential transformer surrounding and normally centered relative to said armature, and a servomotor energized responsive to the position of said armature relative to said transformer, the improvement which comprises a weir in said tank, a discharge outlet outside said weir, a float floating on said combined fluid as it passes over said weir, means for raising and lowering said transformer responsive to said float, and a link in said hydrometer tube, said link being fixed at one end to said tube variable in length dependent upon temperature, said armature being mounted on the other end of said link; an electrical circuit having spaced contacts movable with said transformer and a circuit breaking device operable upon shorting of said contacts, a conductive element movable with said hydrometer tube and ararnged to short said contacts to actuate said circuit breaking device when said hydrometer tube fluctuates relative to said transformer beyond predetermined limits governed by spacing of said contacts.

3,186,424
HYDRAULIC CONTROL VALVES
Richard Guy Peach, Poole, Dorset, England, assignor to Hamworthy Engineering Limited, Poole, Dorset, England
Filed Mar. 12, 1962, Ser. No. 178,806
Claims priority, application Great Britain, Mar. 28, 1961, 11,252/61
7 Claims. (Cl. 137—117)



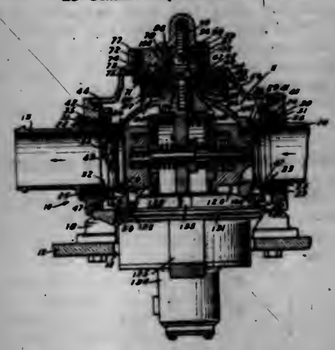
1. Hydraulic control valve comprising a valve body having a bore therethrough, at least one service port and a high and a low pressure port in communication with said bore, a control spool having a passage therethrough slidably engaged in said bore and provided with service control ports therein at one end and constructed and arranged so that one position of said spool, communication is established between the service port and the low pressure port through said passage and is precluded between the high pressure port and said passage, and in another position thereof communication is established between the service port and the high pressure port through said passage and is precluded between the low pressure port and the passage, said spool having by-pass port means establishing communication between said low pressure port and said passage and spaced from said end having the service control ports therein, a valve seat in said passage between said service control ports and said by-pass port means, an elongated by-pass valve member in said passage adapted to co-operate with said seat and constructed and arranged so that a predetermined flow rate is maintained from said high pressure port through said passage to said service port when said spool is in said another position, means biasing said valve member to a closed position on said seat, said valve being pressure balanced at its opposite ends and responsive to pressure from said high pressure port when said spool is in said another position to move from said seat against the force of the biasing means, whereby pressure in excess of a predetermined amount is by-passed to said by-pass port.

3,186,425
CONVERTIBLE MODE TRACER VALVE
Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut
Filed Mar. 20, 1962, Ser. No. 180,971
14 Claims. (Cl. 137—270)



1. A hydraulic tracer valve comprising: three spool valves, each spool valve having an axis, the axes being normal to each other, each spool valve comprising a sleeve and a spool inside the sleeve, which are axially slidable relative to each other in order to provide hydraulic connections for metering and passing fluid under pressure for controlling and powering the movement of machine tool elements, a first of the spool valves having its axis substantially upright; a body mounting the three spool valves, and having an internal stylus passage; an elongated stylus having an axis, the stylus being disposed in the stylus passage and generally aligned with the axis of the first spool valve; three ball-like members integral with the stylus; stylus mounting means mounted to the body for tiltably mounting and adjustably varying the elevation of the stylus and to limit the extent of its axial movement, comprising a first retainer having an internal wall forming a central passage, the internal wall embracing the first ball-like member and rendering it laterally immovable, the retainer being disposed in the stylus passage, a first ball seat for the first ball-like member disposed on said retainer and surrounding the stylus on the opposite side of the first ball-like member from the first spool valve, said first ball seat being adapted to support the first ball-like member, retainer adjustment means for adjusting the location of said first ball seat along the first spool axis, a second retainer having a central axis and disposed in said stylus passage, a second ball seat on the second retainer and surrounding the stylus on the opposite side of the first ball-like member from the first ball seat, the second ball seat being adapted to limit the vertical movement of the first ball-like member, whereby said stylus is universally tiltably mounted to the body with a tip portion projecting beyond the body to make contact with a contour to be traced and duplicated; a yoke connected to the second and third of said spool valves and embracing the second ball-like member, whereby tilting movement of the stylus is converted into axial movements of the second and third spool valves; rate control means comprising a ring embracing the third ball-like member, means immovably connected to the body forming a groove, a shoulder on said ring adapted to enter into the groove, matching tapered surfaces on the groove and shoulder; means mounting the ring for axial movement toward and away from the groove so as adjustably to vary the amount of lateral movement permitted to the ring and thereby to the second and third ball-like members; a converter passage in the first spool, an axial concave surface of revolution forming a depression in the end of the stylus facing the first spool; an axial concave surface of revolution forming a depression in the end of the first spool facing the stylus; a ball lying in the stylus depression adapted to support the first spool; converter means in said converter passage comprising a pin having a planar surface lying normal to the first spool axis, and means for shifting the planar surface into a first axial postion to make contact with the ball to prevent it from contacting central regions of the spool depression and to shift the planar surface into a second axial position where it permits unimpeded contact between the ball and the spool depression.

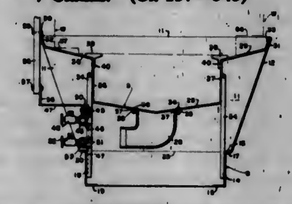
3,186,426
PLUG-IN VALVE
Gordon F. Brown, Glendale, and James K. Mosher, Pasadena, Calif., assignors to Schulz Tool and Manufacturing Co., San Gabriel, Calif., a corporation of California
Filed Nov. 27, 1961, Ser. No. 158,013
13 Claims. (Cl. 137—315)



3. In a plug-in valve assembly: a housing; a valve in said housing, said valve being removable from said housing through an opening therein, said valve being rotatable in said housing from a removable position to an operable position; means within said housing to retain said valve therein when it is in its operable position; two flow passages disposed in opposite ends of said housing, said passages being aligned with said valve in its operable

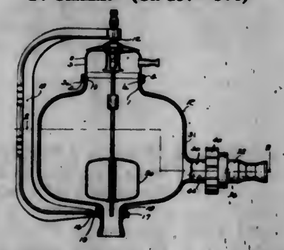
position; flowing sleeves surrounding and being in slidable engagement with said flow passages and extending toward said valve; valve seats on said sleeves aligned to form seals on said valve in its operable position, said valve having an open condition in said last position in which flow communication is provided through said housing and said flow passages and a closed condition in said last position in which said valve cooperates with said seats to arrest flow through said housing; a valve socket within said housing, said valve extending within said socket, said socket being rotatable with said valve, said socket being rotatable to be aligned to seat on said valve seats and seal said flow passages from said housing when said valve is rotated to its removable position; springs biasing said sleeves and seats toward said valve and said socket when in respective alignments therewith; and cam means on said valve cooperating with cam follower means adjacent said sleeves to displace said seats away from said valve and said socket while said valve and socket are being rotated.

3,186,427
BASE FOR WASHING MACHINES
Bertice A. Martin, Denver, and Volker W. H. Rassbach, Englewood, Colo., assignors to Sturdi Manufacturing Co., Denver, Colo., a corporation of Colorado
Filed May 11, 1962, Ser. No. 194,145
7 Claims. (Cl. 137—343)



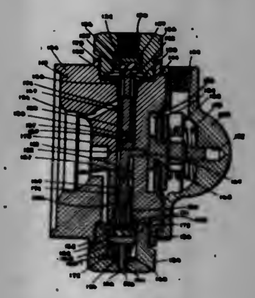
1. A base for a plurality of automatic washing machines, including a longitudinally extending drain pan to receive water discharged from said machines, a portion of said drain pan being inclined outwardly and upwardly; means for supporting said drain pan at an elevated position; hot water supply means extending generally along said base, beneath said inclined portion of said pan for supplying hot water to said machines; cold water supply means extending along said base, beneath said inclined portion of said pan and adjacent said hot water supply means, for supplying cold water to said machines; and means mounted on said drain pan for supporting said washing machines above said drain pan.

3,186,428
WASHER-RELEASER FOR DAIRY EQUIPMENT
Lloyd F. Bender, Hayward, Wis.
Filed Oct. 31, 1963, Ser. No. 320,352
14 Claims. (Cl. 137—376)



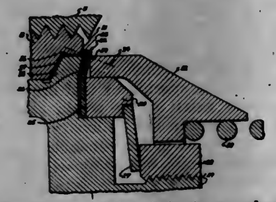
13. A washer-releaser unit for dairy equipment comprising, a fluid receptacle, a mounting member embracing said receptacle and engaging its lower end for support thereof, said fluid receptacle having an opening in its upper end, said opening defined by a vertical flange which terminates in an upper horizontal edge, a flexible gasket set around said opening and having a vertical flange and a horizontal flange bearing respectively against the vertical flange and horizontal edge of said receptacle, said gasket terminating at its upper end in a thin vertical edge located above said horizontal edge, said gasket terminating at its lower end in an outwardly and downwardly inclined flange located below said horizontal edge, a hollow cap for said receptacle and extending over and around said gasket to enclose said receptacle opening, said cap having a vertical flange and a horizontal flange bearing respectively against the vertical and horizontal flanges of said gasket, said cap vertical flange terminating in a lower edge that is engageable with said inclined flange of said gasket, and means on said mounting member for applying downward pressure on said cap and consequently downward pressure of said cap lower edge on said inclined flange to cause the gasket to distort and the thin vertical edge of said gasket to be urged in an outward direction and bear tightly against the inside of said hollow cap.

3,186,429
SUPPLY AND EXHAUST VALVE
Robert E. Radford, Tulsa, Okla., assignor to Oil Capital Valve Company, Tulsa, Okla., a corporation of Oklahoma
Original application Aug. 15, 1960, Ser. No. 49,576, now Patent No. 3,081,790, dated Mar. 19, 1963. Divided and this application Nov. 14, 1962, Ser. No. 245,339
3 Claims. (Cl. 137—463)



1. A valve comprising a housing, a valve stem reciprocally disposed within the housing, a valve port provided at each end of the valve stem, a valve seat provided for each valve port for cooperating with the valve stem to alternately open and close the valve ports, a fluid inlet provided in the housing, a fluid outlet provided in the housing, said valve stem cooperating with one of said valve seats for normally opening one of said valve ports to provide communication between the fluid inlet and the other of said valve ports, means responsive to pressure differentials for automatically moving the valve stem in one direction for closing the first of said valve ports and opening the second of said valve ports whereby communication is provided between the first of said ports and the fluid outlet for exhausting the fluid from the valve, said first valve port being closed to preclude flow of fluid through the valve inlet when the said second valve port is opened, and manual reset means for moving the valve stem in an opposite direction for opening the first of said valve ports and closing the second of said valve ports.

3,186,430
VALVE
Rodrick J. Koutnik, Vista, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Nov. 15, 1962, Ser. No. 237,825
14 Claims. (Cl. 137—516.29)



1. A valve device comprising a body member having an axial opening,
a poppet member movable axially in said opening between valve opening and valve closing positions,
cooperating valve means on said members comprising
a first annular valve seating corner on one of said members,
means on the other of said members forming an annular radially extending wall,
at least a portion of said wall adjacent said corner extending at least substantially conically in a direction wherein the plane of said conical portion will intersect said corner at an angle to the axis of said opening when said poppet member is adjacent said closed position,
an annular yieldable closure disc on said other member,
a portion of said disc extending in radially overlapping relation to said corner,
means for maintaining a portion of said disc which is spaced from said overlapping portion against said wall, said overlapping portion of said disc extending at least substantially conically,
yieldable means including an annular retaining member engaging a portion of said disc adjacent said corner;
said retaining member tending to maintain said disc against said wall,
said retaining member having a second circular corner radially spaced from said first corner by an amount less than the thickness of said disc, said second corner being effective upon movement of said poppet member to said valve closing position to apply a sealing force to said disc and against said first corner at an angle to the direction of movement of said poppet member, and
cooperating stop means on said body member and said poppet member for preventing movement of said poppet member beyond said valve closing position.

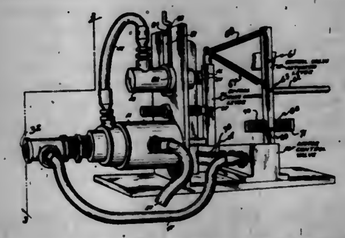
3,186,431
CONNECTION ASSEMBLY FOR PRESSURE LINES
Charles H. Moore, R.D. 4, West Chester, Pa.
Filed Dec. 24, 1962, Ser. No. 246,842
5 Claims. (Cl. 137—561)

1. A pipe connector formed of metal and used as a T, cross, reducer, bend, or a combination of such; said pipe connector consisting essentially of a pair of substantially identical hemispherical heads in opposed relationship with their adjoining edges joined together with a continuous weld thus forming a hollow sphere; said hollow sphere having at least two circular openings therein; said openings being so spaced from the adjoining edges of said hemispherical heads as not to intercept any portion of the continuous weld by which they are connected; the diameter of said hollow sphere with respect to the diameter of the openings therein being such that there is sufficient metal between the openings to adequately compensate by way of reinforcement for the



weakening of the walls of the hollow sphere caused by the placing of the aforementioned openings therein; a pipe communicating with each of the circular openings in said hollow sphere; the internal diameter of each of said pipes corresponding to the diameter of the opening with which it communicates; said pipes being secured to said sphere by continuous welds.

3,186,432
HYDRAULIC ACTUATING AND CONTROL SYSTEMS
Raymond C. Schneckloth, Rte. 2 on Stockwell Lane, Clinton, Iowa
Filed Sept. 26, 1963, Ser. No. 311,771
2 Claims. (Cl. 137—596.13)



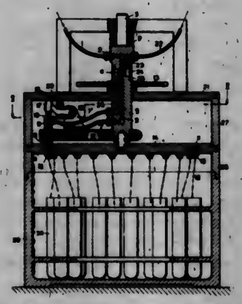
1. In a hydraulic system for actuating a fluid actuated device from a source of fluid pressure, a control valve means having a high pressure supply line port adapted to be connected to said source of fluid pressure, said control valve means having multiple use ports adapted to be connected to said fluid actuated device, pivoted control lever means for actuating said control valve means, said control lever means being movable from a central cut-off position in opposite directions to open positions at which said valve will discharge through selected ones of said use ports, a by-pass line in fluid communication with said supply line port and leading to a low pressure zone, a by-pass valve in said by-pass line, said by-pass valve being oriented so its movement toward a closed position is opposed by pressure in said high pressure supply line port, a pivoted by-pass lever operating said by-pass valve, flexible means connecting points on said control lever means at opposite sides of the fulcrum thereof with a given point on said by-pass lever to move said by-pass valve toward its closed position when said control lever is moved to any of its open positions, and means for augmenting movement of said by-pass valve toward its closed position including an auxiliary hydraulic cylinder in communication with said high pressure supply line port, said cylinder having a ram bearing against said by-pass lever.

3,186,433
FAUCET
Lloyd W. Bills, Downey, and Douglas I. Hellberg, Fullerton, Calif., assignors, by mesne assignments, to Mark Chemical Company, Anaheim, Calif., a limited partnership
Filed Sept. 14, 1962, Ser. No. 223,774
4 Claims. (Cl. 137—609)



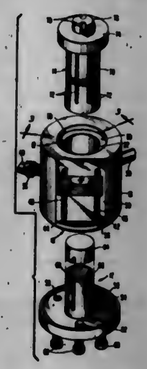
1. A faucet having a plurality of discharge spouts adapted for movement about an axis of reference through a predetermined range thereby to control the direction and rate of flow of fluid comprising a housing having a chamber therein and a plurality of discharge passageways leading from the chamber; a plurality of discharge spouts rigidly mounted on the housing and extended therefrom in respective circumferential positions relative to said axis, each of said spouts being in communication with a respective one of said passageways; means mounting the housing on the inlet pipe to provide communication between the chamber and the inlet and to permit swinging movement of the housing about said axis through a predetermined range; a plurality of poppet valves mounted in the chamber and biased against the housing by fluid pressure in the chamber, each being adapted to close a respective one of said passageways and to block communication between the chamber and a respective one of said spouts, each of said valves having an elongated stem extended therefrom; and a cam member rigidly secured to said inlet pipe and provided with a profile having a plurality of circumferentially spaced lobes each being engageable with a respective one of said valve stems upon movement of the faucet to a predetermined circumferential position in said range of movement.

3,186,434
DEVICE FOR THE CENTRAL DISTRIBUTION OF LIQUIDS AND GASES, PARTICULARLY IN THE COURSE OF SEPARATION PROCESSES
Jiří Hrdina, Prague, Czechoslovakia, assignor to Československá akademie věd, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed July 31, 1962, Ser. No. 213,808
Claims priority, application Czechoslovakia, Aug. 7, 1961, 4,852/61
3 Claims. (Cl. 137—625.11)



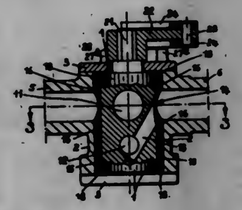
1. A device for distributing gaseous or liquid material into stationary held and substantially equally spaced collecting vessels in substantially circular arrangement comprising in combination a base plate having a plurality of equally spaced and circularly arranged distribution openings; a top plate above said base plate; a vertical spindle located centrally of said circularly arranged distribution openings; said spindle including a lower spindle portion rotatable in equal steps, a stationary upper portion, bearing means for the abutting ends of said spindle portions and spring means holding said abutting end in tight contact; a closed annular space surrounding the abutting ends of the spindle portions; said rotational steps conforming to the spacing of said distribution openings; a first central axial boring within said spindle having its upper inlet end in the stationary spindle portion and its lower outlet end in the rotatable spindle portion; at least a second boring extending within the axial direction of the stationary spindle portion and entering with its lower end into said annular space; at least a third boring extending within and in the axial direction of the rotatable spindle portion and communicating at its upper inlet end with said annular space; a first tube line feeding material to be distributed to said inlet end; a second tube line connected with one end to said outlet end; a third tube line feeding material into the upper end of said second boring; a fourth tube line connected with one end to the lower outlet end of said third boring; a distribution arm attached to the stepwise rotatable lower spindle portion; a first distributing head attached to the other end of said second tube line and adjustably mounted in said distribution arm in operative relation to said distribution opening of the base plate; means holding said first distribution head in sliding tight contact with the base plate; a second distributing head attached to the other end of said fourth tube line and adjustably mounted in the distribution arm in spaced relation to said second distributing head and in operational relation to said distribution openings; and means holding said second distributing head in sliding tight contact with said base plate.

3,186,435
ALTERNATING VALVE
Gilbert Zweig, Irvington, N.Y., and Charles R. Kershaw, Broomall, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 23, 1963, Ser. No. 275,135
9 Claims. (Cl. 137—625.19)



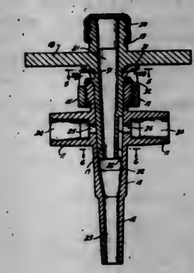
6. An alternating valve comprising, a housing having inlet ports and an outlet port associated with each inlet port, a rotatable sleeve valve having radially extending passages angularly spaced which communicate in the rotation of the rotatable sleeve with each inlet port and each outlet port, a first pair of said radially extending passages communicating simultaneously in the rotation of the rotatable sleeve valve with one of said inlet ports and its associated outlet port and upon further rotation thereof a second pair of said radially extending passages communicating simultaneously with another inlet port and its associated outlet port, and a circular valve member concentrically in the interior of the rotatable sleeve valve and provided with passage means establishing communication between the radially extending passages in each of said pairs of radially extending passages wherever the respective pair of radially extending passages is in communication with one of said inlet ports and its associated outlet port.

3,186,436
COCKS AND THE LIKE FLUID DISTRIBUTORS, CHIEFLY THOSE CONTROLLING THE PNEUMATIC BRAKING OF VEHICLES
Louis Modrin, Saint-Etienne, Loire, France, assignor to l'Auxiliaire de l'Industrie et des Mines "Auxim," Saint-Etienne, France, a company of France
Filed Dec. 5, 1961, Ser. No. 157,121
4 Claims. (Cl. 137—625.22)



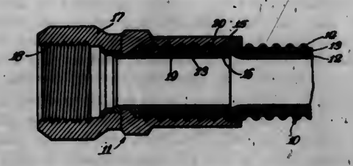
1. A shut-off cock comprising:
(a) a body portion having a first cylindrical bore formed therein;
(b) a cylindrical control member revolubly disposed in said first bore coaxially therewith, said control member being revoluble between a closed position and an open position;
(c) means included in said body portion defining a first port;
(d) an inlet connection communicating with said first port;
(e) means included in said body portion defining a second port coaxial with said first port and of the same configuration as said first port, the common axis of said first and second ports intersecting the axis of said first bore perpendicularly with respect thereto;
(f) an outlet connection communicating with said second port;
(g) means included in said body portion defining a third port in communication with the atmosphere, a plane containing the axis of said first bore and passing through the center of said third port being angularly inclined with respect to said common axis of said first and second ports;
(h) said control member having a second bore formed therein which is coaxial with said common axis when said control member is in said open position, the configuration of said second bore being the same as that of said first and second ports for simultaneous registry therewith in said open position;
(i) said control member having a third bore formed therein, the axis of said third bore lying in said plane whe said control member is in said closed position, the configuration of said third bore being the same as that of said third port for registry therewith in said closed position;
(j) said control member having a fourth bore formed therein, the axis of said fourth bore being obliquely inclined with respect to the axis of said control member, one end of said fourth bore being in communication with said third bore and the other end of fourth bore communicating with said second port when said control member is in said closed position,
(k) means connected to said control member for rotating the same between said open and closed positions;
(l) a cylindrical sealing member disposed in said first bore, said sealing member being interposed between the internal surface of said first bore and the external surface of said control member, said sealing member having a plurality of apertures formed therein, each aperture being in registry with one of said ports, and
(m) a tubular member carried by said body portion and disposed in said third port, said tubular member extending into the one of said apertures in said sealing member which is in registry with said third port for holding said sealing member against rotation in said first bore.

3,186,437
STOPCOCK
Frank S. Bucno, Garfield, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Mar. 19, 1962, Ser. No. 180,535
2 Claims. (Cl. 137—625.42)



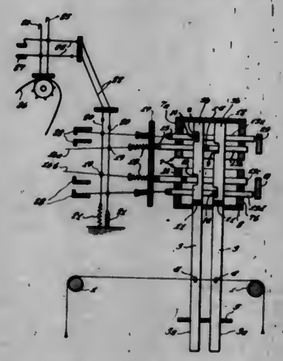
1. A stopcock, all parts of which are formed of plastic materials by a molding process and for use in the administration of fluids including in combination a body provided with a tapered bore and an opening communicating therewith, a key member, a tapered stem forming a lower part of said member and having a passage on its outer face, said stem extending into said body bore, an adjustable collar encircling and axially shiftable along said stem towards the upper end of said member, latch parts integral with said stem carried by said stem and collar and cooperating upon such shifting occurring to positively couple said collar to said stem and prevent a return movement of said collar along the latter, a body mounting to adjustably retain said collar and thus maintain said stem within said bore and in sealing contact with the face of the latter, said body mounting including mating threads on the body and the collar whereby the frictional engagement between the key member and body is adapted to be varied and the key member is adapted to be locked against rotation with respect to the body and handle actuator means integral with said key member which projects laterally and circumferentially about said key member at the upper portion thereof, said handle means serving as an indicator and being adapted for rotating said key member with respect to said body for establishing and interrupting communication between the opening of the latter and the passage on the outer face of said key member and bore of the body.

3,186,438
HOSE STRUCTURE
Marvin E. Holmgren, Prospect Heights, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Oct. 13, 1961, Ser. No. 145,022
8 Claims. (Cl. 138—121)



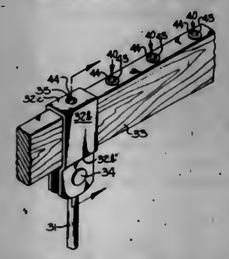
1. A reinforced plastic hose comprising: a tubular core; and a monolithic tubular outer sheath coaxially surrounding said core and formed of a plastic material, said sheath having an internal cylindrical surface of substantially constant diameter throughout and varying in thickness longitudinally to define an alternate succession of innermost flexible thin portions and thick rigid portions projecting radially outwardly of said thin portions, said thick portions extending lengthwise circumferentially about the axis of the hose.

3,186,439
JACQUARD LOOMS
Wolfgang Seiler, Rheydt, Germany, assignor to N.V. Vereenigde Towfabrieken, Rotterdam, Netherlands
Filed Aug. 22, 1962, Ser. No. 218,673
Claims priority, application Germany, Aug. 26, 1961, S 30,199
5 Claims. (Cl. 139—59)



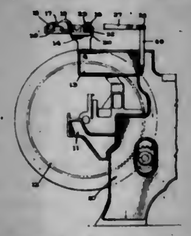
1. In a Jacquard controlled loom having warp and weft threads, a device comprising the combination of a plurality of vertically displaceable lifting bars serving as control members for the individual warp threads, each lifting bar having an eyelet through which passes a warp thread, an upper recess and a lower recess vertically spaced apart in each lifting bar, a plurality of horizontally displaceable control slides arranged in pairs and associated with each said individual lifting bar and arranged at such vertical distances from one another, that one slide of each pair is adapted to engage in said upper recess while the other slide is adapted to engage in said lower recess of the associated lifting bar, a plurality of vertically displaceable slide housings arranged one above the other, and adapted to be controlled to move in vertically opposite directions, said control slides being mounted in said slide housings so as to be horizontally displaceable while said lifting bars are vertically displaceable and means are provided for reciprocating said control slides within said slide housings so that the two control slides of each pair are caused to be engaged in and disengaged from the associated lifting bar.

3,186,440
JACK STICK AND STRAP ARRANGEMENT
George Frank League, Greenville, S.C., assignor to G. F. League Manufacturing Company, Greenville, S.C., a corporation of South Carolina
Filed Feb. 6, 1964, Ser. No. 343,004
4 Claims. (Cl. 139—88)



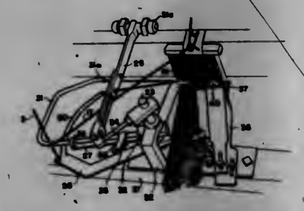
1. A jack stick and strap arrangement for interconnecting harnesses and treadles on a loom comprising
(a) a plurality of elongate jack sticks adapted to be connected at opposite ends to corresponding harnesses of a loom,
(b) a plurality of vertically disposed jack straps adapted to be connected at their lower ends to treadles of a loom and including strap portions at their upper ends which closely encircle medial portions of said jack sticks, each of said strap portions having an opening therein, and
(c) a plurality of retractable means positioned at longitudinally spaced apart positions in the medial portion of each of said jack sticks and including portions normally disposed in the openings in said strap portions of said jack straps to positively lock the jack straps in adjusted position on the jack sticks, said portions of said retractable means being accessible through and readily depressible out of said openings to permit the jack straps to be moved longitudinally of the jack sticks to another adjusted position.

3,186,441
TENSION BAR BEARING FOR LOOMS
Walter Engels, Tryon, N.C., assignor to Southern Machinery Company, Greer, S.C., a corporation of South Carolina
Filed May 14, 1962, Ser. No. 194,543
4 Claims. (Cl. 139—114)



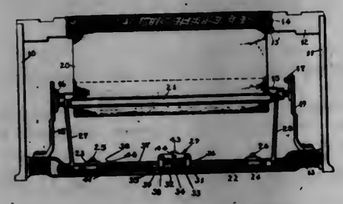
1. A tension bar bearing structure for looms comprising a supporting bracket having an upwardly opening substantially rectangular pocket formed therein, a relatively stationary block seated within said pocket and having an exterior shape conforming substantially to the cross sectional shape of said pocket and also having an upwardly opening symmetrical V-shaped recess, a downwardly tapering symmetrical V-shaped wedge engaging within said V-shaped recess and defining an included angle between its converging sides which is substantially less than the included angle defined by the sides of said recess, said wedge having a through bore transversely thereof above said bracket and block adapted to support a tension bar, and a relatively thin walled flexible jacket substantially covering and enclosing the block and wedge and including a lower portion disposed between the interior surfaces of said pocket and the exterior surfaces of said block for resiliently cushioning the latter, said jacket being yieldable and adapted to flex during rocking movement of the wedge upon said block, said jacket excluding foreign matter from entering between said block and wedge during operation of the bearing structure.

3,186,442
APPARATUS AND METHOD FOR FORMING A DECORATIVE FRINGE
Harold Graeme Gale, 327 Balaclava Road, Caulfield, Victoria, Australia
Filed Sept. 4, 1962, Ser. No. 221,065
Claims priority, application Australia, Sept. 7, 1961, 8,969/61
13 Claims. (Cl. 139—118)



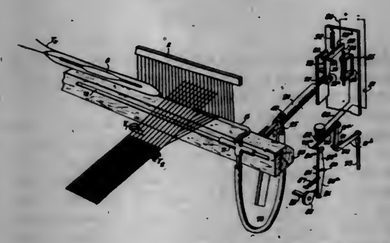
1. A method of producing in a single machine a composite fringe having a band portion, a free thread portion, and a tape portion comprising weaving the band portion with transverse threads extending beyond one longitudinal edge to form the free thread portion of the fringe, simultaneously weaving the tape portion and interlocking the threads of the tape portion with threads of the band portion along said longitudinal edge.

3,186,443
TAKE-UP MECHANISM
Joseph M. Budzyna, East Douglas, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed May 17, 1963, Ser. No. 281,151
2 Claims. (Cl. 139—291)



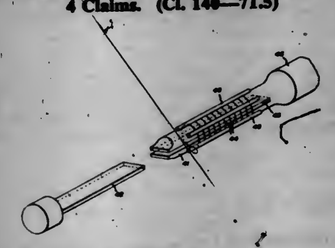
1. In a loom the combination of a fabric take-up roll and a cloth roll on which fabric is adapted to be wound, a presser roll adapted to cooperate with said cloth roll as the fabric is received thereon comprising supporting arms and a horizontally disposed shaft member to which said supporting arms are fixedly attached, adjustable spring means for subjecting said shaft to torsional tension whereby said presser roll is continually urged into pressing contact with the fabric as it is received by said cloth roll.

3,186,444
PROCESS AND AN APPARATUS FOR CONTROLLING THE WEFT THREADS IN WEAVING LOOMS
Heinrich Schäffer, Werther, near Bielefeld, Germany, assignor to C. A. Delius & Sohne, Bielefeld, Germany, a firm
Filed Feb. 13, 1962, Ser. No. 172,981
Claims priority, application Germany, Feb. 20, 1961, D 35,439
9 Claims. (Cl. 139—370)



1. Process for controlling weft threads in a weaving loom having a stop motion normally operable each throw of the shuttle to stop the loom comprising, arranging suction intakes having open inlets in the region of the edges in the path of weft threads laid by the shuttle to grip the weft threads, utilizing weft threads being laid to restrict the inlets to increase the vacuum in the suction inlets, and employing the vacuum increase in the suction inlets as a motivating force to render the stop motion inoperative.

3,186,445
APPARATUS FOR MANUFACTURING ELECTRON TUBE GRIDS
Pierre Patriarche, Courbevoie, and Pierre O. Kahn, Paris, France, assignors to Compagnie Industrielle Francaise des Tubes Electroniques, Courbevoie, France
Filed June 29, 1960, Ser. No. 39,521
4 Claims. (Cl. 140—71.5)



1. Apparatus for making grids for electron discharge devices, comprising an elongated mandrel of high thermal conductivity and having an axial slot extending along a predetermined portion thereof, an insert member of high thermal conductivity adapted to be snugly received in said slot, means for winding a layer of lateral wire onto said mandrel in relatively high heat-exchanging contact therewith, in a helix of desired pitch and with said insert member positioned in said slot, means for applying a plurality of grid support elements over said helix in contact therewith and in predetermined spaced array, and welding means including said mandrel as one electrode thereof for welding the support wires to portions of said helix.

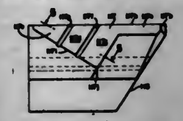
3,186,446
APPARATUS FOR ATTACHING FILAMENTARY MATERIAL
Robert E. Hunt, Reading, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 9, 1961, Ser. No. 108,859
2 Claims. (Cl. 140—93)



1. Apparatus for attaching a predetermined length of filamentary material to an object including in combination a moveable support; a holder moveably mounted on said moveable support and adapted to hold an object; mounting means for permitting movement of the holder with respect to the moveable support whereby an object in said holder can be oriented to a predetermined position with respect to the moveable support, and for fixing the position of said holder with respect to the moveable support; a fixed support; a bonding tool moveably mounted on said fixed support, said bonding tool having a bonding surface; positioning means for guiding filamentary material of a supply of filamentary material and maintaining it adjacent the bonding surface; means for moving said moveable support to position an object oriented to said predetermined position with respect to said moveable support at a bonding location adjacent said fixed support; moving means responsive to said means for moving the moveable support for advancing said bonding tool together with said filamentary material into bonding position with the bonding surface adjacent an object in position at the bonding location; thermal compression bonding means including the bonding tool for thermal compression bonding the filamentary material to an object in position at the bonding location; retracting means for withdrawing said bonding tool from said bonding position to a retracted position subsequent to thermal compression bonding of the filamentary material to an object in position at the bonding location; and cutting means responsive to withdrawal of the bonding tool to the retracted position for severing from the supply of filamentary material a length of filamentary material attached to the object, said cutting means including a portion adapted to cooperate with said bonding tool as the length of filamentary material is severed from the supply to place a portion of the filamentary material of the supply adjacent the bonding surface and intermediate the bonding surface and the bonding location.

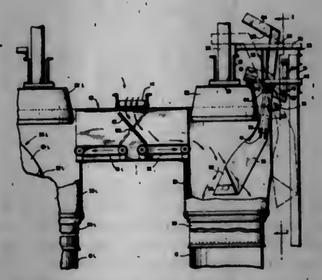
3,186,447
MACHINE FOR PROCESSING ELECTRICAL COMPONENTS
James C. Wilson, Port Dickinson, and Albert W. Zemek, Binghamton, N.Y., assignors to Universal Instruments Corporation, Binghamton, N.Y., a corporation of New York
Original application Nov. 29, 1960, Ser. No. 72,405, now Patent No. 3,073,446, dated Jan. 15, 1963. Divided and this application Aug. 10, 1962, Ser. No. 225,951
10 Claims. (Cl. 140—147)

1. A machine for straightening the leads of an electrical component having a central body and a pair of oppositely extending leads, said machine comprising, a pair of axially spaced rotating drums each having a shoe confronting at least a part of the surface thereof, means for placing the leads of components between said drums and shoes, each said shoe having, in order commencing with the leading edge thereof, a relatively narrow land extending rearwardly from the leading edge a distance at least one third of the total effective shoe length, said narrow land lying adjacent the edge of the shoe which is closest to the other shoe, a first diagonally rearwardly extending land integral with said narrow land, and a second pair



of diagonal lands parallel to said first diagonal land, all of said lands having a common margin along the edge of the shoe and said first and second diagonal lands having a common margin convergent with said first mentioned margin, said diagonal lands being separated from each other by parallel grooves extending between said margins.

3,186,448
METHOD AND APPARATUS FOR FILLING AND PACKING CONTAINERS
Robert C. Clark, Asheville, N.C., assignor to Engineering Associates Incorporated, Asheville, N.C., a corporation of North Carolina
Filed Nov. 1, 1962, Ser. No. 234,956
23 Claims. (Cl. 141—12)

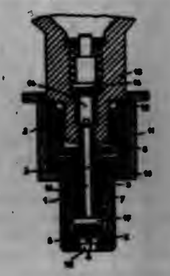


16. A method of filling and packing a container with compressible material comprising;
positioning a vibrating distributor over the mouth of the container,
feeding the material in a continuous stream onto the vibrating distributor to agitate and distribute the material toward the periphery of the container until a selected amount of the material is received in the container,
removing the vibrating distributor to an inoperative position spaced from the mouth of the container,
and compressing the material in the container.

3,186,449
SAFETY FILLING VALVE FOR LIQUEFIED GAS CONTAINERS
Lucien François Simon Tissot-Dupont, Paris, France, assignor to S.A.R.L.S.T. Dupont, Faverges, Haute-Savoie, France
Filed Jan. 4, 1962, Ser. No. 164,293
Claims priority, application France, Jan. 13, 1961, 41,112, Patent 1,278,877
8 Claims. (Cl. 141—295)

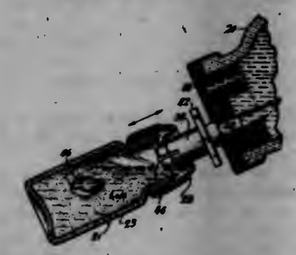
1. A coupling for connecting a threaded neck of a gas refill container with a further container for filling said further container with gas from the refill container, said coupling comprising a tubular first element adapted for being secured in said further container and having an opening for establishing communication with the interior

of said further container, a second element projecting within the first said element and including a threaded portion adapted for threadable engagement with the neck of the refill container, means on said first element engaging the second element to permit only non-rotative axial displacement of said second element within the first element, said second element constituting a valve element and being



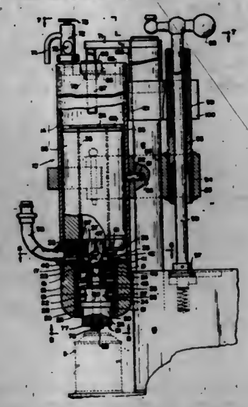
displaceable in said first element as said neck of the refill container is threadably advanced in the second element to move the valve element from a first position in which the opening in the first element is blocked to a second position in which said opening is open, and resilient means engaging said valve element to urge the same towards said first position whereby displacement of the valve element to the second position is resisted by the resilient means.

3,186,450
DISPENSING ASSEMBLY
Glenn L. Beall, Wildwood, and Henry M. Scislowicz, Lake Bluff, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed June 1, 1962, Ser. No. 199,539
2 Claims. (Cl. 141—319)



1. A dispensing container comprising: a container having an opening at its terminal end, a flexible dome-shaped diaphragm having an aperture therein, said flexible dome-shaped diaphragm defining a converging inner surface which converges toward said aperture, a flange portion depending from said diaphragm and externally engaging said terminal end of said container, a dispensing cannula connected to said diaphragm and extending outwardly beyond and inwardly beyond said aperture in said dome-shaped diaphragm, a flexible closure disc releasably seated between said terminal end of said container and a lower peripheral portion of said dome-shaped diaphragm, said converging inner surface of said dome-shaped diaphragm preventing said closure disc from unseating against said terminal end of said container, said closure disc having an eccentrically disposed cut-out portion located at the periphery thereof, said flexible closure disc being releasable and displaceable into said container in response to the inward flexure of said diaphragm and the pushing of the inwardly extending end of said dispensing cannula against said flexible closure disc.

3,186,451
FILLING APPARATUS
Richard B. Stanley, Park Ridge, Ill., assignor to The Kartridg Pak Co., Davenport, Iowa, a corporation of Iowa
Filed Apr. 6, 1962, Ser. No. 185,547
11 Claims. (Cl. 141—360)



1. A device for dispensing a measured quantity of a product into a receptacle comprising a vertically disposed tubular outer housing forming member, a nozzle assembly having an axial passageway mounted in vertically disposed slidable relation in the lower end of the said outer housing member, an inner tubular member of a lesser external diameter and a shorter length than the internal diameter and length of said outer housing member, said inner tubular member being disposed concentrically within said outer housing member and having its lower end spaced above the uppermost end of said nozzle, a weighted cylindrical piston supported in free floating relation in the space between the vertical walls of the inner tubular member and the outer housing member, a flexible plate-like sealing member disposed between the outer housing member and the inner end of the nozzle and normally spaced below the bottom end of the inner tubular member, said sealing member having a center aperture and being constructed to form a seal with the lower end of the inner tubular member when the nozzle is raised to a retracted position and to place the nozzle in communication with the inner tubular member, a valve forming member between the lower end of the inner tubular member and the upper end of the nozzle which is normally operative to close the center aperture in the sealing member and the upper end of the nozzle and which cooperates with the flexible sealing member to close off the space between the bottom end of the inner tubular member and the sealing member, and a conduit connecting the space between the sealing member and the lower end of the inner tubular member with a source of supply of the product under pressure.

3,186,452
GUIDE TRACK FOR PNEUMATIC AND ELECTRIC PORTABLE CIRCULAR SAWS
Harold Magnussen, 55 Tieman Place, New York, N.Y.
Filed Feb. 19, 1963, Ser. No. 259,610
1 Claim. (Cl. 143—47)

A device for supporting and guiding a portable power operated circular saw comprising an elongated rectangular bed pate which is provided with a flat under surface and is adapted to be removably secured in fixed position on a work piece, one side edge of said bed plate being inclined downwardly and inwardly from the upper surface of said bed plate, a single relatively wide shallow

rectangular groove which is formed in the upper surface of said bed plate and extends from end to end of said bed plate adjacent to and parallel to the said one side thereof, an elongated upwardly extending narrow rib which is integral with said bed plate and extends from end to end thereof between said groove and the other side edge of said bed plate parallel to said groove; a thin flat rectangular mounting plate which is slidably mounted on said bed plate over said groove with one end thereof in engagement with said rib and the other end thereof extending out beyond the said one side edge of said bed

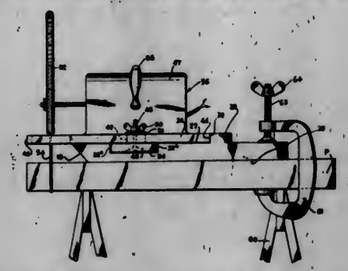
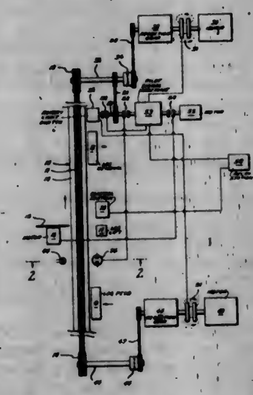


plate in overhanging relation to a work piece to which said bed plate is secured, an elongated slot in the said overhanging end of said mounting plate, said mounting plate being adapted to have a portable power operated circular saw secured thereto with the blade thereof extending downwardly through said slot for engagement with said work piece; and a single rectangular slide plate which is adjustably secured to the under surface of said mounting plate for transverse lateral adjustment of said mounting plate with respect to said rib, and is disposed in said groove with the opposed side edges thereof slidably engaging the opposed sides of said groove.

3,186,453
AUTOMATIC APPARATUS FOR SAWING LOGS TO DESIRED LENGTHS
Mavis J. Green, Bellaire, Tex., assignor to H. E. Bovay, Jr., Consulting Engineers, Houston, Tex., a partnership
Continuation of abandoned application Ser. No. 100,729, Apr. 4, 1961, which is a continuation of application Ser. No. 810,431, May 1, 1959. This application May 9, 1963, Ser. No. 279,214
3 Claims. (Cl. 143—47)



1. Apparatus for sawing logs comprising a log conveyor, a saw disposed adjacent the conveyor, means to start the conveyor in motion to carry a log to the saw, pilot signal means, means responsive to the presence of a log on said conveyor at a particular position relative to said saw to start said pilot signal means, means controlled by the pilot signal means to bring the conveyor to rest in any selected one of a plurality of positions relative to the saw corresponding to desired lengths to which the log can be cut, and operator actuated means to control the pilot signal means to select the particular one of said positions at which the conveyor is brought to rest, said operator actuated means comprising a plurality of control members, means responsive to actuation of each of said control members as soon as said pilot signal means has been started to control the pilot signal means to cause the conveyor to stop in a different one of said positions, two sets of signal lights, each set including one light for each of said positions, means controlled by said pilot signal machine to light up successively the lights in one of said sets corresponding to the next nearest of said positions as said conveyor carries the log to the saw, and means actuated by said operator actuated means to light up the one of the other set of lights corresponding to the position at which the conveyor will stop.

3,186,454
SHOE FOR PORTABLE POWER-DRIVEN TOOL
Samuel H. Kohler, Lutherville, and Allen C. Stanley, Baltimore, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Aug. 29, 1962, Ser. No. 220,303
2 Claims. (Cl. 143—68)



1. In a portable power-driven tool having a split housing comprising a pair of mating halves detachably secured together along a common longitudinal midplane, the improvement in the shoe structure and the means to secure the shoe structure to the housing, which comprises:

(a) a substantially-flat shoe plate having a pair of spaced-apart lanced-out raised tabs formed along its longitudinal axis;

(b) a pair of longitudinally-spaced tab recesses formed within each of the mating halves;

(c) each pair of tab recesses opening to the common longitudinal midplane, and the tab recesses of one half communicating with the tab recesses of the other half of the split housing;

(d) said respective raised tabs of said shoe plate being trapped in said respective communicating tab recesses, thereby positioning said shoe plate with respect to the tool housing;

(e) a boss formed within each of the mating halves along the longitudinal midplane, each boss being formed intermediately of said respective pair of tab recesses;

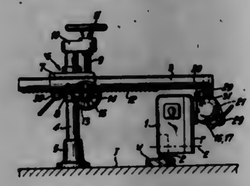
(f) each boss having a recess opening to the common longitudinal midplane, with a horizontal ledge at the bottom of the recess, and each boss further having a vertical aperture communicating said recess with the underside of said boss;

(g) said recess, said vertical aperture, and said ledge of the one boss communicating with those of the other boss;

(h) a clamping nut positioned mutually in said communicating recesses of said respective bosses, said clamping nut having a limited shifting movement therein in a plane parallel to said shoe plate, but being precluded from rotating therein; and

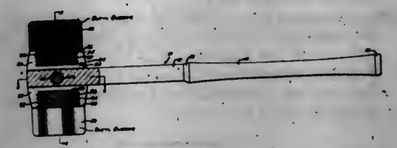
(i) a screw passing up through said shoe plate and said communicating vertical apertures to engage said clamping nut, thereby drawing said clamping nut against said communicating horizontal ledges, and thereby securing said shoe plate to the housing.

3,186,455
ROLLER FEED MECHANISM FOR WOODWORKING MACHINES
Gottlieb Stoll, Esslingen (Neckar), Germany
Filed Apr. 23, 1962, Ser. No. 189,548
Claims priority, application Germany, Apr. 26, 1961, F 33,763
1 Claim. (Cl. 144—246)



In a wood working machine or the like having a pair of spaced feed rollers mounted in a housing turnably about spaced parallel axes located in a plane, in combination, support means including a substantially horizontal support arm, a pivot pin projecting substantially normal and downwardly from the region of one end of said arm and a ball member fixed to the free end of said pivot pin; socket means fixed to said housing and engaging said ball member for connecting said housing to said arm turnably through an angle of 360° about the axis of said pivot pin and through an angle of substantially 90° about a second axis normal to the axis of said pivot pin, said socket means including a pair of members fixed at one end thereof to said housing and having each a face normal to said plane in which the axes of said feed rollers are located and arranged spaced from and opposite of the face of the other of said members so as to define a clamping gap between said faces, each of said members being formed with a substantially semi-spherical cavity respectively extending from said face into the member and said cavities complementing each other for forming a cavity in which said ball member is housed, each of said members being further formed in said face thereof with a cutout extending through an angle of substantially 90° from the cavity in the member to the outer surface thereof and said cutouts complementing each other to define a slot between said members having a width slightly greater than the diameter of said pivot pin, said pin extending through said slot and the latter permitting turning of said socket means and said housing connected thereto between a first position in which said plane is substantially normal to the axis of said pivot pin and a second position in which said plane extends substantially parallel to said axis; guide and limiting means on said socket means engaging said pivot pin for guiding said socket means on said pivot pin during turning of said socket means about the axis of said pivot pin and for limiting the turning movement of said socket means about said second axis, said guide and limting means including a pair of set screws respectively arranged in said members aligned along a common axis substantially normal to that of said pivot pin and a third set screw arranged normal to said common axis and to that of said pivot pin, said set screws protruding with inner ends thereof into said slot and engaging said pivot pin for guiding said socket means during turning thereof about the axis of said pivot pin when said socket means is in said first position and said third set screw limiting turning movement of said socket means in one direction about said axis normal to that of said pivot pin; and clamping means cooperating with said socket means for clamping the latter in any adjusted position on said ball member.

3,186,456
INDUSTRIAL HAMMER
Clarence O. Glasgow, 2620 S. Yorktown, Tulsa, Okla.
Filed Feb. 12, 1962, Ser. No. 172,641
1 Claim. (Cl. 145—29)



A hammer comprising:

(a) an elongated handle having a rectangular cross sectional configuration near one end thereof; and further having an aperture passing therethrough normal to a first pair of opposed parallel faces on said rectangular portion of the handle;

(b) a chuck mounted on said handle, said chuck comprising:

(1) a first longitudinally extending jaw member having opposed parallel ends joined by a substantially flat surface on one side of said first jaw member and by an arcuate surface opposite said substantially flat surface, said arcuate surface extending through an arc of less than 180°, said first jaw member being further characterized by:

(i) a transverse rectangular groove formed in the central portion of said flat surface for receiving said handle, said groove having a depth equal to a distance less than half the thickness of said handle;

(ii) an aperture in said first jaw member passing through the center of said groove and said arcuate surface, the portion of said first jaw member aperture adjacent said arcuate surface having a countersink formed therein, and

(iii) a threaded, shank-receiving groove formed in each of said parallel ends, each of said threaded grooves decreasing uniformly in cross section from the respective end of said jaw member toward the central portion thereof, said threaded grooves each extending through an arc of less than 180°, with said arcs being formed on a figure of revolution;

(2) a second longitudinally extending jaw member having opposed parallel ends joined by a substantially flat surface on one side of said second jaw member and by an arcuate surface opposite said substantially flat surface, said arcuate surface extending through an arc of less than 180°, said second jaw member being further characterized by:

(i) a transverse rectangular groove formed in the central portion of said flat surface, said groove being substantially identical with the groove formed in the flat surface of said first jaw member, and adapted to cooperate therewith to receive said handle,

(ii) an aperture passing through the center of the groove formed in the flat surface of said second jaw member, said second jaw member aperture being threaded and adapted to be aligned with the corresponding aperture in said first jaw member, and

(iii) a threaded, shank receiving groove formed in each of said parallel ends, each of said threaded grooves in said second jaw member being substantially identical to the corresponding threaded grooves in said first jaw member and adapted to cooperate therewith to form a socket;

(c) a partially threaded bolt having an enlarged head passing through the countersink of the aperture in said first jaw member and the aperture in said handle and threaded into the threaded aperture in said second jaw member; and

(d) an impact face carried in each socket formed by the cooperating shank-receiving grooves in said first and second jaw members, said impact faces having a threaded, tapered shank portion of circular cross section, and being dimensioned to threadably engage the socket in which it is carried.

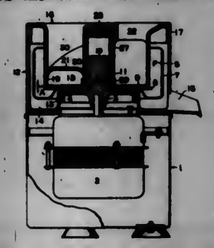
3,186,457
MACHINE FOR PEELING PRODUCE
Hans-Joachim Dames, Bahnhofstrasse 286, Lispenhausen, near Bebra, Germany
Filed Mar. 1, 1963, Ser. No. 262,163
10 Claims. (Cl. 146—43)



1. A device for peeling produce comprising a housing for receiving the produce to be peeled therein, a peeling sleeve-shaped insert fitted in said housing and mounting on its inside wall a plurality of knife blades, the cutting edges of the blades extending lengthwise of the insert in parallel array, a rotatably mounted peeling disk at the bottom of the housing, and a plurality of knife blades mounted in generally radial arrangement on the side of said disk facing the knives of the peeling insert.

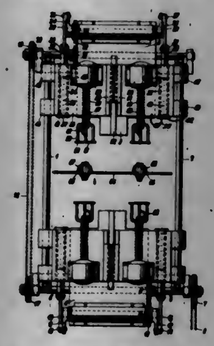
3,186,458
VEGETABLE JUICE EXTRACTOR
Hisao Takei, Ota, Nobumichi Hattori, Nitta-gun, and Naoyuki Iwata, Ota, Japan, assignors to Mitsubishi Denki Kabushiki-Kaisha, Chiyoda-ku, Tokyo, Japan
Filed July 9, 1963, Ser. No. 293,690
Claims priority, application Japan, July 11, 1962, 37/29,154, 37/29,155, 37/29,156; (utility models) 37/38,194, 37/38,195, 37/38,196
7 Claims. (Cl. 146—76)

1. In a vegetable juice extractor comprising juice separator means of centrifugal type, rotary grating disk member within said juice separator means formed on its upper surface with a multiplicity of grating edges for grating a raw material, and a cover member including an inlet open adjacent to the upper surface of the rotary grating disk member to deliver the raw material onto said upper surface therethrough, the combination of a feed material passage formed on the lower surface of said cover member into an annular groove having its bottom open end facing the said upper surface of said rotary grating disk member, the distance between the upper surface of said feed material passage and the upper surface of said rotary grating disk member gradually decreasing in the direction of rotation of said rotary grating disk member, the width of said annular feed passage in a radial direction gradually increasing in the direction of rotation of said rotary grating disk member, said feed material passage communicating at one end at which said distance is maximum with said inlet, an exhaust outlet disposed at the other end of said feed material passage at which said distance is minimum to communicate said feed material with the interior of said juice separator means, and an annular clearance formed between the lower end of the outer side wall of said annular



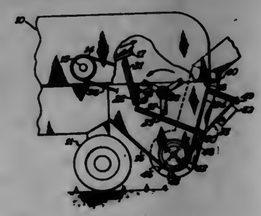
feed passage and said upper surface of said rotary grating disk member through which said annular feed passage communicates laterally with the interior of said juice separator means, said rotary grating disk member, when rotating, being operative to grate the raw material received through said inlet in said feed material passage while advancing said raw material along the same toward said exhaust outlet to thereby finely divide the raw material and produce a juice, and to automatically project the finely divided raw material and the juice into said juice separator means through said clearance for centrifugal separation, with the flattened residue of the raw material left within said feed material passage being automatically discharged into said juice separator means through said exhaust outlet.

3,186,459
ONION END TRIMMER
Albertus van Raay, Ulft, Netherlands, assignor to N.V. Machinefabriek "FINIS," Ulft, Netherlands, a limited-liability company
Filed Nov. 12, 1963, Ser. No. 322,884
Claims priority, application Netherlands, Nov. 9, 1962, 285,343
3 Claims. (Cl. 146—83)



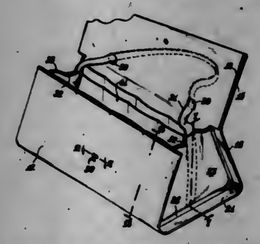
1. An onion trimmer, including in combination:
an intermittently moved horizontal conveyor having a series of longitudinally spaced onion-receiving apertures therethrough in which onions may be placed vertically, with one part to be trimmed lying above the conveyor and another part to be trimmed lying below the conveyor, said conveyor stopping during the trimming with at least one aperture then in a predetermined trimming position,
a pair of trimming assembly frames mounted for reciprocating vertical movement, one above and one below said conveyor,
moving means for simultaneously moving both said frames toward said conveyor when said conveyor is stopped in said trimming position and for retracting said frames therefrom after the trimming,
a cage resiliently supported by each said assembly through spring means and each having an annular foot-plate for bearing gently against the body of a stationary onion to be trimmed, said spring thereupon yielding to further movement of said frame toward said conveyor, and
a pair of cutting means comprising driving means mounted on each said frame for movement therewith and a rotating blade mounted for movement with said cage and spaced a constant distance from said foot-plate and driven by said driving means,
whereby when said conveyor is stopped with an onion in trimming position, two foot-plates come gently against the opposite ends of said onion and hold it while said blades trim said onion, the points of trimming thereby being determined by each onion regardless of its size at a set distance from the area where said foot-plates engage their body, and whereby the trimming is achieved without scraping or rubbing the body of said onion.

3,186,460
STRAW CHOPPING APPARATUS
Joseph Frederick, Box 77, Richardton, N. Dak.
Filed July 20, 1961, Ser. No. 125,487
2 Claims. (Cl. 146—117)



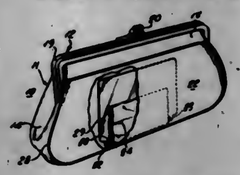
1. A straw chopping apparatus to be used in combination with a combine comprising: a power driven combine for combining crops having straw walkers and a discharge opening below said straw walkers for discharging straw and inert matter; a housing having top, rear, and side openings therein attached to said combine with said top opening under said discharge opening for receiving said straw and inert matter from said combine; a plurality of knives attached laterally across said housing at a forward position such that straw is discharged thereacross; a shaft rotatably supported in said housing having a plurality of knives fixedly attached thereto to cooperate with said knives attached to said housing and rotate therebetween so that said straw is chopped into small segments; first power transfer apparatus connected between said first shaft and said power driven combine to provide rotational power for said first shaft; a pair of plate guideways extending forwardly and upwardly from said rear opening located in and being fixedly attached to the side walls of said housing; a plate adapted to slide in said guideways including means for securing said plate in said guideways to cause said chopped straw to be discharged through said rear openings; a partition extending substantially in a vertical direction, both above and below said knives attached to said housing to terminate below said walkers and above said guideways; a blower attached to said housing at said side opening to draw said inert matter into said blower and discharge it therefrom; and second power transfer apparatus connected between said blower and said first shaft to provide rotational power for said blower.

3,186,461
PURSES AND THEIR METHOD OF FABRICATION
Edna L. Erickson, 15 W. 320 George St., Bensenville, Ill.
Filed Aug. 23, 1963, Ser. No. 304,136
5 Claims. (Cl. 150—28)



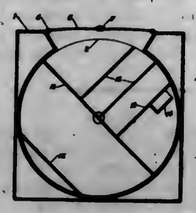
1. An article of the character described comprising a blank of fabric material faced on one surface with a plastic coating, said blank being foldable to provide outside front, back and bottom walls, separate blanks secured to said walls to provide end walls, an integral liner formed by folding said blank to define front, back and bottom liner walls, separate blanks forming end walls of said liner, said liner front, back and bottom walls and end walls having their fabric surfaces disposed outwardly, and each being formed on related edges with tongue extensions that overlie the related wall and are secured thereto by an adhesive.

3,186,462
LADIES' PURSE AND RETRACTIBLE MIRROR
Daniel J. Nash, Jersey City, N.J., assignor to Nash Inc., Jersey City, N.J., a corporation of New Jersey
Filed Jan. 4, 1962, Ser. No. 164,332
2 Claims. (Cl. 190—34)



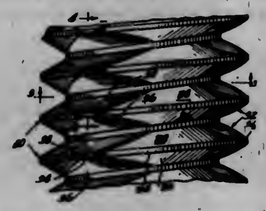
1. A handbag comprising walls defining an open topped bag body member including a front wall, a frame including a pair of hinged members movable between opened and closed positions and affixed to the upper edges of said body member to selectively open and close said bag, a pocket wall affixed along its side and bottom edges to said body member front wall to define therewith an open topped pocket, a rectangular mirror slideably nesting in said pocket and having an elongated slot formed therein along the lower edge thereof, and a flexible band looped through said slot and having its free ends secured to the inside of said pocket, said band being of a length to limit the movement of said mirror member to an extended position outside the pocket, whereby said mirror is disposed against the outer face of the pocket wall and substantially between the upper and lower marginal edges thereof.

3,186,463
PURSE CLASSIFIER
Grey B. Yerg, 474 22nd St. SE., Vero Beach, Fla.
Filed Sept. 11, 1963, Ser. No. 308,220
3 Claims. (Cl. 150—34)



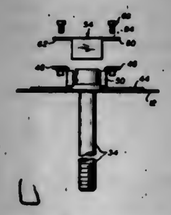
1. A purse classifier comprising a housing, a cylindrical recess in said housing, an aperture through said housing and connecting with said recess, a rotatable unit pivotally mounted in said recess, and comprising a rotatable shaft positioned concentric with said recess, a diametric plane member secured to said shaft, a plurality of spaced parallel plane members secured to one side of said diametric plane member and perpendicular to the rotational axis of said rotatable unit, and a second set of parallel spaced plane members secured to the other side of said diametric plane member and perpendicular to said first set of parallel plane members, and said plane members being of a length and heighth and design as to rotate in said recess in close proximity to the walls thereof.

3,186,464
THREAD FORMING SCREW AND METHOD AND APPARATUS FOR MAKING THE SAME
Rudolph K. F. Baumle, Elgin, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed Apr. 3, 1961, Ser. No. 100,227
3 Claims. (151—22)



1. A metal screw adapted to be applied to an unthreaded aperture in a workpiece comprising a shank having a tapering entering end portion and an elongated holding portion, and a plurality of closely spaced helical thread convolutions integral with said shank portions, thread convolutions along said entering end portion being of progressively diminishing heighth for facilitating starting into said unthreaded aperture, said holding shank portion having a circular transverse cross section, each complete thread convolution on said holding shank portion having predetermined root and crest circles and opposite flank surfaces converging in cross section from said root circle toward said crest circle, flanks of adjacent convolutions being closely adjacent each other at said root circle, and each complete thread convolution on said holding portion including a plurality of circumferentially spaced bearing and workpiece forming enlargements for facilitating the formation of complementary threads in said unthreaded aperture, each of said enlargements projecting axially in opposite directions from said opposite flank surfaces and radially outwardly of the crest circle of its associated thread convolution, and each of said enlargements extending to said root circle and tapering substantially flush with its associated flank surface at said root circle, each of said enlargements having sides rounded both radially and circumferentially of the thread convolutions, radially outer ends of said sides of each enlargement providing a tip portion extending at least to the crest of the thread convolution, and said sides of each enlargement having a maximum circumferential extent adjacent said root circle and progressively diminishing to a minimum circumferential extent at said tip portion.

3,186,465
BOLT RETAINING DEVICE
Fred Hayunga, 234 Godwin Ave., Wyckoff, N.J.
Filed Mar. 26, 1962, Ser. No. 182,322
1 Claim. (Cl. 151—41.71)



A device for retaining relatively large sized bolts and similar elements used in the mounting of a wheel having bolt openings in a flange to accommodate bolts which extend therethrough and are threaded into the threaded bores of a hub, comprising a ring of a size to fit over the annular area of the location of the bolt openings of the wheel flange and the threaded bores of the hub, said ring having a plurality of circumferentially spaced openings of a size to accommodate a bolt and located to align with the openings of said wheel flange and the bores of said hub, opposed first and second channel-shaped elements arranged on each side of each opening in said ring, each including a base flange portion secured to said ring and a portion extending outwardly from said ring by an amount commensurate with the height of the head of a bolt to be positioned in the opening, said opposed first and second channel-shaped elements terminating in a cap-receiving flange substantially parallel to the surface of said ring, a cap member covering the space between said first and second channel-shaped elements, said cap member including flanges extending outwardly from each side which are secured to respective cap-receiving flanges of said channel elements, said opposed channel-shaped elements and said cap member together being of a size to prevent escape of a respective bolt as well as the head of said bolt alone, said opposed channel-shaped members each having inturned ends which extend on each side of the bolt head positioned therebetween, said cap member including a substantially channel-shaped piece having downwardly extending leg portions which extend between said channel members interiorly of the inturned ends, and a cap-securing bolt extending through said cap member flanges and threaded to respective cap-receiving flanges of said channel member.

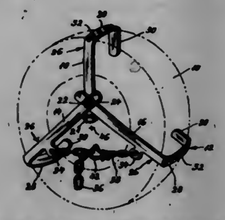
3,186,466
ANTI-SKID ELEMENT FOR THE TREAD OF A VEHICLE TIRE
Sulo Paavo Johannes Kelnänen, Nummela, Finland
Filed Apr. 17, 1962, Ser. No. 188,192
Claims priority, application Canada, Nov. 15, 1961, 836,113
2 Claims. (Cl. 152—210)

1. An anti-skid element for the vulcanized rubber tread of a tire, comprising a straight plug of hard metal having a wear resistance comparable to that of the vulcanized rubber of the tread and an elongated sleeve of a plastic material softer than the hard metal surrounding the plug and injection-molded around said plug, the plastic material being adapted to shrink on cooling after injection-molding, the sleeve having a laterally extending flange spaced from an end of the sleeve and tapering gradually outwardly



towards a sharp circumferential edge, and the plug having a roughened surface defined by criss-crossing grooves and extending within the sleeve at least to the level of the flange.

3,186,467
OFF CENTER TRACTION GRIP DEVICE
Carl E. Treiber, Jr., Baldwin, N.Y.
(49 Spring Lane, Levittown, L.I., N.Y.)
Filed Mar. 12, 1964, Ser. No. 351,397
4 Claims. (Cl. 152—226)



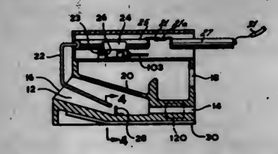
1. An anti-skid and traction device for a vehicle wheel comprising a plurality of arms having generally straight inner end portions pivotally connected to each other, said arms having hook-shaped outer end portions adapted to straddle the tire of a vehicle wheel, one of said arms being shorter than the other two arms, said arms swingable about an axis normal to the plane of the arms between operative and inoperative positions, the arms in their inoperative positions being extended in a common direction in side-by-side relation and in their operative positions extending angularly to one another, and a flexible element connected between the two long arms, said element being connected to the arms substantially at the juncture of the outer ends of the arms with the hook-shaped outer end portions thereof, said element adapted for adjustment as to its overall length.

3,186,468
PUNCTURE SEALING MEANS
Vladimir (Cherniak)-Cherniaew, Brooklyn, N.Y., assignor of one-half to David Ratner, Brooklyn, N.Y.
Filed July 22, 1963, Ser. No. 296,798
5 Claims. (Cl. 152—347)



1. In a tubeless tire having an interior wall, instant puncture-sealing means, comprising a first flexible layer adhering to said wall, a second layer adhering to the first layer, said second layer being soft, gummy and tacky, and a third layer adhering to the first layer, said third layer being softer than the second layer, more pliable and sticky, the second and third layers being capable of flowing into a hole formed in the tire to seal the hole against air passing therethrough, said first layer being formed of a mixture of shoe cement, rubber cement, rubber base mastic cement, and negrosine; said second layer being formed of a mixture of rubber base mastic cement, rubber cement, and negrosine; said third layer being formed of a mixture of rubber base mastic cement, rubber cement, pure white shellac and negrosine.

3,186,469
OIL BURNER CONTROL
William G. Younger, Guelph, Ontario, Canada, assignor to Kemp Manufacturing Co. Ltd., Guelph, Ontario, Canada
Filed Dec. 17, 1962, Ser. No. 245,024
3 Claims. (Cl. 158—28)

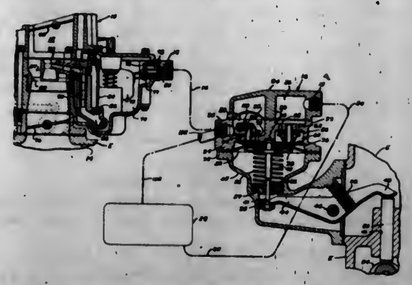


1. In an oil burner of the vaporizing type having means for supplying oil and air to the vaporizer thereof for combustion at least at one predetermined rate, said vaporizer having a throat through which burning oil may pass, the improvement of means for igniting the burner comprising a heater for initially vaporizing oil in the vaporizer, a pair of electrodes adapted to operate in the vaporizer of said oil burner, means for applying an electrical potential across said electrodes to ignite oil vapour formed by said heater whereby said burner is ignited, said means for supplying oil for vaporization by said heater and said means for applying electrical potential all being responsive to a signal indicative of a demand for heat from the burner, means for mounting one of said electrodes for movement of the tip end thereof between a normal position and an operative position, said normal position being one in which said tip end thereof is out of the combustion zone of said vaporizer, said operative position being one in which said tip end thereof is in the combustion zone of said vaporizer, and having means for moving the movable electrode between said two positions, said movable electrode including a stem and one hooked end, said means for mounting said electrode comprising means for mounting said stem on said vaporizer for rotation about a line having the direction of the longitudinal axis of said stem, said longitudinal axis being arranged at an angle to the longitudinal axis of said throat of said vaporizer as it is rotated about its stem to move the tip end thereof between said normal position and said operative position.

3,186,470
THERMOSTATIC VALVE FOR FUEL PUMPS
Alfred C. Korte, Jennings, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 30, 1960, Ser. No. 79,768
1 Claim. (Cl. 158—36.3)

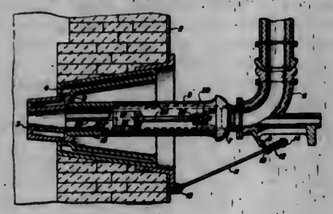
A fuel system for an internal combustion engine, said system comprising a source of fuel, a carburetor, a fuel conduit means connecting the source of fuel and the carburetor, fuel pumping means including a diaphragm pump for delivering fuel from said source to said carburetor forming a part of said fuel conduit means, a return fuel by-pass means connecting said fuel pumping means and said fuel source, valve means normally closing said by-pass, temperature responsive means located in the flow path of said fuel in said fuel conduit to bias said valve means towards open position upon a predetermined rise

in fuel temperature, and a normally open restricted bleed about said valve means to permit a limited flow of vapor



from said pump into said by-pass when said valve means is in closed position to prevent the build up of pressure in said pump.

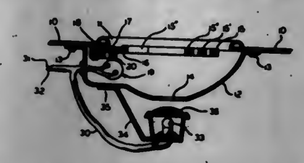
3,186,471
FLUID FUEL INJECTION APPARATUS FOR BLAST FURNACE
Earl A. Coatenbader and Patrick G. Durkin, Baltimore, Md., assignors, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Filed Aug. 7, 1962, Ser. No. 215,417
3 Claims. (Cl. 158—76)



1. A fuel injection device comprising:
(a) a hollow blowpipe shell,
(b) means forming a first cylindrical passage extending forwardly at an angle through the wall of said blowpipe,
(c) a sleeve mounted on said blowpipe shell having a second cylindrical passage therethrough in alignment with and communicating with said first passage and having a conically flared seat portion therein at the outer end of said second passage,
(d) a slidably insertable and removable pipe nozzle extending through both said passages,
(e) a conical collar concentrically attached to said pipe and seated in said conically flared end portion in fluid tight relation therewith, and
(f) adjustable wedge means pushing the conical collar into substantially gastight engagement with the flared end portion and releasably securing said collar within the flared portion.

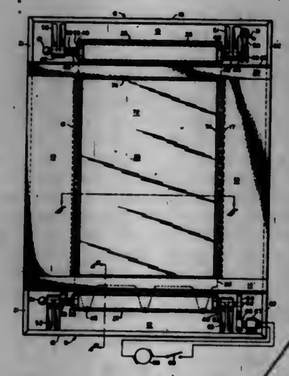
3,186,472
SIGNAL SYSTEM
Frank S. Caravella, 4321 N. 13th St., Milwaukee, Wis.
Continuation of abandoned application Ser. No. 74,985, Dec. 9, 1960. This application Oct. 22, 1962, Ser. No. 233,187
8 Claims. (Cl. 158—122)

1. In combination; a kitchen range having a generally horizontal top wall provided with a heating element therein for heating a vessel disposed thereabove, an independent electrically actuated indicator means for indicating the presence of a temperature in said element in excess of a predetermined value after said heating element is no longer energized, a temperature-responsive control means mounted in heat exchange relation with said element, and an electric circuit including said indicator means and control means and being adapted to be connected to an independent power source, said circuit being operable regardless of whether said heating element is energized, and said control means functioning solely to energize and deenergize said indicator means, said control



means being normally open to maintain said indicator in a deenergized state when said heating element is below a predetermined temperature for which a person would be burned by contact therewith and being closed by elevation of the temperature of said element above such predetermined value to complete said circuit and thereby effect energization of said indicator regardless of whether said heating element is energized.

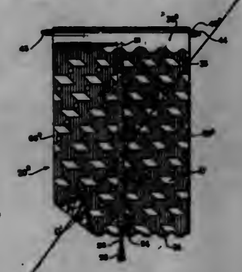
3,186,473
MEANS FOR CONTROLLING THE LIGHT ENTERING A ROOM WINDOW
Darwin E. Myers, 5758 Alta Vista Ave., San Diego, Calif., and Merrill D. Downey, 957 Barrett Ave., Chula Vista, Calif.
Filed Jan. 6, 1960, Ser. No. 854
6 Claims. (Cl. 160—26)



1. A prefabricated structure for controlling the light passing through a large wall opening of a room, comprising: a rectangular frame constructed to fit in said wall opening, said frame including a pair of stationary spaced apart vertical members the centers of whose adjacent faces are provided with aligned grooves of substantial depth; a pair of opaque closed casings disposed at the opposite ends of said vertical members and connected thereto, said casings having a pair of long aligned narrow openings therein in alignment with said grooves; a first roller pivotally supported within one of said casings; a second roller parallel to said first roller and pivotally supported within the other casing; a long thin sheet of flexible plastic passing through said narrow openings and having its ends wound around said rollers, the edges of said sheet extending into said grooves, said sheet comprising a plurality of rectangular panels of different colors, the length of each panel being longer than the distance

between said opaque casings and each panel having an area of at least 6 square feet; and gearing disposed entirely within one of said casings for rotating one of said rollers.

3,186,474
WINDOW SHADE CONSTRUCTION
Harry Levitas, 1236 Virginia Ave., Bronx, N.Y.
Filed Sept. 18, 1963, Ser. No. 309,778
1 Claim. (Cl. 160—238)



A window shade comprising a roller, a first generally rectangular panel having an upper marginal end secured to the roller and a free lower marginal end, a vertically disposed elongated narrow strip which is secured at its upper end to a center portion of said panel and extends downwardly from the lower edge of said panel, a slide fastener assembly comprising a pair of first stringer tapes secured to and extending along the rear side of said long strip, said stringer tapes having upper ends extending laterally of the long strip and secured in alignment to the front side of the first panel on a line above the bottom end thereof, said first panel overhanging and concealing the upper ends of the long, narrow strip and first stringer tapes, a pair of long rectangular other panels, said other panels each having a second stringer tape secured to one lateral edge and one end edge thereof, the pair of first stringer tapes having spaced teeth thereon, the second stringer tapes having spaced other teeth engageable with the teeth of the first stringer tapes, and a pair of sliders on the first stringer tapes for engaging and disengaging the teeth of each first stringer tape with the teeth of one of the second stringer tapes, whereby the second panels are attachable to the first panel and to said strip, said first and second stringer tapes being arranged so that the sliders disengage the teeth of the first and second stringer tapes as the sliders are moved upwardly from the outer bottom end of the long, narrow strip toward the first panel, the bottom ends of the second panels being adapted to be disengaged in order to be gathered into folds simulating draped curtains.

3,186,475
WINDOW SHADE ASSEMBLY
Lawrence S. Wilcoxon, Cincinnati, Ohio, assignor to Clopay Corporation, Cincinnati, Ohio, a corporation of Maryland
Filed Aug. 18, 1961, Ser. No. 132,353
3 Claims. (Cl. 160—326)

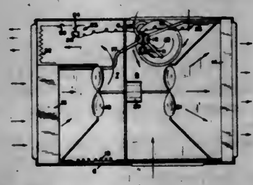


1. In a shade roller assembly having a tubular metal roller with a shade rolled thereon and a spring motor at one end thereof, the improvement to facilitate the adjustment of the overall length of the assembly comprising,
an expansible plug at the other end of said roller, said plug being an integral molding of semi-resilient plastic material having the characteristics of polyethylene,
said plug having a circular end wall at the outer end thereof that is sufficiently larger in diameter than the inside diameter of said roller to prevent insertion of the plug into said roller beyond said end wall,
an elongated cylindrical barrel portion extending from the inner face of said end wall, the axis of which is coextensive with the central axis of said circular end wall and which is of an outside diameter to be received in the roller in slip-fit relation when the plug is in unexpanded condition,
a hub portion extending from the inner face of said end wall the axis of which is concentric to the central axis of said end wall, said hub portion having an inwardly tapering central opening therein that opens through said end wall,
a cylindrical gudgeon pin having a pointed end receivable in the opening in said hub,
a plurality of radially disposed ribs interconnecting said barrel in said hub,
and the outer end of said opening in said hub being substantially equal in diameter to the diameter of said gudgeon pin but said opening tapering inwardly to a diameter substantially smaller than the diameter of said pin, whereby forceable insertion of the pin into said opening expands said hub radially outwardly with the expanding force being transmitted to said barrel through said ribs to lock said plug within said roller.

3,186,476
METHOD FOR HEATING LIQUID BY MEANS OF STEAM
Yoshio Tsunoda, Setagaya-ku, Tokyo, Masumi Seko, Meguro-ku, Tokyo, Ryo Ehara, Kawasaki-shi, Shinsaku Ogawa, Nobeoka-shi, and Yasumichi Yamakoshi, Meguro-ku, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan
No Drawing. Filed Apr. 14, 1961, Ser. No. 102,915
2 Claims. (Cl. 165—1)

1. In a method for heating a liquid by indirect contact with steam, the steps of adding to said steam 1–500 p.p.m. of an oil mixture consisting of 50–99 parts by weight of mineral oils and 1–50 parts by weight of neutral saturated fatty oils, and flowing the liquid to be heated at a rate of 1 to 4 m./sec., whereby the overall coefficient of transfer is greatly improved.

3,186,477
HEAT PUMP CONTROL
William W. Bell, Jr., Marcellus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 18, 1961, Ser. No. 110,928
6 Claims. (Cl. 165—2)



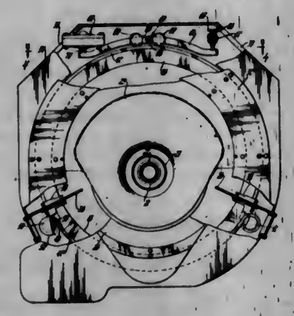
5. In the method of operating an air-to-air heat pump to condition a room, said heat pump including a reversing valve, an outdoor coil, a fan, auxiliary heating means,

and a compressor, the steps which consist in energizing the compressor and fan to cool on a predetermined high temperature of the room, energizing the reversing valve, compressor and fan to heat upon a predetermined low temperature of the room, energizing the auxiliary heating means upon a first predetermined temperature of the refrigerant in the connection betweerl the reversing valve and the outdoor coil, deenergizing the reversing valve and the fan to defrost the outside coil upon a predetermined outdoor coil-outdoor temperature differential, and deenergizing the auxiliary heating means during defrost upon a second predetermined temperature of the refrigerant in the connection between the reversing valve and the outdoor coil.

3,186,478
REGENERATIVE GAS TURBINE

Joseph P. Miller, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 24, 1962, Ser. No. 219,319
5 Claims. (Cl. 165—7)



1. A rotary generator comprising, in combination, a housing, a diaphragm dividing the housing into two zones, a porous regenerator matrix symmetrical about an axis of rotation rotatably mounted in the housing and extending into both zones, the matrix being traversed between the zones by rotation about said axis; the diaphragm having structure providing clearance for movement of the matrix between the zones, the regenerator being adapted for use in a system normally establishing a pressure in one zone which is greater than the pressure in the other zone so that a pressure differential between the zones exerts a force on the matrix transverse to said axis urging it toward the lower pressure zone, motor means communicating with said zones and responsive to any pressure differential between the zones effective to exert a force proportional to such differential, and force applying means coupling the motor means to the matrix including means engageable with the matrix to direct a force opposed to the first-mentioned force urging the matrix toward the higher pressure zone so as to counteract the first-mentioned force.

3,186,479
LABYRINTH STIFFENER

James R. Mondt, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 18, 1962, Ser. No. 245,577
5 Claims. (Cl. 165—10)

1. An annular regenerator matrix comprising an annular body defining passages for the flow of fluids to establish a temperature gradient between the opposite sides of said body, said annular body including sealing plates spaced around the matrix axis and lying in planes extending along the latter, each of said sealing plates comprising a sheet with opposite marginal portions extending from the annular body for sealing purposes and having a low effective moment of inertia in a plane normal to said opposite sides and transverse to the sheet, two parallel and spaced bars of material thicker than that of the sheet and each being fixed to the latter a predetermined distance

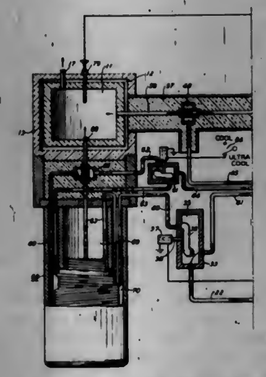


from the matrix axis, the aggregate of said bars having a high effective moment of inertia in the above-recited plane transverse to the sheet, and the material of one of one of said bars lying toward one side of said body having a coefficient of thermal expansion lower than that of the other bar which lies toward the other side of said body.

3,186,480
TEMPERATURE AND ENVIRONMENT CONTROLLING SYSTEM

Harold A. Sauer, Hatboro, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 16, 1962, Ser. No. 230,819
8 Claims. (Cl. 165—27)

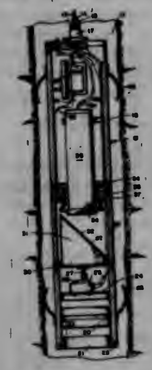


1. A temperature and environment controlling system comprising:
- a test chamber;
- means for transmitting gases to the test chamber comprising at least three branch conduits;
- means for maintaining a first branch conduit at a relatively high temperature;
- means for maintaining a second branch conduit at a relatively low temperature;
- means for maintaining the third branch conduit at a temperature intermediate the high and low temperatures;
- a source which transmits input gases at a predetermined rate of flow;
- means for controlling and adjusting the proportion of input gas that is transmitted to each of the main conduits;
- means for selectively connecting the two main conduits to two of the branch conduits;
- and means connected to the test chamber and the first, second, and third branch conduits for intermixing the input gases immediately prior to their injection into the test chamber.

3,186,481
METHOD AND APPARATUS FOR DETERMINING THE ORIENTATION OR DIRECTIONAL FEATURES OF A WELL

Kenneth W. Foster, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 15, 1961, Ser. No. 152,460
12 Claims. (Cl. 166—4)



6. A method of determining the relative permeability of at least two formations traversed by a well, said method comprising the steps of selecting at least two adjacent formations traversed by a well, sealing off a zone of the well at points above and below the formations to be tested, spotting a small quantity of oil in the well adjacent said formations, injecting said oil into the more permeable of said formations, lowering a television camera down the wel to the level of the formations, illuminating said formations with ultraviolet light, and observing the fluorescence on the more permeable formation into which the oil was injected.

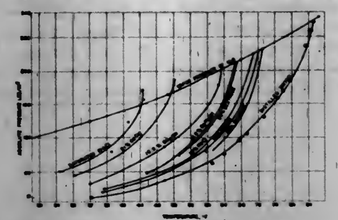
7. Apparatus for determining the orientation of directional features within a well borehole, said apparatus comprising a fluid-tight housing, transparent window means in said housing wall and extending substantially around the periphery thereof, light source means positioned in said housing opposite said window means to radiate light directly through said window means, camera means fixed y and coaxially mounted within said housing, a mirror rotatably mounted in said housing opposite said window means at an angle to reflect an image of an object outside said window means to said camera means, said mirror being at an angle to the axis of the camera means, motor means mounted in said housing and operatively connected to said mirror means to rotate the mirror means and scan the window means of said housing, azimuth-indicating means mounted in said housing at all times in direct viewing range of said camera means, and weight-supporting and electrical conductor cable means secured to one end of said housing and electrically connected to the electrically-actuated components thereof.

3,186,482
SECONDARY RECOVERY OF OIL

Donald C. Bond, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

Filed July 23, 1962, Ser. No. 211,661
7 Claims. (Cl. 166—9)

1. The method for recovering petroluem oil from a reservoir penetrated by an input well and an output well, wherein the reservoir temperature is in the range of 86° F. to 106° F., and said input and producing wells are effectively connected by a thief channel of high permeability, consisting essentially of injecting through said injection well and into said formation 0.001 to 0.020 reservoir pore volume of liquid hydrogen sulfide, then injecting through said input well into said formation 0.02 to 0.10 reservoir pore volume of petroleum solvent, then injecting an inert driving liquid to drive the injected materials towards said producing well, said injection steps occuring at a pressure sufficient to maintain hydrogen sulfide and said petroleum solvent as liquids at reservoir temperature, and recovering reservoir fluids from said producing well.



3,186,483
METHOD AND MEANS FOR TREATING WELLS

Carl M. Schwab, Pasadena, Tex., assignor, by mesne assignments, to Otis Engineering Corporation, Dallas County, Tex., a corporation of Delaware

Filed Aug. 5, 1957, Ser. No. 676,299
23 Claims. (Cl. 166—42)



1. The method of treating and completing cased wells comprising the sequential steps of: introducing a well pipe into a well; introducing a treating fluid through the well pipe into the casing of said well and placing said fluid adjacent an opening in said casing; closing the space between said casing and said well pipe by a closure; closing the well pipe; subjecting the treating fluid to pressures developed by downward movement of said well pipe and the closure between the casing and the well pipe to force said fluid outwardly through said opening into the stratum surrounding said well; introducing additional treating fluid through said closure between the casing and said well pipe; and subjecting such additional treating fluid to pressure developed by downward movement of said well pipe and of said closure between said casing and said well pipe to force such additional treating fluid outwardly through said openings into the stratum surrounding said well.

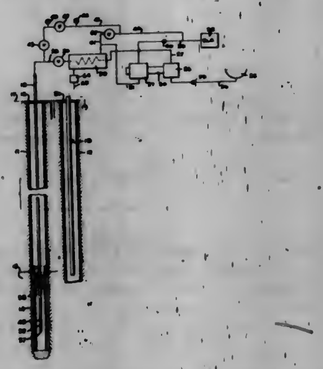
3,186,484
HOT WATER FLOOD SYSTEM FOR OIL WELLS

Russell R. Waterman, Long Beach, Calif., assignor of ten percent to Vernon D. Beehler, Los Angeles, Calif.

Filed Mar. 16, 1962, Ser. No. 180,147
4 Claims. (Cl. 166—52)

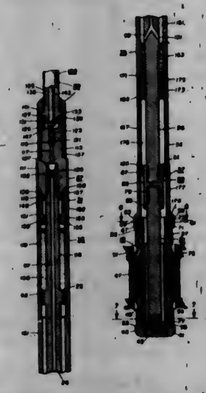
1. A hot flood water drive system for the secondary recovery of oil from producing strata comprising a pro-

duction well extending into the strata having a pump line extending therefrom, a pressure sealed flood well extending into the strata and a hot flood water pressure line extending into the flood well, said pressure line comprising a pipe extending from the surface to near the strata, a source of supply of steam, a supply of flood water, a flood water pump connected to said supply of flood water and a steam powered actuator for said pump, a steam supply line connected between said source of supply of steam and said actuator, a heat exchanger having a water



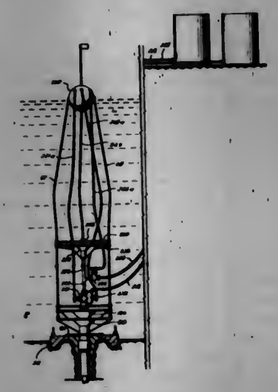
passage therethrough and a steam jacket therein in heat exchange relationship with the water passage, a steam exhaust line from said actuator to the steam jacket in said heat exchanger, a hot flood water connecting line from said pump to the water passage of said heat exchanger, said water passage of said heat exchanger being connected to said pressure line, and a live steam branch line from said source of steam supply extending into the steam jacket of the heat exchanger whereby to create a hot water drive in the strata.

3,186,485
SETTING TOOL DEVICES
Harrold D. Owen, 4300 Lanard, Fort Worth, Tex.
Filed Apr. 4, 1962, Ser. No. 185,040
9 Claims. (Cl. 166—63)



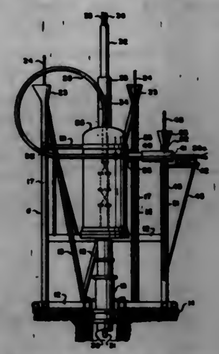
3. Well apparatus, including a well device adapted to be operated in a well bore; fluid actuated means comprising a head assembly including igniter means, a cylinder assembly and a piston assembly within said cylinder assembly, and means releasably securing said cylinder assembly against movement relative to said piston assembly, with said piston assembly being slidable relative to said cylinder assembly when said securing means is released; said piston assembly including linking means connecting said piston assembly in fixed relation to said head assembly and said well device, and a first piston; said first piston defining with a portion of said cylinder assembly a damping chamber constricted at the end thereof remote from said piston and exposed at said constricted end to well fluid pressure; and means including a combustion chamber within said cylinder assembly for imparting motion to said piston in the direction toward said constriction upon actuation of said fluid actuated means.

3,186,486
WELL COMPLETION
Allen F. Rhodes, Houston, John G. Jackson, Jr., Angleton, and William C. Triplett, Corpus Christi, Tex. (all % McEvoy Company, P.O. Box 3127, Houston, Tex.)
Filed Feb. 24, 1959, Ser. No. 795,105
6 Claims. (Cl. 166—66.5)



1. Well completion apparatus for underwater wells, comprising a casing extending from the top of the well downwardly thereinto, connection means carried at the upper end of said casing, valve means having cooperable connection means at its lower end cooperatingly joined with said casing connection means, handling means extending from said connection means to the water surface, said casing connection means and said valve means having cooperable connection means being connectible and disconnectible by manipulation of said valve means by said handling means provided to extend therefrom to the water surface so that said valve means may be connected and disconnected from the water surface, a pipeline terminating at a point spaced along the floor of the body of water from the well, a flexible conduit means connected with said valve means and extending along the floor of the body of water and connected with said pipeline for fluid flow from within said casing through said valve means into said pipeline, said flexible conduit means being of sufficient length to permit movements of said valve means between its said connection at said casing connection means and the water surface, whereby said valve means may be connected to and disconnected from said casing from the water surface and moved between the water surface and the well by said handling means without disconnection of said connection through said flexible conduit means between said valve means and pipeline.

3,186,487
UNDERWATER WELL GUIDE SYSTEM
Ronald L. Geer and Lloyd G. Ottemann, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,429
5 Claims. (Cl. 166—66.5)



1. Apparatus for guiding wellhead equipment from an operational base above the surface of a body of water to a predetermined point below the surface of the water, said apparatus comprising wellhead support structure having a wellhead support base positioned below the surface of the water, a plurality of tubular guide columns with the lower ends thereof being fixedly secured to said support base, a flexible guide line fixedly secured to each of said guide columns and coaxial therewith, said guide lines extending upwardly through said water to said operational base thereabove, means carried on said operational base and operatively connected to said guide lines for supporting the upper ends thereof, each of said tubular guide columns having a longitudinal slot through the wall thereof, substantially adjacent the well axis, said support structure including auxiliary tubular guide column means fixedly secured to said support base at a spaced distance from the axis thereof, and flexible guide line means having the lower end thereof fixedly secured in said auxiliary tubular guide column means, said guide line means extending upwardly through said water to said operational base thereabove.

3,186,488
WELLHEAD ASSEMBLY
Glenn D. Johnson, Downey, and Bruce J. Watkins, West Covina, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,969
7 Claims. (Cl. 166—89)

1. A wellhead assembly for supporting a tubing string concentrically disposed within a casing string, both of said strings extending into a well, said wellhead assembly comprising

(1) housing means having a first fluid cross-over chamber formed therein in communication with a casing string to which the housing means is secured,

(2) a portion of said housing means having a second fluid cross-over chamber in spaced relation above said first cross-over chamber

(3) a portion of said housing means between said cross-over chambers having

(a) a first conduit means in communication with said tubing string suspended within said casing string and extending upwards therefrom, and

(b) second conduit means parallel to and independent of said first conduit means in communication with said first and second cross-over chambers,

(c) said first conduit means including wall structure isolating the first conduit means from communication with said chambers and from the second conduit means, and



(4) at least a pair of flow passageways arranged in concentric spaced relationship at the top of the housing means, the outer flow passageway of said concentric flow passageways being in communication with said second cross-over chamber.

3,186,489
RETRIEVABLE PLUGS AND PACKERS FOR DEEP WELLS
Willie W. Farrar and William R. Lewis, Wichita Falls, Tex., assignors to Totem Oil Tools, Inc., Wichita Falls, Tex., a corporation of Texas
Filed June 26, 1962, Ser. No. 205,301
3 Claims. (Cl. 166—138)



1. A retrievable bridge plug adapted to be supported on an elongated support member for longitudinal and arcuate movement in the bore hole of a cased well, which bridge plug comprises:

(a) an inner tubular member adapted to be connected to said elongated support member for longitudinal and arcuate movement therewith upon longitudinal and arcuate movement of said elongated support member,

(b) a first sleeve fitted on and surrounding said inner tubular member for limited sliding relation and being rotatable, within limits, on said inner tubular member,

(1) said first sleeve having an inverted J-slot formed therein,

(c) a second sleeve fitted on and surrounding said first sleeve for limited longitudinal sliding movement relative thereto and for relative arcbate movement therewith about the axis of said inner tubular member and for relative independent longitudinal movement with respect to said inner tubular member,

(1) said second sleeve having an inverted J-slot formed therein which is complementary to said J-slot in said first sleeve, when said sleeves are in one position,

(2) said second sleeve having a longitudinal slot formed therein,

(d) a pin fixedly secured to said first sleeve and extending into said longitudinal slot in said second sleeve to limit the relative sliding movement between said first and said second sleeves and to permit relative arcuate movement therebetween,

(e) friction members mounted on said second sleeve exteriorly thereof to frictionally engage the inner wall of the casing of the cased well to retard movement of said second sleeve relative to said first sleeve when said bridge plug is moved longitudinally in the casing of the cased well,

(f) a slip expander cone mounted on and secured to the upper end of said first sleeve and having a downwardly and inwardly tapered face thereon,

(g) resilient arms mounted on said second sleeve exterior thereof and extending upward therefrom, and being spaced around the periphery of said second sleeve,

(h) a toothed slip member mounted on the upper end of each said arm and having an inwardly and downwardly tapered surface on the inner face thereof to complementally engage the tapered surface of said slip expander cone to move said slip members, upon relative movement of said tapered slip expander cone with respect to said slip members,

(i) a pin fixedly secured to said inner tubular member and extending out through said inverted J-slot in said first sleeve and into said inverted J-slot in said second sleeve to permit relative longitudinal sliding movement between said first sleeve, mounting said slip expander cone, and said second sleeve, mounting said toothed slip members thereon, when said pin is in one position relative to said inverted J-slots in said first and second sleeves,

(1) said pin, secured to said inner tubular member and extending through said inverted J-slots in said first and second sleeves, being adapted to retain said toothed slip members out of engagement with the inner wall of the casing of the cased well, when said pin is in another position in said inverted J-slots,

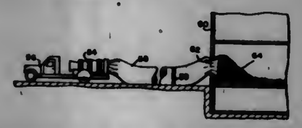
(2) said inner tubular member and said first sleeve being adapted to move downward relative to said second sleeve, which has said expander cone thereon, when said friction members are in engagement with the inner wall of the casing of the cased well, so said tapered surfaces of said slip members will be retained against downward movement relative to said slip expander cone, so said slip expander cone will engage the tapered face of each said slip member to urge said slip members outward into binding engagement with the inner wall of the casing of said cased well.

(j) an annular elastomer packer element secured to said first sleeve above said slip expander cone and being movable therewith,

(k) a downwardly and inwardly tapered packer expander cone mounted on the upper end of said inner tubular member and being movable therewith to engage said elastomer packer element when said packer expander cone is in one position,

(1) said packer expander cone, mounted on said inner tubular member, being adapted to move into engagement with said elastomer packer element, upon downward movement of said elongated support member, so as to form a seal between said inner tubular member and the inner wall of the casing of the cased well.

3,186,490
FIRE-FIGHTING METHOD EMPLOYING HIGH EXPANSION FOAM
Will B. Jamison and Robert W. Barnes, Greensburg, Pa., assignors, by mesne assignments, to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Aug. 8, 1961, Ser. No. 130,167
4 Claims. (Cl. 169—15)



1. In the method for fighting fires in an enclosure having an entry leading into the enclosure; the steps of inserting the discharge end of a collapsible tube into the enclosure through said entry, and under air pressure forcing foam having an expansion ratio as high as 1500 to 1 into the intake end of said collapsible tube and through the collapsible tube to cause it to become inflated and expand to fill the cross section of said entry to provide a seal around said entry.

3,186,491
HELICOPTER DRIVE SYSTEM UTILIZING TIP MOUNTED FANS
Lee Joseph Fischer, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 17, 1964, Ser. No. 352,569
1 Claim. (Cl. 170—135.4)



A drive system for use in a helicopter having a fuselage and a rotor assembly comprising a plurality of substantially hollow blades mounted thereon for rotation in a horizontal plane about a vertical axis, said drive system comprising:

a gas generator means mounted in a fixed position relative to said fuselage,

a plurality of hollow annular casings each located at the outer tip of a respective one of said hollow rotor blades, the axes of said casings being perpendicular to the longitudinal axes of the respective rotor blades and being disposed in the horizontal plane of rotation of said rotor blades,

an elongated hub including fixed support means concentrically supported within each of said casings and forming therewith an annular passageway,

a plurality of axially spaced bearings mounted on said fixed support means, the axial spacing between said bearings being substantially the length of said annular passageway,

a turbomachine rotor mounted on said axially spaced bearings for rotation about the axis of said casing,

a row of compressor blades mounted on said rotor intermediate said bearings and extending radially outward across said passageway,

a shroud ring circumferentially connecting the radially outer tips of said compressor blades,

a row of turbine buckets mounted on said shroud ring and extending outwardly therefrom,

said annular casing having an annular groove therein for receiving said turbine buckets,

a nozzle diaphragm in said annular casing in alignment with the groove and said turbine buckets,

a ducting system comprising in part the hollow interiors of said rotor blades interconnecting said gas generator means to the nozzle diaphragms in said plurality of annular casings for supplying gas produced by said gas generator means to said nozzle diaphragms,

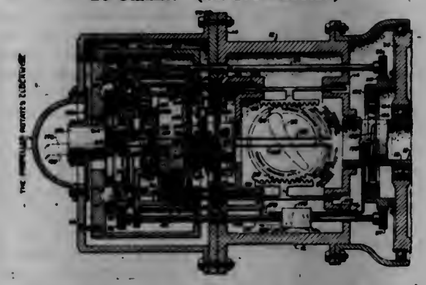
said nozzle diaphragms adapted to supply gas to the respective rows of turbine buckets at the proper angles and velocities to drive said turbomachine rotors and said rows of compressor blades,

inlet means communicating with said annular passageways for supplying ambient air to said rows of compressor blades,

and exhaust means communicating with said annular passageways for discharging fluid received from said rows of compressor blades and said rows of turbine buckets as propulsion jets,

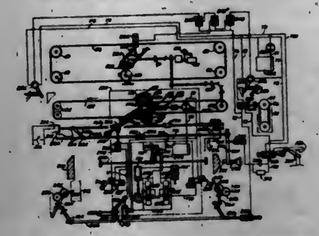
said exhaust means disposed such that the propulsion jets exhausted therefrom are in the proper direction to drive said rotor assembly and thereby produce lift forces on the helicopter.

3,186,492
MECHANICAL PITCH CONTROL SYSTEM FOR AIRCRAFT PROPELLERS
Charles W. Chillson, Wayne, and William F. Johnson, Jr., Ridgewood, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Mar. 30, 1964, Ser. No. 355,630
20 Claims. (Cl. 170—135.29)



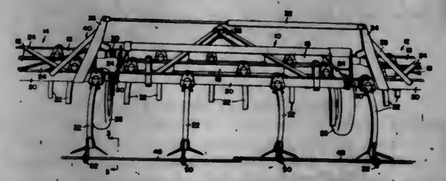
7. The combination comprising a propeller blade; means for rotating the propeller blade to create thrust; reciprocating means driven by the blade rotating means; a member aligned in the direction of reciprocation, driven by the reciprocating means and operatively connected to adjust pitch of the blade; support means; a pair of controllably movable devices on said member, the member being biased by a torque on the propeller blade to a position in which one of the devices is loaded against the support means, the other device being actuated by operation of the reciprocating means to intermittently assume the load from said one device; mechanism for translating the position of a device when unloaded on the member to adjust pitch of the propeller blade; speed and phase responsive control means for positioning said mechanism to control the speed and phase of the propeller blade in a desired manner; and means for altering the position of the other device when free of load according to the said translation.

3,186,493
AUTOMATIC FARMING SYSTEM
Leonard D. Barry, 19300 Pennington Drive, Detroit, Mich.
Filed May 6, 1959, Ser. No. 811,500
22 Claims. (Cl. 172—26)



1. An automatic tilling vehicle comprising a bridge, swivel casters supporting each end of the bridge, a track on said bridge along the length thereof, an implement car on the track, a cable drive having an endless cable on said bridge for pulling said car back and forth across the bridge, clutch means on said car for holding either running side of said cable drive to cause the cable to pull the car in either direction or permit the car to stop, a lever for controlling said clutch means, said lever having a forward, reverse and neutral position, two linkage rails spaced apart running along the length of the bridge on opposite sides of an arm of said lever, parallel arms pivotally supporting said linkage rails to said bridge to enable movement of said rails toward and away from each other, means for moving and biasing said lever means toward either said linkage rail according to the direction of travel intended for said car, means engaged by said car at an end of said bridge to propel said bridge at an angle to its length while said car is at that end of the bridge, means on each end of the bridge to throw said lever into neutral to stop said car, means engaged by movement of the bridge to reverse said biasing means to start said car in reverse, means to guide the bridge along its angle of travel, means at ends of travel for the bridge for reversing the bridge, selective means to control said bridge to continue to run, row locators on said linkage rails for actuating said lever to stop said car intermediate the ends of said bridge while said bridge operates, means controlled by movement of said bridge for separating said linkage rails to start said car so that said car can index to the next row locator, whereby the implement car can cover ground in a series of rows and then be set to cover the ground in a series of crossrows.

3,186,494
ROD WEEDER
William W. Jackson, Ankeny, Iowa., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,815
7 Claims. (Cl. 172—44)



1. A rod weeder carrying frame having pivoted outrigger sections and a central section to which the outrigger sections are pivotally secured, each of the outrigger sections having generally transversely extending frame means, a plurality of depending means carried by each

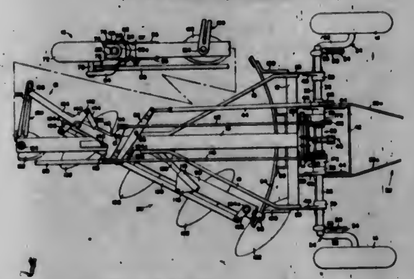
of the sections, two weeder rods, one of said weeder rods being supported by the depending means on one of the outrigger sections and by selected depending means on the central section when the outriggers are disposed in their working position, the other of said weeder rods being supported by the depending means on the other of said outrigger sections and by other selected depending means on the central section when the outriggers are disposed in their working position, said weeder rods being generally parallel to said transversely extending frame means, and means carried by each of said outrigger sections and adapted to drive and weeder rods when they are in their working position, at least one of said plurality of depending means on each of said outrigger sections being vertically shiftable to accommodate vertical shifting of intermediate portions of each of said weeder rods when said outrigger sections pivot relative to the intermediate section.

3,186,495
SEED BED HARROW
Joost Gijzenberg, 933 Aalsmeerderweg, Nieuw Vennep, Netherlands
Filed Apr. 27, 1964, Ser. No. 362,912
4 Claims. (Cl. 172—102)



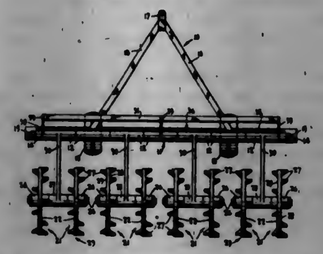
1. A device for harrowing farmland, which device comprises a frame with a number of harrow beams having tines, the said beams being disposed behind one another and capable of reciprocation in a direction transverse to the direction of travel, the amplitude of the to and fro movement of the harrow beams—as seen contrary to the direction of travel—increasing from a smaller value to a greater value, the tines of each harrow beam extending as far as to its extreme ends and the sum total of the length of each beam and the double value of its amplitude being constant.

3,186,496
REVERSIBLE DISK PLOW
Robert E. Cox, Rock Island, and James F. Sullivan, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 17, 1962, Ser. No. 210,343
13 Claims. (Cl. 172—211)



1. A reversible disk plow comprising a frame, a gang of disks mounted on said frame and swingable between right- and left-hand plowing positions, means to raise and lower said gang, means adapted to swing said gang from one of said positions to other of said positions, an expansible and retractable power source mounted on said frame, and control means operatively connecting said power source with said swinging means and said raising means, said control means including a rockshaft, a first rock arm mounted on said rockshaft, means interconnecting said first rock arm and said power source, a pair of clutches mounted on said rockshaft, means operable to engage one of said clutches and disengage the other of said clutches whereby only one of said clutches will be engaged at any one time, a pair of links, one end of each of said links being connected to said swinging means, and the other end of each of said links being connected to said clutches, and means interconnecting said rockshaft with said raising means.

3,186,497
LAND PACKER
John M. Forbes, 843 11th St. W., Saskatoon, Saskatchewan, Canada
Filed Dec. 24, 1962, Ser. No. 246,789
6 Claims. (Cl. 172—548)

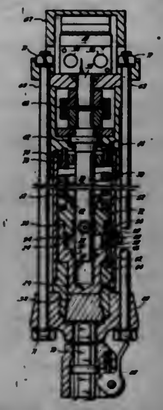


1. A land packer comprising a towing frame mounted on a pair of supporting wheels, and a plurality of packing wheels located rearwardly of the frame, said frame including a tow bar and a stop bar, said packing wheels being associated in pairs, each of said pairs of packing wheels being mounted for rotation about an associated axle in spaced apart relationship on an axis substantially paralle to the axis of the tow bar, each of said axles being connected to a trailing arm extending rearwardly and transversely from said tow bar, a sleeve portion circumscribing the tow bar being associated with each of said trailing arms thereby adapting each of the said pairs of packing wheels for pivotal movement about the longitudinal axis of the tow bar independently of the other pairs of packing wheels, each of said packing wheels having a plurality of latera ly projecting lugs which alternately project from the opposite side faces of said packing wheels adjacent the peripheral edges thereof, said stop bar being positioned forwardly of the tow bar to limit the extent to which each trailing arm is upwardly pivotable about the tow bar to a predetermined point beyond the vertical, at which point gravitational pull on a pair of packing wheels so elevated, readi y retains such pair of packing wheels in such elevated position.

3,186,498
IMPACT TOOL
Jack A. Roll, Bryan, Tex., assignor to Albritton Engineering Corporation, Bryan, Tex., a corporation of Texas
Filed Oct. 2, 1961, Ser. No. 142,393
6 Claims. (Cl. 173—123)

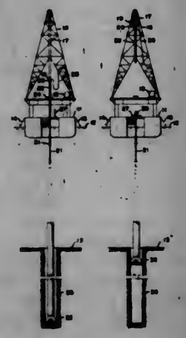
2. In an impact tool having a housing, a driving shaft mounted in the housing for rotation relative to said housing, a hammer assembly in the housing and positioned about the shaft for axial movement relative to said shaft, a cam in the housing assembly, at least one roller bearing connected to said shaft in position to mate with said cam, a spring in said housing and around the shaft urging said hammer assembly in one direction to provide an impact, the improvement in the cam comprising,

said cam having an inclined surface and an axially aligned shoulder surface permitting sudden axial travel of the hammer assembly in said one direction, the cam surface between the inclined surface and the axially aligned shoulder forming a substantially con-



stant line of contact between the outer surface of the bearing and the cam surface as the bearing moves from the inclined surface to the axially aligned shoulder.

3,186,499
WELL DRILLING METHOD
Billy Jack Bullard, Buena Park, and Raymond A. Malott, Fullerton, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,877
9 Claims. (Cl. 175—5)



1. A method of drilling an underwater well from a floating drilling vessel at the surface of a body of water, said vessel having a rotary table above an unobstructed passage to the surface of the water and means for supporting a drill string below said rotary table, said method comprising the sequential steps of

(a) positioning said vessel at a selected drilling location,
(b) lowering from the vessel into contact with the formation beneath the body of water a drill string having a kelly at the upper end thereof,
(c) inserting the kelly in the rotary table,
(d) drilling a hole in the formation by applying a rotating force to the kelly to rotate the drill string,
(e) supporting on said floating drilling vessel at a level below the rotary table the upper end of the drill string at a point below the kelly, with the lower end of the drill string being freely suspended for vertical up and down movement in the drilled hole,
(f) disconnecting the kelly from the top of the drill string,
(g) coupling a section of drill pipe to the top of the drill string and connecting the kelly to said pipe section, and
(h) rotating the drill string to drill more hole.

3. A method of initially starting the drilling of an underwater well from a floating drilling vessel at the surface of a body of water, said vessel having a rotary table above an unobstructed passage to the surface of the water, said method comprising the sequential steps of

(a) positioning the vessel at a selected drilling location,
(b) lowering from the vessel into contact with the formation beneath the body of water a drill string having a bit at the lower end thereof and having a kelly at the upper end thereof positioned in a rotary table during drilling operations,
(c) drilling a hole in the formation by rotating the drill string,
(d) carrying out said drilling operation over a period where a drop in tide takes place which is substantially greater than any rise in tide which may occur resulting in a decrease in the distance between the formation and the vessel and a corresponding increase in the depth of the hole drilled in the formation,
(e) raising the drill string an amount sufficient to suspend it from the vessel without the lower end of the drill string losing contact with the hole,
(f) adding a first new section of drill pipe between the kelly and the top of the drill string,
(g) inserting the drill string back to the bottom of the hole, and
(h) continuing drilling operations.

3,186,500
GAGE MAINTAINING ARRANGEMENT FOR DRILL BIT CUTTERS
Elvin G. Boice, Houston, Tex., assignor to Reed Roller Bit Company, Houston, Tex., a corporation of Texas
Filed Feb. 9, 1961, Ser. No. 88,218
7 Claims. (Cl. 175—374)



7. A rotary drill cutter having a gage face, the said gage face having a groove therein, and tungsten carbide inserts movable in said groove and arranged to protrude from the surface of said gage face, means through which said inserts are supplied into said groove, and means to retain said inserts in said groove.

3,186,501
ROCK-DRILLING BITS
Bruce Percival Warburton, Market Overton, Rutland, England, assignor, by mesne assignments, to P. & V. (Mining & Engineering) Limited
Filed Aug. 1, 1960, Ser. No. 46,807
Claims priority, application Great Britain, Aug. 28, 1959, 29,431; Oct. 5, 1959, 33,656
9 Claims. (Cl. 175—412)

1. A rotary drill bit assembly comprising, in combination, a hollow shaft having an enlargement at its lower end and a threaded connection at its upper end, a con-

nector piece attached to said threaded connection, said shaft carrying axially directed elements intermediate said ends, a collar surrounding the shaft, an upper region of the collar having elements complementary to said shaft elements and forming therewith peripheral engagement means preventing relative rotation between the collar and the shaft, a lower region of the collar having a frusto-conical inner surface widening towards the collar lower end and radially directed elements adjacent to said end circumferentially spaced on said surface, drill bit arms



being held between the collar and the enlargement, said arms having upper portions, inner surfaces of which closely fit the shaft enlargement and outer surfaces of which closely fit said collar inner surface, said outer surfaces including elements engaging said collar elements and maintaining the relative circumferential positions of the bit arms to the collar, said connector piece bearing upon the upper region of the collar to secure the assembly in position, the maximum dimension of the shaft enlargement then lying within the collar lower portion.

3,186,502
SPUDDING-IN-SEISMOMETERS
Friedrich J. C. Rademacher, Rijswijk, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,793
Claims priority, application Netherlands, May 3, 1961, 264,318
5 Claims. (Cl. 175—422)



1. An apparatus for planting geophysical cylindrical prospecting means using hydraulic washing action to bore into the earth and to be used in combination with a supply of liquid under pressure comprising:

(a) a length of hollow pipe having a connection for a liquid conduit at one end and a mouth at the opposite end;

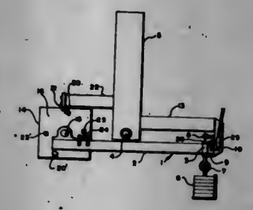
(b) a piston member slidably disposed in said pipe having a closable port through which liquid from said conduit may pass through said piston member to said mouth of said pipe;

(c) a cylindrical prospecting means fitted in said mouth of said pipe, said means having an outside diameter smaller than the inside diameter of the bore of said mouth so as to form an annulus therebetween thereby forming a nozzle in the mouth of said pipe for directing liquid passing through said pipe out of said mouth in a jet;

(d) a pressure-releasable holding means in said mouth for securing said prospecting means in said mouth; and

(e) plugging means to be inserted upstream of said piston means for closing said closable port in said piston member thereby causing the liquid passing through said pipe to act on said piston forcing said prospecting means out of said mouth by overcoming said pressure releasable holding means.

3,186,503
WEIGH FEEDER SYSTEM
James R. Moore, Strasburg, Va., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
Filed Feb. 11, 1963, Ser. No. 257,389
9 Claims. (Cl. 177—71)



1. A weigh scale system for continuously controlling the weight rate of flow of particulate solid material from a vessel having an outlet, said system comprising:

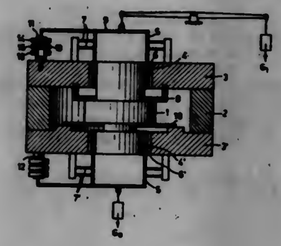
a continuous feeder which operates in response to electrical energy to discharge material from an outlet in a vessel which feeds material when electrical energy is supplied to said feeder,

an electrical circuit including means for supplying electrical energy to said feeder, and timer means for automatically controlling the electrical energy input into said feeder in accordance with a predetermined timed cycle,

a weigh scale comprising a weight beam, means for balancing said weigh beam for a preselected weight load and a load receiving element supported on said weigh beam for receiving particulate solid material passing from the outlet in the vessel to the feeder, said load receiving element being rotatably supported on said weigh beam in a manner such that said load receiving element can rotate and dump its load only when the weight of the load therein balances the preselected weight,

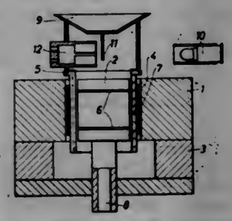
and switch means associated with and responsive to the tipping movement of said weigh beam for controlling the supply of energy to the feeder that controls the discharge of material from the outlet to the vessel, whereby the weight of particulate material discharged through the outlet in the vessel is controlled by the movement of the weigh beam.

3,186,504
WEIGHING APPARATUS
Jacob van Wilgen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,651
Claims priority, application Netherlands, Sept. 8, 1961, 269,071
21 Claims. (Cl. 177—210)



1. Apparatus for measuring a force comprising means for producing a magnetic field, a current-carrying coil located within said magnetic field, means responsive to said force for causing relative movement between said magnetic field producing means and said coil proportional to the magnitude of said force, means for producing a plurality of current pulses for said coil in a given time interval, means responsive to the relative movement of said field producing means and said coil for controlling the number of current pulses supplied to said coil in said given time interval, and means for producing an indicating signal as determined by the number of said pulses supplied to said coil in said time interval.

3,186,505
APPARATUS FOR MEASURING SMALL FORCES
Bernhard Vinzelberg, Leverkusen, and Walter Haupt, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Sept. 18, 1962, Ser. No. 224,299
Claims priority, application Germany, Oct. 2, 1961, F 35,036
6 Claims. (Cl. 177—210)



1. An apparatus for measuring small forces comprising:

(a) a magnet having spaced poles for providing a magnetic field in the magnet gap,

(b) a pole shoe disposed in said gap at a fixed position with respect to the first magnet,

(c) a coil disposed coaxially with respect to said pole shoe and between the pole shoe and the poles of the magnet,

(d) load receiving means in fixed connection with the coil for receiving load to be measured,

(e) said coil and load receiving means being movable axially with respect to the pole shoe,

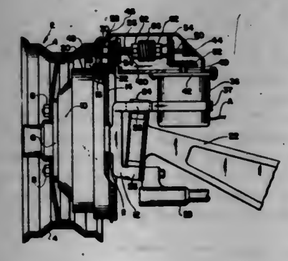
(f) current flow through the coil tending to oppose movement of the coil and load receiving means in response to loading of the load receiving means,

(g) means responsive to movement of the load receiving means and coil and effective to control the current in the coil to counteract such movement, and

(h) indicating means for indicating current flow in the coil to provide a measure of load,

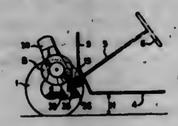
the improvement which comprises means for passing an air stream between the pole shoe and the coil to provide an air bearing for the movement of the coil and load receiving means relative to the pole shoe.

3,186,506
AUXILIARY DRIVE MECHANISM FOR AUTOMOTIVE VEHICLES
Frank W. Leach, 11 Case St., Hartford, Conn., and Vincent A. Okon, 280 Matianuck Ave., Windsor, Conn.
Filed July 5, 1962, Ser. No. 207,522
10 Claims. (Cl. 180—10)



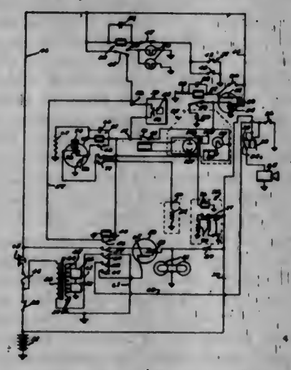
7. In an automotive vehicle having an engine and also having a battery and a generator, a rear set of wheels receiving driving power from said engine and an unpowered set of front wheels each rotatably mounted on a wheel support assembly pivotally supported within the frame for turning movement, the combination therewith of an auxiliary drive mechanism for the front set of wheels including a ring gear mounted on each wheel of said front set for rotation therewith, pinion gears engageable with said ring gears to impart rotational movement thereto and thereby to the wheel, pinion support means mounted on the wheel support assembly and carrying the pinion gears for rotation and for movement laterally of the ring gears into and out of engagement therewith, each of said pinion support means including a drive shaft overlying the ring gear, a screw shaft on said drive shaft having a screw thread extending over the ring gear and terminating at a point spaced from said wheel and upon which said pinion gear is mounted for longitudinal and rotational movement and drive spring means drivingly connecting said screw shaft and drive shaft for simultaneous rotation thereof, said pinion gear being of sufficient weight to move outwardly along said screw thread without rotation during initial rotation of the drive and screw shafts until engaged with said ring gear and being disengageable from said ring gear upon rotation of said ring gear at a speed in excess of that of the drive screw shaft causing the pinion gear to spin away from the ring gear along the screw thread, electric motor means connected with said battery and generator for rotating said drive shafts, and switch means for activating said electric motors.

3,186,507
STEERING OF MOTOR VEHICLES HAVING A COMPACT MOTOR-GEARBOX-DIFFERENTIAL UNIT IN VERTICAL ALIGNMENT WITH A FORWARD DRIVING AXLE
Marcel Dangauthier, Paris, France, assignor to Societe d'Etudes et d'Applications Industrielles Commerciales et Immobilieres "Inter-Technique," Paris, France, a corporation of France
Filed Jan. 10, 1963, Ser. No. 250,555
Claims priority, application France, Mar. 27, 1962, 892,412, Patent 1,327,778
1 Claim. (Cl. 180—42)



In a motor vehicle having a motor, front steering and driving wheels, a front wheel drive axle assembly and a compact and extra-low motor-speed change gear transmission-differential unit, the motor being transversely disposed in the vehicle, the change gear transmission being located under the rear part of the motor, and the differential being located under the motor in coaxial relation to the drive axle assembly, the change gear transmission having a sump associated therewith, said unit being enclosed in a casing having a casing portion which is located at the rear of the transmission and defines a part of the sump, the casing portion having a re-entrant part forming a recess extending transversely of the vehicle, and a rack-and-pinion steering device including a steering rod associated with the steering wheels and a rack parallel with the steering rod and rigidly connected to the rod, the steering rod and rack extending transversely of the vehicle in said recess and being spaced from the re-entrant part a distance just sufficient to allow movements of the steering rod and rack during use of the vehicle.

3,186,508
EMERGENCY CONTROL FOR A VEHICLE
Lewis H. Lamont, 4750 N. Lotus Ave., Chicago, Ill.
Filed Mar. 6, 1963, Ser. No. 264,478
17 Claims. (Cl. 180—82)



9. An emergency control for a vehicle having a switch-operated power supply, a shift lever for the transmission, and an electrically actuated remedying device, comprising:
(a) a relay having a coil;
(b) a switch under the control of the shift-lever position, said switch being closed whenever the lever is in a drive position, and open whenever the lever is in a non-drive position, one side of said switch being connected to the power supply;
(c) means operative to sample the driver's breath, under the control of said shift-lever switch;
(d) means responsive to any alcohol in such breath sample and operatively connected to the coil of said relay; and
(e) a pair of normally open contacts, closed by operation of said relay, for completing a circuit between the power supply and said electrically actuated remedying device of the vehicle.

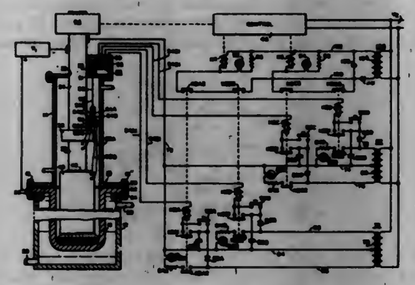
3,186,509
HIGH FIDELITY LOUDSPEAKER SYSTEM
Jean-Pierre Dudognon, 35 Rue de Nanterre, Asnieres, Seine, France
Filed Feb. 5, 1963, Ser. No. 256,338
Claims priority, application France, Feb. 13, 1962, 887,871, Patent 1,322,235
5 Claims. (Cl. 181—31)



1. A substantially aperiodic loudspeaker system comprising, in combination: means including baffle board means defining an acoustic chamber, said baffle board means extending transversely of said chamber at the front thereof; a rearwardly extending dynamic speaker mounted in said baffle board means; first partition means in said chamber defining a first rearwardly convergent acoustic passage effectively coaxial with said speaker; second partition means defining an air pocket in said chamber extending adjacent to the rear of said chamber substantially throughout the entire width thereof, said first acoustic passage communicating directly with said air pocket at a location adjacent to one side of said chamber; third partition means defining a second acoustic passage extending laterally away from said speaker and communicating directly with said air pocket at a location adjacent to the other side of said chamber, said third partition means including a plurality of wall members of differing lengths which extend from the sides of said second passage at spaced locations therealong obliquely toward the longitudinal axis thereof and convergently away from said speaker whereby the acoustic impedance of said second passage is less for acoustic waves traveling away from said speaker than in the opposite direction, said differing lengths detuning said second passage from resonance at any particular frequency within a predetermined range of frequencies; and angularly adjustable reflector means located exteriorly of said cabinet, said reflector means communicating with the interior of said cabinet in proximity to the location where said second passage communicates with said air pocket.

3,186,510
DEVICE FOR INDICATING CONSUMPTION OF CONSUMABLE ELECTRODES
Charles F. Rebhun, Natrona Heights, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1964, Ser. No. 353,794
10 Claims. (Cl. 13—9)

1. In a consumable electrode melting furnace having an enclosed melting chamber, ram means to advance the electrode being melted downwardly, and clamp means to secure the electrode to the ram means, the improvement which comprises, an electrical circuit disposed externally of said furnace, said circuit having first and second portions each including signalling means having a first condition when the respective portion is energized responsive to an electric signal and a second condition when no signal is received, first and second current-conducting wire means each having a first end connected, respectively, to the first and second portions of said circuit and a second end connectable to said electrode at spaced selectable locations, each of said wire means having a supply length thereof disposed to extend as the ram moves the electrode downwardly, and a source of electricity to provide a flow of signal current through said electrode and each of said first



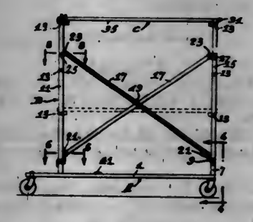
and second wire means to said first and second portions, respectively, of said electrical circuit when said wire means is connected to said electrode, whereby when the electrode is melted in the region of the connections of said first and second wire means the connections will be broken and the signal removed from the respective portions of said electrical circuit, thereby causing the second condition of the signalling means to occur in each portion of the circuit when its respective signal is removed.

3,186,511
AIR JET EXHAUST MUFFLER
Edward Albert Kliewer, Sr., P.O. Box 1282, Longview, Tex.
Filed Oct. 26, 1961, Ser. No. 147,870
10 Claims. (Cl. 181—51)



1. In a muffler structure, a shell, an exhaust tube comprising an imperforate hollow tube having an open exhaust delivery end within said shell and an open exhaust receiving end, said shell having an exhaust delivery end distal from the exhaust delivery end of said exhaust tube and surrounding and being spaced from the delivery end of said exhaust tube, a plurality of air jet tubes fixed adjacent to and disposed along the exterior of said exhaust tube, said air jet tubes comprising imperforate hollow tubes having air receiving open ends in communication with the atmosphere and having air delivery open ends extending slightly beyond said exhaust delivery end of said exhaust tube, said shell defining a substantially continuous gas flow path in the direction of the axis of the exhaust tube downstream of the delivery ends of said air jet tubes whereby a flow of exhaust gases from said exhaust delivery end of said exhaust tube draws atmospheric air through said air jet tubes.

3,186,512
FOLDING SCAFFOLD
Herbert M. Johnson, 42 Hawthorne Drive, St. Genevieve, Quebec, Canada
Filed Jan. 15, 1962, Ser. No. 166,258
Claims priority, application Canada, Jan. 17, 1961, 814,982, Patent 652,828
3 Claims. (Cl. 182—152)

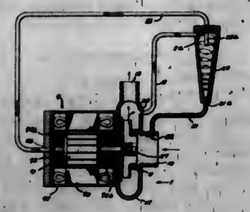


1. A folding scaffold unit comprising in combination, a horizontal base frame including a pair of parallel side frame members, a first end frame member extending between one end of said side frame members and a second end frame member extending between said side frame members spaced from the other end thereof, a first pedestal extending upward from the base frame along the first end frame member, and a second pedestal extending upward from said base frame along the second end frame member, the first pedestal comprising two uprights each located at the junction of the side frame members with the first end frame member, the second pedestal comprising two uprights each located at the junction of the side frame members with the second end frame member and a cross frame member extending between the respective uprights of said second pedestal, spaced apart vertical frame members pivotally engaging said cross frame member and extending upwardly therefrom, a cross brace member of a first pair pivoted to the lower end of each of said first pair of vertical frame members, a cross brace member of a second pair each extending transversely to one of said first pair and pivoted thereto at an intermediate point, each of said second pair of cross braces being disconnectably connected to one of said first vertical frame members adjacent the top and pivotally connected to one of a second pair of vertical frame members adjacent the bottom, the bottom end of each of the second vertical frame members being disconnectably connected to said second pedestal, each of the first pair of cross brace members being disconnectably connected to one of said second pair of vertical frame members adjacent the top thereof.

3,186,513
METHOD AND MECHANISM FOR LUBRICATING THE BEARINGS OF A PUMP ROTOR AND MOTOR COMBINATION FOR PUMPING AN ABRADANT-CONTAINING LIQUID
James T. E. Dunn, 1521 Butternut, and Robert J. Sloat, 2600 Harris Ave., both of Richland, Wash.
Filed Nov. 9, 1962, Ser. No. 236,607
9 Claims. (Cl. 184—1)

8. The method of lubricating the bearings of a canned motor pump rotor combination having a high pressure side and a low pressure side used in pumping liquid which contains abradants, which method comprises bleeding off liquid from said high pressure side, delivering the bled-off liquid to a region of pressure lower than the pressure

in said high pressure side, centrifuging the bled-off liquid to define a clear liquid core, and tapping off clear liquid



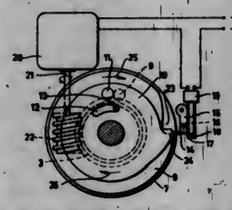
from such core and delivering it to the bearings of the motor-rotor combination.

3,186,514

SPRING-OPERATED WINDING-UP MECHANISM, PARTICULARLY FOR CLOCK MOVEMENTS IN TAXICABS

Sven Håkan, Wallqvist, Halmstad, Sweden, assignor to Haldex Aktiebolag, Halmstad, Sweden, a corporation of Sweden

Filed Oct. 31, 1961, Ser. No. 148,866
Claims priority, application Sweden, Nov. 9, 1960, 10,772/60
2 Claims. (Cl. 185—40)



1. A spring-operated wind-up mechanism, particularly for clock movements in taxicabs, comprising a spring movement having a spring, wind-up mechanism and a rotatable spring power outtake, said wind-up mechanism of said spring movement having control means to actuate the wind-up mechanism to apply a definite wind-up tension to the spring for each actuation of the wind-up mechanism, said spring power outtake comprising a cam for engaging said wind-up mechanism control means when the previously applied wind-up tension of said spring has been consumed, said wind-up mechanism of the spring movement comprising a spring casing having arranged thereon a circular curved disc provided with a peripheral recess, said rotatable power outtake comprising a cam disc having a projecting peripheral portion, both of said discs being adapted to cooperate with the control means, said cam disc being arranged rotatable relatively to the power outtake, means connecting said cam disc with said power outtake comprising means having a groove and pin connection, and said cam and curved discs having protuberances for cooperation with each other with said control means when said discs are rotated in a direction for disengagement of said wind-up mechanism control means.

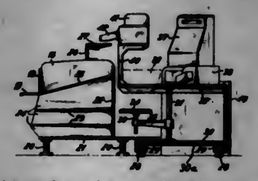
3,186,515

CASHIER'S TABLE FOR SELF-SERVICE STORES

Werner Potrafke, Hufeisenstrasse 6, Hattingen (Ruhr), Germany

Filed Feb. 26, 1962, Ser. No. 175,580
Claims priority, application Germany, Mar. 2, 1961, P 26,686
9 Claims. (Cl. 186—1)

1. A cashier's station including a cash register for self-service stores, which comprises in combination: a plurality of withdrawal compartments substantially rectangular when viewed from above and in side by side relation for receiving purchased goods after the price of the latter has been registered by said cash register, each of said compartments having a charging side on the side toward the cash register at which the purchased goods are placed into the respective compartment and also having a withdrawal side on the side remote from the cash register at which the customer withdraws the goods purchased by the customer, the charging sides of said compartments being in a common plane and the longitudinal axes of said compartments being parallel, non rotatable table means



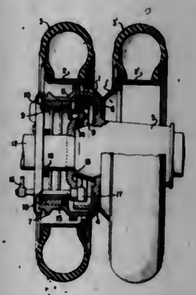
supporting said cash register, said table means also including a depositing section for receiving the goods selected by the customer prior to the registration of the price of said goods by said cash register, a seat between the table and said withdrawal compartments, a carriage supporting said table means and said seat, and means supporting said carriage for movement selectively transversely in a straight line with regard to the longitudinal axes of said compartments into a plurality of positions from each of which said cash register and said depositing section and the charging side of at least one of said compartments are within easy reach of a person on said seat.

3,186,516

BRAKE INSTALLATION FOR MOTOR VEHICLES

Eugen Stümp, Stuttgart-Unterturkheim, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed July 28, 1961, Ser. No. 127,553
Claims priority, application Germany, July 30, 1960, D 33,915/60
8 Claims. (Cl. 188—18)



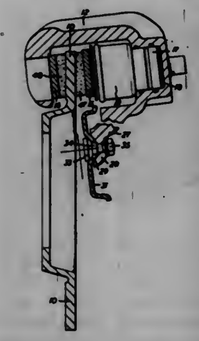
5. A brake installation, especially for two wheels of motor vehicles having two mutually independent drum brakes disposed about the wheel hub, comprising first brake drum means, second brake drum means arranged adjacent said first drum means, first brake shoe means associated with said first brake drum means, second brake shoe means associated with said second brake drum means, said wheel hub being provided with substantially bell-shaped annular flange means, and means for securing both of said brake drum means directly to said flange means including first connecting means connecting one of said brake drum means within said bell-shaped flange means, and second connecting means connecting the other brake drum means to the free end of said flange means.

3,186,517

CALIPER TYPE DISC BRAKES

Anthony William Harrison, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Aug. 30, 1963, Ser. No. 305,674
Claims priority, application Great Britain, Sept. 1, 1962, 33,646/62
3 Claims. (Cl. 188—73)



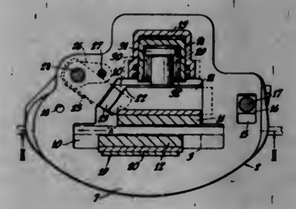
1. A disc brake comprising a rotatable disc, a caliper straddling a portion of the periphery of the disc, opposed friction pads mounted in the caliper for engagement with opposite faces of the disc, actuating means located in the caliper for applying one of said friction pads to the disc, and means for pivotally mounting the caliper on a stationary member comprising no more than two spaced part-spherical joints which lie within the perimeter of the disc and are located on opposite sides of the axis of the disc but not beyond said axis from said caliper, the geometrical centers of the joints lying in a plane perpendicular to a tangent at the intersection of the central plane of the disc with the arc through which the center of contact of a pad with the disc moves as the pads wear.

3,186,518

CLOSED LOOP, SPOT-TYPE DISC BRAKES

John Rodway, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Jan. 22, 1964, Ser. No. 339,425
Claims priority, application Great Britain, Jan. 25, 1963, 3,320/63
8 Claims. (Cl. 188—73)



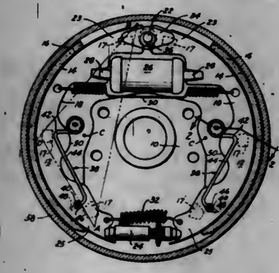
1. A disc brake comprising a fixed support with a horizontal flange portion, a plate member slidably disposed on said flange portion comprising a closed loop with a central opening therein adapted to receive a brake disc therein, said closed loop plate member having a rectangular slot therein disposed at substantially a right angle with respect to the plane of a brake disc extending into said central opening, a pin carried by said flange portion of the fixed support with a square shank portion disposed in said rectangular slot, said pin and shank portion connecting said fixed support and closed loop member together to permit linear movement only with respect to each other and in a direction at a right angle with respect to the plane of a brake disc in said central opening, brake pads carried by said slidable loop member adjacent said central opening adapted to engage a brake disc therein, a brake pad backing plate disposed on one brake pad adjacent said central opening with an inclined surface, a piston carried by said slidable loop member and bearing against said backing plate for moving said one brake pad into contact with a brake disc when disposed in said opening, to cause linear sliding movement of the slidable member in a direction opposite to the movement of the piston operated brake pad, a thrust member carried by said slidable member adjacent said central opening and adapted to contact said inclined surface when a braking action is applied to produce a wedging action.

3,186,519

HOLD-DOWN DEVICE

Donald D. Johannesen, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,811
11 Claims. (Cl. 188—78)



1. In a drum brake: a drum rotatable about an axis; a support member; a brake shoe slidably supported by said support member for engagement with said drum and comprising a rim with friction material attached thereto and a web transverse to said rim and attached at its outer edge to said rim; a cantilevered hold-down device anchored at one end on said shoe and having a portion thereof axially spaced from the plane of said web in a direction away from said support member; means developing force on said hold-down device in a direction toward said support member; said means being operatively connected to said support member and to said portion of said hold-down device and so located that the net resultant force, in a direction toward said support member, exerted on said brake shoe by said hold-down device passes between a portion of the inner edge of said web and said axis.

3,186,520

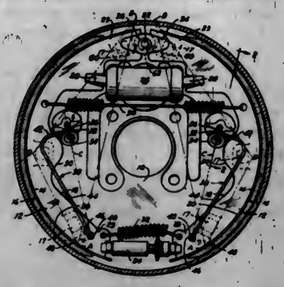
HOLD DOWN DEVICE

Roy E. McCandlish, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Apr. 17, 1963, Ser. No. 273,745
8 Claims. (Cl. 188—78)

1. In a drum brake: a drum rotatable about a horizontal axis, a support member, a brake shoe slidably supported by said support member for engagement with said drum and comprising a rim with friction material attached thereto and a web transverse to said rim and attached at its outer edge to said rim; a cantilevered hold-down device anchored at one end on said shoe and having a portion thereof axially spaced from the plane of said web in a direction away from said support member, and means connected to said portion of said hold-down device and

said support member for stressing said hold-down device to impart perpendicular force components on said shoe, one of said components acting in a horizontal direction toward said support member to hold said shoe against said support member and the other of said components acting



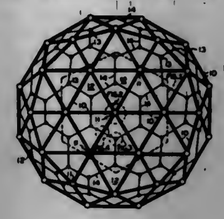
upwards to provide a lifting force on said shoe, said connecting means being so arranged and located that the net resultant force, in a direction toward said support member, exerted on said brake shoe by said hold down device passes between a portion of the inner edge of said web and said axis.

3,186,521
AUTOMATIC ADJUSTING DEVICES FOR BRAKE ACTUATING MECHANISMS
Leslie C. Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Dec. 26, 1962, Ser. No. 247,183
Claims priority, application Great Britain, Dec. 28, 1961, 46,509
1 Claim. (Cl. 188—196)



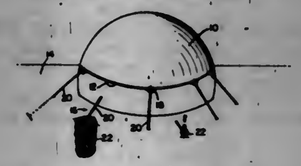
An automatic adjusting device for the piston and cylinder of a hydraulic fluid pressure operated brake mechanism comprising a cylinder formed of a single integral piece of material with a closed end and an open end, a piston slidably disposed therein, two annular recesses formed on the inner surface of said cylinder being open to each other at their adjacent sides with one recess being of larger diameter disposed toward the open end of said cylinder, a shoulder formed at the outer side of said larger diameter recess, a single sealing ring member disposed in said smaller recess and being rectangular in cross section so as to fill said smaller recess, said ring member being coextensive with said smaller recess, and of uniform constant thickness, the inner and outer radial surfaces of said ring member in contact with and touching said piston and smaller recess bottom respectively, a coiled compression spring disposed in said larger recess with its outer end touching and in contact with said shoulder, and the inner end of the spring touching and in contact with said sealing ring member and said inner end of said ring member being disposed in communication with hydraulic fluid pressure acting against said piston adjacent the closed end of said cylinder, said ring member and piston being disposed in said cylinder for independent axial movement in response to hydraulic fluid pressure acting against said ring member and piston, and chamber means in said cylinder in communication with said ring on the right side thereof and with said piston.

3,186,522
STRUCTURAL SURFACES
George W. McCauley, 64 Fuller St., Waban 68, Mass.
Filed Feb. 27, 1963, Ser. No. 261,384
16 Claims. (Cl. 189—1)



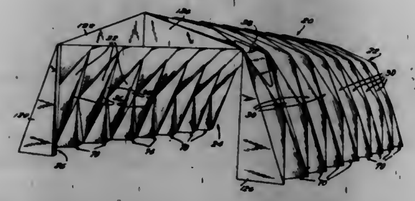
1. A structural surface, comprising a spinal network of interconnected flexing elements defining the bounding walls of polygonal cells, and a counterpoised tensional network therefor, comprising a system of tension elements intercoupled with each other, means coupling a pair of tension elements to each of a plurality of said flexing elements, said coupling means including means for placing the elements of each of said pairs of tension elements in opposed tensional relationship to each other to restrain flexing of said flexing elements in opposite directions, said tension network including a tension circuit coupling one tension element of each of said pairs of tension elements to the other tension element of the pair externally of the flexing element to which such pair of tension elements is coupled.

3,186,523
GROUND ANCHORING SYSTEM
William C. Brisse, Laconia, N.H., assignor to Laconia Malleable Iron Company, Inc., Laconia, N.H., a corporation of New Hampshire
Filed Jan. 3, 1961, Ser. No. 80,362
2 Claims. (Cl. 189—2)



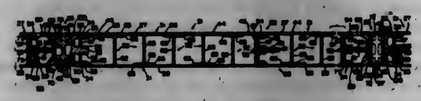
1. A ground anchoring system to secure a portable structure to a substratum, comprising, a line affixed to the outside of said portable structure at a plurality of equally spaced points initially to form a plurality of catenary sections of line depending from said portable structure, a similar plurality of guy assemblies, a separate one of said guy assemblies cooperating with a separate one of said catenary sections of line, each said separate one of said guy assemblies consisting of a clamp having opposed convex guy wedging and clamping surfaces, a guy, and a ground anchor, said ground anchor being embedded in said substratum, said guy being looped around said ground anchor to form a first and a second lead of said guy, said first and said second lead running from said ground anchor through said substratum to said clamp, the free ends of said first and said second lead extending beyond said clamp, the points of contact between said clamp and said first and second leads being adjustable along the length thereof, said first and said second lead being frictionally engaged in said clamp, a separate clamp of each said plurality of guy assemblies being disposed on a separate one of said catenary sections whereby the tension on each said guy assembly may be equalized by adjusting the points of contact between each said clamp and the leads of said guy corresponding thereto.

3,186,524
PANELIZED BUILDING CONSTRUCTION
Otto Lucien Spaeth, Jr., 308 E. 73rd St., New York 21, N.Y.
Filed Apr. 11, 1961, Ser. No. 102,226
2 Claims. (Cl. 189—2)



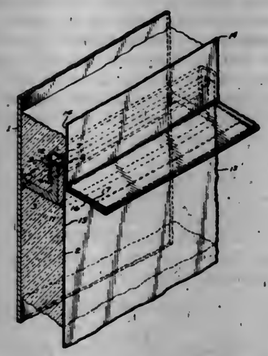
1. A building structure having a generally cylindrical curved portion and a substantially planar end substantially normal thereto, said curved portion comprising a plurality of discrete uniformly shaped wall sections of generally diamond-shape and having opposite apices at the ends of a straight longitudinal center line formed by a sharp fold therein, each of the wall sections having extending side edges, interconnecting means interconnecting the wall sections along the side edges, said wall sections being mutually interconnected along side edges thereof in a pattern of arcs defined by a plurality of equally spaced parallel planes oblique to the axis of the cylindrical curved portion and a plurality of equally spaced parallel planes oblique to said axis with the angles of the first oblique planes relative to the axis being equal and opposite to the angles of the second oblique planes relative to the axis, said center lines being contained in a plurality of equally spaced parallel transverse planes perpendicular to said axis and defining with said oblique planes isosceles triangles arranged in sets of two for each diamond-shaped wall section, and at least one further wall section at the end of the building structure including a pair of panels, one of which defines another of said isosceles triangles and the other defines a right triangle forming part of an end of the building and being disposed in the plane of such end, the triangles of the further wall section having a common side defined by a fold in the wall section such that the pair of panels of the further wall section are divergent from their common side.

3,186,525
INTERCONNECTED PANEL CONSTRUCTIONS
George S. Gresham, John L. Webster, and Layle B. Barker, all of Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,298
4 Claims. (Cl. 189—34)



1. In combination, a pair of panel constructions each having an end wall disposed adjacent the end wall of the other panel construction, each end wall having a pair of outwardly directed flanges, each pair of flanges having free ends turned toward each other, and a locking member respectively disposed between said adjacent end walls of said adjacent panel constructions, said locking member having opposed pairs of legs extending outwardly therefrom, each pair of legs having free ends turned away from each other and respectively disposed in interlocking engagement with said turned ends of said adjacent flanges of said adjacent panel constructions, said locking member having means disposed against the outer surfaces of the adjacent flanges of said adjacent end walls.

3,186,526
DEVICE FOR ATTACHING AN ENCLOSURE ABOUT A HIGH TEMPERATURE CASING
Roger D. Sidener, Westfield, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Apr. 23, 1962, Ser. No. 189,400
1 Claim. (Cl. 189—34)



An apparatus for attaching an enclosure to a vertical planar portion of a casing with the casing operable at a higher temperature than the enclosure,

the apparatus comprising

an elongated metallic angle connected to the casing and having an upward projecting longitudinally extending flange spaced from the casing,

an elongated metallic clip connected to the enclosure and defining a longitudinally extending downward opening recess adapted to receive at least a portion of the upward projecting flange in sliding engagement therein,

the flange being movable with the casing relative the clip,

the flange having an outer surface on the side thereof removed from the casing,

insulation lining the outer surface between adjacent surfaces of the flange and clip to minimize heat transfer from the casing to the enclosure, the insulation and flange making a close fit in said recess,

the enclosure comprising a first and a second panel arranged in contiguous relationship and aligned in a vertical plane,

the first panel defining a terminal lip projecting outward relative the enclosure,

the second panel defining an end folded over the terminal lip to form a joint,

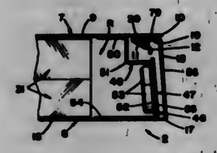
the clip disposed in sandwiched engagement between the terminal lip and the end for connection to the enclosure.

3,186,527
STRUCTURAL LOCK
Anthony N. Konstant, Mount Prospect, and Burt E. Schell, Jr., Long Grove, Ill., assignors to Speedrack Inc., Skokie, Ill., a corporation of Illinois
Filed Mar. 7, 1963, Ser. No. 263,509
5 Claims. (Cl. 189—35)



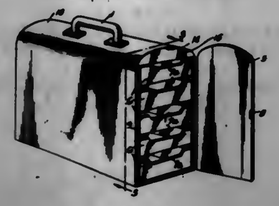
1. A structural unit which comprises an L-shaped locking pin having first and second pin sections disposed in generally perpendicular relation to each other, a first structural member including means releasably engaging said first pin section, a second structural member with a facing surface having two portions disposed in generally perpendicular relation to each other and in abutting engagement with said first member, one of said portions including means in releasable engagement with said first pin section and the other of said portions including retaining means in releasable engagement with said second pin section and also including means obstructing the exit of said second pin section from said retaining means so as to prevent the unintentional disengagement of said structural members, and means preventing rotation of said locking pin relative to said members.

3,186,528
DOOR CONSTRUCTION
John A. Bohnsack, Shaker Heights, Ohio, assignor to The E. F. Hauserman Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 17, 1959, Ser. No. 840,747
1 Claim. (Cl. 189—46)



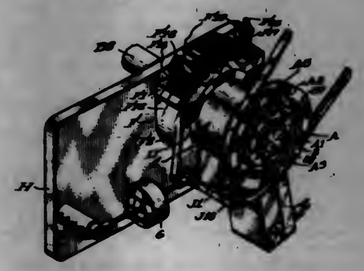
In a door construction, a first panel plate assembly having laterally directed vertically extending latching grooves adjacent the face thereof, latch portions in said grooves, a second panel plate assembly having end plates extending substantially normal to the face of said first panel plate assembly, inwardly directed flanges on the edges of said end plates extending within said grooves, latch portions on said flanges engaged behind the latch portions in said grooves holding said flanges within said grooves and thus said second panel plate assembly to said first panel plate assembly, and overlapping angle hinge reinforcing members secured to the respective panel plate assemblies whereby a hinge leaf secured to said members will secure said panel plate assemblies together, the hinge reinforcing member secured to said first panel plate being bent to avoid one of said laterally directed vertically extending latching grooves.

3,186,529
HAND TRAVELING CASE
Margaret A. Gilbert, 15 Clyde St., Halifax, Nova Scotia, Canada
Filed Apr. 30, 1962, Ser. No. 192,303
1 Claim. (Cl. 190—51)



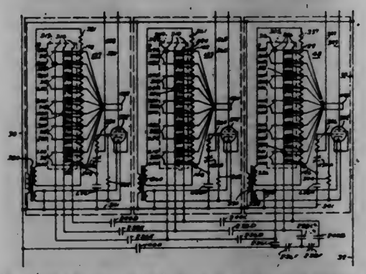
A hand-carrying case having drawers and being characterized by a stiff body portion and having superimposed slidably removable drawers comprising:
(a) a body portion having superimposed drawers slidably supported and located one above the other, and slidable from an end of the case,
(b) a top member having a curved surface and ending in straight line edges at its sides,
(c) substantially vertical side members forming portions of the body portion, permanently and rigidly secured to the straight line edges of the top member,
(d) the top member having a reinforcing member extending from one side member to the other side member and attached to the top member along a curved line, thus forming a truss construction between the side members and the top member,
(e) angle rails attached to the interior side walls of the case to provide stiffening means for the case and for slidably supporting the respective drawers,
(f) a handle for the carrying case attached to the top member midway between the ends and sides of the top member,
(g) and an end door, hinged at one side and covering substantially the area of the end of the case.

3,186,530
COIL SPRING CLUTCH WITH BRAKE
Robert J. Petroff, Lombard, Ill.
(% Petroff Association, 5101 W. Lake St., Chicago 4, Ill.)
Filed Dec. 26, 1962, Ser. No. 246,943
10 Claims. (Cl. 192—12)



1. A clutch system comprising, a cylindrical driver member for rotation in one direction, a cylindrical driven member, means for mounting said two members in axial alinement, a helical coil spring disposed over said two members for clutch action and normally gripping said two member cylindrical surfaces with the direction of spring wind tending to tighten the spring coils when said driver member is rotating said driven member, said spring having one end at the driver member and having the other end at the driven member, means for locking said other spring end to said driven member against relative rotation between the two, detent means laterally offset from the alined cylinder axes and supported for rotary movement about said aligned axes over a small limited angle and including a manual control, a detent stop for cooperation with said detent means and secured to rotate with said one spring end, means for coupling said one spring end to said driven member to provide some angular displacement between the two spring ends, the angular displacement being sufficient and oriented with respect to the one spring end that said other spring end can be moved in a direction toward uncoiling said spring from its normal clutch engaging position and reverse-tension said spring to a clutch disengaging position, said small limited angle of detent rotary movement being large enough to accommodate the uncoiling spring movement and said driven member being adapted to be coupled to a load having sufficient moment of inertia to cause said driven member to turn beyond the stopping position of said one spring end as the result of detent action after a clutch engaging operation, and effect sufficient reverse tensioning of said spring to cause clutch disengagement, a brake drum rotatively secured to said driven member, and brake bands cooperating with said brake drum and anchored to prevent substantial rotation with the brake drum when operating, said brake means comprising a means operating on said driven member to prevent said reversely tensioned spring from relieving itself through creepage of said driven member whereby upon detent release, said reversely tensioned spring relieves itself by moving said one spring end and detent stop to effect clutch engagement and rotation of said spring and driven member until a succeeding detent stop action occurs.

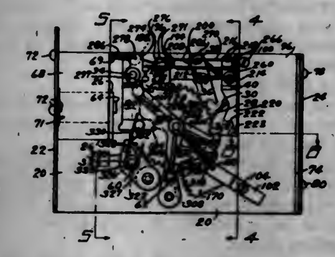
3,186,531
MONEY-ACTUATING DEVICES
Clifford B. Adams, Bellefontaine Neighbors, Mo., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed Oct. 26, 1960, Ser. No. 65,030
50 Claims. (Cl. 194—10)



15. In a money-actuated device, a value sensing circuit including "over" and "exact" relays, a money registering circuit, a selection circuit, and a relay that can reject inserted money, said "over" and "exact" relays being adapted to become energized and thereby initiate the vending of the selected product, said selection circuit causing said relay to reject money whenever a product selection is being made, said relay also being adapted to reject money whenever said "over" and "exact" relays are initiating the vending of said desired product.

3,186,532
MONEY-HANDLING DEVICES
Ray G. Ellis, Hanley Hills, and James N. Sturdy, Manchester, Mo., assignors to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed June 7, 1962, Ser. No. 200,790
40 Claims. (Cl. 194—19)

1. A coin-handling device that can respond to the insertion of coins to establish credits and that comprises:
(a) a pivot,
(b) a ratchet wheel rotatably mounted on said pivot,
(c) said ratchet wheel being biased for rotation in one direction but being rotatable in the opposite direction,
(d) a pawl that normally engages said ratchet wheel to prevent rotation of said ratchet wheel in said one direction but that can move out of engagement with said ratchet wheel to permit said ratchet wheel to rotate in said one direction,
(e) a second pivot,
(f) a coin-operated lever that has an actuator with a coin-receiving portion which is adapted to receive coins of a pre-determined denomination,
(g) a second coin-operated lever that has an actuator with a coin-receiving portion which is adapted to receive coins of a second predetermined denomination,
(h) a third coin-operated lever that has an actuator with a coin-receiving portion which is adapted to receive coins of a third predetermined denomination,
(i) said levers being rotatably mounted on said second pivot and being rotatable relative to the first said pivot and relative to said ratchet wheel,
(j) a third pivot,
(k) a transfer plate that is rotatably mounted on said third pivot and that is selectively engagable by each of said levers,



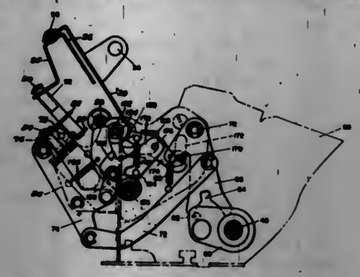
(l) said transfer plate normally permitting said pawl to remain in position to hold said ratchet wheel against rotation in said one direction but being movable by any one of said levers to move said pawl to a position where it frees said ratchet wheel,
(m) a fourth pivot that is carried by said transfer plate,
(n) a second pawl that is rotatably mounted on said fourth pivot and that is movable with said transfer plate,
(o) said second pawl normally being spaced from said ratchet wheel to permit rotation of said ratchet wheel relative to said second pawl but responding to movement of said transfer plate to move into engagement with said ratchet wheel,
(p) said second pawl having the center of rotation thereof adjacent the first said pivot whereby said second pawl can rotate with said ratchet wheel,
(q) a stop that normally is in the path of said second pawl and that can intercept said second pawl and hold said second pawl and said ratchet wheel after said second pawl and said ratchet wheel have moved a predetermined distance,
(r) a second stop that is normally spaced from the path of said second pawl but that can be moved into the path of said second pawl,
(s) a connector which extends between said second stop and said second lever,
(t) a slot in said second stop that coacts with said connector to provide a lost-motion connection between said second lever and said second stop,

(u) said second stop responding to coin-induced movement of said second lever to move into position in the path of said second pawl and thereby intercept said second pawl and said ratchet wheel after said second pawl and said ratchet wheel have moved a second predetermined distance,
(v) a third stop that normally is out of the path of the teeth on said ratchet wheel but that can move into the path of said teeth on said ratchet wheel to intercept said ratchet wheel after said ratchet wheel has moved a third predetermined distance,
(w) said second pawl being movable radially outwardly of said ratchet wheel to free said ratchet wheel after said second pawl and said ratchet wheel have been intercepted by the first said and said second stops,
(x) the first said stop being rotatable whereby the portion of the first said stop which receives and holds said second pawl can move with said second pawl as said second pawl is moved radially outwardly of said ratchet wheel,
(y) said lost-motion connection permitting said second stop to move with said second pawl as said second pawl is moved radially outwardly of said ratchet wheel,
(z) a mechanism that can selectively restore said ratchet wheel to its initial position,
(aa) a credit-readout that is movable to permit initiation of a cycle of operation of a controlled device which said coin-handling device is used,
(ab) a member that rotates with said ratchet wheel,
(ac) said credit-readout normally rotating with said member but permitting said member to rotate if it is held,
(ad) a fifth pivot,
(ae) an inertial element that is mounted on said fifth pivot and that has an arm thereof disposed adjacent the first said pawl,
(af) said arm of said inertial element being yieldable,
(ag) said inertial element holding the first said pawl in engagement with the teeth of said ratchet wheel despite the application of sharp blows to said coin-handling device,
(ah) coin chutes that accommodate said coin-receiving portions of said actuators,
(ai) said coin chutes having recesses in the inner surfaces thereof to accommodate said coin-receiving portions of said actuators, whereby said coin-receiving portions can be wider than the widths of said coin chutes and thereby keep coins from passing downwardly through said coin chutes without moving said actuators,
(aj) said coin-receiving portions of said actuators being triangular but having rounded apices,
(ak) said actuators being pivoted to said coin-operated levers to permit free movement of said actuators relative to said coin chutes despite mis-alinement of said coin-operated levers and said coin chutes,
(al) said coin chutes having narrow surfaces that can receive and guide said actuators.

3,186,533
CARRIAGE AND RIBBON MECHANISM FOR CALCULATING MACHINES

Ralph L. Schultz, Chicago, Ill., assignor to Victor Comptometer Corporation, a corporation of Illinois
Original application Nov. 1, 1960, Ser. No. 66,635, now Patent No. 3,145,651. Divided and this application May 27, 1964, Ser. No. 370,574
4 Claims. (Cl. 197—157)

1. In a calculating machine having a type sector, a platen, a main shaft, and a deck carrying a ribbon with a black portion normally positioned along a printing line between the platen and sector and with a red portion, the improvement comprising a pair of pivotal carriage frame plates supporting the platen for pivotal movement toward the type sector, means pivotally mounting the deck on the frame plates, a slide having a stud and shifted during each substracting and negative total taking cycle of the machine, a first lever pivoted by the stud upon shifting of the slide, a pivotal power driving arm, a first linkage connecting the driving arm to the deck, a second link-



age connecting the driving arm to the main shaft pivoting the arm about its axis during adding cycles, and a second lever pivoted into engagement with the driving arm upon pivotal movement of the first lever transmitting pivotal movement of the power driving arm to the first linkage to pivot the deck on the frame plates to a position in which the red portion of the ribbon lies over the printing line.

3,186,534
COMESTIBLE TREATING APPARATUS

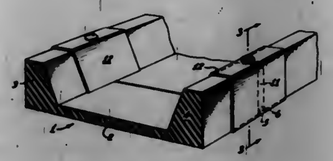
Walter H. Harte, Cherry Hill, N.J., assignor to DCA Food Industries Inc., New York, N.Y., a corporation of New York
Filed Dec. 4, 1962, Ser. No. 242,321
13 Claims. (Cl. 198—33)



1. A comestible treating apparatus comprising a tray member including a plurality of transversely spaced longitudinally extending cantilevered first fingers, means for advancing said tray member downwardly along a predetermined vertically extending path, a turning member including a platform having an upper face and defined by a plurality of transversely spaced, longitudinally extending second fingers directed oppositely to said first fingers and being transversely offset relative thereto and located in the path of said tray member whereby to interdigitate said first fingers with the advance of said tray member, and means for swinging said turning member upwardly to an advanced comestible-receiving position underlying said tray member and thereafter swinging said turning member downwardly with the advance of said tray member to a retracted position with the upper face of said platform disposed along and facing in the direction of said tray member and supporting said comestible for discharge from said turning member into said tray member.

3,186,535
FLANGED CONVEYOR BELT

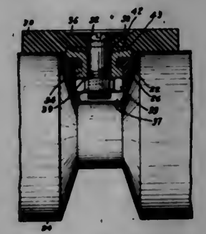
Karl V. Palmaer, Walnut Creek, Calif., assignor to The Monobelting Corp, Oakland, Calif., a corporation of California
Filed June 12, 1961, Ser. No. 116,553
1 Claim. (Cl. 198—201)



In combination: a conveyor belt having an integral flange and a base section; a clamping clip splicing adjacent ends of said conveyor belt along said base section; guard means of a cross-section generally complementary to the shape of said flange and of a generally uniform length substantially greater than the gap between the adjacent ends of said flange at said splice; and fastening means positioned in said gap and securing said guard means to said clamping clip.

3,186,536
GUIDES FOR CONVEYOR BELTS

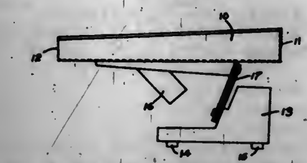
Theodore H. Hinchcliffe, Pasadena, Calif.; Emily Hinchcliffe, administratrix of said Theodore H. Hinchcliffe, deceased
Filed Nov. 7, 1961, Ser. No. 150,676
2 Claims. (Cl. 198—202)



1. A V-belt section adapted to be removably secured to the longitudinal center line of the pulley side of a flat conveyor belt comprising, in combination:
a body of resilient material having a relatively long longitudinal axis, relatively short vertical and transverse axes, rectangular bottom belt contacting and top surfaces, two relatively long and two relatively short sides sloping inwardly from said bottom surface to said top surface;
a plurality of apertures formed in said body; and
a plurality of smooth bored metallic inserts molded within said body of resilient material, said smooth bores being concentric with said apertures, said metallic inserts having a belt gripping portion protruding from the belt contacting bottom surface of said resilient body wherein said belt gripping portion comprises a circular angular rim concentric with said bore and a concave surface joining said rim with said bore.

3,186,537
METHOD OF CONVEYING TITANIUM DIOXIDE

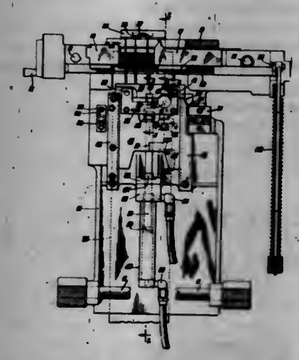
Warren C. Burgess, Jr., 18900 Detroit Road, Cleveland, Ohio
Filed Apr. 10, 1963, Ser. No. 272,014
3 Claims. (Cl. 198—220)



1. The method of vibratorily conveying a finely divided particulate material having a particle size in the range of from about 0.001 micron to about 2 microns which comprises applying said material to a vibratable receptacle at a depth of from about 0.1" to about 3", and reciprocating said receptacle with a vibration inducer, which produces a substantially square wave profile reflecting abrupt changes from acceleration to deceleration, at a frequency of from about 1800 to about 4000 cycles per minute at an amplitude of from 0.015" to about 0.4".

3,186,538
JUSTIFICATION MECHANISM FOR LINECASTING MACHINES

William B. Abbott, Pleasantville, and Herbert Klepper, Brooklyn, N.Y., assignors to Eltra Corporation, a corporation of New York
Filed Mar. 5, 1963, Ser. No. 263,039
7 Claims. (Cl. 199—51)



1. In a typographical linecasting machine wherein a composed line of matrices and spacebands is presented to a casting mold and justified between a pair of vise jaws, justification apparatus comprising, in combination, a justification bar, hydraulic means for raising and lowering said bar, means for actuating said hydraulic means during each machine cycle to cause said justification bar to be raised and lowered during a first justification operation and to be raised and lowered during a second justification operation, and means for causing said bar to be canted during the first justification operation and horizontal during the second justification operation, said last named means comprising a member rigidly connected to said hydraulic means for pivotally supporting one end of said justification bar, a movable element carried by said supporting member and spring biased to support said justification bar in a horizontal position, a slideable member carried by the vise frame, cam means mounted on the first elevator to engage the slideable member and slide it into engagement with the spring biased movable element, and means secured to the vise frame for en-

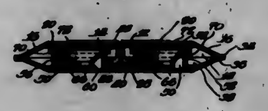
gaging the free end of the justification bar to restore it to a horizontal position as the justification bar is lowered after the first justification operation.

3,186,539
ARTIST'S COMPACT PALETTE
Jannice Sims, 6744 East End Ave., Chicago, Ill.
Filed Mar. 5, 1964, Ser. No. 349,546
3 Claims. (Cl. 206—1.8)



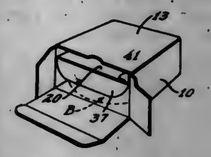
1. An artist's compact palette comprising:
(a) a base, rectangular in shape;
(b) a container permanently fixed upon the upper side of said base along the rear longer edge thereof and adapted to receive a plurality of paint stock cups that rest upon the base;
(c) a cover for said container for closing the same to preserve paint stock in said cups;
(d) a second container permanently fixed upon the upper side of said base along one of the shorter edges thereof and adapted to receive a plurality of solvent cups that rest upon said base;
(e) a cover for said second container for closing the same to preserve solvents in said cups;
(f) a lock in each container for securing the cover therefor in place;
(g) a mixing palette; and
(h) means for removably securing said mixing palette upon said base.

3,186,540
CONTACT LENS CONTAINER
Joseph L. Breger, 511 Ravine Drive, Highland Park, Ill.
Filed May 24, 1962, Ser. No. 197,468
5 Claims. (Cl. 206—5)



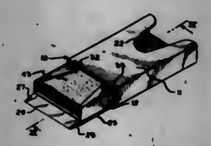
1. An improved ventilated dry-type contact lens case comprising a base portion divided into a pair of compartments, each of said compartments including a contact lens-retaining means having a raised generally cylindrical receptacle connected to said base, a cavity within said receptacle defined by an inverted generally frusto-conical annular surface of the upper portion of said receptacle and by a generally cylindrical lower portion, a floor positioned in said lower portion, said floor also defining a portion of the outer wall of said base, said cavity being adapted to receive a contact lens with the convex surface of the lens resting upon the frusto-conical surface of the cavity and above the said floor, said floor of said cavity being provided with an aperture extending from the cavity to the atmosphere outside the case so as to provide communication between the convex surface of the lens and the atmosphere, and a cover hingedly interconnected with said base.

3,186,541
CLOCK PACKAGES
George C. Shenk, West Chicago, Ill., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Dec. 12, 1962, Ser. No. 244,078
2 Claims. (Cl. 206—46)



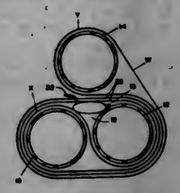
1. A clock package comprising,
a carton having tubularly secured side and end walls in rectangular relation,
a partition wall connecting the opposed end walls parallel to said side walls and dividing said carton into a relatively large clock compartment and a relatively small cushioning compartment,
a clock in said clock compartment having a dial facing said partition wall,
a thin flexible film of padding secured to said partition wall between said clock dial and said partition wall, and
said partition pad having an aperture extending therethrough substantially aligned with the clock dial and of somewhat smaller diameter, whereby said clock dial may flex the padding partially into said partition pad aperture.

3,186,542
SLIDE PACK SHEET DISPENSER
John P. Greene, Deaville, N.J., assignor to Parachem Corporation, North Newark, N.J., a corporation of New Jersey
Filed Jan. 30, 1962, Ser. No. 169,725
12 Claims. (Cl. 206—57)



1. A package comprising a cardboard box formed as an outer portion, an inner portion longitudinally slidable therein to a limited extent, said inner portion being formed to expose leaves for withdrawal one by one from a contained stack thereof, the inner portion comprising two bottom walls functionally slidable with respect to one another and connected at the leaf outlet end of the package by a double end wall formed by united portions folded upon one another, but with their bottom edges spaced so that said united portions are normally disposed at an angle to one another where they unite at the top, means connected to the sides of the upper bottom wall of said inner portion and lying inside of said outer portion, and means on the lower bottom wall of said inner portion cooperating with means on said outer portion to initially functionally limit sliding movement of only the lower of said bottom walls of said inner portion with respect to said outer portion, whereby when said means connected to the upper bottom wall are longitudinally pushed toward the leaf-withdrawing end of the package, the upper part of said inner portion slides along its lower bottom wall and the double end wall is moved down to open position after the engagement of the cooperating means on the lower bottom portion and said outer portion.

3,186,543
SHIPPING MEANS AND METHOD
David G. Minick, Mayfield Heights, Russell E. Miller, Euclid, and Hugh P. Quinn, Cleveland, Ohio, assignors to The Lindsay Wire Weaving Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 28, 1962, Ser. No. 247,888
15 Claims. (Cl. 206—59)



1. A shipping apparatus for shipping flexible material comprising a plurality of elongated members disposed in lengthwise oriented relation about which the flexible material is wound, means holding said elongated members together, said means being spaced from said flexible material, and inflatable means disposed intermediate said members for urging outward movement of the elongated members with respect to one another, whereby the flexible material will be tensioned on such elongated members upon expansion of said inflatable means.

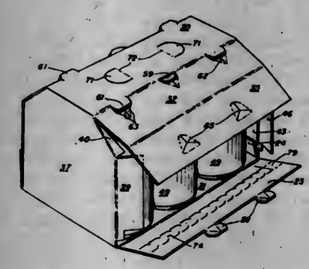
3,186,544
MULTIPLE CONTAINER PACKAGE AND CARRIER
Byron V. Curry, 6 W. Orange Grove, Arcadia, Calif., and John Malcolm Dunn, Monrovia, Calif. (305 Via Montego, San Clemente, Calif.)
Filed Feb. 23, 1962, Ser. No. 175,238
2 Claims. (Cl. 206—65)



2. A carrier for a plurality of similarly oriented cylindrical containers each having an engaging lip of greater diameter than the major diameter of the container and comprising
a plurality of cinctures grouped in a common plane in parallel rows,
a plurality of resilient support tabs extending inwardly and upwardly from the wall of each cincture to define an intermittent support surface circle of substantially the same diameter as the major diameter of the container adapted to engage the underside of the lip of a container,
each of said support tabs tapering from the cincture wall to a lesser thickness at the support surface of the tab and being prestressed to bend outwardly more readily than inwardly;
a carrier tray portion defined by the carrier material between cinctures; and
hand grip means on the carrier for lifting said carrier.

3,186,545
FULLY ENCLOSED BOTTLE PACKAGE
David E. Comrades, Menlo Park, Calif., assignor to St. Regis Paper Company, a corporation of New York
Filed Nov. 8, 1962, Ser. No. 236,193
2 Claims. (Cl. 206—65)

2. A multi-container carrier for at least one row of capped containers, having sloping shoulders, in substantially side-by-side relation, said carrier comprising:
(a) a single elongated blank formed with folding creases extending transversely thereof and spaced longitudinally of said blank to provide a top, a bottom, and a pair of end wall panels extending in end-to-end relation longitudinally of the blank;
(b) means connecting the ends of said blank to form a sleeve for encompassing said row of containers with said bottom panel being adapted to support said containers thereon, with said top panel being adapted to extend across and be in engagement with the tops of the caps of said containers, and with said end wall panels being adapted to extend across and be substantially in engagement with the oppositely outwardly facing sides of the end containers in said row;
(c) said blank further including a pair of upper and a pair of lower partial sidewall panels respectively integrally joined along longitudinally extending folding creases to said top and bottom panels;

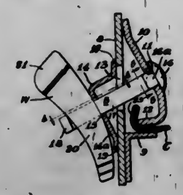


(d) said partial sidewall panels being folded downwardly and upwardly respectively from said top and bottom panels to positions adapted to extend across and be substantially in engagement with the oppositely outwardly facing sides of the containers of said row;
(e) means connecting adjacent edges of said upper and lower partial sidewall panels for forming composite sidewall panels therefrom;
(f) said upper partial sidewall panels including upper and middle sections integrally joined to each other along longitudinally extending folding creases;
(g) said upper sections extending outwardly downwardly from said top panel at generally the same slope as said shoulders of said containers; and
(h) triangular gusset sections integrally joined along transversely extending folding creases to said upper sections and said end panels and folded oppositely inwardly between said upper sections and said shoulders.

3,186,546
FLOTATION SEPARATION OF PARTICULATE MATERIALS IN NON-AQUEOUS MEDIA
James L. Keen, New Brighton, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Mar. 12, 1962, Ser. No. 179,253
12 Claims. (Cl. 209—166)

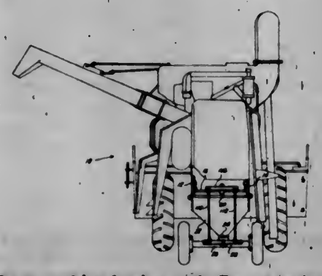
10. The method which comprises: adding a fluorinated organic compound selected from the group consisting of fluorinated aliphatic acids, amines, alcohols and aldehydes to a miscible non-fluorinated liquid organic medium containing particulate materials, the amount of said fluorinated organic compound being sufficient to render at least one of said particulate materials organophobic; floating said particulate material by bubbling a gas through the organic medium; and separating the particulate material from the organic medium.

3,186,547
SCREEN TENSIONING AND CLAMPING MEANS
George W. Behnke, Durand, Mich., assignor to Simplicity Engineering Company, Durand, Mich., a corporation of Michigan
Filed Oct. 29, 1962, Ser. No. 233,722
2 Claims. (Cl. 209—403)



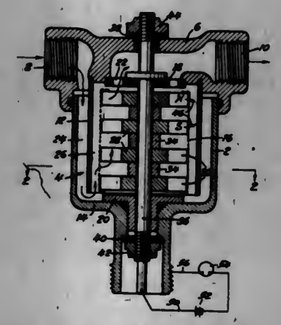
1. In a vibrated machine for screening materials including spaced apart side plates; take-up rails mounted on the inner face of each plate and having openings therein; take-up brackets secured to the outer face of each side plate; having openings therein; a machine deck supported by said side plates; a screen supported on said machine deck and engageab e by said take-up rails; a take-up bolt formed with a flatted surface for at least one take-up rail and having a head of greater size than the opening in said rail, the bolt body passing through the opening in the take-up rail, side plate and take-up bracket; said bolt body having integral shoulder means at the end remote from the head, and a straddle, wedge-type member formed with downwardly, tapering spaced apart legs straddling the flatted body of the bolt and interposed between said shoulder means and said take-up bracket for securing one edge of the screen firmly in position on said machine deck, the openings in the said take-up bracket, side plate, and take-up rail being of a size sufficient to pass said shoulder means.

3,186,548
LEVELING DEVICE FOR THE CHAFFER AND SIEVE ON A COMBINE
Clark E. Stroburg and Eldon L. Stroburg, Blockton, Iowa
Filed Apr. 30, 1962, Ser. No. 191,073
10 Claims. (Cl. 209—416)



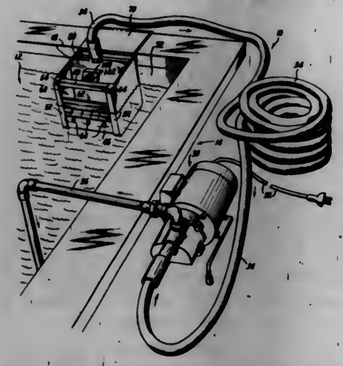
5. In a combine having a chaffer operatively mounted at the rear thereof over a shaker shoe and said shoe having respective front and rear ends, and a rear axle on said combine, the combination therewith of:
(a) means pivotally supporting said chaffer at the front and rear ends of said shoe so that said chaffer is normally on a horizontal plane,
(b) a crank arm assembly mounted on said rear axle,
(c) said crank arm assembly including a bearing member and a crank arm rotatably secured at one end in said bearing member so as to depend from and remain in a vertical plane irrespective of any tilt of said rear axle away from a horizontal plane, and
(d) means connecting said crank arm to said chaffer for acting upon said chaffer to maintain it on a horizontal plane when said combine is tilted away from a horizontal plane.

3,186,549
LIQUID FILTERING DEVICE WITH INDICATING MEANS
Dietrich W. Botstiber, 307 S. Chester Pike, Glenolden, Pa.
Filed July 6, 1961, Ser. No. 122,156
3 Claims. (Cl. 210—86)



1. A filter for liquids comprising:
(a) a housing having an inlet and an outlet;
(b) a cylindrical sleeve of high magnetic permeability mounted in the housing in position to define a flow passage between the inlet and outlet, one end of the sleeve communicating with said inlet;
(c) a cylindrical, liquid-pervious filter element mounted within and electrically insulated from the sleeve in concentric, spaced relation thereto, said element and sleeve defining therebetween, at said one end of the sleeve, an annular entrance opening for a liquid to be filtered, the other end of the sleeve being closed and said outlet communicating solely with the interior of the filter element to require passage of a liquid to be filtered through the wall of the filter element and longitudinally of and within the filter element toward the outlet, after flow of the liquid through the entrance opening;
(d) a series of permanent magnets centered in the filter element, each magnet including a plurality of radial arms terminating at the wall of and aligned longitudinally of the filter element, said arms of each magnet being uniformly, angularly spaced about the circumference of the filter element to define, in alternating relation thereto, corresponding straight, unobstructed flow paths extending from end to end of the filter element in paths paralleling the axis of the filter element, the extremities of corresponding, aligned arms of the several magnets providing substantially continuous lines of magnetic flux lying longitudinally of and within the space between the filter element and sleeve along straight paths paralleling the flow paths and alternating with the same circumferentially of the filter element; and
(e) an electrical signalling circuit one side of which is electrically connected to the sleeve and the other side of which is electrically connected to the filter element, said circuit including a signal device and a source of electric power, said circuit closing in response to bridging of the space between the filter element and sleeve by an accumulation of paramagnetic particles occurring in any one of said paths of magnetic flux.

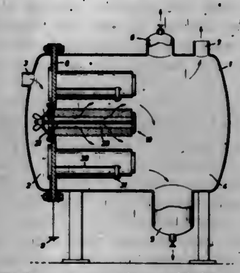
3,186,550
FILTERING SYSTEM AND APPARATUS THEREFOR
Daniel E. Beduhn, Manitowoc, Wis., assignor to Manitowoc Engineering Corporation, Manitowoc, Wis., a corporation of Wisconsin
Filed Jan. 12, 1961, Ser. No. 82,310
7 Claims. (Cl. 210—169)



1. A system for skimming and filtering a liquid, said system comprising, in combination,
a skimmer unit disposed within a container wherein such liquid is confined,
said skimmer unit having a housing defining a receptacle,
said housing having an opening therein whereat there is disposed structure defining a skimming edge,
a filter unit having a shell separably supported by the receptacle of the skimmer unit and removable therefrom through a second opening in said housing,
said shell having opposed open end portions one of which is disposed below the skimming edge with another open end portion being disposed thereabove,
a filter medium support disposed within said shell intermediate the open end portions thereof,
a filter medium supported by said filter medium support,
a resilient member for removably maintaining the filter medium in contact with the filter medium support,
a pump device, and
conduit means placing the intake side of the pump device in communication with the open end portion of the shell that is above the skimming edge and placin the discharge side of the pump device in communication with such liquid.

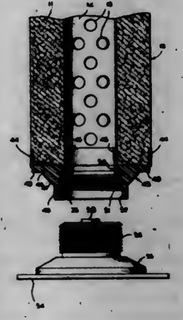
3,186,551
JET FUEL FILTERING, EMULSION BREAKING AND DRYING DEVICE
Arnold Dornauf, Stuhlberg, Oberhochstadt, Taunus, Germany, assignor to Fandi Feinbau G.m.b.H., Oberursel, Germany
Filed Apr. 11, 1960, Ser. No. 21,472
Claims priority, application Germany, Apr. 13, 1959, F 28,190
2 Claims. (Cl. 210—243)

1. A filter and water separator comprising a vessel having an inlet and an outlet for passing liquid to be treated therethrough, a metal partition member in said vessel disposed between said inlet and outlet, a plurality of cartridges secured to said member and disposed to receive liquid from said inlet and to discharge it to said outlet, said cartridges comprising a cylindrical perforated center tube, an annular filter layer made of plastic resin bonded mineral fibers surrounding said tube and in contact therewith having a thickness of approximately 10 mm. and a pore size of approximately 50 to 150 times greater in size than the maximum particle size allowed to pass through the filter layer with filtering action being provided by the filtering effect of said pore size acting serially over the distance of said thickness, a prestressed wire helix extending longitudinally the full length of said filter layer and wrapped completely around the outer diameter of said



layer and radially compressing said layer in an inward direction at a unit pressure equal to the predetermined burst pressure of said layer, to prevent channeling in said layer, and a second annular layer wrapped around said helix and said first layer to coalesce water from liquid passed through said first layer, said second layer having a pore size different than the pore size of said first layer.

3,186,552
FILTER ELEMENT END CAP
Mac C. Cutler, Los Gatos, Calif., assignor to Filters, Inc., San Jose, Calif., a corporation of California
Filed Dec. 12, 1962, Ser. No. 244,052
2 Claims. (Cl. 210—457)



1. In a filter apparatus having:
a filter housing, a bottom plate member in said housing;
a nipple member having external threads and having one end secured to said bottom plate member and the other end extending inwardly into said housing providing a fluid inlet passage for said filter housing; and
a hollow filter cartridge threadably secured to said nipple member, the improvement comprising said filter cartridge which includes a hollow cylindrical mass of resin impregnated fibrous material, a perforated center tube disposed within the hollow interior of said mass of fibrous material and being in contact and substantially coextensive therewith, first and second plastic end caps sealing off the opposite ends of said cylindrical mass of fibrous material and being intimately bonded to the respective ends of said mass of fibrous material and said perforated center tube, said first end cap having an annular portion the upper surface of which is intimately bonded to

one end of said cylindrical mass of fibrous material and the respective end of said perforated center tube, said first end cap having an integral hollow cylindrical portion depending from said annular portion extending away from said mass of fibrous material, internal threads integrally formed on the inner surface of said hollow cylindrical portion for threaded engagement with the external threads of said nipple member, an annular gasket seat formed within the interior of said first end cap below the upper surface of said annular portion and adjacent the innermost portion of said internal threads said first end cap including an annular recess intermediate said gasket seat and said innermost portion of the threads, an annular ring gasket in contact with said gasket seat and secured thereto, a portion of said ring gasket being retainingly received in said annular recess, and said first end cap includes inner and outer spaced apart upwardly extending rims integrally formed on said annular portion, said rims being respectively in intimate contact with adjacent portions of the outer side of said hollow cylindrical mass of fibrous material and said perforated center tube.

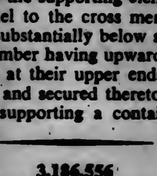
3,186,553
CUT WIRE HOLDER AND MOUNTING MEANS THEREFOR
Godfrey L. de'Caccia, Long Beach, Calif., assignor, by direct and mesne assignments, to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,330
3 Claims. (Cl. 211—13)



1. A unit for containing a plurality of cut wires for use in electrical wiring operations, comprising: a plurality of elongate tubular wire holders; mounting means supporting said tubular wire holders grouped in rows extending substantially horizontally alongside each other; said holders being open at their outer ends; said mounting means including a skeleton basket having wire members forming opposite sides thereof; said holders being disposed with each row extending transversely of said opposite sides of said basket and with the open ends of the holders thereof between said wire members; downwardly facing hook means on the upper side of the open end of each holder; upwardly facing hook means on the lower side of said open end of each holder; and said hook means on said upper and lower sides being detachably engaged with wire members for holding the wire holders so as to extend inwardly of said basket.

3,186,554
RETAINER FOR PRINTED CIRCUIT BOARDS
Rodney L. Mack, Temple City, and Arnold M. Weisman, Los Angeles, Calif., assignors to The Bircher Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 23, 1962, Ser. No. 239,465
6 Claims. (Cl. 211—41)

1. A retainer for retaining a printed circuit board by receiving an edge thereof comprising:
a flat bottom mounting panel, a single upturned panel along one edge thereof having a first board engaging surface;
a second upturned panel along the other edge of said mounting panel supporting a flat top panel extending toward said single panel and substantially parallel to said mounting panel;
a downturned panel attached at the edge of said top panel nearest said single panel and having a second board engaging surface and located opposite said first surface;



a board receiving slot located between said first and second surfaces, said slot normally having less width than the thickness of said board so that upon insertion of said board within said slot said surfaces are spread apart slightly and firmly engage the surface of said board with a spring force.

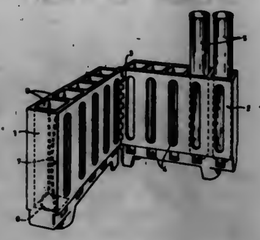
3,186,555
CONTAINER RACK
Charlie J. Ventura, 5308 Miller Ave., Dallas, Tex.
Filed Nov. 8, 1963, Ser. No. 322,553
12 Claims. (Cl. 211—71)



1. A container rack adapted to be detachably mounted on a supporting member and including: a frame having an upright member and a laterally extending cross member at its upper end; a supporting element disposed outwardly from and extending parallel to the upright element of the frame member and having inwardly extending portions secured to said upright member; annular receiving members secured to the cross member of the frame and to the outwardly extending portion of the supporting element; and a horizontally extending supporting member secured to the supporting element and extending substantially parallel to the cross member of the frame in a plane spaced substantially below said cross member; said supporting member having upwardly extending outer portions connected at their upper ends with the annular receiving members and secured thereto to provide means for receiving and supporting a container.

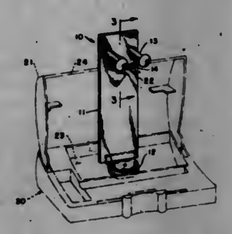
3,186,556
TEST TUBE RACK
Bo Gösta Forsström, Marieholl, Sweden, assignor to LKB-Produkter Aktiebolag, Stockholm, Sweden, a company of Sweden
Filed Sept. 5, 1963, Ser. No. 306,904
Claims priority, application Sweden, Sept. 12, 1962, 9,873/62
1 Claim. (Cl. 211—74)

A test tube rack comprising a first portion having a plurality of vertically disposed holes for test tubes, a second portion similar to said first portion, a hinge connecting an end of said first portion to an end of said second portion so that said two portions may rest upon a plane support surface at any angle to each other from 0 to 180° and a U-shaped spring positioned in each hole, said holes being square in cross section and said springs



each having a bottom cross bar positioned in contact with the bottom of a hole, one straight arm positioned in one corner of a hole and an inwardly curved arm positioned in the opposite corner of the hole.

3,186,557
ATTACHMENTS AND IMPROVEMENTS TO CASES, BOXES, AND THE LIKE
George Wise, 5606 Burtis Ave., Baltimore 7, Md.
Filed Nov. 21, 1961, Ser. No. 153,803
7 Claims. (Cl. 211—86)



3. The combination of an enclosing case with an attachment, said enclosing case comprising upper and lower sections hinged to each other, said upper section of said case having attaching means, said attachment having attaching means at its top conforming to said attaching means in said upper section of said case for attachment thereto, said attachment having article-supporting means, said attachment also having fastening means at its bottom, said bottom fastening means comprising a resilient footing so that when said resilient footing is pressed down on the floor of said lower section of said case when in open condition and said attaching means on the upper section of said case is secured to said attaching means at the top of said attachment, said enclosing case and said attachment form an article-supporting rack.

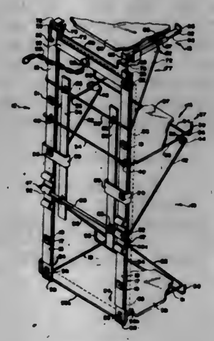
3,186,558
SPICE RACK
Lane E. Horstmann, 3408 Douglas St., Midland, Tex.
Filed May 31, 1963, Ser. No. 284,735
3 Claims. (Cl. 211—88)

1. A spice rack, for holding boxes, comprising: a backplate, a plurality of vertically aligned first seats secured in a column to said backplate, a partition member secured to each of said first seats, a plurality of vertically aligned second seats secured to said backplate in a column parallel to the column of said first seats, and a partition member secured to each of said second seats, the vertical space between each two partition members being such as to accommodate one of said boxes wherein the partition members of one of said columns are staggered with respect to the partition members of the other



of said columns in such manner that one of said boxes cannot move from one of said columns to the other of said columns.

3,186,559
SHELF SUPPORT RACK
Henry Glowa, 1114 Comox St., Vancouver, British Columbia, Canada
Filed June 7, 1963, Ser. No. 286,412
4 Claims. (Cl. 211—150)



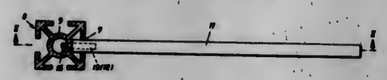
1. An adjustable shelf support rack comprising a substantially vertically disposed backing element having a series of vertically spaced seats, said element being adapted to be connected to a wall or the like, a horizontally disposed rod adapted to be selectively positioned in any one of said seats, means carried by the backing element operable to adjustably position the latter between a vertical position and a position wherein said element is inclined outwardly from the wall, a pair of centrally spaced shelf supporting elements pivotally connected to the backing element and being adapted to be arranged in a normal parallel horizontal position, a brace connected at an outer end to the upper shelf support element adjacent the outer end thereof for angular movement, a hanger connected at an outer end adjacent the outer end of the lower shelf supporting element, said brace and said hanger being pivotally connected at their inner ends to the rod, said seats being disposed so that the rod may be positioned in a selected one of them when the shelf supporting elements are arranged in their normal position.

3,186,560
DISPLAY RACK
Albert J. De Cristino, Long Island City, N.Y., assignor to N. S. Meyer, Inc., New York, N.Y., a corporation of New York
Filed Dec. 27, 1963, Ser. No. 333,957
8 Claims. (Cl. 211—177)



1. A rack structure including in combination a vertically extending post, article-supporting assemblies having openings through which said post projects, means engaging said assemblies and post to maintain such assemblies in spaced relationship and in tier formation along said post, said assemblies comprising central and outer parts and means for separably coupling them to cause the outer parts to extend radially of said post the coupling means for the assemblies comprising perforated strip elements included in one said part, rod elements included in the other part, angularly offset end portions for said rods extendable through said perforations to provide a hinge coupling and means forming a part of one of said elements and cooperable with the other of the same to limit hinging movements thereof and maintain the outer assembly part in a position substantially perpendicular to the post axis.

3,186,561
PROFILED BAR
Marcel Strässle, Kirchberg, Sankt Gallen, Switzerland
Filed Dec. 4, 1963, Ser. No. 328,077
3 Claims. (Cl. 211—182)



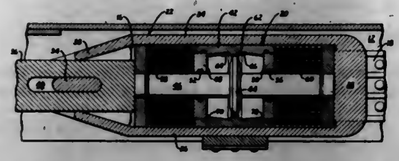
1. A structure comprising a plurality of profiled bars and at least one connecting member connecting the bars together, each bar being a profiled bar including a central tubular portion and at least two identical arrow head profile portions, each arrow head portion including a shank extending radially from said central tubular portion and two barbs symmetrically connected to said shank, opposite barbs of adjacent arrow head profiles being in alignment with one another and defining a gap between one another, at least one trapezium profile cavity being enclosed between said central tubular portion and said arrow head profile portions and externally accessible through said gap, said central tubular portion of said bars having a row of holes, the structure further comprising carrier arms including projections detachably engaging selected holes of said rows, said bars being adapted for being vertically mounted with a carrier arm mounted on each of two different profiled bars at the same level for being capable of supporting a shelf board.

3,186,562
FREIGHT CAR UNDERFRAME WITH HYDRAULIC CUSHIONING
John A. Angold, Topeka, Kans., assignor to Keystone Railway Equipment Company, a corporation of Illinois
Filed Aug. 11, 1958, Ser. No. 754,196
28 Claims. (Cl. 213—8)



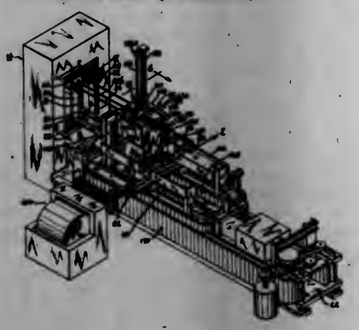
9. In combination, an underframe structure comprising opposed horizontally extending channel members defining a lengthwise extending guideway that is open at the bottom, side sills extending parallel to and flanking the channel members, end sills connecting the ends of the side sills and channel members, and a plurality of cross-bearer and crosstie members connecting the side sills to the channel members at spaced points therealong, a channel shaped floating sill structure disposed in the guideway, with the underframe structure including bottom tie members bridging the guideway and slidably supporting the floating sill structure therein, said floating sill structure having aligned draft pockets adjacent opposite ends thereof, a draft gear mechanism operatively mounted in each pocket, coupling mechanism to each draft gear mechanism for transmitting buff and draft impact forces therethrough to the floating sill structure, piston stop assemblies disposed within the floating sill and spaced apart lengthwise on opposite sides of the center line of the underframe structure, said assemblies each comprising a bridging member extending lengthwise between and fixed to bottom plates of adjacent cross-bearer and crosstie members to provide cooperating lengthwise spaced horizontally aligned stops, and a hydraulic cushioning unit disposed in the floating sill structure and comprising a double-ended hydraulic cylinder lengthwise of the guideway, an outer casing housing the cylinder and forming a reservoir chamber therearound for hydraulic fluid, a double-ended piston and piston rod assembly extending lengthwise through the cylinder with the piston rods thereof projecting from opposite ends of the cylinder to abut with the piston stop assemblies, and cylinder heads within the casing in telescoping relation over the piston rods and sealing with the cylinder at opposite ends thereof, said unit providing a hydraulic fluid flow path for developing fluid frictional resistance to relative lengthwise movement between the cylinder and the assembly such that the unit resists relative lengthwise movement between the structures, each head having fluid flow passage means extending therethrough to connect between the cylinder and reservoir chamber and said cylinder having fluid return holes centrally therealong opening into the reservoir chamber to complete a hydraulic fluid return circuit, with the fluid return holes being masked by the piston when the piston is in a neutral centered position within the cylinder, with each head having check valve means normally blocking flow outwardly through the head as the piston is moved toward such head, thereby developing hydraulic fluid pressure within the cylinder, said check valve means being yieldable to accommodate flow inwardly through the head.

3,186,563
DRAFT GEAR
Kenneth G. Empson, 1132 N. 7th St., San Jose, Calif.
Filed July 16, 1963, Ser. No. 295,493
2 Claims. (Cl. 213—43)



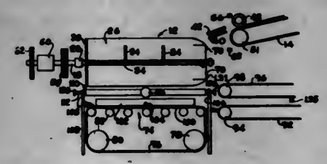
1. In a buffer for a railroad draft gear comprising a combination of a hydraulic cylinder with rubber buff and draft springs mounted in a unit adapted to fit within the yoke of a railroad coupler, the improvement comprising a hydraulic cylinder having a piston therein, said piston normally under conditions of rest riding at a point between the ends of the cylinder, and a reduced annular intermediate portion in said cylinder opposite the position of the piston at rest whereby a relatively small clearance exists between said cylinder and said piston when the piston is at rest with a greater clearance on either side of said reduced annular portion.

3,186,564
ARTICLE TRANSFER AND LOADING MECHANISM
Frank S. Hyer, Whitefish Bay, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,414
10 Claims. (Cl. 214—1)



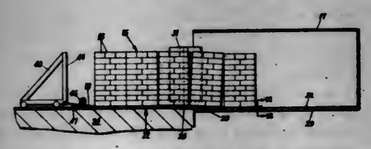
9. In an article transfer mechanism, in combination, a carriage, means comprising a fluid power operator energizable to move said carriage between first and second points, said carriage having parallel article support members spaced apart transversely of its axis of movement, a belt conveyor having an upper belt run positioned between the carriage support members and having its entering end at a third point ahead of said first point to convey articles onto said support member, a pair of gates disposed on opposite sides of said second point, which when closed, have arms positioned to hold articles at a fourth point below said second point, and have tabs interposed behind articles carried by said carriage to said second point to prevent their withdrawal with said carriage when it returns to said first point, second means including fluid power responsive means energizable to move said gates between said closed position and an open position to drop any articles previously on said arms, and control means including a first switch operable by articles moving on said belt run to a given position relative to said carriage when the latter is at said first point to energize the operator of the first mentioned means to move said carriage to said second point, a second switch operable by said carriage when it reaches said second point to energize the operator of said second means to close said gates and to reversely energize the operator of the first mentioned means to move said carriage back to said first point, and a third switch operable by said carriage as it approaches said first point to reversely energize the operator of said secured means to open said gates.

3,186,565
AUTOMATIC SHINGLE STACKER
George H. Williamson, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Jan. 15, 1962, Ser. No. 166,335
15 Claims. (Cl. 214—6)



15. Apparatus for stacking flexible shingles comprising,
(a) means for intermittently dropping relatively small stacks of shingles fed thereto,
(b) means for receiving and supporting stacks of shingles dropped from the dropping means;
(c) means for receiving predetermined dropped stacks before they reach the first mentioned receiving means and rotating the stacks about a horizontal axis, and
(d) means for dropping the rotated stacks to the location on the first-mentioned receiving means where the stacks which have not been rotated are located, whereby the relatively small stacks form a relatively large stack on the first mentioned receiving means, the predetermined small stacks being inverted with respect to the other stacks.

3,186,566
APPARATUS FOR LOADING AND UNLOADING VEHICLES
Arthur Spinanger and Robert V. Burt, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 10, 1963, Ser. No. 294,080
11 Claims. (Cl. 214—38)



3. Apparatus for use in the loading of a unitized cargo into a vehicle, having in combination:
(A) a flexible web of kraft paper comprising a sled of rectangular lineaments, said sled being adapted to have placed in stacked relation thereon the unitized cargo to be loaded;
(B) a slide path underlying substantially the full length and width of said flexible sled and extending substantially continuously into the vehicle to be loaded;
(C) said slide path comprising two aligned runways, a dock runway and a vehicle runway;
(D) said dock runway being substantially fixed in position and extending from a unitizing area to a point closely contiguous to the vehicle to be loaded and

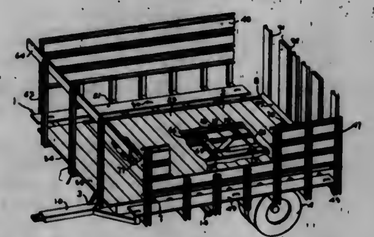
having a high-slip top surface of abrasion resistant plastic;

(E) said vehicle runway being a flexible web of sufficient dimension to cover the loading area to be occupied by said cargo in said vehicle;

(F) the coefficients of static and kinetic friction between said sled and the top surface of said vehicle runway being less than the coefficient of static friction between the lower surface of said vehicle runway and the floor of said vehicle and also less than the coefficient of static friction between the sled and the cargo to be carried thereon, and

(G) means to propel the sled and the unitized cargo thereon for movement along the full length of said slide path into loaded position on said vehicle.

3,186,567
SELF LOADING AND UNLOADING VEHICLE
Calvin B. Blair, Box 76, Barnard, Kans.
Filed Dec. 21, 1962, Ser. No. 246,513
1 Claim. (Cl. 214—510)



A wagon apparatus adapted for stacking bales comprising:

(a) a bed and a wheeled frame for normally supporting said bed substantially horizontally and spaced above the ground, a connection between said bed and said frame permitting said bed to move from a substantially horizontal bale loading position to a generally vertical bale unloading position,

(b) power lift means connected between said frames and said bed for selectively moving said bed between said positions,

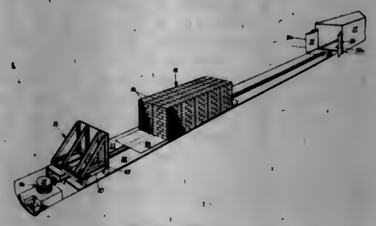
(c) a tailgate secured to said bed and extending generally at right angles thereto and upon which bales are adapted to rest when the bed is moved to said unloading position, said tailgate terminating in an outer end portion, said connection being intermediate the ends of said bed whereby said tailgate terminates adjacent the ground when said bed is in unloading position,

(d) a push member movably supported on said tailgate and movable therealong from a location adjacent said bed to a location adjacent said outer end portion of said tailgate,

(e) a force exerting member mounted on said apparatus and operably connected to said push member, said tailgate including a pulley rotatably mounted on said outer end portion, and a cable connecting said force exerting member to said push member, said cable engaging said pulley,

(f) said force exerting member comprising an extensible device mounted on the under side of said bed and including a support member slidably mounted on the under side of said bed and connected to said extensible device for sliding with respect to said bed in response to the extension of said extensible device, said support member engaging said cable for moving said push member, whereby a plurality of bales stacked on said bed may be upended by said lift means and subsequently pushed off the tailgate in upended position by said push member.

3,186,568
METHOD FOR LOADING AND UNLOADING VEHICLES
Arthur Spinanger and Robert V. Burt, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Original application July 10, 1963, Ser. No. 294,080. Divided and this application Nov. 2, 1964, Ser. No. 408,221
3 Claims. (Cl. 214—152)



1. The method of loading a vehicle at a warehouse dock, which method comprises:

(A) providing a slide path extending from a unitizing area into the loading area of said vehicle, said slide path comprising continuous portions of the surface of the warehouse floor and vehicle bed,

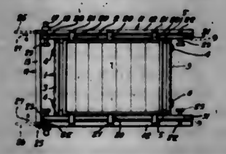
(B) placing a material on said slide path so as to present a surface thereon having high-slip characteristics,

(C) positioning a thin flexible web-like sled on said slide path at the unitizing area with the length of the sled parallel to the length of said slide path, the coefficient of static and kinetic friction between said sled and the surface of said slide path being less than the coefficient of static friction between the sled and the cargo to be loaded,

(D) placing the cargo in a substantially compact mass on said sled, leaving the ends of said sled uncovered, the sole means of securement of the cargo to the sled being effected by the weight of the cargo and the said coefficient of static friction between the sled and the cargo, and

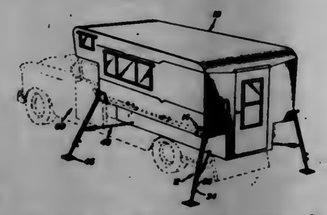
(E) pushing the loaded sled into the vehicle by means of a pushing force acting directly on said cargo at the end thereof furthermost removed from said vehicle, said pushing force being directed parallel to said slide path and causing said cargo and sled to simultaneously slide along said slide path into position in the loading area of said vehicle.

3,186,569
BOAT AND LUGGAGE CARRIER
André Roux, 880 112th Ave., Drummondville South, Quebec, Canada
Filed Oct. 21, 1963, Ser. No. 317,627
3 Claims. (Cl. 214—450)



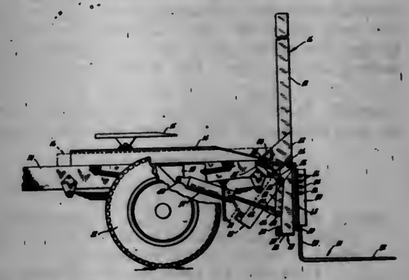
1. A boat carrier for motor vehicles comprising a stationary frame consisting of a pair of spaced parallel rails and of transverse members rigidly interconnecting said rails, means for securing said frame over the top of a motor vehicle with said rails disposed transversely to the longitudinal axis of said motor vehicle, support brackets secured to one end of said rails and laterally extending therefrom, a movable frame of U-shape consisting of longitudinal legs and a transverse bight member interconnecting one end of said legs, said movable frame capable of displacement with respect to said stationary frame between a transport position in which said legs are disposed alongside said rails and said bight member is disposed adjacent said support brackets, and a loading and unloading position in which said movable frame is inclined on one side of said vehicle to receive a boat, support elements secured to the free ends of said legs and laterally extending therefrom and engaging said rails for the support of said free ends of said legs, said support elements being capable of displacement along said rails and being guided by the latter, the other ends of said legs resting directly on said support brackets in the transport position of said movable frame, the top of said legs in said transport position being at a lower level than the top of said rails, whereby a boat in said transport position of said movable frame rests directly on the top of said rails, said movable frame being capable of being lifted off said support brackets and bodily pivoted about said support elements, so as to be raised above said rails, whereby to lift a boat off said rails.

3,186,570
CAMPING BODY LOADING AND UNLOADING DEVICE
Neal E. Bunnell, 1609 N. State St., Orem, Utah
Filed June 24, 1963, Ser. No. 289,978
7 Claims. (Cl. 214—515)



1. In combination with a portable camper adapted to be transported on the bed of a pickup-type truck or the like, a plurality of telescopically adjustable legs including a telescopically receiving and a telescopically sliding portion received within said receiving portion, mounting means for removably securing said legs to opposite corners of the camper for supporting it above the ground surface, said means mounting a first pair of legs in the same vertical plane at the front end of said camper and a second pair of legs in the same vertical plane at the rear end of said camper in such a position so that each pair of legs converges toward the top of the camper when supporting said camper whereby the camper is stabilized and able to withstand strong wind forces, and bracing means strung between each leg and the camper, said mounting means including a bracket secured to each of said corners, a socket rigidly mounted on each of said brackets, a pair of stub shaft extensions mounted at the top of each leg perpendicular thereto slidably and removably received within a preselected socket, means carried by each socket for locking said extensions in position within said sockets, the pair of sockets mounting the front and rear legs converging towards the bottom of the camper, said legs being removable from said sockets and re-positionable in a stored position flush with opposite side walls of the camper by re-inserting one of said stub shaft extensions of each leg in its socket and locking it thereto, each leg of said front pair being joined with a corresponding leg of said rear pair in said stored position by locking the telescopically sliding portion of one of said legs in both telescopically receiving portions of the front and rear leg.

3,186,571
TRUCK-MOUNTED LIFTING DEVICE
Charles R. Holzhause, 2 Koning Drive, Greensburg, Ind.
Filed June 28, 1962, Ser. No. 205,890
10 Claims. (Cl. 214—674)



1. A truck-mounted lifting device, comprising

(a) a first boom section swingably interconnected to the frame of said truck and swingable between a retracted generally horizontal position and an erected operative position,

(b) a second boom section releasably retained in a retracted position angularly orinted with respect to said first section and swingably interconnected to said truck frame on a common axis with said first boom section in the general horizontal plane of truck frame for swinging movement between said retracted position and an erected position in alignment with said first section,

(c) means releasably locking said boom sections in longitudinal alignment with each other,

(d) link means operatively connected to said boom sections and to power means on said truck for moving simultaneously said boom sections about said common axis into a retracted position when the power means is actuated in one direction and into erected position when the power means is actuated in an opposite direction,

(e) a load-lifting carrier slidably carried on one of said boom sections when said boom sections are in retracted position and vertically movable along the length of said boom sections when they are in erected position, and

(f) power means for moving said carrier on said boom sections.

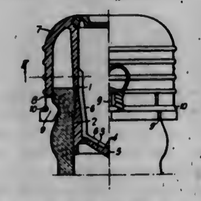
3,186,572
CONTAINER CLOSURE
William H. McKnight, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 7, 1963, Ser. No. 314,423
3 Claims. (Cl. 215—46)



1. An improved easily removable hermetically-sealable closure for open mouth containers which may be readily reapplied and removed to reclose and reopen such containers when the hermetic seal is broken which comprises, a central disk portion projectable within an

upper opening of a container, an annular rim portion bounding said central disk portion and forming a downwardly open channel for receiving upper edge portions of the side walls of such container, an extended vertical flange depending from said annular rim portion overlying outer edge portions of the side walls adjacent the upper edge thereof, said vertical flange having a lower end portion forming a strengthening curvilinear beam section cooperably engaging a reentrant circumferential outwardly-facing finish on the container for locking said closure thereon, said curvilinear beam section having a radially-inwardly extending horizontal portion cooperably engageable with the finish and a downwardly-outwardly projecting skirt portion joined by a curvilinear compression-locking knee portion, and a predetermined weakness line formed along a desired length of said vertically-extending flange providing a tear strip for facilitating the easy removal of said closure from the container.

3,186,573
BOTTLE CLOSURE
Paavo Viktor Ludvig Salminen, Helsinki, Finland, assignor to Etablissement Paainvest, Geneva, Switzerland, a corporation of Switzerland
Filed Apr. 12, 1963, Ser. No. 272,599
Claims priority, application Germany, Sept. 29, 1962, S 81,849
4 Claims. (Cl. 215—52)



1. A bottle closure of elastically resilient synthetic material comprising a tubular sealing member for sealing engagement with the inner surface of the bottle neck, a covering cap portion extending from the upper end of said sealing member downwards over the outside of the bottle neck top and having inner projections engaging the underside of a widened head portion of the bottle neck, a closure wall closing the tubular sealing member near its lower end extending from near the lower end of said sealing member inwards and downwards obliquely relative to the axis of the bottle to form a cup-shaped closed end portion of said sealing member, longitudinal reinforcing ribs on the inside of said sealing member in regular peripheral spaces extending at least along the length of the sealing member to be inserted into the bottle neck and down to said closure wall, an annular projection forming a sealing ring on the outside of the sealing member near its lower end, said sealing ring having in the untensioned state of the bottle closure a diameter larger than the inner diameter of the part of the bottle neck engaged thereby.

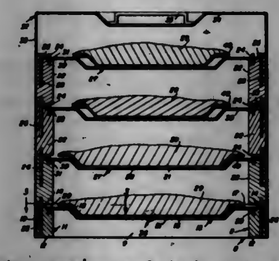
3,186,574
RECEPTACLE WITH INTEGRAL HINGED COVER AND SUPPORT
Donald S. Davidson, Mount Tabor, N.J., assignor to Antonio J. de Bernardi, doing business as Plastics Engineering Sales Company, Jackson Heights, N.Y.
Filed Dec. 13, 1962, Ser. No. 244,453
4 Claims. (Cl. 217—60)

1. A receptacle formed of a synthetic organic thermoplastic material and comprising a base member provided with a rearwardly directed first flange along the upper edge thereof, a cover member overlying said base member and including a rearwardly directed second flange superimposed on said first flange, a self hinge defining flexible web formed integrally with said flanges and connecting the rear edges thereof, said second flange having a transversely extending opening formed therein provided with a side shoulder, and a latch member formed integrally with said first flange and including a depending first arm pro-



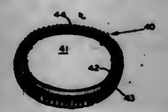
jecting through said opening and terminating in a rearwardly directed second arm extending rearwardly of said flange rear edges and a first detent element formed on a face of said second arm and adapted to releasably engage the upper edge of said shoulder when said cover is in an open upright position.

3,186,575
PASTRY CONTAINER AND CARRIER
Leif H. Gravos and Audrey F. Gravos, Arnegard, N. Dak.
Filed June 1, 1962, Ser. No. 199,513
3 Claims. (Cl. 220—20)



1. A pastry container and carrier comprising a rack and a cover, the rack including a base comprising a ring, stacks of vertically aligned spacing blocks mounted on the ring, the blocks in said stacks being transversely aligned, and pastry shelves removably mounted on selected ones of said transversely aligned blocks, said cover including a top and depending hollow body defining an open bottom for telescopically receiving the rack therethrough, and means for releasably locking the cover to the ring whereby the rack and cover may be lifted as an assembly.

3,186,576
METHOD OF MAKING A DIE CUT EDGE OF THERMOPLASTIC ARTICLES TEAR RESISTANT
Carlton L. Whiteford, New Canaan, Conn., assignor to Poly-Pak Corporation of America, Springdale, Conn., a corporation of Delaware
Filed May 12, 1960, Ser. No. 28,656
3 Claims. (Cl. 220—24)



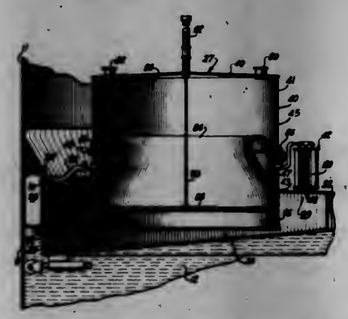
2. An orientable thermoplastic end closure for a cylindrical container comprising a central disc portion, an annular flange portion and an annular channel therebetween defined by said disc portion and said flange portion; said closure characterized by said flange portion having a die cut marginal edge, said flange being deeply corrugated adjacent said die cut edge to uniaxially orient said flange in a direction parallel to said die cut edge.

3,186,577
CONTAINER CLOSURE
Kenneth F. Tennison, 939 S. Stone Ave., La Grange, Ill.
Filed Dec. 20, 1962, Ser. No. 246,279
4 Claims. (Cl. 220—25)



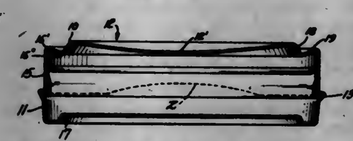
1. A contamination-proof closure for a container having a top wall provided with an access opening, said closure having a depending and laterally-extending flange adapted to receive a sealing ring and having also rearwardly of its center a pair of spaced apertured pivot straps, a clamping handle having horizontal portions extending through said apertures and having end portions adapted to bear against said container to draw said flange toward the top of said container, and a locking ear rigidly carried by the front portion of said closure and projecting over the edge of said top.

3,186,578
STORAGE TANK
Reign C. Ulm, Schererville, and Robert W. Bodley, Highland, Ind., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 12, 1961, Ser. No. 82,248
1 Claim. (Cl. 220—26)



In a storage tank having a well for storing fluid products, a floating roof having a periphery less than the periphery of said tank and adapted to float on said fluid products, said floating roof having at least one pontoon for providing buoyancy thereto, a gas inflatable means disposed between the periphery of the roof and the wall of the storage tank and having a first connecting means, variable volume means for maintaining the pressure in said inflatable means at a substantially constant pressure irrespective of temperature change of said gas, said variable volume means including second and third connecting means, conduit means interconnecting said first and second connecting means for maintaining said inflatable means and variable volume means in direct fluid communication, a thermal pump means for supplying gas to said variable volume means and having a further connecting means, an integral valving means interconnecting said third connecting means, fourth connecting means and the atmosphere to automatically vent said inflatable means when the pressure within said inflatable means reaches a predetermined level and to automatically admit air into said thermal pump means when the pressure differential between the thermal pump means and the atmosphere reaches a predetermined amount, and to automatically admit air into said variable volume means from said thermal pump means when the pressure differential between said thermal pump means and said variable volume means reaches a predetermined value.

3,186,579
CONTAINERS
Carl E. Meyerhoefer, Little Neck, N.Y., assignor to Knomark, Inc., Brooklyn, N.Y., a corporation of New York
Filed June 26, 1963, Ser. No. 290,753
2 Claims. (Cl. 220—43)



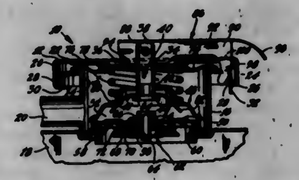
1. A package for shoe polish or the like, comprising a sheet metal container for a supply of the packaged material and a snap-open lid thereon having a relatively rigid top wall of lighter gauge metal than that of said container and a relatively flexible skirt of substantially uniform circular cylindrical peripheral contour depending therefrom, said top wall including a central downwardly dished portion of arcuate cross-sectional contour connected to the top edge of said skirt by a peripheral portion including a first outwardly extending annular ridge continuous with the peripheral edge of said central portion, a second outwardly extending annular ridge continuous with the top edge of said skirt and an inwardly extending annular ridge operatively connecting said first and second annular ridges whereby said top wall is resistant to deformation when downward lid opening pressure is applied thereto, said skirt having a bottom edge portion cut away in an arc which defines spaced fulcrums where its ends intersect adjacent bottom edge portions of the skirt, said fulcrums being angularly spaced apart between 160° and 180° to ensure effective lid rocking leverage, and said container including an annular side wall of which an upper portion is closely embraced by portions of said skirt, and a peripheral flange extends upwardly and outwardly at an angle of not more than 45° from an intermediate portion of said side wall thereby to provide a seat for bottom edge portions of said skirt and for said fulcrums and being arranged and adapted to laterally engage bottom portions of said skirt and confine the same against lateral spreading when lid rocking pressure is applied to the top wall of the lid above said cutaway arc.

3,186,580
CLOSURE DEVICE
Dominick L. Previte, Willowick, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 7, 1962, Ser. No. 171,720
2 Claims. (Cl. 220—44)

1. A pressure outlet pipe having an open end, a seat portion flaring outwardly from said open end, having an aperture disposed therein, a rim portion adjacent said seat portion having cam means disposed thereon in combination with a pressure relief closure device, said closure device comprising:

a cover member engageable with and adapted to cover said open end of said pressure outlet pipe, said cover member having a peripheral slot adapted to register with said seat portion aperture;

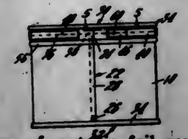
flange means depending from said cover member adapted to releasably engage said cam means disposed on said rim portion;
a valve plate adjacent said cover member receivable in and engageable with said pressure outlet pipe;
spring means disposed intermediate said valve plate and said cover member, so constructed and arranged to bias said valve plate from said cover member to effect a sealing engagement between said valve plate and said pressure outlet pipe;
a movable pin member extending through said cover member being connected to said valve plate;
said movable pin member having land means integral therewith;
said cover member having an opening therethrough, so constructed and arranged to slidably receive said movable pin member with said land means;
a lever member pivotally connected to said movable pin member and having a cam surface disposed adjacent said movable pin member and engageable with said cover member, whereby pivotal movement of said lever member selectively releases said valve plate from sealing engagement with said pressure outlet pipe;



said lever member having one end portion remote from said cam surface and a tab member projecting from said lever member;
said movable pin member with said land means having a portion, the configuration of which is substantially similar to the configuration of said opening through said cover member, whereby the cooperating relationship between said portion and said complementary opening through said cover member will effect a positive alignment of said peripheral slot with said tab member and rotatably fix said movable pin member and said lever member relative to said cover member;
stop means disposed adjacent said pressure outlet pipe open end, so constructed and arranged to cooperate with said flange means, whereby said peripheral slot on said cover member is brought into registry with said aperture on said seat portion; and
said tab member of said lever member is receivable into said peripheral slot of said cover member and said aperture of said seat portion, said peripheral slot and said aperture being brought into axial alignment upon complete closure of said relief closure device on said pressure outlet pipe and cooperable with said tab member to effectively lock said cover member against rotation on said pressure outlet pipe.

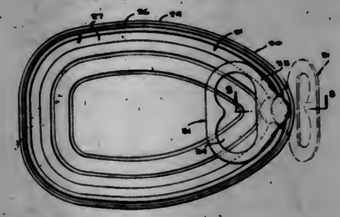
3,186,581
CONTAINER
Alden James Schneider, Greenwich, Conn., and William Edward Taylor, Fairfield, and George Ernest Eckman, Oradell, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 20, 1962, Ser. No. 246,029
4 Claims. (Cl. 220—53)

1. An easily opened reclosure can, comprising in combination:
a tubular sheet metal body having its edges seamed together in a longitudinal side seam,
a circumferential slit formed in said body adjacent one end and extending around a major portion thereof, said slit terminating closely adjacent both sides of said side seam,



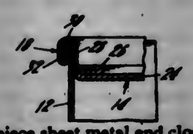
a peelable tape of metallic foil covering and sealing said slit and being bonded to the adjacent portions of said can body by a thermoplastic resin adhesive of low peel resistance, and
a collar disposed within said can body adjacent said slit for suporting said can body in the area thereof on both sides of said slit, said collar extending longitudinally beyond one portion of said can body after it has been opened along said slit and being engageable with another portion of said can body beyond said slit to provide a reclosure seat therefor.

3,186,582
PIVOTED PULL HANDLE FOR EASY OPENING SCORED HAM CAN END
John Henschert, Morton Grove, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 30, 1961, Ser. No. 148,592
24 Claims. (Cl. 220—54)



1. A can end assembly comprising a can end having a peripheral weakening line adjacent the peripheral edge thereof defining a removable portion which constitutes a major part of the can end, said weakening line having a tear starting portion, a pull handle secured to said removable portion immediately adjacent said tear starting portion, said removable portion having an opening therethrough and said pull handle having a resilient plug portion passing through said can end opening in sealed relation to said can end and forming the connection between said pull handle and said can end removable portion.

3,186,583
END CONSTRUCTION FOR CAN
Arthur Philip Zandel, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 18, 1962, Ser. No. 245,522
6 Claims. (Cl. 220—66)



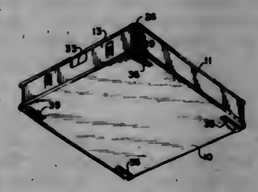
1. In a one-piece sheet metal end closure for subsequent attachment to a tubular container body including a central panel, a peripheral flange surrounding said panel and extending in a lateral direction above said panel, and a wall integral with and extending between said panel and said flange in a generally vertical direction; the improvement comprising, a fold in said wall at its lower end adjacent its connection to said panel forming two contiguous layers of metal extending substantially inwardly towards the center of said panel in contiguous relation only with the periphery of said panel, said contiguous metal layers strengthening said wall against deformation when said closure is subjected to forces from within a container body to which it is attached whereby said closure can be made of lighter gage sheet metal.

3,186,584
JOINT FOR PLASTIC ROCKET CASES
Harold Eugene Helms and Rowland L. Stadfeld, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,704
4 Claims. (Cl. 220—75)



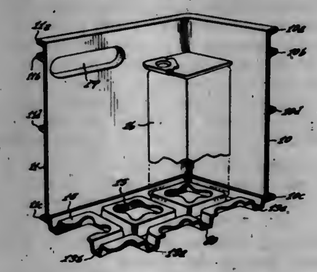
1. An impregnated fiberglass case section comprising:
an inner end ring at the inner surface and anchored to the end of said case section;
an outer end ring on the outer surface and anchored to the end of said case section;
spaced projections on said inner and outer end rings having fingers extending from the margins of said projections into said case section, said projections from said inner and outer end rings being relatively axially staggered;
outer and inner coupling rings lying within and without the aforementioned rings and overlapping them;
and radially extending pin means securing said end rings to said coupling rings.

3,186,585
COLLAPSIBLE BREAD CRATE
Orion B. Denny, Gastonia, N.C., assignor to S. W. Smith, Jr., Charlotte, N.C.
Filed Oct. 22, 1962, Ser. No. 232,153
1 Claim. (Cl. 220—97)



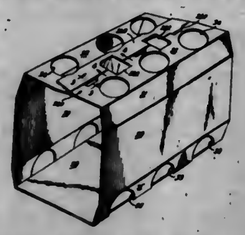
A collapsible bread crate of a character to be stacked upon itself both in extended and collapsed condition, said bread crate comprising a bottom and a first and a second pair of side members of sheet material, one pair of side members being pivoted at their lower edges to the bottom and the other pair of side members being pivoted at its upper edges between the upper edges of the first side members whereupon the first pair of side members pivoted to the bottom may be moved in either direction from an upright position to a generally horizontal position substantially in the plane of the bottom and said second side members may be pivotally moved toward each other to a collapsed position close to the plane of the bottom, said bottom having substantially correspondingly elongated tapered projections on its under surface, one adjacent each corner, said tapered projections being positioned at spaced aligned locations on said bottom inwardly of the edges thereof and extending longitudinally inwardly from adjacent edges of said other two opposed sides thereof with the thickness of the projection gradually reduced from said adjacent edge toward the edge opposite thereto, and said two other side members having struck-out portions corresponding in taper to said projections and so located that when collapsed crates are in stacked relation the struck-out portions on one of said other walls will have cooperative interlocking engagement with the projections adjacent the corresponding side of an adjacent crate, the interlocking engagement of said struck-out portions and the projections of a superimposed collapsed crate limiting relative lateral movement of stacked collapsed crates but by slight lifting of a crate at one side permitting such side to be withdrawn from engagement with an underlying crate and enabling the oppositely inclined opposite projections to ride over the near edge of the underlying crate.

3,186,586
PLASTIC CARRYING CASE
Theodor Box, 57—62 251st St., Little Neck, N.Y.
Filed Nov. 26, 1962, Ser. No. 239,091
3 Claims. (Cl. 220—97)



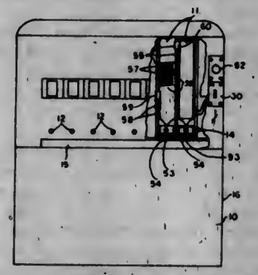
1. A carrying case for the storage and transport of relatively fragile liquid containers comprising in combination:
(1) an integrally molded structure of high-impact synthetic material having side, end and bottom walls,
(2) said side and end walls being formed at their upper edges with a pair of spaced outwardly projecting flanges, to provide a reinforced rim of U-shaped cross-section,
(3) said side and end walls being further provided at their lower edges with an outwardly projecting flange, to enable stacking of a plurality of cases with the lower flange of one case being aligned with and resting upon the rim of the next lower case of a stack,
(4) said bottom wall being formed with two sets of parallel channels having side and bottom portions with the channels of one set being normal to and intersecting the channels of the other set,
(5) the width of said channels being a multiple of the thickness of said bottom wall and the channels of both said sets being spaced from each other by a distance, whereby said bottom portions form a stable supporting surface of the case by the stiffening action of said channels and said side portions form, together with the intervening portions of said bottom wall, a plurality of discrete self-supporting and relatively flexible platforms having a dimension substantially conforming with the dimension of the containers to be supported each by one of said platforms in mutually adjoining relation with the other containers stored within said case.

3,186,587
ARTICLE CARRIER
Robert A. Englander and Carl P. Cato, Lynchburg, Va., assignors to Ducam Corporation, Lynchburg, Va., a corporation of Virginia
Original application July 2, 1962, Ser. No. 206,974. Divided and this application May 1, 1963, Ser. No. 277,301
9 Claims. (Cl. 220—115)



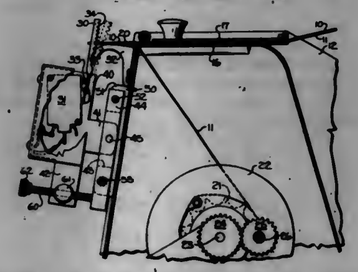
1. A sleeve-type carrier for a group of similar shaped articles, said carrier being made from a paperboard or the like blank, and having overlapping end panels, the outermost of said overlapping panels having a longitudinally extending fold line, a cutout in said outermost overlapping panel defining a tab interrupting the longitudinal fold line and extending away from the longitudinal edge of the outermost overlapping panel, a cutout in the innermost of said overlapping end panels and defining an opening arranged to receive said tab to prevent movement of the overlapping panels outwardly of each other in the plane of overlap, a second cutout in the outermost of said overlapping end panels, said second cutout defining a second tab facing transversely of said first tab, and a second cutout in said innermost panel and defining an opening for receiving said second tab, said second tab having a maximum width greater than the width of the portion of the opening into which it is received and which is engaged thereby, said second tab having converging foldlines thereon whereby it may flex as it is pushed through the opening.

3,186,588
COIN OPERATED DISPENSER HAVING A MESSAGE MEANS
Marvin W. Chapman, 3108 Dornick Drive, Oklahoma City, Okla.
Filed Feb. 27, 1963, Ser. No. 262,290
10 Claims. (Cl. 221—3)



5. In a coin operated talking article dispenser including a multiple means for storing articles to be dispensed, a coin receiving means for selecting and ejecting an article from the dispenser after activation thereof by the insertion of the correct number of coin(s) into said coin receiving means, and an audible message means cooperatively connected with said coin receiving means, the improvement comprising providing a means that starts the playing of the message of the audible message means upon the insertion of the correct number of coin(s) into the coin receiving means to thereby obtain the cooperative connection between the coin receiving means and the audible message means and a means for timing the playing of the message.

3,186,589
DEVICE FOR DISPENSING PRESSURE-SENSITIVE LABELS
John A. West and William R. Eppes, Charlotte, N.C., assignors to Idento Equipment Company, a corporation of North Carolina
Filed May 2, 1963, Ser. No. 277,535
8 Claims. (Cl. 221—13)

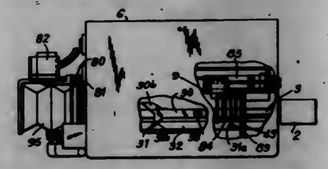


1. A device for dispensing labels from a web having a series of separately detachable labels adhered thereto along the length thereof, said device comprising
(a) a web supporting plate having a forward label stripping edge which is adapted to have a web with labels thereon drawn thereover and therearound,
(b) feeding means operatively associated with said web supporting plate for moving the web along a predetermined path of travel onto said web supporting plate and over and around said label stripping edge for successively stripping the labels from the web and for successively delivering the labels to a dispensable position in which a portion of each successive label is stripped from the web and projects forwardly from said label stripping edge,
(c) an actuator arm disposed forwardly of said label stripping edge of said web supporting plate and extending into the path of travel of a label being stripped from the web and adapted to be engaged thereby, said actuator arm normally occupying a rearward position toward which the same is biased and being movable by a label being stripped from the web to a forward position and being adapted to be held in this forward position by each label in the dispensable position and aids in maintaining the label in the dispensable position until the label is removed, said actuator arm then returning to said rearward position, and
(d) control means operatively associated with said actuator arm and said feeding means and operable in response to movement of said actuator arm to said forward position for stopping said feeding means and operable upon return of said actuator arm to said normal rearward position for actuating said feeding means.

3,186,590
CIGARETTE DISPENSER
Walter Beha and Wilhelm Bender, Frankfurt am Main, Germany, assignors to Schoeller & Co. Elektrotechnische Fabrik, Frankfurt am Main, Germany
Filed May 1, 1963, Ser. No. 277,252
Claims priority, application Germany, May 16, 1962, Sch 31,487
1 Claim. (Cl. 221—147)

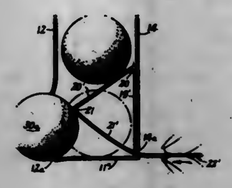
A cigarette dispenser comprising, in combination, a housing having a dispensing opening; an electric lighting device mounted on said housing and coaxially spaced

from said opening; a cigarette magazine in said housing, said magazine having two bottom plates forming together an elongated gap through which an individual cigarette may pass; conveying mechanism in said housing, and including slider means and cigarette-holding claw means; said slider means being displaceable, from a starting position to an operating position, in a direction transverse to said gap for shifting said individual cigarette into said claw means; a trough structure extending beneath said claw means from said lighting device to said dispensing opening, said claw means being displaceable in and along said trough structure for longitudinally displacing said individual cigarette into lighting contact with said lighting device and thereafter in the reverse direction and partly out of said dispensing opening; a pusher rod having a starting position and being manually controllable to move longitudinally inwardly from said position; said claw means having a starting position and said slider means and said claw means being coupled with said pusher rod and entrainable thereby during inward movement of said pusher rod; a plurality of spring means connected with said slider means and claw means, said pusher rod, and said control rod for tensioning by inward movement of said pusher rod for individually returning said pusher rod, said control rod and said slider means and claw means to their respective starting positions; plural releasable latch means operable to releasably maintain said pusher rod and said slider means in the operated positions thereof; releasing means for disengaging said control rod from said pusher rod at the end of the inward run of said pusher rod for return of said control rod by one of said spring



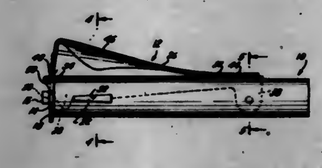
means; means operable, responsive to return of said pusher rod to its starting position, to release the latch means of said pusher rod for return of said pusher rod to its starting position; means operable, responsive to return movement of said pusher rod, to release the latch means for said slider means for return of said slider means to its starting position by one of said spring means; a first normally open switch mounted on a wall of said housing; means carried by said control rod and engageable with said first switch, upon the start of movement of said control rod inwardly from its starting position, to close said first switch and to maintain said first switch closed until return of said control rod to its starting position; a second normally open switch mounted on a wall of said housing; means on said slider means engageable with said second normally open switch to close the latter when said slider means reaches its operating position; a relay mounted on said housing and including an operating coil and a set of relay contacts which are closed responsive to energization of said operating coil; means connecting said relay contacts in series with said lighting device and a voltage source; and a series circuit including said first and second switches; said relay operating coil, and the voltage source; whereby said relay coil is energized upon conjoint closure of said first switch means, responsive to movement of said control rod from its starting position, and said second switch, responsive to movement of said slider means to its operating position, so that said electric lighting device is energized only when said control rod has been entrained by said pusher rod during inward movement of the latter and when said slider means has reached its operating position to move a cigarette into said claw means.

3,186,591
CONTAINER
Benjamin Solomon, Merrick, N.Y., assignor to Topps Chewing Gum, Incorporated, Brooklyn, N.Y., a corporation of New York
Filed Feb. 3, 1964, Ser. No. 342,024
5 Claims. (Cl. 221—260)



1. In a box arranged to hold a plurality of articles in columnar array, a combined dispensing and sealing apparatus comprising a dispenser aperture defined by a wall of said box, an integral cardboard deflector link having one end hingedly mounted in said box and pivotally movable toward and away from said aperture, a dispenser flap forming an extension of said link, a second aperture formed in said box in spaced relation to said dispenser aperture, said flap having portions extending outwardly and slidably through said second aperture and foldable into closing position of said dispensing aperture.

3,186,592
SINGLE DISC DISPENSER
Theodore J. Carski, Baltimore, Md., assignor, by mesne assignments, to B-D Laboratories, Inc., East Rutherford, N.J., a corporation of Delaware
Filed July 15, 1963, Ser. No. 294,963
4 Claims. (Cl. 221—276)



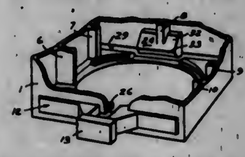
1. A single disc dispenser comprising a disc-containing cartridge having an open end from which the contained discs are adapted to be dispensed, a disc support at the open end of the cartridge for supporting the discs and being spaced from the open end to permit removal through this space of the individual discs one at a time, a holding means for detachably holding the disc-containing cartridge, said holding means comprising an elongated and arcuate plate having cartridge engaging arm means receiving and engaging a cartridge and having projecting surfaces for releasably retaining the cartridge in engagement with the holding means, an actuating means coupled with the holding means for ejecting individual discs from the cartridge, said actuating means including an elongated arm having one end coupled with said holding means and the other end biased away therefrom, a disc dispensing head projecting laterally from the arm for engaging the disc resting directly on the disc support and dispensing such disc therefrom upon overcoming the bias of the arm by application of finger pressure thereto, and surfaces of the cartridge and said cartridge engaging means providing a projection and mating detent cooperating to provide an indexing means for relatively locating said actuating means and the discs in the cartridge in a predetermined manner for dispensing.

3,186,593
PORTABLE GOLF BALL DISPENSING DEVICE
Harvey R. Mlodik, 19314 Hamburg, Detroit, Mich.
Filed Mar. 18, 1963, Ser. No. 265,863
3 Claims. (Cl. 221—297)



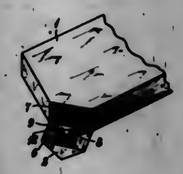
1. A portable golf ball dispensing device comprising an inner ball storage tube having an upper closed end and a lower end, a shaft rigidly secured to the upper closed end of said ball storage tube, said ball storage tube having a plurality of circumferentially spaced vertical slots in the side wall thereof adjacent the lower end of the tube, an outer tube surrounding said ball storage tube and having a plurality of circumferentially spaced vertical slots in the side wall thereof to register respectively with said first-mentioned plurality of slots, said second-mentioned plurality of slots having lower upwardly facing abutment edges, and a plurality of circumferentially spaced leaf springs carried by said ball storage tube between the ball storage tube and said outer tube, said springs each having an intermediate bent portion projecting respectively through said first-mentioned slots normally to support a ball thereon and having outwardly and downwardly extending end portions projecting through the aligned slots externally of said outer tube and resting respectively on said abutment edges and outwardly flexible to release a ball by downward movement of said storage tube while the outer tube remains stationary.

3,186,594
DISPENSING DEVICE FOR CUPS
Peder Mario Antonius Nyblom, Stockholm, Sweden, assignor to AB Plåtmanufaktur, Fack, Malmo, Sweden, a corporation of Sweden
Filed June 11, 1963, Ser. No. 287,095
Claims priority, application Sweden, July 2, 1962, 7,382/62
7 Claims. (Cl. 221—299)



1. A dispensing device for dispensing preformed, substantially rigid drinking cups each having an outwardly beaded rim, said device comprising a tubular container for receiving therein a stack of nested cups, said container having a discharge opening at one end thereof, and discharge control means provided at said open end of the container for gravity discharge of cups one by one, said discharge control means including a slide having a circular opening the diameter of which just permits passage of a cup, the diameter of the container opening being greater than the maximum cup diameter, said slide being slidable transverse of the container axis between a discharge position in which the slide opening is clear for discharge of a cup, and a locking position in which the slide opening is blocked for such discharge, first supporting surfaces on the slide and on the inner wall of the container for supporting the lowermost one of said cups in the locking position of the slide, and second supporting surfaces on the slide and the inner wall of the container for supporting the next following one of the cups in the discharge position of the slide, movement of the slide from the locking postion toward the discharge position pushing the lowermost cup supported on said first supporting surfaces off said surfaces for gravity discharge through the slide opening and the container opening, said second supporting surfaces supporting the cup following the one being discharged during the discharge thereof, and spring means biasing the slide into its locking position.

3,186,595
DISPENSING CARTON AND METHOD OF DISPENSING THE CONTENTS THEREFROM
Leif Hartvig-Johansen, Elisenbergveien 35A, Oslo 2, Norway
Filed Nov. 19, 1962, Ser. No. 238,584
Claims priority, application Norway, Nov. 28, 1961, 141,623
11 Claims. (Cl. 222—1)

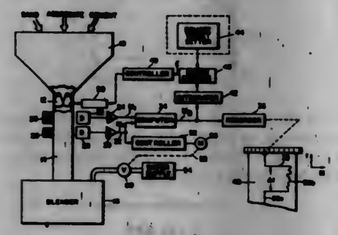


9. A carton adapted for dispensing measured quantities of material therefrom, said carton comprising a plurality of walls, means defining lines of weakness in said walls to provide a cap when the carton is severed along said lines, a fold line along which the cap is hingeably supported to the remainder of the carton, means defining a hinge line in said cap separate from said fold line to enable a portion of the cap to undergo further pivotal movement with respect to the remainder of said carton about said hinge line, and means defining a line of weakness joining the hinge line and the fold line which must be severed before the cap can undergo the further pivotal movement, said fold line and hinge line being cooperatively arranged in said carton to provide pivotal capability of said portion of the cap through an angle exceeding 180°.

3,186,596
CONCRETE BATCH BLENDING CONTROL SYSTEM
Charles O. Badgett, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Jan. 25, 1962, Ser. No. 168,689
6 Claims. (Cl. 222—14)

1. Batch concrete blending apparatus which comprises:
a storage bin for a nominally dry ingredient having an unknown moisture content,
a blender,
a chute leading directly from said bin to said blender and having a measuring section provided in said chute,
gate means located between said bin and said measuring section for admitting said ingredient to said chute whereby said ingredient passes to said blender;
said gate, said chute and said measuring section therein being arranged so that said ingredient passes through said measuring section at a relatively constant velocity;

means responsive to the apparent bulk density of material in said measuring section for providing a signal indicating the rate of mass flow of said ingredient therethrough,
means responsive to the moisture contained in material in said measuring section for providing a signal indicating the rate of moisture mass flow accompanying the flow of said nominally dry ingredient therethrough,



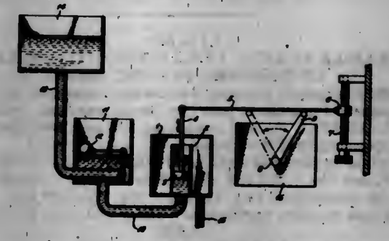
computer means for mathematically combining said moisture mass flow signal with said ingredient mass flow signal to provide a compensated mass flow signal indicating the mass flow of said ingredient in a dry state,
means for computing a time integral of said compensated mass flow signal, and
means for closing said gate when said computed integral exceeds a predetermined value.

3,186,597
LIQUID METERING AND DISPENSING SYSTEM
William Dick Henderson, 2328 Henderson Highway, Winnipeg, Manitoba, Canada
Filed Sept. 27, 1963, Ser. No. 312,097
Claims priority, application Canada, Oct. 16, 1962, 860,182
9 Claims. (Cl. 222—30)



1. A liquid metering and dispensing system which comprises, a cylinder, a piston received for movement in said cylinder, a nozzle on said cylinder at one side of said piston, permanent resilient means for exerting force on the other side of said piston, said nozzle comprising, a valve having a closed and an open postion for respectively restraining and permitting passage of liquid through said nozzle and into and out of the space defined by said cylinder and said one side of said piston, said piston being moveable under said resilient means into a position for exhausting said space and said valve being normally urged towards its closed position; a second nozzle for co-operation with said first nozzle, means for supplying liquid under pressure to said second nozzle, said first and second nozzle operatively co-operating upon mutual connection for allowing liquid passage from said second nozzle into said space defined by the cylinder and one side of the piston and movement of said piston in a direction against said resilient means, a stop for limiting movement of said piston and accurately determining the maximum volume of liquid in said space, said liquid supplied to said second nozzle being pressurized for moving said piston towards said stop for defining a chosen volume of liquid in said cylinder, and operating means for moving said valve into its open position and for discharging said chosen volume of liquid from said cylinder under force from said resilient means and exhausting said cylinder.

3,186,598
DISPENSING APPARATUS
Bror Edvin Jonsson, Hargshamn, Sweden, assignor to Aktiebolaget Ewos, Sodertalje, Sweden, a corporation of Sweden
Filed Dec. 14, 1961, Ser. No. 159,310
Claims priority, application Sweden, Dec. 20, 1960, 12,304/61
6 Claims. (Cl. 222—57)

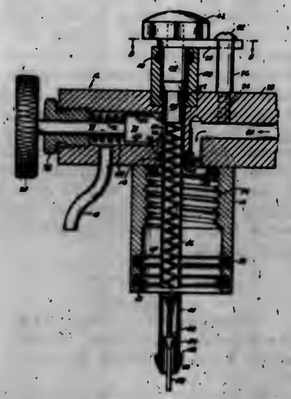


1. Apparatus for dispensing a predetermined quantity of liquid on actuation by an external device, said apparatus comprising a substantially vertical cylinder, means for supplying said cylinder with liquid to a predetermined level, a piston freely movable in said cylinder, a lever adapted to be swung by the action of the said external device, a piston rod connected at one end to said piston and at the other end to the said lever, a housing enclosing said cylinder and said piston and adapted to receive liquid overflowing said cylinder, and outlet means in said housing adapted to allow outflow of said overflowed liquid but to prevent entry of extraneous matter.

3,186,599
DISPENSER FOR LIQUID IN UPRIGHT CONTAINER WITH CONTROLLED ATMOSPHERE
Benjamin L. Levinson, Miami, Fla., and Edward E. Brush, 901 Roderigo Ave., Coral Gables 34, Fla.; said Levinson assignor to Evelyn S. Levinson, Bay Harbour Island, Miami, Fla.
Filed Oct. 15, 1963, Ser. No. 316,342
12 Claims. (Cl. 222—82)

1. A bottle holder forming part of a positive-pressure controlled-atmosphere liquid dispenser, for use with a bottle having a neck with a threaded portion adapted to receive a bottle cap, the end of the bottle being sealed independently of the bottle cap by a thin easily penetrable membrane, said holder including a socket having a threaded part dimensioned to receive the threaded neck of the bottle, a gas inlet for connection from a gas tank to the socket, a spout, a liquid discharge passage leading through the holder to the spout, a dispensing valve for said passage and a retractable dip tube downwardly slidable through the socket, the top end of said dip tube being closed and having an operating knob, the lower end of

said dip tube serving to rupture the membrane, the side of said dip tube near its upper end having an opening



which when the dip tube is in down position comes into flow communication with said liquid discharge passage.

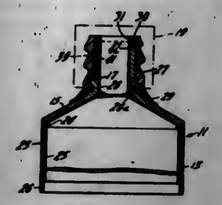
3,186,600
FLEXIBLE PLASTIC CONTAINER WITH HELICALLY DISPOSED PLASTIC GRAIN
Boris Guignard, Lucens, Switzerland, assignor to Compagnie Financiere pour le Developpement Industriel C.O.F.I.D.I. Societe Anonyme, Nyon, Switzerland, a corporation of Switzerland
Original application Jan. 16, 1961, Ser. No. 82,940, now Patent No. 3,109,198, dated Nov. 5, 1963. Divided and this application Oct. 11, 1962, Ser. No. 229,919
Claims priority, application Switzerland, Jan. 27, 1959, 68,807
2 Claims. (Cl. 222—107)



1. In a flexible plastic container,
(a) a tubular seamless plastic side wall of such thickness that it may readily collapse by external pressure;
(b) the upper end of the side wall being predominantly closed and having means forming a discharge opening for the container;
(c) said side wall being smooth internally and externally and having a helically disposed plastic grain extending continuously throughout said side wall and longitudinally thereof, said plastic grain forming an integral part of said side wall.

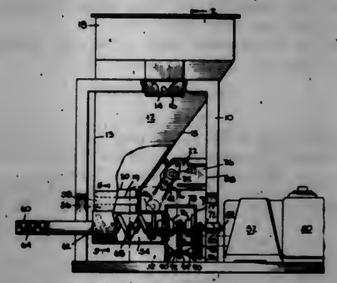
3,186,601
LEAKPROOF DISPENSING TUBE
Nicholas Marchak, Martinsville, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Continuation of abandoned application Ser. No. 122,549, July 7, 1961. This application July 7, 1964, Ser. No. 380,813
5 Claims. (Cl. 222—107)

1. A collapsible tube type container, comprising:
a metal body including a cylindrical shell portion and an integral headpiece having a breast portion terminating in a neck;
a thin film protecting seal on the inside of said headpiece;
said film seal also extending continuously down a portion of the inside of said shell portion in underlying relation to a unitary self-sustaining thermoplastic sleeve fitted within said body;



and said sleeve fitted within said body shell portion only and having its inner end sealed against said film seal to provide a barrier for direct contact with a product to be held in said container.

3,186,602
FEEDING APPARATUS FOR PARTICULATE MATERIAL
Ronald Joseph Ricciardi, Garfield, N.J., assignor to Jos. L. Muscarelle, Hackensack, N.J.
Filed Sept. 5, 1963, Ser. No. 306,845
10 Claims. (Cl. 222—161)

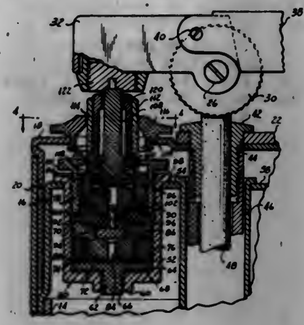


1. Apparatus for conditioning and dispensing particulate solid material comprising a bin supported for pivotal movement about a horizontal line located upwardly from the base thereof at a distance of the order of about two-thirds of the height of the bin, said bin having an upper receiving inlet and a lower dispensing outlet, means for arcuately rocking said bin about said axis, a conditioning chamber flexibly connected to said bin in material flow communication with said outlet, outlet means for said chamber, a first auger disposed within said chamber and extending toward said outlet means, a second larger auger mounted coaxially with respect to said first auger, said second auger being disposed concentrically and in overlapping relationship with respect to said first auger substantially throughout the length of said second auger, and means for rotating said augers at a preselected ratio of speeds.

3,186,603
REGULATABLE LIGHTER VALVE
Ray L. Burchett, East Orange, N.J., assignor to Jacques Kreisler Manufacturing Corporation, North Bergen, N.J., a corporation of New Jersey
Filed Oct. 11, 1962, Ser. No. 229,865
7 Claims. (Cl. 222—189)

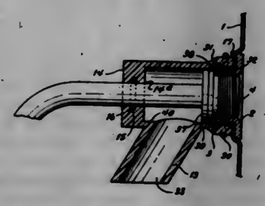
1. A valve assembly for controlling the flow of fluid from a tank including in combination means providing a first opening normally permitting the passage of fluid therethrough, first adjustable means for regulating the flow of fluid through said opening, means providing a

second opening normally permitting the passage of fluid therethrough, second adjustable means for regulating the flow of fluid through said second opening independently of the actuation of said first adjustable means, a shutoff



valve and means mounting said opening providing means in spaced relation in series with each other and with said shutoff valve to permit communication between the atmosphere and the interior of said tank.

3,186,604
FAUCET ATTACHMENT
Walter J. Pentesco, St. Catharines, Ontario, Canada, assignor to American Flange & Manufacturing Co., Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,526
5 Claims. (Cl. 222—191)



1. In a faucet attachment for metal drums, a cylindrical housing formed of yieldable resilient material having a straight cylindrical interior surface, an end wall and an open end, a pouring spout extending laterally from said housing, said end wall having a centrally located circular opening therethrough, an elongated rod-like wrench member extending through said end wall opening and terminating in a closure plug engaging means within said housing, said open end terminating in an integrally formed resilient engaging means for securing said faucet attachment to a container closure structure and an abrupt annular shoulder forming the juncture of said cylindrical interior surface and said enlarged engaging means.

3,186,605
GAS PRESSURE TYPE DISPENSING CONTAINER VALVE
Joseph B. Potoczky, 8975 Burke Ave., South Gate, Calif.
Filed Dec. 26, 1961, Ser. No. 161,854
3 Claims. (Cl. 222—394)

3. A device for actuating a valve operable in response to the application of a predetermined force on said valve, said device comprising:
a first movable member,
said first member being movable in a predetermined direction to actuate said valve by the application of a force to said member in said direction,
an immobile structure spaced from said movable member,
a mobile element, and



a second movable member operatively connected to said first movable member and extending between said first movable member and said immobile structure and movable by said first movable member in said direction, said second movable member providing an area for movement for said mobile element and so disposed in relation to said structure as to gravitationally interpose asid mobile element between said structure and said movable member for blocking movement of said movable member toward said valve actuating direction in all but a predetermined range of attitudes of said device, said area being arranged so that said mobile element is rendered inoperative when said mobile element is in said area.

3,186,606
PUNCH-OUT POURING SPOUT CLOSURE
Robert J. Williams, Dover, Ohio, assignor to Dover Molded Products Company, Dover, Ohio, a corporation of Ohio
Filed Jan. 21, 1963, Ser. No. 252,820
2 Claims. (Cl. 222—541)



1. A combination closure cap and liquid dispenser for use with a squeeze bottle comprising a unitary molded cap having a cylindrical side wall portion and a circular disc-like top portion at one end of said cylindrical portion; receptacle-engaging means on the interior surface of said cylindrical portion, and receptacle-sealing means adjacent the top portion; a shallow pouring spout extending slightly beyond the exterior surface of said top portion, and providing a short dispensing passage the inner wall of which flares outwardly by at least thirty degrees from the axial line of the cap; a thin rupturable diaphragm closing the smaller end of said outwardly flaring passage, said diaphragm having at least two intercepting weakened linear portions to facilitate rupturing of the diaphragm, whereby fluid is dispensed in a coherent stream from the dispensing passage, there being sufficient clearance behind the diaphragm so that ruptured portions thereof can be stressed beyond their elastic limit, whereby such portions are bent inwardly and remain bent to provide a passage for liquid flow.

3,186,607
CONTAINER
Lewis W. Lubenow, 27 Hawthorne Ave., Bloomfield, N.J.
Filed June 19, 1962, Ser. No. 203,550
4 Claims. (Cl. 222—547)

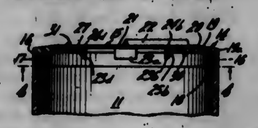
4. A hollow body to serve as a container, comprising a plurality of metal side sheets united at corner portions, a metal bottom sheet closing the area between the lower edges of said side sheets, a metal top sheet closing the area between the upper edges of said side sheets, a generally circular opening offset from the center toward one corner in said top sheet, which sheet is generally unob-

structed on its inner surface around said opening so as to be free from means baffling the flow of material therealong when the body is upturned to a discharge position, and a transition corner plate secured to and depending from the top sheet adjacent the corner toward which said opening is offset and tangential to the periphery of said opening, closing off an area at only one said corner portion immediately beneath said top sheet, tapering while it slopes graduatlly toward, to finally merge with, said corner portion at a substantial distance from said



top sheet, having its side edges secured to the side sheets which are united at said corner portion, said generally circular opening being defined by an upstanding flange united to the top wall along the upper edge of a diagonal connecting plate portion, the upper edge of said flange terminating in a bead, a cover for said opening, the outer edge of which is curved to overlie the bead, a gasket disposed between the top of said bead and said curved cover portion, and a clamping ring for holding said curved cover portion against said bead in compressing relationship with said gasket.

3,186,608
CONTAINER DISPENSING DEVICE
Arvid Kjellson Grimsley, Rockaway, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 8, 1961, Ser. No. 157,898
1 Claim. (Cl. 222—554)



A dispensing device adapted to be sealingly fitted to an open end of a container in circumferentially coextensive relation therewith, comprising:

an annular stator having dispensing openings and a central enlarged opening therein and adapted to be fixedly and sealingly fit to said open container end;

a rotor disk in rotatable engagement with said stator and having an outer diameter less than the outer diameter of said stator, and having a plurality of openings for registration with said dispensing openings in said stator;

a plurality of radially inwardly facing abutment lugs on an inner annular wall of said stator;

a plurality of fingers depending from said rotor having lower claw portions engaging the lower surface of said stator to seat said rotor within an annular recess within the upper surface of said stator;

said annular wall, surrounding and defining said central enlarged opening, providing an edge from which the plurality of radially inwardly facing abutment lugs project and past which edge the lower claw portions of the plurality of fingers snap;

and upper stem portions of said fingers contacting the inner annular wall of that said stator so said rotor may rotate with relation to said stator thus bringing into alignment said stator and rotor openings for dispensing product within said container and said stem portions may engage said abutment lugs to stop rotation of said rotor when said stator and rotor openings are aligned.

3,186,609
GARMENT HANGER
Albert C. Patch, Town House, Apt. 721, Topeka, Kans.
Filed June 21, 1963, Ser. No. 289,567
2 Claims. (Cl. 223—88)



1. A garment hanger having a first member having an upper portion having upper surfaces oppositely inclined with respect to each other and inclined with respect to the vertical in a conventional manner, said upper portion having downwardly extending forward and rearward side surfaces adjoining respective opposite sides of said inclined upper surfaces respectively, said first member having a centrally disposed hook attached thereto and extending upwardly therefrom, a garment back support disposed in use position extending outwardly from a back of the hanger, said support having an outer convex surface for engaging the upper back area of a garment disposed on said hanger, said support having an attaching means attaching the support to the upper, forward and side surfaces of said first member, said attaching means comprising two substantially U-shaped members having open under sides with said U-shaped members being attached to outer extremities of said support in spaced relation to each other with the convex surface of said support projecting outwardly and downwardly to one side of said attaching means, each substantially U-shaped member having one side attached to that side of said support which is adjacent said hanger, said U-shaped members being disposed one on each side of said hook whereby each U-shaped member can be detachably hooked onto said oppositely inclined upper surfaces of said hanger, said first member side surfaces being cooperatively shaped with respect to said U-shaped members whereby at times when said U-shaped members are hooked across the upper surfaces of said garment hanger they will engage the downwardly extending surfaces of said garment hanger for firmly holding said support in said outwardly extending position to support the back portion of a garment, no portions of said convex surface rising substantial distances beyond said inclined upper surfaces whereby an economical construction is defined.

3,186,610
COMBINED COAT AND TROUSERS HANGER
Paul F. Bertram, St. Louis, Mo., assignor to Lee-Rowan Company, St. Louis, Mo., a corporation of Missouri
Filed Feb. 6, 1963, Ser. No. 256,691
2 Claims. (Cl. 223—91)

1. A combination coat and trousers hanger comprising a coat hanger member having diverging arm elements for supporting a coat and a trousers hanger having means pivotally supporting it about a horizontal axis underneath and depending from said coat hanger member, said trousers hanger being comprised of a pair of trousers

gripping members having means continuously biasing them toward one another in gripping engagement and further including handle means comprised of a pair of handle members individually fixed to said gripping members, and extending above the gripping members to the opposite side of said horizontal axis, and operable to open said gripping members against the action of the biasing means, said pivotal support means comprising a horizontal



shaft element supported in fixed relation underneath said coat hanger member and extending generally underneath and parallel to said arms, and said handle means being pivotally supported thereupon and manually operable to pivot the trousers hanger from a substantially vertical position in alignment with said arm elements of the coat hanger member to a substantially horizontal position out of alignment with said arm elements.

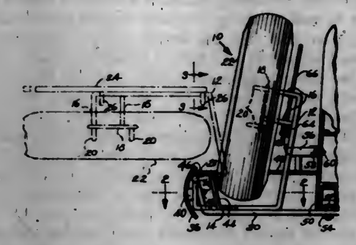
3,186,611
GAME CALL HOLDERS
John Albert Sondermann, South Pekin, Ill., assignor to Philip S. Olt Company, Pekin, Ill., a corporation of Illinois
Filed June 5, 1961, Ser. No. 115,007
2 Claims. (Cl. 224—5)



1. For use with a game call having an external annular groove around the mid-portion thereof and intended to be connected thereto by an adjustable lanyard bight positioned in said groove, a lanyard adapted to be worn around the neck of a user, said lanyard comprising an unbroken loop of flexible, tubular cording having a neck bight portion and a game call bight portion, said neck bight portion being formed and made variable by a first slidable adjustable keeper embracing juxtaposed portions of said cording, said game call bight portion being formed and made variable by a second slidable lengthwise adjustable keeper of a substantial length and embracing juxtaposed portions of said cording, said second keeper abutting an abutment member fixedly securing said juxtaposed portions together and positioned between said first and second keepers, said second keeper being contractably adjustable against said abutment to provide a game call bight portion that may be passed around the mid-portion of said game call and when expandably adjustable providing a bight portion of a diameter conforming to the circumference of said annular groove thus providing a connecting means.

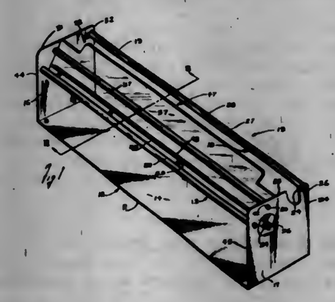
3,186,612
AUTOMOBILE REAR TIRE ATTACHMENT
Douglas Kermett Lyles, 10652 SE. Clinton, Portland, Oreg.
Filed Nov. 20, 1962, Ser. No. 238,990
7 Claims. (Cl. 224—42.01)

1. An automobile spare tire attachment comprising a frame member, means for securing said frame member on an automobile in rearwardly projecting relation, a wheel supporting arm pivotally mounted on said frame member, said wheel supporting arm including an upright portion for holding engagement with a wheel and a rearwardly extending horizontal portion integral with said upright portion, means at the rearward end of said hori-



zontal portion pivotally connecting said wheel supporting arm to said frame member, said wheel supporting arm being normally supported on said frame member in an upright position and being pivotal rearwardly to a horizontal position to the rear of said frame member, and stop means on said frame member for holding said wheel supporting arm in its horizontal position.

3,186,613
SHEET DISPENSING DEVICE
Edward Waltz, Grand Rapids, Mich., assignor to E. O. Bulman Manufacturing Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 5, 1962, Ser. No. 228,651
4 Claims. (Cl. 225—80)



1. A device for guiding and severing a piece of sheet material from a web thereof, comprising:

a frame composed of a base plate and a pair of end plates;

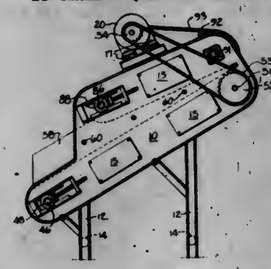
a cutting member mounted on and extending between said end plates at the forward end thereof, said cutting member being substantially parallel with said base plate and being adjacent the upper edge of said end plates;

a pair of vertically offset guide rollers rotatably supported in spaced, parallel relationship upon and between and close to the upper edges of the end plates substantially parallel with said cutting member and spaced different distances therefrom (the axis of the guide roller remote from said cutting member being located below a plane substantially passing through said cutting member and the axis of the adjacent guide roller;

a sheet guide mounted on and extending between said end plates and located below said adjacent guide roller, said sheet guide including a flat guide member

extending upwardly and forwardly from below said adjacent guide roller toward said cutting member into and through the space between said cutting member and said adjacent guide roller, said guide member being of such length that when it is in a substantially horizontal position it extends close to said cutting member, said sheet guide being resiliently urged into an upwardly extending position wherein a region between its ends abuts against and extends substantially tangent to said adjacent roller and its free end is disposed between said adjacent roller and said cutting member and extends a substantial distance above said adjacent roller whereby the web of sheet material can be threaded over said remote roller and under said adjacent roller and can be releasably held against said adjacent roller by said guide member when same is in said upwardly extending position and whereby said guide member can be moved downwardly by force applied to said web so that a portion of said web can be moved forwardly over and beyond said cutting member and can be cut from the remainder of the web, whereupon the guide member will return to its upwardly extending position to grip the remainder of the web against said adjacent roller in readiness for the next cutting operation.

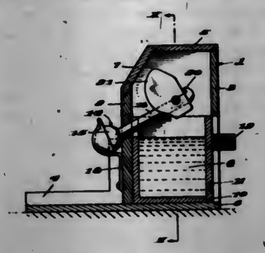
3,186,614
APPARATUS AND METHOD FOR PARTING BINDING STRINGS SURROUNDING WOOL FLEECES
Stanley Wilkinson, Johnsonville, and Dewey B. Cook, Camden, S.C., assignors to Wellman Combing Company, Johnsonville, S.C., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,785
15 Claims. (Cl. 225—100)



1. In the processing of wool fleeces, each of which is bound into a bundle by one or more loops of string, a method of parting the loops of string, comprising the steps of
(a) moving a stream of bound wool fleeces along a predetermined path of travel, while
(b) engaging each of the loops of string at two spaced apart points, and
(c) parting the loops of string by moving the two engaged points further apart.

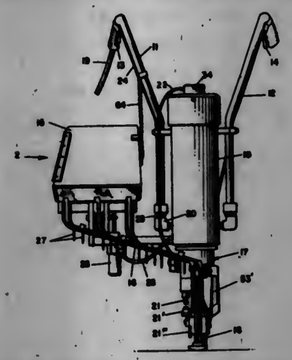
3,186,615
VIAL OPENER
Albert Smith, 27716 Havana Ave., Hayward, Calif.
Filed Nov. 13, 1963, Ser. No. 323,329
8 Claims. (Cl. 225—103)

1. A device for opening sealed glass containers having a tubular stem portion comprising a housing having a stationary supporting member including an aperture therein defining a passageway inclined at an angle to the horizontal, a rigid annular adaptor member releasably secured within said aperture, rotatable hammer means mounted within said housing and rotatable about an axis parallel to the diameter of said aperture such that the free end thereof passes in close proximity to the hole defined by the inner end of said adaptor to strike a stem portion of a glass container protruding through said hole and



into said housing, and means to rotate said hammer means.

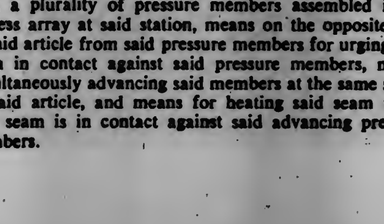
3,186,616
AUTOMATIC NAILING MACHINE
Clyde Weems, 982 Montgomery Court, Thousand Oaks, Calif.
Filed Dec. 14, 1962, Ser. No. 244,742
9 Claims. (Cl. 227—8)



1. An automatic nailing machine comprising, in combination: nail driving means; nail receiving means movably mounted to said nail driving means; an escapement mechanism responsive to movement of said nail receiving means relative to said nail driving means for passing a single nail to said nail receiving means; and actuating means responsive to said movement beyond a given distance for actuating said nail driving means; said nail driving means including a driving pin and pneumatic means for driving said driving pin upon actuation, said machine including a hopper for carrying said nails; track means to guide the nails from said hopper to said escapement mechanism; and shaker means for said hopper responsive to manual triggering for shaking said hopper independently of movement of said nail receiving means.

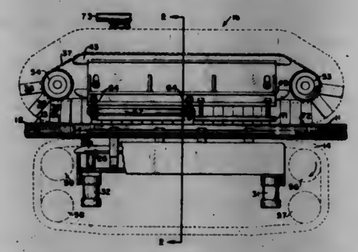
3,186,617
STAPLING APPARATUS
Emil Fischer, Ludwigshafen-Oggersheim, Germany, assignor to Schnellpressenfabrik Frankenthal Albert & Cie. Aktiengesellschaft, Frankenthal, Pfalz, Germany, a company of Germany
Filed Jan. 9, 1963, Ser. No. 250,252
Claims priority, application Germany, Jan. 10, 1962, Sch 30,805
6 Claims. (Cl. 227—81)

1. Staple forming and inserting apparatus comprising in combination:
(1) a staple clinching die,
(2) a rotary stapling cylinder having a circumferential recess and a transverse eccentric bore including a lateral space,
(3) a hollow drive shaft for said cylinder,
(4) a rotary staple forming disc engaging said recess, to form, in the staple forming position of said cylinder, wire members fed thereto and to said cylinder into staples engaging notches in the walls of said recess providing a stapling die,
(5) a staple inserting punch slidably mounted in said bore and having an outer notched end forming the bottom of said stapling die,
(6) stationary guide means extending along the circumference of said cylinder, to retain the staples formed within said recess while moving from the staple



forming position to the staple insertion position of said cylinder with said stapling and clinching dies in registry with one another,
(7) resilient actuating means effective to urge said punch in the outward staple driving direction, and
(8) staple insertion control means being comprised of:
(a) a cam follower carried by said punch,
(b) a stationary shaft mounted within said drive shaft and said lateral space, and
(c) a cam carried by said stationary shaft and engaging said follower, to normally restrain outward movement of said punch and to release said punch in the staple insertion position of said cylinder.

3,186,618
SEALING APPARATUS
George N. Meansoff, Tarrytown, and Bernd W. Haase, New York, N.Y., assignors, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 155,997
7 Claims. (Cl. 228—26)



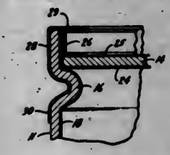
1. Apparatus for forming a continuous overlapped seam in an elongated article comprising a seam sealing station, means for advancing said article past said station, a plurality of pressure members assembled in an endless array at said station, means on the opposite side of said article from said pressure members for urging said seam in contact against said pressure members, means simultaneously advancing said members at the same speed as said article, and means for heating said seam while said seam is in contact against said advancing pressure members.

3,186,619
SHIPPING CONTAINER
Robert B. Le Roy, Moorestown, N.J., and Robert B. Pool, Baltimore, Md., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Feb. 15, 1962, Ser. No. 173,438
11 Claims. (Cl. 229—4.5)



1. A container comprising
a plurality of plies of fibreboard of substantially equal length and disposed with their end portions in offset relationship with respect to the end portions of adjacent plies for overlapping of the end portions of adjacent plies when the ends of each ply are brought into juxtaposition with each other,
a plurality of circumferential tension members spaced one from the other lengthwise of said plurality of plies for securing their end portions in said overlapping relationship and to reinforce said plurality of plies against outwardly directed forces developed by the loading of said container,
a plurality of longitudinal tension members disposed within the container adjacent the inner wall thereof,
a plurality of fastening members substantially uniformly spaced about the periphery of opposite ends of the container, each said fastening member having at least (1) a U-shaped portion within which said plurality of plies nest, (2) closure-supporting elements and (3) means for receiving said longitudinal tension members for application to said longitudinal tension members of outwardly directed forces due to said load within the container,
end closures respectively disposed against said closure-supporting elements, and
means including said closure-supporting elements for retaining said end closures in place.

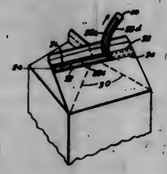
3,186,620
SHIPPING CONTAINER
Antonie H. Meijers, Nederhorst den Berg, Netherlands, assignor, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,617
Claims priority, application Germany, Oct. 18, 1961, V 21,479
4 Claims. (Cl. 229—5.7)



1. A shipping container comprising, in combination, a container body made of fibrous material such as paperboard, a removable lid made of similar material, a layer of liquid-tight sheet material formed on a surface of said lid, said layer having a marginal edge portion protruding radially beyond the periphery of said lid and adapted to be bent outwardly into a position adjacent the

inner surface of said body upon insertion of said lid into said body, a first ring surrounding the upper edge of said body, a second ring disposed inwardly of said first ring, said body and said marginal edge portion, one of said rings comprising a closing ring, and means for tightening said closing ring whereupon said body and said marginal edge portion are pressed together.

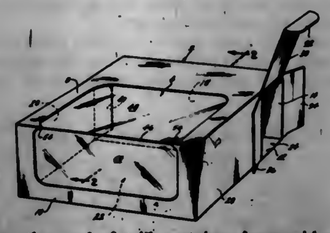
3,186,621
FLUID STORAGE AND DISPENSING CARTON
Soldan A. Svensson, Cincinnati, Ohio, assignor to Gulf States Paper Corporation, Tuscaloosa, Ala., a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,565
1 Claim. (Cl. 229—17)



In storage and dispensing carton for fluid materials formed from a blank of paperboard or the like, a top closure of gable form, comprising to flat, rectangular side flaps joined at opposite ends by bellows-type underfold flaps, the respective underfold flaps being scored along converging diagonal lines to define inter-foldable, triangular portions, said rectangular flaps and underfold flaps being jointly foldable in gable form with the triangular portions of the underfold flaps underlying the rectangular flaps and sealed across their meeting upper edges, the triangular portions of one of said underfold flaps being unfoldable into a common plane, a removable tear-strip extending transversely across said last-named triangular portions in downwardly spaced relation to their upper edges, said tear strip being defined by two parallel cut lines extending transversely across said one underfold flap and cut only partially through the thickness of said blank from the outer surface thereof, and at least one parallel cut line coincident with said first-named cut line and laterally, inwardly offset with respect thereto, said last-named cut line extending only partially through the thickness of said blank from its inner surface, and a tear strip tab integral with one longitudinal extremity of said tear strip, projecting beyond the adjacent boundary of its respective triangular portion, and upon removal of said tear strip, the unfolded triangular underfolds are released and are projectable to form a pouring throat.

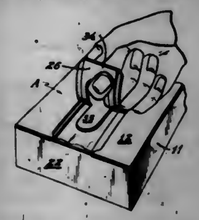
3,186,622
PLURAL COMPARTMENT WINDOW CONTAINER AND BLANK THEREFOR
Charles E. Palmer, Somers, Conn., assignor to Monsanto Company, a corporation of Delaware
Filed Aug. 6, 1963, Ser. No. 300,331
9 Claims. (Cl. 229—27)

3. A plural compartment window container having a windowed compartment and an unwindowed compartment, said container having a frame of relatively rigid and opaque sheet material, a window of transparent, semi-rigid sheet material and means securing said window to said frame, said frame having a plurality of hingedly connected wall panels providing the top, bottom, side and end walls of said container and a partition wall extending across the interior of said container intermediate said end walls dividing the interior of said container into two compartments, said frame having a flap hingedly connected to said partition wall panel engaged to one of the other of said wall panels maintaining said partition wall panel in position, adjacent wall panels spaced towards one end of said container from said partition wall panel having a window aperture therein extending across the hinged interconnection therebetween, the marginal portions of said adjacent wall panels generally normal to the hinged connection therebetween overlapping opposed side margins of said window and said window having a linear fold therein in general alignment with the hinged connection between said adjacent panels, one of said wall panels to-



wards the other end of said container from said partition wall providing a hinged closure for the unwindowed compartment to permit ready access thereto, said frame having flaps hingedly connected to a plurality of wall panels providing the windowed compartment destructively engaged with other wall panels to render said windowed compartment substantially inaccessible and said means securing said window to said frame along said overlapping side margins.

3,186,623
CARTON TEAR STRIP OPENER
Reynolds Guyer, White Bear Lake, Minn., assignor to Waldorf Paper Products Company, Ramsey County, Minn., a corporation of Minnesota
Filed Sept. 5, 1961, Ser. No. 135,945
5 Claims. (Cl. 229—51)

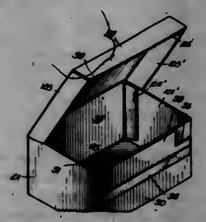


5. A carton opened for use in removing a portion of a carton panel, the opener including an elongated area defined by a pair of generally parallel cut score lines extending into one surface of said panel, a second pair of cut score lines between, and in side by side relation to, the first named cut score lines, and a pair of cut lines extending between said parallel cut score lines at the ends thereof, and a tab defined by a generally U-shaped cut line between said parallel cut score lines with the base of the U-shaped cut line adjacent to one of said cut lines of said pair.

3,186,624
RECLOSABLE CARTON
Edwin L. Arneson, Morris, Ill., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,366
6 Claims. (Cl. 229—51)

1. A generally rectangular paperboard container formed from a cut and scored paperboard blank which is folded and adhesively connected so as to initially form a tubular container of rectangular cross section with one side closed and the opposite side open for filling, the open

side becoming the front wall when the filled and closed container is positioned for opening, and the filled and closed container when positioned for opening, comprising a body forming portion and a side opening cover forming portion, said body forming portion comprising a bottom wall, upstanding front and back walls integrally hinged thereto and upstanding connecting side walls each comprising a panel hinged to the edge of the bottom wall, corner connecting flaps hinged to the end edges of the back wall and connected to the inside faces of adjoining side walls, front wall forming flaps hinged to the front edges of the body side walls and folded into the plane of the front wall, said container cover forming portion comprising a top wall integrally hinged to



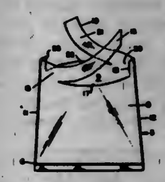
the body back wall, a depending front wall and depending narrow connecting side walls, said cover front wall overlying the top margin of the front wall of the body portion and being connected thereto by readily separable fastening means, said cover side walls each comprising a panel hinged to the top wall and a corner connecting flap hinged to the front end edge of each said panel and secured beneath the end portions of the cover front wall and said body front wall having portions cut away along the top margin thereof to accommodate the corner connecting flaps which are secured to the cover front wall whereby the front wall of the body portion has a uniform two ply thickness at the upper margin beneath the overlying cover front wall.

3,186,625
BAGS FOR MILK AND THE LIKE
Harry A. Mead, Lakewood, Colo. (10060 W. 8th Place, Denver, Colo.), and Lamont Slagel, 6855 S. Adams Way, Littleton, Colo.
Continuation of application Ser. No. 119,732, June 26, 1961. This application July 6, 1964, Ser. No. 386,103
8 Claims. (Cl. 229—53)



1. A bag for milk and the like, comprising front and rear walls attached together at the side edges and formed of a flexible, heat sealable plastic material; a heat seal extending from one edge and generally across a lower portion of said bag to a first generally downwardly extending heat seal; a heat seal extending from the opposite edge and generally across a lower portion of said bag to a second generally downwardly extending heat seal, said first and second downwardly extending heat seals being spaced apart; a heat seal extending between the lower ends of said first and second downwardly extending heat seals, said former heat seals forming a pouring spout upon severance of said bag adjacent said latter heat seal; a transverse heat seal extending across a limited portion of the top of the bag; and a heat seal extending downwardly from each end of said top heat seal, then outwardly to the respective edges of said bag, thereby forming a filling spout upon severance of said bag adjacent said transverse heat seal.

3,186,626
BAG EMBODYING ONE OR MORE TIE-STRIP PORTIONS, AND SHEET MATERIAL PROVIDING THE SAME
Roman E. Shvetz, 580 5th Ave., New York, N.Y.
Filed Nov. 26, 1963, Ser. No. 326,277
7 Claims. (Cl. 229—62)



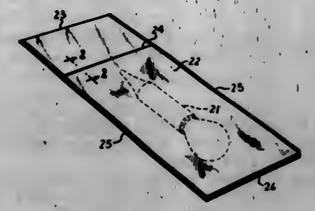
1. A bag formed of sheet material and comprising a front side and a rear side having generally horizontal top and bottom edges and united at their bottom portions and at two edge portions extending generally upwardly therefrom, a top portion thereof comprising at least one generally horizontal tie-strip portion unitary at at least one end with and merging into said sheet material and extending downwardly from a top edge to a generally horizontal line defining its bottom edge, said sheet material being formed with a rupturable separation line at said horizontal line, and said tie-strip portion being further defined at its other end by a separation-line extending away from said top edge and toward the first mentioned separation line.

3,186,627
BAG VALVE
Johan Carl Julius Evenblij, Koog aan de Zaan, Netherlands, assignor to Dutch Company "Polypress N.V.," Zaandam, Netherlands
Filed Sept. 6, 1962, Ser. No. 221,783
Claims priority, application Netherlands, Sept. 7, 1961, 269,052
3 Claims. (Cl. 229—62.5)



1. A bag comprising bag walls defining a cavity and at least one edge, and a flexible tube of V-shape in said cavity, said tube having opposite ends one of which is closed, said tube being attached to one of the edges of the bag, said tube being folded upon itself along a diagonal line intermediate the ends of said tube with an intermediate communication opening in said diagonal fold line.

3,186,628
PACKAGING
William A. Rohde, Wheeling, Ill., assignor to Tower Packaging Company, Wheeling, Ill., a corporation of Illinois
Filed Mar. 27, 1964, Ser. No. 356,354
7 Claims. (Cl. 229—66)



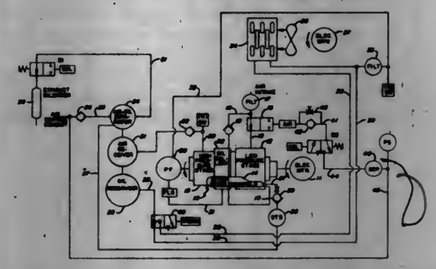
2. A rupturable envelope adapted to be edgewise sealed to form an imperforate package comprised of two opposed imperforate thermoplastic flexible sheet material layers, at least one of said layers being formed with a relatively thinned groove line in the envelope body portion thereof comprising a line of predetermined opening extending inwardly of the area to be sealed.

3,186,629
PAPER AND COIN CONTAINER
Carl L. Tucker, Englewood, Colo., assignor to Rockmont Envelope Company, Denver, Colo., a corporation of Colorado
Filed Dec. 4, 1963, Ser. No. 327,998
2 Claims. (Cl. 229—72)



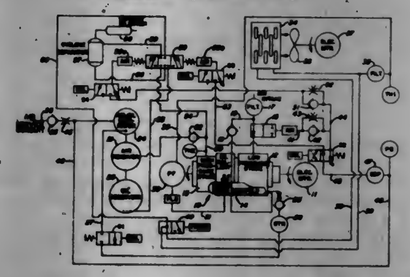
1. An envelope-like container formed from a bank having a central panel and panels extending from one end and the opposite sides thereof, the panel extending from the end of the central panel being generally rectangular having a width not greater than the width of said central panel and a length substantially less than that of said central panel, said end panel comprising a body portion and a flap portion, said flap portion being hingedly connected to said body portion along a side opposite that from which extends said central panel, said end panel in its folded position overlying a portion of said central panel, one of said side panels having a length not greater than the length of said body portion and, prior to folding thereof, having a bottom edge extending generally co-linearly with the end of the central panel from which extends said end panel, said one of said side panels, in its folded position, overlying generally the body portion of said end panel and having adhesive means formed along the side and bottom edges thereof for attachment thereof, in its folded position, to an adjacent portion of the body of said end panel to form a coin pocket, said coin pocket being closable upon folding the flap portion of said end panel to overlie a portion of said side panel, said coin pocket and said central panel forming a paper pocket, said other side panel being freely foldable over said coin pocket and a portion of said central panel.

3,186,630
ROTARY COMPRESSOR
Ralph E. Lamberton, Worthington, and Orville R. Lowther and Robert A. Redding, Columbus, Ohio, assignors to The Jaeger Machine Company, Columbus, Ohio, a corporation of Ohio
Filed Sept. 5, 1963, Ser. No. 306,952
13 Claims. (Cl. 230—26)



1. A rotary compressor comprising low-pressure and high-pressure stages having air-compressing rotors, a pressure lubricating-cooling system for said stages and connected thereto for supplying oil thereto, an inlet valve controlling the inlet of air to be compressed into said low-pressure stage, an air and oil receiver system connected to the discharge of said high-pressure stage for receiving the oil and air mixture discharged thereby, said receiver system including separator means for separating the oil and air of the mixture, said separator means having an inlet for the mixture, an outlet means for the air and an outlet means for the oil for returning it to said stages, a venting unloading valve connected to said separator air outlet means of the receiver system, said receiver system including a service line leading therefrom and connected to said separator air outlet means thereof, a check valve in the service line for preventing venting of said line upon opening of said venting unloading valve in the receiver system, and control means connected to both of said valves for closing the inlet valve and opening the venting unloading valve to freely unload the compressor, said control means comprising a pressure line connected to said service line and to said inlet valve for actuating it to close said inlet valve when pressure in the service line reaches a selected upper limit and thereby to unload the inlet side of the compressor.

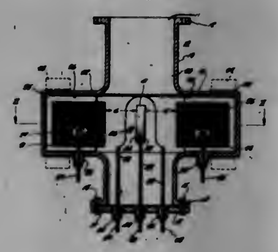
3,186,631
ROTARY COMPRESSOR
Ralph E. Lamberton, Worthington, and Orville R. Lowther and Robert A. Redding, Columbus, Ohio, assignors to The Jaeger Machine Company, Columbus, Ohio, a corporation of Ohio
Filed Oct. 3, 1963, Ser. No. 313,601
19 Claims. (Cl. 230—26)



1. A rotary compressor comprising low-pressure and high-pressure stages having air-compressing rotors, a

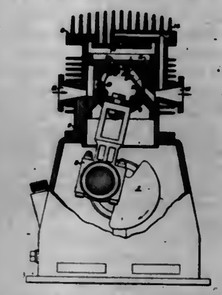
pressure lubricating-cooling system for said stages and connected thereto, an inlet valve connected to said low-pressure stage for controlling the inlet of air thereto, an air and oil receiver system connected to a discharge port of said high-pressure stage for receiving the air and oil mixture discharged therefrom and including a service conduit leading therefrom, said receiver system being connected to said discharge port by a conduit having a check valve interposed therein to prevent fluid flow from said receiver system, a directional flow control valve connected to said discharge port to vent said high-pressure stage to atmosphere, and control means connected to said valves for closing the inlet valve and operating the flow control valve to vent said high-pressure stage for freely unloading the compressor, said control means being responsive to the pressure in said air service conduit for actuation to close said inlet valve and operating the flow control valve to vent said high-pressure stage when the pressure in said service conduit reaches a selected upper limit to thereby freely unload the compressor while maintaining said receiver system under pressure and to open said inlet valve and operate said flow control valve to prevent venting of said high-pressure stage when the pressure in said service conduit reaches a selected lower limit to thereby load the compressor, said pressure lubricating-cooling system including a supply tank connected in said receiver system and an air-oil separator vented to atmosphere, said supply tank and air-oil separator being connected to said flow control valve whereby actuation thereof to a first position will operatively connected said supply tank in said lubricating-cooling system and actuation to a second position will operatively connect the separator to the discharge port of said high-pressure stage, said valve when in said second position also preventing further outflow from said supply tank.

3,186,632
IONIZATION VACUUM PUMP
Thomas A. Connor, Hilton, N.Y., assignor to Consolidated Vacuum Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 11, 1963, Ser. No. 257,401
25 Claims. (Cl. 230—69)



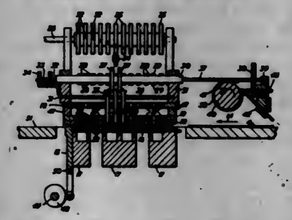
1. An ionization vacuum pump comprising an enclosure for confining an evacuated space, means for connecting said enclosure to a space to be evacuated, a source of gas molecule-entrapping material in said enclosure, a plurality of separate anode structures insulated from each other, located in said enclosure and spaced substantially equally from said source of material, and means for applying to each of said anode structures an individul electrical potential with respect to said source of material, each potential applied to one of said anode structures being distinct from the potentials applied to the others of said anode structures.

3,186,633
COMPRESSORS
Martin Gomez Martinez, Zaragoza, Spain
Filed June 12, 1962, Ser. No. 201,831
Claims priority, application Spain, June 15, 1961, 268,273; May 30, 1962, 277,852
9 Claims. (Cl. 230—190)



1. A compressor comprising a cylinder, a piston slidable in said cylinder, said piston having a cavity, a piston rod supported in said cavity for undergoing rotatable movement therein, means connected to said piston rod for reciprocally driving the piston rod and the piston therewith through compression and intake strokes while causing the piston rod to undergo synchronized rotatable movement within the cavity of the piston, said piston and piston rod being provided with ports which are respectively and selectively in communication with one another at specific positions of the piston rod within the piston and specific positions of the piston within the cylinder, said cylinder being provided with a separate fluid inlet and outlet which are in communication with the ports of the piston at specific positions of the latter within the cylinder such that fluid is admitted to said cylinder through the fluid inlet and through aligned ports in the piston rod and piston during an inlet stroke of the piston while the fluid is expelled from the cylinder under pressure through the fluid outlet and through other corresponding aligned ports in the piston and piston rod, said outlet port in the cylinder being operatively positioned with respect to the corresponding port in the piston to be in communication therewith only after the piston has completed a determinable portion of the compression stroke and for the remainder thereof.

3,186,634
DATA RECORDING APPARATUS
Alan Foster, Addiscombe, and Raymond Owen Parmenter, Mitcham, England, assignors to International Computers and Tabulators Limited
Filed Mar. 27, 1963, Ser. No. 268,408
Claims priority, application Great Britain, Apr. 4, 1962, 12,939
3 Claims. (Cl. 234—112)



1. Data item recording apparatus including a plurality of individual recording members arranged in matrix formation in rows and columns; a group of first members

each aligned with a different row respectively of said recording members, said first members being spaced from said recording members and being mounted for movement towards and away from said recording members; first driving means operative to move the first members sequentially towards said recording members; a group of second members each associated with a different column of said recording members respectively; second driving means for operating said second members selectively; and a plurality of groups of linking members, each group of linking members being moved from inoperative to operative positions by operation of a different one of said second members respectively, said linking members when in their operative positions being positioned in the paths of movement of said first members and effective to transmit movement of said first members to said recording members to record items of data and when in their inoperative positions being positioned out of the paths of movement of said first members.

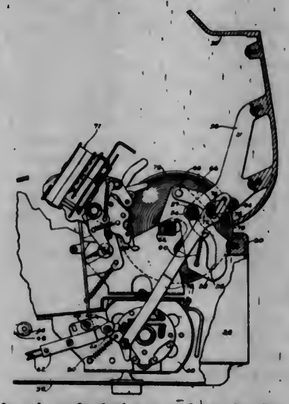
3,186,635

ACCESS HOOD FOR CALCULATING MACHINE

Ralph L. Schultz, Chicago, Ill., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Original application Aug. 4, 1960, Ser. No. 47,491. Divided and this application Nov. 14, 1963, Ser. No. 323,631

6 Claims. (Cl. 235—1)



2. In an electric calculating machine having a hood which may be raised for purposes of inspection, maintenance, and replacement of the ink ribbon, an electric motor, a motor switch, and control keys for closing the motor switch, a guide and safety mechanism for the hood comprising a pair of spaced vertical plates each having a guide slot which is generally vertical at its lower end and arcuate at its upper end in generally concentric relation with an axis rearwardly thereof, a pair of arms depending from the hood each having a stud received in one of the slots, a pair of links each pivotally supported by one of the plates, a pair of pins pivotally connecting the links to the arms rearwardly of the slots, the studs and the vertical portions of the slots causing links to pivot about their supports on the plates upon initial upwardly directed force on the hood to move the rear portion of the hood upwardly and rearwardly and to move the pins into coaxial relationship with said axis, the studs and arcuate portions of the slots causing the links to pivot about the pins for pivotal movement of the hood, and a linkage connected between one of the pair of links and the motor switch to render the latter inoperative when the hood is in raised position to prevent cycling of the machine by a control key.

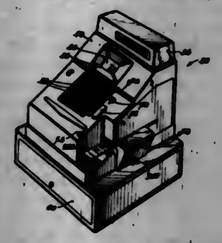
3,186,636

RECEIPT PRINTING AND VALIDATING DEVICE

Robert C. Hoffmann, Park Ridge, Raymond M. Faber, Chicago, and Robert H. Schnakenberg, Park Ridge, Ill., assignors to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Filed Mar. 12, 1962, Ser. No. 179,021

6 Claims. (Cl. 235—3)



1. In a cash register adapted to perform add and total operations for cash and charge transactions and having a side printer for issuing cash receipts from a tape and for issuing individual charge receipts, means for advancing the cash and charge receipts, a consecutive numbering device, form print means for printing a heading on the cash receipts and for actuating the numbering device, a cash drawer latching mechanism, an item accumulator control shaft selectively operated in one manner during each add operation and in another manner during each total operation, a manually operable validate lever having cash and charge positions, control mechanisms selectively operated by the control shaft and the validate lever rendering the advancing means effective for each cash transaction to advance the cash receipt tape a first desired amount and a second greater desired amount during each add and total operation respectively and for each charge transaction to advance a charge receipt a desired amount during each add and total operation, control mechanisms selectively operated by the control shaft and the validate lever rendering the form print means effective only during each total operation of a cash transaction, and means selectively operated by the control shaft rendering the latching mechanism ineffective only during total operations.

3,186,637

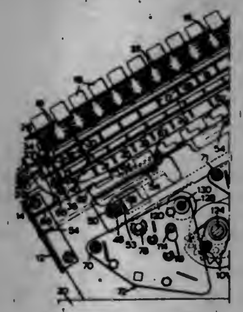
CASH REGISTERS AND LIKE ADDING MACHINES

Henry Gross, "Braewood," Winnington Road, and Samuel Gross, 22 Winnington Road, both of London N. 2, England

Filed Oct. 22, 1962, Ser. No. 232,134

Claims priority, application Great Britain, Nov. 8, 1961, 39,972/61, 39,973/61

9 Claims. (Cl. 235—6)



1. In a cash register of the class described, having a pair of counter units pivotable about parallel axes and each having toothed wheels aligned with movable rack elements, cam followers on said counter units each cooperable with one of two groups of coaxial cams, each cam follower including a roller rotatable about an axis parallel to the pivotal axes of said counter units and movable in the direction of its axis of rotation, means to rotate said groups of cams, and means to move the follower roller on one or each of said counter units in the direction of its pivotal axis to register with a selected cam of the associated group of cams whereby said counter unit is rocked during a predetermined phase in the movement of the rack elements first into and then out of an operative position in which the toothed wheels thereof are meshed with the rack elements.

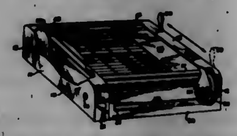
3,186,638

VOTING MACHINE

James M. Detering, Northbrook, Ill., Leonard L. Johnson, Fort Wayne, Ind., Stanley F. Meiner, Boston, Mass., and Robert G. Nutting, Glenview, Ill., assignors, by mesne assignments, to Automatic Voting Machine Corporation, Jamestown, N.Y., a corporation of Delaware

Filed Apr. 26, 1962, Ser. No. 190,401

3 Claims. (Cl. 235—51)



1. A vote selection device including a frame mounting thereon a paper ballot, a pressure-operative ballot marker having a printing portion adapted to be used to mark said paper ballot to identify a voter's selections thereon, a magnetic record tape carried by said frame and disposed beneath said paper ballot, said ballot marker also having a magnet portion disposed in proximity to said printing portion and adapted to impose a magnetic record on said record tape corresponding to the mark made on said paper ballot.

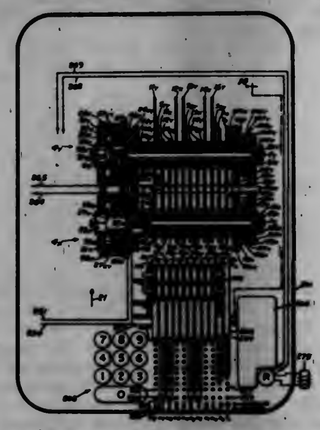
3,186,639

MECHANICALLY VARIABLE ELEMENTS TO CALCULATE CHECK SYMBOLS

Karel J. Staller, Rutherford, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Apr. 13, 1961, Ser. No. 102,692

35 Claims. (Cl. 235—60)



1. A calculating device comprising a series of independent mechanical elements arranged to intercept variable length sections of a line common to all of said elements, means coupled to said elements for selectively varying the line sections intercepted by said elements with reference to initial idle section intercepting conditions of said elements, and means operative subsequent to each operation of said means for varying to measure the total length of said intercepted line sections by shifting all of said elements into end-to-end contact and measuring the distance between a first and last of said elements.

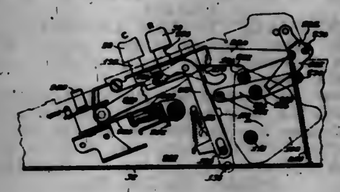
3,186,640

CONTROL MECHANISM FOR CALCULATING MACHINES

Ralph L. Schultz, Chicago, Ill., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Continuation of abandoned application Ser. No. 47,491, Aug. 4, 1960. This application Nov. 14, 1963, Ser. No. 325,803

12 Claims. (Cl. 235—60)



1. In a calculating machine having a shaft angularly displaceable from a normal position in which it is adapted to control an accumulator for an adding operation to second and third positions in which it is adapted to control the accumulator for total and subtotal taking operations respectively and having a pin carriage and numeral keys selectively registering amounts in the pin carriage and moving the pin carriage from a normal position when an amount is registered, a shaft positioning mechanism comprising a combination add and total taking key, a combination add and subtotal taking key, a first linkage controlled by the combination keys and conditioned to shift the shaft from its normal position to the second or third position upon actuation respectively of the total or subtotal keys when no amount is registered in the pin carriage, and a second linkage controlled by the pin carriage engageable with the first linkage to prevent operation thereof and to maintain the shaft in its normal position when an amount is registered in the pin carriage and to release the first linkage for operation immediately at the conclusion of an add cycle of the machine.

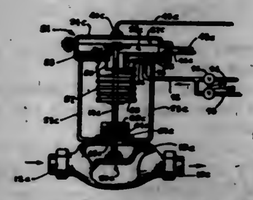
3,186,641

CONTROL FOR VAPOR FLOW VALVE

William Goodman, 1236 E. Madison Park Ave., Chicago, Ill.

Filed Jan. 4, 1960, Ser. No. 363

8 Claims. (Cl. 236—49)



1. In a vapor condensing system of the kind wherein a vapor condensing device has an inlet conduit connected to a source of supply of vapor and a continuously open outlet connected to an outlet conduit, a control mechanism

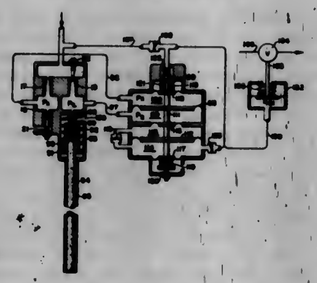
for regulating the supply of vapor to the condensing device comprising, a regulating valve disposed in the conduit for governing the amount of vapor supplied to the condensing device, first means responsive to the fluid temperature at the outlet of the condensing device for moving the valve in a closing direction, second means responsive to the fluid pressure within the condensing device for moving the valve in an opening direction, a flexible element connected to the valve to exert a biasing force to move the valve in a closing direction, and conduit means connected to supply a fluid under pressure to the flexible element, whereby the pressure acting on the flexible element maintains a differential between the temperature of the fluid at the condensing device outlet and the saturation temperature corresponding to the pressure internal of the condensing device so as to maintain a sub-cooled condition of the condensate at the outlet as determined by the biasing means for any vapor pressure within the condensing device.

3,186,642

PNEUMATIC CONTROL APPARATUS

Alexander Silver, Tarzana, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Application Aug. 16, 1956, Ser. No. 604,421, now Patent No. 3,027,904, dated Apr. 3, 1962, which is a division of application Ser. No. 306,139, Aug. 25, 1952, now Patent No. 2,775,231, dated Dec. 25, 1956. Divided and this application Jan. 5, 1962, Ser. No. 164,539
1 Claim. (Cl. 236—79)



Control apparatus comprising:

a pressure sensing unit having a pair of parallel flow passages connected with a common fluid pressure source;

a pair of spaced restricted sonic velocity flow openings in each of said passages whereby an intermediate pressure is effected between each of said pair of flow openings;

means for adjusting one of the restricted flow openings in each of said flow passages to preset said intermediate pressures to desired values;

means for modulating flow through the remaining restricted flow opening of one of said flow passages in response to changes in a character of a sensed medium;

pilot valve means including a first balanced pressure responsive movable wall;

means for subjecting one side of said first movable wall to the intermediate pressure in one of said pair of flow passages;

means for subjecting the other side of said first movable wall to the intermediate pressure in the other of said pair of flow passages;

an actuator having a connection with the fluid pressure source supplying fluid to the flow passages of the pressure sensing unit;

means responsive to movements of said first movable wall for modulating flow of fluid from the fluid pressure source to said actuator;

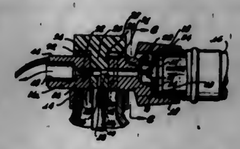
and stabilizing means including a second pressure responsive movable wall in said pilot valve means arranged to cooperate with said first pressure responsive movable wall to counteract surges in the fluid flowing to said actuator.

3,186,643

SPRAY GUN HAVING DISK, DIAPHRAGM AND PLUG CONSTRUCTION

Phillip F. George, San Diego, and Leonard M. Collins, Los Angeles, Calif.; said Collins assignor to Mario J. Manetti and Fred P. Manetti, both of Chicago, Ill.

Filed Mar. 4, 1963, Ser. No. 262,757
6 Claims. (Cl. 239—318)



5. In a device for preventing backflow of a fluid, the combination of:

a conduit for fluid having an inlet portion and an outlet portion;

a substantially rigid flat disk disposed across said conduit in said inlet portion and having a generally annular perforate portion surrounding a central imperforate portion; and

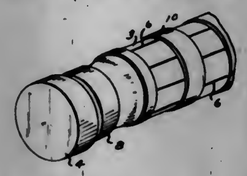
a generally flat resilient diaphragm disposed across said conduit on the outlet side of and adjacent said disk, said diaphragm having a flat central portion aligned with said central imperforate portion of said disk and having slits therein, and a plurality of generally annular sealing surfaces surrounding said central slits, said flat central portion and said annular sealing surfaces contacting said imperforate central portion of said disk when said diaphragm is in an undistended position to prevent backflow of fluid from said outlet portion to said inlet portion through said slits in said diaphragm and said perforate portion of said disk.

3,186,644

DIFFUSER HEAD

David S. Ross and Gene W. Ross, Lorain, Ohio, assignors to The Amcodyne Corporation, Lorain, Ohio, a corporation of Delaware

Filed Feb. 6, 1963, Ser. No. 256,735
11 Claims. (Cl. 239—534)



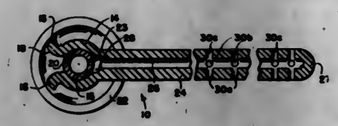
1. A diffuser head comprising, in combination, a perforated hollow core adapted to receive gas under pressure, a resilient sleeve receiving said hollow core, said sleeve being adapted to distend under said air pressure, a plurality of slits in said sleeve, the opposed wall surfaces of each of said slits being in intimate contiguous sealing engagement when said resilient sleeve is in a relaxed condition, and tape means adhered to said sleeve adjacent the ends of the slits to restrain expansion of the sleeve at the end portions of said slits.

3,186,645

SPRAY NOZZLE FOR PRESSURIZED CONTAINERS

Roberta R. Eberlein, 225 E. 36th St., New York, N.Y.

Filed Feb. 10, 1964, Ser. No. 343,586
3 Claims. (Cl. 239—567)



1. A spray nozzle for pressurized containers comprising, in combination, a mounting cap for receiving a dispensing valve stem of a pressurized container, a discharge stem integral at one end with said cap having a longitudinal bore closed at one end and having port means at the opposite end communicating with the interior of said cap, said stem having a plurality of laterally outwardly opening apertures for dispensing fluid therethrough, said mounting cap comprising a hollow cylindrical member having a downwardly extending side wall defining a socket for receiving a dispensing valve stem therewithin, one side of said side wall having said port means communicating with said longitudinal bore, another portion of said side wall having a pair of radially outwardly extending resilient tabs defining a restricted passageway for receiving the dispensing valve stem laterally therethrough, and said port means comprising an orifice extending through said side wall and flared outwardly from said longitudinal bore toward the interior of said socket.

3,186,646

EXPENDABLE SPRAY NOZZLE

Wilfred D. Kennedy, Marion, Ohio, and Carl E. Schiman, Stevensville, Mich.; said Kennedy assignor to Whirlpool Corporation, Benton Harbor, Mich.

Filed Nov. 27, 1963, Ser. No. 326,412
6 Claims. (Cl. 239—602)



4. An expendable, replaceable, spray nozzle comprising: a body portion defining a fluid passage therethrough; and a resilient, deformable coupling portion including: a base member, a plurality of peripheral lands and grooves about said base member, and a proximal land extending radially outwardly of said plurality of peripheral lands, said proximal land having outwardly angled surfaces and defining a plurality of spaced notches.

3,186,647

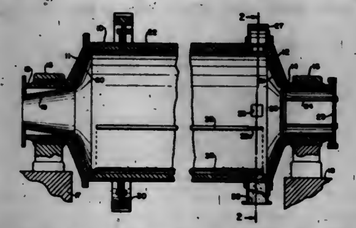
METHOD AND APPARATUS FOR THE DEFIBRATION OF FIBROUS MATERIALS

Jan Peterson Bacher, Aalborg, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed Oct. 19, 1962, Ser. No. 231,716
Claims priority, application Great Britain, Oct. 23, 1961, 37,976/61
11 Claims. (Cl. 241—4)

1. A method of defibrating asbestos in the form of small fiber bundles, which comprises making a mixture of the asbestos material as received from the quarry substantially free from gangue with water with the water present in an amount not less than about 10% nor more than about 50% by weight of the mixture and subjecting the mixture to the action of the rods in a rod mill.

7. A rod mill for use in defibering asbestos in the form of small fiber bundles, which comprises a generally cylindrical shell having an unobstructed interior with end plates and hollow trunnions connected to the end plates and extending axially therefrom, one trunnion having an open outer end and serving as an inlet, the shell having a plurality of unobstructed outlet openings



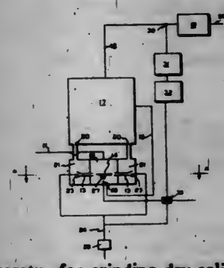
adjacent to the end plate remote from the inlet and uniformly distributed circumferentially, bearings for the trunnions, a charge of rods in the mill in contact with the shell, the rods having relatively short sections of reduced diameter at their ends adjacent to the outlet openings, and a casing enclosing the zone of the shell containing the outlet openings.

3,186,648

FLUID ENERGY MILL

Richard M. Mandle, Pompton Lakes, N.J., and Thomas O. Tongue, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed May 27, 1963, Ser. No. 283,459
1 Claim. (Cl. 241—34)



An apparatus for grinding dry solids which comprises in combination a fluid energy mill, wherein said dry solids are comminuted by impingement upon themselves in a dry heated gas stream and separation of comminuted particles from said gas stream is impeded by the buildup of static electric charges on said particles, means for injecting water into the particle stream passing through said mill to dissipate the static charge on said particles, means for monitoring static electric charge on the particles of said stream, water controlling means for controlling the amount of water injected by said injection means, said controlling means responsive to said monitoring means whereby the amount of water injected into said particle stream is proportional to the amount required to substantially dissipate the static electric charge thereon as determined by said monitoring means.

3,186,649

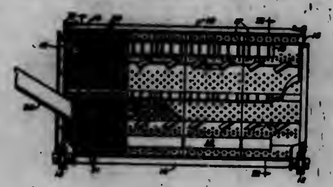
COAL BREAKER

Henry Haltof, Portage, Ind., assignor to United States Steel Corporation, a corporation of New Jersey

Filed Nov. 23, 1962, Ser. No. 239,730
2 Claims. (Cl. 241—81)

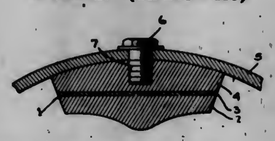
1. In a rotary coal breaker which includes a drum having feed and discharge ends, means rotatably sup-

porting said drum, drive means operatively connected with said drum for rotating it, and means for introducing coal to the feed end of said drum, said drum having a perforated cylindrical wall which extends along a portion of its length spaced from the feed end, means inside said wall for feeding coal along the length of the drum, and means inside said wall for lifting coal and allowing it to fall and break into pieces which pass through the



perforations in said wall, the combination therewith of means for eliminating fines from coal introduced to said drum before the coal reaches said wall and thus preventing overloading of the drum, said last-named means comprising a plurality of spaced-apart peripherally extending bars forming the drum wall in the space between the feed end and said perforated wall, the spaces between said bars forming peripherally extending slots through which fines discharge without clogging.

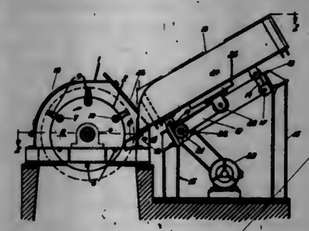
3,186,650
DUPLEX MILL LINERS
Ronald H. T. Dixon, Chesterfield, and Arthur J. Rickard, Solihull, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 12, 1962, Ser. No. 186,893
Claims priority, application Great Britain, Apr. 13, 1961, 13,356/61
3 Claims. (Cl. 241—183)



1. A tumbling mill liner comprising a uniformly abrasion-resistant, continuous and substantially homogeneous cast metal face of carbidic cast iron and a readily machinable impact-resistant cast metal back of metal selected from the group consisting of spheroidal graphite cast iron and cast steel continuously metallurgically bonded to said face by an interface zone characterized by a cast structure of mixed metal of said face and said back.

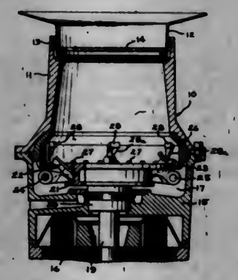
3,186,651
CRUSHER
Enzo Briolini, Pescara, Italy, assignor to Polysius G.m.b.H., Neubeckum, Germany
Filed Apr. 12, 1962, Ser. No. 187,089
Claims priority, application Germany, Apr. 15, 1961, P 26,975
1 Claim. (Cl. 241—186)

A crusher installation, particularly for crushing moist sticky materials, which comprises; a housing, a rotor cylindrical in outline and rotatable on a horizontal axis in said housing, a plurality of crusher hammers pivotally supported by and circumferentially and laterally distributed over said rotor so that the paths of said hammers during rotation of said rotor will be along circles about the axis of rotation of said rotor, a substantially planar grate comb in said housing stationarily arranged with regard to said rotor for cooperation with said hammers having slots through which said hammers pass, said grate comb being so positioned relative to the circular hammer paths at approximately the level of a horizontal plane passing through the axis of rotation of said rotor, said comb having its upper surface inclined upwardly in a direction away from the rotor at an angle of about 30° to the horizontal, a charging chute for delivering materials to said comb and extending substantially parallel to said surface of said grate comb and thus at an inclination of about 30° to the horizontal, the lower discharge end of said chute being located near and above said surface of said grate comb and thus in the region of the level of said horizontal plane passing through the axis of rotation of said rotor, the spacing between each two adjacent slots of the grate comb being the same as the spacing between laterally adjacent ones of said hammers, each



slot receiving at least one hammer, said hammers being distributed about the length and circumference of the rotor in spaced relation according to a pattern which repeats, each said hammer in cross section tapering inwardly to an edge in both the front and the back and being substantially symmetrical with respect to a longitudinal axis, a plate-like feed control valve carried by the housing and extending laterally into said chute and adjustable toward and away from the bottom of the chute for regulating the rate of movement of material to the grate comb, a support fixed in the housing, said grate comb being detachably mounted on said support, and said housing including an opening formed therein aligned with said support and through which said grate comb can be withdrawn when detached from said support.

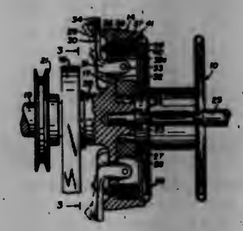
3,186,652
COMMINUTING ASSEMBLY FOR A FOOD WASTE DISPOSER
Albert L. Hardy, Louisville, Ky., and Charles E. Hauser, Jeffersonville, and James E. Stiner, New Albany, Ind., assignors to General Electric Company, a corporation of New York
Filed Sept. 26, 1963, Ser. No. 311,806
7 Claims. (Cl. 241—257)



1. A comminuting assembly for a food waste disposer comprising:

(a) at least one stationary grinding pad,
(b) a rotatable flywheel,
(c) a first impeller carried by said flywheel adjacent the periphery thereof and having an inclined top surface to impart a lifting action to food waste coming into contact with said impeller, and
(d) a second impeller carried by said flywheel and adapted to cooperate with said grinding pad to grind the food waste within the disposer,
(e) said first impeller and said second impeller travelling in substantially the same path upon rotation of said flywheel.

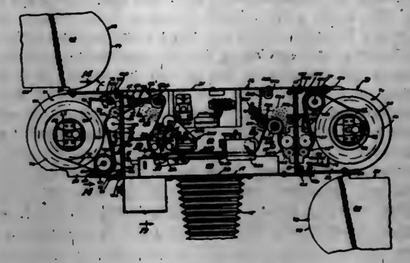
3,186,653
CENTRIFUGAL SELF-CLEANING SNAGGER
John Joseph Stefaniszyn, Pointe Claire, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Oct. 29, 1962, Ser. No. 233,615
11 Claims. (Cl. 242—25)



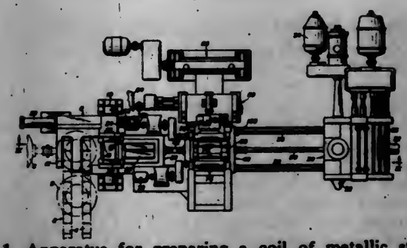
1. A snagger plate for a strand take-up mechanism in which a take-up reel is rotatably and drivably mounted, comprising a plate adapted to be mounted on the take-up mechanism adjacent a flange of the reel for rotation therewith, pivot means mounted on the plate and having a pivot axis which extends at a substantial angle to the axis of rotation of the plate, a snagging member having a free end and mounted on said pivot means for pivotal movement between a normal position in which said free end is spaced axially from the plate on the side thereof remote from the reel and a snagging position in which it is in contact with the plate, the snagging member adopting said snagging position by the action of centrifugal force thereon upon rotation of the plate above a critical speed, said free end of the snagging member in said snagging position extending beyond the periphery of the plate and defining with the periphery of the plate a slot which lies beyond the periphery of the plate and diverges in the direction of rotation of the plate, whereby a strand laid across the periphery of the plate will be snagged in said slot.

3,186,654
MAGAZINE FOR PHOTOGRAPHIC PRINTER MACHINE
Karl J. Kallenberg, Minneapolis, Minn., assignor to Pako Corporation, Minneapolis, Minn.
Original application Mar. 10, 1959, Ser. No. 798,503, now Patent No. 3,113,498, dated Dec. 10, 1963. Divided and this application Jan. 16, 1963, Ser. No. 251,791
4 Claims. (Cl. 242—55.11)

1. A photographic printer machine comprising, in combination, a casing, brake shoe means mounted on one end of said casing having means for actuating said brake shoe means, driving means mounted on the outer end of said casing, a magazine having a spool for print paper rotatably mounted therein, a pulley mounted on the outside of said magazine and connected to said spool, means for mounting said magazine on either end of said casing, said pulley engageable by said brake shoe means for braking said spool when mounted on one end of said casing and engageable with said driving means for rotating said spool when mounted on the other end of said casing.



3,186,655
METHOD AND APPARATUS FOR HANDLING COILS OF STRIP
Russell D. Huffington, Gary, and Hans O. Linde, Long Beach, Michigan City, Ind., assignors to United States Steel Corporation, a corporation of New Jersey
Filed Nov. 20, 1959, Ser. No. 854,471
11 Claims. (Cl. 242—79)

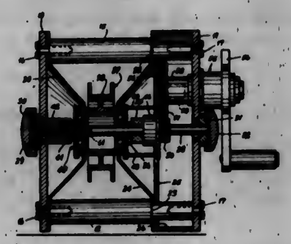


11. Apparatus for preparing a coil of metallic strip material for processing comprising, in combination, a coil receiving station, a coil unwinding station, first coil transfer means disposed in advance of a strip processing line and shiftable between the coil receiving station and the coil unwinding station, means to deliver coils of strip material to the coil receiving station, coil opening means disposed adjacent the coil unwinding station, shear means placed adjacent the coil opening means to receive strip therefrom, a line feeding station at the entry end of the processing line, second coil transfer means shiftable between the unwinding and said line feeding station, and shifting means in operative connection with the first coil transfer means and the second coil transfer means.

3,186,656
PRELOADED BALL BEARING CASTING REEL
James R. Venable, Rexana, Ill.
Filed June 13, 1962, Ser. No. 202,162
4 Claims. (Cl. 242—84.1)

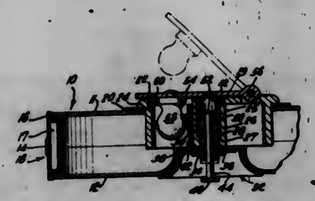
1. In a casting reel: a frame having opposite end plates and a plurality of posts supporting the plates in spaced, rigid relationship; a shaft removable non-rotatably fixed in the end plates and extending between them; a collar fixedly positioned on the shaft, a pair of ball bearing units, each including an outer race, balls, and an inner race, each inner race being freely slidably mounted on the shaft, one of the races of each bearing having varying diameters so that upon relative axial movement between the races of each bearing the balls thereof are tightened or loosened; the inner race of the first bearing abutting the collar to limit its axial movement in a direction to

loosen the balls; the inner race of the second bearing being on the shaft in spaced relation to the first and disposed so that movement toward the first inner race tightens the balls; a line spool having a hub with a central opening through which the shaft extends, the outer races of the two bearings being fixedly mounted in spaced relation in the opening in the hub of the spool, so that the spool may rotate freely on the shaft, and the distance between the outer races is maintained constant; an adjustment collar threaded onto the shaft and engageable against the second inner race, so that it can press the said race toward the first inner race and tighten both bearings; a lock nut threaded onto the shaft to bind the threaded collar; winding means including a crank mounted on the frame eccentrically of the shaft; a clutch including a slid-



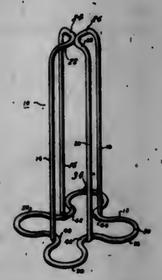
able gear-toothed element mounted rotatably and slidably on the shaft; projecting means extending axially from the toothed element radially outside of the ball bearing, to engage the hub of the spool outside the outer bearing race, said hub having cooperating means to receive the projections to clutch the spool and toothed element together when the toothed element is pushed toward the spool; pinion means on the frame eccentrically of the shaft operated by rotation of the crank, meshed with the toothed element; feeder plates secured to the frame, extending inwardly toward the shaft and toward each other, with central openings to receive and overlie the ends of the hub of the spool; the spool having a peripheral line channel with its side walls radially outwardly from, but axially adjacent to, the inner ends of the feeder plates.

3,186,657
TAPE MEASURE UNIT
Justus G. Roe, Sayville, N.Y., assignor to Justus Roe and Sons, Inc., Patchogue, N.Y., a corporation of New York
Filed July 30, 1963, Ser. No. 298,788
2 Claims. (Cl. 242—84.8)



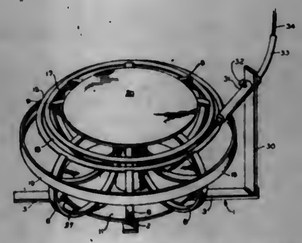
2. A tape measure reel comprising a spool, an axial bore within said spool, a first spring seat formed on said spool within said axial bore, a spindle, a second spring seat formed on said spindle, a helical compression spring coaxial with said spool and engaging said first and second spring seats effective to bias said spool and said spindle in opposite directions, a case supporting said spindle and spool in coaxial relation, first means associated with said spool and said case effective to resist said bias, and second means associated with said spindle and said case effective to resist said bias, whereby said spring is effective to absorb any shock imparted to said spindle or said spool and is also effective to compensate for any wear taking place at the interfaces between the said bias resisting means and said case.

3,186,658
WIRE CARRIER
Robert Kohn, and Mortimer C. Winski, Michigan City, Ind., assignors to Northern Indiana Steel Supply Co., Inc., Michigan City, Ind., a corporation of Indiana
Filed Jan. 25, 1963, Ser. No. 253,851
4 Claims. (Cl. 242—129)



1. A tubular, collapsible wire carrier, comprising a base of tubular material having four arcuate outwardly extending lobes and four arcuate inwardly extending lobes disposed between said fist mentioned lobes and joined thereto to form a four leaf clover configuration, said tubular material being joined at its ends to form a continuous structure, two separate elements of tubular construction and inverted U-shaped configuration, each having two substantially vertical members and a generally U-shaped member joined integrally to the upper ends of said members and extending inwardly substantially horizontally, hook-like fixtures on the bottom of each vertical member for securing the lower ends of said vertical members to the innermost portion of the inwardly extending lobes, and means for securing the U-shaped members of said two elements together to form a rigid carrier structure.

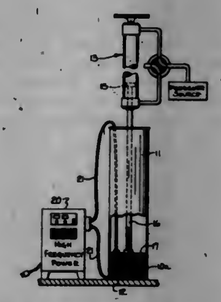
3,186,659
DEVICE FOR COILING AND STORING WIRE ROPE AND THE LIKE
Carter H. Arnold, Redwood City, Calif.
(317 Rocky Point Road, Palos Verdes Estates, Calif.)
Filed May 27, 1963, Ser. No. 283,465
4 Claims. (Cl. 242—129)



1. A device for coiling and storing an elongated flexible element comprising:
a housing,
a base on which said housing is supported,

means mounting said housing for rotation about a central axis relative to said base,
means on said housing forming a generally circular wall directed radially inwardly relative to said axis and defining an annular space for coils of said element,
a guide member fixedly mounted relative to said base and adapted to restrain said element at a portion of its length to movement along a line intersecting said annular space,
whereby movement of said element toward said housing automatically rotates said housing in one direction and forms coils in said space, and movement of said element away from said housing automatically rotates said housing in the opposite direction and unwinds the coils from said space,
said housing including a central portion extending along said axis and inwardly of said annular space,
and an extension on said central portion extending radially outwardly toward said wall and terminating at its outer end in a margin spaced from the adjacent margin of said wall to define an annular slot on said housing for receiving said element therethrough.

3,186,660
FIBER PACKAGE
Dewey B. Cook, Johnsonville, S.C., assignor to Wellman Combing Company, Johnsonville, S.C., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,409
4 Claims. (Cl. 242—168)



1. A package of textile sliver consisting of a compressed highly compacted self-sustaining mass of overlying sliver formed of textile fibers, said package having a volume-to-weight ratio substantially less than that of an uncompressed mass of the same sliver, said sliver mass when in uncompressed form having moisture therein in a predetermined amount sufficient, but not substantially in excess of that required for further textile processing, said moisture being distributed therethrough in a substantially uniform manner, and said compressed sliver package having said same moisture in said same amount distributed therethrough in substantially said same uniform manner.

3,186,661
AIRCRAFT PROPULSION POWER PLANTS
Ralph March Denning, William James Lewis, Terence Edward Gouvenôt Gardiner, Peter Michael Runacres, and Philip William Davis, all of Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed May 8, 1961, Ser. No. 108,594
Claims priority, application Great Britain, May 13, 1960, 17,035/60
5 Claims. (Cl. 244—53)

1. An aircraft power plant comprising an engine having an inlet and an outlet, means defining a forwardly facing first air intake opening, a duct extending to the inlet of the engine from the first air intake opening, a primary nozzle defining a rearwardly facing jet discharge opening having a fixed outer periphery, a jet pipe extending from the outlet of the engine to the primary nozzle, said jet pipe enclosing jet gas discharged from the outlet of the engine, a secondary nozzle having an inlet end adjacent to but substantially larger in area than the discharge opening of the primary nozzle and a rearwardly facing jet discharge opening, said discharge opening being spaced rearwardly from the jet discharge opening of the primary nozzle, means defining a second air intake opening including a wall having a sharp leading edge and adapted to separate the second air intake opening from the first air intake opening and an opposite wall extending a substantial distance forwardly of the sharp leading edge so as to generate a boundary layer which enters the second air intake opening, a boundary layer air duct defined by inner and outer walls and extending from the second air intake opening to an outlet end substantially coaxial with and of the same external form as the inlet end of the secondary nozzle, and closure means adjacent to the outlet end of the boundary layer air duct movable



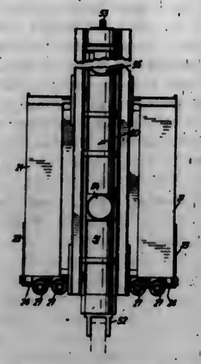
into a position closing said boundary layer air duct, the secondary nozzle being constituted by structure comprising a pair of U-section nozzle members having upstream and downstream ends, and supporting means for the members, permitting movement of the members through a first range in which they define a continuation of the outer wall of the outlet end of the boundary layer air duct, which continuation is variable between divergence and convergence, and a second range in which the upstream ends of the nozzle members move outwardly from the outlet end of the outer wall of the boundary layer air duct to provide openings for lateral outflow of the jet gas discharged from the jet discharge opening of the primary nozzle, while the downstream ends of the nozzle members move inwardly and finally butt together at the end of the second range.

4. An aircraft having a wing, and a power plant according to claim 1 mounted beneath the wing rearwardly of its leading edge, the opposite wall of the second air intake opening being constituted by the lower surface of the wing so that the second air intake opening takes in part of the boundary layer flow over the underside of the wing.

3,186,662
EJECTION OF ONE BODY FROM ANOTHER
James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, England
Filed Nov. 7, 1961, Ser. No. 150,670
Claims priority, application Great Britain, Nov. 7, 1960, 38,194/60
12 Claims. (Cl. 244—122)

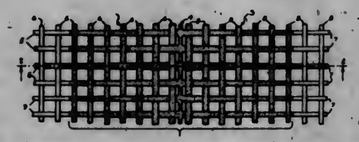
1. An ejection system for ejecting an airman from an aircraft comprising, in combination:
(a) aircraft seat means for holding an airman therein in a position in which said seat means and said airman have a common center of gravity;
(b) ejection gun means for accelerating said seat means and the airman held therein relative to an aircraft in a predetermined direction;
(c) rocket motor means carried by said seat means independently of the ejection gun means for producing thrust along a vector extending substantially through said common center of gravity in a direction substantially parallel to said predetermined direction; and

(d) firing means for firing said rocket motor means independently of the ejection gun means after said seat



means has been accelerated by said ejection gun means.

3,186,663
SEAM FOR FOURDRINIER WIRE
Adrian T. Godschalx, Bruce B. Purdy, and John I. Vlosnak, Appleton, Wis., assignors to Appleton Wire Works Corp., Appleton, Wis., a corporation of Wisconsin
Filed Mar. 4, 1963, Ser. No. 262,753
6 Claims. (Cl. 245—10)



1. A seam in a Fourdrinier wire comprising the combination of
opposite ends of said Fourdrinier wire containing warp strands and weft strands;
a fused metal joint joining said opposite ends of said Fourdrinier wire;
and a metallic jacket enclosing said joint and each of said warp strands and said weft strands adjacent to said joint.

3,186,664
YIELDING ANCHORAGE
Robert A. Schultz, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Jan. 19, 1961, Ser. No. 83,810
2 Claims. (Cl. 248—25)



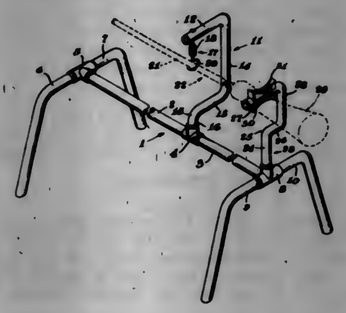
1. A yielding anchorage for securing a member to a foundation comprising a length of deformable tube disposed with one end bearing against said member, said length of tube being substantially cylindrical in shape and normally of uniform diameter along the greater portion of its length, a tapered plug having a greater diameter end and a lesser diameter end fitted snugly in the end of said tube opposite its bearing end with said greater diameter end substantially level with said opposite end of said tube and said lesser diameter end being cylindrical and disposed inwardly of said tube short of said bearing end of said tube, the portion of said tube containing said plug conforming in shape to the tapered configuration of said plug, the length of said plug being substantially less than the length of said tube, and means securing said plug to said foundation whereby the greater diameter end of said plug is moved inwardly of said opposite end of said tube thereby expanding the diameter of said tube along its length on movement of said member away from said foundation.

3,186,665
BICYCLE LICENSE PLATE BRACKET
Leo F. Cole, 5377 N. 34th St., and Joseph A. Pfleger, 3218 W. Cameron Ave., both of Milwaukee 9, Wis.
Filed Nov. 16, 1962, Ser. No. 238,147
1 Claim. (Cl. 248—28)



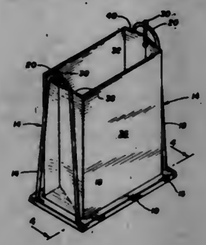
A license plate bracket for bicycles including a vertical plate, the upper portion of said plate offset to form a horizontal shoulder for support of a license plate, a portion centrally of said plate depending therefrom and formed as a short sleeve triangular in cross-section, a bolt in said sleeve, a pair of arcuate strap clips on the ends of said bolt, each clip having a parallel return portion to engage the underside of a bicycle mudguard, and a strap prop bent to engage over the top of the top offset portion of the vertical plate with the body thereof inclined at a downward angle with an apertured bent portion at the lower end thereof for fastening to a bicycle mudguard.

3,186,666
FISHING ROD SUPPORT
Charles F. Williams, 3093 S. Eugene, Flint, Mich.
Filed Oct. 14, 1963, Ser. No. 315,881
9 Claims. (Cl. 248—44)



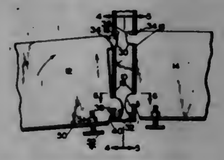
1. A support for a fishing rod or the like comprising a base; yieldable means supported by said base above the latter for connection to a fishing rod between the ends of the latter; and stabilizing means having a substantially horizontal member supported on and spaced above said base for engagement with said rod either above or below the latter, said horizontal member being spaced from said yieldable means.

3,186,667
PAPER SACK HOLDER
William V. Messer, 153 W. Oak, Fort Collins, Colo.
Filed Jan. 8, 1964, Ser. No. 336,530
4 Claims. (Cl. 248—97)



1. A paper sack holder comprising a base, a pair of U-shaped uprights each secured by their legs to and extending upwardly from said base at spaced apart positions and each adjacent an edge of said base, said U-shaped members being resilient so as to be capable of being spread apart a short distance and return to normal upright position, an elongated pin reciprocably mounted through the top of each said upright extending downwardly between said legs and arranged in a generally vertical position, a bulbous member mounted on each end of each said pin to limit movement thereof but permit extending a substantial distance below the top of said U-shaped upright, and a spring mounted on each said pin between said U-shaped uprights and the lower bulbous member for biasing said pin in downwardly directed position.

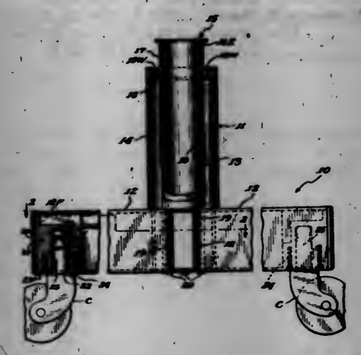
3,186,668
SHELF UNIT SUPPORT
Thomas Story, Aloha, Oreg., assignor to S. Birkenwald Company, Portland, Oreg., a corporation of Oregon
Filed Jan. 3, 1963, Ser. No. 249,268
7 Claims. (Cl. 248—158)



3. A shelf unit support comprising an upright standard having an upper aperture and a lower aperture, said upper aperture having a transversely disposed notched locking extension, a cross base having upper and lower tabs selectively spaced for removab e insertion in said apertures, said lower tab being angled relative to said cross base whereby said lower tab is adapted to bias the cross base in a direction such as to position said upper tab in said transversely disposed extension, and lock means on one of said tabs engageable with said standard.

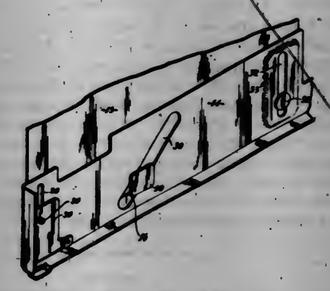
3,186,669
CHAIR BASE CONSTRUCTION
Bruce O. Bahrmaster, North Aurora, Ill., assignor to All-Steel Equipment Inc., a corporation of Illinois
Filed June 19, 1963, Ser. No. 288,948
6 Claims. (Cl. 248—158)

1. In a chair base having vertical post structure and a plurality of exteriorly plated leg elements radiating from said post structure, the improvement wherein said post structure includes a vertical inner shell and an exteriorly plated vertical outer shell supported in spaced relation to said inner shell at an upper region thereof and extending downwardly coextensively therewith in surrounding masking relation to the inner shell, said outer shell having peripherally spaced wall openings about its lower end to present a separate mounting slot for each leg, each leg



having an exteriorly plated outer surface and having an inner end portion projecting through its corresponding slot into radial abutment with said inner shell to define junction lines therewith masked by said outer shell, a weld along each said junction line securing said inner shell and said legs in rigid relation, and means for securing the outer shell to the inner shell in said spaced relation thereto.

3,186,670
APPLIANCE LEVELER
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed July 15, 1963, Ser. No. 294,974
6 Claims. (Cl. 248—188.2)



1. A leveling device for effecting relative vertical and tilting movement between two adjacent vertically extending members, one of said members being provided with a horizontal slot intermediate the front and rear edges thereof, the other of said members being formed with an inclined slot generally longitudinally coextensive with said slot in said one member, connector means extending through and movable along the adjacent slots, said connector means thereby being operable to cam said

one member generally vertically relative to said other member, adjusting means disposed at one end of said members for controlling the direction of movement of said connector means, the said one member being tiltable relative to the said other member about said connector means, and means to clamp said members in their various conditions of adjustment.

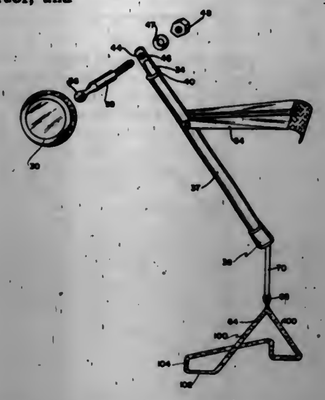
3,186,671
RECEPTACLE HOLDER
Henderson B. Standley, 552 S. Hillside, Wichita, Kans.
Filed July 12, 1963, Ser. No. 294,688
2 Claims. (Cl. 248—224)



1. A receptacle holder comprising a rod having a sharp bend intermediate its ends forming a narrow tip with the clearance within the tip being of a size to embrace a small projection for supporting the holder, each portion of said rod diverging from said narrow tip forming a top portion of a size to embrace a larger projection for support therefrom, said rod extending from said top portion with less divergence forming hanger sides, said tip, top portion and hanger sides lying in a vertical plane forming a back, a connector extending at a sharp angle forwardly from each hanger side and a curved band extending forwardly from each connector in a plane lying at an acute included angle to said vertical plane with the concave side of each curved band facing the concave side of the other band to leave a handle receiving space between the outer ends of the curved bands, a downwardly extending vertical handle guide extending from the forward end of each curved band for a substantial distance to provide a front for the receptacle holder, and a bottom base member including a portion extending rearwardly from the bottom end of each handle guide to a position adjacent the vertical plane of the back, defining a base plane with the base plane converging rearwardly toward the plane of the curved bands whereby the receptacle holder may be suspended from a small or large supporting projection on a generally vertical supporting surface to supportingly retain a handled cup or other receptacle on the bottom base member within the curved bands and when a heavy receptacle is placed in the holder the plane of the curved band and plane of the bottom base member may become approximately parallel.

3,186,672
REARVIEW MIRROR SUPPORT
William J. Weber, Upper Black Eddy, Pa., assignor to Arcos, Inc., Portland, Oreg., a corporation of Oregon
Filed Mar. 31, 1964, Ser. No. 356,208
7 Claims. (Cl. 248—226)

1. A rearview mirror comprising:
(a) a supporting base, having bumper means at its lower end;
(b) a mirror supporting piece extending from within said base and adjustably contained therein;
(c) a rearview mirror attached to said supporting piece;
(d) a top auto window channel clamp pivoted at one end medially of said base and extending to one side thereof; and



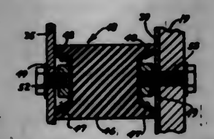
(e) a bottom auto door clamp flexibly depending from the bottom of said base.

3,186,673
DETACHABLE TRAY AND TRAY HOLDER
Harold C. Olson, 2105 Croydon Drive, Tallahassee, Fla.
Filed Apr. 22, 1964, Ser. No. 361,852
3 Claims. (Cl. 248—226)



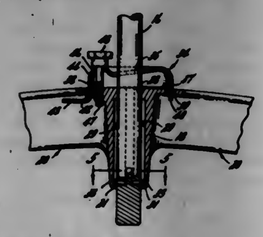
2. A tray holder comprising a horizontally disposed tray support member having an upper surface and a lower surface, means attached to said support member for readily releasably attaching a tray thereto, spring means attached to said support member adjacent said lower surface and extending therebelow, said spring means defining a generally vertical space for the reception thereinto of and releasable engagement with various sizes of generally vertical arms of chairs or the like, selective leveling members attachable to said support member and extending below said lower surface for adjustably leveling said support member on a generally vertical arm to which the tray holder is applied.

3,186,674
BOAT SEAT SUSPENSION SYSTEM
Maurice H. O'Link, St. Cloud, Minn., assignor to Stearns Manufacturing Company, St. Cloud, Minn., a corporation of Minnesota
Filed May 28, 1963, Ser. No. 283,847
5 Claims. (Cl. 248—399)



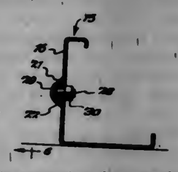
1. A boat seat suspension system having in combination,
a boat seat,
a supporting frame for said seat,
a pair of upstanding deck mounted brackets spaced longitudinally of said supporting frame and having upstanding sides spaced transversely of said supporting frame between the side walls thereof,
resilient mounting members horizontally disposed connecting the respective upstanding sides of said brackets and the adjacent side wall portions of said supporting frame holding said frame free from deck engagement,
said mounting members respectively comprising
a resilient member,
a pair of concave plate members respectively recessed in opposed sides of said resilient member to be disposed transversely of said supporting frame and made integral with said resilient member,
tapped studs integral with said plate members, and
bolts respectively extending through said upstanding sides of said brackets and through the side walls of said supporting frame and being threaded into said studs.

3,186,675
CHAIR PEDESTAL
Donald L. Moore, Columbus, Ind., assignor to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Nov. 29, 1963, Ser. No. 326,855
6 Claims. (Cl. 248—410)



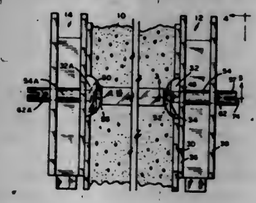
1. In a pedestal for a chair,
(a) a base comprising a hub provided with a vertically extending opening and a plurality of radially projecting arms,
(b) a vertically extending rod carried in the hub opening and projecting above said base for interconnection to a chair,
(c) a plate having one of its ends swingably mounted in an opening formed in said base and having an opening formed therein in which said rod is received, and
(d) a bolt threadably connected to said base and releasably bearing against said plate to swing said plate about its connection to the base to cause the edges of the plate opening to bear against said rod for releasably retaining said rod in a fixed axial position with respect to said base.

3,186,676
KEYWAY-FORMING MEMBER FOR USE ON HIGHWAY FORMS
Alfred F. Crone, Williamsville, N.Y., assignor to Acme Highway Products Corporation, Buffalo, N.Y.
Filed Mar. 4, 1963, Ser. No. 262,526
4 Claims. (Cl. 249—9)



1. A keyway-forming member for attachment to a paving form for use in pouring highway strips,
said member being slightly elastic and of channel shape including an upright wall having diverging upper and lower walls formed integral therewith and forming an open, interior space between said walls,
and a reinforcing rib extending into said space from said upright wall and terminating adjacent to said paving form in position to contact with said form if sufficient pressure is exerted on said upright wall to prevent excessive deformation of said member,
said upper and lower walls having their free edges spaced from said upright wall to a greater extent than the free edges of said rib to contact with a paving form to prevent concrete from passing between said form and the edges of said upper and lower walls and into said space.

3,186,677
WALL FORM FOR CONCRETE CONSTRUCTION
Homer T. Dudley, Tulsa, Okla., assignor to H. T. Dudley Company, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Nov. 4, 1963, Ser. No. 321,212
4 Claims. (Cl. 249—41)



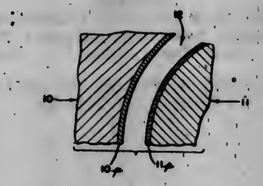
1. A wall form for concrete construction consisting of a plurality of interconnected wall form sections disposed on one side of said construction in opposition to a plurality of interconnected wall form sections on the other side of said construction, each of said sections comprised of:
a substantially flat reinforced structural wall body having a front side provided with a facer panel for contact with said construction, and a back side, said wall body provided along two adjacent edges with lip extensions substantially parallel to the plane of said wall body and provided along the other two adjacent edges with channel members having outwardly presented grooves for receiving therein the lip extensions of adjacent wall form sections;
a wall tie receiving element projecting from said front side of said wall body;
a circular passage extending through said wall form and through the rearward portion of said receiving element terminating forwardly in a rectangular passage that extends through the remainder of said receiving element;
an elongated wall tie having a rectangular transverse cross-section and provided inwardly of each end with a weak point, one end portion of said wall tie extending from said front side at said wall through said rectangular passage and said circular passage to a point beyond said back side of said wall form section such that the weak point in said one end portion is situated at least as far rearwardly in said circular passage as the forwardmost point in said circular passage;
a circular cross-sectioned retainer means for retaining said one end portion of said wall tie within said rectangular passage and said circular passage, the forward end portion of said retainer means extending into said circular passage and provided with a first longitudinal diametric slot for receiving therein said one end portion of said wall tie, the rearward end portion of said retainer means extending rearwardly

of said wall form section and provided with a second longitudinal diametric slot;

means for connecting said one end portion of wall tie to said forward end portion of said retainer means; and

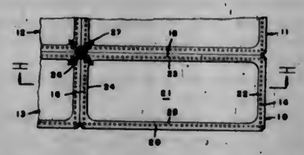
at least one wall form support element removably attached to said wall form section and inclining downwardly and rearwardly into contact with the ground.

3,186,678
METAL CASTING ART
John H. Keating, Cleveland, Ohio, assignor to Monarch Aluminum Mfg. Co., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 19, 1961, Ser. No. 146,183
6 Claims. (Cl. 249—116)



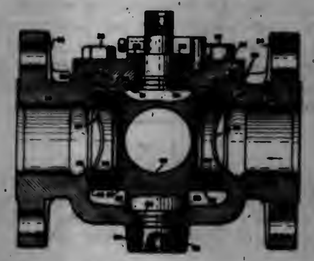
1. A non-porous mold defining a metal cavity adapted to receive a molten metal to be cast comprising a mold coating of hard chromium adhering to the mold cavity in physical contact with the metal being cast and having a surface porosity defined by a network of voids extending uniformly over about 60% of the mold coating area and to an average depth of at least 0.002 inch whereby entrained gases in the metal are vented through the coating.

3,186,679
CONCRETE FORM ASSEMBLY AND CLAMPING MEANS THEREFOR
Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich.
Filed Apr. 13, 1961, Ser. No. 102,772
1 Claim. (Cl. 249—192)



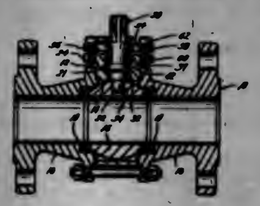
A system of forms for positioning concrete as it is poured, comprising: a plurality of form elements of cast material each including a substantially polygonal panel portion and peripheral flange portions, said flange portions having the exterior surfaces thereof disposed in planes normal to the said panel portion, and having interior surfaces inclined to said exterior surfaces to produce a taper of said flange portions to reduced thickness, proceeding from said panel portion, and extending substantially throughout the height of said flange portions, said flange portions having corners containing discontinuities, each defining a fraction of an opening transverse to said panel whereby said discontinuities of each corner together with those of a plurality of similar corners define a complete opening when at least three of said elements are assembled together; fastenings traversing said openings, and being similar thereto in cross section; and securing means for said form elements including members adapted to embrace the interior inclined surfaces of adjacent flanges of at least three of said elements at the intersection thereof, said members also being adapted to receive said fastenings whereby said form elements are held in place and urged together as said fastenings are advanced towards said panels.

3,186,680
VALVES
Eldert B. Pool, Palos Park, Ill., assignor, by mesne assignments, to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 7, 1962, Ser. No. 236,017
8 Claims. (Cl. 251—175)



1. A valve comprising a body having inlet and outlet ports communicating with a chamber, a valve closure member mounted for movement in said chamber between open and closed positions, said valve closure member having a recess bounded by a continuous annular wall surrounding said inlet port when said valve closure member is in closed position; a composite sealing ring received in said recess, said sealing ring comprising a resilient body compressed between the bottom of said recess and the surface of said valve body surrounding said port when said valve is closed; an outer rigid reinforcing ring bonded to the outer periphery of said resilient body and slidably engaging said annular wall; an inner rigid reinforcing ring bonded to the inner periphery of said resilient body in the region adjacent the bottom of said insert, the portion of said resilient body adjacent the bottom of said recess being grooved in order to increase its flexibility.

3,186,681
STEM SEAL FOR ROTARY PLUG VALVE
William E. Lowrey, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 18, 1961, Ser. No. 160,703
5 Claims. (Cl. 251—214)



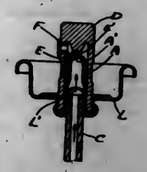
1. A stem seal for a valve comprising a valve housing having a valve chamber, a valve member in said valve chamber, a boss on the housing, an opening in said boss formed of a small aperture communicating with the valve chamber and a large aperture extending from the small aperture to the outer end of the boss and defining a planar support surface, a stem having a cylindrical inner end extending through the small aperture into the valve chamber with the end thereof being in co-operative engagement with the valve member, the stem having a shoulder located in the larger aperture and a cylindrical outer end extending out of the outer end of the boss, the shoulder having a frusto conical axial outer surface and flat axial inner surface, a flat resilient washer under the flat surface and in engagement with the support surface, an annular resilient seal member positioned over the cylindrical outer end of the stem and having a tapered surface opposing the frusto conical surface of the shoulder, the angle of the tapered surface being slightly greater than the angle of the frusto conical surface with respect to the axis of said stem so that said surfaces diverge outwardly toward the outer end of said stem whereby initial contact between the tapered surface and frusto conical surface will be made at the outer peripheral edge, annular means contacting the annular resilient seal member to apply an axial load on the resilient seal member whereby as a result the edge of the tapered surface of the seal member will be forced into initimate sealing contact with the edge of the frusto conical surface and will also wipe out and sealing engage the wall of the aperture.

3,186,682
BUTTERFLY VALVE DISC AND SHAFT SEALING STRUCTURE
Karl B. Pierson and John R. Hanson, Warren, Pa., assignors to Betts Machine Company, Warren, Pa., a corporation of Pennsylvania
Filed Nov. 12, 1963, Ser. No. 323,022
3 Claims. (Cl. 251—306)



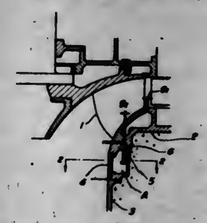
1. A valve comprising a housing having an inner, substantially cylindrical, rigid wall surface; means defining a pair of diametrically oppositely disposed recesses in said cylindrical wall surface; a butterfly valve disc disposed within said housing and having a diametrical axis aligned with said recesses; said disc having a circular core which is diametrically slightly smaller than the diameter of said cylindrical wall surface; at least the peripheral edge portion of said core having a coating of resilient material bonded thereon; said coating being thick enough to extend the diameter of said disk beyond the diameter of said cylindrical wall surface and necessitating compression of said coating around the peripheral edge of said disc when said disc is rotated to a closed position whereby it is disposed in a plane which is transverse to the axis of said cylindrical wall surface; means on said disc providing journal means for journalling said disc in said housing at said recesses; said coating of resilient material being formed to provide integral projections which project radially outwardly beyond the periphery of said disc and completely surrounding said journal means and extending into said recesses at diametrically opposite positions on said disc, said projections resiliently compressively bearing against the bottoms of said recesses and tightly engaging the side walls of the recesses to provide a complete seal around said journal means and completing a seal across the interior of said housing transversely of the axis of said cylindrical wall surface when said disc is in a closed position.

3,186,683
VALVE DEVICE FOR AEROSOL VESSEL
Masayoshi Asechi, 141 1-chome, Katayama-dori, Tennoji-ku, Osaka, Japan
Filed May 31, 1962, Ser. No. 196,880
Claims priority, application Japan, Apr. 19, 1962, 37/16,199
1 Claim. (Cl. 251—342)



A valve device, comprising, in combination: a mounting cup for mounting the valve device to control fluid flow from a container; a projection cup having an eyelet of a diameter substantially smaller than that of the projection cup at the top of the projection cup and connected to said mounting cup and adapted to be connected to a source of presaurized fluid; and a hollow actuating button connected to said mounting cup to cover said projection cup and enclosing the projection cup between the actuating button and the mounting cup, said actuating button including a tongue projecting downwardly from the top of the actuating button, said tongue having a convex rounded tip which extends to form the sole means for sealing the eyelet, the contact area between the projection cup and said rounded tip being only slightly larger than the area of the eyelet, said actuating button forming an annular chamber about said contact area which extends upwardly about the tongue and downwardly about the projection cup for part of the length of the latter, said actuating button having an opening therethrough in communication with said annular chamber, said button being made of an elastic material thereby to be deformed upon the lateral application of exterior force to move the tongue from over the eyelet to permit flow of fluid through said eyelet into said button and out through said opening.

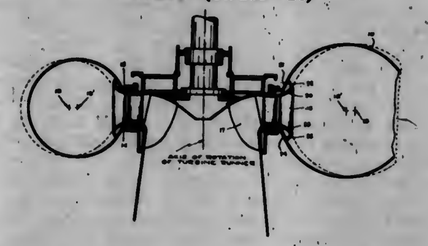
3,186,684
DEVICE FOR MEASUREMENT OF THE BOTTOM RUNNER CLEARANCE IN A REACTION TYPE HYDRAULIC TURBINE
Mitsuo Takase, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 4, 1963, Ser. No. 270,640
Claims priority, application Japan, Apr. 6, 1962, 37/16,755
3 Claims. (Cl. 253—26)



1. In a mixed flow reaction-type hydraulic turbine having a rotary runner provided with an annular closure shroud, a guide case including a bottom cover having an annular surface spaced in close proximity to said closure shroud and overlapping the closure shroud radially at one end thereof and defining with said bottom cover an annular gap clearance space not visible from said one end due to the aforesaid overlap, a draft tube connected to said bottom cover, means to determine said clearance

space comprising a plurality of axially extending holes formed in said bottom cover in alignment with said annular gap, at least one closed chamber positioned beneath said bottom cover in alignment with said holes whereby a gauge may be inserted through said holes to determine the size of said gap and means providing access to said chamber through the wall of said draft tube.

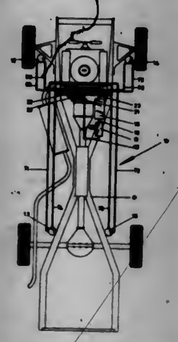
3,186,685
METHOD FOR CONSTRUCTION OF HYDRAULIC TURBINE SPIRAL CASES
Victor G. M. Chatfield, Lachine, Quebec, Jacques A. Desbaillets, Montreal, Quebec, and Robert A. Newey, Pointe Claire, Quebec, Canada, assignors to Dominion Engineering Works Limited
Filed Sept. 18, 1963, Ser. No. 309,729
4 Claims. (Cl. 253—26)



1. In a hydraulic machine, a volute casing having a wall of arcuate outline in cross-section terminating in a pair of spaced annular edges defining an annular opening at the inside of the volute, a volute lip on said wall at one edge thereof projecting into said casing a minimum distance at the minimum cross-section of the casing and increasing progressively in projection as said cross-section increases, in cross-section said lip appearing in outline in the general shape of a triangle having its base a portion of said casing wall and its two sides curved outwardly from the base and meeting in a curved apex, an annular stay ring located in said annular opening in the casing, said annular edges of the casing being united with said stay ring adjacent the peripheral edges thereof, and said stay ring having a plurality of spaced vanes projecting therefrom into the casing to said apex and extending from said lip to the casing wall adjacent the other edge thereof, said casing, lip, stay ring, and vanes being united so as to constitute integral mechanical structure.

3,186,686
HYDRAULIC JACKING SYSTEM
Peter Mayer, 41 Geoffrey St., Toronto 3, Ontario, Canada
Filed June 27, 1963, Ser. No. 291,025
3 Claims. (Cl. 254—86)

1. A hydraulic jacking system for vehicles including a plurality of hydraulic jacks secured to the chassis of said vehicle, each of said jacks having a ram extendable vertically downwardly from a housed position to any selected degree of extension; a similar plurality of control valves, each of said valves serving one of said jacks exclusively; hydraulic lines interconnecting each said valve with its particular jack; a hydraulic fluid tank and hydraulic pump supplying pressure fluid to said control valves; each of said control valves comprising an upper valve assembly and a lower valve assembly operable simultaneously; lever means to operate each said control valve; pressure fluid supply means and fluid return means said lever means placing said upper valve assembly in communication with said pressure fluid supply means and placing said lower valve assembly in communication with said fluid return means in a first position; a second position of said lever means placing said upper valve assembly in communication with said fluid return means and said lower valve assembly in communication with said pressure fluid supply means; and a neutral position of said lever wherein said upper and lower valve assemblies are blanked off and fluid therewithin trapped to provide a hydraulic lock, said pressure fluid supply means and fluid return means including a distributor valve body, a wall dividing said body into a pressure chamber and a return chamber; said pressure chamber being supplied with fluid through said pipe means from said pump and said return chamber being connected to said tank; said upper and lower valve as-



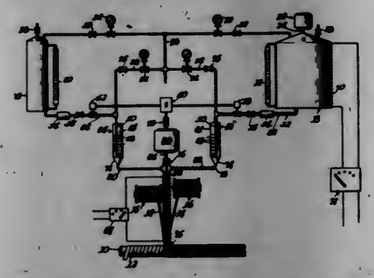
semblies extending across said body and passing through said wall in fluid-tight relation; each of said valve assemblies including an outer sleeve and a piston valve slidable therein; said outer sleeve having a first orifice therethrough located within said pressure chamber and a second orifice therethrough located within said return chamber and said piston valve having a hole therethrough selectively alignable with said first or second orifice and movable to a third position wherein said hole is completely covered by said sleeve; and hydraulic pipes connecting each of said upper valve assemblies with one side of its respective jack and connecting each of said lower assemblies with the opposite side of said jack.

3,186,687
ROTARY PELLETIZING APPARATUS
Andrew L. Askew, Jr., Haifa, Israel, and Richard H. Reynolds, Aransas Pass, Tex., assignors to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
Filed Sept. 3, 1963, Ser. No. 306,207
4 Claims. (Cl. 259—7)



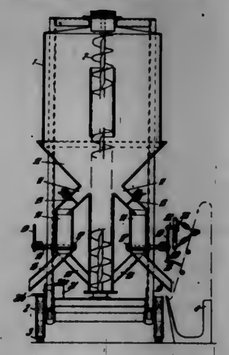
4. Rotary pelletizing apparatus comprising: a cylindrical pellet-forming chamber having an inlet at one end and an outlet at the other end; a rotatable hollow shaft extending along the longitudinal axis of said chamber; a plurality of helically disposed agitator pins extending radially outwardly from said shaft toward the chamber wall; each pin being separated from each neighboring pin by a uniform longitudinal spacing and a uniform angular displacement; the outer end of each pin being bent in the direction of rotation and being formed with a forwardly facing cutting edge that is separated from the chamber wall by a very small clearance; and a plurality of spray means associated with the shaft for directing a pelletizing fluid outwardly toward the chamber wall; each spray means being uniformly angularly disposed ahead of a pin.

3,186,688
RESIN DISPENSING APPARATUS AND PROCESS
Vesta F. Michael, Wichita, Kans., assignor to Rock Island Oil & Refining Co., Inc., Wichita, Kans., a corporation of Kansas
Filed Jan. 23, 1961, Ser. No. 84,232
5 Claims. (Cl. 259—23)



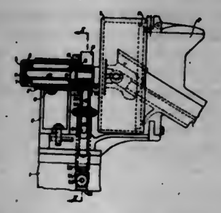
1. Apparatus for dispensing resin and hardener in a readily curable condition comprising discrete storage vessels for said resin and for said hardener, pressure means for forcing said resin and said hardener from said storage vessels, flow meters in fluid communication with said storage vessels, discharge nozzles disposed in each of said flow meters, conduits connecting said storage vessels and said discharge nozzles, valve means disposed in said conduits, said pressure means also being connected directly to said flow meter discharge nozzles whereby pressure may be exerted directly through said jet nozzles when said valve means in said conduits are closed, a mixing chamber in fluid communication with the discharge from each of said flow meters, and means disposed in said mixing chamber for intimately mixing said resin and hardener.

3,186,689
APPARATUS FOR MIXING AND DISPENSING FEED AND LIKE MATERIALS
Reginald Blair Davies, Blue Hill Farm, Watton-at-Stone, England
Filed Dec. 3, 1963, Ser. No. 327,660
13 Claims. (Cl. 259—44)



1. An apparatus for mixing and dispensing feed and like materials comprising hopper means for the feed and like material, receptacle means positioned along a predetermined path with respect to said hopper means, means operably associated with said hopper means for moving said hopper means relative to said receptacle means, recirculating conveyor means connected to said hopper means, first and second delivery means operably connected with said hopper means, and positioned to discharge to said receptacle means and conveyor means, respectively, valve means operatively located between said hopper means and said first and second delivery means operable selectively for diverting the feed from the hopper means via said first delivery means for deposit into the receptacle means and/or to the second delivery means for movement to said conveyor means, and means located exteriorly of said delivery means and operably coupled with said valve means for adjusting such valve means.

3,186,690
NAIL HOPPER ARRANGEMENT FOR A SHOE MACHINE
Miloslav Krejčí, Chvalcov, Czechoslovakia, assignor to Závody presního strojírenství Gottwaldov, narodní podnik, Gottwaldov, Czechoslovakia
Filed Mar. 8, 1963, Ser. No. 263,955
Claims priority, application Czechoslovakia, May 19, 1962, 3,047/62
4 Claims. (Cl. 259—75)



1. A nail hopper for a shoe nailing machine comprising, in combination:
(a) a support;
(b) a shaft journaled in said support for angular movement about an axis;
(c) a hopper drum adapted to contain a load of nails secured on said shaft for angular movement therewith;
(d) an actuator member arranged for reciprocating movement relative to said support; and
(e) motion transmitting and damping means interposed between said actuator member and said shaft for oscillating said shaft about said axis between two terminal angular positions in unison with said reciprocating movement of the actuator member, for permitting angular inertial movement of said shaft beyond said terminal positions, and for damping said inertial movement, said motion transmitting and damping means including
(1) two motion transmitting members elongated in a common direction and in telescoping engagement with each other for relative longitudinal movement, said two members being operatively connected to said shaft and to said actuating member respectively for joint movement therewith,
(2) cam means mounted on one of said two members and having a central cam face portion defining a substantially V-shaped notch flaring in a direction transverse of said common direction, and two outer cam face portions extending from said central portion in opposite longitudinal directions,

(3) detent means on the other one of said two members and engaging said cam face, and

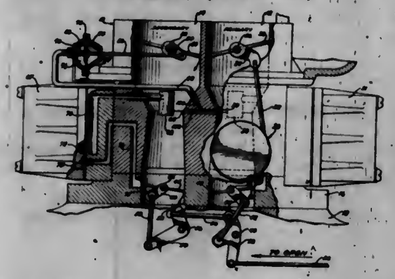
(4) yieldably resilient means permanently urging said detent means toward said cam face in a direction inward of said notch.

3,186,691

CONTROL MEANS FOR THE SECONDARY INDUCTION PASSAGE OF A TWO-STAGE CARBURETOR

William O. Manning, Jr., Birmingham, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed May 25, 1961, Ser. No. 112,577
7 Claims. (Cl. 261—23)



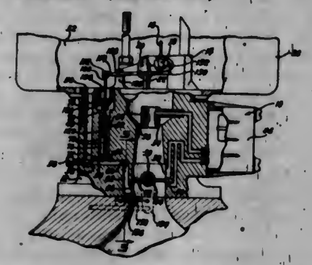
2. A carburetor comprising a body having primary and secondary induction passages formed therein, each of said passages having a venturi restriction and a throttle valve pivotally mounted downstream of said venturi, a choke valve pivotally mounted in said primary induction passage upstream of the venturi therein, and an air valve pivotally mounted in said secondary induction passage upstream of the venturi therein, and means operably connected to said air valve for controlling said air valve in said secondary induction passage in response to air flow through said primary venturi.

3,186,692

IDLE AIR BYPASS MEANS

James T. W. Moseley, Glendale, Calif., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Continuation of application Ser. No. 734,159, May 9, 1958. This application June 20, 1962, Ser. No. 205,822
2 Claims. (Cl. 261—39)



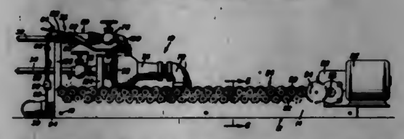
1. A control mechanism for an internal combustion engine carburetor having a throttle valve and an induction passage therein, said induction passage being normally substantially closed by said throttle valve, said control mechanism comprising a choke valve and a choke shaft in said induction passage, thermostat means tensioned for variably opposing the opening of the choke valve as a function of engine temperature, means for delivering idle fuel downstream of said throttle, constantly open idle air bypass means discharging air only downstream of said throttle valve, means including a metering valve for supplementing said idle air bypass means with additional air, means normally biasing said metering valve in a direction so as to close said supplementing means, actuation means secured to one end of said choke shaft for rotation therewith, connecting means operatively engaging said actuation means and said metering valve, said actuation means being positioned by said choke shaft so as to cause said connecting means to open said metering valve against said biasing means upon choke closing movement.

3,186,693

THERMOMETER FIXING MACHINE AND METHOD OF FIXING

Frederic M. Winchell, Leesburg, Fla., assignor to Joseph J. Ballo, Leesburg, Fla.

Filed May 6, 1963, Ser. No. 278,315
5 Claims. (Cl. 263—2)



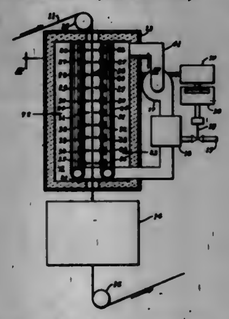
1. A method of obtaining dimensional uniformity in the constrictions of the bores in thermometers wherein each bore is sealed adjacent opposite ends of the thermometer and has a bulb formation adjacent one end of the thermometer, comprising the steps of: locally heating the thermometers simultaneously to dimensionally vary the constrictions formed therein; rotating said thermometers about parallel spaced axes while being heated; aligning the bulb ends of the thermometers while being rotated to localize said heating at the constrictions equally distanced from the bulb ends; and regulating the duration and intensity of the heat locally applied to the thermometers to dimensionally correct deviations in the constrictions from a standard.

3,186,694

TEMPERATURE CONTROL SYSTEM FOR JET CONVECTION STRIP HEATING FURNACE

Donald Beggs, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio

Filed June 28, 1962, Ser. No. 205,901
4 Claims. (Cl. 263—3)



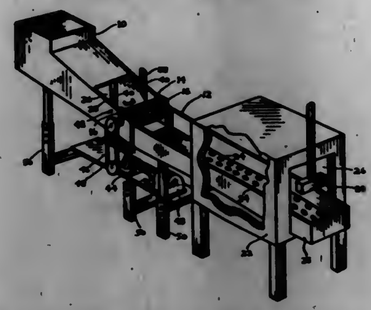
3. In a heating method comprising heating compressible fluid and directing the heated compressible fluid in at least one free jet containing spent compressible fluid against the work to be heated, the steps of sensing the temperature of the mixture of heated compressible fluid and entrained spent compressible fluid which actually impinges on the work; and controlling the heating of compressible fluid to maintain the sensed temperature at a predetermined value.

3,186,695

GRAVITY FEED OVEN WITH SELECTING ROLLER

Harry Randall, 786 Connecticut Ave., South Norwalk, Conn.

Filed Sept. 25, 1962, Ser. No. 226,116
5 Claims. (Cl. 263—6)



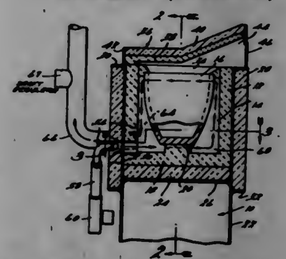
1. An oven provided with a gravity feed device for separating and conducting billets in a predetermined orientation and progression to said oven, said gravity feed device being a hopper and connecting chute positioned at an obtuse angle relative to the horizontal plane, said oven enclosing a portion of the end of said chute, a roller with peripheral projections thereon, said roller being adjustably located at such a predetermined level in said chute that said roller is adapted to pass only one thickness of said billets, and means for rotating said roller in a clockwise direction whereby the billets in the hopper are passed individually under the roller and with said predetermined orientation into said oven.

3,186,696

HEATING UNIT

Kornelius Hildebrand, Washington Hotel, Watertown, Wis.

Filed Nov. 14, 1962, Ser. No. 237,570
Claims priority, application Canada, Dec. 18, 1961, 838,285
17 Claims. (Cl. 263—11)



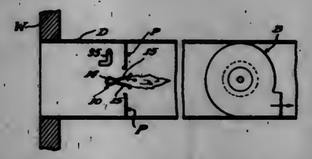
9. A furnace comprising: a housing, a container receivable in said housing and having a bottom and upwardly extending side walls in spaced relationship with the interior of said housing to define a combustion chamber with said housing, uppermost portions of said side walls terminated by a periphery defining an open top, sealing means extending between said periphery and said housing for isolating said open top from said combustion chamber, a number of spaced flame ports located symmetrically with respect to a center axis of said container at one end of said chamber and extending thereinto in a common horizontal plane adjacent the bottom wall of said container, a burner nozzle positioned in each of said flame ports for directing a flame horizontally across the chamber adjacent the lowermost side edges of said container, a pressure relief port extending from said chamber at said one end thereof, said pressure relief port being located in close proximity to and on a vertical line intermediate said burners, and a stack communicating with said pressure relief port for removing combustion products from said chamber.

3,186,697

GAS-FIRED HEATER

Edward J. Haedike, Arlington Heights, and Steve W. Zavoday, Barrington, Ill., assignors to Mid-Continent Metal Products Co., a corporation of Illinois

Continuation of abandoned application Ser. No. 211,523, July 23, 1962. This application Dec. 23, 1964, Ser. No. 423,896
19 Claims. (Cl. 263—19)



17. In a gas burning direct fired makeup air type heating apparatus that includes a high turn-down gas burner and means for flowing a low pressure air stream forwardly past the burner at a substantially constant velocity while the burner is operating within its high-low gas burning range, the improvement wherein the gas burner is of the nozzle mixing type and comprises an elongated gas manifold having a downstream wall provided with spaced gas ports therein, an elongated chamber downstream of said downstream wall and defined by said downstream wall and by spaced walls joined to the manifold and extending downstream to a point where, in at least one of said spaced walls, a series of air ports provide communication between said air stream and said chamber, outwardly flared walls downstream of said chamber having openings therein permitting air to flow from said air stream into the space between said flared walls to provide a combustion zone for said burner, the distance between the flared walls at their downstream extremity being at least ten times as great as the distance between said spaced walls at the outer extremity of the chamber, and means including said gas ports and said air ports for causing the burner to have a turndown range of at least 20 to 1 when the gas in the manifold is a raw gas, said burner while disposed in said air stream and supplied with raw gas throughout said 20 to 1 turndown range being capable of presenting a stable flame characterized by producing less than 100 parts per million of CO in the heated air and being substantially soot free and odorless.

3,186,698

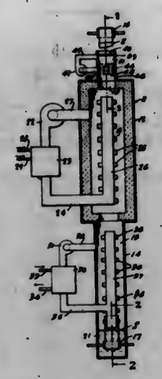
HEAT TREATING APPARATUS

William L. Thome, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio

Filed June 14, 1963, Ser. No. 288,002
4 Claims. (Cl. 266—3)

1. In heat treating furnace apparatus comprising wall means forming a first treating section and a second treating section communicating with the first treating section and disposed therebelow; roller means comprising an upper roller and a lower roller for passing a strand of metal work of indefinite length into the furnace apparatus through an upper opening at an upper portion of the first treating chamber thence, sequentially, through the first treating section and the second treating section, and thence from the furnace apparatus through a lower opening at a lower portion of the second treating section; sealing means comprising a fluent impervious seal-

ing medium to block the influx of air into the furnace apparatus through the lower opening; the improvement comprising means for pressurizing the first treating section and comprising, in combination: wall means defining a narrow strip passage throat intermediate the upper



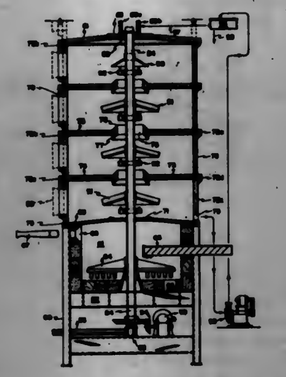
roller and the upper opening and in communication with the upper opening; and downwardly inclined jet nozzle means disposed at an elevation intermediate the vertical extremities of the throat for injecting compressible fluid into the throat at a direction which has a substantial component of motion vertically downward.

3,186,699
APPARATUS FOR THE HARDENING AND TEMPERING OF WORKPIECES
Hans Wilhelm Grönegress, Gevelsberg, Westphalia, Germany, assignor to Firm Paul Ferd. Peddinghaus, Gevelsberg, Westphalia, Germany
Filed Sept. 12, 1962, Ser. No. 223,217
Claims priority, application Germany, Sept. 26, 1961, P 27,932
5 Claims. (Cl. 266—4)



1. An apparatus for the surface-hardening and tempering of a metallic workpiece, comprising heating means displaceable relatively to said workpiece for substantially uninterruptedly and progressively heating said workpiece to a temperature sufficient to harden a surface thereof upon relative displacement of said workpiece and said heating means in a predetermined direction; partial quenching means rearwardly of said heating means in said direction for subsequently quenching said surface to a temperature below a predetermined tempering temperature and displaceable relatively to said workpiece in step with said heating means; after-cooling means rearwardly of said quenching means in said direction for cooling said surface upon the temperature thereof exceeding said predetermined tempering temperature upon reheating of said surface by heat retained in said workpiece subsequent to the partial quenching thereof; temperature-responsive detecting means trained on said surface rearwardly of said quenching means; and mechanism controlled by said detecting means for continuously and automatically adjusting the distance between said after-cooling means and said quenching means.

3,186,700
APPARATUS FOR PROMOTING LIQUID-GAS CONTACT
Arthur C. Daman, Denver, Colo., assignor to Denver Equipment Company, Denver, Colo., a corporation of Colorado
Filed Mar. 8, 1963, Ser. No. 263,866
17 Claims. (Cl. 266—15)



9. Apparatus for promoting liquid-gas contact, comprising in combination a lower roaster for ores mounted on a fixed support, a top closure for the roaster having a central opening for exhaust of heated gases and an inverted dished surface outwardly of the central opening, an elongated container seated on the top of the roaster for confining separate flows of gas and liquid, means for introducing a liquid to be treated into a top portion of the container for gravitational descent therethrough, partitioning means at vertically spaced intervals through the container dividing its interior into a succession of treatment zones, each partitioning means having a central opening defined by a rim portion having a flaring bottom surface, and having small apertures distributed over its surface for dripping deposited liquid in droplets into a lower treatment zone, a rotary shaft extending through said central openings, baffle means mounted on the shaft under each central opening directing heated roaster gases outwardly in the treatment zone through descending liquid prior to passage of the rising gas through the associated central opening into the next treatment zone, there being a top opening in the container for discharge of treated gas and a bottom outlet at the periphery of the dished closure of the roaster for discharge of treated liquid from the container, and means for discharging spent ore from the roaster.

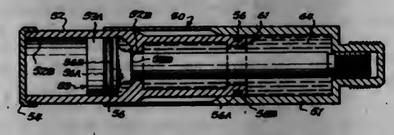
3,186,701
SPRING
Ralph L. Skinner, Sr., Birmingham, Mich., assignor to Rennlks Co.
Filed Mar. 4, 1963, Ser. No. 262,729
1 Claim. (Cl. 267—1)



A one piece garter spring for effecting a radially inward bias on a circumscribed member comprising,
a plurality of helically wound convolutions of relatively large outside diameter and constant lead, each of said large diameter convolutions having generally

cylindrical outer peripheral surfaces and arcuate inner peripheral surfaces, respectively, and
a plurality of helically wound convolutions of relatively small outside diameter and relatively constant lead, each of said relatively small diameter convolutions having an arcuate outer peripheral surface the outside diameter of which is relatively smaller than the outside diameter of said relatively large convolutions but relatively larger than the inside diameter of said relatively large diameter convolutions, said small diameter convolutions being formed integrally with said large diameter convolutions thereof at one end of said relatively large convolutions, the arcuate outer peripheral surfaces of said relatively smaller convolutions being engaged between the arcuate inner peripheral surfaces of said relatively larger convolutions, respectively, at the other end thereof in threaded relationship, said relatively smaller convolutions being substantially entirely enclosed within said relatively larger convolutions so that the relatively large convolutions at the opposite ends of said spring are substantially juxtaposed against one another thereby to exhibit a substantially continuous relatively smooth outer peripheral surface that is engageable with an outer peripheral surface on the circumscribed member in substantially continuous circumferentially extending line contact.

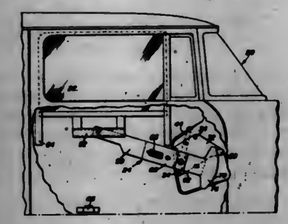
3,186,702
LIQUID SPRING
Paul Hollis Taylor, Grand Island, N.Y., assignor to Tayco Developments, Inc., North Tonawanda, N.Y., a corporation of New York
Filed Feb. 23, 1962, Ser. No. 175,113
17 Claims. (Cl. 267—1)



1. In a liquid spring including a cylinder member and an internal member within the cylinder member cooperating to define a chamber containing liquid means, the spring relying upon compressibility of liquid for its resilience, an improvement comprising: a groove formed in one of said members between said one member and the other of said members, and seal means formed of expandable material seated in said groove, said liquid means including at least one liquid which is effective upon said expandable material to cause said seal means to increase in volume and exert a predetermined seal pressure between said members in excess of the pressure exerted upon said liquid means by compression during normal operation of the liquid spring.

3,186,703
VEHICLE WINDOW CONTROL DEVICE
Lloyd D. Stapp, Midland, Tex., assignor of fifty percent to Henry T. Porter, Midland, Tex.
Filed Nov. 15, 1962, Ser. No. 237,835
8 Claims. (Cl. 268—126)

1. A control apparatus for a movable window, said apparatus consisting of a mounting plate, a stop on said mounting plate, a shaft, said shaft extending transversely through said mounting plate and being rotatable relative thereto, an elongated arm, said arm being rotatably mounted on said shaft, a clutch plate, means mounting said clutch plate on said arm for movement in a longitudinal direction relative thereto, means mounting said clutch plate on said shaft for rotation relative thereto, means on said clutch plate releasably engageable with said stop so as to optionally prevent rotational movement of the clutch plate and consequently the arm, means biasing said last mentioned means into engagement with said stop, means secured to said shaft for effecting the rotation thereof, and control means fixed to said shaft and rotatable therewith for causing a withdrawal of the clutch plate from the stop and a subsequent rotation of the clutch plate and arm, said control means consisting of a flat plate in a plane parallel and juxtaposed to one face of the clutch plate, a pair of lugs fixed to said clutch plate,



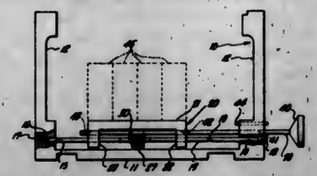
one of said lugs being orientated so as to be engaged by the control plate for effecting a forward movement of the clutch plate out of engagement with the stop and a rotation of the clutch plate and arm in a first direction upon a rotation of the shaft in a first direction, the second of said lugs being orientated so as to be engaged by the control plate for effecting a forward movement of the clutch plate out of engagement with the stop and a rotation of the clutch plate and arm in a second direction upon a rotation of the shaft in a second direction.

3,186,704
PIPE HOLDING DEVICE
Richard G. McCloskey, Sandusky, and Heinrich H. Frank, Elyria, Ohio, assignors to The Ridge Tool Company, Elyria, Ohio, a corporation of Ohio
Filed July 18, 1962, Ser. No. 210,728
3 Claims. (Cl. 269—9)



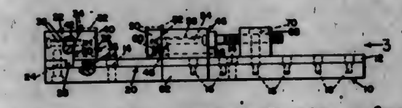
1. A device for holding in end opposed engaged relation a pair of elongate bodies of curved cross section, said device consisting of two elongate plate elements and a connecting spring therebetween, each of said plate elements consisting of a plate having convergent side edges forming an apex and a broad transverse base edge, there being an aperture in the apex end of each plate in which an end of said spring is engaged, each of said elements having an article engaging socket recess extending from a side edge of the element into the element, said socket recess being defined by an edge wall, the longitudinal center line of which recess is in alignment with the center of the aperture in the apex end of the element in which aperture an end of the spring is connected, said edge wall being formed on opposite ends of said center line by a pair of arcs the curvature of which arcs is smaller than the curvature of the body to which the device is to be attached and determined by radii, the loci of which are spaced apart from each other and which arcs extend equidistant on each side of the said center line, and a third portion of the recess edge wall being formed by an arc of larger radius than the first arcs and connected to the adjacent ends of the first arcs and providing with said ends and with the other ends of the first arcs, four inwardly projecting abutments for engagement with the curved surface of the elongate body at equidistantly spaced points on opposite sides of the latter.

3,186,705
POSITIONING APPARATUS
Jerome A. Rodder, 775 Sunshine Drive, Los Altos, Calif.
Filed Jan. 16, 1963, Ser. No. 251,834
10 Claims. (Cl. 269—60)



1. Positioning apparatus comprising a frame, an elongated guide rod secured to the frame, a carriage mounted to slide along the guide rod, detent means for holding the carriage at a fixed location on the guide rod, and means for moving the guide rod with respect to the frame to shift the location determined by the detent means.

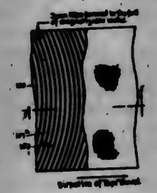
3,186,706
VISE CONSTRUCTION
Amedio P. De Felice, % Banner Mold & Die Co., 105 Union St., Leominster, Mass.
Filed Mar. 11, 1963, Ser. No. 264,342
1 Claim. (Cl. 269—136)



A vise comprising a generally flat plate, a fixed vise jaw mounted on said plate, means securing said jaw in fixed position, an arcuate surface on the jaw, a separate jaw face for said fixed jaw, said jaw face having an arcuate surface corresponding to that of the jaw, said arcuate surfaces being in sliding contact with each other, and a substantially flat work holding surface on the jaw face, said arcuate surfaces having an elongated center of curvature parallel to the flat plate, means loosely mounting said separate jaw face on said fixed jaw providing for a limited motion of said jaw face on the jaw to and from the plate, resilient means on said plate engaging the jaw face and normally tending to urge the same away from the plate, said jaw face mounting means holding the jaw face with its arcuate surface in close association with respect to the arcuate surface of said vise jaw,

a movable jaw, means mounting said movable jaw on the plate for motion toward and from the fixed jaw said jaws being substantially parallel, said movable jaw having an arcuate surface thereon, a separate jaw face having an arcuate surface corresponding to the arcuate surface on the movable jaw, means loosely holding the last-named jaw face to the movable jaw with their arcuate surfaces in contact, providing for limited sliding motion of the jaw face on the movable jaw corresponding to the relative motion of the movable jaw face on the fixed jaw, resilient means tending to move the jaw face on the movable jaw in a direction away from the plate, the jaw face having a work-holding surface, the arcuate surfaces of the fixed jaw and its jaw face and the movable jaw and its jaw face presenting concavities facing toward each other, said concavities being more closely spaced at the portions of the respective jaws remote from the plate and gradually increasing in the distance between them in a direction toward the plate, means to move the movable jaw toward the fixed jaw to clamp a workpiece between the jaw faces under pressure which is exerted on the workpiece at the jaw face engaged sides thereof in a direction parallel with the motion of the movable jaw, said pressure reacting on the jaw faces tending to move the latter downwardly toward the plate and thereby urging the workpiece clamped therebetween into a firm abutting contact with the plate.

3,186,707
MAGNETIZABLE TAPE AND THE LIKE, FOR SIGNAL CARRIERS
Thomas A. Banning, Jr., 5520 South Shore Drive, Chicago 37, Ill., and Emil L. Ranseen, deceased, late of Chicago, Ill., by Agnes J. Ranseen, executrix, Evanston, Ill.; said Agnes J. Ranseen assignor to said Banning
Original application May 4, 1954, Ser. No. 427,428, now Patent No. 2,976,354, dated Mar. 21, 1961. Divided and this application Mar. 9, 1961, Ser. No. 94,649
4 Claims. (Cl. 274—41.4)



1. As a new article of manufacture, a flexible tape for receiving records of signals, said records being magnetic variations of magnetic effect carried by said tape, said tape having a flexible magnetizable surface comprising the surface of a thin sheet of flexible alloy metal which alloy includes substantially 4 percent molybdenum and 79 percent nickel, said tape including a flexible strip of high tensile strength fabric mounting for said strip of alloy metal, and a flexible cementitious connection between the strip of high alloy metal and the said backing mounting, wherein there is provided a continuing series of ribs of said alloy metal extending across the general plane of said sheet of said metal and extending across a substantial portion of the width of said sheet of metal and all of the same shape and parallel to each other.

3,186,708
PHOTOELECTRIC CONTROL DEVICE
Werner Hinz, Berlin-Neukolln, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 3, 1961, Ser. No. 129,134
Claims priority, application Germany, Aug. 15, 1960, ST 16,802
17 Claims. (Cl. 271—57)



1. Apparatus for detecting the conveyance of non-coextensive overlapping documents which overlap on a desired side of leading conveyed documents comprising:

(a) means for conveying documents along a predetermined path;

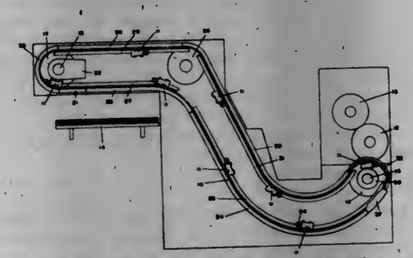
(b) a first source of light positioned on a first side of said path said first side corresponding to the desired side of said leading documents;

(c) means directing the light from said first source toward a given position with respect to said path so that light from said first source will be reflected in a given direction off the leading edges of conveyed documents which pass said given position on said first side of said path and light from said first source will be reflected in directions other than said given direction off portions of said documents other than said leading edges;

(d) first light sensitive means disposed on said first side of said path in said given direction with respect to said given position adapted to detect only reflections in said given direction from said given position and means for emitting a signal whenever such a reflection is detected, each said reflection being representative of the leading edge of a conveyed document; and

(e) indicating means coupled to said first light sensitive means and responsive to the receipt of two or more of said signals within a predetermined time for indicating the presence of overlapping documents, said predetermined time corresponding to the time in which it normally takes one document to pass said given position.

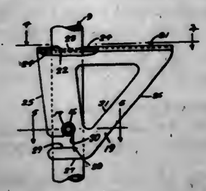
3,186,709
DELIVERY MECHANISM FOR PRINTING PRESSES
Henri E. Peyrebrune, River Forest, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 18, 1963, Ser. No. 288,711
10 Claims. (Cl. 271—79)



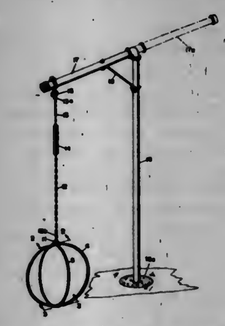
1. In sheet delivery mechanism, in combination, a pair of endless chain conveyors in spaced relation and a pair of rotatable sprockets over which the chain conveyors pass at the transfer and delivery end respectively, guide tracks for the chain conveyors at the transfer end in spaced encircling relation with each sprocket at said end, a plurality of gripper assemblies extending transversely of the delivery mechanism in spaced relation along its length, and means securing each gripper assembly at its ends to the chain conveyors, said means respectively including a pivot connection adjacent the rearward side of each assembly joining the assembly directly to a chain conveyor, and a second pivot connection adjacent the forward side of each assembly and joining the assembly to said chain conveyor by means of a toggle link pivotally carried by the gripper assembly.

3,186,710
ADJUSTABLE STILT
Lawrence A. St. Peter, Box 315, Hubbell, Mich.
Filed Sept. 23, 1963, Ser. No. 310,694
5 Claims. (Cl. 272—70.1)

4. A stilt comprising a substantially upright rigid standard, a foot support including an elongated top portion having an opening adjacent one end thereof through which said standard is received for sliding, rotary and rocking movement of said foot support relative to asid standard, said top portion constituting a foot engaging or tread portion of the foot support, said foot support having depending substantially parallel side walls provided with complementary outwardly opening angular notches, and longitudinally spaced pins extending through and projecting from said standard and having portions selectively engageable in said notches for supporting said foot support at different elevations on the standard.



3,186,711
PLAYGROUND TOY AND EXERCISING DEVICE
Robert C. Morrow, 725 S. 21st St., Paducah, Ky.
Filed Oct. 22, 1962, Ser. No. 232,204
7 Claims. (Cl. 272—85)



5. An exercising and amusement device for children comprising an open cage-like carrier consisting of a plurality of hoop-like rings of a diameter to receive a child therein, means for rigidly uniting the rings to each other in equidistantly spaced relation, and upon a common vertical axis an overhead support and a flexible twistable strand connected at its top to said support and at its bottom to the tops of said rings.

3,186,712
COIL-UP BOWLING RETURN GUTTER
Milton Kessler, 4535 Grove Drive, Youngstown, Ohio
Filed May 18, 1962, Ser. No. 195,692
5 Claims. (Cl. 273—51)



1. In combination, a floor portion and two parallel upright straight wooden members defining with said floor portion a shallow trough having two straight side walls, a semi-rigid plastic strip having two longitudinal edge portions and being transversely curved between said edge portions to define a return gutter located in said trough, a locking strip fastened to one of said upright walls and extending longitudinally thereof and having a longitudinal recess extending along its length, said recess providing a slot having an opening facing the interior of the trough, an enlarged bead on a longitudinal edge of said plastic

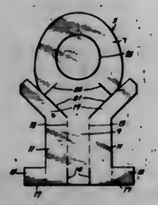
strip, said bead lying in said recess to hold and position one side of said strip, and means holding the other edge of said strip against the other upright wall, said plastic gutter strip being transversely resiliently flexed into a sharper curve than its normal relaxed condition and thereby forcing said bead into engaging relationship with said recess.

3,186,713
BOWLING PIN BASE
Keith Allen Hebble, Arcade, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 16, 1960, Ser. No. 50,013
2 Claims. (Cl. 273—82)



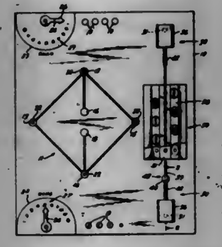
2. A bowling pin having its butt end provided with an undercut at the juncture of the bottom surface and the side surface of the pin forming thereby an outwardly projecting central core, said undercut extending into the body of the pin adjacent said core forming a downwardly facing annular groove, a circumferential locking groove in said central core, an annular base of wear resistant material in said undercut, said base comprising an annular skirt portion forming the junction for the bottom and side of the pin and, integral with said skirt portion, an upright collar portion encircling said core, said collar portion provided with an an integral locking wedge inside said collar at the upper extremity thereof, and a deformed inner ring member positioned between said core and said annular base and forming, at the inner extremity thereof a rigid locking bead in said circumferential locking groove, the upper end of said locking ring engaging the locking wedge of the collar portion and being deformed thereby into said circumferential locking groove.

3,186,714
BLANK FOLDABLE TO FORM A PAPER PADDLE
Ralph S. Berendt, Carol D. Berendt, and Murray Bernthal, Syracuse, N.Y., assignors to Capsle, Inc., Buffalo, N.Y., a corporation of New York
Filed Aug. 15, 1961, Ser. No. 131,634
3 Claims. (Cl. 273—96)



1. A blank for forming a paper paddle comprising a single ply face portion, an integrally attached inner handle ply depending longitudinally from said face, an outer handle ply integrally attached to each side of and adapted to be folded to lie in juxtaposition with said inner ply to thus effect a three ply handle, and an angular tongue integrally attached to and extending upwardly and outwardly from the upper end of each outer ply, said tongue being generally adjacent and outside the lower associated face edge, said face having a slit on each side extending inwardly from the edge thereof within the longitudinal reach of said associated tongue, each of said tongues being in juxtaposition with said face when said outer plies are folded and adapted to be passed through one of said slits to reinforce the junction of said handle and said face.

3,186,715
MAGNETIC SURFACE PROJECTILE GAME
Milton L. Dreiblatt, 33 Greenwich Ave., New York, N.Y.
Filed Feb. 27, 1963, Ser. No. 261,349
6 Claims. (Cl. 273—108)



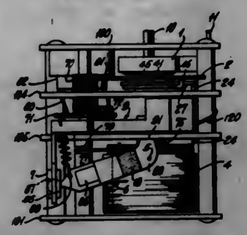
1. A scoring device comprising, in combination:
(a) a board;
(b) impelling means supported within a housing surmounting said board, said impelling means being disposed in spaced relation with respect to said board;
(c) a missile projectable by said impelling means into the vicinity of a pre-selected region on said board;
(d) said missile being provided with magnetic means deflectable to at least one predetermined area in said region;
(e) said predetermined area being provided with means for attracting said magnetic means;
(f) said predetermined area indicating the score of a game simulated on said board;
(g) said housing being provided with a horizontal guide rod;
(h) said guide rod extending through a bore formed in said missile whereby said missile is suspendable above said predetermined area;
(i) said missile being disposed in spaced relation with respect to said predetermined area when said missile is in the vicinity of said predetermined area.

3,186,716
MODIFIED CHECKER GAME
Anthony A. Shaberick, 4421½ San Fernando Road, Glendale, Calif.
Filed Apr. 16, 1962, Ser. No. 187,580
5 Claims. (Cl. 273—137)



2. Equipment for playing a modified checker game comprising two sets of distinctively marked checkers, each checker having a projection from its top surface of one of a plurality of different shapes, certain checkers of of each set having a recess in its bottom surface mateable with certain ones only of said projections, certain pieces having similarly shaped projections and recesses and others having differently shaped projections and recesses, and each of said recesses and each of said projections being mateable, respectively, with a projection or a recess of another one of said checkers.

3,186,717
MINIATURE PHONOGRAPH
Nicholas D. Vuyosevich, Fairhaven, and Frederick J. Kent, Glen Rock, N.J., assignors to Nicholas D. Vuyosevich, trading as V-Associates, Matawan Township, Monroe County, N.J.
Filed Jan. 12, 1962, Ser. No. 165,872
10 Claims. (Cl. 274—1)



2. A miniature phonograph comprising means to rotate a grooved sound record, a stylus, a stylus arm carrying the stylus to track the groove of the record, an acoustical diaphragm, a sound conveying member in operative relationship with the diaphragm, a pivoted lifter member carrying at one end said stylus arm, the other end of the lifter member bifurcated thereby forming a hold arm and a combination stop and lifting arm, the lifter arm adapted to be moved in one direction to move the stylus arm to engage the stylus in the groove of the sound record, the lifter arm adapted to be moved in the opposite direction to move the stylus arm to disengage the stylus from the groove of the record, a starting lever release arm operative to engage said hold arm of the lifter member thereby to hold the lifter arm in non-playing position, the release arm movable into playing position so that the record is rotated against the stylus to reproduce a recording thereon, a shaft, a detent member carried by the shaft, a lifter arm cam disc freely mounted on the shaft, and a double faced cam member extending from the cam disc and having a lifting surface and a detent engaging surface on one face and a stop surface on the other face, in one direction of the shaft the detent engaging surface of the cam contacted by the detent to move the cam stop surface into blocking engagement with the stop arm of the lifting member, in the other direction of the shaft the stop surface of the cam engaged by the detent to move the cam lifting surface into engagement with the lifting arm of the lifting member to raise the lifter arm into inoperative position so that the parts are in position for the start of another playback of the record.

3,186,718
SOUND REPRODUCING MACHINES
John Adrian Churchill, Thorpe-le-Soken, England, assignor to Foster-Mallard Limited, London, England
Filed June 23, 1960, Ser. No. 38,148
Claims priority, application Great Britain, June 25, 1959, 21,884/59
4 Claims. (Cl. 274—10)

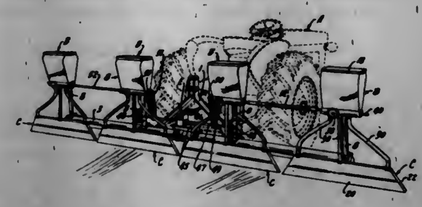
1. In a sound reproducing machine having a turntable, adapted to support a stack of records, having a top side and an under side, and a pick-up arm adapted to play both said top and said under side of said records; a control member, a first means determining a control cycle of said machine and controlling the direction of rotation of said turntable, a second means for effectuating the movements of said pick-up arm for bringing said pick-up arm into playing relation with said top side and said under side, respectively, of one of said records above or below said pick-up arm, a third means for releasing one of said records from said stack onto said turntable, linkage means connecting said first, second and third means, a rocking member arranged in said linkage means, said rocking member being movable between two predetermined positions, said linkage means being arranged for moving said rocking member from one of said predetermined positions to said other predetermined position during each one of said control cycles of said machine, a pecker member arranged within said linkage, said pecker member being moved during each one of said control cycles, and said rocking member having faces being engaged by said



pecker member in such manner that when said rocking member is in either one of its predetermined positions, it will be moved to its other predetermined position by the movement of said pecker member, a pivoted arm, said pecker being pivotally mounted on said arm, and a striker means on said control member, said striker means being arranged for moving said pivoted arm during each one of said control cycles.

ERRATUM
For Class 274—41.4 see:
Patent No. 3,186,707

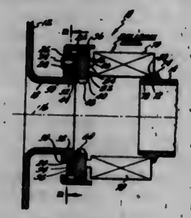
3,186,719
MULTIPLE APPLICATORS
Harry L. Sosalla and Simon Bylsma, Sac City, Iowa, assignors to Noble Manufacturing Company, Sac City, Iowa, a corporation of Iowa
Filed Jan. 23, 1962, Ser. No. 168,133
4 Claims. (Cl. 275—14)



1. In an applicator system for agricultural machinery and the like, said applicator system being connectable and dis-connectable as a unit from a carrying structure such as a tractor or the like, said applicator system including, in combination, an elongated bodily rigid applicator support extending generally transversely with respect to the direction of travel of the applicator system, a plurality of applicator subassemblies mounted on and disposed in generally aligned relationship one to the other substantially parallel to the transversely extending support, each such subassembly including an individual hopper, a metering and feed assembly for each such hopper, and a plurality of discharge tubes extending from each such hopper, a casing beneath the hopper of each sub-assembly, each such casing being substantially wider transversely than along the longitudinal axis of the tractor, and a plurality of

individual applicator sub-units arranged end to end within and along the transverse extension of the casing, whereby to provide a generally continuous zone of application from end to end of each such casing, the casings being mounted in transverse alignment along the support, whereby to provide a generally continuous zone of application extending transversely across the path of movement of the tractor, the discharge tubes from each hopper extending to the individual applicator sub-units within the casing with which such hopper is associated, generally vertically extending structure for rigidly mounting each hopper and its associated applicator sub-assembly to the applicator support, and for fixedly positioning each hopper with respect to its associated applicator sub-assembly, and connecting means for fixedly mounting the applicator support to the carrying structure whereby the relative positions of the applicator sub-assemblies to the ground are fixed upon connection of the applicator support to the carrying structure.

3,186,720
SEAL PLATE ARRANGEMENT
Guy W. Miller, Vernon, and Alexander Benyi, Jr., Granby, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,044
3 Claims. (Cl. 277—9)

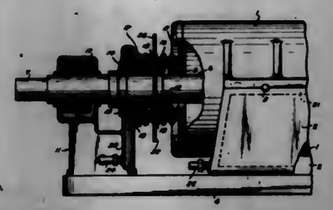


1. A seal unit with a readily removable and replaceable seal plate comprising:
a first flanged device having a radially extending flange surface and a second device to be sealably connected,
a connecting member connected and locked to said first device and including exposed screw threads,
a seal plate having first and second smooth, radially extending, opposed sealing surfaces thereon and further having screw threads cooperatively engaging said connecting member screw threads,
a resilient lock ring positioned between and sealably contacting said first seal plate surface and said first device flange surface and including protrusions to engage said seal plate and said first device to prevent relative motion therebetween when resiliently compressed therebetween due to said screw thread cooperation,
a contact seal positioned against said seal plate second surface in sealing relation therewith,
and compressible means bearing against said contact seal and said second device to cause said contact seal to bear against said seal plate second surface and such that said compressible means can be compressed to permit the retraction of said contact seal from said seal plate and to permit the threadable disconnection of said seal plate from said connecting member and the removal and replacement thereof.

ERRATUM

For Class 277—11 see:
Patent No. 3,186,042

3,186,721
DEFORMABLE PUMP SEAL FOR OPERATION UNDER EXTREME TEMPERATURE CONDITIONS
Johannes Petri, Frankenthal, Pfalz, Germany, assignor to Klein, Schanzlin & Becker A.G., Frankenthal, Pfalz, Germany
Filed June 12, 1962, Ser. No. 201,860
Claims priority, application Germany, Aug. 2, 1961, K 44,404
13 Claims. (Cl. 277—16)



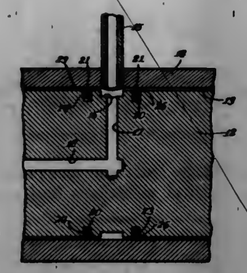
1. In a rotary pump, particularly for use in connection with fluids whose temperatures varies within a comparatively wide range, in combination, housing means comprising apertured wall means movable in response to temperature changes; a shaft in said housing means, said shaft comprising a portion which extends through and beyond said apertured wall means; and sealing means for preventing escape of fluid through said apertured wall means, said sealing means comprising a fixed sealing element spaced from said wall means, said fixed sealing element surrounding and sealingly engaging said shaft portion, an axially expandible tubular sealing portion surrounding said shaft portion and having a first end sealingly connected with said wall means and a second end, and connecting means providing a sealing connection between the second end of said tubular sealing portion and said fixed sealing element so that said housing means may change its dimensions in response to temperature changes of the fluid to expand or to permit contraction of said tubular sealing portion without affecting the sealing action between said fixed sealing element and said shaft portion.

3,186,722
POLISHED ROD PROTECTOR
Leslie A. Johnston, 1225 E. 18th St., Tulsa, Okla.
Filed July 25, 1962, Ser. No. 212,292
5 Claims. (Cl. 277—32)



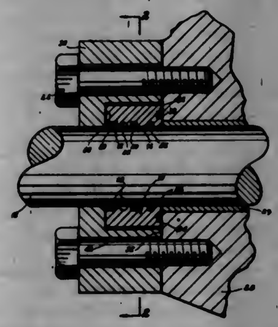
1. In combination with a pumping system having a polished rod reciprocated through a stuffing box, a polished rod protector comprising,
a bellows member surrounding said polished rod, said bellows member affixed at its upper end to said polished rod and its lower end supported adjacent said stuffing box;
and a quiescent chamber air receiving means in communication with said bellows member.

3,186,723
WEAR RESISTANT SEALING RING
James A. Wagner, Hagerstown, Ind., assignor, by mesne assignments, to Perfect Circle Corporation, Hagerstown, Ind., a corporation of Indiana
Filed Apr. 5, 1961, Ser. No. 100,862
1 Claim. (Cl. 277—59)



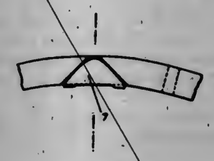
A sealing ring for preventing excess leakage of fluid between relatively rotating parts and adapted to be mounted in a circumferential groove in one of said parts and to resiliently grip the other of said parts, said groove being in communication with a source of lubricating fluid under pressure, said sealing ring having one side thereof adapted to be forced by the lubricating fluid pressure into slidable and sealing engagement with one side of said groove, said side of said ring being provided with a plurality of circumferentially spaced recesses to receive said lubricating fluid and to feed the lubricating fluid to the spaces on said side of the ring between said recesses, at least said side of said sealing ring including said recesses being provided with a coating of molybdenum disulfide, coating said side as well as the interior of said recesses without substantially filling said recesses, the molybdenum disulfide in said recesses being carried by said lubricating fluid to said spaces for a prolonged period of time after said coating on said side of the ring between said recesses has been worn off.

3,186,724
FLOATING STUFFING GLAND
Charles Wheatley, Tulsa, Okla., assignor to Charles Wheatley Company, Tulsa, Okla., a corporation of Oklahoma
Filed July 5, 1962, Ser. No. 207,731
2 Claims. (Cl. 277—59)



1. A stuffing gland assembly comprising a body member having a central bore extending therethrough for receiving a rotatable shaft member, said body member provided with at least one substantially flat surface for disposition adjacent a stationary support member, a plurality of spaced annular grooves provided in the bore adjacent the rotatable shaft, a sealing ring disposed in each of said grooves to provide a dynamic sealing between the body and the rotatable shaft, second annular groove means provided in the bore and interposed between the first mentioned annular grooves for receiving a lubricant to provide lubrication between the sealing rings and the rotatable shaft, third annular groove means provided in the bore and spaced from the first mentioned annular grooves, safety seal means disposed in the third annular groove means to provide auxiliary sealing between the body and the rotatable shaft in the event of failure of the dynamic sealing means, at least one annular groove provided on the substantially flat surface of the body, a seal member disposed in the last mentioned annular groove to provide a static sealing between the body and the stationary support member, and retainer means secured to the stationary support and encasing the body member in a manner to permit a self-alignment of the body in accordance with the disposition of the rotatable shaft member, said retainer means having a bore for receiving the shaft therethrough, a chamber provided in the retainer means and surrounding the shaft for receiving said body member therein, said chamber being of a diameter slightly greater than the diameter of said body member and having an annular shoulder surrounding the bore and engaging the surface of said body member opposite the said flat surface thereof, and a plurality of threaded members extending through the retainer means for securing thereof to the stationary support whereby pressure of the stuffing gland against the stationary support may be varied.

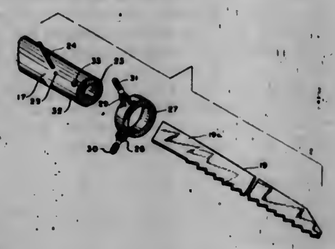
3,186,725
PISTON RING
Felix Wankel, Lindau (Bodensee), and Lothar Wiemann, Burscheid, Cologne, Germany, assignors to Goetzewerke Friedrich Goetze Aktiengesellschaft, Burscheid, Germany, a corporation of Germany
Filed July 10, 1962, Ser. No. 208,963
8 Claims. (Cl. 277—218)



1. A piston ring for internal combustion engines and the like, comprising an annular ring structure having a joint therein to permit radial compression and expansion thereof, said joint being divided into an upper and a lower gap each having spaced confining end walls, said gaps being circumferentially offset relative to each other and connected by a circumferentially extending line of separation parallel to the plane of the ring and dividing the portion of the ring structure between said gaps to form a lap joint which isolates said gaps from each other within the confines of the ring, and a sealing member disposed at the inner side of the ring structure adjacent the lower gap only and free of connection to the ring or to a piston on which the ring is mounted, operative to engage and seal against the confining end walls of said lower gap thereby to cover and seal the latter, said sealing member being so constructed and arranged as to follow the radial movement of the ring structure while remaining in sealing engagement with the confining end walls of said lower

gap and while preventing flow of gas axially or radially through said lower gap.

3,186,726
BLADE CLAMP FOR JIG SAW
David E. Wilhelm, Hampstead, and Vincent J. Raum, Baltimore, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Sept. 21, 1962, Ser. No. 225,181
1 Claim. (Cl. 279—83)

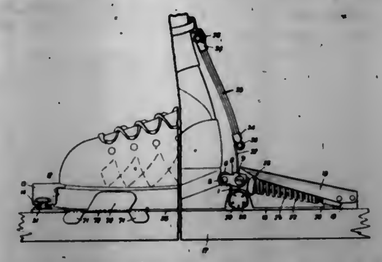


In a jig saw having a reciprocating shaft to which the shank of a saw blade is to be secured, a blade clamp comprising:

(a) a first axial bore formed at one end of the shaft;
(b) a second axial bore formed at the opposite end of the shaft;
(c) said bores communicating with each other, and said second bore having a slightly larger diameter than said first bore;
(d) a longitudinal slot formed diametrically across said first bore, said slot communicating with said second bore, whereby the shank of the saw blade may be received in said slot;
(e) a pair of holes formed in the shaft on a transverse axis;
(f) said holes being substantially alined with one another, and said holes communicating with said second bore and being spaced inwardly from said longitudinal slot;
(g) a longitudinally-slotted resilient roll pin frictionally seated within said holes and accommodating any misalinements, and said roll pin limiting the inward movement of the saw blade longitudinally of the shaft; and
(h) means to clamp the shank of the saw blade to the reciprocating shaft.

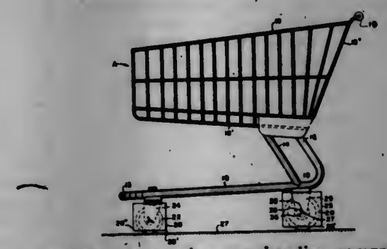
3,186,727
SKI BINDING
Rolf Hatlapa, Uetersen, Germany, assignor to Wiener Metallwaren- und Schnallenfabrik, Schar-Smolka, Schwechat, Austria, a firm of Austria
Filed Apr. 25, 1962, Ser. No. 190,064
Claims priority, application Germany, May 8, 1961, H 42,534
10 Claims. (Cl. 280—11.35)

8. A ski binding comprising
a holder adapted to grip a ski boot,
means for securing said holder to a ski,
said securing means including spring-biased supports which are yieldable turnably about the front portion of the ski boot in response to an adjustable overstrain in the upward direction of the heel of the ski boot and in both lateral directions thereof,
said holder comprising rocker means,
base plate means adapted to be secured to a ski, and
spring-biased pressure balls cooperatively associated with said base plate means for releasably securing said rocker means to said base plate means by abutment with said rocker means, so that said rocker



means disengages from said base plate means as a result of a vertical as well as horizontal overstrain.

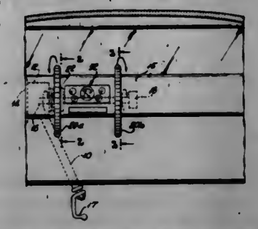
3,186,728
MERCHANDISE CART
William M. Turlington, 5612 Midwood Ave., Baltimore, Md.
Filed July 30, 1963, Ser. No. 298,614
1 Claim. (Cl. 280—33.99)



A cart for transporting merchandise comprising, in combination:

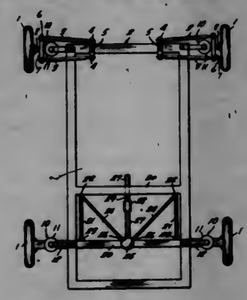
(a) a rigid frame having at least two substantially horizontal lower side portions extending throughout the length of the cart including a front end and a rear end, the two lower tubular side portions of the frame having portions extending upwardly from the rear end of the lower horizontal side portions;
(b) a basket supported on the upwardly extended side portions and above the lower horizontal side frame portions;
(c) a fixed wheel supporting means permanently and rigidly fixed to the rear end of each of the horizontal lower tubular side portions for receiving and supporting a rotatable wheel and a combination caster and wheel support adjacent the front of the lower horizontal frame portion, said wheels adapted to support the cart upon a supporting surface;
(d) the wheel supporting means adjacent the rear of the frame extending along and adjacent the side of each wheel;
(e) a rigid surface engaging member in the form of a plate positioned adjacent each of the rear supports and in a plane parallel with the wheel, and permanently fixed to the wheel supports, each plate having its lower lateral edges terminating in a predetermined horizontal plane extending below the wheel axle, the front and rear edges of the plate extending outwardly from each side of the wheels for a substantial distance in the direction of the rim of the wheel, beyond the wheel rim, whereby the surface engaging members attached to the rear end of the lower tubular member are adapted to engage irregularities in the supporting surface beyond a predetermined height.

3,186,729
STEERING WHEEL MECHANISM
Matthew Vacante, Syosset, N.Y., assignor to Postless Steering by Dual Wheels Co., Inc., Baldwin, N.Y.
Filed Aug. 29, 1962, Ser. No. 220,256
3 Claims. (Cl. 280—87)



1. In an automotive vehicle having a passenger compartment for transporting at least one passenger, the combination comprising, first means for controlling directional travel of said vehicle, a turnable shaft supported in an axially lateral sense with respect to the normal position of the driver-passenger when steering said vehicle, steering box means for linking said shaft and said first means for transmitting to said first means the turning motion applied by the driver-passenger to said shaft, first and second steering wheels mounted over and operatively connected to said shaft for selectively turning said shaft in either direction about its axis, said wheels having rim portions in the vehicle passenger compartment within reach of the driver-passenger for permitting normal steering of said vehicle, one wheel being linked to said shaft to turn in the same direction therewith, and gear means intermediate said second wheel and said shaft for providing a reversal sense of simultaneous rotation of said second wheel with respect to said first wheel, whereby said first and second wheels are selectively rotatable in opposite directions about said shaft axis for producing the directional movement of said vehicle, and whereby the passenger compartment of said vehicle is free of stake-like impaling steering mechanism structure adjacent the driver-passenger.

3,186,730
FLUID SUSPENSION SYSTEM FOR VEHICLES
James W. Angell, 4926 Goodridge Ave., New York 71, N.Y.
Filed May 11, 1961, Ser. No. 109,449
27 Claims. (Cl. 280—104)



1. A suspension system for supporting a chassis from a pair of spaced-apart front and a pair of spaced-apart rear wheels comprising fluid cushion means between each wheel and the chassis, said cushion means including relatively movable elements separated by a chamber containing a fluid which provides support for the chassis, one element being connected with the chassis and the other with the wheel, means transmitting a pressure increase in the chamber of one cushion means caused by relative movement of said elements toward each other from their normal positions to the corresponding chamber of the diagonally opposite fluid cushion means, whereby relative movement between the movable elements of one cushion means which tends to raise one corner of the chassis will transmit the pressure to the diagonally opposite cushion means to displace the relatively movable elements thereof so as to raise the diagonally opposite corner of the chassis, and means preventing a pressure decrease in the chamber of one cushion means, as in the case of the cushion means of the inside wheels on a turn or the cushion means of a wheel which hits a hole, from being transmitted to the chamber of the diagonally opposite fluid cushion means.

3,186,731
VEHICLE SUSPENSIONS
Thomas E. Fossard, Springfield, Mo., assignor to A. J. Industries, Inc., Springfield, Mo., a corporation of West Virginia
Filed Dec. 7, 1964, Ser. No. 416,454
5 Claims. (Cl. 280—104.5)

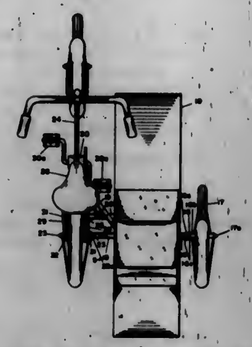


1. In a suspension for a vehicle having tandem axles, elongated springs independent of one another, means enabling each of said springs substantially at the medial portion thereof to be connected to the axles so that the springs have inner ends disposed toward one another and outer ends spaced remotely from one another, means to support the outer ends of the respective spring means on the frame of the vehicle for free or unencumbered movement away from the vehicle frame, a first equalizer bracket to be secured to the frame of the vehicle and having a first equalizer pivotally related thereto, said equalizer having an arm engaged in sliding contact with and by the inner end of one of the spring means so as to be rocked upon a vertical force being impressed on the corresponding axle and spring, a second equalizer bracket to be secured to the frame of the vehicle and having a second equalizer pivotally related thereto, said second pivotal equalizer having an arm engaged in sliding contact with and by the inner end of the other of the spring means so as to be rocked upon a vertical force being exerted on the corresponding axle and spring, a single link interconnecting said equalizers, said first and second equalizers being pivoted intermediate the inner ends of said springs, and said equalizers each having another arm depending below the first-named arm thereof and having a point of direct pivotal connection to said link so that an encountered force exerted on one axle causing its equalizer to rock is transmitted directly through the link at opposite ends thereof directly to the other equalizer which imposes part of said encountered force on its spring and axle.

3,186,732
SIDECAR FOR A BICYCLE
Bruce B. Mohs, 2355 University Ave., Madison, Wis.
Filed Oct. 9, 1963, Ser. No. 314,972
4 Claims. (Cl. 280—293)

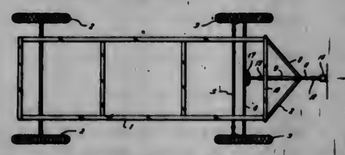
1. A sidecar for a bicycle,
(a) said sidecar mounted on a frame,
(b) said frame having an inside leg running along one side of said sidecar and a transverse leg extending in lateral relation to said side car and intersecting said inside leg,

(c) means attached to one end of said transverse leg to fixedly engage the rear axle of said bicycle in detachable relation,
(d) a substantially straight rigid brace with a free end projecting obliquely from said inside leg at a point of rigid connection slightly forward from said transverse leg,



(e) said free end of said brace being adapted to be detachably secured to the frame of said bicycle in the area of its saddle,
(f) an arm with a free end projecting outwardly from said inside leg at a point slightly forward from said brace,
(g) said free end of said arm being adapted to be detachably secured to one of the lower fork arms of a bicycle in rigid relation.

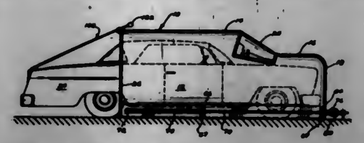
3,186,733
TRAILER STEERING CONTROL DEVICE
William L. Langebeanig, Pasadena, Tex.
(716 W. Ave. C, Killeen, Tex.)
Filed Apr. 10, 1963, Ser. No. 272,130
4 Claims. (Cl. 280—446)



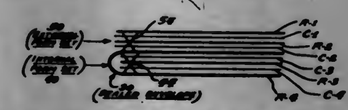
1. In a steering control for trailers having multiple pairs of wheels, a framework, a rotating axle on said framework, front wheels pivotally and vertically mounted on said axle, king pins supporting said front wheels, a reciprocating shaft connected at one end to a towing vehicle and at the other end to said rotating axle, said shaft maintaining said axle in one position for maintaining said king pins at a forwardly projecting inclination for the forward movement of said trailer and moving said axle to another position for maintaining said king pins in a rearwardly projecting inclination for the rearward movement of said trailer.

3,186,734
TRAILER VEHICLE FOR HOUSING A MOTOR VEHICLE
Leo F. Touhey, 3610 Dupont Ave. N.,
Minneapolis 12, Minn.
Filed Dec. 17, 1962, Ser. No. 244,978
5 Claims. (Cl. 280—460)

1. A trailer vehicle comprising in combination a supporting framework including a pair of laterally spaced apart longitudinally extending frame members one such member being positioned on each side of the trailer, a covering including a side, top and front walls, the lower edges of said sidewalls being rigidly connected to said frame members, a floor rigidly connected between said frame members, a cross member connected to the forward end of said longitudinally extending frame members, a longitudinally extending wheel support member pivotally connected at its forward end to the cross member and resiliently connected at its rearward end to said floor member and a ground wheel supporting hub rotatably mounted upon said wheel support member adjacent the rearward end of said trailer vehicle.



3,186,735
MULTIPLE COPY BUSINESS REPORT ASSEMBLY
William J. Hanrahan, Maywood, Ill., assignor to American Envelope Company, a corporation of Illinois
Filed Nov. 26, 1963, Ser. No. 326,028
2 Claims. (Cl. 282—25)



1. In a multiple copy report form assembly for use by a reporting company in preparing and transmitting reports of its transactions with other companies or individuals, a sealed envelope of the type comprising a single sheet of paper with all four edge margins of the envelope constituting a fold in said sheet, and with one such fold forming the flap of the sealed envelope, said envelope having an address face which includes an address receiving area, first and second report sheets, said report sheets having identically located first and second data receiving areas adapted to have transaction data and recipient identifying data respectively applied thereto, said first report sheet being disposed in a substantially fixed position within said sealed envelope, a pressure sensitive transfer means carried as a printed pattern on the inside face of the address face of the envelope, which pattern is located over both data receiving areas of said first report sheet, and said second report sheet being removably attached to the address face of said sealed envelope and having pressure sensitive transfer means disposed beneath said second identifying data area of said second report sheet and exclusive of said first data receiving area, whereby the pressure application of transaction and recipient identifying data on said second report sheet will transmit all such data to the first report sheet within said sealed envelope, but will transmit only the recipient identifying data to the address face of the sealed envelope.

3,186,736
LIMITED UNIVERSAL SWIVEL JOINT FITTINGS FOR ELECTRIC CONDUITS
Jerome Warshawsky, 3284 Bertha Drive, Baldwin, N.Y.
Continuation of application Ser. No. 75,406, Dec. 12, 1960. This application Oct. 2, 1962, Ser. No. 230,308
6 Claims. (Cl. 285—39)

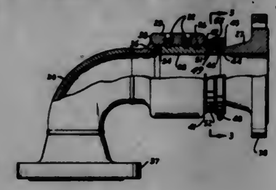
1. A swivel joint fitting comprising a tubular socket member having an axial bore enlarged at one end, a swiveling ball member having an axial bore and a spherical shaped head terminating one end thereof, said head being movably mounted in said socket member bore

enlarged end for adjustable angular and rotary movement of the ball member with respect to the socket member with said axial bores in continuity for extension of electric wiring therethrough, an internal track formed in said socket member having a wall forming an exterior wall portion of said socket member, said spherical shaped head being formed with a generally axially extending groove intersecting said track, a pin extending across said intersection into said groove and track and having an axis in radial alignment with respect to said spherical



shaped head, and a depression formed in said exterior wall portion extending as an obstruction into said track for engaging said pin to limit said rotary movement to less than one complete revolution, said radial axis of the pin having a length substantially equal to the radial distance between the bottoms of said groove and track, said pin having a base surface facing said track bottom and a side surface extending substantially parallel to said axis and forming a relatively sharp edge with said base surface for positive contact with said depression on said engagement of the pin therewith.

3,186,737
EXTERNAL ROTARY SEAL FOR A SWIVEL JOINT
Benjamin W. Brundage, 227 El Cerrito Ave.,
Piedmont, Calif.
Filed Mar. 9, 1962, Ser. No. 178,613
2 Claims. (Cl. 285—45)



1. In a swivel joint:
(a) a first cylindrical member having a tubular portion terminating in an end;
(b) a second cylindrical member having an end rotatably mounted within said tubular portion of the first member;
(c) bearing means mounting and retaining said end of the said second member for rotation in the tubular portion of the first member with the end of the tubular portion of said first member fitting closely adjacent to but spaced from the second member to provide an annular space between the said first and second members;
(d) a shoulder on the said second member immediately adjacent said end of the said first cylindrical member and disposed substantially in the same radial plane therewith whereby to provide a substantially continuous surface including the said end of the said first cylindrical member and the said shoulder;
(e) a washer lying against said end of the said first cylindrical member and against the shoulder of the said second member and extending across the annular space therebetween;
(f) a resilient ring fitted about said second member and engaged with the said washer;
(g) a stop secured to the said second cylindrical member on the side of said resilient ring opposite from said washer and engaged with the said resilient ring whereby to prevent the resilient ring from sliding away from the said washer; and
(h) a means for compressing said ring to force the ring into engagement with said washer.

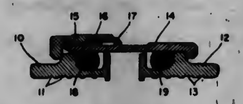
3,186,738
WELL DRILLING PIPE CONSTRUCTIONS AND THE LIKE WITH WEAR RESISTANT INSERTS
Robert S. Dalrymple, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 13, 1961, Ser. No. 144,904
1 Claim. (Cl. 285—55)



In combination: a first pipe section having a relatively long first main body with a fluid passageway with a substantially uniform first main body internal diameter and including a first end portion with a first end shoulder; a tool pin joint member secured on said first end portion and including a first groove forming surface formed at one end thereof and a radially inwardly extending pin joint shoulder on said joint member smoothly and tightly abutting said first end shoulder, said first end portion and pin joint member having aligned equal first internal diameters substantially equal to said main body internal diameter and with smoothly abutting shoulders; a second pipe section having a relatively long second main body with a fluid passageway with a substantially uniform second main body internal diameter substantially equal to said first main body internal diameter and including a second end portion with a second end shoulder and a radially enlarged internal surface extending from said end shoulder and tapering axially and radially inwardly to said second main body internal diameter; a tool box joint member secured on said second end portion and including a second groove forming surface formed on one end thereof and cooperating with said first groove forming surface to define a radially inwardly directed groove between said pin and box joint members and a radially inwardly extending box shoulder on said box joint member smoothly and tightly abutting said second end shoulder, said second end portion and box joint member having aligned cylindraceous surfaces with equal second internal diameters at said smoothly abutting shoulders, said second internal diameters being greater than said first internal diameters, said cylindraceous surface in said box joint member extending axially from said second groove forming surface and said cylindraceous surface in said second end portion comprising a portion of said enlarged internal surface said joint members having threaded portions in threaded engagement with each other and shoulder means in tight shoulder abutment at one end of said threaded engagement with said inwardly directed groove being between said joint members at the other end of said threaded engagement, and a wear resistant sleeve having an integral flange extending into and reducing the longitudinal extent of said groove and an axially extending portion

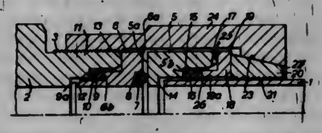
overlying in a contacting relationship said cylindraceous surfaces and the remainder of said enlarged internal surface, said sleeve having an interior surface with a third internal diameter substantially equal to said first internal diameter whereby a substantially uniform bore extends through said pipe sections and said joint members.

3,186,739
FLEXIBLE COUPLING
George A. Mahoff and Leonard L. Rice, Santa Monica, Calif., assignors to Gamah Corporation, a corporation of California
Filed Nov. 14, 1960, Ser. No. 68,725
6 Claims. (Cl. 285—95)



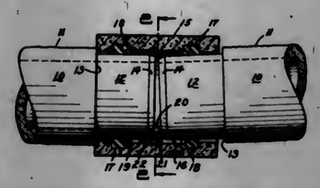
1. In a flexible coupling designed for connecting together opposing end portions of two tubular members: a flange rigidly secured to at least one of said end portions including a first radially extending inner annular wall portion, a second radially extending outer annular wall portion spaced from said inner wall portion, and an axially extending wall portion between said first and second wall portions, said wall portions defining an O-ring groove; said inner wall portion having an outer peripheral edge sloping axially inwardly towards a decreased diameter and towards the free end of said tubular member; said outer wall portion having an outer peripheral edge sloping axially outwardly towards a decreased diameter and in a direction opposite the free end of said tubular member; said axially extending wall portion sloping axially outwardly to a decreased diameter from said inner wall portion to said outer wall portion; an O-ring positioned in said groove, said O-ring having a cross-sectional diameter substantially less than the axial dimension between said first and second wall portions and greater than the radial depth of said groove; and, means connecting said opposing end portions, said means including an annular member having a constant diameter cylindrical inner surface portion which bridges said flange and sealingly engages said O-ring.

3,186,740
COUPLINGS FOR CONNECTING TUBULAR CONDUITS
Norman Lee, Allesley, Coventry, England, assignor to Keelavite Hydraulics Limited, Allesley, Coventry, England, a company of Great Britain
Filed Aug. 13, 1962, Ser. No. 216,487
Claims priority, application Great Britain, Aug. 16, 1961, 29,617/61
4 Claims. (Cl. 285—101)



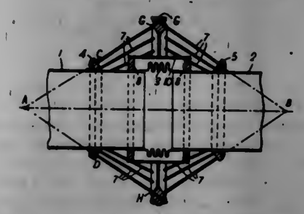
1. A pressure sealing, fluid tight coupling assembly for connecting the spaced-apart ends of two coaxial tubular conduit members, said assembly comprising two coaxial sleeve sections arranged in serial relationship between the spaced-apart ends of said conduit members, the mutually adjacent ends of said sleeve sections terminating in generally transverse annular surfaces; an O-ring of resilient material situated between said transverse annular surfaces in sealing engagement therewith, means holding the ring in substantially coaxial relation; the remote end of each of said sleeve sections extending in limited telescoping relation to a peripheral surface adjacent the terminal end of the corresponding conduit member, the telescoping portion of said sleeve section being formed with at least one coaxial annular step; a further O-ring of resilient material seated on said step of each sleeve section for sealing engagement with the opposed peripheral surfaces on said sleeve section and conduit member; rigid shoulder means separate from and adjacent to said sleeve section end for maintaining said further O-ring in position during operation, said rigid shoulder means defining with said step and said conduit member periphery a chamber enclosing said O-ring, said shoulder means including abutment means engaging said sleeve section to limit the axial position of said shoulder means to said step to a minimum axial dimension between adjacent transverse surfaces of said shoulder means and step not less than the maximum axial thickness of said O-ring; the corresponding surfaces of said sleeve section and conduit member between said step and the bore of said assembly being spaced apart and in direct communication with said bore to admit fluid at operating pressure to said chamber, said O-ring maintaining such pressure in said chamber to expose the surfaces defining said chamber to said pressure; the total annular area of the transverse surfaces exposed to operating fluid pressure at each of the remote ends of the two sleeve sections having a mean radius in excess of the mean radius of the annular area of the transverse surface of each of the mutually adjacent section ends within the sealing ends within the sealing confines of the O-ring therebetween; and means surrounding said sleeve sections and adapted to engage at least one of said conduit members to loosely hold said sleeve sections together.

3,186,741
CUSHIONED PIPE JOINT
Ralph W. Kurtz, Coshocton, Ohio, assignor to James B. Clow & Sons, Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 1, 1963, Ser. No. 269,462
3 Claims. (Cl. 285—111)



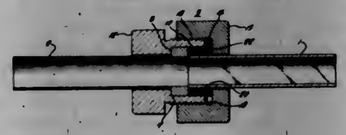
1. In a pipe coupling which includes a pair of cylindrical pipes normally subject to lineal expansion and having end portions disposed in substantially longitudinally adjoining relation, an annular coupling sleeve disposed around the relatively adjoining end portions of said pipes, and a pair of resiliently flexible, annular gaskets carried in said sleeve and disposed respectively in fluid tight engagement with the relatively adjoining end portions of said pipes; that improvement which comprises a resiliently flexible spacer cushion positioned in said sleeve and having a main body portion pinched between arcuate segments of the ends of said pipes, said spacer cushion possessing an initially straight lineal form in an unflexed condition, but being resiliently flexed in its applied position into segmental arcuate configuration conforming to the curvature of a segment of the inner circumference of said sleeve, the main body portion of said cushion having a length dimension of from 10% to 40% of the inner circumference of said sleeve and a thickness dimension greater than the normal lineal expansion of either of said pipes.

3,186,742
FLEXIBLE JOINT FOR DUCT SYSTEM
Adolf Frankel, Newcastle-on-Tyne, and Jerzy A. Lorett, Ponteland, Northumberland, England, assignors to Richardsons, Westgarth & Co. Limited, Northumberland, England
Filed Feb. 16, 1961, Ser. No. 89,854
Claims priority, application Great Britain, Feb. 24, 1960, 6,555/60
13 Claims. (Cl. 285—114)



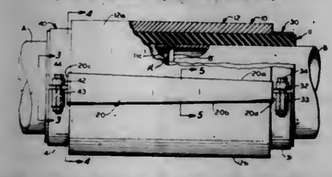
1. In a duct system for conveying a gas or liquid under pressure or partial vacuum, a flexible connection permitting angular displacement between a first duct and a second duct, and means joining said ducts in fluid tight relation and wherein the flexible connection comprises substantially the sole force transmitting means between said ducts and includes a tie, said tie comprising a first plurality of circumferentially equi-angularly spaced flexible bars, means rigidly securing the flexible bars to the first duct adjacent its end so that all forces from the duct are transmitted axially through the said flexible bars, a second plurality of circumferentially spaced flexible bars, means rigidly securing the second plurality of flexible bars to the second duct adjacent its end so that all forces from the second duct are transmitted axially through the second plurality of flexible bars, said flexible bars on each duct being of equal length and inclined at the same angle with respect to their duct, said first plurality of bars being oppositely inclined to said second plurality of bars, a rigid floating annular member centrally supported with respect to the aligned axes of the ducts by said first and second plurality of flexible bars, means rigidly securing the flexible bars to the floating member whereby all forces are transmitted axially through the bars so that any displacement between the axes of the two ducts will cause each flexible bar to bow inwardly and outwardly, said floating member retaining its original configuration throughout the entire range of operating pressures.

3,186,743
GLASS-TO-METAL TUBE COUPLING HAVING INDIUM SEAL MEANS
Harold W. Russell, Jr., Rochester, N.Y., assignor to Consolidated Vacuum Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 28, 1962, Ser. No. 219,913
2 Claims. (Cl. 285—238)



1. A selectively breakable vacuum tight glass-to-metal seal union comprising a glass tube having a free end and a predetermined portion of its peripheral surface adjacent said free end coated with a metal selected from the group of indium and indium alloys, a metal tube having an end portion defining a projecting shoulder portion and defining a sealing surface facing in the direction of said glass tube and extending at right angles to said glass tube and said metal tube, a compression ring member being slidably disposed on said glass tube and having a substantially frustoconical inner surface facing in the direction of said metal tube end portion and the coated glass tube end, a substantially annular gasket member comprising a metal selected from the group of indium and indium alloys and being interposed between said metal tube end portion and said ring member so as to encompass said coated glass tube end, a first tightening member slidably movable on said metal tube into contact with said projecting shoulder portion and selectively movable away from said shoulder portion, and a second tightening member slidably movable on said glass tube against said ring member and selectively movable away from said ring member, said first and second tightening members having corresponding threaded portions adapted to be brought into tightening engagement when said glass tube end is placed adjacent to said metal tube end portion, and to be selectively untightened from each other when said seal union is to be broken.

3,186,744
PIPE COUPLING DEVICE WITH DUAL CLAMPING MEANS
Arthur J. Smith, 4037 Golf Road, San Jose, Calif., and Clifford R. Hughes, 2945 Miles Drive, Santa Clara, Calif.
Filed Dec. 3, 1962, Ser. No. 241,943
1 Claim. (Cl. 285—373)

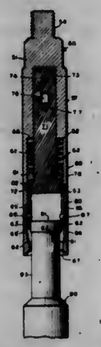


A pipe coupling device for connecting confronting spaced ends of adjacent pipes comprising a resilient sleeve split in an axial direction and arranged to be disposed around said adjacent pipes at the confronting ends thereof, said sleeve being formed with a concentric annular projection along the inner wall thereof for positioning intermediate the confronting ends of said adjacent pipes, said sleeve being formed to overlap along the split thereof, a malleable housing disposed around said sleeve and having a plurality of separated sections, said housing being formed along the edges of said sections with tapered flanges, said tapered flanges being arranged in pairs at confronting edges of said separated sections with respective pairs of said flanges being tapered in opposite directions, a locking device for each of said pairs of tapered flanges on said housing, each of said locking devices being formed with tapered, longitudinally extending, opposing flanges for gripping an associated pair of flanges on said housing, whereby imparting movement to said locking devices in opposite axial directions causes said housing to compress said sleeve to form an improved seal for said pipe coupling device, each of said locking devices being formed with bent end portions for engagement with opposite ends of said housing, and a band clamp disposed at each end of said sleeve, said clamps being disposed around said sleeve adjacent to opposite ends of said housing to further compress said sleeve for forming an improved seal for said pipe coupling device.

3,186,745
WELL TOOLS
Cecil Ray Lyles, Borger, Tex.
(2101 E. 16th St., Farmington, N. Mex.)
Filed Mar. 21, 1961, Ser. No. 97,287
4 Claims. (Cl. 287—119)

1. A well tool combination comprising a first well tool and a second well tool releasably attached to one another,

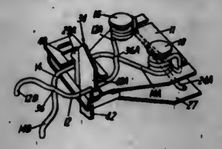
the first well tool comprising a first elongated member, a second hollow member elongated in the same direction as said first member and movable with respect to said first member and slidably attached thereto, said second member having therein a series of holes passing therethrough in a plane normal to the direction of elongation of said second member, a locking member having a diameter movably located at least in part within each of said holes, one end of each of said holes being smaller than the diameter of the locking member therein whereby each of said locking means will not entirely pass through and out of the hole in said sleeve in the direction of said one end, the other end of each said hole being open towards said first member, and said locking member movable therethrough, said first member having a pair of vertically spaced apart depressions in the surface, said depressions matching, in the vertical cross-section thereof,



the corresponding cross-section of said locking members, said depressions each having a depth that is, in combination with the holes in said second member, as deep as the thickness of each said locking member, and said first member also having, adjacent to and continuous with said depressions, a recess which, in combination with the holes passing through said second member, has a depth less than the thickness of said locking means, said locking means being, in the attached position of said first tool and second well tool, located in part within said holes therefor and in part projecting therefrom and in contact with said recess and said second tool, said second well tool having a head which slidably fits said second member of said first tool, and said head having immediately therebelow an extension thereof of different width and joined thereto by a shoulder, said locking means fitting below and supporting said shoulder.

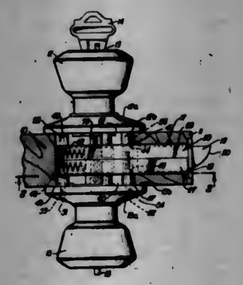
3,186,746
LATCHES
William Spencer Attwood, St. Albans, and Harold Ernest Coverley, Redbourn, England, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 5, 1962, Ser. No. 242,493
Claims priority, application Great Britain, Dec. 9, 1961, 44,140/61
4 Claims. (Cl. 292—19)

1. A latch mechanism for a closure member mounted for movement relative to a support member, said latch mechanism comprising a pair of resilient elements secured to one of said members and having spaced latch portions cooperating to define a striker receiving gap extending substantially parallel to said one member, a striker secured to and extending from the other of said members substantially normal to the latch portions of said resilient elements, said striker having a head with opposite barbs thereon adapted to enter said gap and transversely engageable with spaced latch portions upon movement of the closure member toward said support member to laterally deflect said latch portions apart until said portions resiliently snap behind and latchably engage said barbs, and said resilient elements each having a spring



portion resiliently engageable with said striker to maintain the latch portions of said spring elements in latching engagement with said striker barbs when said members are in their latched position, and said spring portions being operable to bias said members apart upon release of said latch portions from latching engagement with said barbs.

3,186,747
DEADLOCKING LATCH FOR HOUSE TRAILERS
Theodore F. Hamm, deceased, late of Anaheim, Calif., by Marjorie L. Hamm, executrix, Anaheim, Calif., and Albert S. Lord, Long Beach, Calif., assignors to Tool Research and Engineering Corporation, Compton, Calif., a corporation of Delaware
Filed Feb. 12, 1963, Ser. No. 258,954
11 Claims. (Cl. 292—169)



1. A deadlocking door latch mechanism which includes: a housing for mounting in a door near the swinging edge thereof; a face plate closing said housing at the edge of said door, said face plate having a bolt opening; a locking spindle passing transversely through said door and said housing between the interior and exterior sides thereof, said locking spindle being rotatable between locking and unlocking positions; a retractor slide assembly reciprocably slidable within said housing to and from said face plate, and comprising an interior retractor slide toward the interior of said door, an exterior retractor slide toward the exterior of said door, and a deadlocking dog movably mounted in said retractor slide assembly, and movable to and from a locking position engaging said locking spindle; spring means urging said retractor slides toward said face plate; a bolt carried on one of said retractor slides; and dog operating means to move said locking dog from locking to unlocking position, said dog operating means being operated by a relative longitudinal movement between said exterior and interior slides; mating overlapping shoulder means between said interior retractor slide and said exterior retractor slide transverse to the direction of retraction movement, and spaced from one another sufficiently to permit said relative longitudinal movement of said slides to achieve said dog release movement.

3,186,748
MAGNETIC CATCH
Robert E. Foltz, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Oct. 31, 1962, Ser. No. 234,421
2 Claims. (Cl. 292—251.5)



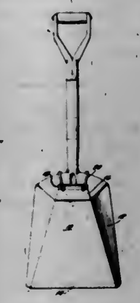
1. A magnetic catch adapted to secure a door that is provided with a magnetically permeable strike plate, said catch comprising: a housing of non-magnetic material including side and top plate members cooperating to define a chamber with an opening generally confronting said door; a magnet assembly mounted in said chamber and spaced from opposite side plate members of said housing for rotation through a small angle therein whereby to accommodate the relative positioning of said catch and said strike plate, said magnet assembly including a permanent magnet comprising magnetic particles bonded together by a rubber matrix, said magnet having coupling apertures opening from opposite pole faces thereof, said assembly further including a magnetically permeable metal pole piece disposed in contact with each of said faces and extending an edge portion through the opening in said chamber whereby readily to engage said strike plate, said pole pieces having integral boss means disposed inwardly from the margins thereof and pressed into said coupling apertures with a press fit therebetween, said pole pieces being positively and mechanically coupled to said magnet substantially immovably locking said edge portions in alignment for rotation in unison into full magnetic contact with said strike plate; and stud means penetrating said top plate member and said magnet assembly to retain said assembly in said chamber and provide a pivot about which said assembly is rotatable.

3,186,749
SPRING-CONNECTED CHOPSTICKS
George A. Dawes, Tokyo, Japan, assignor to E-Z Products Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 1, 1963, Ser. No. 269,495
1 Claim. (Cl. 294—16)



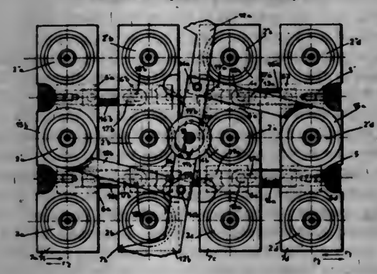
An eating implement comprising, in combination, a pair of chopsticks, and a connecting spring member joining said chopsticks together near their upper ends and yieldingly holding said chopsticks with their lower ends spread apart, said spring member being in the form of an arched leaf spring having a pair of sleeves at opposite ends thereof, said sleeves being disposed to receive and firmly grip said chopsticks, the ends of said leaf spring being of substantially the same width as said sleeves, said arched leaf spring having its side edges bowed outwardly between said sleeves so that the midportion thereof is at least one and one-half times the width of the ends, said widened center portion of said arched leaf spring providing a firm spring connection between said chopsticks having a stabilizing effect on said chopsticks tending to resist twisting and crossing of the chopsticks, and at the same time providing a wide angle of spread between the chopsticks.

3,186,750
SHIELD FOR A SCOOP SHOVEL
Fred W. Nelson, 18 S. Cherry St., Princeton, Ill.
Filed Oct. 11, 1963, Ser. No. 315,559
3 Claims. (Cl. 294—56)



1. A shield for the edge and bottom of a scoop shovel comprising a sheet of rigid material having a main portion conformably shaped to the bottom of a scoop shovel, an end portion folded back over the main portion to form a V-shaped groove adapted to receive the free edge portion of a scoop shovel, and means on the other end of said sheet for attaching said sheet to the neck of a shovel, said sheet having side edges being bent inwardly and crimped downwardly upon the main portion to make the sheet rigid and enabling the sheet to be retained tightly against the bottom of a shovel.

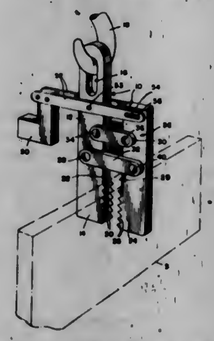
3,186,751
VARIABLE-PITCH GRIPPING DEVICE
Edgar Jean Marcel Dardaine, Poissy, France, assignor to E. P. Remy & Cie, Poissy, France, a French body corporate
Filed Mar. 18, 1963, Ser. No. 265,846
Claims priority, application France, Mar. 20, 1962, 891,566; Mar. 8, 1963, 927,232
2 Claims. (Cl. 294—87.26)



1. A gripping device adapted to grip bottles and the like for lowering them into crates having separate cells formed therein and for extracting said bottles therefrom, comprising a frame structure, a plurality of cross members carried by said frame structure and adapted to slide

in a direction normal to their longitudinal axes, a plurality of gripping heads secured to said cross members and disposed in parallel rows, a rotary cam disposed centrally of said frame structure, and a plurality of link members connecting said rotary cam individually to each of said cross members, said link members being so arranged that rotation of said cam causes the relative spacing between said gripping heads to vary from a value corresponding to the diameter of the bottles to another value corresponding to the spacing between said cells, said link members being connected adjacent one end thereof to said rotary cam and adjacent the opposite end thereof to a central point on said cross members, said link members being connected to said cam at points along a single diameter thereof and at distances from the center of rotation of said cam corresponding to the distances of said cross members from said cam, so that the sliding movements of said cross members are proportional to their respective distances from said cam.

3,186,752
LIFTER WITH SUBSTANTIALLY CONSTANT INWARD JAW PRESSURE
Louis G. Kaplan, 306 Darrow St., Evanston, Ill., and Yvon Couillais, 6254 N. Rockwell Ave., Chicago, Ill.
Filed Dec. 11, 1962, Ser. No. 243,821
12 Claims. (Cl. 294—104)



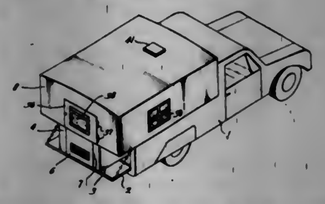
1. A lifter of the opposed gripping jaw type comprising: a lifter body, a first object-gripping jaw carried on said body, means on said lifter body establishing a four bar linkage of the type wherein the four bars thereof are pivotally connected together at adjacent ends to provide a closed quadrilateral structure, the four bars of said linkage including an intermediate portion of the lifter body, a movable jaw-supporting member opposite to said intermediate portion, a movable upper link connecting the upper end of said intermediate portion to the upper end of said jaw-supporting member, and a lower movable link connecting the lower end of said intermediate portion to the jaw-supporting member at an intermediate point thereon, the distance between the upper and lower links on the jaw-supporting member being less than twice the distance between the upper and lower links on the lifter body, the lower region of said jaw-supporting member projecting downwardly and constituting an extension of the jaw-supporting member which lies outside the confines of said articulated quadrilateral structure, a second object-gripping jaw on said extension and opposing said first jaw, the effective length of said upper link being less than the effective length of the lower link whereby the jaw-supporting member is capable of movement between an elevated position and a lowered position for varying the effective distance between said jaws and the second object-gripping jaw carried thereby will move in a substantially straight linear path.

3,186,753
WIND SILENCER FOR SUN-ROOFS OF PASSENGER VEHICLES
Denne N. Steffanoff, 460 Madison St., Eugene, Oreg.
Filed Feb. 24, 1964, Ser. No. 346,762
5 Claims. (Cl. 296—1)



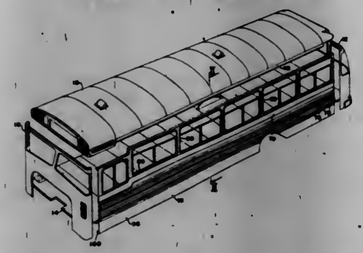
1. A vehicle top having a sun roof opening defined by front and rear transverse edges and two side edges,
said roof at the front edge of said opening being of vertically spaced apart double wall construction,
said front edge of the roof opening defined in cross section by a vertical web integral with said double walls and having at least one horizontally disposed opening therein backed by a rearwardly spaced ridge of less height than said web opening,
a normally vertically disposed panel integrated with a forwardly extending base terminating in an upwardly bent hook member substantially parallel with said panel and in engagement with said web through said opening therein with the opposite end of the base member resting upon and supported by said ridge.

3,186,754
CAMP HOUSE FOR USE ON PICKUP TRUCKS AND THE LIKE
Guy D. Winstead, 917 Airline Drive, Corpus Christi, Tex.
Filed Nov. 14, 1962, Ser. No. 237,596
1 Claim. (Cl. 296—23)



In a camp house for use on pickup truck beds and the like, rectangular upper and lower telescoping sections, the lower section being shaped to fit in the bed of a pickup truck and having its side walls outwardly extended to extend over the side walls of a pickup truck bed, a sprocket on the upper end margin of the lower section adjacent each corner thereof, elevating chains, each anchored at one end to the inside lower margin of the upper section and extending over one of said sprockets and anchored at the other end to the outside lower margin of said upper section, a worm gear power transmission unit on said lower section, a drive shaft mounted on said lower section at one end and actuated by said power transmission unit, a sprocket on said drive shaft over which one of said elevating chains is mounted, another sprocket on said drive shaft, a chain mounted on said last mentioned sprocket, the respective ends of said chain being anchored to the one end of a pair of straps extending longitudinally along one side of said lower section, a rotatable shaft having sprockets mounted thereon at the other end of said lower section, a chain mounted on one of said last mentioned sprockets, the respective ends of said chain being anchored to the other end of said straps, sprockets on said rotatable shaft over which a chain is mounted having its respective ends anchored to one end of a pair of straps extending longitudinally on the other side of said lower section, a rotatable drive shaft on said lower section having a sprocket thereon, a chain having its respective ends mounted to the other ends of said straps and extending over said last mentioned sprocket, another sprocket on said last mentioned drive shaft on which one of said elevating chains is mounted and actuated thereby synchronizing the movement of all corners.

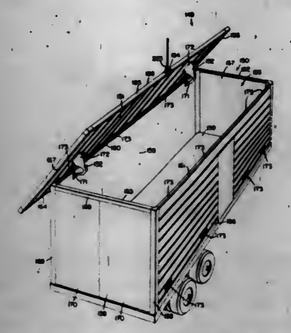
3,186,755
KNOCKDOWN VEHICLE BODY
David H. Ward, P.O. Box 311, 1912 Caldwell St., Conway, Ark.
Filed Aug. 13, 1963, Ser. No. 301,861
5 Claims. (Cl. 296—28)



1. In a vehicle body for buses and the like, the combination comprising a roof panel, a floor panel, a pair of side panels disposed between said roof and floor panels, connector means connecting said roof panel to said side panels and including first, second and third parts, said first part having spaced vertical strips and a horizontal strip therebetween, one of said vertical strips defining interior trim for said vehicle body, said second part having horizontal and vertical strips and a curved strip therebetween, said curved strip defining interior molding for the vehicle body, said third part having upper and lower attaching strips and an intermediate strip therebetween, said intermediate strip being curved to define a rain drip molding for the exterior of the vehicle body, said upper attaching strip and the other of said vertical strips being secured to said roof panel, said lower attaching strip and the vertical strip of said second part being secured to an adjacent side panel, means fastening together the horizontal strips of said first and second parts, each of said side panels including an upper window frame portion and a lower body portion, said lower body portion having exterior and interior strips extending along the length of the vehicle and having a combined exterior and interior strip integrally formed as a single strip and being connected to said strips, and means fastening said combined exterior and interior strip to said floor panel.

3,186,756
CARGO TRANSPORTING VEHICLE CONSTRUCTION
Jules F. Saut, Chesterfield County, and Layle B. Barker, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 18, 1961, Ser. No. 133,014
16 Claims. (Cl. 296—100)

1. In combination, a vehicle body having a pair of opposed sidewall means and having a pair of opposed endwall means, said sidewall means and said endwall means respectively having top edge means defining an open top of said body, a hinge member having a pair of opposed ends, one of said ends of said hinge member being pivotally secured to one side surface of one of said wall means of said body below said top edge means to cause the other end thereof to be movable through an arc between positions on opposite sides of one of said sidewall means, and a roof construction for selectively opening and closing at least a part of said open top of said body, said roof construction being slidably interconnected to the other end of said hinge member to be



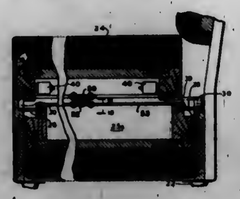
slidably and pivotally movable relative to said body to open and close at least a part of said open top thereof.

3,186,757
CHAISE LOUNGE
Robert A. Hopkins, Loveland, Ohio, assignor to Bell Intercontinental Corporation (Balcrank Division), New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1963, Ser. No. 324,055
2 Claims. (Cl. 297—28)



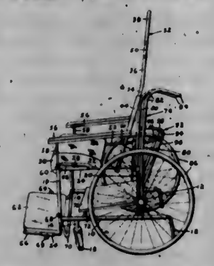
1. A folding chaise lounge comprising a seat panel, a back panel pivotally connected at its lower end to one side of said seat panel, a leg support panel pivotally attached to the opposite side of said seat panel, a supporting frame for said panels including front-supporting and rear-supporting legs attached by a pair of adjustable connections to a pair of laterally disposed arm rests, a pivot connection between said seat panel and said front supporting legs said back panel being pivotally connected to said arm rests and pivotably about a back panel pivot supported upon the top of said rear-supporting legs whereby upon adjustment of said arm rests relative to said supporting legs the angle of inclination of said back panel will be varied, a link pivotally attached at one end to said rear legs and at the other end to said back panel pivot, said back panel pivot between said rear-supporting legs and said back panel being vertically offset and so disposed relative to said pivotal connection between said back panel and seat that as said back panel is adjusted rearwardly said one side of said seat panel is raised, each of said adjustable connections comprising a plate pivotally attached to said supporting legs, an elongated slot in said plate having a plurality of notch sites located along said slot, a pair of spaced follower pins attached to each of said arm rests and extending through said slot, at least one of said follower pins being locatable in said notch sites to lock said back panel in an adjusted angle of inclination.

3,186,758
EXPANSIBLE COUCH
Ernest Wanzenried, Turin Road, Rome, N.Y.
Filed Oct. 31, 1963, Ser. No. 320,259
6 Claims. (Cl. 297—118)



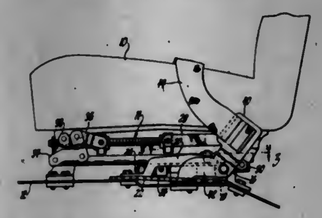
1. An expansible couch having an elongated hollow four-sided frame section provided with floor legs, a back supported on said frame section and overlying a portion of the frame section along its back side, a plurality of seat units narrower than the frame section and normally stored within said frame section, each of said seat units having retractable means for supporting the unit in said frame section, a unitary removable seat section of substantially the same width and thickness as said seat units and of a length substantially equal to the sum of the lengths of said seat units and normally supported above said stored units on said frame section, and movable seat supporting means beneath said back and secured along the back of said frame section, said supporting means being normally concealed by the overlying back and adapted to be moved from seat-supporting position during storing and unstoring of said seat units, said seat section having a plurality of legs adapted to support said seat section at its normal height, said seat section legs being normally stored beneath said seat section and being movable to a position for supporting said seat section independently of said frame section and said seat units being adapted to be supported by the seat supporting means in place of said seat section.

3,186,759
INVALID CHAIR
William E. Reeves, 320 Central Park W., New York, N.Y.
Filed Feb. 21, 1962, Ser. No. 174,812
2 Claims. (Cl. 297—188)



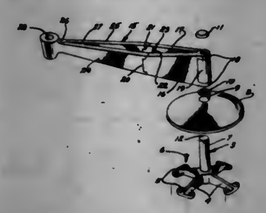
1. A chair for relieving pressure in the ischial, sacral and trochanteric areas of a user comprising a supporting frame, a back frame connected to said supporting frame, a seat connected to said supporting frame, said seat being movable in a substantially horizontal plane with regard to said back frame and extending from a plane remote from the point of connection of said back frame to said supporting frame to a plane more remote from said point of connection, whereby said seat is adjustable to engage the thighs of the user between a point below the ischial tuberosities to just before the popliteal space, a back rest connected to said back frame, said back rest being movable in a substantially vertical plane with regard to said back frame and extending from a plane remote from the point of connection of said back frame to said supporting frame to a plane more remote from said point of connection, whereby said back rest is adjustable to engage an area of the back of the user from above the iliac crests to just below the shoulders.

3,186,760
COMBINATION SEAT BELT ANCHORING AND SEAT BRAKING MECHANISM
Thomas E. Lohr, Detroit, and Romeo Oribello Umanos, Livonia, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 24, 1963, Ser. No. 282,924
8 Claims. (Cl. 297—216)



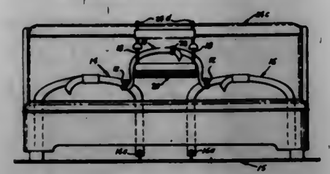
1. Apparatus for anchoring a seat belt in a motor vehicle having a seat of the type that is movably mounted on the vehicle floor, said apparatus comprising means connecting an end of said seat belt to said seat so as to permit movement therewith, the connecting means including belt holder means pivotally supported on said seat and having one end joined to said seat belt and the other end provided with a braking portion positioned adjacent said floor so that when said seat belt is subjected to a predetermined tensioning force said belt holder will pivot and the braking portion thereof will brakingly engage said floor thereby preventing movement of said seat.

3,186,761
MOVABLE CHAIR
Robert L. Propst, Ann Arbor, Mich., assignor to Herman Miller, Inc., a corporation of Michigan
Filed Mar. 14, 1961, Ser. No. 95,726
5 Claims. (Cl. 297—349)



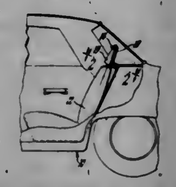
1. A movable chair, comprising: a stationary base member bolted to the floor and including a short upstanding pin; a pair of first arms each pivotally secured to said upstanding pin and extending in a lateral direction therefrom, said first arms movable through a common path; a pair of second supporting arms, one of said second arms pivotally secured to the free end of each of said first arms and movable through an area lying above the area traversed by said first arms and extending beyond the area traversed by said first arms; and a seat pivotally secured at the free ends of said second arms, said free ends of said second arms pivotally connected, said base member providing the sole support for said seat through said first and second arms.

3,186,762
SAFETY SEAT BELT COMBINATION FOR VEHICLES
Gary B. Lucas, Rte. 4, Box 323, W. 11th Ave., Chico, Calif.
Filed Jan. 31, 1964, Ser. No. 341,653
5 Claims. (Cl. 297—385)



4. A safety seat belt combination for vehicles comprising an auxiliary safety seat belt interconnected to two conventional safety seat belts, end buckles adapted to quickly secure said auxiliary safety seat belt to said conventional safety seat belts, and an intermediate buckle for quickly securing the ends of the auxiliary safety seat belt together about a passenger.

3,186,763
HEADREST
Rudolph A. Ferrara, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 26, 1962, Ser. No. 212,623
5 Claims. (Cl. 297—410)



1. The combination comprising, a vehicle body member, a seat member, a headrest, means mounting said headrest on one of said members for adjustment within a defined range of movement to any of an infinite number of positions with respect to said seat member, one-way clutch means operatively interconnecting said one member and said headrest and freely permitting movement of said headrest in one direction relative to said seat member to any of said positions and normally positively preventing movement of said headrest in the opposite direction relative to said seat member from any one of said positions, said clutch means being slippable without damage thereto upon the application of a predetermined force to said headrest in said opposite direction to permit movement of said headrest in said opposite direction relative to said seat member, and manually operable means for releasing said clutch means to permit movement of said headrest in said opposite direction relative to said seat member.

3,186,764
KNEELING ATTACHMENT FOR PORTABLE CHAIRS
Samuel D. Lockshin, Baker Hill, Mass., assignor to Hampden Specialty Products Corporation, Easthampton, Mass.
Filed May 15, 1964, Ser. No. 367,619
1 Claim. (Cl. 297—426)

A kneeler attachment for a chair having a pair of spaced rear legs, the kneeler attachment comprising, a kneeler pad, a support means for said kneeler pad, a pair of pivot links extending outwardly from opposite sides of said kneeler pad and pivoted at one end to said support means, and connecting means on the opposite ends of said pivot links for releasably connecting the kneeler attachment to the rear legs of the chair, said connecting means comprising, a clamp portion pivotally connected to the outer ends of said pivot links, said clamp portion having an arcuate body portion adapted to partially encircle a chair leg and a bracket portion and a cam lock portion extending laterally outwardly from opposite sides of said body portion, said bracket portion and said cam lock portion being substantially axially aligned as to each other and extending outwardly on either side of the chair leg,



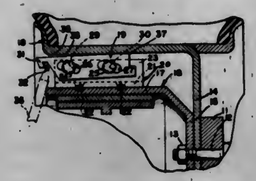
and a locking bar pivoted at one end to said bracket portion so as to be disposed rearwardly of the chair rear leg and having a locking flange at its opposite end having an innermost inwardly-facing surface adapted for engagement with said cam lock portion, said cam lock portion comprising an outwardly-facing outermost cam surface and an outwardly-facing outermost locking shoulder, said locking bar being movable relative to said clamp portion to move the inwardly-facing surface of the locking flange into engagement with first said cam surface and then said locking shoulder for releasably securing said connecting means to the chair legs.

3,186,765
METHOD OF MAKING A BRUSH
Andrew L. Gentoso, Cresskill, N.J., assignor, by mesne assignments, to Faberge, Inc., Ridgefield, N.J., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,622
2 Claims. (Cl. 300—21)



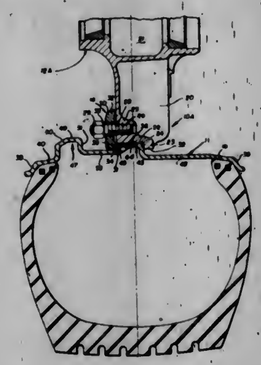
1. A method of forming a fan shaped brush comprising expanding the larger end of a metallic frusto-conical ferrule to form two oppositely disposed ears extending outwardly from a substantially circular central opening, inserting a bristle body in said larger end of the ferrule through said substantially circular opening, compressing said end in a direction perpendicular to a plane containing the longitudinal axis of said ferrule and the outer ends of said ears to form fan-shaped flattened segments in contact with opposite faces of said bristle body whereby said bristle body is retained in a fan shape, and attaching a handle to the smaller end of said ferrule.

3,186,766
VEHICULAR WHEEL WITH IMPROVED BRAKE DRUM
Marvin A. Hole, Livonia, and John H. Murphy, Dearborn, Mich., assignors to Multi-Purpose Drum Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 15, 1963, Ser. No. 265,480
9 Claims. (Cl. 301—6)



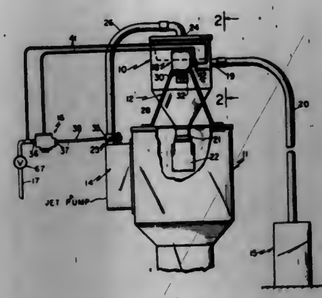
1. A vehicular wheel comprising: a tire rim and a brake drum concentrically mounted therein, the brake drum having a plurality of circumferentially spaced legs extending outwardly toward the tire rim, a plurality of compensators having radially outer surfaces, and fastening means for adjustably attaching one of said compensators to each of said legs so that the outer surfaces slope downwardly and outwardly, and only the edge of one of their outer surfaces engages the tire rim under low brake pressures or low operating temperatures of the drum, and the entire surface of each of the compensator outer surfaces engages the tire rim under higher brake pressures or operating temperatures of the drum.

3,186,767
RIM AND WHEEL ASSEMBLIES
Daniel A. Walther, Dayton, Ohio, assignor to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio
Filed May 9, 1962, Ser. No. 193,391
6 Claims. (Cl. 301—10)



1. A rim for mounting wide bead tires having peripheral flanges for seating the tire beads, a web portion connecting the bead flanges, two ribs extending radially inwardly from said web portion, the first of said ribs located medially of said flanges, the second of said ribs located between said first rib and one of said peripheral flanges, each of said ribs having a flat and horizontal load bearing surface, the inner diameter of the load bearing surface on said first rib being of greater diameter than the inner diameter of the load bearing surface on said second rib.

3,186,768
PNEUMATICALLY OPERATED APPARATUS FOR FEEDING FLUENT MATERIAL
Frank P. Pendleton, Montclair, N.J., assignor to Vac-U-Max, Belleville, N.J., a corporation of New Jersey
Filed Mar. 29, 1963, Ser. No. 268,892
10 Claims. (Cl. 302—3)



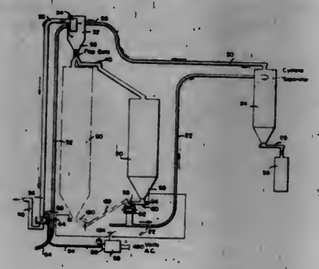
1. In apparatus for controlling the feeding of fluent material, the combination of a hopper for receiving, storing and discharging fluent material, means for mounting said hopper to tilt in response to the weight of fluent material therein; means for vacuumizing said hopper including a gaseous pressure medium operated jet pump, a pipe for supplying gaseous pressure medium to said pump, a valve in said pipe for controlling the flow of pressure medium therethrough and including a spring for opening said valve and gaseous pressure operated piston means for closing said valve, a normally closed pilot valve connected for controlling the flow of pressure medium to said piston means, a lever pivotally mounted about a fixed point and having a first arm for actuating said pilot valve to open the same and having a second arm provided with means for supporting one side of said hopper, and a spring for opposing the movement of said second arm and adapted to yield in response to the weight of said hopper and its contents to cause said first arm to effect opening of said pilot valve and for moving said second arm to allow said pilot valve to close upon discharge of the fluent material from said hopper.

3,186,769
PUMPING SYSTEM
Thomas W. Howlett, Jr., Highland, Ind., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 1, 1962, Ser. No. 170,349
9 Claims. (Cl. 302—17)



1. In a pumping system for transporting solid, particulate materials from one place to another including an inlet pipe communicating with a transporting pipe and means for forcing a gas through said transporting pipe, the improvement comprising said inlet pipe having an end which communicates with said transporting pipe, said end of said inlet pipe being positioned within a first venturi tube in said transporting pipe and a second venturi tube within said transporting tube having a downstream end communicating with said end of said inlet pipe, said second venturi tube and said end of said inlet pipe being concentrically positioned with respect to said first venturi tube, said end of said inlet pipe terminating downstream of said downstream end of said second venturi tube.

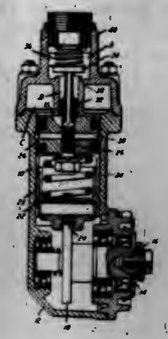
3,186,770
CONDITION RESPONSIVE CONTROL, METHOD AND APPARATUS
Harry Lee O'Neal, Pine Bluff, Ark., assignor to O'Neal & Causey, Pine Bluff, Ark., a partnership
Filed Jan. 3, 1962, Ser. No. 164,101
17 Claims. (Cl. 302—42)



1. A conveyor system for particulate material comprising:
(a) a particulate material storage device;
(b) a conveyor disposed to receive material from said storage device and transport such material to a desired location;
(c) a particulate material variable delivery feed means disposed between said storage device and said conveyor adapted to controllably receive material from said storage device and deliver it to said conveyor and including:
(1) an oscillatory electric motor drive means; and
(d) automatic control means having:
(1) a power circuit connected to said oscillatory electric motor drive means,
(2) a signal control means responsive to a conveyor operation condition indicative of the load of material in transport by said conveyor, and
(3) means continuously responsive to load condition indicative signals in said signal control means and operative on said power circuit for varying the incremental time period and amplitude of power pulses to said oscillatory electric motor drive means to thereby vary the rate of material delivery by said feed means.

3,186,771
DEVICE FOR PROPORTIONATING THE PNEUMATIC BRAKING OF MOTOR VEHICLES TO THE LOAD TRANSPORTED BY THE VEHICLE
Giuseppe Alfieri, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed Apr. 22, 1963, Ser. No. 274,759
Claims priority, application Italy, Apr. 30, 1962, 8,587/62
5 Claims. (Cl. 303—22)

1. A device for proportioning the pressure required in a pneumatic system of braking vehicles automatically in accordance with the load comprising a slidable piston sealably mounted in a cylinder mounted on a vehicle frame, resilient means for moving said piston in response to the relative movement between the frame and an axle, an interception valve assembly actuated by said piston and positioned in the duct in said cylinder through which the air passes to the braking system, an air chamber defined by the upper surface of said piston and the lower wall of said duct and at least one calibrated opening connecting said chamber and said duct to equalize the pressure in said duct and said chamber during the oscillation of said piston caused by the relative movement between said axle and said frame.



3,186,772
TELESCOPIC MOUNTING BRACKET
Max Cohn, East Brunswick, N.J., assignor to South River Metal Products Co. Inc., South River, N.J., a corporation of New Jersey
Filed July 11, 1962, Ser. No. 209,065
1 Claim. (Cl. 308—3.8)



A telescopic mounting bracket comprising an outer track having first and second longitudinally extending outer grooves and an inner track having first and second longitudinally extending inner grooves, the respective first and second inner and outer grooves being in opposed relation by pairs and defining longitudinally extending first and second raceways therebetween, a carriage including a base wall and first and second side walls, said first and second side walls extending substantially medially of said first and second raceways, pairs of resilient flexible extensions extending in opposite directions within said raceways from said first and second intermediate side walls, each of said extensions having ball bearing receiving and retaining means therein, ball bearings of a diameter at least as large as said raceways received within each of said means and in rolling contact with said first and second raceways, said extensions being biased outwardly to urge said ball bearings into engagement with the outer grooves of said outer track and being sufficiently flexible to provide movement of said ball bearings in a direction transverse to said raceways, the bias and flexing of said extensions establishing a rattle-proof sliding fit between said outer and inner tracks.

3,186,773
SUCKER ROD GUIDES
Glen H. Harris, 1309 N. Fielder, Arlington, Tex., and Donald E. Soble, 4413 Windsor, Dallas, Tex.
Filed Feb. 26, 1963, Ser. No. 261,016
3 Claims. (Cl. 308—4)

1. A guide for use on a sucker rod comprising:
(a) a substantially cylindrical body of elastomeric ma-

terial having an axial bore therethrough for receiving said sucker rod;

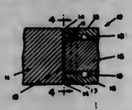
(b) said body having a transverse slot through its side near its center intersecting said bore and dividing the body into opposed halves joined by the continuous side of the body opposite said slot;



(c) said body having a longitudinal slot through its side in each of said opposed halves, these slots opening into the transverse slot, and each opening into the bore respectively on substantially opposite sides of the body; and

(d) spring-material rod-gripping means comprising a one-piece member more rigid than the body and having at each end oppositely facing C-shaped clips joined together by a connecting member which is so located with respect to the clips that when the latter are embedded in the body concentric with its axis with the openings in the C-shaped clips registering respectively with the longitudinal slots, the connecting member will lie along said continuous side.

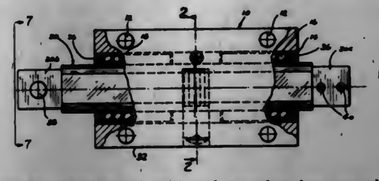
3,186,774
HYDROSTATIC GAS BEARINGS
Roy M. Wilcox, 2803 Locust Lane, South Bend, Ind.
Filed Sept. 4, 1962, Ser. No. 221,176
8 Claims. (Cl. 308—5)



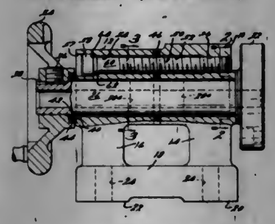
1. In a gas bearing comprising a pair of relatively movable bearing members separated by a lubricating gas film, a restricted gas flow passage formation leading through one of said members to between said members to supply pressure gas to a gas film separating said members, said gas flow passage formation being arranged and dimensioned to restrict pressure gas flow to between the bearing members to limit film thickness under half bearing load to a maximum thickness of from approximately 9.0×10^{-4} to 1.6×10^{-3} inches to prevent bearing vibration.

3,186,775
SLIDE
Earl F. Beezer, 77 Hemlock Drive, Paramus, N.J.
Filed May 29, 1962, Ser. No. 198,497
3 Claims. (Cl. 308—6)

1. A slide comprising a housing having a bore, a linear ball bearing bushing arranged in said bore at each end of said housing, each bushing having ball bearings arranged in an axial direction at circumferentially spaced locations for facilitating axial rolling movement, a rod member supported on said ball bearings within said housing and being movable in axial directions in rolling contact with said ball bearings, said rod member having a portion forming a surface for limiting angular movement, and a roller mounted in said housing for rotation about an axis substantially perpendicular to the direction of movement of said rod member and being in engagement with the formed surface of said rod member and limiting angular rotation of said rod member but permitting free linear movement thereof, said roller member being supported centrally in said housing between said ball bearing bushings, a cylinder rotatable in said housing and eccentrically carrying said roller, said cylinder being rotatable to adjust the position of said roller toward and away from said rod member.



3,186,776
SPINDLE BEARING
George Hohwart, Farmington, Mich., assignor to N. A. Woodworth Company, Ferndale, Mich., a corporation of Michigan
Filed Apr. 16, 1962, Ser. No. 187,848
28 Claims. (Cl. 308—65)



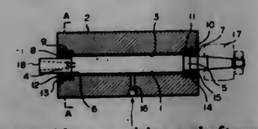
1. A bearing comprising a plurality of spaced bearing sections having generally aligned bores, a base, flexible support means for at least certain of said bearing sections connecting the latter to said base, a movable shaft in said bores, and adjustable means for flexing said certain bearing sections lengthwise of the shaft to incline the axes of the bores in said flexed sections relative to the axis of said shaft and to bring the ends of said bores against and rotatably confine said shaft.

3,186,777
LUBRICATOR RETAINERS
Edward R. Gorcyca, Mahwah, N.J., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,944
3 Claims. (Cl. 308—89)



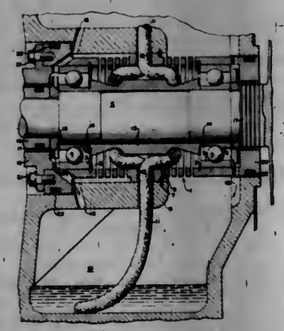
1. The combination of a lubricator and a retainer clip for use in a railroad journal box, said lubricator having a soft and porous portion, said retainer clip comprising a flat elongated body portion generally of rectangular contour, means affording a pair of prongs at one end of the body portion and embedded in the soft portion of said lubricator upon bending the same in an appropriate direction, and said clip at the opposite end being provided with a hook adapted to embrace the forward lip of the dust guard slot of the journal box.

3,186,778
BEARING ASSEMBLIES
Tanekatsu Torii, 4 Toriyagane, Minowacho, Anjo-shi, Aichi-ken, Japan
Filed Jan. 23, 1963, Ser. No. 253,387
Claims priority, application Japan, Apr. 16, 1962, 37/15,575
1 Claim. (Cl. 308—121)



A bearing assembly comprising a shaft member having coaxially reduced ends, an outer annular member, circumposed on and spaced radially from the shaft member, said shaft member and outer annular member being relatively rotatably mounted, first bearing rings circumposed on the inner portions of the coaxially reduced ends, second bearing rings surrounding the first bearing rings in sliding engagement therewith, said annular member having seats receiving said second bearing rings, said bearing rings being formed of super-hard alloy, thrust rings surrounding the ends of the shaft member and bearing against the bearing rings, adjustable adjusting members integral with the thrust rings, cooperative securing means between the outer member and the adjusting members, and means for introducing fluid into the space between the outer annular member and the shaft member.

3,186,779
RESILIENT MOUNT ASSEMBLY FOR SHAFT STRUCTURE
James E. Chapman and Eugene S. Cox, Palos Verdes Estates, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed May 4, 1962, Ser. No. 192,379
5 Claims. (Cl. 308—184)



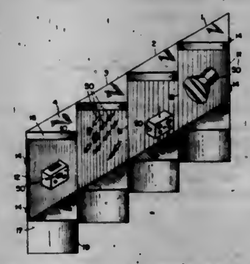
1. A bearing structure for high speed machinery comprising, in combination:
a shaft;
bearing means rotatably supporting the shaft;
a rigid housing structure around and spaced from at least a part of the shaft;
and means for supporting the bearing means resiliently for limited axial and radial movement of the bearing and shaft, said bearing support means including an annular member surrounding the shaft and having a first portion supported by direct non-resilient engagement with the housing;
a second portion spaced substantially axially along said shaft from the first portion engaging the bearing means to support the bearing;
and an axially disposed resilient section interconnecting the first and second portions of the annular member and permitting limited axial and radial movement of the second portion relative to the first portion.

3,186,780
SEWING MACHINE CABINETS
Stefan Schaerf, Old Chum Creek Road, Healesville, Victoria, Australia
Filed Jan. 14, 1963, Ser. No. 251,223
3 Claims. (Cl. 312—30)



1. A sewing machine cabinet of the type herein specified having a two section closure constituting the major portion of the top of the cabinet and mounted in a common horizontal plane for sliding movement in a longitudinal direction relative to each other and to the cabinet, each section being step shaped at one end so that in one assembled position of the sections the step shaped ends interfit to present an uninterrupted closure and upon inverting one of the sections the projections formed by the step shaped ends are in abutting alignment to define an opening through which the head of the machine projects to be supported in an upright operative position upon said two sections.

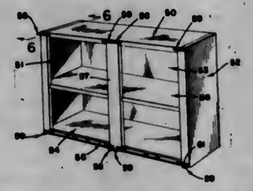
3,186,781
DISPLAY BOOTH
Michael S. Lax, 1311 Madison Ave., New York, N.Y.
Filed Sept. 19, 1962, Ser. No. 224,751
9 Claims. (Cl. 312—200)



1. A foldable, integral, multisection display booth having a plurality of hinged together sections carrying displays,
each of said sections comprising an outer wall having a substantially polygonal shape with outer vertical edges, said sections also each having an integral base and top,
hinge means hinging adjacent outer walls together at adjacent vertical edges in series and with the end outer walls carrying joining means for joining said end

outer walls together at their outermost edges to form a continuous enclosing outer shape,
said bases and tops having polygonal outer substantially horizontal surfaces,
an internal shelf lying between each of said bases and tops with said shelves abutting one another when said booth is foldled to form said continuous outer shape,
said surfaces each having bounding edges comprising one edge coincident and integral with an outer wall and a pair of outer edges extending from said outer walls on the same corresponding sides thereof,
said surfaces shaped and sized to form when folded with said outer walls a continuous, integral polyhedrical shape with said first-mentioned coincident edges forming bounding edges of said polyhedrical shape and with said last-mentioned outer edges extending inwardly of said polyhedrical shape,
said hinge means being mounted for movement of said sections to an unfolded position with at least two of said outer walls lying in back-to-back relationship.

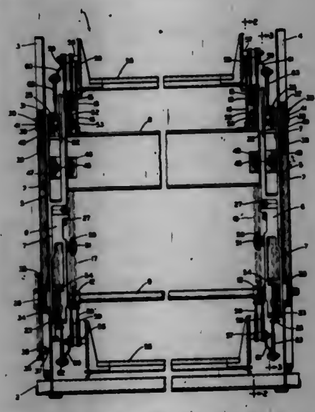
3,186,782
KNOCK-DOWN CABINET CONSTRUCTION
Myron E. Ullman, Jr., Canfield, Ohio, assignor to Mullins Manufacturing Corporation, Warren, Ohio, a corporation of Ohio
Filed July 5, 1962, Ser. No. 207,639
5 Claims. (Cl. 312—263)



1. In a cabinet body structure assembled from interlocking prefinished panel members, the combination including a front corner of the body structure formed by adjoining vertical and horizontal front mullions of vertical and horizontal panel members, a hinge bracket having a detent embossed therein, a detent formed in the front mullion of the vertical panel member to receive said hinge bracket detent emboss, clearance for said detent in the front mullion of the horizontal panel member, aligned holes in the hinge bracket and adjoining vertical and horizontal front mullions for inserting and securing a single fastener means to form a rigid corner structure and hinge bracket mounting.

3,186,783
ELEVATOR FILING APPLIANCE
Carl D. Graber, Orrville, Ohio, assignor to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Feb. 11, 1963, Ser. No. 257,408
4 Claims. (Cl. 312—268)

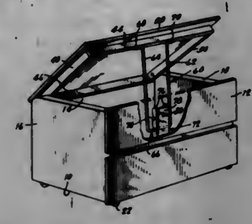
1. In elevator file construction, spaced first and second upright frame support members, a first pair of offset continuous drive and stabilizing chains located adjacent the first frame support member, a second pair of offset continuous drive and stabilizing chains located adjacent the second frame support member, a plurality of card-holding pans each supported at one end on the first pair and at the other end on the second pair of drive and stabilizing chains, a main drive shaft extending between and journaled on the spaced support members, a first stabilizing chain drive shaft journaled on the first frame support member spaced from said main drive shaft, a second stabilizing chain drive shaft axially aligned with said first stabilizing chain drive shaft journaled on the second frame support member, a first pair of sprockets for the first drive chain including a drive sprocket fixed to the main drive shaft and an idler sprocket journaled on the first frame support member, a second pair of sprockets for the second drive chain including a drive sprocket also fixed to the main drive shaft and an idler sprocket journaled on the second frame support member, a third pair of sprockets for the first stabilizing chain including a drive sprocket fixed to said first stabilizing chain drive shaft and an idler sprocket journaled on the first frame support member, a fourth pair of sprockets for the second stabilizing chain including a drive sprocket fixed to said second stabilizing chain drive shaft and an idler sprocket journaled on the second frame support member, a fifth pair of synchronizing sprockets including a drive sprocket fixed to said main drive shaft and a drive sprocket fixed to said



first stabilizing chain drive shaft, a sixth pair of synchronizing sprockets including a drive sprocket also fixed to said main drive shaft and a drive sprocket fixed to said second stabilizing chain drive shaft, the sprockets of each pair being aligned and spaced above one another, a first continuous inter-connecting chain trained around the fifth pair of synchronizing sprockets, a second continuous inter-connecting chain trained around the sixth pair of synchronizing sprockets, motor-drive means for the main drive shaft, and means for adjusting the inter-connecting chain and synchronizing sprocket driving connections between the main drive shaft and the first and second stabilizing chain drive shafts to maintain matching angular orientation of the main, first and second drive shafts whereby synchronous movements of the drive and stabilizing chains are maintained.

3,186,784
CHILD'S COMBINATION STORAGE CHEST AND EASEL
Leonard Bergstein, 70 Stephan Marc Lane, New Hyde Park, N.Y.
Filed May 6, 1963, Ser. No. 278,306
2 Claims. (Cl. 312—316)

1. A generally rectangular storage chest having a bottom wall, a front wall, a rear wall, and a pair of end walls, said rear wall extending upwardly from said bottom wall for a distance not substantially more than one-half the height of said chest whereby rear access is provided to the interior of said chest, a lid hinged to each of said end walls by a hinge structure comprising pivot studs anchored within the thickness of said end walls whereby an unbroken facial surface of said end walls is maintained, a bail for supporting said lid, said bail being pivoted to the underside of said lid at a point spaced inwardly of an edge thereof whereby said bail is disposed within said chest when said lid is closed, a vertically disposed rack carried by the inner face of said front wall for engaging and supporting said bail in any one of a plu-



rality of elevations whereby said lid is supported in a tilted position adapting the same for use as an easel, and casters adjacent the corners of said bottom wall adapting said chest for free movement on a supporting surface.

3,186,785
THREE MEMBER SLIDE MECHANISM FOR CABINET DRAWERS
Albert E. Berger, Jr., Chicago, Ill., assignor to Austin Continental Industries, Incorporated, Chicago, Ill.
Filed Dec. 31, 1962, Ser. No. 248,570
6 Claims. (Cl. 312—339)



1. A slide mechanism comprising three thin slide members one of which remains stationary and has upper and lower horizontal flanged edges which extend outward so as to shape upper and lower tracks for sliding an intermediate extensible member back and forth, said intermediate member sliding between ball bearings held in said tracks, said intermediate slide member having upper and lower horizontal flanged edges which extend outward so as to shape upper and lower tracks for sliding an inside extensible member back and forth, said inside slide member having roller wheels spaced along its upper and lower horizontal edges which roll in the tracks provided by the flanged upper and lower edges of said intermediate slide member, each of said roller wheels having axial extensions to a thin flange which guides said roller along the track of the intermediate extensible slide, and a spring mechanism attached near the rear end of said intermediate slide for locking said intermediate slide member to said stationary slide member in its farthest extended relation.

3,186,786
METHOD FOR PROCESSING OXIDE COATED CATHODES
Donald MacNair, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 1, 1961, Ser. No. 114,256
12 Claims. (Cl. 316—17)



1. A method for processing a cathode including a base, binder and emissive coating comprising at least one alkaline earth carbonate, said cathode being destined for use in a thermionic tube, which comprises the steps of successively heating the said cathode at a temperature within the range of 200 to 300° C. in an oxygen-containing atmosphere, whereby the binder is decomposed and eliminated, assembling the said cathode in a tube envelope and converting the said alkaline earth carbonate to the corresponding oxide.

CHEMICAL

3,186,787
PROCESS FOR DYEING OR PRINTING SHAPED STRUCTURES OF LINEAR AROMATIC POLYESTERS, ESPECIALLY POLYETHYLENE TEREPHTHALATES
Helmut Gies, Hofheim, Taunus, and Wilhelm Happe, Schwalbach, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Dec. 17, 1962, Ser. No. 244,933
Claims priority, application Germany, Dec. 27, 1961, F 35,668
4 Claims. (Cl. 8—41)

1. A process for dyeing and printing fibrous materials of polyethylene terephthalates, which comprises applying to said materials at about 95 to 140° C. from an aqueous dispersion the disazo dyestuff phenol-(4 azo 1)-benzene-(4 azo 4)-phenol of the formula



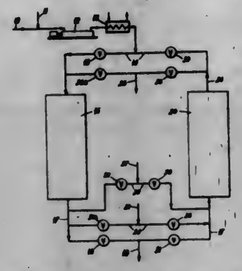
3,186,788
PROCESS FOR DYEING POLYPROPYLENE AND POLYFORMALDEHYDE FIBERS CONTAINING ZINC COMPOUNDS WITH METALLISABLE DYESTUFFS
Walter Percival Mills, Manchester, William Alexander O'Neill, Harrogate, and Raymond Price, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,790
Claims priority, application Great Britain, Dec. 1, 1961, 43,033/61
9 Claims. (Cl. 8—42)

1. A process for the production of coloured textile fibres selected from the class consisting of stereoregular polypropylene and polyformaldehyde fibres containing a zinc compound which comprises dyeing said fibre with a metallisable dyestuff which is devoid of sulphonic acid groups while yielding a water-insoluble zinc complex and treating said fibre with an aqueous solution of a sequestering agent selected from the class consisting of water-soluble pyrophosphates, hexametaphosphates, aminotriacetates and ethylenediaminetetraacetates.

3,186,789
METHOD OF REMOVING HYDROGEN SULFIDE FROM GASES

Douglas M. Ward, Webster, N.Y., and James D. Shuttler, deceased, late of Kenmore, N.Y., by Ellen J. Shuttler, widow and legal representative, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Mar. 29, 1961, Ser. No. 100,781
2 Claims. (Cl. 23—3)



1. A process for sweetening a gas stream containing hydrogen sulfide impurity which comprises: contacting such gas stream with a catalyst consisting of crystalline zeolitic molecular sieve material having an apparent pore size of at least 4.6 Angstrom units, said contacting being in the presence of free oxygen at temperature below 700° C. so as to produce elemental sulfur and sufficiently low for deposition and adsorption of the sulfur in said catalyst; recovering an impurity-depleted stream; and removing the adsorbed sulfur from said catalyst by contacting the catalyst with ethylene at sufficiently high temperature to form hydrogen sulfide, and below 700° C.

3,186,790
PRODUCTION OF NITRONIUM PERCHLORATE

Robert A. Brown, Butler, and David S. Fetterman, Willow Grove, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 22, 1960, Ser. No. 38,074
8 Claims. (Cl. 23—14)

1. A method for the production of nitronium perchlorate, NO_2ClO_4, which comprises mixing and reacting nitrogen dioxide, NO_2, chlorine dioxide, ClO_2, and ozone in the throat of a Venturi tube reactor, said ozone being introduced into the reaction zone separately from the other reactants.

4. A method of producing nitronium perchlorate which comprises passing ozone into a first Venturi tube reactor; mixing and reacting nitrogen dioxide and chlorine dioxide with the said ozone, said ozone being introduced into the reaction zone separately from the other reactants and the amount of said nitrogen dioxide and said chlorine dioxide being less than would be required to react with all the ozone; passing the effluent stream from said first reactor into a second Venturi tube reactor; mixing and reacting additional nitrogen dioxide and chlorine dioxide with the said stream in the throat of said second reactor; and recovering the nitronium perchlorate thus produced.

3,186,791
PRODUCTION OF WATER FREE BORATES

Harry Kloepfer, Frankfurt am Main, and Helmut Knorre, Halmstadt (Main), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt, Germany

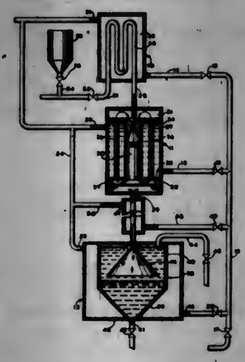
No Drawing. Filed Oct. 22, 1962, Ser. No. 232,303
Claims priority, application Germany, Oct. 20, 1961, D 37,278
10 Claims. (Cl. 23—59)

1. A process for the production of a water free borate composition selected from the group consisting of alkali metal borates in which the molar ratio of alkali metal monoxide to boron trioxide is greater than 1:2 and mixed alkali metal alkaline earth metal borates in which the molar ratio of alkali metal monoxide + alkaline earth metal oxide to boron trioxide is greater than 1:2 which comprises heating at least one water free reactant oxide selected from the group consisting of alkali metal monoxides and alkaline earth metal monoxide in admixture with water free sodium tetraborate until reaction initiates between all oxide reactants and the sodium tetraborate, the quantity of the oxide reactant being between 1 and 5 mol inclusive per mol of sodium tetraborate.

3,186,792
PRODUCTION OF AMMONIUM SULFATE

John S. Gerrard, Bramhall, England, assignor to Simon-Carves Limited, Stockport, England, a British company

Filed Mar. 2, 1961, Ser. No. 92,951
Claims priority, application Great Britain, Mar. 5, 1960, 7,888/61
12 Claims. (Cl. 23—119)



1. A process for the recovery of ammonium sulphate from spent flue gas wash liquor containing ammonium sulphite and ammonium bisulphite comprising adding sulphuric acid to said spent liquor to bring the ratio of ammonium bisulphite to ammonium sulphite to 2:1 and the sulphuric acid content in said liquor to 0.1 mole per litre, preheating said acidifier liquor, supplying said preheated liquor to an agitated body of treated liquor containing ammonium sulphate and free sulphuric acid in amount equal to 0.1 mole of litre at a temperature of approximately 150° C. and under superatmospheric pressure to convert said ammonium bisulphite and ammonium sulphite in said preheated liquor to ammonium sulphate and sulphur and withdrawing from said body of treated liquor an amount equal to the amount of preheated liquor added to said body.

3,186,793
CLARIFICATION OF ACIDIC PHOSPHATIC SOLUTIONS

Marvin B. Gillis, Glenview, Ill., and James G. Gilchrist, Jr., Bartow, Fla., assignors to International Minerals & Chemicals Corporation, a corporation of New York

No Drawing. Filed Oct. 10, 1960, Ser. No. 61,344
10 Claims. (Cl. 23—165)

1. A process for the clarification of an aqueous solution containing as essential ingredients phosphatic materials of the group consisting of phosphoric acid, monocalcium phosphate and mixtures thereof, said solution containing suspended impurities and dissolved impurities, comprising mixing said solution with an acid-treated activated carbon prepared by treating previously activated carbon with an acid of at least 10% concentration by weight selected from the group consisting of sulfuric acid, hydrochloric acid and nitric acid, said acid-treated activated carbon being employed in the amount of about 1 lb. to about 30 lbs. per ton of said solution, and thereafter separating a clarified fraction.

3,186,794
OXIDATION OF SULPHUR DIOXIDE TO SULPHUR TRIOXIDE AND CATALYSTS THEREFOR

Phineas Davies, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,114
Claims priority, application Great Britain, Aug. 13, 1956, 24,680/56, 24,681/56; Mar. 22, 1957, 9,431/57; Dec. 17, 1958, 40,678/58
24 Claims. (Cl. 23—175)

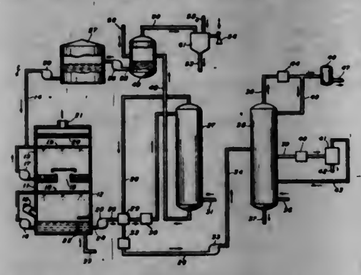
1. A process for the production of catalysts suitable for the oxidation of sulphur dioxide to sulphur trioxide, which consists essentially of admixing a vanadium salt selected from the group consisting of vanadyl and vanadate salts in aqueous medium with an aqueous solution of sodium and potassium silicates, collecting the precipitate containing a vanadium compound and silica, admixing therewith a quantity of kieselguhr and drying the resulting mixture to form a product consisting essentially of the catalyst having the analysis within the ranges:

	Percent by weight
K_2O	5.5–8.0
Na_2O	1.25–1.75
V_2O_5	3.5–7.5
SiO_2	52.5–62.5

3,186,795
METHOD OF RECOVERING AMMONIA

Marvin C. Fields and Robert D. Rice, Monroeville, Pa., assignors to United States Steel Corporation, a corporation of New Jersey

Filed Oct. 31, 1961, Ser. No. 149,111
9 Claims. (Cl. 23—196)



1. A method of separating ammonia from coke-oven gases which consists in scrubbing said gases with an aqueous absorbent solution of ammonia and phosphoric acid, whereby substantially all of the ammonia in said gases is absorbed in said solution, then placing the solution under a pressure between about 100 and 300 p.s.i.a., and stripping to thereby recover an ammonia-water product from the enriched solution.

3,186,796
PRODUCTION OF CARBON BLACK AND APPARATUS THEREFOR

David C. Williams, Arnaud Pass, Tex., assignor, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed Oct. 18, 1961, Ser. No. 145,837
17 Claims. (Cl. 23—209.4)

1. A continuous process for preparing carbon black by the thermal decomposition of a hydrocarbon feedstock which comprises: impinging hot combustion gases upon a particulate solid heat exchange mass in a heating zone to heat said mass to a temperature sufficient to decompose said hydrocarbon feedstock; passing said particulate mass into one end of a reaction zone which is in communication with said heating zone; injecting said hydrocarbon feedstock into said one end of said reaction zone; passing said feedstock and said particulate mass concurrently through said reaction zone whereby said feedstock is caused to flow away from said heating zone and through the voids in said particulate mass wherein it is converted with evolution of gases to carbon black, a portion of which adheres to said particulate mass; discharging the resultant carbon black-bearing gases and the carbon black-bearing particulate mass from said reaction zone into a carbon black separation zone; separating the carbon black from said gases; removing the adherent carbon black from said particulate mass by subjecting particles of said particulate mass to sustained vibration in said carbon black recovery zone; and returning said particulate mass to said heating zone.

3,186,797
PROCESS FOR CATALYTICALLY STEAM REFORMING HYDROCARBONS

Thomas James Perrett Pearce and Richard John Young, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 13, 1960, Ser. No. 21,854
Claims priority, application Great Britain, Apr. 17, 1959, 13,183/59
1 Claim. (Cl. 23—212)

A continuous long term process of catalytically steam reforming hydrocarbons substantially free from carbon lay down on the catalyst, comprising reacting a substantially sulphur free straight run distillation fraction of petroleum boiling in the range 30° C. to 220° C. with steam in a proportion corresponding to from about 4 to about 5 molecules of steam per atom of carbon in the said distillation fraction to produce a gaseous product, the reaction being conducted at a temperature between 600° C. and 950° C. and a pressure between 1 and 50 atmospheres absolute in the presence of a catalyst consisting essentially of nickel and a substantially inert refractory support composition for the nickel consisting of a refractory oxide material and a hydraulic binding agent, the support composition containing at most about 5% of silica by weight of the catalyst, and thereafter burning at least part of said gaseous product with injected air in a secondary reformer, thereby producing the heat necessary for completing the destruction of hydrocarbons by reaction with steam in the presence of the catalyst, and producing a gas containing nitrogen and hydrogen.

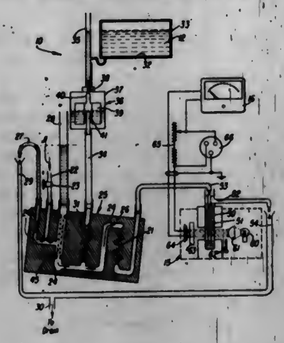
3,186,798
METHOD OF AND MATERIAL FOR IDENTIFYING METALS

Francis W. Juchnicki, 118 Munson St., and William A. Merriam, 59 Shattuck St., both of Greenfield, Mass.

No Drawing. Filed Dec. 7, 1961, Ser. No. 157,844
6 Claims. (Cl. 23—230)

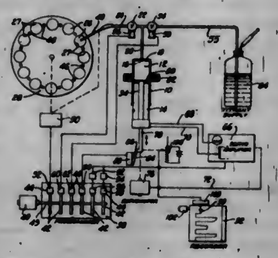
1. A method of determining the basic component of a lightweight non-ferrous metal selected from the group consisting of alluminum, magnesium, zinc and alloys of the same comprising the steps of cleaning and scraping a portion of the metal, applying to said portion an aqueous solution of copper sulphate, ammonium chloride and zinc chloride, said solution having substantially no effect on an aluminum-bearing metal, boiling violently and producing a black spot on a magnesium-bearing metal, and producing a brown spot on a zinc-bearing metal.

3,186,799
APPARATUS FOR AUTOMATIC ANALYZING
Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa
Filed Apr. 19, 1960, Ser. No. 23,246
12 Claims. (Cl. 23—253)



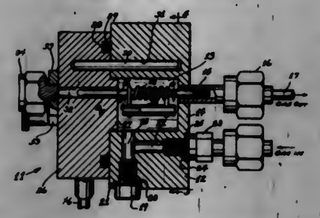
1. An automatic analyzer for continuously performing a colorimetric test on a fluid sample by using a known testing reagent comprising, in combination, means including a metering passage for feeding said sample at a constant head through said metering passage so as to create a steady and uniform stream of said sample, means including a metering passage for feeding said reagent to said sample stream at a predetermined head through said metering passage so as to add to said sample stream a steady and uniform flow of reagent, a colorimeter including a transparent generally vertically disposed cell having an open top and open bottom, a transparent chamber surrounding said cell with the lower end of the cell opening into said chamber, an overflow outlet formed in said chamber above the lower end of said cell, and means for dripping said sample-reagent stream into said cell so as to mix the sample and reagent.

3,186,800
AUTOMATIC TITRATOR
Allen Strickler, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 27, 1961, Ser. No. 92,030
12 Claims. (Cl. 23—253)



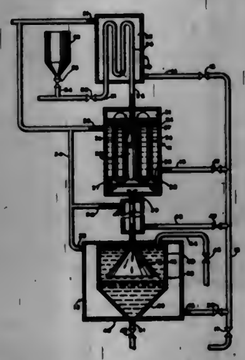
1. A chemical analysis apparatus comprising:
a positive fluid displacement device including a chamber providing an analysis space and a piston movable therein;
means for admitting a first liquid to the chamber with movement of the piston in an intake direction;
means for admitting a second liquid to the chamber with further movement of the piston in the intake direction while blocking admission of said first liquid to cause a reaction directed toward an end point;
end point sensing means positioned with respect to said chamber to measure said end point; and
means for substantially exhausting the chamber of its contents with movement of the piston in an exhaust direction.

3,186,801
PYROLYZER ASSEMBLY
William C. Hampton, Takoma Park, Md., assignor to American Instrument Company, Inc., Silver Spring, Md.
Filed June 4, 1962, Ser. No. 199,800
7 Claims. (Cl. 23—253)



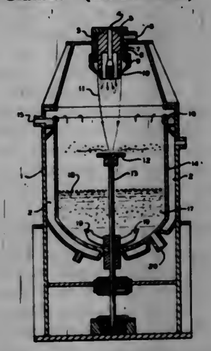
1. A pyrolyzer for gas chromatography comprising a chamber, a gas outlet conduit connected to one wall of said chamber, said chamber having an opposite wall formed with a loading passage longitudinally aligned with said gas outlet conduit, a sample tube slidably supported in said loading passage and having an open end portion received in said outlet conduit, closure means sealingly disposed in said loading passage, a gas inlet conduit communicatively connected to said chamber at a location spaced from the loading passage and the outlet conduit connection, and an electrical heating coil mounted in said chamber between and in axial aligment with said loading passage and gas outlet conduit and surrounding the sample tube.

3,186,802
APPARATUS FOR THE PRODUCTION OF AMMONIUM SULPHATE
John Stanton Gerrard, Bramhall, England, assignor to Simon-Carves Limited, Cheadle Heath, Stockport, England, a British company
Original application Mar. 2, 1961, Ser. No. 92,951. Divided and this application Nov. 9, 1961, Ser. No. 151,302
Claims priority, application Great Britain, Mar. 5, 1960, 7,888/60
3 Claims. (Cl. 23—260)



1. Apparatus for recoving ammonium sulphate from flue gas washing liquor, comprising a pre-heater, means for adding a quantity of acid to said washing liquor, means for passing said washing liquor through said pre-heater after acidification thereof, a reaction vessel having a reaction zone, means for applying heat to said reaction vessel, means for supplying said acidified washing liquor from said pre-heater to said reaction zone in said reaction vessel to convert said liquor into ammonium sulphate and sulphur, and means for recirculating a portion of said converted liquor back through said reaction zone whereby to increase the acidity of the liquor undergoing conversion therein, said reaction vessel comprising a reaction tube having a venturi at the inlet end thereof said means for supplying acidified washing liquor delivering directly to said venturi, and a plurality of return tubes disposed in equispaced relation around said reaction tube, a baffle plate disposed adjacent that end of said reaction tube remote from the venturi therein and an outlet adjacent the side of the baffle plate remote from the reaction tube and below said baffle plate, liquid between said baffle plate and the adjacent end of the reaction tube being drawn through said return tubes back to the venturi end of the reaction tube under the influence of the pressure drop in said venturi caused by the passage of said acidified washing liquor therethrough.

3,186,803
APPARATUS FOR MIXING A RELATIVELY VISCOUS LIQUID WITH A RELATIVELY NON-VISCOUS LIQUID
Michijiro Akaboshi, Moto-machi, Toyonaka City, Tsuguo Kominami, Nishinomiya City, Seigo Fukuda and Kikuji Uragami, Toyama City, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan
Filed Feb. 5, 1959, Ser. No. 791,384
Claims priority, application Japan, Feb. 11, 1958, 33/3,463, 33/3,464, 33/3,465
4 Claims. (Cl. 23—285)



1. Apparatus for intimately mixing a relatively viscous liquid with a relatively non-viscous liquid by dispersing the relatively non-viscous liquid in the relatively viscous liquid and subsequently subdividing the resultant mixture, comprising,
first inlet means for the relatively viscous liquid,
separate second inlet means for the relatively non-viscous liquid,
wall means defining a chamber below said first and said second inlet means for receiving said relatively viscous liquid and said relatively non-viscous liquid,
means defining an annular slit orifice facing downwardly toward said chamber,
means for delivering said relatively viscous liquid from said first inlet means to said annular slit orifice,
and said annular slit orifice being constructed to discharge said relatively viscous liquid downwardly therethrough into said chamber in the form of a continuously downwardly flowing cylindrical film,
spray-producing means communicating with said separate second inlet means and said spray-producing means disposed to lie interiorly of said downwardly flowing cylindrical film of said relatively viscous liquid,
means for delivering said relatively non-viscous liquid from said second inlet means to said spray-producing means,
said spray-producing means disposed interiorly of said cylindrical film adapted for producing spray particles of said relatively non-viscous liquid and said spray-producing means adapted to spray said particles of said relatively non-viscous liquid outwardly for contact with the inner surfaces of said downwardly flowing cylindrical film of said relatively viscous liquid,
rotating means in said chamber disposed interiorly of said chamber wall means,
said rotating means disposed below said annular slit orifice and below said spray-producing means and aligned with said annular slit orifice to engage said continuously downwardly flowing cylindrical film,
said rotating means effective for disintegrating said engaged film into fine discrete droplets and said rotating means effective for propelling said fine discrete droplets radially outwardly to said chamber wall means,
and means disposed on the upper end of said chamber wall means for forming a liquid film on the interior of said chamber wall means effective to prevent adhesion of said propelled fine discrete droplets to said chamber walls.

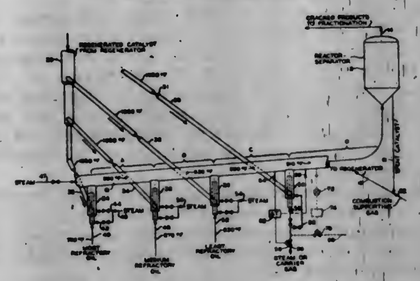
3,186,804
CATALYTIC MUFFLER WITH END PORTS FOR EMPTYING AND FILLING
Charles E. Fisher, La Mirada, Calif., assignor to Norris-Thermador Corporation, Los Angeles, Calif., a corporation of California
Filed June 26, 1961, Ser. No. 119,373
4 Claims. (Cl. 23—288)



1. A catalytic muffler for an internal combustion engine exhaust system which comprises: an elongated case having a front wall and a rear wall; perforate partition members in said case that are coextensive in length with the case and that, in cooperation with said case, front wall and rear wall, define first, second and third parallel chambers extending the length of the case, the second chamber being disposed between the first and third chambers and comprising a catalyst chamber said perforate partition members permitting the exhaust gases to pass into and out of the catalyst chamber but presenting barriers against the passage of catalyst particles therethrough; an exhaust gas inlet opening in said front wall communicating with said first chamber; an exhaust gas outlet opening in said rear wall communicating with said third chamber; an access port extending through each of said end walls and communicating with said catalyst chamber; a perforated web connected to one of said end walls and extending across the respective access port; and a removable cover member connected to each of said end walls in covering position over the respective access port, whereby when the cover members are removed from the ports, particulate catalyst material can be blown into said catalyst chamber through said port without the perforated web and excess air relieved through the port with the perforated web so as to substantially fill the catalyst chamber, the perforated web blocking passage of the particulate catalyst through the port having the perforated web, and

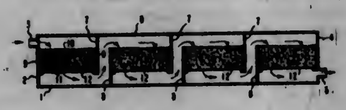
whereby particulate catalyst can be blown out of said catalyst chamber by blowing air through the port with the perforated web so as to blow the catalyst out of the port without the web so as to substantially empty the catalyst chamber.

3,186,805
CATALYTIC APPARATUS
Paul L. Gomory, Bethesda, Md., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,476
3 Claims. (Cl. 23—288)



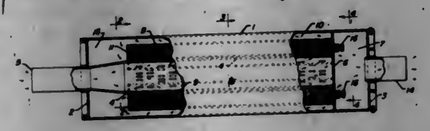
1. Apparatus comprising in combination an elongated tubular reactor free of obstructions so as to permit flow of solids and gases longitudinally therethru; means for forming a suspension of particulate catalyst in a first fluid reactant outside of said reactor and introducing said suspension to the upstream end of said reactor; at least one additional similar means for forming a suspension of said particulate catalyst in a fluid reactant outside of said reactor and introducing said suspension to said reactor downstream of the first suspension; separate catalyst introduction means downstream of the last means for introducing suspended catalyst and feed for injecting a stream of feed-free solid particulate catalyst to said reactor; an outlet for catalyst and reaction effluent in the downstream end of said reactor as the sole outlet from said reactor; means for separating catalyst and reaction effluent gases connected with said outlet; and separate means for withdrawing fluid product and catalyst from the separating means.

3,186,806
CATALYTIC EXHAUST CONVERTER
Alvin B. Stiles, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 20, 1961, Ser. No. 153,391
2 Claims. (Cl. 23—288)



1. An automobile exhaust catalytic converter comprising a catalyst chamber having a single unitary housing with a gas inlet located near the top of the housing at one end and having a gas exit located near the bottom of the housing at the opposite end, transverse baffles located along the length of the housing and extending alternately from the top and bottom of the housing toward but not reaching the opposite side, a horizontally disposed series of catalyst cartridges, each cartridge comprising a frame with screen on its top and bottom adapted to retain the catalyst, the said catalyst cartridges being mounted between the front end wall of the converter and the first baffle, between the back end wall of the converter and the last baffle, and between successive pairs of upwardly and downwardly extending baffles respectively so as to provide unobstructed vertical passages between the cartridges whereby gases entering the converter are caused to pass downwardly through each such catalyst cartridge and upwardly through each such vertical passage.

3,186,807
CONVERTER-MUFFLER
Ted J. Bolek, Franklin Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,397
2 Claims. (Cl. 23—288)

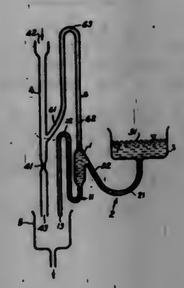


1. A catalytic muffler comprising a substantially cylindrical outer housing having a pair of end closures, a transverse partition plate across the housing and spaced from one of said closures to form an end manifold section within the housing, an exhaust gas outlet from said manifold section, an axially positioned partially perforated conduit extending from said plate through the remainder of said housing and through the other of said end closures, an elongated perforate partition extending longitudinally from said plate to a short spaced distance from said other end closure, said perforate partition being spaced from said conduit and from the inner wall of the housing to form a particle retaining section adjacent the conduit and a longitudinal manifold section adjacent said inner wall, catalyst particles in said retaining section, a second transverse partition plate extending between said conduit and the end of said elongated perforate partition spaced from said other end closure, said second plate providing end closure means for the particle retaining section and forming with said other end closure of the housing a plenum section in communication with said longitudinal manifold section, elongated imperforate partitioning means in the housing coextensive with said elongated perforate partition and extending between said conduit and the housing to form a longitudinal gas passageway connecting between said plenum section and said end manifold section, and means for introducing a gas to said conduit to pass from the latter radially through the particle retaining section to said longitudinal manifold section into said plenum section and then through said longitudinal gas passageway into said end manifold section for discharge through said exhaust gas outlet.

3,186,808
DEVICE FOR DOSING REAGENTS IN AUTOMATIC ANALYZERS OR OTHER INTERMITTENTLY OPERATING CHEMICAL APPARATUS
Arnošt Anscherlik, 5 Revoluční, Prague 1, Czechoslovakia
Filed May 19, 1961, Ser. No. 111,342
Claims priority, application Czechoslovakia, June 24, 1960, PV 4,057/60
3 Claims. (Cl. 23—292)

1. A device for dosing a liquid comprising, in combination:
(a) a discharge pipe adapted for intermittent passage of a first liquid in a downward direction when the device is in the normal operating position thereof, said pipe having a constricted portion;
(b) a closed dosing vessel extending vertically and having a top portion and a bottom portion, when the device is in said normal operating position;

(c) liquid supply vessel means for defining a predetermined level of a second liquid in said normal position of the device:
(d) a connecting tube having two terminal portions and a portion intermediate said terminal portions, said terminal portions respectively communicating with the top portion of said dosing vessel and with a portion of said discharge pipe upwardly spaced from said constricted portion in said normal position of the device;



(e) a substantially S-shaped siphon tube connected to the bottom portion of said dosing vessel and having a discharge orifice lower than said bottom portion, a portion of said siphon tube being higher than said liquid level, and said intermediate portion of said connecting tube being substantially higher than said portion of said siphon tube in said normal position of the device; and
(f) an inlet tube having two terminal portions and a portion intermediate said terminal portions, said terminal portions respectively communicating with said liquid supply vessel means and with said top portion of said dosing vessel below said liquid level, and said intermediate portion of said inlet tube being lower than said terminal portions thereof in said normal position of the device.
(g) said discharge pipe having an inlet upwardly spaced from said constriction, but lower than said intermediate portion of said connecting tube in said normal position of the device.

3,186,809
EXTRACTION OF MINERAL ACIDS USING DODECYLPHENOL
Maurice M. Kreevoy and Le Roy T. Ditsch, both of Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Aug. 10, 1961, Ser. No. 130,488
8 Claims. (Cl. 23—312)

1. In a process for recovering inorganic mineral acids from an aqueous solution thereof wherein the said aqueous solution is contacted with a water immiscible organic phase comprising an amine extractant dissolved in a non-reactive organic solvent, the aqueous and organic phases are separated and the said acids are recovered from the organic phase, the improvement which comprises adding dodecylphenol to the water immiscible organic phase containing the amine extractant prior to the contacting of said organic phase with the said aqueous solution of the inorganic mineral acids.

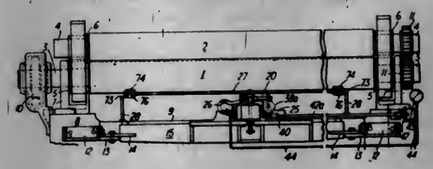
ERRATUM

For Class 29—194 see:
Patent No. 3,186,070

3,186,810
STABILIZED DISTILLATE FUEL OILS AND ADDITIVE COMPOSITIONS THEREFOR
William P. Dunworth, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 9, 1962, Ser. No. 178,536
4 Claims. (Cl. 44—62)

1. An additive composition for distillate hydrocarbon fuel oils, which additive composition consists essentially of
(a) an oil-soluble, basic amino nitrogen-containing addition copolymer which is a 50/40/10 tripolymer of octadecenyl methacrylate, styrene and beta-diethylaminoethyl methacrylate contained in combined form as the essential monomeric co-polymerizable ethylenically unsaturated compounds, said tripolymer containing 0.1% to 3.5% by weight of basic amino nitrogen and having an inherent viscosity of 0.1 to 3.0 as determined at 0.1% weight/volume concentration in benzene at 25° C.,
(b) from about 0.5 to about 2 parts by weight per part of said tripolymer (a) of N,N-dimethylcyclohexylamine, and
(c) a normally liquid inert hydrocarbon carrier solvent in an amount to constitute from about 40% to about 60% by weight of the composition.

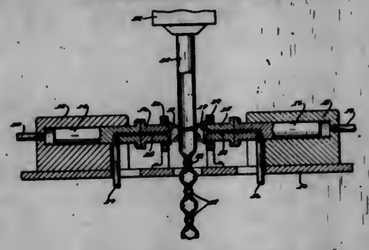
3,186,811
METHODS OF AN APPARATUS FOR CORRECTING A DEVIATION FROM TRUE FORM OF A CASTING ROLL
William Arthur Lightfoot, Bamby Dun, near Doncaster, England, assignor to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain
Filed Mar. 24, 1960, Ser. No. 17,278
11 Claims. (Cl. 65—29)



1. Apparatus for correcting deviations from original form of a casting roll used in the manufacture of flat glass in continuous ribbon form, comprising stream forming means arranged for directing cooling streams along a generatrix of the roll, a source of supply of a cooling medium for each roll to be corrected, a pipe connection between the respective stream forming means and the source of supply, a balanced valve incorporated in the pipe connection, a proportional lever of which the long arm is disposed to open the valve and feeling means connected to the short arm of the said lever for feeling a physical deviation on the respective roll, said feeling means being disposed behind the stream forming means considering the sense of rotation of the roll, and the balanced valve being sensitive to the degree of asymmetry of the deviation sensed by the feeling means and communicated to the valve by the lever to graduate the volume of said cooling streams progressively in proportion to said degree of asymmetry.

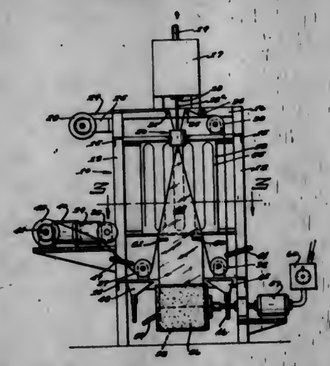
9. A method of correcting physical deviations from the original form of a casting roll used in the manufacture of flat glass in continuous ribbon form, by continuously directing streams of cooling medium on to the roll surface along a generatrix of the roll throughout the rotation of the roll, and progressively varying the volume of cooling medium so directed in proportion to the degree of asymmetry of the deviation being sensed.

3,186,812
METHOD AND APPARATUS FOR FORMING HOLLOW GLASS ARTICLES
Lawrence V. Pfaender, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed June 8, 1961, Ser. No. 115,648
5 Claims. (Cl. 65—55)



1. A method of forming hollow glass spheres, comprising the steps of continuously feeding two adjacent walls of heated glass between a pair of hemispherical, concave die members, moving said die members toward each other against opposite walls of the hot glass thereby sealing the two walls of glass together along a circular path while entrapping air within the circular area, thereafter applying a vacuum to the interior of said dies thus allowing entrapped air to expand, releasing said vacuum and moving said dies away from each other, whereby a hollow glass sphere is formed.

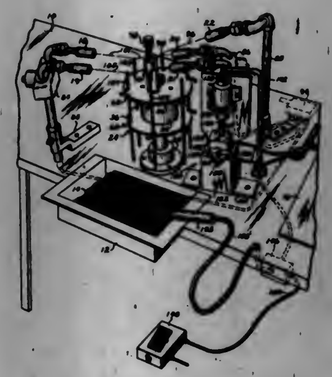
3,186,813
FORMING THIN GLASS FOIL
Lawrence V. Pfaender, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Aug. 17, 1961, Ser. No. 132,098
8 Claims. (Cl. 65—90)



1. In a method of forming a continuous glass foil from a reservoir of molten glass wherein a pair of glass wettable members are continuously moved out of said melt in diverging directions to form a foil of glass between the divergent portions of said members and the formed foil is separated from the members at a selected distance from the melt depending upon the width of foil desired, the improvement comprising continuously stretching said foil by applying force thereto in a direction parallel to its length after separation from said members.

3. Apparatus for forming continuous glass foil comprising a heated chamber, means for feeding molten glass to said chamber, a spool of wire mounted adjacent said chamber, an orifice formed in the bottom of said chamber, a continuous, heat-resistant wire extending from said spool through said chamber and out through said orifice at an angle to the vertical axis of said chamber, said wire further extending a substantial distance below said chamber, returning to a point above said chamber, and extending back through said chamber and orifice at an angle to the axis of said chamber which is equal to said first mentioned angle but at a diametrically opposed side of said chamber, a take-up spool to which said wire is connected, drive means for rotating said take-up spool for drawing said wire through said chamber at a preselected speed and means to sever the formed foil from the wire adjacent its point of lowest travel.

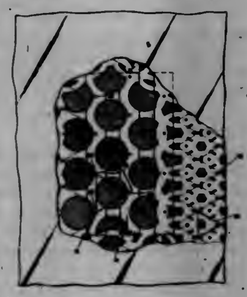
3,186,814
METHODS FOR THERMOMETER MANUFACTURE
John L. Hobbs, Springfield, Ohio, assignor to Springfield-Greene Industries, Inc., Springfield, Ohio, a corporation of Ohio
Continuation of application Ser. No. 841,427, Aug. 21, 1959, which is a division of application Ser. No. 491,072, Feb. 28, 1955, now Patent No. 2,900,763, dated Aug. 25, 1959. This application Sept. 30, 1963, Ser. No. 321,382
3 Claims. (Cl. 65—110)



3. The method of forming a bulb on an open ended glass capillary tube blank in the construction of glass thermometers comprising heating an end of the capillary tube blank to form a molten upper end portion with the remainder of the tube blank unheated and with the region intermediate said molten end and said unheated remainder where the tube is plastic being as short in an axial direction as possible, inserting the heated end portion in a pre-heated die cavity having a tube receiving opening on one side with a narrow annular ridge having a configuration conforming with the peripheral contour of the tube blank and providing a line contact around just said plastic intermediate region of the tube, and inflating the tube blank through the unheated end to form a bulb with an opening through said plastic intermediate region communicating with said capillary tube bore.

3,186,815
TEMPERED GLASS
Friedrich Jochim, Herzogenrath, Germany, assignor to Compagnie de Saint-Gobain, Paris, France
Filed July 24, 1959, Ser. No. 829,400
Claims priority, application France, Aug. 8, 1958, 772,152
4 Claims. (Cl. 65—115)

1. A method of tempering a hot glass sheet that comprises applying to the surface of the sheet while the sheet is at rest jets of air in rings grouped in different sizes comprising at least one group of non-intersecting rings and one group of intersecting rings with different pressures of air being supplied to the different groups.



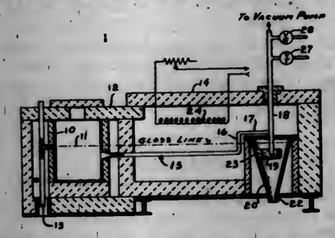
2. An apparatus for tempering hot glass sheets which comprises blowing means having orifices directed toward the position of the glass sheet, means to move the blowing means with translatory motion whereby to move the orifices in closed paths, a first set of orifices on each blowing means being more widely spaced than other orifices on the same blowing means, the distance between the orifices in the first set having a minimum roughly approximating the diameter of the translatory motion of the blowing means and the spacing of the other orifices being less than the said diameter, thereby producing intersection of the paths of adjacent ones of said other orifices.

3,186,816
METHOD OF PRESTRESSING GLASS
Erwin W. Wartenberg, Stuttgart, Germany
Filed Aug. 11, 1961, Ser. No. 130,895
Claims priority, application Germany, Aug. 13, 1960, W 28,368
8 Claims. (Cl. 65—116)

1. In a method of producing prestressed glass bodies, the step of introducing a glass body having an expansion coefficient of about 30×10^{-7} and being at an elevated temperature within the range of tempering temperatures of said glass body into a liquid consisting essentially of an organic compound having at least one OH-group and being maintained at a temperature close to its boiling point, said liquid having a specific heat of evaporation less than about 200 cal./g. and such that, upon introduction of said glass body, the portion of said liquid adjacent to said introduced glass body will be vaporized and will form between said liquid and said glass body a vapor layer being stable for a period of time sufficient to prevent contact between said liquid and said glass body until said glass body has cooled sufficiently so as to be no longer affected by direct contact between the same and said liquid.

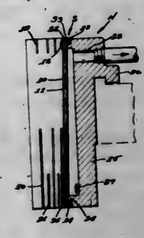
3,186,817
LIQUID DELIVERY METHOD
Theodore Novack, Big Flats, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 21, 1961, Ser. No. 139,809
4 Claims. (Cl. 65—130)

1. A method of controlling the rate of flow of a liquid so as to provide uniform desired flow rates which comprises, creating an initial vacuum to withdraw liquid from a source thereof through a confined space to a height above the surface of such source, maintaining the confined space completely full of such liquid during the application of the initial vacuum, flowing such liquid from the confined space into a vertically disposed chamber intermediate its vertical extent, maintaining a pool of the liquid about a lower outlet end of such chamber to close such outlet end to the atmosphere, varying the degree of vacuum applied to produce a desired flow rate of the liquid



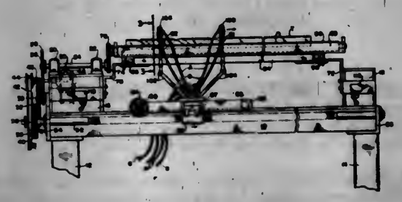
through the confined space, and thereby forming a predetermined head of such liquid within the chamber so as to provide a uniform desired delivery rate therefrom.

3,186,818
MOLD FOR FORMING THERMOPLASTIC MATERIAL
Robert W. Havens and Edward A. Nowak, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed June 5, 1961, Ser. No. 114,711
12 Claims. (Cl. 65—169)



1. A mold for forming glassware, said mold comprising a porous member having inner and outer surfaces, said inner surface defining a molding cavity, means for continually supplying water to the outer surface of said member, and means formed in the inner surface of said member and extending a substantial distance thereof for selectively venting the inner surface of said member to the atmosphere when forming said glassware.

3,186,819
APPARATUS FOR FORMING HELICAL GROOVES IN TUBES
Luke Thorington, Berkley Heights, Andrew H. Olsen, Jersey City, and Donald G. Trutner, Chatham, N.J., assignors to Duro-Test Corporation, North Bergen, N.J., a corporation of New York
Filed Aug. 25, 1961, Ser. No. 133,989
6 Claims. (Cl. 65—244)



1. A machine for forming a helical groove in the wall of a heat deformable tube, a pair of rollers supported for rotation on spaced parallel axes to form a substantially continuous V-shaped slot in which the tube is supported throughout the length, a carriage supported for back and

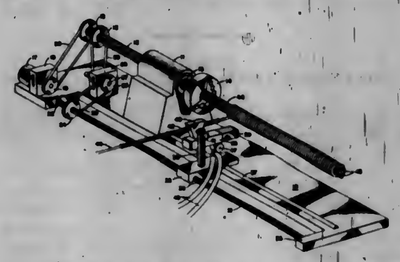
forth movement on a path parallel to said rollers, a fuel burning torch supported on said carriage in a position to direct a spot of flame onto a tube supported in said slot by said rollers, and means for simultaneously rotating said rollers in the same direction and moving said carriage along said path in predetermined timed relation to the speed with which a tube is rotated by said rollers when supported in said slot to soften the tube wall along a helical path.

3,186,820

GLASS SPIRAL WINDING MACHINE

Malcolm W. Adkins, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Sept. 12, 1960, Ser. No. 55,571
2 Claims. (Cl. 65—271)



1. A glass spiral winding machine adapted to wind glass spirals from glass tubing stock, comprising:

a bed;

a chuck rotatably supported on the bed;

a glass forming mandrel secured in the chuck for rotation with the chuck;

feed means rotatably mounted on the bed parallel to the axis of the chuck;

glass tubing support means on the feed means for holding the glass tubing stock and moving along the feed means upon rotation of the feed means to wind the tubing on the glass forming mandrel;

a burner carried by the glass tubing support means for heating the mandrel and the tubing being wound on the mandrel;

a drive motor on the bed; and

a slipping drive system connecting the drive motor to the chuck and to said feed means to disconnect the drive motor from the chuck and feed means when the bending resistance of the tubing exceeds a predetermined level to prevent breakage of the tubing.

3,186,821

APPARATUS FOR BENDING GLASS SHEETS

Frank J. Carson and Herbert A. Leflet, Jr., Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed June 12, 1961, Ser. No. 116,463
10 Claims. (Cl. 65—288)



1. Apparatus for bending glass sheets to complex curvatures, comprising a generally rectangular, peripheral-type mold including a center section and a pair of end sections movably joined to the opposite ends of said center section, said sections being movable from an open position in which a flat glass sheet is supported on said end sections to a closed position in which the bent sheet is received on all said sections, said center section including a pair of spaced, opposed shaping rails, one of which defines a substantially straight line in plan and is curved in elevation while the other is bowed outwardly in plan and is also curved in elevation, each of said end sections also including a shaping rail, said end section shaping rails being generally U-shaped in plan with the uppermost surfaces thereof along the major portion of the rail length lying in a substantially horizontal plane when said mold sections are in the open position.

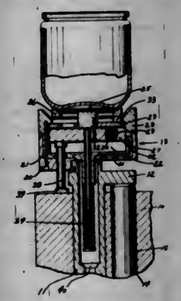
8. Apparatus according to claim 1, in which first and second heat shields are carried by and disposed above said mold, said first heat shield being positioned to extend in width from a point outwardly of said center section shaping rail which defines a substantially straight line in plan to a point inwardly of said center section shaping rail which is bowed outwardly in plan, and in length terminates inwardly of said end section shaping rails, said second heat shield being coextensive in length with said first shield but spaced therefrom, and extending in width from said center section shaping rail curved in plan to a point outwardly thereof.

3,186,822

GLASSWARE COOLING AND TRANSFER APPARATUS

Albert W. Rieck, Waterville, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed July 7, 1961, Ser. No. 122,464
6 Claims. (Cl. 65—348)



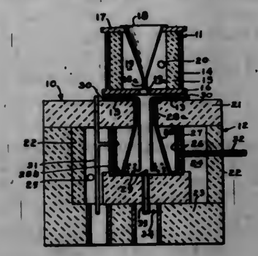
1. An improved ware support for a ware transfer device, said support comprising an air guide provided with a central opening, the inner walls of said opening having a configuration paralleling that of the lower portions of the ware, a stacker ring positioned centrally of said air guide and having an outer diameter slightly less than the diameter of said air guide opening, said stacker ring being formed with two distinct inner annular steps, one formed above the other with the upper step paralleling the shape of the stacker ledge formed on the bottom of the container to be handled, said stacker ring being mounted for vertical movement relative to said air guide, a shape-maintaining support member central of said stacker ring and having its peripheral edge seated within the lower annular step formed in said stacker ring with its upper rim surface merging with the bottom of said upper step, first resilient means normally retaining said shape-maintaining member seated within said recess in said stacker ring, second resilient means normally retaining both said shape-maintaining member and said ring in a horizontal plane beneath the upper surface of said air guide and means responsive to lowering of said ware support for raising said shape-maintaining member into a horizontal plane above the upper surface of said air guide and raising said stacker ring an amount less than said shape-maintaining member, whereby the ware is totally supported by said shape maintaining member.

3,186,823

MELTING APPARATUS

Theodore Novack, Big Flats, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 4, 1962, Ser. No. 164,338
5 Claims. (Cl. 65—335)



1. A two-zone apparatus for transforming solid batch material into a homogeneous molten mass comprising, a first zone for melting solid batch material and delivering it to a second zone for fining, said first zone being positioned above said second zone, said first zone including an inverted conically-shaped container having an open upper end portion for receiving solid batch material and a lower open end portion for delivering molten charge therefrom, said second zone including a receptacle positioned below said lower end of the conically-shaped container for collecting and refining the molten charge delivered by such lower open end portion, an enclosing baffle member positioned within and extending above said receptacle in axial alignment with said lower open end portion for initially receiving therewithin the molten charge from said lower end, a heated refractory housing surrounding said receptacle and closing the upper end thereof to the atmosphere, said baffle member extending upwardly through said refractory housing and communicating with the atmosphere intermediate said first and second zones to facilitate the removal of gases from the molten charge within such baffle, means adjacent a bottom portion of said baffle member for flowing refined molten material from the interior thereof to the remainder of said receptacle, and discharge means communicating with a side wall portion of said receptacle below the surface of the molten material retained therein for delivering such material.

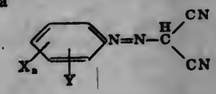
3,186,824

DEFOLIATING AND DESICCATING COMPOSITION AND METHOD

Albert L. Flenner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 11, 1962, Ser. No. 201,317
2 Claims. (Cl. 71—2.3)

1. A method for the defoliation and desiccation of plants which are ripe and ready for harvesting, said method comprising applying to the plant to be treated, a defoliating and desiccating amount of a composition comprising one part by weight of an arylazomalononitrile of the formula



where:

X is selected from the group consisting of hydrogen, halogen, and alkyl containing from 1 to 4 carbon atoms,

Y is selected from the group consisting of hydrogen, halogen, trifluoromethyl, and nitro, and

n is a whole positive number less than 3,

formulated with 0.25 to 4 parts by weight of a compound selected from the group consisting of N-methyl-2-pyrrolidone, N,N-dimethylformamide, N,N-dimethylacetamide and N-methylcaprolactam.

3,186,825

MIXED FERTILIZERS HAVING A UREA SOURCE OF NITROGEN IN EXCESS OF A NITRATE SOURCE

David S. Price, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,784
2 Claims. (Cl. 71—28)

1. A non-hygroscopic mixed fertilizer having a urea source of nitrogen in excess of a nitrate source of nitrogen, said mixed fertilizer comprising from about 10% to 45% by weight of an ammoniating solution consisting essentially of:

	Percent by weight
Urea	26–36
Ammonium nitrate	14–24
Ammonia	25–35
Water	9–19

in admixture with fertilizer ingredients which include potassium chloride and superphosphates, the content of ammonium nitrate of said ammoniating solution ranging from about 5% through 60% of that which stoichiometrically reacts with the potassium chloride content of said fertilizer ingredients.

3,186,826

SOIL IMPROVER AND PROCESS FOR PREPARING SAME

Margarita del Muro de Rendon, Division Del Norte Ave., No. 415–3, Mexico City, Mexico

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,857
7 Claims. (Cl. 71—6)

1. Composition for reducing the alkalinity of alkaline and saline soils, consisting essentially of (a) a mixture of cultures of bacteria of the species *Thiobacillus thiooxidans, Thiobacillus thioparus* and *Thiobacillus denitrificans*, in admixture with a carrier material including (b) finely divided sulfur in an amount sufficient to sustain the sulfur-oxidative action of said bacteria, (c) peat containing from about 40% to about 50% moisture to preserve the viability of the bacteria, (d) activated carbon of vegetable origin in an amount sufficient to catalyze the sulfur oxidative reactions of said bacteria.

5. Method for the preparation of a composition for reducing the alkalinity of alkaline and saline soils, comprising the steps of mixing nutrient broth cultures of bacteria of the species *Thiobacillus thiooxidans, Thiobacillus thioparus* and *Thiobacillus denitrificans*, with peat containing from about 40% to 50% moisture, to preserve the viability of the baceteria, adding to said mixture an amount of activated carbon sufficient to catalyze the sulfur oxidative reactions of said bacteria, and finally adding to said mixture finely divided sulfur in an amount sufficient to sustain the sulfur oxidative action of said bacteria.

3,186,827

MANUFACTURE OF GRANULAR FERTILIZERS

Isaac Allan Brownlie and George Andrew Wemyss, Edinburgh, Scotland, assignors to Scottish Agricultural Industries Limited, Edinburgh, Scotland, a corporation of Great Britain

No Drawing. Filed Aug. 16, 1962, Ser. No. 217,264
Claims priority, application Great Britain, Sept. 8, 1961, 32,398/61; June 19, 1962, 23,521/62
2 Claims. (Cl. 71—34)

1. A process for the production of granular mixed fertilizer comprising mixing solid ammonium phosphate having an N:P atomic ratio of from 0.95 to 1.6 and a

moisture content of up to 15%, with other conventional fertilizer ingredients, and thereafter subjecting said mixture to wet granulation, said ammonium phosphate contributing at least 5% P_2O_5 to the end product and providing at least 15% of the moisture for the wet granulation thereby serving as the granulating agent.

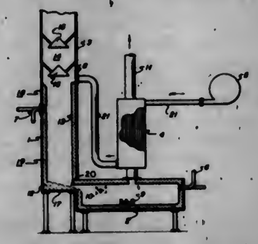
3,186,828
COATING COMPOSITIONS FOR PARTICULATE MATERIALS
Robert E. Bearson, La Grange, Ill., and Duane T. Ohlsen, Eugene, Oreg., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 4, 1962, Ser. No. 192,349
7 Claims. (Cl. 71—64)

1. An improved non-caking salt composition, comprising hygroscopic water-soluble salt particles having a substantially uniform anti-caking coating of a cationic material selected from the group consisting of compounds having the formula RNH_3 and $RNHCH_2CH_2CH_2NH_3$, wherein R is an aliphatic hydrocarbon radical having from 8 to 22 carbon atoms, and the hydrochloric, acetic and fatty acid salts of the foregoing compounds, said fatty acids containing from 6 to 22 carbon atoms, and an organic solvent for said cationic material, said coating constituting from about 0.05 to about 4.0 pounds per ton of the composition.

3,186,829
PROCESS OF PREPARING MAGNETIC PARTICLES
William C. Landgraf, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
No Drawing. Filed Jan. 21, 1963, Ser. No. 252,610
3 Claims. (Cl. 75—0.5)

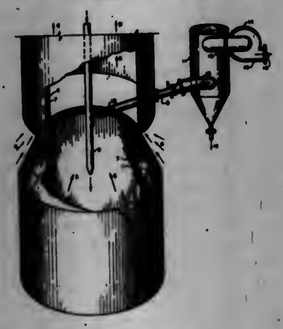
1. The process of preparing finely divided magnetic particles comprising forming an aqueous mixture of iron, nickel and cobalt salts, said salts being selected from the sulfates and chlorides, adding to said mixture dimethyl oxalate to precipitate iron, nickel and cobalt oxalates, separating said precipitate from supernatant liquid and reducing said precipitate by heating the same in an atmosphere of hydrogen at a temperature of from 300 to 600° C.

3,186,830
MELTING PROCESS
William H. Moore, 19 Villa Road, Larchmont, N.Y., and Harry H. Kessler, 7 Dromara Road, Clayton, Mo.
Filed May 20, 1963, Ser. No. 295,259
4 Claims. (Cl. 75—43)



1. The method of continuously producing cast iron in a substantially vertical shaft furnace having tuyeres at the upper end portion and a conduit at the lower end portion leading to a metal receiver comprising the steps of introducing a bed of solid lump fuel to occupy the lower portion of the shaft furnace below said tuyeres, introducing air for combustion at said tuyeres, introducing a series of metal-solid lump fuel charges at said upper end portion of the shaft furnace, igniting said solid lump fuel at an upper portion of the shaft furnace and said air and said solid lump fuel producing a combustion zone at and below said tuyeres which produces hot gases substantially all of which pass downward through the shaft furnace, said combustion zone being rich in oxygen to produce an oxidizing zone and said downward flow of gases producing a reducing zone containing substantially no free oxygen at a point in the shaft furnace below said combustion zone, said metal charge melting in said oxidizing zone and thereafter falling through said reducing zone and then passing through said conduit into said metal receiver.

3,186,831
METHOD OF RECOVERING OFF-GAS AND GAS PROBE APPARATUS THEREFOR
Daniel E. Pike, Emerson, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 25, 1961, Ser. No. 147,505
7 Claims. (Cl. 75—60)

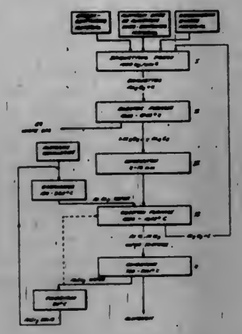


1. Method of recovering off-gas undiluted with air and substantially free of entrained solids from the air-ventilated hood of a steel furnace or the like which comprises selectively inducting a portion of said off-gas from the central region of said hood through separate duct removal means, accelerating said gas portion to high velocity at the point of induction, thereafter immediately quench-cooling and scrubbing said gas portion at the point of induction by injection of liquid into the accelerated gas stream substantially transverse to gas flow, whereby entrained solids are removed from the gas stream into the injected liquid and the gas stream is purified within said duct removal means, and separating entrained liquid droplets from the resulting scrubbed and cooled final gas stream, whereby the final gas stream recovered from the furnace is undiluted and purified.

3,186,832
METHOD OF PRODUCING ALUMINUM
Volker Sparwald, Luenen, Westphalia, Germany, assignor to Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany
Filed Sept. 5, 1962, Ser. No. 221,581
Claims priority, application Germany, Sept. 9, 1961, V 21,288
9 Claims. (Cl. 75—68)

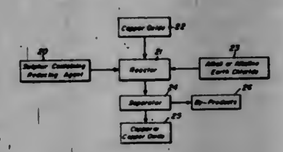
1. Method of producing aluminum, which comprises reacting a material consisting essentially of aluminum oxide and aluminum carbide in an atmosphere free of oxygen and of carbon oxide at a temperature of between about 1400 and 1500° C. with an aluminum trihalide which is gaseous at said temperature to form a gaseous mixture comprising said aluminum trihalide and formed aluminum monohalide, and maintaining the sum of the partial pressures of said aluminum trihalide and said aluminum monohalide at between about 300 and 400

mm. Hg, thereby preventing formation of carbon monoxide which would reoxidize said aluminum monohalide to aluminum oxide, aluminum carbide and aluminum trihalide; cooling said gaseous mixture to between about



700 and 900° C. so as to transform the same into aluminum in liquid condition and gaseous aluminum trihalide; and separately recovering the thus formed aluminum and said aluminum trihalide.

3,186,833
METHOD FOR REDUCING COPPER OXIDE
Robert E. Cech, Madison, Wis., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1963, Ser. No. 249,036
15 Claims. (Cl. 75—72)

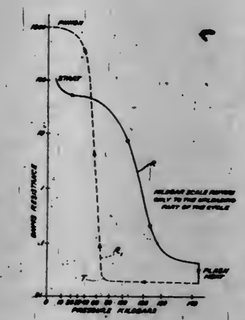


1. A process for producing cuprous oxide or copper metal by reducing a copper oxide from the group consisting of cupric oxide, cuprous oxide and mixtures thereof to a lower valence state, the steps of the process comprising: providing a mixture in which the active constituents are; (*a*) a reducing agent selected from the group consisting of sulfur, copper sulfide, iron sulfide, zinc sulfide, tin sulfide and lead sulfide, (*b*) said copper oxide, and (*c*) a chloridizing agent selected from the group consisting of alkali metal chlorides and alkaline earth metal chlorides; and heating the mixture in a protective atmosphere to an elevated temperature sufficient to chemically react the active constituents and achieve reduction in the valence state of said copper oxide.

3,186,834
PREPARATION OF RARE EARTH METAL SPONGE
Dale L. Schechter and William E. Domning, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 2, 1961, Ser. No. 92,759
6 Claims. (Cl. 75—84.5)

1. The improved method of preparing yttrium which comprises heating a reductor metal selected from the group consisting of sodium, potassium, lithium, magnesium, calcium, barium, zinc and cadmium, together with a coherent mass of yttrium chloride under an inert atmosphere and at a temperature sufficient to initiate reaction between the reductor metal and yttrium chloride, but the reaction temperature being maintained at least 30 centigrade degrees below the melting temperature of yttrium thereby to cause reduction of the yttrium chloride to a metal sponge and oxidation of the reductor metal chloride; and separating said reductor metal chloride in molten form from a mixture thereof with said metal sponge.

3,186,835
HIGH DENSITY GERMANIUM
Francis P. Bundy, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 30, 1962, Ser. No. 213,457
5 Claims. (Cl. 75—134)



1. A dense semiconducting form of germanium stable at temperatures below about 120° C. having a density significantly greater than ordinary germanium said dense form being of density between about 5.7 grams/cm.^{3} to 6.1 grams/cm.^{3} at 25° C. and having a tetragonal unit cell of 12 atoms and C=6.98 A. and a_0=5.93 A.

3,186,836
ALUMINUM-TIN ALLOY
Michael J. Pryor, Hamden, Philip R. Sperry, North Haven, and Douglas S. Keir, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Feb. 5, 1962, Ser. No. 171,114
11 Claims. (Cl. 75—138)

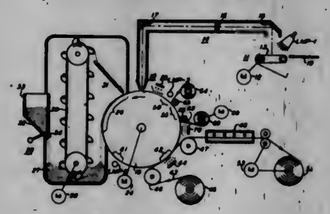
1. An aluminum base alloy consisting essentially of from 0.04 to 0.5 percent tin, with said tin being present in solid solution to the maximum degree at room temperature, said maximum degree being 0.1 percent, said alloy also containing silicon in an amount less than 0.05 percent and iron in an amount less than 0.1 percent and the remainder aluminum.

3,186,837
COLUMBIUM-TANTALUM BASE ALLOY
Edward F. Duffek, Jr., Mountain View, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Feb. 28, 1961, Ser. No. 92,305
The portion of the term of the patent subsequent to Apr. 7, 1981, has been disclaimed
2 Claims. (Cl. 75—174)

1. A ductile columbium base alloy composition resistant to the action of hot oxidizing and non-oxidizing acids and consisting essentially of in weight percent 20–45% tantalum, 2–15% titanium, a sufficient amount above 1% of nickel to give a two-phase alloy but no more than 15% nickel, up to 7.5% molybdenum, up to 7.5% tungsten, up to 10% vanadium and up to 4% tin, the

total of molybdenum, tungsten, vanadium and tin being not more than 15%, the balance being essentially columbium with a purity of at least 99.6%, said alloy containing at least 35% columbium.

3,186,838
XEROGRAPHIC PLATE CLEANING METHOD UTILIZING THE RELATIVE MOVEMENT OF A CLEANING WEB
William P. Graff, Jr., Chicago, Ill., and Robert W. Gundlach, Spencerport, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York and Bell & Howell Company, a corporation of Illinois
Filed Dec. 27, 1960, Ser. No. 110,281
7 Claims. (Cl. 96—1)



4. The method of cleaning residual powder from the surface of a xerographic plate after transfer of a powder image from the plate surface to an image receiving member including

placing a portion of a web of fibrous material into contact with the residual powder on the plate surface,

imparting a relative movement between the plate surface and the portion of the web of fibrous material in contact with the residual powder on the plate surface whereby the linear speed of the web material is on the order of 1/10 to 1/100 of the plate speed,

and moving the web of fibrous material so that the portion of the web in contact with the residual powder on the plate is constantly changing during said movement between the plate surface and the web of fibrous material.

3,186,839
LIGHT-TO-ELECTROSTATIC-IMAGE CONVERTER AND PROCESS FOR MANUFACTURING SAME
Joseph J. Stone, Glenview, and John H. Borland, Dundee, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 10, 1962, Ser. No. 186,474
3 Claims. (Cl. 96—1)



1. An image converter for converting a light image to a charge on a charge receiving member comprising a sheet of insulating material having a hole extending between opposite surfaces of said sheet of insulating material, a conductor in said hole extending from one surface partly to the opposite surface, photoconductive material filling the remainder of said hole, a transparent conductive coating over said opposite surface upon which a light image to be converted is permitted to fall, a conductive member spaced from said one surface by the thickness of said charge receiving member, and means for applying operating potential between said transparent coating and said conductive member whereby said charge receiving member may receive a charge pattern as determined by said light image.

3,186,840
DIRECT POSITIVE COLORED PHOTOGRAPHIC ELEMENTS CONTAINING DIHYDRAZONES AND PROCESS FOR FORMING COLORED MASKS THEREFROM
Walter Püschel, Dusseldorf, Ottmar Wahl, Baden-Baden, Willibald Pelz, Opladen, and Hans Schellenberger and Karl Loffler, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 8, 1959, Ser. No. 858,052
Claims priority, application Germany, Dec. 11, 1958, A 30,924
14 Claims. (Cl. 96—9)

3. A process of producing a masking image in a multilayer photographic material comprising several silver halide emulsion layers, wherein at least one of the said layers contains an uncolored color-forming coupler which is reactive with the oxidation product of a primary aromatic amine developing agent to form a dyestuff in the said layer, and wherein at least one of the said layers contains a dihydrazone of the following general formula

$$\begin{array}{l} R_1-C=N-NH-R_3 \\ | \\ R_2-C=N-NH-R_4 \end{array}$$

in which R_1 and R_2 each represent a radical of the group consisting of hydrogen, alkyl up to 20 carbon atoms, phenyl, naphthyl, benzyl, furyl, thienyl, 2-benzofuranyl, benzothienyl, and pyridyl; R_1 and R_2 together with the carbon atoms adjacent to each are the atoms required to complete a ring of the group consisting of cyclopentane, cyclohexane, 2,3-dihydrobenzo furan and 2,3-dihydroindole; R_3 and R_4 each represent a radical of the group consisting of aromatic and heterocyclic radicals which are free of groupings capable of coupling to form colored reaction products, with oxidation products of primary aromatic amine silver halide developing agents, which comprises exposing and developing the said multilayer photographic material to form a dyestuff image from the said uncolored coupler and to form a reaction product from said dihydrazone, which is stable to silver bleaching agents, and treating the said material with a silver bleaching agent to transform the said dihydrazone at the unexposed areas into a masking dyestuff image which is negative with respect to the said color image.

3,186,841
METHOD OF INFLUENCING THE GRADATION OF COLOR-PHOTOGRAPHIC PRINTING MATERIAL
Heinz Berger, Leverkusen, and Hans Berghaus, Cologne-Deutz, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Aug. 29, 1960, Ser. No. 52,384
Claims priority, application Germany, Sept. 3, 1959, A 32,780
2 Claims. (Cl. 96—23)

1. A process for influencing the gradation of a color photographic printing material when copying from a multicolor negative of an original image onto a multilayer positive printing material containing at least three silver halide emulsion layers, each layer of which is sensitive to one of the different regions of the visible spectrum of the group consisting of red, green and b ue, and each layer of which contains a different color coupler that is capable of reacting with the oxidation product of an aromatic primary amine developer to form a dye, the color coupler in the green-sensitive layer to form a magenta dye, the color coupler in the red-sensitive layer to form a cyan dye, and the color coupler in the blue-sensitive layer to form a yellow dye, which process comprises

(a) providing said mu tilayer positive printing material in which the emulsions have balanced contrasts,

(b) determining the characteristics of a filter which when interposed in a beam of white light that is projected on the printing material through a black-and-white transparency causes that transparency to be reproduced on the positive material as a neutral gray image without any distinct color hue,

(c) exposing said printing material to the multicolor negative through a combination of subtractive color filters to obtain light having a color composition which causes said printing material to produce a positive print of the mu ticolor negative in the colors of the original image,

(d) subjecting the said positive printing material to a supplementary exposure from a beam of white light projected through the filter of step (b), this supplementary exposure having an intensity between 10 and 20 percent of the image exposure (c), and

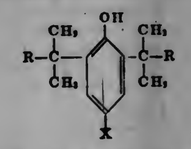
(e) subsequently developing, bleaching, fixing, and washing the thus exposed positive printing material.

3,186,842
DIFFUSION TRANSFER PROCESS FOR THE MANUFACTURE OF PRINTING PLATES
Louis Maria De Haes and Paul Maria Cassiers, Mortsel-Antwerp, André Rott, Berchem-Antwerp, Albert Petrus Wagemans, Edegem-Antwerp, and Jozef Frans Willems, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium
No Drawing. Filed Oct. 14, 1959, Ser. No. 846,257
Claims priority, application Great Britain, Oct. 25, 1957, 33,431/57
16 Claims. (Cl. 96—29)

1. In a process for the manufacture of a silver image bearing metal plate for printing purposes by application of the silver halide diffusion transfer process, the steps of treating a photographic material containing a light sensitive silver halide emulsion layer having exposed and non-exposed areas with a silver halide developing solution containing a sequestering agent, wherein said sequestering agent is a compound selected from the group consisting of amino polycarboxylic acids and water soluble salts thereof, contacting the side of said photographic material bearing the emulsion layer with the surface of a metal plate in the presence of a silver halide solvent, said surface of said metal plate being substantially oxide-free and composed of a metal higher than silver in the electrolytic series, whereby the undeveloped silver halide in the emulsion layer at least partially dissolves, diffuses from said emulsion layer to the surface of said metal plate, is reduced by said plate and deposits as a silver image on the surface of said metal plate.

3,186,843
PHOTOGRAPHIC DEVELOPER CONTAINING HINDERED PHENOLS
Howard C. Haas, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Apr. 27, 1962, Ser. No. 190,792
6 Claims. (Cl. 96—66)

1. A process of developing an exposed silver halide emulsion which comprises treating said emulsion with a substantially non-aqueous alkaline solution comprising a hindered phenol of the formula:



wherein R is a lower alkyl radical and X is selected from the group consisting of tertiary butyl, tertiary amyl, methyl, carboxy-alkoxy and carboxy-alkylene radicals.

3,186,844
FLEXIBLE PHOTOPOLYMERIZABLE ELEMENT
Francis Peter Alles, Basking Ridge, and Charles Walter Smith, Red Bank, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 26, 1962, Ser. No. 212,681
4 Claims. (Cl. 96—87)



1. A thin, flexible photopolymerizable element for use in preparing shallow relief, high-precision printing plates which comprises:

(1) a thin layer of a photopolymerizable composition comprising:

(a) an addition polymerizable, non-gaseous ethylenically unsaturated compound, having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer by free-radical initiated, chain-propagating addition polymerization,

(b) a free-radical generating addition polymerization initiator activatable by actinic radiation and therma ly inactive below about 85° C., and

(c) a compatible, polymeric binding agent;

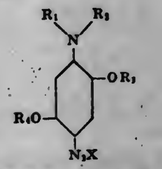
(2) a barrier layer from about 0.0005 to 0.003 inch in thickness of a partially polymerized composition defined above under (1);

(3) a layer from about 0.0001 to 0.001 inch in thickness of a thermally curable copolyester adhesive composition containing a diisocyanate curing agent; and

(4) a thin, flexible support layer.

3,186,845
TWO-COMPONENT DIAZOTYPE MATERIAL
Oskar Süs, Wiesbaden-Biebrich, Gottlieb von Poser, Wiesbaden, and Georg Werner, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Co., Hoboken, N.J.
Filed Nov. 8, 1962, Ser. No. 236,191
Claims priority, application Germany, Nov. 11, 1961, K 45,186
6 Claims. (Cl. 96—91)

1. A two-component diazotype photoprinting material, comprising a support, and a light sensitive layer coated on said support, said light sensitive layer comprising a diazo compound and a coupler, said diazo compound having the formula



where R_1 and R_2 are selected from one of the following two groups A and B:

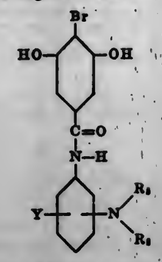
group A wherein R_1 is selected from a group consisting of 1, 2, 3, and 4-carbon alkyls, and aralkyl, and wherein R_2 is a member of a group consisting of 1, 2, 3, and 4-carbon alkyls; and

group B wherein R_1 and R_2 are members of a common heterocyclic ring selected from a group consisting of five-membered and six-membered heterocyclic rings;

where R_3 and R_4 are selected from a group consisting of 1, 2, 3, 4, and 5-carbon alkyls, and

where X is an acid radical,

and said coupler having the formula



where R_5 and R_6 are selected from one of the following two groups C and D:

group C wherein R_5 and R_6 are selected from a group consisting of 1, 2, and 3-carbon alkyls; and

group D wherein R_5 and R_6 are members of a common heterocyclic ring selected from a group consisting of five-membered and six-membered heterocyclic rings,

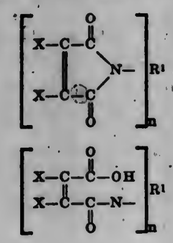
and where Y is a member selected from the group consisting of hydrogen, alkyl, and halide radicals.

3,186,846
PROCESS FOR PRODUCING SILVER HALIDE EMULSIONS CONTAINING GELATIN DERIVATIVES

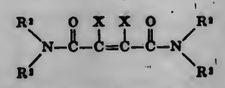
William H. Ryan, Carlisle, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed June 10, 1960, Ser. No. 35,123
5 Claims. (Cl. 96—94)

1. In a method of preparing silver halide dispersions, the steps which comprise mixing together a water-soluble silver salt and at least one water-soluble alkali metal halide salt in an aqueous solution of gelatin, thereby forming a silver halide dispersion, reacting the gelatin with an organic compound selected from the group consisting of compounds of the formulae:



and



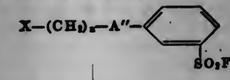
wherein each X is selected from the group consisting of hydrogen and alkyl groups and at least one X is hydrogen; *n* is one of the positive integers 1 and 2; R^1, when *n* is 1, and R^2 each is a monovalent organic radical selected from the group consisting of hydrogen, acyclic and cyclic groups; and R^1, where *n* is 2, is a divalent organic radical selected from the group consisting of acyclic and cyclic groups; to thereby form a derivative of said gelatin, which derivative renders the dispersion coagulable at a pH within the range of about 2 to 4, coagulating the dispersion by adjusting same to said coagulating pH range, thereby forming silver halide-gelatin derivative particles, and separating the thus-formed silver halide-gelatin derivative particles from the liquid portion of the mass.

3,186,847
COMPOSITION OF GELATIN AND HARDENING AGENT

Jozef Frans Willems, Wilrijk-Antwerp, and Marcel Nicolas Vrancken, Berchem-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Apr. 27, 1961, Ser. No. 105,909
Claims priority, application Belgium, Apr. 29, 1960, 39,743, Patent 590,302
3 Claims. (Cl. 96—111)

1. A composition comprising gelatin containing therein 1–5% based on the weight of gelatin of a compound according to the general formula



wherein:

X is a halogen atom selected from the group consisting of a bromine atom and a chlorine atom,

A'' is a bivalent organic radical selected from the group consisting of a —CO— radical, a —CONH— radical and a SO_2NH— radical, and

n is a positive integer as from 1 to 2.

3,186,848
PHOTOGRAPHIC GELATIN LAYER CONTAINING PHOSPHONITRILE DICHLORIDES AS HARDENING AGENTS

Jozef Frans Willems, Wilrijk-Antwerp, and Marcel Nicolas Vrancken, Berchem-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,255
Claims priority, application Belgium, Dec. 19, 1960, 40,307, Patent 598,272
3 Claims. (Cl. 96—111)

1. A light-sensitive photographic material carrying a gelatin layer containing 2–7%, based on the weight of gelatin, of a compound selected from the group consisting of tri(phosphonitrile dichloride) and tetra(phosphonitrile dichloride).

3,186,849
REMOVAL OF CONTAMINANTS FROM MILK

Joseph Silverman, Hicksville, N.Y., assignor to Radiation Applications, Inc., Long Island, N.Y., a corporation of New York

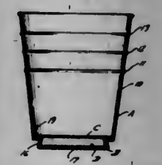
No Drawing. Filed Nov. 2, 1959, Ser. No. 850,069
6 Claims. (Cl. 99—60)

1. A process for the removal of radioactive strontium from milk which comprises passing said milk through a bed of an edible inorganic calcium salt selected from the group consisting of calcium carbonate and, calcium phosphate, thereby removing said strontium from the milk.

3,186,850
CUP CONTAINING BEVERAGE INGREDIENT

Roy Anthony, 200 E. 63rd St., New York 23, N.Y.

Filed Apr. 28, 1960, Ser. No. 25,267
1 Claim. (Cl. 99—78)



A prepared mixed beverage cup having an upper container portion to receive the mixed beverage and a lower container portion to receive the dry ingredients, said upper container portion consisting of an elongated cylindrical shaped drinking cup having a plurality of spaced peripheral marking circles thereon to indicate the amount of liquid to be added, and said lower container portion being relatively short and flat and of smaller diameter than the upper container portion having a shoulder at the junction of the lower end of the upper container portion and at the upper end of the lower container portion, said container portion receiving a dry mixture of beverage ingredients and a closure resting on said shoulder and sealing the lower container from the air and moisture and from the upper container, both said upper and lower container portions being of conical shape and convergent toward each other and at their point of meeting at their different diameters to form said shoulder, said closure consisting of a tapped disk having associated therewith a depending snap-in container having the same outside dimensions as the interior of the lower container.

3,186,851
FLUID SHORTENING COMPOSITION

Norman Bratton Howard, Hamilton, and Paul Martin Koren, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed May 22, 1962, Ser. No. 196,603
11 Claims. (Cl. 99—123)

1. A fluid shortening composition, suitable for use in commercial baking and cream icing operations, which comprises a normally liquid glyceride oil having therein from about 0.5% to about 8%, by weight of the composition, of monoester of propylene glycol and saturated fatty acid containing from about 14 to about 22 carbon atoms, said shortening composition additionally comprising, by weight of the composition, from about 0.5% to about 10% saturated fatty acid having from about 14 to about 22 carbon atoms, and from about 1% to about 9% of material selected from the group consisting of the condensation products of saturated fatty acid having from about 14 to about 22 carbon atoms and monohydroxy-monocarboxylic acid having from 2 to 6 carbon atoms and the alkali metal and alkaline earth metal salts of said condensation products.

3,186,852
PROCESS FOR MAINTAINING THE CRISPNESS IN A PASTRY PRODUCT FILLED WITH A FROZEN CONFECTION

William H. Baker, Worthington, Ohio, assignor to Big Drum, Inc., a corporation of Ohio

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,209
1 Claim. (Cl. 99—136)

A method of protecting a baked pastry surface from the water content of a contacting frozen confection which comprises: treating the pastry surface with a primary protective substance which is sprayed thereon at a temperature of about 100° F., said primary substance being a colloidal dispersion of one or more fats and oils having a melting point ranging from about 70° F. to 80° F. and a freezing range of from about 40° F. to 50° F.; subsequently spraying on said treated surface at a temperature ranging from 80° F. to 110° F. a colloidal dispersion containing edible fat having a melting point range of from about 70° F. to 80° F. and a freezing range of from about 40° F. to 50° F. and containing solids in an amount ranging from 40% to 42% by weight; and contacting the said surface within one-half to five seconds after spraying the last-named colloidal dispersion thereon with the confection at a temperature ranging from about 22° F. to 25° F. so as to congeal the fat and form a protective coating on the surface.

3,186,853
METHOD OF PROCESSING MEAT

Jerome A. Meusel, Baltimore, Md., assignor to The Baltimore Spice Company, Baltimore, Md., a corporation of Maryland

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,325
2 Claims. (Cl. 99—159)

1. In the seasoning of meat products formed from comminuted meats, the improvement which permits identification of the source of the seasoning incorporated in the comminuted meat product which improvement consists in incorporating into the seasoning an amount of maltol and incorporating said maltol-containing seasoning into the comminuted meat in an amount such that the amount of maltol imparted to the seasoned meat product is substantially below an amount which suffices to impart a noticeable maltol flavor to said meat product and which constitutes between about 0.25 part and 2.5 parts per million of maltol in said meat product.

3,186,854
EDIBLE OIL BLENDS

Louis H. Going, Loveland, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed July 6, 1962, Ser. No. 208,109
9 Claims. (Cl. 99—163)

1. A clear liquid glyceride oil composition characterized by substantial stability against clouding and stearin deposition whereby it has a chill test of at least 5½ hours at 32° F. which comprises the blend of at least two fatty triglyceride oils at least one of which is a summer oil normally having poor stability against clouding and stearin deposition and at least another of which is a winter oil normally having good stability against clouding and stearin deposition with a crystallization inhibitor in an amount of from about 0.005% to about 0.5%, by weight of the total composition, the blend containing from about 15% to about 85%, by weight of the total composition, of summer oil and having such proportions of summer oil to winter oil as to satisfy the condition that the relative transparency, defined as

$$I_0/I$$

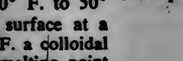
wherein I_0 is the transmitted intensity of the winter oil component and I is the transmitted intensity of the uninhibited blend of summer and winter oils, should equal about 0.5 to about 1.0 when held at a temperature of 33.5° F. for a period of 90 minutes and photoelectrically measured with monochromatic light having a wave length of 600 mμ.

3,186,855
MOLD COATING COMPOSITION

Eugene P. Miller, Pueblo, Colo., assignor to The Colorado Fuel and Iron Corporation, Denver, Colo., a corporation of Colorado

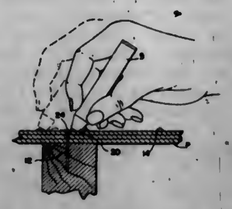
No Drawing. Filed Oct. 8, 1962, Ser. No. 229,153
3 Claims. (Cl. 106—38.23)

1. The aqueous slurry coating composition for metal molds consisting essentially of a mixture on a dry weight basis of from 1 to 32% of a polysiloxane represented by the repeating unit



in which "a" is an integer having a value of 1 to 2 and R is a hydrocarbon of the group consisting of methyl and phenyl and the ratio of R to Si is from 1.2 to 1.7, carbon of the group consisting of pulverulent coke, coal and charcoal, carbon black and lamp black in an amount varying from 1 to 80%, and the balance substantially a thickening agent of the group consisting of starch, dextrin and cereal flour.

3,186,856
COMPOSITION STICK FOR FILLING SMALL REGULAR CAVITIES
John F. Leutzinger, 1320 Republican, Seattle, Wash.
Filed Nov. 15, 1954, Ser. No. 468,784
9 Claims. (Cl. 106—245)



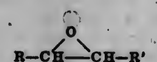
1. A stick for filling small cavities in prefinished materials, comprising: an elongated, glossy stick rigid and flakible on the edges of such cavities at normal atmospheric temperatures, said stick having a base material of between about 11.5% and 30% paraffin, between about 15% and 24% boiled linseed oil, between about 55% and 65% waxes having melting points over about 156° F. of which not more than 20% of the total base materials are waxes having melting points below about 162° F., said stick having a needle penetration, 50 grams, 72° F., 20 seconds, of about 0.04 to 0.05 cm. and having a melting point of between about 162° F. and 172° F., and there being pigments added to said base materials whereby the stick matches the color of prefinished material.

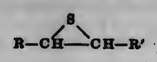
3,186,857
METHOD FOR DECREASING ADHESION OF SILICATE ADHESIVES TO HEATED METAL SURFACES
Helmut V. Freyhold, Duesseldorf-Oberkassel, and Arno Sponge, Duesseldorf-Benrath, Germany, assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 23, 1962, Ser. No. 175,345
Claims priority, application Germany, Mar. 30, 1961, H 42,166
7 Claims. (Cl. 106—82)

1. An adhesive composition having a low adherence to metal consisting essentially of aqueous sodium silicate having a mol ratio of Na_2O to SiO_2 of between about 1:2 and 1:4 and between about 0.5% and 5% by weight of a compound selected from the group consisting of caprylic acid, capric acid and the alkali metal salts of caprylic and capric acids.

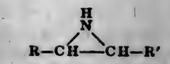
3,186,858
PROCESS FOR PREPARING REGENERATED CELLULOSE SPONGES
Edward L. Kosak, Lancaster, and Edward J. Quinn, Tonawanda, N.Y., assignors to General Mills Inc., a corporation of Delaware
No Drawing. Filed May 2, 1962, Ser. No. 192,005
5 Claims. (Cl. 106—122)

1. The process for preparing cellulose sponges which comprises preparing a solution of cellulose as viscose, foaming said viscose into a porous structure, and then regenerating said cellulose viscose in the presence of an excess of alkali and a regeneration accelerating compound selected from the group consisting of compounds of the formulae

(1)


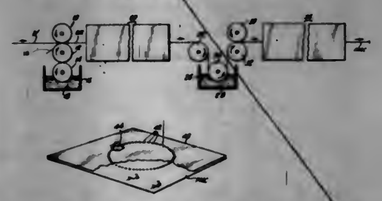
(2)


and

(3)


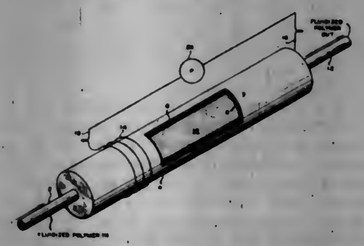
where R and R′ are selected from the group consisting of hydrogen and alkyl radicals, the said compounds containing from 2–8 carbon atoms.

3,186,859
METHOD FOR MARKING CLOTH AND THE RESULTING ARTICLE
Philip Surowitz, Middlesex, N.J., assignor, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
Filed Jan. 30, 1961, Ser. No. 85,785
2 Claims. (Cl. 117—1.7)



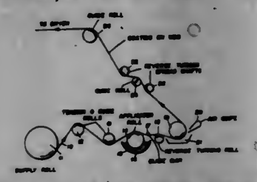
1. A method for making a pattern marking cloth adapted to receive a predetermined pattern from a stencil, said method comprising assembling a layer of overlapping, intersecting fibers; applying a binder to one side of said layer of overlapping, intersecting fibers to bond the same into a self-sustaining nonwoven fabric having a relatively smooth side and a fibrous, relatively non-slipping side; applying to said self-sustaining nonwoven fabric a color-developable impregnant, positioning said stencil contiguous to said smooth side of said pattern marking cloth and applying a liquid color-developing agent for said impregnant, said color-developing agent contacting said pattern marking cloth through the openings defining the pattern in said stencil to cause said color-developable impregnant to undergo a color change in said predetermined pattern area to relatively clearly define the same on said smooth side without effecting the fibrous non-slipping side whereby it remains capable of clinging to the materials to be contacted by said pattern marking cloth during use thereof.

3,186,860
PROCESS FOR COATING SURFACES
Rufus Vernon Jones, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 13, 1956, Ser. No. 621,899
8 Claims. (Cl. 117—18)



1. Method for surface coating metal objects which comprises forming a fluidizable mass of finely divided solid particles of a fusible organic resinous coating material, said mass being at least as deep as the portion of said object intended to be coated; fluidizing said mass by passing a stream of an inert gas at a fluidizing rate upwardly through said mass while maintaining the average temperature of the mass below the softening temperature of the solid particles therein; contacting a metal object to be coated with said fluidized mass; inductively heating said metal object while it is in contact with said fluidized mass by subjecting it to the influence of an alternating high frequency magnetic field to generate sufficient heat on the surface of said object to fuse contacting and contiguous particles of said organic resinous material and form a coated, enveloping layer of said fused particles on the surface of said metal object; and then removing said coated object from contact with said fluidized mass and the influence of said magnetic field and cooling it to a normal temperature.

3,186,861
PROCESS FOR PRODUCING PRESSURE SENSITIVE RECORD PAPER
John W. Smith, John J. Smith, and Edward A. Hawkins, Chillicothe, Ohio, assignors to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed June 8, 1960, Ser. No. 34,744
4 Claims. (Cl. 117—36.1)



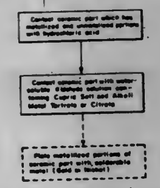
1. A process for producing pressure sensitive record material having a dry surface of rupturable microscopic capsules containing a marking oil interspersed with smudge reducing cellulose fibers, comprising the steps of sequentially applying an excess of an aqueous dispersion of said capsules to a paper web, removing the excess of said aqueous dispersion with an air knife, dispersing resulting clumps of cellulose fibers, distributing the remaining dispersion by means of reverse turning spread shafts operated at surface speeds of the order of twice that of said web to produce a smooth uniform film on said web and thereafter drying said film on the paper web.

3,186,862
PRESSURE-SENSITIVE TRANSFER SHEETS
Walter Reuter, Kappeler Strasse 174–178, Duesseldorf-Reisholz, Germany
Filed Apr. 14, 1960, Ser. No. 22,269
Claims priority, application Germany, Apr. 17, 1959, R 25,339; Jan. 14, 1960, R 27,107; Feb. 11, 1960, R 27,325
7 Claims. (Cl. 117—36.4)



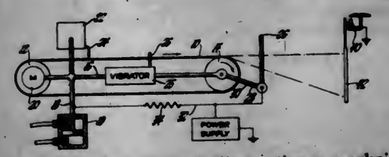
1. A pressure-sensitive color-transfer sheet, consisting essentially of:
(a) a sheet of paper having two sides,
(b) a color-yielding layer of about 0.005 mm. to 0.05 mm. thickness superimposed on one side of said sheet of paper, said color-yielding layer comprising a dry megascopically homogenous film containing coloring matter and a non-rubbery, resinous binder selected from the group consisting of vinyl chloride acetate resins, alkyl resins, rosin, copal resin, cellulose ethers, cellulose esters, casein, abietic acid, and pimaric acid, said coloring matter comprising predominantly inorganic pigments and a small amount of organic pigments, said color-yielding layer being capable of transferring color to treated paper upon the exertion of stylus pressure, said color-yielding layer also being grip-fast and wipe-fast,
(c) a smear-proof and water-proof color-covering layer of about 0.005 mm. to about 0.02 mm. thickness superimposed on said color-yielding layer, said color-covering layer being of sufficient thickness to substantially mask the color of the color-yielding layer and being sufficiently thin so that upon the exertion of stylus pressure, it will break allowing color to be transferred from the color-yielding layer,
(d) a grating-like layer having lines of about 0.1 mm. to 1.0 mm. in width, the space between said lines being about 0.05 mm. to about 1.0 mm., said grating-like layer being imprinted on said color-covering layer, whereby the color-covering layer and the color-yielding layer are strengthened,
(e) a color-receptive layer of about 0.002 mm. to about 0.015 mm. thickness superimposed on the other side of said sheet of paper, said color-receptive layer consisting essentially of waxy substances having a microcrystalline structure.

3,186,863
PROCESS FOR PLATING CERAMIC BODIES
Francis D. Foley, Jr., Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,679
9 Claims. (Cl. 117—45)



1. The method of providing only a metallized portion of a ceramic body having metallized and unmetallized portions with a plating of copper comprising the steps of: contacting portions of said body including said metallized portions with a solution consisting essentially of hydrochloric acid so as to sensitize only said metallized portions of said body for said plating, and then placing said body in contact with a solution of a water soluble aldehyde containing a cupric salt and an alkali metal compound selected from the group consisting of tartrates and citrates.

3,186,864
METHOD FOR ELECTROSTATIC PAINTING
William S. Pettigrew, Pleasant Ridge, and Eugene W. Christen, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,072
4 Claims. (Cl. 117—93.42)



1. A method of electrostatically coating a workpiece comprising the steps of applying coating material to an

endless belt, centrifugally atomizing the coating material by passing the belt through an arc at high velocity, and electrostatically depositing the atomized coating material on the workpiece.

3,186,865

METHOD OF FORMING CHROMIUM DIFFUSION COATINGS

John P. Page, Thousand Oaks, Calif., assignor to North American Aviation, Inc.

No Drawing. Filed Oct. 16, 1962, Ser. No. 231,039
7 Claims. (Cl. 117—119)

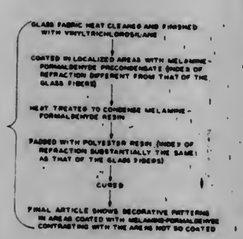
1. A method of forming a chromium-containing alloy on a chromium-alloyable base metal which comprises providing a molten bath containing lithium as active solvent under an inert gas atmosphere, dissolving chromium in said bath, placing said base metal in said bath, and maintaining said base metal in said bath at a temperature of approximately 1500–2400° F. until a coating of chromium is obtained thereon.

3,186,866

GLASS FIBER REINFORCED PLASTIC AND METHOD

Etienne Claeys, Zele, Belgium, assignor to Syncoglas N.V., Zele, Belgium, a limited-liability company

Filed Aug. 17, 1962, Ser. No. 217,547
16 Claims. (Cl. 117—126)



1. A method of producing decorative glass fiber reinforced plastic articles comprising providing glass fiber reinforcement coated only in certain areas with a bridging binder, embedding said reinforcement in the plastic and hardening the plastic, said binder having a refractive index different from that of the plastic, the fibers of said reinforcement and said plastic having substantially the same refractive index to produce a pattern in said areas which visually contrast with the remaining areas of said reinforcement.

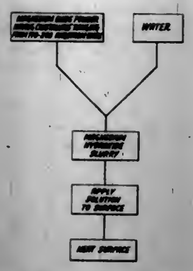
3,186,867

PROCESS FOR COATING FERROUS MATERIAL AND MATERIAL COATED BY SUCH PROCESS

Herbert B. Forslund, Williamstown, and Robert G. Hirst, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

Filed Oct. 12, 1962, Ser. No. 230,219
4 Claims. (Cl. 117—127)

1. A ferrous material having thereon a firmly adherent coating consisting essentially of magnesium hydroxide formed by application of a slurry consisting essentially of an aqueous suspension of approximately 5.5 to 8% by weight of a magnesium oxide powder, said powder having



a crystallite size in the range of approximately 170 to 208 angstrom units, said coating being dried at a temperature not in excess of approximately 135° C.

3,186,868

METHOD OF FLAMEPROOFING ACRYLIC FIBERS AND THE RESULTING PRODUCT

Julian J. Hirshfeld, Decatur, Ala., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,927
21 Claims. (Cl. 117—136)

11. A method of flameproofing acrylic fibers which comprises treating said fibers with an aqueous solution of phytic acid and a member selected from the group consisting of urea, formaldehyde and mixtures of same, drying the treated fibers and then curing the treated fibers.

3,186,869

COATED FILM FOR LAUNDRY PACKAGE

Jack Friedman, 250 Kensington Ave., Montreal, Quebec, Canada

Filed Jan. 29, 1962, Ser. No. 169,316
10 Claims. (Cl. 117—138.8)



1. A film comprising a continuous base film of a water-soluble synthetic organic film-forming material normally reactive with chemical bleaching and washing agents provided with a thin continuous barrier coating capable of being emulsified and having a water-dispersible waxy material containing an emulsifier, said waxy material being non-reactive with such agents,

said barrier coating adapted to prevent the reaction of the agents with the substance of the supporting film, said emulsifier being present in sufficient quantity to act as a dispersing agent for said waxy material,

the composite film being adapted to disperse in water at a temperature in the range of from 68° F. to 212° F.

3,186,870

PROCESS FOR REMOVING THIN FILMS OF COBALT OXIDE FROM VITREOUS SURFACES

Robert G. Mentzer, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Sept. 22, 1960, Ser. No. 59,142
6 Claims. (Cl. 134—3)

1. In a process for removing a film of cobalt oxide from a vitreous surface, the steps of subjecting the filmed surface to the action of an aqueous solution of phosphoric acid, in a concentration in the range of about 50 to 85%

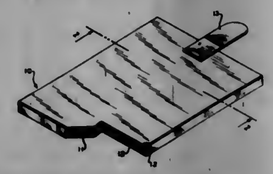
by weight, with a ferrous ion, in a range from about 0.25% to 5.0% based on the weight of the phosphoric acid, at a temperature in the range from about 140° F. to about 350° F.

3,186,871

METHOD FOR PRODUCING POROUS SINTERED PLATE

Walter A. Donohue, Scotch Plains, N.J., assignor to The Electric Storage Battery Company, a corporation of New Jersey

Original application Jan. 22, 1959, Ser. No. 788,291, now Patent No. 3,053,925. Divided and this application Jan. 3, 1962, Ser. No. 163,994
3 Claims. (Cl. 136—29)



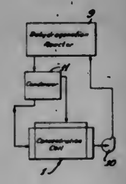
1. The method of producing a porous sintered electrode plate of a laminar structure having a high porosity central stratum and a relatively low porosity surface coating bonded integrally with said central stratum into a unitary structure, which comprises mixing with infolding of air a first batch including nickel powder, water, a plasticizer and a processing agent selected from the group consisting of polyvinyl alcohol, lucite and polyisobutylene, mixing a second batch of the same ingredients without infolding of air, forming a laminar body having a central stratum of said first batch and a relatively thin surface coating of said second batch in adhesive contact with said central stratum, drying said laminar body and then sintering the same into a unitary self supporting structure.

3,186,872

CONTINUOUS GAS CONCENTRATION CELL ENERGY CONVERSION

Bland Ewing, 860 Plum Ave., Riverside, Calif.

Filed Feb. 12, 1962, Ser. No. 172,730
12 Claims. (Cl. 136—86)



1. A simple, efficient method of continuously converting thermal energy into electrical energy which comprises:

(a) separating in a low temperature zone a first body of fluid consisting essentially of hydrogen gas from a second body of fluid consisting essentially of hydrogen and methylnaphthalene with a barrier means impermeable to the components of said fluid bodies, said barrier means separating at least one pair of spaced electrodes in contact therewith, the first of said electrodes contacting said first body of fluid and the second of said electrodes contacting said second body of fluid and said barrier means containing easily replaceable hydrogen ions and being adapted to transport hydrogen ions between said electrodes;

(b) reducing the partial pressure of hydrogen gas in said second body of fluid in relation to the hydrogen gas partial pressure in said first body of fluid by hydrogenating the methylnaphthalene with the hydrogen in said second body of fluid;

(c) conducting a portion of said second body of fluid to a high temperature zone, said high temperature zone being maintained by thermal energy at a temperature sufficient to substantially change the equilibrium constant of said hydrogenation reaction from its value in said low temperature zone to favor the production of hydrogen;

(d) dehydrogenating at least part of said hydrogenated methylnaphthalene in said fluid portion in said high temperature zone to hydrogen and methylnaphthalene;

(e) separating the hydrogen from the methylnaphthalene and hydrogenated methylnaphthalene in the fluid produced by said high temperature zone;

(f) recycling said separated hydrogen to said first body of fluid; and

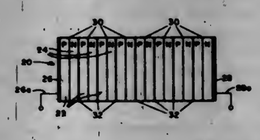
(g) recycling said separated methylnaphthalene and hydrogenated methylnaphthalene to said second body of fluid, whereby said difference in hydrogen partial pressure is maintained between said electrodes and electrical energy is made available from said electrodes.

3,186,873

ENERGY CONVERTER

William Crawford Dunlap, Jr., Cambridge, Mass., assignor to The Bendix Corporation, a corporation of Delaware

Filed Sept 21, 1959, Ser. No. 841,142
8 Claims. (Cl. 136—89)



1. An energy converter comprising a stack of alternately arranged layers of p and n type semicodnuctor material, junctions being formed between each of said p layers and the nearest n layers on either side of the p layers, there being at least two of said junctions in said stack, the energy bands of said layers being of progressively decreasing values, low recombination rate materials being in the semiconductor materials on either side of alternate junctions to give long diffusion lengths to the carriers moving across the alternate junctions, high recombination rate materials being in the semiconductor materials on either side of the remaining junctions to keep diffusion lengths of carriers moving across the remaining junctions to a minimum so that the voltages established across said alternate junctions are additive and have minimum opposition from the voltages established across said remaining junctions.

3,186,874

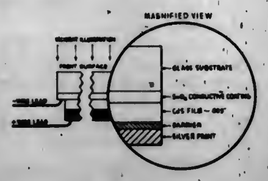
PHOTOVOLTAIC CELL

Daniel A. Goroki, Middleburg Heights, Ohio, assignor to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 21, 1961, Ser. No. 139,781
7 Claims. (Cl. 136—89)

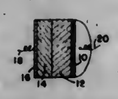
1. In a photovoltaic cell comprising a layer of N-type, polycrystalline cadmium sulfide disposed on a substrate, having opposite surfaces defining planes substantially parallel to each other, a photovoltaic barrier layer forming an integral part of one of said surfaces and electrodes electrically attached to each of said surfaces the improve-

ment wherein said cadmium sulfide layer has a thickness of from 20 to 100 microns and having a substantial por-



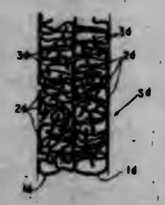
tion of its crystals axis-oriented with respect to said substrate.

3,186,875
SOLID STATE BATTERY
Donald C. Freeman, Jr., Durham, N.C., assignor to Union Carbide Corporation, a corporation of New York
Filed Sept. 15, 1959, Ser. No. 840,116
18 Claims. (Cl. 136—153)



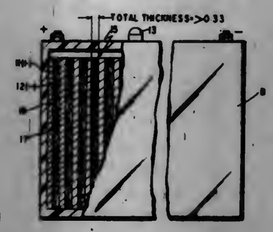
1. A solid state battery comprising a low resistance contact element, a catholyte material in intimate contact with said contact element, a metal anode element and an ion conducting separator interposed between the catholyte material and the anode element, and wherein the catholyte comprises a crystalline zeolitic material containing metal cations therein the metal of said metal cations being electronegative with respect to the metal of the anode, and wherein the separator comprises a crystalline zeolitic material.

3,186,876
SEPARATORS FOR ELECTROLYTIC CELLS
Jean Claude Piéchon, Chatillon-sous-Bagneux, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France
Filed Apr. 10, 1962, Ser. No. 186,396
Claims priority, application France, June 12, 1961, 864,691
8 Claims. (Cl. 136—143)



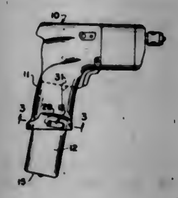
1. In an electrolytic cell having an alkaline electrolyte and electrodes of opposite polarity, the separator interposed between the electrodes comprising long, entangled, felted fibers which are chemically resistant to the electrolyte, said fibers forming a plurality of loops at the outer surfaces of the separator in contact with the contiguous surfaces of the electrodes, said separator being adapted to swell in said electrolyte.

3,186,877
SEPARATORS FOR ALKALINE ACCUMULATORS
Douchan Stanimirovitch, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France
Filed June 11, 1962, Ser. No. 201,486
Claims priority, application France, June 12, 1961, 864,688
4 Claims. (Cl. 136—143)



1. An alkaline electric accumulator comprising positive and negative electrodes, a separator between adjacent electrodes of opposite polarity and alkaline electrolyte immobilized within the separator by retention due to capillarity, said separator consisting of a first layer of non-woven fibrous synthetic material unaffected by said electrolyte and having a high degree of capillarity being capable of quasi-instantaneous absorption of a drop of said electrolyte, and a second layer of felted fibrous material also unaffected by the said electrolyte in contact with said first layer and having a lower degree of capillarity than said first layer, said second layer requiring a period of approximately three minutes to absorb a drop of said electrolyte, said second layer being of substantially greater thickness than said first layer and being disposed to face and make surface contact with the said negative electrode.

3,186,878
QUICK RELEASE LATCHING MEANS FOR SEPARABLE CASE ADAPTED TO BE TELESCOPED WITHIN A HOUSING
Arthur H. Filander, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Mar. 5, 1962, Ser. No. 177,450
4 Claims. (Cl. 136—173)



1. For use in conjunction with a cordless electric device of the type having a housing and further having a separable battery case adapted for keyed sliding movement with respect to the housing and to be partially telescoped within the housing, a quick release latching means operable between the housing and the battery case, which comprises:

(a) a partially-completed internal generally-annular recess formed within the housing and terminating in a pair of end portions, one on each side of the housing;

(b) the housing having a substantially longitudinal axis, and said recess being transverse to said axis;
(c) a spring latch comprising a leaf spring received within said recess, the ends of said leaf spring resting on the respective end portions of said recess, whereby said spring exerts a radial outward force against said recess, so as to be retained within the housing;
(d) a latch member secured to said spring latch and depending therefrom inwardly of the housing;
(e) a window formed within the housing;
(f) a manually-manipulatable cam lever pivotably supported by the housing adjacent said window and having a portion extending through said window and engaging said spring latch on the side of said spring latch which is opposite from said latch member;
(g) said cam lever having a raised unlocking position and a depressed locking position with respect to said housing, whereby in the depressed locking position, said cam lever engages said leaf spring and moves said spring and said latch member radially inwardly of the housing against the tension of said spring; and
(h) a raised portion formed on the battery case and having an edge which cooperates with said latch member to prevent the battery case from being withdrawn from the housing whenever said cam lever is in its depressed position.

3,186,879
SEMICONDUCTOR DEVICES UTILIZING CADMIUM ALLOY REGIONS
George L. Schnable, Lansdale, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Original application July 24, 1959, Ser. No. 829,436. Divided and this application Aug. 28, 1961, Ser. No. 134,352
8 Claims. (Cl. 148—1.5)



1. A semiconductor device comprising an n-type semiconductor body and a p-type alloy region integral with said body, said body consisting essentially of n-type monocrystalline germanium and said alloy region consisting essentially of germanium and a material selected from the class consisting of
(a) cadmium,
(b) cadmium and gallium,
(c) cadmium and aluminum,
(d) cadmium, gallium and aluminum,
(e) cadmium and an element selected from the group consisting of tin, lead, zinc, thallium and gold, and
(f) cadmium, an element selected from the group consisting of tin, lead, zinc, thallium and gold, and a metal selected from the group consisting of gallium and aluminum.

3,186,880
METHOD OF PRODUCING UNSUPPORTED EPITAXIAL FILMS OF GERMANIUM BY EVAPORATING THE SUBSTRATE
Clyde W. Skaggs, Baltimore, Md., and Eugene A. Leary, Schenectady, N.Y., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Oct. 10, 1962, Ser. No. 229,546
4 Claims. (Cl. 148—1.6)

1. A method of producing an unsupported film of semiconductive material comprising the discrete steps of:

(a) forming a coated substrate by depositing a thin film of vaporized semiconductive material on the surface of a substrate suspended in a vacuum, the vaporization temperature of said substrate being higher than the temperature suitable for vapor deposition and lower than the vaporization temperature of the semiconductive material;
(b) continuously heating said coated substrate above the vaporization temperature of said substrate to vaporize said substrate, thereby leaving an unsupported film of semiconductive material;
(c) cooling said unsupported film of semiconductive material; and
(d) catching intact and undamaged said unsupported film of semiconductive material as it falls free.

3,186,881
ALUMINUM FLUX
Frank E. Robbins, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,066
4 Claims. (Cl. 148—26)

1. A flux composition adapted for use in melting aluminum and aluminum alloys in a melt vessel, said flux composition consisting essentially of from about ten to about twenty percent potassium chloride, from about fifty-five to about seventy-five percent calcium chloride, from about five to about sixteen percent barium chloride, and from about five to about twelve percent calcium fluoride.

3,186,882
NITROCELLULOSE CONTAINING EXPLOSIVE COMPOSITIONS AND METHODS OF PREPARING SAME
Erich von Holt, 1 Heisterbacherhof Strasse, Bonn, Germany
Filed Jan. 12, 1962, Ser. No. 165,831
21 Claims. (Cl. 149—18)

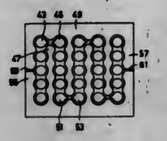
1. The method of preparing colloidal blocks of an explosive composition which comprises incorporating into the mass of an explosive substance containing 25 to 100% by weight of nitrocellulose, for stabilizing and plastifying purposes, from 3 to 8% by weight of an additive constituted by at least one water insoluble soap selected from the group consisting of water insoluble calcium, magnesium and amine salts of saturated and unsaturated fatty acids, said additive comprising at least 50% by weight of unsaturated fatty acid salt, and gelatinizing the mixture thus obtained.

3,186,883
ETCHING POLYESTER FILM
John J. Frantzen, St. Paul, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota
Filed Nov. 2, 1962, Ser. No. 235,090
3 Claims. (Cl. 156—7)



1. A method of etching through polyethylene terephthalate resin film which comprises applying to selected areas thereof the reaction product of somewhat less than 50% by weight phenol and somewhat greater than 50% by weight fuming sulfuric acid with a relatively small portion of water in a sulfuric acid medium maintained at a temperature of approximately 220° F. to 230° F. until the film in said selected areas disintegrates.

3,186,884
METHOD OF MANUFACTURING GRID PLATES
Edward Fokko de Haan and Johannes Josephus Antonius Jonkers, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1961, Ser. No. 126,360
Claims priority, application Netherlands, May 2, 1960, 251,141
16 Claims. (Cl. 156—13)



1. A method of manufacturing grid plates having parallel metal strips comprising the steps, providing a metal plate with a plurality of parallel rows of apertures in which the distance between apertures in a row is less than the distance between apertures in adjacent rows, covering only one side of at least portions of the plate between apertures in each row with an electrically insulating material, and subjecting the thus-covered plate to the action of an etching agent which acts upon the metal but which is substantially inert toward said insulating material for a time sufficient for the apertures in a row to enlarge and form a continuous gap in the metal plate with bridges of insulating material across the gap while between adjacent rows a continuous metal strip is retained.

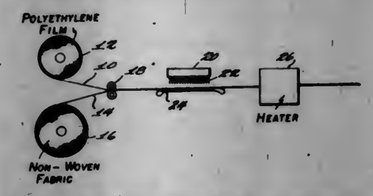
3,186,885
METHOD AND APPARATUS FOR MAKING A RESILIENT ROLLING LOBE DIAPHRAGM OF CORD AND ELASTOMERIC MATERIAL
Harold Arthur Iles, Tyseley, Birmingham, England, assignor to Dunlop Rubber Company Limited, a British company
Filed Jan. 17, 1961, Ser. No. 83,279
15 Claims. (Cl. 156—132)



1. A method of manufacturing a rolling lobe diaphragm which comprises winding a cord of textile material alternately from a peripheral, circular, edge of one of two axially spaced end portions of a forming spool to a peripheral circular, edge of the other end portion to form a substantially cylindrical enclosure of parallel cord lengths between said end peripheries, twisting said end portions relatively to each other about their common axis while moving said circular peripheries toward each other during said twisting to draw said cord lengths between said circular peripheries in side-by-side position to an intermediate portion of reduced diameter spaced from said circular peripheries, embedding said cords in a flexible sheet of elastomer to form an impervious enclosure and to maintain said cord structure assembly on removal of said structure from said forming spool, mounting a bead ring on said intermediate portion midway between said end peripheries and folding the resulting structure on one side of said bead ring about said bead ring onto the structure on the opposite side of said bead ring.

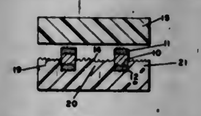
13. Apparatus for manufacturing a rolling lobe diaphragm which comprises a shaft, a pair of forming elements slidably mounted on said shaft, at least one of said forming elements being rotatable on said shaft, relative to the other forming element, each said forming element having a cylindrical surface co-axial with said shaft and having two axially spaced series of circumferentially spaced projections forming cord-receiving and guiding notches, resilient means separating said forming elements and deformable to permit said forming elements to move toward each other, and means to lock said forming elements to said shaft.

3,186,886
PROCESS OF MANUFACTURING FUSIBLE INTERLINING
Gibson O. Etchison, Riverview, and Clarence E. Poe, Shawmut, Ala., assignors to West Point Manufacturing Company, West Point, Ga., a corporation of Georgia
Filed Dec. 12, 1961, Ser. No. 158,756
5 Claims. (Cl. 156—253)



1. Process of manufacturing fusible interlining comprising the steps of contacting a non-woven fabric with a polyethy ene film having a thickness of from about 0.5 mil to about 3.0 mils, said film having from about 150 to about 900 perforations per square inch, and then heating the assembly sufficiently to melt the polyethylene and cause it to form into small globules adhered to the surface of the fabric.

3,186,887
ENCAPSULATED ARTICLE AND METHOD OF MAKING
Victor F. Dahlgren, Woodland Hills, Calif., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Dec. 27, 1960, Ser. No. 78,634
1 Claim. (Cl. 156—298)

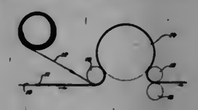


The method of bonding thermoplastic resins comprising the steps of oxidizing a surface of a body of copper to provide a coating primarily of black cupric oxide, placing said cupric oxide coated copper surface in contact with the surface of a first thermoplastic resin having a flow characteristic at a given temperature, applying a sufficient degree of heat and pressure to laminate said plastic resin and the copper together, forming thereby an imprint of said cupric oxide in said plastic resin, removing portions of said cupric oxide coated copper from said plastic resin to define a copper configuration and a plurality of exposed follicles provided by said imprint in the exposed plastic, forcefully depressing said copper configuration into the follicled surface until said copper configuration is partially driven into said surface of said first coat to thereby lock said configuration in place to prevent conductor displacement during a subsequent laminating step, placing a surface of a second sheet of thermoplastic resin having a tendency to flow at said given temperature in contact therewith and over said partially driven copper configuration, and heating and pressing said plastic resins together to force said second plastic resin into said follicles to provide said bond therebetween and form a laminate.

3,186,888
HEAT INSULATING METAL SHEETS
Rudolf Gaeth, Limburgerhof, Pfalz, Berghard Schmitt, Heidelberg, and Rudolf Bree, Schifferstadt, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Feb. 12, 1963, Ser. No. 257,850
Claims priority, application Germany, Feb. 20, 1962, B 66,015
4 Claims. (Cl. 156—325)

1. A process for the production of a composite heat insulating sheet which comprises covering a sheet consisting essentially of an alkali metal silicate having a molar ratio of alkali metal oxide to silicon dioxide of 1:2 to 1:4, said sheet of alkali metal silicate containing water in an amount of 20 to 70% by weight and glass staple fibers in an amount of 10 to 40% by weight, said percentages being with reference to anhydrous alkali metal silicate contained in the sheet, with a metal sheet on at least one side, and pressing the resulting composite sheet at a temperature between 50 and 150° C. into a coherent sheet composition.

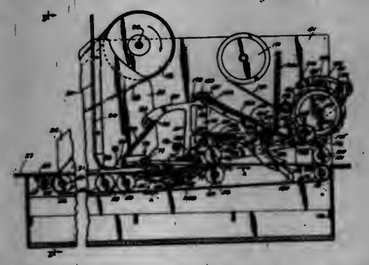
3,186,889
METHOD OF MAKING A LAMINATED MATERIAL
Elvio R. Boldrini, Kearny, and Julian J. Pruszkowski, Union, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Dec. 19, 1960, Ser. No. 76,621
3 Claims. (Cl. 156—333)



1. The method of making a laminated material which comprises, applying a layer of adhesive material, including a member selected from the group consisting of plastisols and organosols containing a copolymer of vinyl chloride and vinyl acetate having a predominant proportion of vinyl chloride copolymerized therein and 1% to 25% by weight of water, to at least one surface of a sheet of vinyl plastic, placing a fabric in contact with the free surface of said adhesive layer and heating said adhesive material until it is cured, thereby bonding said vinyl plastic sheet to said fabric.

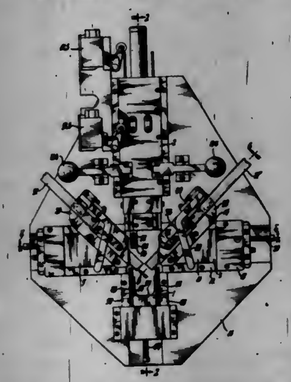
3,186,890
SEALING AND STAMPING MACHINE
Ronald V. Dorn, 315 14th St. NW., Albuquerque, N. Mex., and Reuben R. Logan, 4251 Zenith Ave. N., Robbinsdale, Minn., assignors of thirty percent to said Logan and seventy percent to said Dorn
Filed Nov. 16, 1961, Ser. No. 152,859
20 Claims. (Cl. 156—363)

1. In a stamping machine including conveyor means for transporting envelopes along a predetermined path and further including means for advancing a stamp strip by a preselected length each time an envelope traverses a given portion of that path, a stamp-affixing mechanism comprising: an actuating member extending into the path of envelope movement and movable through a predetermined distance in response to movement of an envelope along a predetermined section of the path; a carriage for receiving the end portion of said stamp strip; means linking said carriage to said actuating member to move the carriage from a normal position aligned with the end of the stamp strip toward an actuated position adjacent the path of envelope travel; means for severing a predetermined length of the stamp strip and depositing the severed length on said carriage during the initial movement of the actuating member; a stamp-affixing pressure member; means for supporting the pressure member for movement with the carriage;



and means for moving the pressure member relative to the carriage to press the severed length of the stamp strip directly from the carriage onto an envelope as the envelope traverses that part of the path immediately adjacent the end of the stamp strip, the driving force for the operation of the actuating member, the carriage, the severing means, and the pressure member, and the timing of each of the recited operations, being derived directly from movement of the envelope along the conveyor with each envelope constituting a driving element coupling the conveyor thereto.

3,186,891
APPARATUS FOR JOINING THERMOPLASTIC ELEMENTS
Homer R. Gelling, Richard M. Goodwin, Paul R. Malone, and William E. Thompson, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,602
5 Claims. (Cl. 156—502)



1. Apparatus for joining two elongated thermoplastic members comprising in combination first and second holder means adapted for firmly holding said members to be joined with the ends thereof projecting beyond said holders and facing one another, said holders being movable toward and away from one another along a linear path between a first position and a second position,

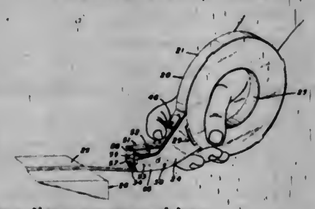
back-up means movable to and away from a back-up position abutting the end portions of said members when said holders are in said first position, said back-up means having a contoured surface adapted to snugly receive the projecting ends of said thermoplastic members when said holders are in said first position,

cutter means movable toward and away from said back-up means and into engagement therewith,

heating means movable to and away from a heating position between said first and second holder means,

power and control means for moving said second holder means to said first position, for advancing said back-up means to said back-up position and said cutter means into engagement with said back-up means whereby the said end portions of said thermoplastic members are received in said contoured surface and are cut to present mutually facing parallel surfaces to be joined, for retracing said back-up means and said cutter means after said members have been cut, for moving said heating means to said heating position between said faces to be joined, for retracting said heating means after a predetermined time necessary to melt said face surfaces and for quickly further advancing said holder means toward each other to said second position whereby the melted faces are joined and permitted to solidify.

3,186,892
CONSTRUCTION OF HAND-OPERATED TAPE DISPENSERS
Kenneth S. Walthers, 2980 Coolidge Road, Muskegon, Mich.
Filed Nov. 27, 1961, Ser. No. 155,095
3 Claims. (Cl. 156—523)



1. A tape dispenser, comprising:

a frame including a disengageable tubular journal portion for rotatably receiving a spool of tape, said frame having a lateral hollow extension forming a cantilever beam:

guide roller means rotatably mounted in said frame adjacent the normal position of the periphery of a spool mounted on said journal portion;

an arm rotatably mounted in said extension; biasing means urging said arm to a position projecting from said extension;

bearing roller means rotatably mounted at the end of said arm for movement with respect to said extension, said roller being engaged by said arm at intermediate points along the length of said roller means, said roller means having an axial length substantially equal to the inside width of said extension;

cut-off means including a knife member having a V-shaped cutting edge and slidably mounted in said extension adjacent the end thereof remote from said journal portion, said knife member being disposed transversely to the normal path of movement of said tape, and movable to a position intersecting the same;

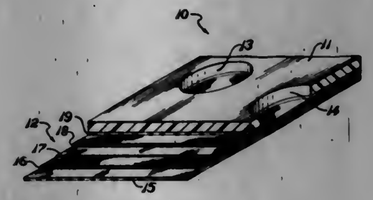
said cut-off means also including biasing means tending to retract said knife member to a position wherein the cutting portion thereof is disposed within said frame.

3,186,893
LAMINATED MATERIALS INCLUDING PLASTIC NETTING
Frank Brian Mercer, Blackburn, England, assignor to Plastic Textile Accessories Limited, Blackburn, England
Filed June 8, 1961, Ser. No. 115,689
11 Claims. (Cl. 161—60)



1. A dimensionally stabilized composite fabric embodying extruded plastic net comprising at least one layer of extruded plastic net consisting of integrally extruded net intersections and net strands the strands of which have been molecularly orientated by stretching and are disposed in substantially parallel relationship with one another and at right angles to the general axes of the net intersections and a plurality of spaced members in the form of yarn, filaments or tapes extending warp-wise of the net strands and bonded to the net strands at their intersections therewith and intermediate the net strand intersections, the net strands providing the weft structure of the fabric.

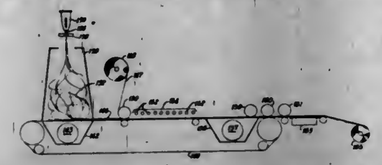
3,186,894
ENGRAVING GUM
Lewis R. Liles, Cuyahoga Falls, and Harold H. Geiger, North Canton, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Feb. 20, 1961, Ser. No. 90,551
5 Claims. (Cl. 161—84)



5. Sheet engraving gum comprising a backing layer of carbon black reinforced copolymer of butadiene and acrylonitrile, a layer of elastomer coated woven fabric on said backing layer, a filler layer of elastomer between said fabric and a second elastomer coated fabric, and an impression layer on the other side of the last-mentioned fabric which impression layer comprises plasticized polyvinyl chloride containing paraffin wax present in the amount of 1 part or less by weight of wax to 100 parts by weight of the polyvinyl chloride with the said impression layer strippably united to the said last-mentioned fabric by a layer of an elastomer having greater adhesion to the said impression layer than to the last-mentioned fabric.

3,186,895
INTEGRATING FILMS AND POROUS BODIES
Donald MacDonald, Los Altos, Calif., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Oct. 2, 1959, Ser. No. 844,081
7 Claims. (Cl. 161—119)

7. A light weight contoured surface panel comprising a rigid base of bonded fibrous mineral material, a thin resinous film attached in complying relation over the heavily contoured surface, said contoured surface including spaced elements positioned upon the mineral fiber base without direct attachment thereto, but which are permanently held in preselected positions by the thin resinous film attached to the rigid fibrous base.



3,186,896
MOISTURE IMPERVIOUS PANEL
Arthur G. Clem, Des Plaines, Ill., assignor to American Colloid Company, Skokie, Ill., a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,543
1 Claim. (Cl. 161—133)



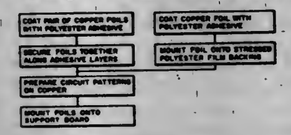
A moisture impervious panel capable of being cut into a desired shape and comprising a corrugated paperboard form including a pair of spaced paperboard facing sheets interconnected by a corrugated strip which forms a plurality of voids between the strips and respective ones of the facing sheets, and a compacted mass of finely divided water swellable bentonite clay filling said voids.

3,186,897
SHEET OF AUTOGENOUSLY BONDED POLYTETRAFLUOROETHYLENE FIBERS AND METHOD OF PRODUCING SAME
Jerome Hochberg, Newburgh, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 17, 1962, Ser. No. 210,557
6 Claims. (Cl. 161—150)

3. A non-woven sheet of discrete fibers consisting essentially of polytetrafluoroethylene, substantially all of said fibers lying substantially parallel to the plane of said sheet and being adhered together by fusion at fiber intersections.

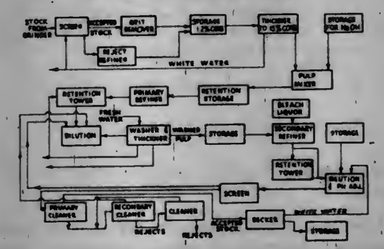
3,186,898
LAMINATED CIRCUIT STRUCTURE AND METHOD OF PREPARING SAME
George E. Melink, Brooklyn Center, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 15, 1961, Ser. No. 117,354
6 Claims. (Cl. 161—214)

1. Laminated conductor means comprising a plurality of alternate conductors and insulators arranged in stacked relationship, said insulators including a first film and at least one second film, said first film comprising a polyester adhesive having a first and a second conducting layer secured to opposite surfaces thereof and forming a first laminate structure, each of said second films comprising a prestressed polyester film having an additional conductor layer arranged along at least one major surface thereof and forming a second laminate structure, said



first and said second laminate structures being adhesively secured together with a polyester adhesive composition and being arranged in superimposed laminated relationship.

3,186,899
GROUNDWOOD PULP
Elmo H. Madison and William H. McPherson, International Falls, Minn., assignors to Minnesota and Ontario Paper Company, Minneapolis, Minn.
Filed Sept. 11, 1962, Ser. No. 222,821
4 Claims. (Cl. 162—24)



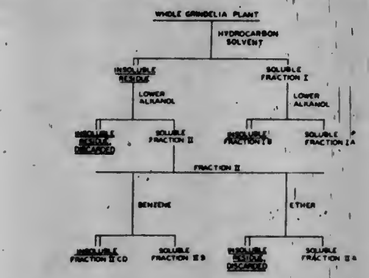
1. The method of producing wood pulp from hardwood which comprises stone grinding wood to a coarse pulp stock too coarse for the coarsest grade of paper and having a Canadian Standard freeness of about 500 to about 750 cc., mixing about 3% to about 7% of caustic soda with the stock in water, holding the stock with the caustic soda mixed therewith for a period not exceeding about 30 minutes and not less than about four minutes, disc refining the stock in the presence of caustic soda in water to about 300 to about 400 cc. Canadian Standard freeness storing the stock slurry from the mechanical refining for a period of about 20 minutes to about 60 minutes, then washing the stock with water and subjecting the washed stock to a second mechanical refining to provide a pulp of about 100 to about 200 cc. Canadian Standard freeness.

3,186,900
SIZING PAPER UNDER SUBSTANTIALLY NEUTRAL CONDITIONS WITH A PREBLEND OF ROSIN AND CATIONIC POLYAMIDE-EPICHLOROHYDRIN RESIN
Frederick B. De Young, Richland, Mich., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 13, 1962, Ser. No. 209,793
6 Claims. (Cl. 162—164)

1. The method of sizing paper which comprises adding to an aqueous pulp suspension at a pH from about 6.0 to about 7.5 from about 0.1% to about 2% by weight, based on the dry weight of pulp, of alum and from about 0.5% to about 5.0% by weight, based on the dry weight of pulp, of a preblend of rosin size and a cationic polyamide-epichlorohydrin resin in a weight ratio of rosin size to resin of from about 5:1 to about 1:2, said cationic polyamide-epichlorohydrin resin being obtained by reacting a polyalkylene polyamine with a dicarboxylic acid selected

from the group consisting of diglycolic acid and C_3–C_8 saturated aliphatic dicarboxylic acids in a mole ratio of from about 0.8 to about 1.4 of the former to about 1.0 of the latter to form a long-chain polyamide, and then reacting the polyamide with epichlorohydrin in a mole ratio of epichlorohydrin to secondary amine groups of said polyamide of from about 0.5:1 to about 1.8:1, maintaining the pH of the aqueous pulp suspension from about 6.0 to about 7.5, and forming the pulp into sheets.

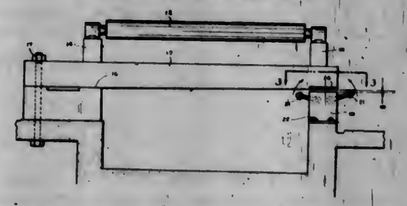
3,186,901
METHOD OF SIZING CELLULOSE FIBERS WITH RESINOUS MATERIAL FROM THE PLANT GRINDELIA AND PRODUCT THEREOF
Ralph E. McNay and William R. Peterson, Houston, Tex., assignors to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
Filed Mar. 1, 1963, Ser. No. 262,156
9 Claims. (Cl. 162—180)



1. A method of producing resin-coated fibers, comprising: mixing together in an aqueous suspension cellulosic fibers, an aqueous alkali solution of resinbus material including at least one fraction of the plant Grindelia selected from the group consisting of fractions soluble in hydrocarbon solvent and fractions insoluble in hydrocarbon solvent but soluble in lower alkanols containing from one to about five carbon atoms, and a coagulant in sufficient amount to precipitate said resin on the fibers; and recovering the coated fibers from the suspension.

8. Cellulosic fibers having an adherent surface layer of resinous material including at least one fraction of the plant Grindelia selected from the group consisting of fractions soluble in hydrocarbon solvent and fractions insoluble in hydrocarbon solvent but soluble in lower alkanols containing from one to about five carbon atoms.

3,186,902
PRE-STRESSED CANTILEVERED FOURDRINIER FOR PAPER MACHINES
Vivian Somers Grater, Beaconsfield, Quebec, Canada, assignor to Dominion Engineering Works Limited
Filed Aug. 16, 1962, Ser. No. 217,432
3 Claims. (Cl. 162—273)



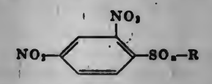
1. In a paper machine Fourdrinier of the type including, transverse support beam means, fulcrum pad means supporting one end of said transverse beam means, and supporting means for supporting the opposite end of said transverse beam means, the improvement comprising securing means for securing said opposite end of said transverse beam means to said supporting means, with said transverse beam means being pre-stressed to provide a clearance between said opposite end of said transverse beam means and said supporting means when said securing means is released.

3,186,903
SYNERGISTIC PYRETHRUM INSECTICIDE
William T. Soltes, 3290 SW. 25th St., Miami, Fla.
No Drawing. Filed Sept. 1, 1960, Ser. No. 53,373
3 Claims. (Cl. 167—24)

3. An insecticidal composition of matter comprising from about 8 to about 30% by weight of a 35% pyrethrum extract, from about 30 to 45% by weight of an oil selected from the group consisting of Siberian fir needle oil, Canadian fir needle oil and Australian fir needle oil, from about 40 to 55% by weight of eucalyptus oil, from 2 to 5% of oil of citronella and from about 1 to 3% by weight of oil of peppermint.

3,186,904
FUNGICIDAL SULPHONES AND SULPHOXIDES
Herbert Aubrey Stevenson, John Ray Marshall, and Anthony Frederick Hams, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a company of Great Britain
No Drawing. Filed Jan. 15, 1962, Ser. No. 166,369
Claims priority, application Great Britain, Feb. 3, 1961, 4,177/61
22 Claims. (Cl. 167—30)

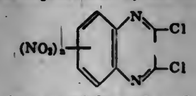
12. A method of controlling the growth of fungi on a crop which comprises treating the crop with a fungicidally effective amount of a compound of the formula



in which n is 1;2 and (a) when n=1, R is selected from the group consisting of alkyl containing 5–7 carbons, lower cycloalkyl, phenyl lower alkyl, phenyl lower alkyl in which the phenyl nucleus contains a substituent selected from the group consisting of halogen and nitro, phenyl, and phenyl which contains a substituent selected from the group consisting of halogen, nitro, lower alkyl, lower alkoxy and lower alkoxycarbonyl; (b) when n=2, R is selected from the group consisting of lower alkyl, methyl containing a halogen substituent, propyl containing a halogen substituent, lower cycloalkyl, phenyl lower alkyl, and phenyl lower alkyl in which the phenyl nucleus contains a substituent selected from the group consisting of halogen and nitro.

3,186,905
BACTERICIDAL AND FUNGICIDAL DICHLORO-NITRO-QUINOXALINES
Junnosuke Hattori, Toyonaka-shi, Hiroshi Sugiyama, Ashiya-shi, Kosuke Yoshioka, Hirakata-shi, and Seiji Koike, Toyonaka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed June 17, 1963, Ser. No. 288,444
8 Claims. (Cl. 167—33)

1. A method for protecting plants from attack of microorganisms which comprises contacting said plants with a microbicide containing as active ingredients at least one of the compounds represented by the formula



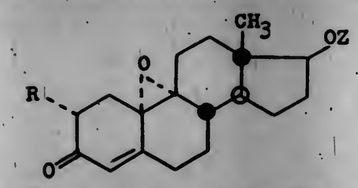
wherein n is an integer of from 1 to 2.

3,186,906
PROCESSES FOR DISINFECTING NON-PERISHABLE ARTICLES
Hermann Genth and Otto Pauli, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed May 15, 1962, Ser. No. 194,982
Claims priority, application Germany, May 25, 1961, F 34,011
11 Claims. (Cl. 167—38.6)

1. A process for the disinfection of non-perishable articles which comprises bringing said non-perishable articles that are to be disinfected into contact with an ester of pyrocarbonic acid of the group consisting of the dimethyl, diethyl, dipropyl, diisopropyl, dibutyl, diisobutyl, diamyl, diisoamyl, dicyclobexyl, diphenyl, dibenzyl, difurfuryl, 2,3-dichlorophenyl ethyl, and 2,5-dichlorophenyl benzyl pyrocarbonate.

3,186,907
19-NOR-TESTOSTERONE DERIVATIVES, THEIR PROCESS OF PREPARATION AND THEIR METHOD OF UTILIZATION
Gérard Nominé, Noisy-le-sec, Robert Bucourt, Clichy-sous-Bois, and Jean Tessier, Paris, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France
No Drawing. Filed Apr. 10, 1962, Ser. No. 186,341
Claims priority, application France, Apr. 14, 1961, 858,794; Aug. 11, 1961, 870,687
6 Claims. (Cl. 167—74)

6. The method of inhibiting excessive hypophysial overstressing in warm blooded animals which comprises administering a safe but effective amount of a 19-nor-testosterone derivative having the formula:



wherein R represents a lower alkyl; and Z represents a radical selected from the group consisting of hydrogen, lower alkyl and an acyl radical of an organic carboxylic acid having from 2 to 18 carbon atoms.

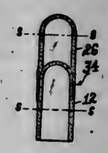
3,186,908
CALCIUM LACTOBIONATE STABILIZATION OF LABILE ANTIGENIC VIRUS VACCINE MATERIALS
Wilton A. Rightsel, Grosse Pointe Woods, and Edward E. Schuler, Detroit, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Aug. 16, 1962, Ser. No. 217,293
13 Claims. (Cl. 167—78)

1. Process for the stabilization of labile, antigenic virus vaccine materials which comprises the step of incorporating with a fluid antigenic virus vaccine material at least 0.1% by weight of calcium lactobionate.

3,186,909
STABILIZED VITAMIN COMPOSITION AND METHOD OF MAKING SAME
Grayce E. McMurtry, New York, N.Y., and John J. Marvinny, Jersey City, N.J.
No Drawing. Filed Apr. 12, 1961, Ser. No. 122,602
15 Claims. (Cl. 167—81)

1. A method of producing an improved feed supplement comprising a fish liver oil containing vitamin A and other synthetic and natural vitamins having a prolonged vitamin potency, comprising the steps of heating to above its melting point a composition containing essentially fatty alcohol esters of fatty acids derived from sperm whale oil, said fatty alcohol esters of fatty acids containing from 12 to 22 carbon atoms, adjusting said composition to a temperature of approximately 90° C., adding urea to said composition while stirring, continuing the stirring until the urea is completely dissolved, adding fish liver oil and additional vitamins, constantly stirring to a homogeneous mixture and preparing same for packaging, said urea being present in amounts of .25 to 25% of the weight of the ingredients in said feed supplement.

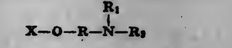
3,186,910
METHOD FOR PRODUCING PERORAL CAPSULES
Jacob A. Glassman, 1680 Meridian Ave., Miami Beach, Fla.
Filed Mar. 8, 1962, Ser. No. 178,474
9 Claims. (Cl. 167—83)



1. The steps in the production of a multi-compartmented peroral capsule which consists of telescoping the closed end of a tubular capsule part into the open end of a like tubular capsule part under such conditions as to cause the material of the telescoped portions thereof to flow in a manner to provide a substantially smooth exterior surface at the joint, bonding said telescoped portions one to the other, severing the free end portions of said assembled parts to provide an H-shaped capsule component, treating at least a part of said component to render the treated part resistant to acids in the stomach, filling one end portion of said component with a medicament, capping said end, filling the other end portion of said component with a medicament, capping said last named end, and finally treating the cap on the treated portion of said component to render it resistant to acids in the stomach.

3,186,911
HAIR SETTING COMPOSITION COMPRISING AN AQUEOUS DISPERSION OF A TERTIARY AMINOALKYL ETHER OF STARCH
Martin M. Rieger, West Englewood, N.J., and George Berenbom, Brooklyn, N.Y., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed July 16, 1962, Ser. No. 210,231
9 Claims. (Cl. 167—87.1)

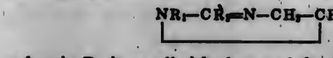
1. A hair-setting composition comprising about 1 to 2 percent by weight of an aqueous dispersion of a tertiary aminoalkyl ether of starch of the formula



wherein X is starch, R is a member selected from the group consisting of alkylene and hydroxyalkylene and R_1 and R_2 each is a member selected from the group consisting of alkyl, aryl and aralkyl, said starch containing by weight 0.2% to 2% nitrogen and amylose and amylopectin in the proportions of from 25 to 50 parts by weight of amylose to 75 to 50 parts by weight of amylopectin.

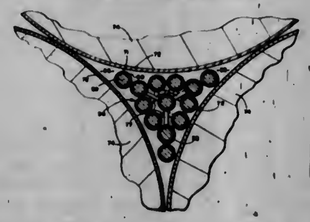
3,186,912
COSMETIC EMULSION
Robert L. Beamer, 2320 N. Kilpatrick St., Portland, Oreg.
No Drawing. Filed Aug. 3, 1959, Ser. No. 830,994
5 Claims. (Cl. 167—91)

1. A cosmetic water in oil emulsion cream comprising the blended mixture of a water phase and an oil phase, wherein the oil phase includes the product of reacting at from about 80° C. to about 90° C. an excess of fatty acid having a carbon chain ranging from 8 to 30; and an amine characterized by forming water in oil emulsions and having the formula



wherein R_1 is an alkyl hydroxy of the formula $C_nH_{2n}OH$ wherein n ranges from 8 to 30, and R_2 is a radical having the formula $CH_3(CH_2)_n$ wherein n ranges from 8 to 30.

3,186,913
GRAPHITE MODERATED NUCLEAR REACTOR
Edward F. Weimer and John R. Churchill, Northridge, Calif., and William F. Banks, Washington, D.C., assignors to North American Aviation, Inc.
Filed May 18, 1960, Ser. No. 29,908
1 Claim. (Cl. 176—50)



A core for a nuclear reactor comprising a core tank, a plurality of solid cylindrical graphite elements of circular cross section supported within said tank, cladding on said graphite elements, said elements being arranged on triangular centers, said graphite element arrangement defining a plurality of interstices of triangular configuration between said graphite elements, a plurality of fissionable material containing fuel elements supported within at least a portion of said interstices, a plurality of reflector filler elements within another portion of said interstices, said fuel elements and said filler elements having a triangular-shaped cross section, and means for removing heat from said core including a coolant adapted to pass through said interstices.

3,186,914
CONTROL ROD GRAB DEVICE
John Webb, Bryn, near Wigan, and Owen Hayden, Bolton, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 25, 1963, Ser. No. 260,614
Claims priority, application Great Britain, Mar. 2, 1962, 8,164/62
7 Claims. (Cl. 176—33)

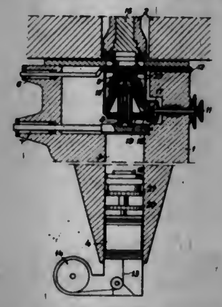
1. A grab device for a nuclear reactor control rod, having a ferromagnetic head and movable between an upper inoperative position and a lower operative position, comprising an electromagnetic grab capable when energised of holding the control rod by its head, the electromagnetic grab being movable for reaching the control rod in the aforesaid two positions and having a magnetising coil, a central polepiece of one polarity to contact an end face on the control rod head and a plurality of fingers constituting polepieces of the other polarity which embrace the control rod head to complete a magnetic circuit through the head.

5. A grab device as claimed in claim 1 wherein a spring-loaded pin is slidable in a bore through the central pole piece and a solenoid is provided in the grab to withdraw the pin into the grab against its spring loading when the



solenoid is energised, the arrangement being such that on de-energisation of the solenoid the pin is sprung into a position in which its end protrudes through the central polepiece to assist disengagement of the control rod head from the grab.

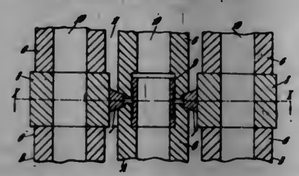
3,186,915
EXCHANGING MACHINE FOR CONTROL ROD ASSEMBLY IN A NUCLEAR REACTOR
Henrik Daniell, Foreningsgatan 18A, Vasteras, Sweden, and Eskil Mönestam, Stenhammargatan 15, Sundsvall, Sweden
Filed June 25, 1962, Ser. No. 205,053
Claims priority, application Sweden, June 30, 1961, 6,820/61
6 Claims. (Cl. 176—36)



1. Exchanging machine for the exchange of control rod assemblies located inside a nuclear reactor, which reactor has an opening in the bottom for withdrawal of a control rod assembly therethrough and a locking member normally holding the control rod assembly in the reactor above the opening, said machine comprising a radiation protecting casing having an opening positioned to face the opening in the reactor bottom and being positionable beneath the reactor in engagement therewith, said casing including first means forming an operating cylinder, a member for withdrawing and inserting a control rod assembly through said openings mounted for reciprocating movement in said cylinder, second means operatively engageable with said control rod assembly locking member, third means to operate said second means to release said locking member, fourth means securable to the control rod assembly, said second and fourth means being carried by said withdrawing and inserting member, a sealing plug within the machine adapted to fit the opening

in the reactor left open by the removal of a control rod assembly, said sealing plug having fifth means for securing it to the reactor, sixth means mounting said sealing plug for movement between a storage position out of alignment with said casing opening and a position beneath said casing opening, said mounting means including seventh means to move said sealing plug to secure it in the reactor opening and operating means selectably engageable with said second, fourth and seventh means.

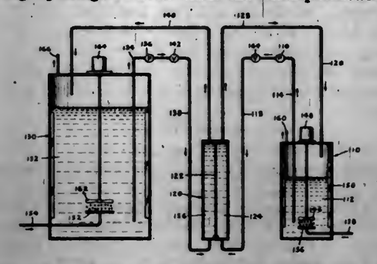
3,186,916
SOLID MODERATOR CORE STRUCTURES FOR NUCLEAR REACTORS
Roderick Taylor, Newcastle-upon-Tyne, England, assignor of one-half to The Nuclear Power Plant Company Limited, Newcastle-upon-Tyne, England
Filed Sept. 27, 1960, Ser. No. 58,831
Claims priority, application Great Britain, Sept. 29, 1959, 33,080/59
7 Claims. (Cl. 176—85)



1. In a solid moderator core structure for a nuclear reactor comprising an assembly of blocks of neutron moderating material arranged in columns the axes of which are substantially parallel and a constraining frame work around the periphery of the assembly to apply forces to said assembly to restrict movement of said blocks in the lateral direction that is in a direction transverse to the axes of the columns, said blocks having side faces and end faces, the end faces being disposed transversely with respect to said column axes, the side faces of adjacent blocks being spaced apart from each other to provide spacing of the blocks in the lateral direction, the provision on opposed end faces of adjacent blocks in at least some of the columns of mutually inclined plane surfaces, the mutually inclined surfaces in each such block intersecting said sides of the block at places lying in planes perpendicular to the axis of the block and which intersect said axis at points lying within the block, said inclined plane surfaces co-acting with the inclined surfaces of adjacent blocks to transmit all forces acting on the blocks in the lateral direction to adjacent blocks in the said direction and thence to the constraining frame work and at the same time allowing the blocks to move relative to one another in the direction of the axes of columns to maintain a fixed lattice pitch between corresponding axes in the blocks parallel to the column axes.

3,186,917
PROCESS AND APPARATUS FOR DIALYSIS FERMENTATION
Philipp Gerhardt, Ann Arbor, and De Vere M. Gallup, Southfield, Mich., assignors to Biochemical Processes, Inc., New York, N.Y., a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,416
8 Claims. (Cl. 195—1)

1. The process of conducting a fermentation with microorganisms comprising the steps of circulating a nutrient solution between a nutrient supply vessel and a first chamber of a remote dialyzer, circulating a diluent solution between a reservoir vessel and a second chamber of said remote dialyzer, circulating a culture between a remote fermentor and a third chamber of said remote dialyzer, said second chamber of said remote dialyzer being intermediate said first and third chambers and separated therefrom by semi-permeable membranes, the semi-permeable membrane between said first and second chambers having openings smaller than the semi-permeable mem-



brane between said second and third chambers, whereby a sorting and size classification of fermentation products takes place.

6. A flask for use in dialysis fermentation that comprises an enclosed fluid container, a plurality of semi-permeable membranes each having a different pore diameter, disposed across said container and separating said container into at least three chambers, inlet and outlet means provided in each of said chambers and means disposed about the periphery of said container for securing said membrane thereto, and foraminous support plates disposed on opposite sides of said membranes in a substantially parallel plane thereto for support thereof.

3,186,918
LOW VISCOSITY CASEIN
Harold K. Salzberg and Milton R. Simonds, Bainbridge, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed July 20, 1962, Ser. No. 211,435
8 Claims. (Cl. 195—29)

1. In making a casein of lowered viscosity of solution and satisfactory strength in the form of an adhesive bond, the process which comprises mixing a protease that is active in alkaline medium into milk containing the casein in the natural micellar condition, admixing a water soluble alkali in amount to make the milk protease composition alkaline, maintaining the resulting mixture at a temperature approximately within the range 90°–120° F. until the viscosity of the casein is lowered by at least about a third, discontinuing the treatment before the casein becomes nonprecipitatable at the isoelectric point for casein, then admixing a curding acid in amount to establish the pH at approximately the said isoelectric point, so as to precipitate the casein, and separating the casein from the whey that remains.

3,186,919
PROCESS FOR PREPARING GALACTOSE OXIDASE BY FERMENTATION
Chauncey O. Rupe, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Oct. 22, 1962, Ser. No. 232,260
9 Claims. (Cl. 195—66)

1. A process for the production of galactose oxidase which comprises growing a culture of *Polyporus circinatus* Fr. in an aqueous fermentation medium containing up to about 2.0% (w./v.) of a carbohydrate source selected from the group consisting of galactose, lactose, sucrose, raffincose, glucose, fructose, mannose, sorbose, beet pulp, orange pulp, flour, starch, mannitol, sorbitol, inositol, and glycerol, from about 0.01% to about 0.15% (w./v.) nitrogen in the form of a primary organic nitrogen source selected from the group consisting of casein, casein hydrolyzate, whole milk powder, meat extracts, fish solubles, autoclaved yeast, soybean protein hydrolyzate, cotton-seed meal and stick liquors, from about 0.005% to about

0.1% (w./v.) nitrogen in the form of an auxiliary nitrogen source selected from the group consisting of glycine, aspartic acid, asparagine, glutamic acid, alanine, ammonium acetate, formamide and urea, and from about 0.5% to about 2.0% (w./v.) of a lipid material selected from the group consisting of mutton tallow, lard oil, linseed oil, peanut oil, olive oil, soybean oil, vegetable oil, corn oil, cotton-seed oil, octadecanol, stearic acid and sorbitan trioleate.

3,186,920

PROCESS FOR PREPARING A STREPTOKINASE

Norbert Heimburger, Cappel, near Marburg (Lahn), Rudolf Schmidtberger, Marbach, near Marburg (Lahn), and Gerhard Schwick, Marburg (Lahn), Germany, assignors to Behringwerke Aktiengesellschaft, Marburg (Lahn), Germany, a corporation of Germany

No Drawing. Filed Feb. 7, 1963, Ser. No. 256,808
Claims priority, application Germany, Oct. 17, 1962, B 69,264
5 Claims. (Cl. 195—66)

1. The process for preparing an immunologically uniform streptokinase under sterile conditions, wherein a streptokinase-containing aqueous buffer solution obtained from a streptococci filtrate and having a molarity of 0.01 and a pH-value of 5.0, is adsorbed on a carboxymethylpolysaccharide selected from the group consisting of carboxymethylcellulose and cross-linked dextran etherified with carboxymethyl groups, which has been heated twice for 3 hours each to 60° C., with an interval of two hours, unspecific proteins that are still in solution are eliminated, the principal fraction of streptokinase is eluted from the carboxymethyl-polysaccharide with a 0.02 molar buffer solution having a pH-value of 5.5 and the residual fraction of streptokinase is eluted with a 0.1 molar buffer solution having a pH-value of 6.5.

3,186,921

PROCESS FOR PREPARING GALACTOSE OXIDASE BY FERMENTATION

Chauncey O. Rupe, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Oct. 24, 1962, Ser. No. 232,872
6 Claims. (Cl. 195—66)

1. A process for the production of galactose oxidase which comprises growing a culture of *Polyporus circinatus* Fr. in an aqueous fermentation medium containing up to about 2.0% (w./v.) of a carbohydrate source selected from the group consisting of galactose, lactose, sucrose, raffinose, glucose, fructose, mannose, sorbose, beet pulp, orange pulp, flour, starch, mannitol, sorbitol, inositol and glycerol, from about 0.01% to about 0.15% (w./v.) nitrogen in the form of a primary organic nitrogen source selected from the group consisting of casein, casein hydrolyzate, whole milk powder, meat extracts, fish solubles, autoclaved yeast, soybean protein hydrolyzate, cotton-seed meal and stick liquors, and from about 0.005% to about 0.1% (w./v.) nitrogen in the form of an auxiliary nitrogen source selected from the group consisting of glycine, aspartic acid, asparagine, glutamic acid, alanine, ammonium acetate, formamide and urea.

3,186,922

PROCESS FOR RECOVERING PURE YEASTS

Alfred Champagnat, Levallois, France, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Aug. 15, 1961, Ser. No. 131,471
Claims priority, application Great Britain, Aug. 22, 1960, 28,958/60
15 Claims. (Cl. 195—82)

1. A process for the recovery of yeasts which have been grown in the presence of hydrocarbons, which comprises adding to a mixture of yeast, aqueous mineral medium and hydrocarbon, so obtained, at least 50 parts per million by weight of a surface active agent and thereafter centrifuging, whereby there is obtained a paste comprising yeast and aqueous mineral medium.

3,186,923

PROCESS FOR IMPROVING THE LOW MOLECULAR WEIGHT YIELD IN BARK PYROLYSIS

Warren Irl Lyness, Cincinnati, Ohio, assignor to The Buckeye Cellulose Corporation, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 12, 1961, Ser. No. 116,244
7 Claims. (Cl. 202—10)

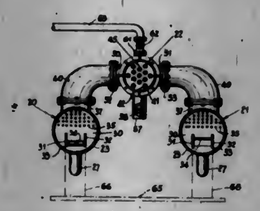
1. A method of increasing the yield of pyrolyzate obtained by the pyrolysis of natural vegetable materials comprising the steps of heating under subatmospheric pressure said materal, the dimensions of which are such that at least one dimension does not exceed about 2 inches, to a temperature of about 150° C. to about 500° C. to effect pyrolysis and liberate low molecular weight compounds for a period of time in excess of about 5 minutes and sweeping same from the reaction zone during pyrolysis by passing thru said zone and the natural materials contained therein a gas consisting essentially of formic acid vapors.

3,186,924

FLASH EVAPORATOR

William Rodger Williamson, Waterford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Oct. 12, 1961, Ser. No. 144,662
4 Claims. (Cl. 202—173)



1. A flash evaporator comprising, in combination, a first evaporator rail, a second evaporator rail parallel to said first rail, said rails each comprising an elongated tank, transverse bulkheads across said tank at least some of which form vaporizing compartments in said tank, two parallel vertical side plates extending longitudinally between each pair of transverse bulkheads with the lower edges of the side plates disposed with a slight clearance above the lower inner surface of said tank, a drain plate extending between said side plates and extending between said transverse bulkheads, the highest portion of each of said drain plates being immediately adjacent the fluid entrance to a compartment and said drain plates sloping from the upper edges of said side plates adjacent to one of said transverse bulkheads to the lower edges of said side plates adjacent to another transverse bulkhead, means conducting heated fluid under the drain plate in the first compartment of said tank, means conducting fluid flowing downward on each drain plate from the lower edge of each drain plate to under the drain plate in an adjacent compartment, and means conducting fluid flowing down the drain plate in the endmost compartment from the lower edge of said drain plate out of said tank, a steam outlet fitting leading from each of the compartments in said tank, a condenser between and above said evaporator rails, said condenser comprising an end to end series of sections of the same length as the compartments in said evaporator rails, condensing tubes extending longitudinally through said sections, tube sheets separating said sections, a first steam inlet fitting entering one end of each of said sections, and a second steam inlet fitting entering a central portion of each of said sections, means connecting said steam outlet fittings of said first rail to said first steam inlet fittings of said condenser, means connecting said steam outlet fittings of said second rail to said second steam inlet fittings of said condenser, and means maintaining a progressively greater degree of vacuum in successive condenser sections and the connected vaporizer compartments in said rails.

3,186,925

CHROMIUM PLATING PROCESS WITH A PURE NICKEL STRIKE

John A. Kushner, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Nov. 1, 1960, Ser. No. 66,417
3 Claims. (Cl. 204—41)

3. In a method of decorative chromium plating which includes the steps of treating a workpiece in at least one bath solution to prepare the workpiece surface for reception of a nickel strike, electrodepositing a nickel strike to the workpiece surface, electrodepositing a semibright nickel coating onto the nickel strike, electrodepositing a bright nickel coating onto the semibright nickel coating and electrodepositing an overlay of chromium onto the bright nickel coating, the improvement which comprises immersing the workpiece without current on in a nickel strike bath which consists of nickel sulfate, nickel chloride, boric acid and water and which is maintained substantially free of organic and other inorganic materials introduced into the bath during its use by substantially continuous purification means and the nickel strike is electrodeposited after the workpiece is fully immersed.

3,186,926

ELECTROPLATING SOLUTION CONTAINING A DIESTER OF SELENIOUS ACID

Hans Hofmann, Neuss (Rhine), Germany (Gustav Klein Strasse 8, Stuttgart-Feuerbach, Germany), and Karl Wilhelm Sassenroth, Duesseldorf, Germany (Roonstrasse 65, Bielefeld, Germany)

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,317
9 Claims. (Cl. 204—49)

1. An aqueous bath for the electrolytic deposition of bright metal coatings, including an ionizable compound of the metal to be deposited, and as a brightener, an effective amount of a stable diester of selenious acid.

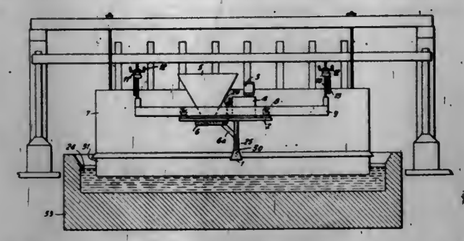
3,186,927

PROCESS AND APPARATUS FOR THE CONTINUOUS FEEDING OF ELECTROLYTIC ALUMINUM CELLS

Giovanni Mantovanello, Bolzano, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

Filed Apr. 20, 1960, Ser. No. 23,421
Claims priority, application Italy, Apr. 24, 1959, 6,964/59
4 Claims. (Cl. 204—67)

1. In the production of metallic aluminum by the electrolytic reduction of alumina in a bath of fused electrolyte, the process which comprises maintaining the bath at crust-forming temperature conditions, continuously feeding alumina at a predetermined variable location through the crust into the bath at a feed pressure sufficient to penetrate into said bath through said crust while simultaneously varying said location over the area of the bath surface in a substantially continuous manner during the electrolytic reduction operation, and varying said feeding location in height during said operation and in accordance with changes in elevation of said bath surface, to thereby prevent excessive accumulations of alumina at the feeding location and to avoid submersion of the feeding location into the bath.

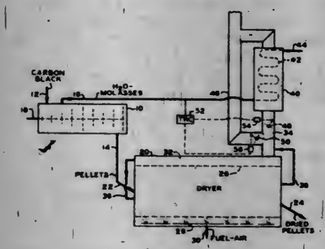


3,186,928

PROCESS FOR WET PELLETING OF CARBON BLACK

Lawrence C. Keaton and William R. King, Borger, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 8, 1962, Ser. No. 215,686
7 Claims. (Cl. 264—117)



1. A process for wet pelleting flocculent carbon black which comprises the steps of:
(1) introducing said black into a wet pelletizer;
(2) heating an aqueous pelleting liquid to a temperature in the range of about 150 to 210° F.;
(3) introducing the heated aqueous liquid of step (2) into the pelletizer of step (1) so as to form wet pellets; and
(4) recovering the resuking pellets.

5. A process for producing dried carbon black pellets from fluocculent carbon black which comprises introducing said black and an aqueous pelleting liquid at a temperature in the range of 150 to 210° F. into a pelletizer in proportions to form wet pellets in passing thru said pelletizer; passing the resulting wet pellets thru a dryer heated by hot gas so as to substantially dry same; passing hot off-gas from said dryer thru an indirect heat exchanger in indirect heat exchange with said aqueous liquid so as to heat same to a temperature in said range before passing same to said pelletizer at said temperature; and recovering the dried pellets.

3,186,929

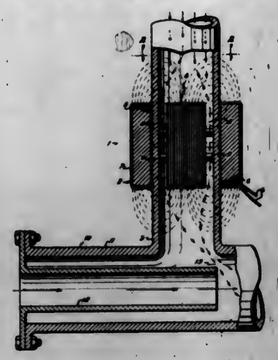
PROCESS AND APPARATUS FOR MAGNETIC TREATMENT OF GASEOUS OXYGEN

Charles W. Ripple, Ashland, Ky., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed July 10, 1961, Ser. No. 122,745
22 Claims. (Cl. 204—155)

1. A method of promoting an oxidation reaction wherein gaseous oxygen is combined with an oxidizable material, said method comprising, subjecting gaseous oxygen

to a magnetic field in a space between an energized electromagnet coil and a core, and thereafter admixing said

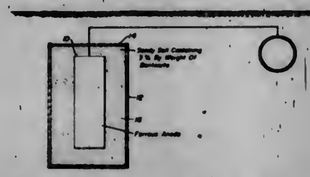


oxygen with said oxidizable material under oxidizing conditions.

3,186,930
METHOD FOR THE PRODUCTION OF OZONE
Gerhard A. Cook, Clarence, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 19, 1961, Ser. No. 140,639
9 Claims. (Cl. 204—176)

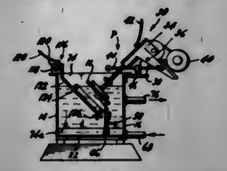
1. An improved method for the production of ozone in silent electric discharge ozonizers having discharge surfaces therein comprising providing an oxygen-containing gas containing less than about 5% nitrogen; introducing into the oxygen-containing gas at least one compound selected from the group consisting of sulfur hexafluoride, fluorinated aliphatic acids and fluorinated aliphatic anhydrides in an amount less than about 100 parts per million, said selected compound essentially having a vapor pressure of at least 0.001 mm. of mercury at ambient temperature; passing said oxygen-containing gas and said selected compound through the silent electric discharge of the ozonizer to produce ozone and to activate said discharge surfaces in the presence of said silent electric discharge; and maintaining the dew point of said oxygen-containing gas at less than about —40° C. during passage through said silent electric discharge.

3,186,931
FERROUS ELECTRODE
Glenn A. Marsh and Edward Schaschl, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed June 26, 1962, Ser. No. 205,266
6 Claims. (Cl. 204—197)



1. A packaged sacrificial electrode for use in corrosion protection of ferrous structures comprising a ferrous metal electrode encased in a material selected from the group consisting of animal tissue, agar-agar, silica gel, alumina gel, and a mixture of sandy soil and about 1 to 10 percent by weight of bentonite, said materials being capable of excluding the continuous influx of water containing dissolved oxygen.

3,186,932
APPARATUS FOR FORMING PHONOGRAPH RECORD MASTERS, MOTHERS, AND STAMPERS
Milton Gelfand and Wallace Scott, Bronx, N.Y., assignors to Audio Matrix, Inc., Bronx, N.Y., a corporation of New York
Filed Dec. 10, 1962, Ser. No. 243,388
6 Claims. (Cl. 204—216)

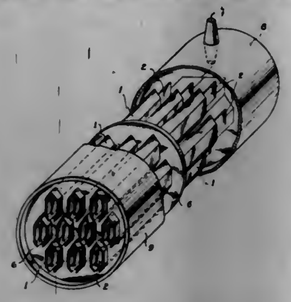


1. An apparatus for electro-forming metallic masters, mothers, and stampers for the manufacture of photograph records comprising an elongated plating tank having a pair of plating sections at opposite ends of the tank and a central portion between said plating sections, said tank having a bottom inclined downwardly toward the central portion such that said tank is of a greater depth at the central portion than at the ends, a pair of baffle plates separating said central portion from said plating sections, said baffle plates extending from front to rear in said tank and spaced from the bottom of said tank providing a flow passage between said central portion and said plating sections, means defining a plurality of plating stations along the length of said tank including a cathode assembly at each of said stations, said cathode assemblies each having a shaft mounted for rotation about its own axis and for tilting movement of one end of the shaft into and out of the plating tank, said shaft having means at said end for securing a disk-like matrix thereto perpendicular to the shaft axis, an anode assembly mounted on the front of said tank including anodes in parallel relationship to the matrices on said cathode shafts when positioned within said tank, an electrolyte circulatory and flow system comprising a flow nozzle at each of said plating stations oriented to flow electrolyte over the circular surface of said metallic masters, an input manifold connected to each of said flow nozzles, an exit pipe in said tank at said central portion for removing electrolyte from said tank, a heat exchanger in a first hydraulic circuit interconnecting said input manifold and said exit pipe, mechanical and organic filter means in a second hydraulic circuit interconnecting said input manifold and said exit pipe, and pump means for moving a electrolyte from said central portion of said tank through said heat exchanger and filter means to said input manifold and through said flow nozzles onto the faces of the matrices at said plating stations, the electrolyte at each plating station, after it is passed over the plating surface of the matrix, flowing downwardly to the inclined bottom of said tank and to said central portion through said flow passages, and electrical power and control means for each of said plating stations for controlling plating current between the anode assembly and the respective cathode assemb ies.

3,186,933
APPARATUS FOR THE ELECTRIC SEPARATION OF EMULSIONS
Otto Güpner, Offenbach am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Mar. 20, 1961, Ser. No. 96,897
Claims priority, application Germany, Apr. 7, 1960, M 44,917
7 Claims. (Cl. 204—302)

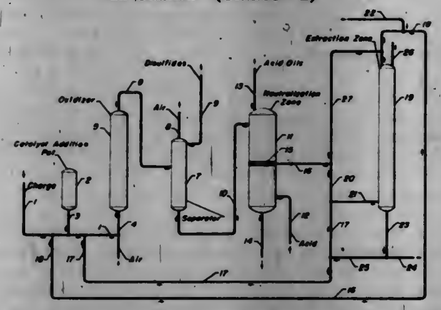
1. In an apparatus for the electrical separation of emulsions having container means forming horizontally extending pretreatment, separation and after-treatment

zones, electrodes in some of said zones, and liquid inlet means in said container means for supplying liquid to said pretreatment zone, the improvement comprising a plurality of tubular hollow prismatic bodies mounted in spaced rows in said container means with their longitudinal central axes parallel to the longitudinal axis of the container means, openings in the lower bases of said bodies for the discharge of separated media into electrical current-free areas between said rows and extending



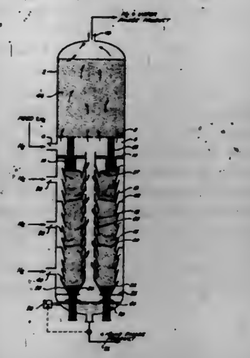
vertically between said bodies, high voltage electrodes extending within said bodies parallel to the axis thereof in said pretreatment and after-treatment zones, and perforate spacer means at the liquid inlet end of said pretreatment zone forming a partition, the inlet ends of said tubular hollow bodies being secured to said spacer means in alignment with, and in continuity with the perforations therein, whereby a flow of liquid is supplied only into the interior of each body and said bodies are stacked in rows and spaced from one another.

3,186,934
RECOVERY OF ACID OILS
Earl A. Nielsen, Lombard, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Sept. 27, 1961, Ser. No. 141,210
12 Claims. (Cl. 208—2)



1. In a process for recovering acid oils from used alkaline solution containing said acid oils and sulfur impurity, the improvement which comprises oxidizing said alkaline solution in the presence of a phthalocyanine catalyst to convert the sulfur impurity, separating the converted sulfur impurity from alkaline solution containing acid oils and catalyst, neutralizing said solution, thereafter allowing the resultant reaction mixture to settle into an upper acid oil phase, a lower neutralized alkaline phase and an interfacial catalyst phase between said upper and lower phases, separately withdrawing each phase, and recycling at least a portion of said interfacial catalyst phase to the oxidizing step for further use in the oxidation of used alkaline solution.

3,186,935
HYDROGENATION PROCESS AND APPARATUS
Raoul P. Vaell, Los Angeles, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Jan. 30, 1962, Ser. No. 169,912
17 Claims. (Cl. 208—59)



7. A catalytic hydrocracking process for converting a hydrocarbon feedstock boiling above the gasoline range to gasoline-boiling-range hydrocarbons which comprises:
(a) passing said feedstock in liquid phase downwardly through a vertically elongated bed of granular hydrocracking catalyst under hydrocracking conditions of temperature and pressure,
(b) separately permeating a hydrogen-rich gas substantially uniformly through one lateral surface of said catalyst bed and flowing the same across said bed in direct contact with catalyst and in a direction transverse to the flow of said liquid feedstock therein,
(c) withdrawing a vapor phase effluent comprising hydrogen and gasoline-boiling-range hydrocarbons substantially uniformly from an opposite lateral surface area of said catalyst bed, and
(d) withdrawing unconverted liquid phase hydrocarbons from the lower end of said catalyst bed.

8. A process as defined in claim 7 wherein said vapor phase effluent also comprises unconverted hydrocarbons boiling above the gasoline range, and wherein said vapor phase effluent is passed axially through a separate bed of hydrocracking catalyst under separately controlled hydrocracking conditions to effect further conversion of said unconverted hydrocarbons to gasoline-boiling-range hydrocarbons.

3,186,936
PROCESS FOR HYDROCRACKING A NITROGEN CONTAINING FEED INCLUDING PRETREATMENT OF CATALYST
Frederick C. Wood, Fullerton, William E. Bradley, Santa Ana, and Bernal Peralta, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Mar. 18, 1963, Ser. No. 265,648
16 Claims. (Cl. 208—89)

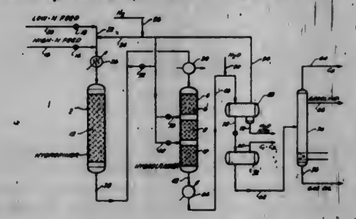
12. In an integral catalytic hydrofining-hydrocracking system wherein a hydrocarbon process feedstock containing more than about 50 p.p.m. of organic nitrogen is hydrofined with added hydrogen over a bed of hydrofining catalyst at temperatures between about 650° and 850° F., and wherein ammonia-containing effluent from said hydrofining is then hydrocracked over a bed of hydrocracking catalyst at temperatures between about 650° and 850° F., the improved method for establishing said system and raising the temperature of said catalyst beds from initial temperatures below about 500° F. to the de-

sired hydrofining and hydrocracking temperatures without damaging said hydrocracking catalyst, which comprises:

(1) establishing an initial contacting sequence wherein a pretreatment mixture of hydrogen and a relatively pure hydrocarbon feedstock containing less than about 50 p.p.m. of organic nitrogen is preheated and passed through said hydrofining catalyst bed and then through said hydrocracking catalyst bed;

(2) incrementally raising the hydrofining inlet temperature of said pretreatment mixture, thereby gradually raising the bed temperature of said hydrofining catalyst to the desired initial hydrofining temperature for said hydrocarbon process feedstock, between about 650° and 750° F.;

(3) during at least the terminal portion of said initial contacting sequence, cooling the effluent from said hydrofining catalyst bed so as to maintain the hydrocracking catalyst bed at a temperature below a level



at which more than about 75% conversion per pass to 400° F. end-point gasoline will occur therein;

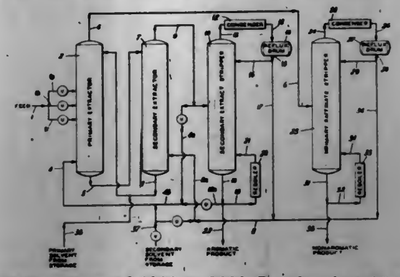
(4) establishing an interim contacting sequence wherein hydrogen and a blend of said process feedstock and said relatively pure feedstock is passed through said hydrofining catalyst bed and through said hydrocracking catalyst bed;

(5) during said interim contacting sequence, maintaining the temperature in said hydrofining catalyst bed at a desired hydrofining level between about 650° and 850° F. while concurrently (a) increasing the proportion of process hydrocarbon feedstock in said blend, and (b) raising the temperature of the hydrofiner effluent so as to preheat said hydrocracking catalyst bed to the desired initial hydrocracking temperature for said process feedstock, between about 650° and 775° F.; and

(6) terminating said interim contacting sequence and establishing the finally desired contacting sequence with process feedstock plus hydrogen passing through said hydrofining and hydrocracking catalyst beds at the desired hydrofining and hydrocracking temperatures.

3,186,937
SEPARATION OF AROMATIC HYDROCARBONS FROM NONAROMATIC HYDROCARBONS
John R. Anderson, Mount Kisco, and George S. Somekh, New Rochelle, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Mar. 6, 1962, Ser. No. 177,916
8 Claims. (Cl. 208—314)

1. A method for the recovery of aromatic hydrocarbons from hydrocarbon mixtures thereof with nonaromatic hydrocarbons which comprises the steps of (a) contacting said hydrocarbon mixture in a primary contacting zone at a temperature range of 25° to 400° C. and a pressure range of 15–500 p.s.i.a., with a primary solvent selected from the group consisting of water-soluble lower glycols and lower polyalkylene glycols, wherein said aromatic hydrocarbons are selectively dissolved, (b) separating a primary solvent-aromatic hydrocarbons phase, and an essentially nonaromatic hydrocarbons phase, (c) contacting said primary solvent-aromatic hydrocarbons phase in a secondary contacting zone at a temperature range of 25° C. to 400° C. and a pressure range of 15–500 p.s.i.a., with a secondary solvent consisting of paraffinic hydrocarbons having a lower boiling point than the aromatic hydrocarbons and nonaromatic hydrocarbons in said hydrocarbon mixture charged to said primary contacting zone, and which secondary solvent is capable of forming an azeotrope with said primary solvent, and which secondary solvent boils in the



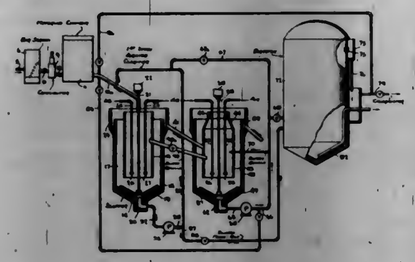
temperature range of 120° to 300° C., wherein said aromatic hydrocarbons from said primary solvent-aromatic hydrocarbons phase are dissolved, (d) removing a secondary solvent-aromatic hydrocarbons phase from said secondary contacting zone, and (e) subjecting said secondary solvent-aromatic hydrocarbons phase to azeotropic distillative operation in a distillation zone at a temperature range of 25° C. to 400° C. and a pressure range of 0 to 500 p.s.i.a. to recover the aromatic hydrocarbons.

3,186,938
FRACTIONATION OF OILS BY SELECTIVE EXTRACTION
Herbert P. A. Gröll, Skogsvägen 18, Pixbo, Sweden
Filed May 18, 1961, Ser. No. 111,114
Claims priority, application Sweden, Aug. 24, 1953, 7,619/53, 7,620/53
7 Claims. (Cl. 208—316)

1. In a process for the fractionation of high molecular weight organic material by liquid-liquid extraction in counter-current flow with a homogenous solvent mixture comprising at least one normally liquid solvent containing a predetermined amount of a gas dissolved therein followed by recovery of the extract from which the solvent, which is substantially freed of the extracted organic material by at least one of temperature increase and gas addition causing precipitation, the improvement which comprises regulating the selectivity of the solvent mixture for reuse by dissolving a further quantity of the gaseous solvent constituent in the solvent mixture at least at one point in the solvent mixture circuit outside of the extraction zone, and at another point of the solvent mixture circuit removing the said gaseous constituent from the solvent mixture and controlling the extent of at least one of said addition and removal of the gaseous constituent to thereby adjust the content of the dissolved gas in the solvent at a predetermined value for reuse and recycling the solvent for reuse.

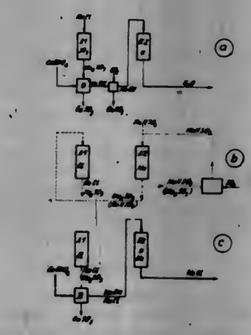
3,186,939
METHOD OF AND SYSTEM FOR SEWAGE TREATMENT
Patrick J. Murray, Clark's Summit, Pa., assignor to Haimur, Inc., Allentown, Pa., a corporation of Pennsylvania
Filed Oct. 10, 1960, Ser. No. 61,778
14 Claims. (Cl. 210—7)

1. The process which comprises passing raw liquid sewage containing substantially all of the solid organic material normally associated therewith to a mixing zone, passing recycled activated sludge to the mixing zone, passing the said combined streams from the mixing zone to the upper part of an aeration zone containing activated sludge dispersed in a liquid stream, introducing air at a jet velocity of about 0.5 to 2 feet per second into the lower part of the aeration zone in an amount of about 500 to 750 cubic feet of air per pound of B.O.D. in the sewage and in a manner to promote turbulence for uniform dispersion of activated sludge throughout the aeration zone, the aeration zone having an L/D ratio such that the aeration zone will retain the total sewage flow for about 1.25 hours, said aeration zone being surrounded by a clarifying zone, said aeration zone and clarifying



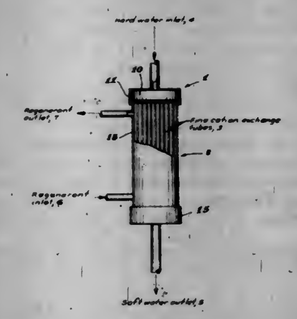
zone superimposing a settling zone wherein activated sludge passing downwardly from the aeration zone settles to form a relatively dense mass thereof, the treated liquid sewage passes from the bottom of the aeration zone and flows upwardly through the clarifying zone wherein it is separated substantially from activated sludge, withdrawing the clarified liquid from the upper part of the clarifying zone, withdrawing dense mass of activated sludge from the settling zone at a rate of about 50 to 60 parts by volume per volume of raw sewage and recirculating substantially all of the same to the mixing zone as aforedescribed, and withdrawing dense mass of activated sludge from the settling zone.

3,186,940
ION EXCHANGE METHOD
Sandor Vajna, Girardet-Allee 15, Bad Honnef, Germany
Filed July 25, 1961, Ser. No. 128,628
Claims priority, application Germany, July 27, 1960, V 19,062
17 Claims. (Cl. 210—30)



1. In an ion exchange process for at least partially desalting a salt-containing aqueous solution which is free of polyvalent cations by replacing anions of said aqueous salt solution with hydroxyl ions, and cations of said aqueous solution with hydrogen ions, and for regenerating the cation and anion exchangers used therefor, the steps of passing a substance selected from the group consisting of polyvalent acids and acid salts thereof through a cation exchanger so as to replace therein cations with hydrogen ions thus regenerating said cation exchanger and forming a solution containing the thus replaced cations; passing the thus formed cations-containing solution through an anion exchanger so as to replace therein anions with polyvalent acid ions thus regenerating said anion exchanger; passing said salt-containing aqueous solution through the regenerated anion exchanger so as to replace the anions of said salt containing solution with ions of said polyvalent acid; treating the ions of said polyvalent acid-containing solution derived from said anion exchanger with an hydroxide of an alkaline earth metal so as to precipitate an alkaline earth metal salt of said polyvalent acid and to replace in said solution polyvalent acid ions with hydroxyl ions; and passing the thus-formed alkali metal ions-containing solution through the regenerated cation exchanger so as to replace in said solution alkali metal with hydrogen.

3,186,941
WATER SOFTENING WITH FINE CATION EXCHANGE TUBES
William E. Skiens, Pittsburg, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 2, 1962, Ser. No. 214,191
5 Claims. (Cl. 210—30)

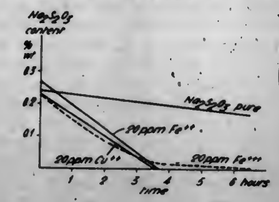


1. A method for softening hard water by cation exchange which compirses passing the hard water through a unit consisting of at least one cation exchange tube having an outside diameter of less than 2 mm. and arranged so that the hard water and the regenerant sodium salt solution required to maintain at least a minimum softening capacity by displacing the alkaline earth ions from the cation exchange tube flow separately and independently through the unit, one inside the cation exchange tube and the other outside.

3,186,942
OXIDATION OF SULPHIDES IN AQUEOUS SOLUTIONS
Michael Benger, London, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation
Filed Apr. 10, 1962, Ser. No. 186,537
Claims priority, application Great Britain, Apr. 19, 1961, 14,122/61
13 Claims. (Cl. 210—63)

1. A process for treating aqueous solutions to convert sulphides contained therein to sulphates which comprises contacting the solution with a free oxygen-containing gas

at a temperature within the range of from about 95° C. to about 135° C. in the presence of a catalyst selected



from the group consisting of ferrous salts, ferric salts and cupric salts.

3,186,943
FOAM METHOD FOR ATMOSPHERE CONTROL

Gerald L. Barthauer, Bridgeville, Pa., assignor to Safety Development Corporation, Greenburg, Pa., a corporation of Ohio

No Drawing. Filed Dec. 11, 1961, Ser. No. 158,556
3 Claims. (Cl. 252—3)

1. The method of generating a fire extinguishing high expansion foam which comprises mixing a liquid concentrate consisting essentially of the ammonium alkyl ether sulfate of about 4 mols of ethylene oxide with one mole of C_{10} to C_{20} aliphatic fatty alcohol, and an aliphatic fatty alcohol selected from the class consisting of lauryl alcohol and myristyl alcohol in an amount of up to 12½% by weight of said sulfate, adding said concentrate to water having a hardness range from soft water to very hard water approaching the hardness of sea water; wetting a net with said mixture, and blowing air through said net to form bubbles having an expansion ratio of total foam volume of between about 50/1 to 2000/1, so as to effectively blanket and smother a fire.

3,186,944
GREASE COMPOSITIONS

John L. Dreher, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,211
9 Claims. (Cl. 252—18)

1. A multi-purpose hydrous grease composition containing a major proportion of an oil of lubricating viscosity, from 5% to 25% by weight of calcium 12-hydroxy stearate, from 4% to 25% by weight, of calcium acetate, excess alkalinity in amount of about 1.0% to about 8.0% by weight expressed as calcium hydroxide, from 1.7% to about 10.0% by weight of calcium carbonate, and from 0.5% to 3% by weight, of water, and wherein the mol ratio of said acetate to said stearate is from 2:1 to 5:1.

3,186,945
HIGH TEMPERATURE LUBRICANTS

Georg Grane, Hombers, Lower Rhine, Otto Pfreugle, Wiesbaden, and Theodor Rössel, Badenheim (Rhine), Germany, assignors to Alpha Molykote Corporation, Stamford, Conn.

No Drawing. Filed Apr. 12, 1961, Ser. No. 102,373
Claims priority, application Germany, Apr. 14, 1960, C 21,217
20 Claims. (Cl. 252—25)

1. An oil- and fat-free lubricant for application as an aqueous solution to a metallic surface to be lubricated where it dries and the resulting residue melt produces a lubricating effect, and consisting essentially of a viscous soluble potassium polyphosphate and at least one inorganic monovalent salt selected from the group consisting of alkali metal phosphate and ammonium phosphate and at least one salt selected from the group consisting of magnesium phosphate, calcium phosphate, zinc phosphate, manganese phosphate, alkali metal borate, ammonium borate, magnesium borate, calcium borate, zinc borate, manganese borate, alkali metal sulfate, ammonium sulfate, magnesium sulfate, calcium sulfate, zinc sulfate, manganese sulfate, alkali metal chloride, ammonium chloride, magnesium chloride, calcium chloride, zinc chloride, manganese chloride, alkali metal fluoride, ammonium fluoride, magnesium fluoride, calcium fluoride, zinc fluoride, manganese fluoride, alkali metal chromate, ammonium chromate, magnesium chromate, calcium chromate, zinc chromate, manganese chromate, and mixtures thereof, with the provision that a cation other than potassium be contained in at least one of said salts, and the ratio of the salts being such that a mixture in the range of the eutectic composition is formed after evaporation of the water.

3,186,946
AQUEOUS CUTTING FLUID

Clyde A. Sluhan, Perrysburg, Ohio, assignor to Master Chemical Corporation, Perrysburg, Ohio, a corporation of Ohio

No Drawing. Filed May 25, 1964, Ser. No. 370,037
1 Claim. (Cl. 252—49.3)

A stable aqueous solution which is useful in the preparation of an aqueous cutting fluid having powerful lubricating properties that leaves a soft residue upon evaporation of water, and which consists essentially of water and from ¼ percent to 50 percent by weight of salts of boric and benzoic acids with at least one amine of the class consisting of those having the general formulas

$$RNHCH_2CH_2CH_2NH_2$$

$$RNCH_2CH_2CH_2N\begin{matrix}(CH_2CH_2O)_xH\\(CH_2CH_2O)_yH\\(CH_2CH_2O)_zH\end{matrix}$$

and

$$RN\begin{matrix}(CH_2CH_2O)_xH\\(CH_2CH_2O)_yH\\(CH_2CH_2O)_zH\end{matrix}$$

wherein R is a normal aliphatic hydrocarbon radical having from 8 to 18 carbon atoms and each of the subscripts x, y, and z is of the class consisting of integers and zero, the total of such subscripts having an average value from two to five, the molar proportion of salts of benzoic acid to salts of boric acid being not greater than 2:1.

3,186,947
COMPOSITION FOR CLEANING HARD SURFACES

Louis McDonald, Altadena, Calif., assignor to Kelite Corporation, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 16, 1958, Ser. No. 742,006
2 Claims. (Cl. 252—137)

1. A cleaning composition for hard surfaces consisting essentially of 40 to 97 percent by weight of ammonium sulphate and 3 to 60 percent by weight of an organic detergent mixture comprising approximately equal proportions by weight of diisobutyl naphthalene sodium sulphonate and dodecyl benzene sodium sulphonate.

2. The composition of claim 1, wherein the composition includes a minor proportion of sodium tripolyphosphate.

3,186,948
DETERGENT TOILET BARS

William A. Sweeney, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,592
6 Claims. (Cl. 252—161)

1. A synthetic detergent toilet bar consisting essentially of a compacted detergent mixture of the following ingredients: water-soluble primary normal alkyl metal sulfonates, secondary alkyl metal sulfates, and water, said alkyl groups of said detergent mixture containing 10 to 20 carbon atoms, the sulfonates and sulfate molecular species being present in approximately equimolecular proportions, respectively; said metal being selected from the group consisting of sodium, potassium, ammonium, calcium and magnesium; said ingredient being present in an amount ranging from about 50 to 90 weight percent alkyl sulfonates and 10 to 50 weight percent alkyl sulfates based on the two, and the water 5 to 20 percent, by weight, based on the bar; said ingredients, moreover, being the sole binding and plasticizing agents for said mixture.

3,186,949
PROCESS FOR PREPARING SOLS

Frederick T. Fitch and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 5, 1962, Ser. No. 242,354
5 Claims. (Cl. 252—301.1)

1. A process for preparing a urania-zirconia aquasol comprising an aqueous dispersion of particles in the 3 to 9 millimicron size range which comprises electrodialyzing a mixed solution of uranyl chloride and zirconyl chloride in a urania to zirconia weight ratio of about 3:1, heating intermittently to a temperature of about 40 to 120° C. under a protective atmosphere of nitrogen and recovering the product sol.

3. As compositions of matter, colloidal particles consisting of oxides of urania intimately associated with zirconia, said particles having a urania to zirconia weight ratio of 5:1 to 1:1 and a diameter of about 3 to 9 millimicrons.

3,186,950
RARE EARTH TUNGSTATE AND MOLYBDATE LUMINOPHORS

Hans J. Borchardt, Liftwood Estates, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 30, 1962, Ser. No. 191,249
10 Claims. (Cl. 252—301.5)

1. A luminescent material consisting essentially of substantially colorless luminophor of the formula:

$$(RE_{1-x}Tb_x)_2O_3 \cdot 3MO_3$$

wherein RE is at least one rare earth element selected from the group consisting of scandium, yttrium, lanthanum, samarium, gadolinum, dysprosium and lutetium, about from 25 to 100 mole percent of RE being selected from at least one of the group consisting of scandium, yttrium, lanthanum, gadolinium and lutetium, x is 0.03 to 1.0, and M is selected from the group consisting of tungsten and molybdenum.

3,186,951
OXYALKYLATED CONDENSATES

Melvin De Groote, University City, and Kwan-Ting Shen, Brentwood, Mo., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

Original application May 8, 1958, Ser. No. 734,000, now Patent No. 3,128,314, dated Apr. 7, 1964. Divided and this application May 16, 1960, Ser. No. 29,405
6 Claims. (Cl. 252—331)

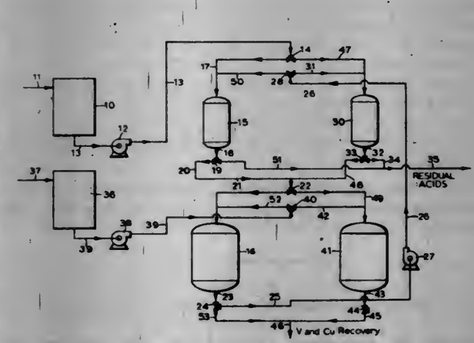
1. A process of breaking a petroleum emulsion of the water-in-oil type characterized by subjecting said emulsion to a demulsifying agent containing an oxyalkylated xylene-carbohydrate condensate, said condensate of xylene and carbohydrate being prepared by reacting xylene with said carbohydrate at about —40° C. to about 150° C. in the presence of hydrogen fluoride.

2. A process of breaking a petroleum emulsion of the water-in-oil type characterized by subjecting said emulsion to a demulsifying agent containing an oxyalkylated phenol-carbohydrate condensate, said condensate of phenol and carbohydrate being prepared by reacting phenol with said carbohydrate at about —40° C. to about 150° C. in the presence of hydrogen fluoride.

3,186,952
RECOVERY OF VANADIUM AND COPPER VALUES FROM CHEMICAL PROCESS STREAMS BY ION-EXCHANGE

David W. Brubaker, Gulf Breeze, and Donald E. Danly, Pensacola, Fla., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

Filed June 23, 1961, Ser. No. 119,210
9 Claims. (Cl. 252—413)



1. In a process for the removal of the recovery of vanadium-copper mixed catalysts from aqueous liquor obtained in the crystallization and separation of adipic acid manufactured by nitric acid oxidation of cyclohexanol and cyclohexanone in the presence of said catalysts and wherein iron in the form of ferric ions is present, the steps comprising bringing said aqueous liquor containing cupric ions, vanadium in cationic form, and ferric ions at a temperature about 20° C. to 90° C. and having a pH of 0.3 to 1.8 into reacting contact with a first cation exchange resin consisting of the hydrogen form of an oxidation-resistant water-insoluble polymerizate to effect adsorption of the ferric ions thereon by displacing the available hydrogen of the first resin therewith, the said aqueous liquor containing about 0.05 to 1.5 weight percent vanadium as ammonium metavanadate, about 0.16 to 5.0 weight percent copper, from greater than 0.0 to 0.2 weight percent iron, and up to 20 weight percent nitric acid, passing the effluent from the first resin into reacting contact with a second cation exchange resin consisting of the hydrogen form of an oxidation-resistant water-insoluble polymerizate to effect adbsorption of the vanadium ions and cupric ions thereon by displacing the available hydrogen of the said second resin, thereafter eluting the vanadium and cupric ions from the said second resin with a strong mineral acid and collecting the eluted vanadium and cupric ions.

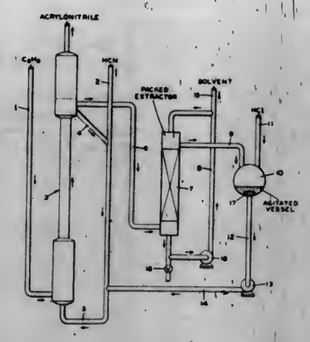
3,186,953
PURIFICATION OF AQUEOUS CUPROUS CHLORIDE CATALYST

John C. Eck, Convent, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Nov. 21, 1961, Ser. No. 153,000
5 Claims. (Cl. 252—414)

1. The method of maintaining the efficiency of an aqueous cuprous chloride catalyst used in the production

of acrylonitrile from acetylene which comprises withdrawing part of the catalyst solution from the acrylonitrile reactor, extracting tarry by-products in said solution



with a halogenated hydrocarbon, separating the catalyst solution from the halo-hydrocarbon and returning the catalyst solution to the acrylonitrile.

3,186,954
CATALYST SYSTEM FOR HEAT CURING OF FABRICS

Henry R. Hushebeck, Wilmington, Del., assignor to Joseph Bancroft & Sons Company, Rockford, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 16, 1959, Ser. No. 838,823
10 Claims. (Cl. 252—428)

1. In a catalyst system for the heat curing of fabric which has been treated with aldehydic textile finishing agents wherein the active ingredients of said system consist essentially of an acid component and an acid salt component, the improvement characterized in that the acid salt component is a polyvalent metal salt of a Lewis acid, the acid component is a non-volatile polybasic organic acid capable of imparting a pH of from 1.5 to 5.5 to impregnating baths containing from about 0.5 to 3.0% by weight of the catalyst and said system being further characterized in that the catalyst components will, when heated in the presence of a textile, form a residue having a pH of at least 2 higher than that of the acid-acid salt combination prior to heating.

3,186,955
BISMUTH-MOLYBDENUM OXIDATION CATALYST PROMOTED WITH A BA–SI OXIDE MIXTURE

James L. Callahan, Bedford, and Joseph J. Szabo, Chagrin Falls, Ohio, and Berthold Gertheer, New York, N.Y., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 28, 1962, Ser. No. 197,932
8 Claims. (Cl. 252—435)

1. A catalyst composition consisting essentially of oxides of bismuth and molybdenum as the essential catalytic ingredients, the bismuth oxide being present in an amount to furnish a bismuth to molybdenum Bi:Mo atomic ratio of above 1:3, promoted by a mixture of oxides of barium and silicon, in the proportion of about 1 to about 5%, calculated as barium, and about 1 to about 10%, calculated as silicon.

2. A catalyst composition in accordance with claim 1, which also includes a phosphorus oxide in an amount up to about 5% by weight.

3,186,956
ACTIVATION OF A NICKEL-KIESELGUHR CATALYST

John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 25, 1961, Ser. No. 112,591
2 Claims. (Cl. 252—459)

1. A process for the activation of a nickel-kieselguhr catalyst which is in a reducible state in the absence of added steam which comprises heating an impure hydrogen stream containing at least 2 mol percent of demethylizable acyclic hydrocarbon compounds having from 2 to 6 carbon atoms to a temperature of about 500° F., passing said heated stream over a bed of said catalyst to reduce said catalyst and demethylate said hydrocarbon, thereby raising the catalyst bed temperature to a temperature in the range 650 to 725° F., removing said stream comprising hydrogen, methane and moisture from said bed and cooling same, passing said cooled stream to a separation zone wherein condensed moisture is removed and a portion of the non-condensible materials are recovered as fuel gas, and recycling the remainder of said stream along with said impure hydrogen stream to said catalyst bed thereby controlling the quantity of demethylizable components passing over said bed of catalyst to maintain said reducing temperature.

3,186,957
METHOD OF PREPARING A NICKEL OXIDE-ALUMINA CATALYST COMPOSITION AND THE PRODUCT THEREOF

Alvin B. Stiles, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 14, 1960, Ser. No. 22,253
7 Claims. (Cl. 252—466)

1. In a process for making nickel-alumina catalysts the steps comprising adding nickel nitrate to an aqueous suspension of alpha alumina hydrate, the nickel-oxide:aluminum-oxide ratio being 60:40 to 90:10, precipitating the nickel with ammonium carbonate to form nickel carbonate, drying and calcining the nickel alumina solids thus obtained at a temperature from 250° C. to 600° C., shaping said calcined solids and then calcining to harden by heating in an oxidizing atmosphere to a temperature of 950° C. to 1100° C.

4. A nickel-alumina catalyst which has a nickel oxide: alumina ratio of 60:40 to 90:10 and in which the nickel oxide particles are intimately mixed with gamma alumina particles, there being an interface of nickel aluminate between the particles and binding them together.

3,186,958
POLYMERIZATION OF EPOXIDES

Abraham Kutner, Newark, and Edwin J. Vandenberg, Wilmington, Del., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

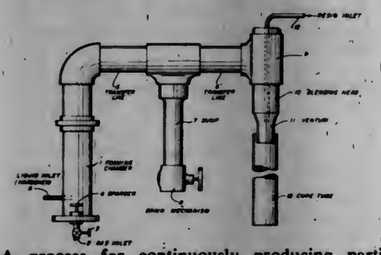
No Drawing. Filed June 29, 1961, Ser. No. 120,491
21 Claims. (Cl. 260—2)

1. The process of preparing poly(epoxides) which comprises polymerizing epoxides, wherein the epoxy group is an oxirane ring, by contacting at a temperature of from about —80° C. to about 150° C. at least one of said epoxides with the catalyst formed by reacting a hydrocarbonaluminum compound, selected from the group consisting of trialkylaluminums and dialkylaluminum hydrides, with a nitrogen compound selected from the group consisting of ammonia and organic basic nitrogen-containing compounds selected from the group consisting of amines, carboxamides, carboximides, urea and alkyl substituted ureas, wherein any active hydrogen in said organic compounds is that attached to nitrogen, in a molar ratio such that the ratio of nitrogen to aluminum is within the range of from about 0.01 to 0.95, said nitrogen compound being a nonchelating compound with the hydrocarbon aluminum compound, said epoxides being free of groups other than oxirane groups which are reactive with said hydrocarbonaluminum catalyst.

3,186,959
METHOD FOR PRODUCING UREA-FORMALDEHYDE FOAMS

Donald S. Shriver, Prince George County, Rob R. Macgregor, Hopewell, and William P. Moore, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Dec. 4, 1961, Ser. No. 156,830
2 Claims. (Cl. 260—2.5)



1. A process for continuously producing partially hardened closed cell structure urea-formaldehyde foams which comprises injecting a stream of aqueous urea-formaldehyde resin solution cocurrent into a stream of an aqueous acidic foam containing a surfactant and flowing under conditions of tubular flow at a space velocity between about 15,000 and about 25,000 hour^{-1}; maintaining the resulting resinous foam mixture under conditions of tubular flow at space velocities between about 1,500 and about 2,500 hour^{-1} for a time sufficient to effect partial hardening of the foam to the extent that the foam is self-supporting but remains sufficiently fluid to readily fill a molding cavity.

3,186,960
METHOD OF PREPARING MIXTURES CONTAINING AN AMINE ACCELERATOR

Jacob A. Knots, Zaandam, Netherlands, assignor to Adriaan Honig's Kunsthars-Industrie N.V., Zaandam, Netherlands, a limited-liability company of the Netherlands

No Drawing. Continuation of application Ser. No. 826,904, July 14, 1959. This application July 11, 1962, Ser. No. 209,242
Claims priority, application Netherlands, July 19, 1958, 229,750
5 Claims. (Cl. 260—24)

1. A method of preparing a stable, solid composition containing benzoyl peroxide and an amine accelerator selected from the group consisting of dimethyl aniline and bis-(p-N-N'-dimethylaminophenyl)methane, comprising the steps of incorporating said amine accelerator into a solid material selected from the group consisting of a rosin-modified maleic anhydride resin and an oil-soluble novolak resin, pulverizing the resultant solid material and mixing said pulverized material with said benzoyl peroxide.

3,186,961
PLASTICIZED POLYCARBONATE RESINS

James K. Sears, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 8, 1962, Ser. No. 229,182
23 Claims. (Cl. 260—30.4)

1. A method of plasticizing a polycarbonate resin which comprises (1) intimately admixing said resin with a compatible plasticizer, (2) heating the mixture above its melting temperature and (3) quench cooling the fused mixture to at least below 50° C.

9. A clear, substantially homogeneous plasticized resin composition comprising a polycarbonate resin and a compatible plasticizer selected from the group consisting of:

(a) esters having up to 22 carbon atoms formed by the reaction of an aliphatic monocarboxylic acid having from 2 to 18 carbon atoms and an alcohol selected from the group consisting of monohydric alcohols having from 1 to 6 carbon atoms, dihydric alcohols having from 2 to 8 carbon atoms, glycerol, tetrahydrofurfuryl alcohol, and ether alcohols having from 2 to 8 carbon atoms;

(b) esters formed by the reaction of an aliphatic polycarboxylic acid having from 6 to 10 carbon atoms and an alcohol selected from the group consisting of monohydric alcohols having from 1 to 11 carbon atoms, tetrahydrofurfuryl alcohol and ether alcohols having from 2 to 8 carbon atoms;

(c) esters formed by the reaction of an aryl carboxylic acid having from 7 to 10 carbon atoms and an alcohol selected from the group consisting of monohydric alcohols having from 1 to 13 carbon atoms, dihydric alcohols having from 2 to 6 carbon atoms, glycerol, pentaerythritol, phenols having from 6 to 8 carbon atoms, tetrahydrofurfuryl alcohol, and ether alcohols having from 2 to 8 carbon atoms;

(d) sulfonamides selected from the group consisting of N-alkyl and N-allyl arylsulfonamides, arylsulfonamides, hydroxyalkyl arylsulfonamides, N,N-dialkyl arylsulfonamides and N,N-bis(cyanoalkyl) arylsulfonamides;

(e) hydrocarbons selected from the group consisting of polyphenyls, chlorinated polyphenyls, alkylated polyphenyls, partially hydrogenated polyphenyls, alkyl aryl hydrocarbons and partially hydrogenated alkyl aryl hydrocarbons wherein the alkyl group contains from 2 to 4 carbons;

(f) cyanamides selected from the group consisting of allyl cyanamide, alkyl cyanamides and aralkyl cyanamides wherein the alkyl group contains from about 1 to about 10 carbon atoms and the aralkyl group contains from about 7 to about 9 carbon atoms; and

(g) epoxy compounds selected from the group consisting of epoxy esters, glycidols, and glycidyl ethers.

3,186,962
POLYETHYLENE TEREPHTHALATE STABILIZED WITH A CONDENSATION PRODUCT OF A PHENOL WITH AN UNSATURATED ALDEHYDE

Derek Ranson, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Original application July 22, 1960, Ser. No. 44,547. Divided and this application July 12, 1961, Ser. No. 130,212
Claims priority, application Great Britain, Apr. 14, 1960, 13,444/60
5 Claims. (Cl. 260—45.95)

1. A stabilized composition of matter consisting essentially of polyethylene terephthalate and a stabilizing amount of the condensation product of a phenol having at least one free reactive nuclear position with an alpha beta unsaturated aldehyde having an unsubstituted alpha carbon atom, the molar ratio of phenol to aldehyde being 3:1.

3,186,963
SILOXANE ELASTOMERS

John Tudor Lewis, Dinas Powis, Glamorgan, and Nigel Page, Barry, Glamorgan, Wales, assignors to Midland Silicones Limited, London, England

No Drawing. Filed Aug. 25, 1961, Ser. No. 133,781
Claims priority, application Great Britain, Sept. 5, 1960, 30,569
3 Claims. (Cl. 260—46.5)

1. A process for obtaining a composition of matter which can be converted at relatively low temperatures to

an elastomeric product comprising forming a mixture of ingredients consisting essentially of (1) a hydroxyl containing organosiloxane polymer having a viscosity of at least 100 cs. at 25° C. and having the average unit formula

$$R''_nSiO_{\frac{4-n}{2}}$$

where each R'' is a monovalent radical selected from the group consisting of hydrocarbon radicals and halogenohydrocarbon radicals and n has an average value of from 1.9 to 2.1 inclusive, and (2) the reaction product obtained by heating to a temperature within the range 80° to 200° C. for a period of at least 15 minutes (a) a tin salt of a carboxylic acid, and (b) a silicon-containing material selected from the group consisting of alkylsilicates of the general formula $R_aSi(OR')_{4-a}$ where each R is an alkyl radical, each R' is an alkyl radical of less than 6 carbon atoms and a has an average value of from 0 to 1 inclusive, and partial hydrolyzates of said alkylsilicates having the unit formula

$$R_aSi(OR')_bO_{\frac{4-a-b}{2}}$$

where R, R' and a are as above defined and b has a value of at least 1 and less than 4 and the sum of $a+b$ is less than 4.

3,186,964

PAINTABLE RELEASE AGENTS

Gust J. Kookootsedes and John L. Speler, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,466
5 Claims. (Cl. 260—46.5)

1. A composition of matter consisting essentially of a toluene soluble copolymer of (1) from 10 to 90 mol percent polymeric units of the formula $(C_6H_5R-)(CH_3)SiO$, wherein R is an alkylene radical of from 2 to 3 inclusive carbon atoms and (2) from 10 to 90 mol percent polymeric units of the formula

$$\begin{array}{c} R' \\ | \\ CH_3SiO \end{array}$$

wherein R' is an alkyl radical of from 2 to 3 inclusive carbon atoms.

3,186,965

VINYL SULFIDE ORGANOSILICON COMPOUNDS

Edwin P. Plueddemann, Midland, Mich., assignor to The Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,405
7 Claims. (Cl. 260—46.5)

1. A composition of the formula

$$(X_{3-y}\overset{R'''_y}{\overset{|}{S}}iCH_2CHA)_a—R—(SCH=CH_2)_b$$

in which

X is selected from the group consisting of halogen atoms and radicals of the formula

$$R'(OCH_2CH_3)_nO—$$

in which

R' is selected from the group consisting of aliphatic hydrocarbon radicals of less than 5 carbon atoms and radicals of the formula

$$\begin{array}{c} O \\ \| \\ R''C— \end{array}$$

in which R'' is an aliphatic hydrocarbon radical of less than 5 carbon atoms and

n has a value from 0 to 2 inclusive,

R is a radical having a valence of $a+b$ and being attached to the S through a C—S bond and containing at least one carbon atom, the remaining atoms in R being selected from the group consisting of H and O atoms, the latter being in a configuration selected from the group consisting of —OH,

$$\begin{array}{c} O \\ \| \\ —CO— \end{array}$$

and ether linkages, there being no more than one ether linkage attached to any one carbon atom,

A is selected from the group consisting of H atoms and methyl radicals,

a and b both having values from 1 to 3 inclusive, the sum of $a+b$ being from 2 to 4 inclusive,

R''' is selected from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals both being free of aliphatic unsaturation, and

y has a value from 0 to 2 inclusive.

4. A siloxane containing at least one unit of formula

$$(O_{\frac{3-y}{2}}\overset{R'''_y}{\overset{|}{S}}iCH_2CHA)_aR(SCH=CH_2)_b$$

in which

R is a radical having a valance of $a+b$ and is attached to the S through a carbon sulfur bond and contains at least one carbon atom, the remaining atoms in R being selected from the group consisting of H and O atoms the latter being in a configuration selected from the group consisting of —OH,

$$\begin{array}{c} O \\ \| \\ —CO— \end{array}$$

and ether linkages, there being no more than one ether linkage per carbon atom,

A is selected from the group consisting of H atoms and methyl radicals,

a and b both having values from 1 to 3 inclusive, the sum of $a+b$ being from 2 to 4 inclusive,

R''' is selected from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, both being free of aliphatic unsaturation and

y has a value from 0 to 2 inclusive, any remaining siloxane units in said siloxane being of the formula

$$Z_cSiO_{\frac{4-c}{2}}$$

in which

Z is selected from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals, and

c has a value from 0 to 3 inclusive.

3,186,966

PREPARATION OF POLYMERS CONTAINING SILICON, OXYGEN, AND ALUMINUM ATOMS

William Randall Bamford, West Kilbride, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,670
Claims priority, application Great Britain, Apr. 6, 1961 12,382/61
5 Claims. (Cl. 260—46.5)

1. A process for the production of a polymer having polymeric chains made up of recurring groups containing silicon, oxygen and aluminum atoms, said process comprising providing a quantity of an aluminum trialkyl, reacting said aluminum trialkyl with a phosphinic acid selected from the group consisting of lower alkyl phosphinic acids and phenylphosphinic acids to obtain an intermediate product, and thereafter reacting said intermediate product with a dihydroxyorganosilicon compound selected from the group consisting of lower alkyl silanediols, monocyclic aryl silanediols, lower alkyl-monocyclic aryl silanediols, bis(hydroxy lower alkylsilyl) benzenes, tetramonocyclic aryl disiloxane-1,3-diols, tetra lower alkyl disiloxane-1,3-diols, and tetra lower alkyl, monocyclic aryl disiloxane-1,3-diols to obtain said polymer, said process being carried out in the presence of an inert organic solvent and at a temperature of reaction such that said solvent remains liquid throughout.

3,186,967

METHOD OF PREPARING HIGH MOLECULAR WEIGHT ORGANOSILOXANE POLYMERS

Siegfried Nitzsche, Rudolf Riedle, and Karl-Heinz Wegehaupt, all of Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Bavaria, Germany

No Drawing. Filed Apr. 4, 1962, Ser. No. 184,929
Claims priority, application Germany, Apr. 12, 1961, W 29,800
8 Claims. (Cl. 260—46.5)

1. A method of preparing high molecular weight essentially linear diorganosiloxane copolymers suitable for the production of silicone rubber having an organic substituent/silicon ratio of from 1.98/1 to 2.02/1, on the average, and wherein the organic substituents bonded to silicon through Si—C linkages are selected from the group consisting of alkyl, halogenoalkyl, alkenyl, aralkyl, aryl, halogenoaryl, and alkaryl radicals consisting essentially of equilibrating at least two immiscible, low molecular weight, fluid diorganosiloxane polymers employing stepwise addition of (B) the low molecular weight siloxane polymer having the more rapid rate of condensation, having a viscosity up to 10,000 cs. at 25° C., containing at least 98 mol percent of diorganosiloxane units, any remaining units being selected from the group consisting of monoorganosiloxane units and triorganosiloxane units where each organic substituent is selected from the group consisting of alkyl, halogenoalkyl, alkenyl, aralkyl, aryl, halogenoaryl and alkaryl radicals, to (A) the low molecular weight siloxane polymer having the slower rate of condensation, having a viscosity up to 10,000 cs. at 25° C., containing at least 98 mol percent of diorganosiloxane units, any remaining units being selected from the group consisting of monoorganosiloxane units and triorganosiloxane units where each organic substituent is selected from the group consisting of alkyl, halogenoalkyl, alkenyl, aralkyl, aryl, halogenoaryl and alkaryl radicals, said siloxane (B) being added in successive steps in proportions of from 0.25 to 2.0 times the quantity of siloxane (A) present, the resulting mixture being equilibrated to form a homogeneous mass prior to further additions of siloxane (B), said equilibration being carried forward in the presence of .001 to 1 percent by weight based on the weight of siloxane polymer present of a phosphorous-nitrogen compound selected from the group consisting of

$$(PNCl_2)_n, \quad \begin{array}{c} R \\ | \\ R'-N \end{array}PX_2, \quad \begin{array}{c} R \\ | \\ R'-N \end{array}P=N-R''$$

$$\begin{array}{c} R \\ | \\ R'-N \end{array}\overset{O}{\overset{\|}{P}}X_2, \text{ and } \begin{array}{c} R \\ | \\ R'-N \end{array}\overset{O}{\overset{\|}{P}}=NR''$$

where n is an integer of at least 3, R and R' are selected from the group consisting of aryl, alkyl, alkaryl and aralkyl radicals and hydrogen, at least 1 of the substituents R and R' being one of the defined organic radicals, R'' is a substituent selected from the group consisting of alkyl, aryl, aralkyl and alkaryl radicals and X is a halogen atom.

3,186,968

POLYMERIC COMPOSITIONS RESISTANT TO ULTRA-VIOLET LIGHT FROM ACRYLYLOXYMETHYL BENZOATES

Joseph Fertig and Martin Skoultchi, New York, N.Y., and Albert I. Goldberg, Berkeley Heights, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,197
5 Claims. (Cl. 260—47)

1. A composition comprising a polymer of at least one ethylenically unsaturated monomer selected from the group consisting of styrene, methyl styrene, the acrylic and methacrylic acid esters of aliphatic alcohols, acrylic acid, methacrylic acid, acrylamide, acrylonitrile, methacrylonitrile, vinylidene chloride, vinyl chloride, vinyl acetate, ethylene and propylene together with at least one ethylenically unsaturated phenyl salicylate derivative selected from the group consisting of phenyl 2-hydroxy-5-acrylyloxymethyl benzoate and phenyl 2-hydroxy-5-methacrylyloxymethyl benzoate.

3,186,969

VICINAL EPOXIDE ADDUCTS OF PHENOL-AROMATIC AMINE-FORMALDHYDE CONDENSATION PRODUCTS

Eugene F. Cox, Charleston, William H. Cook, South Charleston, and Fritz Hostettler, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 9, 1961, Ser. No. 143,580
15 Claims. (Cl. 260—51.5)

1. A polyol which comprises the vicinal epoxide adduct of the uncatalyzed, ternary, permanently fusible, condensation product of

(a) a phenol which has at least one unsubstituted reactive position on the aromatic nucleus,

(b) an aromatic amine which has the formula $ArNH_2$ wherein Ar represents an aryl radical which has at least one unsubstituted reactive position on the aromatic nucleus, and

(c) formaldehyde, wherein said vicinal epoxide is selected from the group consisting of the alkylene oxides, the aryl glycidyl ethers, the aryl-substituted alkylene oxides, the cycloalkylene oxides, and the halogen-substituted alkylene oxides.

3,186,970

PREPARATION OF POLYHYDROXYARYL PARTIAL ACETALS OF POLYVINYL ALCOHOL

Norman W. Schuler, Lexington, Mass, assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed July 31, 1961, Ser. No. 127,865
1 Claim. (Cl. 260—73)

The process of preparing the gentisaldehyde partial acetal of polyvinyl alcohol which comprises the steps of reacting gentisaldehyde with acetic anhydride to provide 2,5-diacetoxybenzaldehyde; reacting the thus-prepared 2,5-diacetoxybenzaldehyde with polyvinyl alcohol to provide the 2,5-diacetoxybenzaldehyde partial acetal of polyvinyl alcohol; and deacetylating the thus-prepared 2,5-diacetoxybenzaldehyde partial acetal of polyvinyl alcohol by alkaline alcoholysis to provide the gentisaldehyde partial acetal of polyvinyl alcohol.

3,186,971

POLYURETHANE POLYMERS FROM LACTONE POLYESTERS

Fritz Hostettler, Charleston, W. Va., and Donald M. Young, New York, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 22, 1964, Ser. No. 377,037
17 Claims. (Cl. 260—77.5)

1. A process for the preparation of isocyanato terminated lactone polyester polyurethane polymers which

comprises reacting hydroxyl terminated lactone polyesters with an organic diisocyanate, at a molar ratio of said diisocyanate to said lactone polyesters greater than one; said hydroxyl terminated lactone polyesters being formed by the reaction of an admixture containing a lactone and an organic bifunctional initiator; said lactone being in molar excess with relation to said initiator; said lactone having from six to eight carbon atoms in the lactone ring and at least one hydrogen substituent on the carbon atom which is attached to the oxy group in said ring; said organic bifunctional initiator having two reactive hydrogen substituents selected from the group consisting of hydroxyl, primary amino, secondary amino, and mixtures thereof, each of said reactive hydrogen substituents being capable of opening the lactone ring whereby said lactone is added to said initiator as a substantially linear group thereto; said hydroxyl terminated lactone polyesters possessing, on the average, at least two of said linear groups, each of said linear groups having a terminal oxy group at one end, a carbonyl group at the other end, and an intermediate chain of from five to seven carbon atoms which has at least one hydrogen substituent on the carbon atom in said intermediate chain that is attached to said terminal oxy group; said hydroxyl terminated lactone polyesters having an average molecular weight of from about 300 to 7,000 and a hydroxyl number of from 374 to 16.

3,186,972

POLYMERIC MALEIC ANHYDRIDE AND METHOD OF MAKING

John L. Lang, Murrysville, Pa., and William A. Pavelich, Lenexa, Kans., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 16, 1961, Ser. No. 82,681

1 Claim. (Cl. 260—78.4)

Homopolymer of maleic anhydride having an intrinsic viscosity of at least 0.05 deciliter per gram as determined in 2-butanone.

3,186,973

PROCESS FOR THE POLYMERIZATION OF STRONGLY BASIC COMPOUNDS USING 1,2-DICHLOROETHANE AS SOLVENT

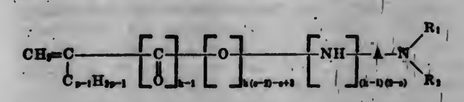
Arthur Maeder, Therwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss firm

No Drawing. Filed Apr. 22, 1960, Ser. No. 23,925

Claims priority, application Switzerland, Feb. 27, 1958, 56,371; June 2, 1958, 60,134

6 Claims. (Cl. 260—80.3)

1. A process for the manufacture of linear additively combined basic polymers which comprises polymerizing (1) a basic polymerizable compound having a pK base value of less than 6 and corresponding to the formula



wherein *k*, *s* and *p* each represent an integer from 1 to 2, A represents a saturated hydrocarbon radical of 2 to 6 carbon atoms, R_1 and R_2 taken singly are hydrocarbon radicals of 1 to 6 carbon atoms, and R_1 and R_2 taken jointly form a heterocyclic radical with the N atom which heterocyclic radical contains 1 to 2 basic nitrogen atoms, and (2) a different ethylenically unsaturated compound, in solution in 1:2-dichlorethane and in the presence of a free radical acting catalyst, which is soluble in 1:2-dichlorethane, at temperatures between 40 to 95° C., the total amount of polymerizable compounds being 5 to 60 percent by weight calculated on the quantity of 1:2-dichloroethane the basic polymerizable compound being present in a major amount of the total amount of the polymerizable compounds.

3,186,974

PROCESS FOR COPOLYMERIZING VINYL ESTERS OF ALPHA-BRANCHED MONOCARBOXYLIC ACIDS WITH ETHYLENICALLY UNSATURATED COMPOUNDS

Govert Verberg, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 11, 1961, Ser. No. 130,751

Claims priority, application Netherlands, Dec. 30, 1960, 259,618

10 Claims. (Cl. 260—85.7)

1. A process for preparing substantially unhydrolyzable vinyl polymers which comprises copolymerizing in the presence of a free-radical catalyst vinyl esters of mixed alpha-branched saturated aliphatic monocarboxylic acids with another copolymerizable ethylenically unsaturated compound, said monocarboxylic acids being obtained by reacting mixtures of olefins containing at least 8 carbon atoms in the molecule with a member of the group consisting of (a) formic acid and (b) carbon monoxide and water, in the presence of inorganic acid catalysts, and said monocarboxylic acids being further characterized by consisting largely of molecules in which at least two hydrocarbon chains each of at least two carbon atoms are attached to the alpha carbon relative to the carboxyl group.

8. A substantially unhydrolyzable vinyl polymer prepared by the process which comprises copolymerizing in the presence of a free-radical catalyst vinyl esters of mixed alpha-branched saturated aliphatic monocarboxylic acids with another copolymerizable ethylenically unsaturated compound, said monocarboxylic acids being obtained by reacting mixtures of olefins containing at least 8 carbon atoms in the molecule with a member of the group consisting of (a) formic acid and (b) carbon monoxide and water, in the presence of inorganic acid catalysts, and said monocarboxylic acids being further characterized by consisting largely of molecules in which at least two hydrocarbon chains each of at least two carbon atoms are attached to the alpha carbon relative to the carboxyl group.

3,186,975

SUSPENSION POLYMERIZATION OF STYRENE IN PRESENCE OF AMINO POLYACETIC ACID COMPOUND

Alva F. Harris, Wilbraham, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 22, 1960, Ser. No. 77,522

8 Claims. (Cl. 260—93.5)

1. In a process for polymerizing styrene with agitation in suspension in an aqueous medium containing a water-soluble suspending agent and a free radical-generating polymerization initiator at 30–200° C., the improvement which comprises conducting the polymerization in the presence of 0.05–200 parts per million, based on the weight of styrene, of an amino polyacetic acid compound of the group consisting of amino polyacetic acids containing at least two —CH_2COOH groups bound to a nitrogen atom and the alkali metal salts, alkylamine salts, dialkylamine salts, and alkyl esters of said amino polyacetic acids; the alkyl radicals of said alkylamine, dialkylamine, and alkyl derivatives containing up to 4 carbon atoms.

3,186,976

PROCESS FOR IMPROVING PHYSICAL AND CHEMICAL PROPERTIES OF HIGH POLYMERS

Pierre Baumgartner, Asnieres, France, assignor to Institut Français de Petrole des Carburants et Lubrifiants, Paris, France

No Drawing. Filed May 11, 1960, Ser. No. 28,230

Claims priority, application France, May 13, 1959, 794,518; July 27, 1959, 801,401; Dec. 24, 1959, 814,292

19 Claims. (Cl. 260—93.7)

1. A process for improving the properties of a normally solid high polymer, selected from the group consisting of polymers of α-ethylenically unsaturated hydrocarbons, polyvinyl chloride, polyvinyl formal, polyvinyl acetal, polyvinyl butyral, polyvinylidene chloride, polyacrylonitrile, polymethacrylonitrile, and polyesters comprising the step of treating said polymer with a chromyl halide to improve dyability.

3,186,977

THREE-COMPONENT ALKYL ALUMINUM CATALYSTS FOR OLEFIN POLYMERIZATION

Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 1, 1961, Ser. No. 92,464

16 Claims. (Cl. 260—93.7)

1. In the polymerization of α-olefinic hydrocarbons containing 3 to 10 carbon atoms to form solid, crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture containing an aluminum compound having the formula R_3Al wherein each R is a hydrocarbon radical containing 1 to 12 carbon atoms and selected from the group consisting of alkyl, aryl and aralkyl, a trihalide of a transition metal selected from the group consisting of titanium and vanadium and an organophosphorus compound having the formulas $P(O)Y_3$ and PY_3 wherein each Y is selected from the group consisting of alkylamino and alkoxy radicals, the alkyl and alkoxy radicals containing 1 to 8 carbon atoms, the molar ratio of transition metal trihalide to organophosphorus compound being within the range of 1:1 to 1:0.1.

3,186,978

METHOD FOR PURIFYING OLEFIN POLYMERS

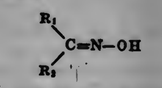
Cornelio Caldo and Giorgio Leicht, Terni, Italy, assignors to Montecatini, Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Apr. 6, 1961, Ser. No. 101,067

Claims priority, application Italy, Apr. 11, 1960, 6,413/60

8 Claims. (Cl. 260—93.7)

1. A method for purifying polymers obtained by the polymerization of olefins in the presence of catalysts comprising an organometallic compound of a metal selected from the group consisting of the 1st, 2nd and 3rd groups of the Mendeleeff Periodic Table and a solid crystalline halide of a transition metal selected from the group consisting of the 4th, 5th and 6th groups of the same table, characterized in that the polymerization slurry is treated, at the termination of the polymerization, with a compound of the general formula:



(A)

wherein R_1 and R_2 are selected from the group consisting of hydrogen, alkyl radicals, aryl radicals, alkylaryl radicals and cycloparaffinic radicals.

3,186,979

REACTIVE DYESTUFFS HAVING A DITHIOCARBAMYL-SUBSTITUTED TRIAZINE RING SUBSTITUENT

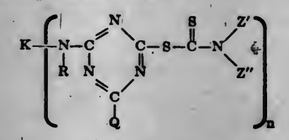
Frank Hall and Ian Durham Rattee, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,650

Claims priority, application Great Britain, Mar. 11, 1959, 8,360/59; May 21, 1959, 17,394/59; July 2, 1959, 22,761/59

9 Claims. (Cl. 260—153)

1. Dyestuffs of the formula:



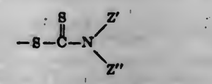
wherein

K represents the radical of a dyestuff selected from the class consisting of azo, anthraquinone, nitro and phthalocyanine dyestuff radicals;

R represents a member selected from the class consisting of hydrogen and lower alkyl;

n is a positive integer not exceeding 2;

Q is a member selected from the class consisting of chlorine, bromine, lower alkyl, phenyl, lower alkoxy, sulponic acid, phenoxy, amino, lower alkylamino, hydroxy lower alkylamino, phenylamino, sulphophenylamino, carboxyphenylamino, N-phenyl-N-lower alkylamino, N-sulphophenyl-N-lower alkylamino, carboxy-sulphophenylamino, N-(carboxysulphophenyl)-N-lower alkylamino, N-carboxyphenyl-N-lower alkylamino, disulphophenylamino, N-disulphophenyl-N-lower alkylamino, cyclohexylamino, morpholino, piperidyl and



and Z' and Z'' are independently selected from the class consisting of lower alkyl, phenyl lower alkyl, cyclohexyl and phenyl, and taken together Z' and Z'' form with the nitrogen atom N a heterocyclic ring selected from the class consisting of piperidyl and morpholino.

3,186,980

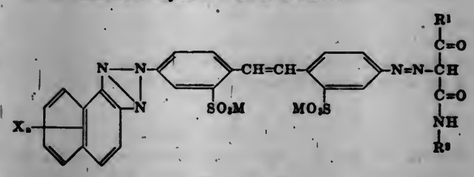
TRIAZINE CONTAINING AZO DYESTUFFS

Alvin C. Litke, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 12, 1960, Ser. No. 75,106

9 Claims. (Cl. 260—157)

1. A monoazo dyestuff of the formula



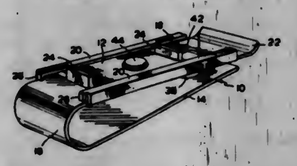
wherein

R^1 as a member selected from the group consisting of methyl and phenyl,

R^3 is a member selected from the group consisting of the benzene radical, the naphthalene radical, and substituted benzene radicals containing one to three substituents selected from the group consisting of lower alkyl, lower alkoxy, trifluoroalkyl, nitrile, chlorine, bromine and SO_2M,

X is a substituent selected from the group consisting of hydrogen, lower alkyl, lower alkoxy and —SO_3M,
n is an integer from 1 to 6, and
M is a cation,
said dyestuff having a maximum of four —SO_3M groups.

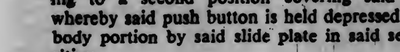
3,186,981
PUSH BUTTON SWITCH OVERRIDE CLIP
Henry M. de Ronde, San Diego, Calif., assignor to The Ryan Aeronautical Company, San Diego, Calif.
Filed Mar. 26, 1962, Ser. No. 182,278
5 Claims. (Cl. 200—169)



1. In combination with a switch having a body portion and an axially movable push button extending from said body portion, a push button override clip, comprising:
a resilient yoke having an upper arm and a lower arm;
means to secure said lower arm to said body portion;
said upper arm extending over said push button and having an opening through which the push button protrudes;
a slide plate slidably mounted on said upper arm and being movable from a first position clear of said opening to a second position covering said opening, whereby said push button is held depressed into said body portion by said slide plate in said second position.

3,186,982
MONO AZO DYES
Milton Green, Newton Center, and Howard G. Rogers, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Apr. 27, 1962, Ser. No. 190,804
4 Claims. (Cl. 260—202)

1. A compound of the formula:



wherein X^1 is selected from the group consisting of p-dihydroxyphenyl and o-dihydroxyphenyl groups; R is selected from the group consisting of hydrogen and lower alkyl groups; Y^1 is a divalent hydrocarbon radical selected from the group consisting of alkylene, phenylene and phenalkylene groups wherein the alkylene radicals are lower alkylene radicals and the phenylene group is directly attached to the nitrogen atom of said



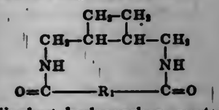
radical; *m* is one of the positive integers 1 and 2; Z^1 is an arylene group having the carbon atom of said



directly attached to a first cyclic carbon atom and a first nitrogen atom of said —N=N— group directly attached to a second cyclic carbon atom, said arylene group selected from the group consisting of arylene groups of the benzene and naphthalene series; Ar^2 is a monovalent cyclic group having a second nitrogen atom of said —N=N— group directly attached to a cyclic carbon atom, said cyclic group selected from the group consisting of cyclic groups of the benzene, naphthalene and pyrazolone series; and one of said Z^1 and Ar^2 groups containing a group selected from the group consisting of hydroxyl and amino groups directly attached to a cyclic carobn atom in one of the ortho and para positions with respect to said —N=N— group.

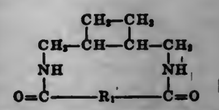
3,186,983
CYCLIC AMIDES AND A PROCESS FOR THE PREPARATION THEREOF
Kenneth C. Stueben, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 9, 1962, Ser. No. 185,860
14 Claims. (Cl. 260—239.3)

1. A cyclic amide having the formula:



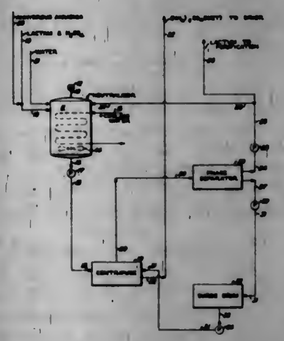
wherein R_1 is divalent hydrocarbon containing a maximum of 12 carbon atoms.

9. A process for the preparation of cyclic amides having the formula:



wherein R_1 is divalent hydrocarbon containing a maximum of 12 carbon atoms which comprises reacting 1,2-bis(aminomethyl)cyclobutane with a dicarboxylic acid to form the corresponding salt and thereafter heating the said salt at a temperature of about 260° C. to about 300° C. under a pressure of about 0.1 mm. of Hg to about 0.4 mm. of Hg and recovering the cyclic amide which is formed.

3,186,984
RECOVERY OF LACTAMS
John White Colton, Pelham Manor, N.Y., assignor to Halcon International, Inc., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,538
2 Claims. (Cl. 260—239.3)

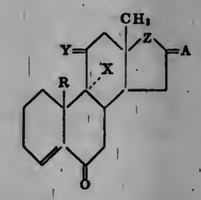


1. In a process for recovering a lactam from a mixture thereof with sulfuric acid wherein said mixture is treated with anhydrous ammonia in the presence of added lactam, the resulting mixture is separated into a solid ammonium sulfate phase and a lactam rich liquid phase, and lactam rich liquid is recycled to the treating step, the improvement which comprises washing said solid ammonium sulfate phase with concentrated aqueous ammonium sulfate liquid, mixing the liquid from the said washing with said lactam rich phase, separating the resulting mixture into a second lactam rich phase and a concentrated aqueous ammonium sulfate phase, recycling part of the separated second lactam rich phase to said ammonia treating step, and recycling the separated concentrated aqueous ammonium sulfate phase to the said washing step.

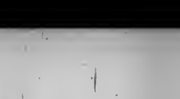
2. The process of claim 1 wherein the lactam is caprolactam.

3,186,985
NOVEL 6-KETO-4-DEHYDRO-STEROIDS AND PROCESSES FOR THEIR MANUFACTURE
Cecil H. Robinson, Montclair, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed May 7, 1963, Ser. No. 278,743
16 Claims. (Cl. 260—239.55)

1. A compound selected from the group consisting of 6-keto-Δ^4-steroids of the following formula:



wherein A is a member selected from the group consisting of hydrogen, methylene, (H, α-lower alkyl), (H, β-lower alkyl), and (H, αOH); R is a member selected from the group consisting of hydrogen and methyl; X is a member selected from the group consisting of hydrogen and halogen; Y is a member selected from the group consisting of keto, (H, βOH) and hydrogen; and when Y is hydrogen, X is hydrogen; and Z is a member selected from the group consisting of

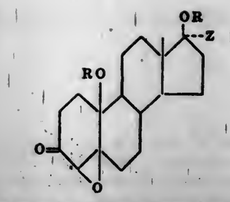


W being a member selected from the group consisting of hydrogen and lower alkanoyl; D being a member selected from the group consisting of hydrogen, lower alkyl, ethinyl, methylethinyl, and halogenoethinyl; R' being a member selected from the group consisting of hydrogen, hydroxy, an acyloxy residue of an acid selected from the group consisting of sulfuric acid, phosphoric acid, and a hydrocarbon carboxylic acid having up to 12 carbon atoms; V being a member selected from the group consisting of hydroxy, lower alkanoyloxy, and, when R' is a member of the group consisting of hydroxy and an acyloxy residue of an acid of the group consisting of sulfuric acid, phosphoric acid, and a carboxylic acid having up to 12 carbon atoms, hydrogen; and when V is hydroxy and A is (H, αOH), the 16α,17α-alkylidenedioxy derivatives thereof.

6. 17α,20;20,21-bis-methylenedioxy-4-pregnen-11β-ol-6-one.

3,186,986
EPOXY ESTRANES AND PROCESSES FOR THE MANUFACTURE THEREOF
Theodore Legatt, Bloomfield, and Elliot L. Shapiro, Cedar Grove, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 22, 1963, Ser. No. 303,938
10 Claims. (Cl. 260—239.55)

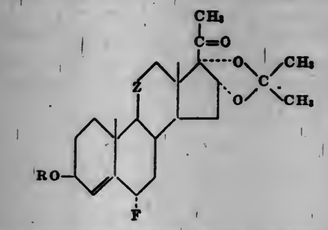
1. A compound of the formula:



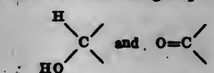
wherein R is a member of the group consisting of hydrogen and lower alkanoyl; and Z is a member of the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl and halo-lower alkynyl.

3,186,987
ANTI-INFLAMMATORY 3β-HYDROXY-PREGN-4-ENE-20-ONES
Romano Deghenghi, Westmount, Quebec, and David J. Marshall, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 27, 1963, Ser. No. 304,973
15 Claims. (Cl. 260—239.55)

1. Pregnenolone derivatives of the formula



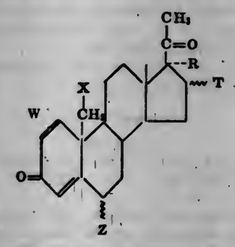
in which Z is selected from the group consisting of



and R is selected from the group consisting of hydrogen, lower alkyl, and lower alkanoyl.

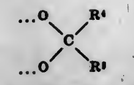
3,186,988
19-HALO PREGNANE DERIVATIVES
Albert Bowers, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Dec. 6, 1963, Ser. No. 328,474
Claims priority, application Mexico, Feb. 19, 1962, 66,216
20 Claims. (Cl. 260—239.55)

3. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen, hydroxyl and a hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms; T is a member of the group consisting of hydrogen, α-hydroxyl, α-hydrocarbon carboxylic acyloxy of less than 12 carbon atoms, α-

methyl and β-methyl; T and R together represent the group



wherein R^4 and R^5 are selected from the group consisting of hydrogen and a lower hydrocarbon residue of up to 8 carbon atoms; X is selected from the group consisting of fluorine and chlorine; Z is a member of the group consisting of hydrogen, α-methyl, β-methyl, α-fluorine, β-fluorine, α-chlorine and β-chlorine; and W is selected from the group consisting of a saturated linkage between C–1 and C–2 and a double bond between C–1 and C–2.

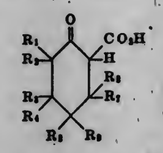
18. 19-halo - 16α,17α - isopropylidenedioxy-Δ^4-pregnene-3,20-dione wherein halo is a halogen of atomic weight less than 36.

3,186,989
PROCESS FOR PREPARING GLUTARIMIDE DERIVATIVES

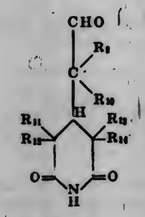
Francis Johnson, Newton Lower Falls, and William D. Gurowitz, Natick, Mass., and Martin Stiles, Ann Arbor, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 1, 1961, Ser. No. 150,855
7 Claims. (Cl. 260—240)

1. The process for preparing α-[2-(3-glutarimidyl)ethylidene]ketones comprising reacting a compound having the formula



wherein R_1 to R_8 are selected from the group consisting of hydrogen, lower alkyls, and halides, with a compound of the formula



wherein R_9 to R_{14} are selected from the group consisting of hydrogen and lower alkyl, in a slightly alkaline aqueous phosphate buffered solution at a temperature between about 0° C. and 30° C., and then separating the ketone product from the reaction mixture.

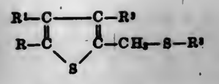
3. The process of claim 1 in which the cyclohexanone is 2-carboxy-6-methyl cyclohexanone.

3,186,990
2-THIENYLMETHYLMERCAPTOAMIDINE HYDROCHLORIDES AND CYCLIC DERIVATIVES THEREOF

William H. Hensley, Raleigh, N.C., and Joseph A. Lambrech, deceased, late of Charleston, W. Va., by Vallah G. Lambrech, executrix, Charleston, W. Va., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 22, 1961, Ser. No. 133,271
8 Claims. (Cl. 260—251)

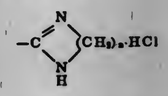
1. A compound represented by the formula:



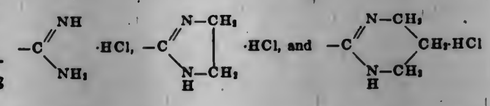
wherein R, when taken alone, is a member selected from the group consisting of a hydrogen atom and a $—CH_2SZ$ radical; R^1, when taken alone, is a hydrogen atom; R and R^1, when taken together, form a divalent

$$—CH=CH—CH=CH—$$

radical; R^2 is a member selected from the group consisting of a hydrogen atom and a $—CH_2SZ$ radical; only one of said R and R^2 being a $—CH_2SZ$ radical; R^3, when R is a hydrogen atom, is a



radical, wherein *n* is an integer having a value of from 2 to 3, and, when R is a $—CH_2SZ$ radical, is a Z radical; and Z is a member selected from the group consisting of



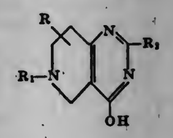
3. 2-(2-thienylmethylmercapto) - 3,4,5,6 - tetrahydropyrimidine hydrochloride.

3,186,991
5,6,7,8-TETRAHYDRO-PYRIDO-[4,3-d]-PYRIMIDINES

Gerhard Ohnacker, Biberach (Riss), Germany, assignor, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Mar. 14, 1963, Ser. No. 265,084
Claims priority, application Germany, Mar. 22, 1962, T 21,811
14 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of 4 - hydroxy-5,6,7,8-tetrahydro-pyrido-[4,3-d]-pyrimidine substitution products of the formula



wherein

R is selected from the group consisting of hydrogen, 7-lower alkyl and 8-lower alkyl,

R_1 is selected from the group consisting of (di-lower alkylamino)-lower alkyl, lower alkoxy-lower alkyl, phenyl, phenyl-lower alkyl and cyclohexyl, and

R_2 is selected from the group consisting of hydroxyl, lower alkyl, amino, mono-lower alkyl-amino, di-lower alkyl-amino, cyclohexylamino, benzyl-lower alkyl-amino, [(di-lower alkyl-amino)-lower alkyl]-amino, (lower alkoxy-lower alkyl)-amino, pyrrolidino, piperidino, morpholino, N'-lower alkyl-piperazino, N'-hydroxy-lower alkyl)-piperazino, lower alkyl-mercapto and benzyl-mercapto,

and their non-toxic, pharmacologically acceptable acid addition salts.

3,186,992
DERIVATIVES OF 4-OXO-6-QUINAZOLINESULFONAMIDE

Milton L. Hoefle, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 2, 1963, Ser. No. 277,484
3 Claims. (Cl. 260—256.5)

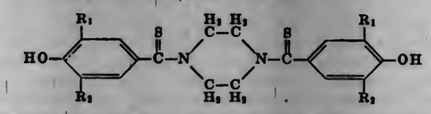
1. A member of the class constituting of 7-chloro-3,4-dihydro-3-hydroxy-4 - oxo - 6 - quinazolinesulfonamide, 7-chloro-1,2,3,4-tetrahydro-3-hydroxy-4-oxo-6 - quinazolinesulfonamide, and alkali metal salts thereof.

3,186,993
α,α'-(1,4-PIPERAZINEDIYL)BIS(3,5-DIALKYL-4-HYDROXYTHIOBENZALDEHYDE) COMPOUNDS

Gordon G. Knapp, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 7, 1962, Ser. No. 200,625
9 Claims. (Cl. 260—268)

1. A compound having the formula:

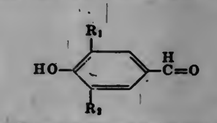


wherein R_1 and R_2 are selected from the group consisting of alkyl groups containing from 1–20 carbon atoms and aralkyl groups containing from 7–20 carbon atoms.

4. The process of producing compounds of claim 1 which comprises reacting a piperazinediylbis-p-cresol having the formula:

wherein R_1 and R_2 are selected from the group consisting of alkyl groups containing from 1–20 carbon atoms and aralkyl groups containing from 7–20 carbon atoms, with sulfur.

5. The process of producing a compound of claim 1 which comprises reacting a benzaldehyde having the formula:



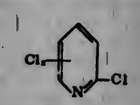
wherein R_1 and R_2 are selected from the group consisting of alkyl groups containing from 1–20 carbon atoms and aralkyl groups containing from 7–20 carbon atoms, with piperazine and sulfur.

3,186,994
POLYCHLOROPYRIDINES

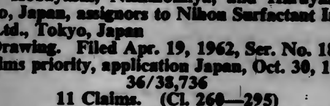
Howard Johnston, Concord, and Mary S. Tomita, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,581
10 Claims. (Cl. 260—290)

1. A method for preparing polychloropyridines having the formula



wherein *x* is an integer of from 2 to 4, inclusive, which comprisies contacting and reacting at temperatures of at least 160° C., chlorine and chloro(trichloromethyl)pyridine compounds having structures selected from the group consisting of



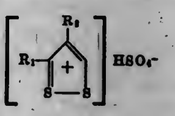
wherein *x* is as above defined.

3,186,995
PREPARATION OF DITHIOLIUM COMPOUNDS

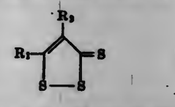
Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 2, 1963, Ser. No. 299,473
4 Claims. (Cl. 260—294.8)

1. A process of preparing the compound of the formula:



wherein R_1 and R_2 are individually selected from the group consisting of lower alkyl, phenyl, naphthyl, hydrogen, thienyl, furfuryl, pyridyl and phenyl lower alkyl, said R_1 and R_2 groups, when cyclic, bearing up to three substituents selected from the group consisting of halo, nitro, lower alkyl, lower alkoxy, di-lower alkylamino, lower alkanoyl, lower alkanoyloxy, sulfo and carboxy, which comprises reacting a compound of the formula:



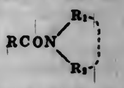
wherein R_1 and R_2 are as above defined, with a percarboxylic acid, said reaction being conducted at a temperature not above about 40° C. in an inert solvent, and separating the product thus formed.

3,186,996
PYRIDOXINE 3,4-DIACYLATES AND THEIR PREPARATION

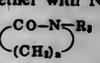
Kanjiro Kobayashi, Nishinomiya, and Haruyasu Ohta, Tokyo, Japan, assignors to Nihon Surfactant Industries Co. Ltd., Tokyo, Japan

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,904
Claims priority, application Japan, Oct. 30, 1961, 36/38,736
11 Claims. (Cl. 260—295)

1. A process for preparing pyridoxine 3,4-diacylate hydrochlorides in which pyridoxine hydrochloride is reacted with a member of the group consisting of saturated and unsaturated fatty acid chlorides in the presence of a weakly basic acid-binding agent and using as a solvent a member of the group consisting of an N,N-disubstituted amide represented by the formula



wherein R is a member of the group consisting of a hydrogen atom and a lower alkyl radical and R_1 and R_2 are members of the group consisting of lower alkyl radicals, morpholyl, piperidyl and pyrrolidyl radicals both together with N, and



wherein R_3 is a lower alkyl radical and *n* is the integer 3 or 4,

so that a pyridoxine 3,4-diacylate hydrochloride is directly precipitated as crystals and the crystals are removed.

3,186,997
1-PHENYL-2-PYRROLLIDINO-PENTANE AND SALTS

Ernst Seeger and August Kottler, Biberach an der Riss, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,543
Claims priority, application Germany, July 1, 1955, T 11,089; Apr. 26, 1956, T 12,153, T 12,154
1 Claim. (Cl. 260—295.5)

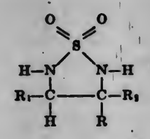
A compound selected from the group consisting of 1-phenyl-2-pyrrolidino-pentane and its non-toxic pharmacologically acceptable acid addition salts.

3,186,998
3,4-DISUBSTITUTED-1,2,5-THIADIAZOLIDINE-1,1-DIOXIDE COMPOUNDS

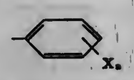
John B. Wright, Kalamazoo Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 13, 1963, Ser. No. 280,113
6 Claims. (Cl. 260—301)

1. 3,4-disubstituted-1,2,5-thiadiazolidine-1,1-dioxide of the formula



wherein R is selected from the group consisting of hydrogen and lower-alkyl of from 1 to 4 carbon atoms, inclusive; and R_1 and R_2 are selected from the group consisting of lower-alkyl of from 1 to 4 carbon atoms, inclusive, phenyl, and substituted phenyl of the formula



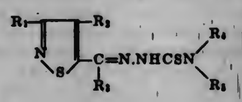
wherein X is selected from the group consisting of lower-alkyl as defined above, lower-alkoxy of from 1 to 4 carbon atoms, inclusive, and halogen, and *n* is an integer from 1 to 4, inclusive.

3,186,999
ISOTHIAZOLE DERIVATIVES

Ronald Slack, Chelsea, London, Sydney Leonard Squires, East Ham, London, and Kenneth Robert Harry Wooldridge, Brentwood, Essex, England, assignors to May & Baker Limited, Dagenham, Essex, England, a British company

No Drawing. Filed Mar. 15, 1962, Ser. No. 180,031
Claims priority, application Great Britain, Mar. 16, 1961, 9,731/61
6 Claims. (Cl. 260—302)

1. A compound of the formula:



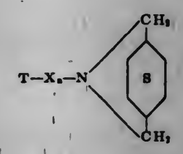
wherein R_1 represents a lower alkyl, R_2 represents a member of the class consisting of hydrogen and halogen, and R_4 and R_5 represent a member of the class consisting of hydrogen and lower alkoxyalkyl.

3,187,000
(AZABICYCLONONYLTHIO)AZOLES

John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 5, 1964, Ser. No. 387,800
12 Claims. (Cl. 260—302)

1. A compound of the formula



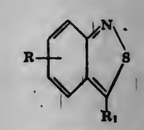
where T is the radical resulting from removing mercaptan hydrogen from an azole selected from the group consisting of 4-(lower alkyl)-2-mercaptothiazole, 4,5-di(lower alkyl)-2-mercaptothiazole, 4-(lower alkyl)-5-(lower carboalkoxy)-2-mercaptothiazole, 4-(lower carboalkoxy)-2-mercaptothiazole, 2-mercaptobenzothiazole, monochloro-2-mercaptobenzothiazole, mono- and di(lower alkyl)-2-mercaptobenzothiazole, mono(lower alkoxy)-2-mercaptobenzothiazole, mono(lower alkyl)-monochloro-2-mercaptobenzothiazole, di(lower alkyl)-dichloro-2-mercaptobenzothiazole, 2-mercaptobenzoxazole and 2-mercaptobenzimidazole, X is selected from a group consisting of sulfur and methylene and *n* is an integer from zero to one inclusive.

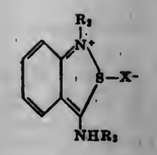
3,187,001
CERTAIN 2,1-BENZISOTHIAZOLE COMPOUNDS

Robert F. Meyer, Ann Arbor, and Betty L. Cummings, Dearborn, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed July 22, 1963, Ser. No. 296,498
6 Claims. (Cl. 260—304)

1. A compound selected from the group consisting of a 2,1-benzisothiazole and a 2,1-benzisothiazolinium salt having the respective formulas





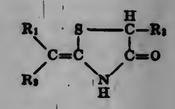
and pharmaceutically acceptable acid addition salts of said 2,1-benzisothiazole; where R is substituted at one of the 5- and 6-positions of the benzo ring and is a member of the group consisting of hydrogen, chlorine, methyl, and methoxy, R_1 is a member of the group consisting of —NH(lower alkyl), N-pyrrolidinyl, and —N(lower alkyl)$_2$, R_2 is a lower alkyl group, R_3 is a member of the group consisting of hydrogen and methyl, and X^- is a pharmaceutically acceptable anion.

3,187,002
SUBSTITUTED 4-THIAZOLIDINONES AND PROCESS THEREFOR

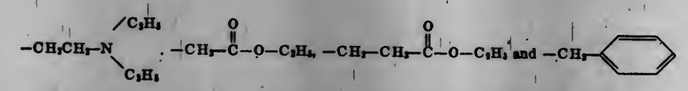
Gerhard Satzinger, Memmingen, Allgau, Germany, assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Mar. 6, 1961, Ser. No. 93,301
13 Claims. (Cl. 260—306.7)

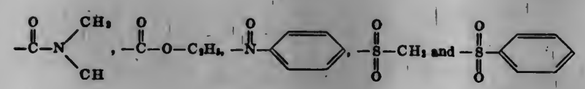
1. A compound of the formula:



wherein R_1 is a member selected from the group consisting of hydrogen, lower alkyl, phenyl,



R_2 is a member selected from the group consisting of cyano,



and R_3 is a member selected from the group consisting of hydrogen and lower alkyl.

2. 2-cyanomethylene-5-methyl-4-thiazolidinone.

3,187,003
ZWITTERIONS OF 1-(2-AMINOETHYL-IMIDAZOLINES)

Joseph J. McBride, Jr., La Grange, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 19, 1961, Ser. No. 117,802
5 Claims. (Cl. 260—309.6)

1. A process for preparing zwitterions of 1-(2-aminoethyl)-2-heptadecenyl imidazoline, comprising mixing 1-(2-aminoethyl)-2-heptadecenyl imidazoline with a 2% excess of an alpha-B-unsaturated carboxylic acid selected from the group consisting of crotonic, acrylic, and methacrylic acid, and heating the mixture to reaction temperature until the reaction is substantially complete.

4. The inner zwitterion of N-[2-(2-heptadecenyl-2-imidazolin-1-yl)ethyl]-B-aminopropionic acid.

3,187,004
HALOGENATED ALKYL AND ARYL SUBSTITUTED GLYCOLURILS

Frank B. Slezak, Painesville, and Henry Bluestone, University Heights, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed May 1, 1961, Ser. No. 106,505
2 Claims. (Cl. 260—309.7)

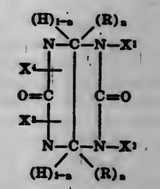
1. 1-benzyl-3,4,6-trichloroglycoluril.
2. 3,4,6-trichloro-1-phenylglycoluril.

3,187,005
CARBOXY AND CARBOXYMETHYL GLYCOLURILS AND PROCESS

Frank B. Slezak, Painesville, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed July 7, 1961, Ser. No. 122,391
10 Claims. (Cl. 260—309.7)

1. A polysubstituted glycoluril of the structure:



wherein R is selected from the group consisting of $COOC_2H_5$ and COONa; X^1 is selected from the group consisting of chlorine, CH_2COOH, $CH_2COOC_2H_5$ and CH_2COONa; X^2 is selected from the group consisting of H and chlorine; X^3 and X^4 are selected from the group consisting of H, chlorine and CH_2COOH; and *n* is a number from 0 to 1, inclusive, with *n* being 1 when X^1 is chlorine and being 0 when X^1 is other than chlorine.

8. The method of preparing carboxymethyl substituted glycolurils which comprises reacting a material selected from the group consisting of glyoxal and glyoxalmonoureide with a material selected from the group consisting of hydantoic acid and ethyl hydantoate in an aqueous acid solution.

3,187,006
N-SUBSTITUTED PYRAZOLES AND METHOD OF PREPARING SAME

Jean Druey, Riehen, and Paul Schmidt, Therwil, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed May 26, 1959, Ser. No. 815,824
Claims priority, application Switzerland, Feb. 10, 1956, 29,762; Apr. 17, 1956, 31,859; July 16, 1956, 35,496; Sept. 28, 1956, 37,936; Jan. 2, 1957, 41,224; Mar. 28, 1958, 57,621; Nov. 26, 1958, 53,081; May 30, 1958, 60,080; June 13, 1958, 60,541; Jan. 12, 1959, 68,600; Apr. 3, 1959, 71,540; Apr. 9, 1959, 71,799
13 Claims. (Cl. 260—310)

1. A member selected from the group consisting of 1-R-3-amino-4-R'-pyrazole, wherein R represents a member selected from the group consisting of lower alkyl, cycloalkyl, lower mono-hydroxyalkyl, lower alkoxy-lower alkyl, phenyl, halophenyl, lower alkylphenyl, nitrophenyl and pyridyl, said cycloalkyl having from 5 to 6 carbon atoms and R' stands for a member selected from the group consisting of carboxy, carbamyl, thiocarbamyl

amidino, carbo-lower alkoxy and cyano and acid addition salts, alkali- and alkaline earth metal salts thereof.

6. 1-lower alkyl-5-amino-4-cyano-pyrazole.

10. 1-phenyl-5-amino-4-carbo-lower alkoxy-pyrazole.

13. Process for the manufacture of 1-substituted pyrazoles and their derivatives, wherein a member selected from the group consisting of α-Z-α-(lower alkoxy-methylene)-acetonitrile in which Z represents a member selected from the group consisting of carbo-lower alkoxy, carbamyl and cyano, is condensed with N-(mono-R)-hydrazine which bears at the N'-nitrogen atom a member selected from the group consisting of lower alkane carboxylic acid acyl, benzylidene and alkylidene, and R stands for a member of the group consisting of lower alkyl, mono-oxy lower alkyl, monooxa lower alkyl, cyclohexyl, phenyl, halogeno-phenyl, lower alkyl-phenyl, nitrophenyl and pyridyl, and the resulting open-chain products are treated with an acid hydrolyzing agent whereby the N'-substituent of the hydrazino group is split off and the pyrazole ring is closed.

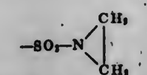
3,187,007

WATER-SOLUBLE PHTHALOCYANINE DYESTUFFS CONTAINING SULFONYLETHYLENEIMIDE GROUPS

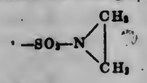
Hans von Tobel, Basel, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Dec. 15, 1958, Ser. No. 780,210
Claims priority, application Switzerland, Dec. 23, 1957, 54,071; Nov. 4, 1958, 65,773
6 Claims. (Cl. 260—314.5)

1. A metal phthalocyanine dyestuff, wherein the metal is selected from the group consisting of copper and cobalt, and which dyestuff contains as sole substituents, per molecule, from one to three $—SO_2H$ groups and from one to two



groups; the total number of $—SO_2H$ and



groups being maximally 4.

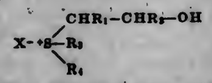
3,187,008

PROCESS FOR PREPARING SULPHATED INNER SULPHONIUM SALTS

William Baird, John Woolley Batty, Alexander Parkinson, and Kenneth Arthur Williams, all of Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 2, 1962, Ser. No. 207,016
Claims priority, application Great Britain, July 27, 1961, 27,249/61; Oct. 2, 1961, 35,496/61
16 Claims. (Cl. 260—327)

1. Process for the preparation of sulphated sulphonium inner salts which comprises reacting in a fluid, easily stirrable mixture, a sulphating agent and a sulphonium salt of the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen and lower alkyl, R_3 and R_4 are selected from the group consisting of alkyl, aryl, benzyl vinyl, methyl vinyl, allyl, cyclohexyl, pyridyl and quinolyl radicals and any of said radicals substituted with a member of the group consisting of hydroxyl, carboxyl, ether, mercapto, thioether, keto, cyano, sulfonic acid and sulfuric ester groups and X^- is the anion of an acid.

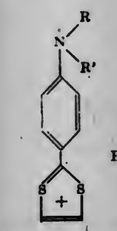
3,187,009

1,3-DITHIOLIUM DERIVATIVES AND INTERMEDIATES THEREFOR

Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,845
8 Claims. (Cl. 260—327)

1. A process for the preparation of a compound of the formula:



wherein R and R' are alkyl radicals of less than eight carbon atoms; by:

(a) hydrolyzing 4,5-dicyano-1,3-dithiole-2-thione with a concentrated strong inorganic acid at room temperature to give the product, 4,5-dicarboxamido-1,3-dithiole-2-thione, then

(b) hydrolyzing the dicarboxamide prepared in step (a) with an aqueous strong acid at reflux temperature to give the compound, 4,5-dicarboxy-1,3-dithiole-2-thione,

(c) refluxing the compound prepared in (b) with a molar excess of a lower alkyl halide, thereby giving the lower alkyl halide salt of 1,3-dithiole-2-thione, and

(d) condensing the salt prepared in (c) with a molar quantity of a N,N-dialkylaniline in which the alkyl radicals have less than eight carbon atoms to yield the corresponding compound of the formula.

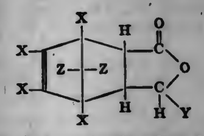
3,187,010

POLYHALO-4,7-ENDOMETHYLENE-3a,4,7,7a-TETRAHYDROPHTHALIDES

Alfred A. Levin, Skokie, and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,677
9 Claims. (Cl. 260—343.3)

1.



wherein each X is independently selected from the group consisting of bromine and chlorine, each Z is independently selected from the group consisting of chlorine, bromine and hydrogen; and Y is a halogen atom.

3,187,011

PREPARATION OF TOCOPHEROLS

Frank J. Sevigne, Tarrytown, N.Y., assignor, by mesne assignments, to General Mills, Inc., Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Aug. 28, 1961, Ser. No. 134,142
The portion of the term of the patent subsequent to Aug. 29, 1978, has been disclaimed
7 Claims. (Cl. 260—345.5)

1. The process of converting a tocopherol compound, in a source material extracted from a natural source, to alpha tocopherol form, comprising, oxidizing said material containing said tocopherol compound whereby the

chroman ring opens forming a tocopheryl para quinone, reducing said product to hydroquinone form, chloromethylating said parahydroquinone, whereby any hydrogen atoms present on the phenyl ring are replaced with chloromethyl radicals, reducing said compound whereby the chloromethyl radicals are converted to methyl radicals, and closing the ring of said compound whereby alpha tocopherol is produced.

3,187,012

PROCESS FOR PREPARING 2-HYDROXYMETHYL-TETRAHYDROPYRAN

Andrew P. Dunlop, Riverside, and Donald G. Manly, Barrington, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed May 15, 1961, Ser. No. 109,834
8 Claims. (Cl. 260—345.9)

1. A process for producing 2-hydroxymethyltetrahydropyran which comprises contacting a feed compound selected from the group consisting of acrolein dimer and 2-hydroxymethyldihydropyran, in the vapor phase with hydrogen, said contacting being at a temperature between about 25° C. and 170° C. and at a pressure of less than 5 atmospheres, in the presence of a nickel catalyst which has been reduced at a temperature below about 450° C., reoxidized by passing a gas containing free oxygen over the reduced catalyst, and again reduced by passing a gas thereover containing free hydrogen at a temperature below about 250° C.

3,187,013

CATALYTIC CONDENSATION OF DI-HYDROCARBON SUBSTITUTED ALKYNES

Harold H. Zeiss and Minoru Tsutsui, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 17, 1960, Ser. No. 36,703
23 Claims. (Cl. 260—346.1)

3. Di-mesitylcobalt solvated with tetrahydrofuran.

23. The method of preparing (A) di-covalent, di-hydrocarbon substituted cobalt wherein both hydrocarbon substituents are monovalent, (B) bis(arene)π-complexes of cobalt (I), and (C) hexahydrocarbon substituted benzene, which method comprises the steps of contacting a monovalent hydrocarbon Grignard reagent with cobaltous halide in the presence of tetrahydrofuran to yield di-covalent, di-hydrocarbon substituted cobalt solvated with tetrahydrofuran; and contacting di-covalent, di-hydrocarbon cobalt with di-hydrocarbon substituted acetylene to yield bis(hexahydrocarbon substituted arene)π-complexes of cobalt (I) and hexahydrocarbon substituted benzenes.

3,187,014

PREPARATION OF COMPLEX METAL ALKYL-BORON COMPOUNDS

Richard C. Pinkerton, Raleigh, N.C., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 9, 1962, Ser. No. 172,108
9 Claims. (Cl. 260—346.1)

4. The process for producing the tetrahydrofuran etherate of sodium tetraalkylboron which comprises reacting triethylborane with sodium in the presence of tetrahydrofuran, wherein essentially 2 moles of said ether and triethylborane, respectively, per mole of said sodium are employed, at a temperature between about the melting point of sodium and 160° C., and then subjecting the product so produced to sequential ethylation with ethylene and hydrogenation with hydrogen at 150 to 225° C. and 200 to 1000 p.s.i., respectively.

3,187,015

DEHYDRATION OF TRIMELLITIC ACID

Norman Henry Pearce, Hull, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,562
Claims priority, application Great Britain, Nov. 22, 1961, 41,697
2 Claims. (Cl. 260—346.3)

1. The process for the production of trimellitic anhydride which comprises heating trimellitic acid at a temperature in the range of 180° to 200° C. within a liquid medium comprising decahydronaphthalene until substantially no further water is evolved and recovering the trimellitic anhydride from its solution in the decahydronaphthalene.

3,187,016

RECOVERY OF PHTHALIC ANHYDRIDE

David Brown, Millbrook, Greenwich, Conn., Alfred V. Cowan, New York, N.Y., and John H. Lutz, Wyckoff, N.J., assignors to Halcon International, Inc., a corporation of Delaware

Filed Oct. 16, 1961, Ser. No. 145,120
7 Claims. (Cl. 260—346.4)

1. In a process for the production of phthalic anhydride wherein a suitable hydrocarbon is partially oxidized in the vapor phase to form a reactor effluent containing phthalic anhydride, the improvement of passing said reactor effluent into a quenching zone; contacting said effluent with methylnaphthalene thereby cooling said effluent and forming a slurry containing solid phthalic anhydride; separating the crude phthalic anhydride from said slurry; and distilling the crude phthalic anhydride and separating pure phthalic anhydride as a distillate.

3,187,017

TETRAHYDROFURANS AND A METHOD FOR THEIR PREPARATION

Erwin Steininger, Frankfurt am Main-Sossenheim, Hesse, Germany, assignor, by mesne assignments, to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed Dec. 14, 1962, Ser. No. 244,578
11 Claims. (Cl. 260—347.8)

1. 3-hydroxy-3-halomethyl-tetrahydrofuran.

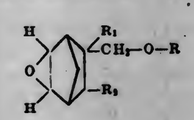
3,187,018

3-OXATRICYCLO[3.2.1.0^{2,4}]OCTANE - 6 - METHANOLS, ETHERS AND ESTERS AND INTERMEDIATE PRODUCTS

Samuel W. Tinsley, South Charleston, and Paul S. Starcher, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 16, 1959, Ser. No. 806,766
12 Claims. (Cl. 260—348)

1. A compound of the formula:



wherein R_1 and R_2 are selected from the group consisting of hydrogen and alkyl up to 18 carbon atoms; and R contains up to 18 carbon atoms and is selected from the group consisting of alkyl, alkenyl, alkoxyalkyl, carbocyclic aryl, epoxyalkyl, epoxycycloalkyl, epoxycycloalkylalkyl, epoxybicycloalkyl, epoxybicycloalkylalkyl, epoxycycloalkylcarbonyl and epoxybicycloalkylcarbonyl.

3,187,019

BROMINATED OILS

James Frederick Jeffries, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,889
6 Claims. (Cl. 260—348)

1. The process of producing a stable oil essentially comprising the steps of

adding at least 0.3% by weight of an organic per-acid to a brominated vegetable oil in which 87–97% of the initially present double bonds are saturated with bromine,

mixing said components at a temperature between 0° and 40° C. for a period of at least one hour,

neutralizing said mixture, and

removing the immiscible by-products from said mixture.

3,187,020

PROCESS FOR PREPARING DIAZIDES

Francesco Minisci, Milan, and Remo Galli, Torricella del Pizzo, Cremona, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,056
Claims priority, application Italy, Mar. 13, 1962, 5,043/62
16 Claims. (Cl. 260—349)

1. A process for preparing a hydrocarbon diazide, which comprises reacting an olefinic hydrocarbon selected from the group consisting of monoolefinic hydrocarbons of from two to ten carbon atoms and conjugated diolefinic hydrocarbons of from four to ten carbon atoms with an azide of an alkali metal in the presence of a ferrous salt and a peroxide selected from the group consisting of hydrogen peroxide and hydroperoxide.

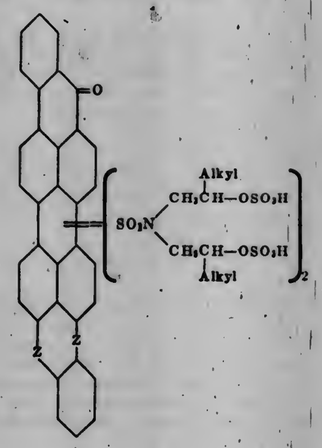
3,187,021

DIBENZANTHRONE AND ISODIBENZANTHRONE HAVING SULFATOXYALKYL SULFONAMIDE GROUPS

Kurt Weber, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Oct. 10, 1961, Ser. No. 144,051
Claims priority, application Switzerland, Oct. 14, 1960, 11,525/60
2 Claims. (Cl. 260—354)

1. A vat dyestuff of the formula



in which one Z represents a direct bond and the other Z a carbonyl group and "Alkyl" stands for a lower alkyl group.

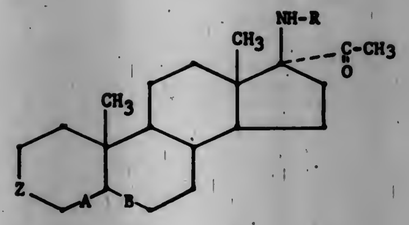
3,187,022

17β-AMINO-17α-PREGNEN-20-ONE COMPOUNDS AND THE PRODUCTION THEREOF

Duane F. Morrow, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,755
8 Claims. (Cl. 260—397.3)

1. A member of the class consisting of 17β-amino-17α-pregnen-20-one compounds having the formula



and pharmaceutically-acceptable acid-addition salts thereof; where R is a member of the class consisting of hydrogen and lower alkyl; Z is a member of the class consisting of carbonyl and β-hydroxymethylene groups; A and B are members of the class consisting of double bonds and single bonds: and Z, A, and B are selected to constitute one of the combinations

Z=carbonyl
A=double bond
B=single bond,

Z=β-hydroxymethylene
A=single bond
B=double bond.

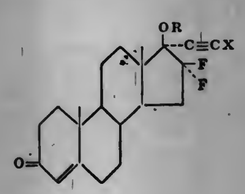
3,187,023

16,16-DIFLUORO-17α-HALOGENOETHINYL ANDROSTANES

Cecil H. Robinson, Cedar Grove, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 228,741, Oct. 5, 1962. This application Oct. 18, 1962, Ser. No. 231,552
8 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of 17α-halogenoethinyltestosterones of the following formula:



wherein R is a member of the group consisting of hydrogen and an acyl radical of a hydrocarbon carboxylic acid having up to 8 carbon atoms; and X is a member

of the group consisting of a halogen having an atomic weight greater than 19 and less than 100.

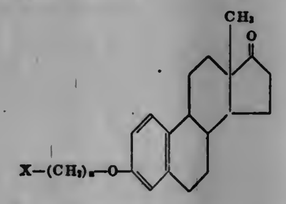
3,187,024

3-(ω-HALOALKOXY)-ESTRA-1,3,5(10)-TRIEN-17-ONE COMPOUNDS

David Darwin Evans, Staines, Middlesex, David Eurof Evans, Surrey, and Peter John Palmer, Twickenham, Middlesex, England, assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Jan. 15, 1964, Ser. No. 337,740
Claims priority, application Great Britain, Jan. 17, 1963, 2,199/63
3 Claims. (Cl. 260—397.4)

1. 3-(ω-haloalkoxy)-estra-1,3,5(10)-trien-17-one compounds, having the formula



where *n* is a positive integer greater than 1 and less than 11, and X is a member of the class consisting of chlorine and bromine atoms.

3,187,025

PROCESS FOR PREPARING COMPOUND S

Percy L. Julian, Oak Park, Arthur Magnani, Wilmette, and Joe M. Hill, Chicago, Ill., and Thomas C. Aschner, King of Prussia, Pa., assignors, by mesne assignments, to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 11, 1963, Ser. No. 286,959
18 Claims. (Cl. 260—397.47)

1. The method of preparing 4-pregnen-17α,21-diol-3,20-dione 21-acetate (Compound S acetate) comprising reacting 5-pregnen-3β,17α-diol-20-one with about 2 moles of bromine in an inert organic solvent in which the reactants are soluble to form a solution of 5,6,21-tribromopregnan-3β,17α-diol-20-ones, reacting said solution with an alkali metal bicarbonate to separate 5α,6β,21-tribromopregnan-3β,17α-diol-20-one from the reaction solution, treating said separated tribromopregnandiolone in the presence of an alkali metal acetate with from about 2–3 moles of an alkali metal iodide to form the $\Delta^{5,6}$-21-halopregnen-3β,17α-diol-20-one, heating said reaction mixture to complete 21-acetoxylation and to form 5-pregnen-3β,17α,21-triol-20-one 21-acetate, reacting said pregnentriolone acetate with about one mole of bromine to give the 5,6-dibromide, oxidation of said dibromide with Jones reagent at temperatures below room temperature to give 5,6-dibromopregnan-17α,21-diol-3,20-dione 21-acetate, zinc debromination of said dibromopregnandioldione to 5-pregnen-17α,21-diol-3,20-dione 21-acetate, and isomerization under acid conditions to complete the formation of 4-pregnen-17α,21-diol-3,20-dione 21-acetate.

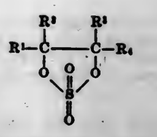
3,187,026

PREPARATION OF ACYLAMIDO-SUBSTITUTED ESTERS OF SULFURIC ACID

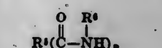
Donald L. Klass, Barrington, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Dec. 7, 1961, Ser. No. 157,859
11 Claims. (Cl. 260—401)

1. A method of preparing carboxamido-substituted sulfate esters comprising reacting an alkylene sulfate of the formula



in which R^1, R^2, R^3 and R^4 are from the group consisting of hydrogen, alkyl radicals, aryl radicals and members of bridging carbocyclic radicals, with a carboxamide of the formula



in which R_5 is a hydrocarbon radical, R_6 is from the group consisting of H and hydrocarbon radicals and *n* is an integer from the group consisting of 1 and 2, at a temperature in the range of from about room temperature to the reflux temperature of the reaction mixture.

3,187,027

METHOD OF PRODUCING VITAMIN A ACID ESTERS

Shigeya Saijo, Nishinomiya-shi, and Kiyoshi Ohizumi, Ashiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

Filed Sept. 7, 1961, Ser. No. 136,506
8 Claims. (Cl. 260—410.9)

1. A method of producing vitamin A acid esters, which comprises reacting vitamin A acid with a di-(lower alkyl) sulfate and an alkaline compound selected from the group consisting of hydroxides, carbonates, and bicarbonates of alkali metals and alkali-earth metals, in a heterogeneous sytem including a hydrocarbon solvent, and recovering the resulting lower alkyl ester of vitamin A acid from the hydrocarbon solvent.

3,187,028

PROCESS FOR PURIFYING TETRAMETHYL LEAD

Herman E. Collier, Jr., Newark, Del., and George S. Hammond, Pasadena, Calif., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,859
7 Claims. (Cl. 260—437)

1. The process for purifying a composition which consists essentially of

(I) about 95% to about 35% by weight of tetramethyl lead containing a soluble bismuth impurity in an amount such that it normally tends to form haze and insoluble sludge during storage, and

(II) about 5% to about 65% by weight of a normally liquid stabilizer solvent for the tetramethyl lead which boils in the range of about 70° C. to about 250° C.,

which process comprises

(A) intimately contacting said composition in the liquid phase

(B) at a temperature of from about 0° C. to about 80° C.,

(C) with a peroxy acid reagent which consists essentially of about 10% to about 45% by weight of an alkane peroxycarboxylic acid of 1–6 carbon atoms, about 80% to about 30% by weight of an alkane carboxylic acid of the same number of carbon atoms as the peroxycarboxylic acid, 0% to about 15% by weight of hydrogen peroxide, and about 5% to about 30% by weight of water, said reagent being employed in an amount to provide from about 0.05% to about 2% by weight, based on the tetramethyl lead, of the alkane peroxycarboxylic acid, and

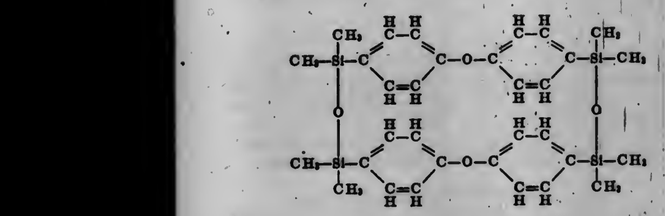
(D) then separating the bismuth reaction product and the residual acid from the reaction mixture.

3,187,029
4,4'-BIS-(DIMETHYLSILYL)PHENYL ETHER CYCLODISILOXANE

George M. Omietanski, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 29, 1961, Ser. No. 141,624
1 Claim. (Cl. 260—448.2)

4,4'-bis(dimethylsilyl)phenyl ether cyclodisiloxane having the formula:

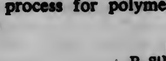


3,187,030
POLYMERIZATION OF SILAZANES BY SELECTED CATALYSTS

William M. Boyer, Tinley Park, Ill., and Charles T. Gannon, Indianapolis, Ind., assignors, by mesne assignments, to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 1, 1960, Ser. No. 72,869
18 Claims. (Cl. 260—448.2)

1. A process for polymerizing silazanes of the unit formula



where R is of the group consisting of hydrogen and monovalent hydrocarbon radicals, n has a value of 0 to 2, and in which the valences of the N atom not attached to silicon are attached to substituents of the group consisting of hydrogen atoms and monovalent hydrocarbon radicals, which process comprises subjecting said silazanes under anhydrous conditions to the action of an inorganic acid salt of a metal selected from the class consisting of copper, silver, gold, zinc, cadmium, mercury, iron, cobalt, and nickel.

3,187,031
PHENYL-SUBSTITUTED SILALKYLENE COMPOUNDS

Donald R. Weyenberg, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed July 3, 1961, Ser. No. 121,309
18 Claims. (Cl. 260—448.2)

1. A copolymeric compound free of Si-Si bonding consisting essentially of organosilicon units (1) selected from the group consisting of units of the formulae $—SiR_m$ and $SiR_m[OSiR_2]_n—$ in which each R is selected from the group consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation and functional substituents selected from the group consisting of the hydrogen atom and —OR' radicals in which R' is a monovalent hydrocarbon radical free of aliphatic unsaturation, each m is a positive integer from 2 to 3 inclusive and each n is a positive integer, and units (2) of the formula

$$—C(C_6H_5)_a(CH_3)_bH_{2-a-b}—C(CH_3)_cH_{2-c}—$$

in which a is a positive integer from 1 to 2, b and c each ranges in value from 0 to 1 and $a+b+c$ is no greater than 2.

3,187,032
PREPARATION OF NOVEL SILALKYLENE COMPOSITIONS

Donald R. Weyenberg, Midland, Mich., assignor to The Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed July 3, 1961, Ser. No. 121,310
15 Claims. (Cl. 260—448.2)

1. The method which comprises reacting in a solvent solution in contact with an alkali metal an organosilicon compound (1) selected from the group consisting of halogenosilanes of the formula R_mSiX_{4-m} and halogenosiloxanes of the formula $R_mX_{3-m}Si[OSiR_2]_nX$ in which each R is selected from the group consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation and functional substituents selected from the group consisting of the hydrogen atom and —OR' radicals in which R' is a monovalent hydrocarbon radical free of aliphatic unsaturation, each X is a halogen atom, each m is a positive integer from 2 to 3 inclusive and each n is a positive integer, and a compound (2) selected from the group consisting of (a) compounds of the formula $R''_2C=CHR''$ in which at least one R'' substituent is the phenyl radical and any remaining R'' substituent is selected from the group consisting of the hydrogen atom and the methyl radical, there being no more than a total of two phenyl and methyl radicals, and (b) compounds of the formula $R'''CH=CH_2$ in which each R''' is a substituent selected from the group consisting of the vinyl radical and the alpha-methylvinyl radical, whereby the silicon atoms of (1) are attached to aliphatic carbon atoms of (2) with the elimination of X atoms from (1).

2. A copolymeric compound free of Si-Si bonding consisting essentially of organosilicon units (1) selected from the group consisting of units of the formulae $—SiR_m$ and $SiR_m[OSiR_2]_n—$ in which at least one R per unit is a functional substituent selected from the group consisting of the hydrogen atom and —OR' radicals in which R' is a monovalent hydrocarbon radical free of aliphatic unsaturation, any remaining R radicals being monovalent hydrocarbon radicals free of aliphatic unsaturation, each m is a positive integer from 2 to 3 inclusive and each n is a positive integer, and units (2) of the formula selected from the group consisting of $—CH_2—CH=CH—CH_2—$ and $—CH_2—C(CH_3)=CH—CH_2—$.

3,187,033
SULFONATED ORGANOSILICON COMPOUNDS

Siegfried Nitzsche and Ewald Pirson, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Bavaria, Germany

No Drawing. Filed Sept. 20, 1961, Ser. No. 139,353
Claims priority, application Germany, Sept. 30, 1960, W 28,656
7 Claims. (Cl. 260—448.2)

1. Sulfonated organosilicon compounds selected from the group consisting of silanes of the formulae

$$(MSO_3CH_2CH(CH_3)CH_2)_nR_mSiX_{4-n-m}$$
$$(MSO_3CH_2CH_2)_nR_mSiX_{4-n-m}$$

and

$$(MSO_3CH_2CH_2CH_2)_nR_mSiX_{4-n-m}$$

and siloxanes of the average unit formulae

$$(MSO_3CH_2CH(CH_3)CH_2)_xR_yX_zSiO_{\frac{4-x-y-z}{2}}$$

$$(MSO_3CH_2CH_2)_xR_yX_zSiO_{\frac{4-x-y-z}{2}}$$

and

$$(MSO_3CH_2CH_2CH_2)_xR_yY_zSiO_{\frac{4-x-y-z}{2}}$$

wherein each R is a monovalent radical selected from the group consisting of hydrocarbon and halogenohydrocarbon radicals, each X is a hydrocarbonoxy radical, n has a value from 1–2 inclusive, m has a value from 1–2 inclusive, $n+m$ does not exceed 3, x has an average value from .001 to 1 inclusive, y has an average value from 0 to 2.999 inclusive, z has an average value from 0 to 2.999 inclusive, $x+y+z$ does not exceed 3.0 and each M is an alkali metal atom.

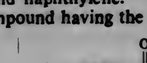
3,187,034
CONDENSATION PRODUCTS CONTAINING PHOSPHONIC ACID DIESTER GROUPS

Hans Holtschmidt, Cologne-Stammheim, Eberhart Degener, Leverkusen, and Günther Braun, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 20, 1961, Ser. No. 153,676
Claims priority, application Germany, Nov. 26, 1960, F 32,636
14 Claims. (Cl. 260—453)

1. A process for making condensation products containing phosphonic acid diester groups which comprises reacting a trialiphatic phosphite where the aliphatic radical is selected from the group consisting of hydrocarbon and halohydrocarbon with an active hydrogen containing compound selected from the group consisting of water, an alcohol, a phenol, a primary amine, a secondary amine, a carboxylic acid and a mercaptan, and an alpha-halo-alkyl-aryl isocyanate wherein aryl is selected from the group consisting of phenylene, chlorophenylene, alkyl phenylene and naphthylene.

10. A compound having the formula



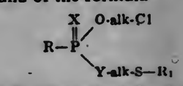
wherein R is an alkyl radical and X is a radical obtained by removing the halogen atom from an alpha-halo-alkyl aryl isocyanate wherein aryl is selected from the group consisting of phenylene, chlorophenylene, alkyl phenylene and naphthylene.

3,187,035
O-CHLOROALKYL O - ALKYLMERCAPTOALKYL AND O-CHLOROALKYL S-ALKYLMERCAPTOALKYL ESTERS OF ALKYL PHOSPHONIC ACIDS

Gerhard Schrader, Wuppertal-Kronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 30, 1962, Ser. No. 169,932
Claims priority, application Germany, Feb. 20, 1961, F 33,242
8 Claims. (Cl. 260—461)

1. A compound of the formula



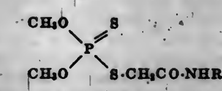
wherein R and R_1 each stand for lower alkyl having up to 4 carbon atoms; alk stands for lower alkylene having up to 4 carbon atoms; and X and Y each stand for a member selected from the group consisting of oxygen and sulfur, with the proviso that when Y stands for oxygen, X stands for oxygen.

3,187,036
PROCESS FOR THE PRODUCTION OF O,O-DIMETHYL DITHIOPHOSPHORYL ACETIC ACID ALKYL AMIDES

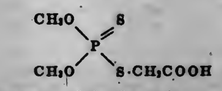
Kosuke Yoshioka, Hirakata-shi, and Sadao Horie, Fuse-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,265
Claims priority, application Japan, Oct. 25, 1961, 36/38,811
2 Claims. (Cl. 260—461)

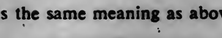
1. A process for the production of O,O-dimethyl-dithiophosphoryl acetic acid monoalkylamide of the formula



wherein R is lower alkyl, which process comprises reacting O,O-dimethyl-dithiophosphoryl acetic acid of the formula



with alkyl isocyanate of the formula



wherein R has the same meaning as above.

3,187,037
PROCESS FOR THE MANUFACTURE OF P-HYDROXYBENZOIC ACID

Johann Giesen, Haldenstein, Graubunden, and Clau Berther, Chur, Switzerland, assignors to Inventa A.G. fuer Forschung und Patentverwertung, Zurich, Switzerland

Filed Oct. 31, 1961, Ser. No. 149,064
Claims priority, application Switzerland, Oct. 31, 1960, 12,133/60
1 Claim. (Cl. 260—521)

A process for the manufacture of p-hydroxybenzoic acid, which comprises introducing completely dry potassium phenolate into an autoclave at a temperature of substantially 120° C., rinsing said autoclave with nitrogen gas under mechanical agitation, placing the contents of the autoclave under pressure of 3 atmospheres, pressing in carbon dioxide until the pressure is increased to 6 atmospheres, withdrawing and cooling the mixture of gases introduced, while keeping said autoclave at a temperature of substantially 200–210° C., phenol formed in the reaction being withdrawn together with said gases, restoring the pressure in the autoclave to 6 atmospheres by pressing in new carbon dioxide, and keeping the temperature in said autoclave constant by regulating the amount and the temperature of the nitrogen gas reintroduced, releasing the pressure when the reaction between potassium phenolate and carbon dioxide ceases, dissolving the reaction product in water at approximately 110° C. and liberating the p-hydroxybenzoic acid therefrom.

3,187,038
CONTINUOUS OXIDATION PROCESS FOR PRODUCTION OF BENZOIC ACID

John G. Hundley, Munster, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Jan. 9, 1961, Ser. No. 81,559
2 Claims. (Cl. 260—524)

1. A continuous process for the production of benzoic acid from toluene, which comprises in combination the steps of introducing into a liquid phase of benzoic acid having heavy metal oxidation catalyst dissolved therein in an oxidation zone liquid charging stock comprising essentially at least 85 weight percent benzoic acid and a finite amount, up to about 5 weight percent, of toluene, contacting said charging stock in the presence of heavy metal oxidation catalyst dissolved in said charging stock with molecular oxygen introduced into the bottom of said liquid phase in said oxidation zone in an amount sufficient to effect substantially complete oxidation of toluene in said zone, operating said zone under essentially adiabatic conditions at pressures in the range of about 100 to about 500 p.s.i.g. and temperatures in the range of 300° to 450° F., continuously withdrawing from said oxidation zone liquid effluent essentially free of toluene,

separating at the pressure range in said zone said effluent into a liquid recycle stream and a liquid minor stream, said recycle stream being greater in weight than said minor stream, introducing said minor stream into a flashing zone operated at subatmospheric pressure and at 375 to 400° F., contacting within said flashing zone said minor stream in indirect heat exchange relationship with said recycle stream simultaneously thereby effecting partial cooling thereof and vaporizing a portion of said minor stream, thereafter further cooling said recycle stream to a temperature in the range of from 300 to 350° F., pumping a portion of the cooled recycle stream into said oxidation zone, removing from said flashing zone a benzoic acid rich portion said minor stream also having materials more volatile than benzoic acid and leaving a liquid bottoms stream and heavy metal oxidation catalyst dissolved therein together with materials less volatile than benzoic acid, pumping said liquid bottoms stream into said oxidation zone, charging said benzoic acid rich portion removed as vapors from said flashing zone to a distillation zone operated at 1.5 to 5.0 p.s.i.a. and a bottoms temperature of 350 to 400° F. to provide as an overhead fraction the materials more volatile than benzoic acid and liquid product benzoic acid as a distillation bottoms fraction, and continuously recovering the liquid product benzoic acid distillation bottoms fraction.

3,187,039
METHOD FOR CHANGING THE CRYSTAL HABIT OF MONOSODIUM GLUTAMATE

John A. Frump and Archie P. Miller, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,859
11 Claims. (Cl. 260—534)

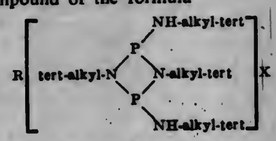
1. In a method for the production of monosodium glutamate crystals from a solution of said salt by causing said solution to be supersaturated with respect to monosodium glutamate to crystallize the monosodium glutamate, the improvement which comprises crystallizing monosodium glutamate in the presence of a calcium compound capable of yielding a sufficient amount of calcium ion in the solution to change the crystal habit of the monosodium glutamate crystals.

3,187,040
DIAZADIPHOSPHETIDINIUM SALTS

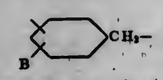
Harold F. Wilson, Moorestown, N.J., and Charles E. Glassick, Adrian, Mich., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,069
7 Claims. (Cl. 260—551)

1. A compound of the formula



wherein tert-alkyl is a tertiary alkyl group containing 4 to 11 carbon atoms; R is a member of the group consisting of lower alkyl groups of 1 to 4 carbon atoms, lower alkoxymethyl groups of the formula R^*OCH_2- wherein R^* is a lower alkyl group of 2 to 4 carbon atoms, and benzyl groups of the formula



wherein A and B are selected from the class consisting of hydrogen and alkyl groups of 1 to 12 carbon atoms, the sum of carbon atoms being 1 to 13 when A and B are both alkyl; and X is a member of the class of anions consisting of bromide, chloride, and iodide.

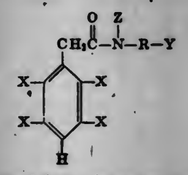
2. Methyl-1,2,3,4-tetrakis - tert - butyl-1,3,2,4-diazadiphosphetidinium iodide.

3,187,041
N-ALKOXY PHENYLACETAMIDES

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,404
17 Claims. (Cl. 260—558)

1.



wherein X is selected from the group consisting of lower alkyl, hydrogen, halogen, lower alkoxy and nitro provided that a maximum of 2 of the X are hydrogen, a maximum of 1 of the X is lower alkoxy and a maximum of 1 of the X is nitro,

R is selected from the group consisting of sulfur and oxygen,

Y is alkyl of 1 to 4 carbon atoms,

Z is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms.

3,187,042
N-ALKOXY BENZAMIDES

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,405
17 Claims. (Cl. 277—11)

1.



wherein X is selected from the group consisting of lower alkyl, hydrogen, halogen, lower alkoxy and nitro provided that a maximum of 2 of the X are hydrogen, a maximum of 1 of the X is lower alkoxy and a maximum of 1 of the X is nitro,

R is selected from the group consisting of sulfur and oxygen,

Y is alkyl of 1 to 4 carbon atoms,

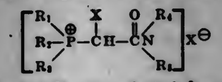
Z is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms.

3,187,043
MONOHALOPHOSPHONIUM HALIDES

Angelo John Speziale, Creve Coeur, and Kenneth Wayne Ratts, Overland, Mo., assignors to Monsanto Company, a corporation of Delaware

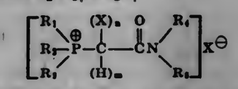
No Drawing. Filed May 18, 1962, Ser. No. 195,957
16 Claims. (Cl. 260—558)

1. A chemical compound of the structure:

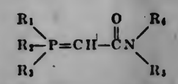


wherein R_1, R_2 and R_3 are selected from the class consisting of phenyl, cyclohexyl, alkyl having up to six carbon atoms, alkenyl having up to six carbon atoms and alkynyl having up to six carbon atoms; wherein R_4 and R_5 are selected from the class consisting of hydrogen, cyclohexyl, phenyl, alkyl having up to six carbon atoms, alkenyl having up to six carbon atoms and alknyl having up to six carbon atoms; and wherein X is selected from the class consisting of chlorine, bromine and iodine.

9. A method of preparing



wherein R_1, R_2 and R_3 are hydrocarbon of the group consisting of cyclohexyl, phenyl and aliphatic hydrocarbon having up to 6 carbon atoms; wherein R_4 and R_5 are radicals selected from the group consisting of hydrogen, cyclohexyl, phenyl and aliphatic hydrocarbon having up to six carbon atoms; wherein n is an integer from one to two, m is an integer from zero to one provided that the sum of m and n is two; and wherein X is selected from the group consisting of chlorine, bromine and iodine; which comprises contacting in an organic liquid solution



with an elemental halogen of the group consisting of chlorine, bromine and iodine, in the amount required to produce a compound with $n+1$ halogen substituents.

3,187,044
BROMIC ACID PROCESS FOR THE PREPARATION OF CERTAIN ALIPHATIC N-BROMO COMPOUNDS

Dale N. Robertson, Boulder, Colo., assignor to Arapahoe Chemicals, Inc., a corporation of Colorado

No Drawing. Filed May 21, 1962, Ser. No. 196,427
5 Claims. (Cl. 260—561)

1. An improved method for producing an N-bromoacylamide selected from the group consisting of N-bromoacetamide and N-bromoformamide which comprises mixing together and reacting (a) the corresponding acylamide selected from the group consisting of acetamide and formamide, (b) subsequentially pure aqueous bromic acid and (c) bromine, wherein said bromic acid has an acid strength of at least 0.8 molar and is substantially free of metallic cations and anions other than those inherent in aqueous bromic acid, and wherein the pH of the reaction mixture is maintained below about pH 2.

3,187,045
PREPARATION OF TRANS 1,2-DIAMINOCYCLOHEXANE

Andrew I. Smith, Raleigh, N.C., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,951
5 Claims. (Cl. 260—563)

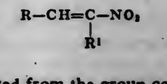
1. A process for preparing substantially pure trans 1,2-diaminocyclohexane from a mixture comprising trans 1,2-diaminocyclohexane and cis 1,2-diaminocyclohexane comprising adding an aqueous solution of sulfuric acid to an aqueous solution of said mixture until a pH no greater than 3.0 is obtained, then cooling the reaction mixture to a temperature no higher than 30° C. prior to separating the precipitated sulfate salt of trans 1,2-diaminocyclohexane which is formed, and thereafter treating an aqueous solution of said salt with an aqueous alkali metal hydroxide solution while maintaining the reaction mixture at a temperature no higher than 30° C. to liberate substantially pure trans 1,2-diaminocyclohexane.

3,187,046
REDUCTION OF NITROOLEFINS TO AMINES

Harris L. Curtis, Needham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,158
8 Claims. (Cl. 260—570.8)

1. The process of preparing amines from nitroolefins which comprises catalytically reducing a nitroolefin of the formula:



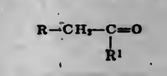
wherein R is selected from the group consisting of phenyl, alkyl-phenyl, alkoxy-phenyl, halo-phenyl and alkyl radicals and R^1 is a lower alkyl radical, with molecular hydrogen in the presence of an aliphatic carboxylic acid to form a reaction mixture comprising the ammonium salt of said acid and the corresponding ketone and the corresponding amine of said nitroolefin, said reducing step being exothermic; and continuing said reducing for a period of at least one hour after the exotherm has substantially subsided and until substantially all of said ketone is converted into said amine.

3,187,047
REDUCTIVE AMINATION OF KETONES

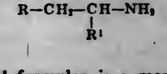
Milton Green, Newton Highlands, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,566
5 Claims. (Cl. 260—570.8)

1. A process for preparing amines by reductive amination of ketones which comprises: (1) forming a mixture comprising a hydrogenation catalyst and a solution containing an ammonium salt of an unsubstituted aliphatic monocarboxylic acid and a ketone of the formula:



and (2) introducing molecular hydrogen into said solution to effect reductive amination of said ketone to form an amine of the formula:



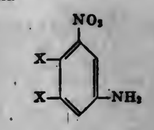
wherein R of said formulae is a member of the group consisting of hydrogen and alkyl, phenyl, alkyl-phenyl and alkoxy-phenyl radicals and R^1 is a lower alkyl radical.

3,187,048
NITRODIAMINOBENZENES AND PROCESS FOR PREPARING THEM

Kurt Burgdorf, Offenbach (Main), Rumpenheim, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

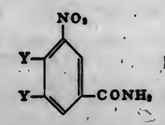
No Drawing. Filed Dec. 6, 1961, Ser. No. 157,586
Claims priority, application Germany, Dec. 7, 1960, F 32,710
4 Claims. (Cl. 260—578)

1. A process for the preparation of nitrodiaminobenzenes of the formula



wherein one X stands for an amino group and the other

X for a hydrogen atom, which comprises reacting a nitrobenzene-dicarboxylic acid diamide of the formula



wherein one Y stands for a carboxylic acid amide group and the other Y for a hydrogen atom, with an alkali metal hypohalite which is present in an amount from stoichiometric to a small excess at a temperature ranging from 0° to 25° C., and heating the corresponding nitrobenzene-dicarboxylic acid-N-halogen amide so obtained at 50–110° C. to convert the same into the corresponding nitrodiaminobenzene by splitting off carbon dioxide and the halogen atom.

3,187,049

PROCESS FOR THE PREPARATION OF AMINOMETHYL-PHENOLS

Milton Green, Newton, and Warren E. Solodar, Waltham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Oct. 17, 1961, Ser. No. 145,764
15 Claims. (Cl. 260—580)

1. The process which comprises reacting a compound selected from the group consisting of 4-nitro-phenol, 2-nitro-phenol, and alkoxy, alkyl and halogen derivatives thereof unsubstituted in a position meta to said nitro substituent, with a dialkylamine and formaldehyde to form the corresponding derivative having a N,N-dialkylaminomethyl substituent meta to said nitro group; and catalytically hydrogenating said derivative in an acid medium whereby to effect debenzylation of said N,N-dialkylaminomethyl substituent, removal of any halogen substituents nuclearly substituted on said phenol, and reduction of said nitro substituent, thereby forming the aminomethyl-phenol analogue of said derivative.

3,187,050

PROCESS FOR CONDITIONING REDUCIBLE CYCLIC ORGANIC COMPOUNDS

Raymond J. Duggan, West Seneca, and Leon O. Winstrom, East Aurora, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 7, 1961, Ser. No. 93,868
13 Claims. (Cl. 260—582)

1. A process for purifying a cyclic organic compound containing iron, sulfur and halogen impurities, which compound is selected from the group consisting of phenol, aniline, nitrobenzene, nitrocyclohexane, quinoline, toluidine and methylene dianiline, which comprises the steps of (1) commingling said cyclic organic compound with a purifying agent selected from the group consisting of ethylenediaminetetraacetic acid and the alkali metal salts thereof in amount of at least 0.001% (calculated as the trisodium salt of ethylenediaminetetraacaetic acid) by weight of the compound being treated, (2) heating the mixture at temperature of at least about 80° C. for a period of at least about one hour and (3) distilling off the purified compound from the mixture.

3,187,051

PROCESS FOR THE PREPARATION OF UNSYMMETRICAL DIALKYL HYDRAZINES

Gene V. Mock, Haddonfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 10, 1956, Ser. No. 564,641
6 Claims. (Cl. 260—583)

1. A process for the production of an unsymmetrical dialkyl hydrazine which comprises hydrogenating dialkyl nitrosamine, wherein the alkyl groups each contain from 1 to 6 carbon atoms, in the presence of a metal catalyst selected from the group consisting of platinum, palladium, and rhodium, on a carbon support, said hydrogenation being effected at a superatmospheric hydrogen pressure and the reaction mixture during said hydrogenation being maintained at a temperature between about 20° C. and about 75° C.

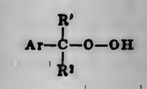
3,187,052

PROCESS FOR PREPARING PHENOLS AND CARBONYL ALKANES

Dorsey C. Nelson, Springfield, and Max B. Mueller, Media, Pa., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 26, 1960, Ser. No. 24,661
5 Claims. (Cl. 260—593)

1. In a process for decomposing an aralkyl alpha-hydroperoxide having the formula



wherein Ar denotes a member selected from the group consisting of aromatic hydrocarbon and chlorinated aromatic hydrocarbon radicals, and R' and R² taken individually are members selected from the group consisting of hydrogen and alkyl groups, and taken jointly with the intermediate carbon atom constitute a cycloalkyl group, to the corresponding phenol and carbonyl alkane, the improvement of minimizing the formation of impurities which exert a poisoning action on hydrogenation catalysts in the subsequent hydrogenation of said phenol by contacting the hydroperoxide in liquid phase with an inorganic heteropoly acid to catalyze the decomposition.

3,187,053

4-NITRO-4-PENTENAL

Karl Klager, Sacramento, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Dec. 21, 1959, Ser. No. 861,138
1 Claim. (Cl. 260—601)

As a composition of matter, 4-nitro-4-pentenal.

3,187,054

PRODUCTION OF ORGANIC COMPOUNDS CONTAINING BORON-CARBON BONDS

George W. Willcockson, Arcadia, and Howard Steinberg, Fullerton, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Apr. 12, 1957, Ser. No. 652,367
8 Claims. (Cl. 260—606.5)

1. The method of producing sodium tetraphenylboron, which method comprises reacting phenylsodium and boron trichloride in an inert hydrocarbon solvent, the molar ratio of phenylsodium to boron trichloride being at least about 4, and isolating sodium tetraphenylboron produced by the reaction.

6. The method of purifying a crude organoboron compound having a boron atom directly bonded to four carbon atoms, said method comprising dissolving the crude product in a mixture consisting essentially of a first solvent selected from the group consisting of acetone, methanol and acetonitrile, and a second solvent selected from the group consisting of toluene, benzene and heptane, said second solvent having an appreciably higher boiling temperature than said first solvent, evaporating said first solvent to precipitate said product, and recovering the precipitate.

3,187,055

MANUFACTURE OF PEROXIDIC COMPOUNDS

Godfrey Paul Armstrong, Kingswood, Reginald Harold Hall, Sutton, Denis Chesselden Quin, Teddington, and Karl Heinrich Walter Turck, Banstead, England, assignors, by mesne assignments, to Hercules Powder Company, a corporation of Delaware

No Drawing. Original application Mar. 19, 1948, Ser. No. 15,954, now Patent No. 2,632,772, dated Mar. 24, 1953. Divided and and this application Nov. 13, 1952, Ser. No. 320,336
Claims priority, application Great Britain, Dec. 9, 1947, 32,397/47
7 Claims. (Cl. 260—610)

1. In a process for oxidizing cumene to cumene hydroperoxide in liquid phase with elemental oxygen as oxidizing agent, the improvement which comprises providing and maintaining solid alkali metal carbonate in contact with said cumene and employing temperatures in the range from about 70° C. to about 150° C.

3,187,056

PROCESS FOR THE PRODUCTION OF OCTAFLUOROCYCLOBUTANE

John Colin Tatlow and Paul Leslie Coe, Birmingham, England, assignors to The National Smelting Company Limited, London, England

No Drawing. Filed Mar. 29, 1962, Ser. No. 183,400
Claims priority, application Great Britain, Apr. 11, 1961, 13,035/61
1 Claim. (Cl. 260—648)

A process for the production of octafluorocyclobutane comprising the steps of: packing a tube with nickel gauze; passing octafluorocyclohexadiene vapour through the packed tube at a temperature within the range 450° C.–700° C. to precondition the gauze and interior surface of the tube; and passing symmetrical dichlorotetrafluoroethane through the tube at a temperature within the range 450° C.–700° C.

3,187,057

TRICHLOROMETHYL POLYMETHYL BENZENES

Hugo H. Peter, The Hague, Netherlands, and Melvern C. Hoff, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed May 19, 1958, Ser. No. 735,961
10 Claims. (Cl. 260—651)

1. A process for producing a trichloromethyl substituted polyalkylenbenzene which comprises reacting a member of the group consisting of trialkylbenzene and tetraalkylbenzene with a molar excess of carbon tetrachloride in the presence of aluminum chloride wherein each alkyl substituent on the benzene nucleus is a member of the group consisting of methyl and ethyl.

7. As a new composition of matter, a ring-substituted trichloromethyl derivative of a polymethylbenzene selected from the group consisting of mesitylene, durene, isodurene, and pentamethylbenzene.

3,187,058

PRODUCTION OF FLUORINATED COMPOUNDS

Colin Russell Patrick, Maurice Stacey, and John Colin Tatlow, all of Edgbaston, Birmingham, England, assignors to National Research Development Corporation, London, England, a British corporation

No Drawing. Filed Oct. 19, 1961, Ser. No. 146,353
Claims priority, application Great Britain, Oct. 26, 1960, 36,735/60
4 Claims. (Cl. 260—651)

1. A process for the production of polyfluorinated aromatic compounds having a perfluorinated ethylene side chain which comprises heating a compound of the formula $Ar—CF_2—CF_3$ wherein Ar represents a polyfluorinated aromatic ring in contact with a metal reactive with fluorine to produce a stable fluoride at a temperature between about 600–650° C. until a substantial quantity of a polyfluorinated aromatic compound having a perfluorinated ethylene side chain is formed.

3,187,059

PYRAZOLIDONE ANTIOXIDANTS FOR CHLOROPRENE

Hubert Charles Bailey, Ealing, London, and George William Godin, Raynes Park, London, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed May 15, 1962, Ser. No. 194,994
Claims priority, application Great Britain, June 28, 1961, 23,323/61
2 Claims. (Cl. 260—652.5)

1. A composition comprising chloroprene and 10 to 2,000 parts by weight of a 1-phenyl-3-pyrazolidone antioxidant per million parts of composition.

3,187,060

PROCESS FOR HYDROFLUORINATION OF ACETYLENIC HYDROCARBONS

Roland Petit, Paris, Claude Kaziz, La Courneuve, and Georges Wetroff, Le Thillay, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,048
Claims priority, application France, Mar. 20, 1962, 891,627
8 Claims. (Cl. 260—653.4)

1. In the process of hydrofluorination of an acetylenic hydrocarbon, the steps of contacting a mixture of hydrofluoric acid and acetylenic hydrocarbon with a catalytic mass at a temperature within the range of 200° C. to 400° C. and wherein the hydrofluoric acid and acetylenic hydrocarbon are present in the ratio calculated on a molar basis of hydrofluoric acid to acetylenic hydrocarbon of at least unity and wherein the catalytic mass consists essentially of a mixture formed of at least 50 percent by volume but not more than 95 percent by volume of a substantially inert, porous, sintered alumina as a diluent free of catalytic effect and having a porous volume of 5 to 50 $cm.^3$/100 grams and a specific surface of 0.01 to 1 $m.^2$/gram and uniformly distributed throughout the catalytic mass, and a catalytic agent.

3,187,061

ORGANOMAGNESIUM COMPLEXES HAVING ENHANCED STORAGE STABILITY

Francis H. Bratton, Northfield, Minn., and Francis J. Buescher, Alfred H. Frye, and Victor G. Soukup, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 13, 1962, Ser. No. 202,052
17 Claims. (Cl. 260—665)

1. A composition of enhanced storage stability consisting essentially of a mixture of an ether-free organomagnesium complex in a quantity of a liquid hydrocarbon medium sufficient to permit the presence of a supernatant liquid phase when the mixture is allowed to settle, the hydrocarbon medium being one which is normally liquid at room temperature and which when slurried with the organomagnesium complex at 25° C. and the slurry then allowed to settle gives a supernatant liquid phase in which the concentration of the organomagnesium complex does not exceed 35 milliequivalents per 100 milliliters of the liquid phase.

3,187,062

CYCLOOLEFIN PRODUCTION

Harold Shechter, Columbus, Ohio, assignor, by mesne assignments, to Columbian Carbon Company, a corporation of Delaware

No Drawing. Filed June 14, 1962, Ser. No. 202,384
17 Claims. (Cl. 260—666)

1. In a process of preparing cycloolefins containing at least two carbon-to-carbon double bonds in the ring and

at least eight carbon atoms in the ring, by oligomerizing a compound selected from the group consisting of substituted and unsubstituted conjugated open-chain diolefins at an elevated temperature and pressure, the improvement comprising the step of conducting said reaction at a temperature between about 40° C. and 250° C. in the presence of a catalyst selected from the group of compounds having the empirical formulas $[(RO)_3Z]_3NiCo$,

$$[R_x(RO)_{3-x}Z]NiCO,\ (R_3Z)_3NiCO$$

and mixtures thereof, wherein R is selected from the radicals of the group consisting of hydrocarbon radicals and substituted hydrocarbon radicals, x is 1 or 2, and wherein Z is selected from the group consisting of phosphorous, arsenic, and antimony.

3,187,063

ALKYLATION OF AROMATICS

Emmett H. Burk, Jr., Hazel Crest, Ill., and Stephen M. Kovach, Highland, Ind., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,633
6 Claims. (Cl. 260—671)

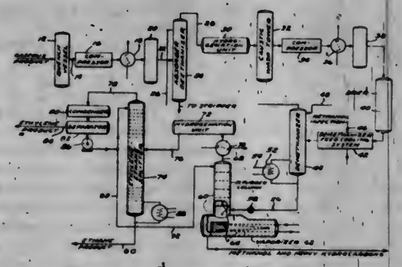
1. A process for the alkylation of aromatics with a methylating agent having the formula CH_3OR where R is selected from the group consisting of hydrogen and methyl, which comprises contacting an alkylatable aromatic with said methylating agent under alkylation conditions including a temperature of about 400 to 1000° F. and in the presence of an alkylation catalyst having hydrogenation-dehydrogenation activity, the improvement comprising conducting said alkylation in the presence of a diluent gas mixture comprising hydrogen and carbon monoxide in a molar ratio of hydrogen to carbon monoxide to said alkylatable aromatic of about 1:1:1 to about 20:20:1.

3,187,064

ETHYLENE RECOVERY SYSTEM

Hsioh W. Wang and Chai Wei Chen, Freeport, N.Y., and William C. Chatman, Matawan, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed May 9, 1962, Ser. No. 193,413
10 Claims. (Cl. 260—677)



1. A process for the recovery of ethylene from a mixture of light gases including methane, hydrogen and acetylene, comprising the steps of compressing and cooling the mixture and subjecting it to demethanization to separate the hydrogen and methane as a gaseous fraction, this step including adding an anti-icing agent to the gas feed to prevent freezing; vaporizing the demethanizer liquid bottoms material; hydrogenating the vaporized bottoms in a hydrogenation facility to convert traces of the acetylene to ethylene; and fractionating the hydrogenated stream in an ethylene-ethane splitter to obtain substantially pure ethylene; the improvement comprising subjecting the vaporized, demethanizer bottoms stream prior to hydrogenation to scrubbing in countercurrent contact with a C_3-rich liquid withdrawn from the ethylene-ethane splitter to condense the anti-icing agent and hydrocarbons heavier than ethane from the stream.

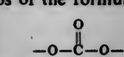
3,187,065

POLYMER COMPRISING ALTERNATING POLYURETHANE AND POLYCARBONATE GROUPS AND PROCESS FOR MAKING THE SAME

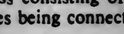
Norman Spencer McPherson, Margaret Loudon Clachan, Keith Reid Tatchell, and Terence Arnold Abbott, all of Manningtree, England, assignors to Bexford Limited, Brantham, Manningtree, Essex, England

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,207
Claims priority, application Great Britain, Sept. 30, 1959, 33,206/59
12 Claims. (Cl. 260—857)

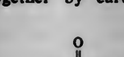
8. A synthetic linear polymeric material which consists of alternating polyurethane sequences A having two free valences and polycarbonate sequences B having two free valences, the free valences of said sequences being satisfied with groups of the formula:



which connects said sequences together, said sequence A consisting of alternating diarylene alkane residues and residues of the class consisting of arylene and diarylene alkane, said residues being connected by urethane groups of the formula:



with the nitrogen of said urethane group being adjacent to the residue of said class, the ratio of diarylene alkane residues to urethane groups being below 2:1 but above 1:1, and said sequence B consisting of diarylene alkane residues linked together by carbonate groups of the formula:

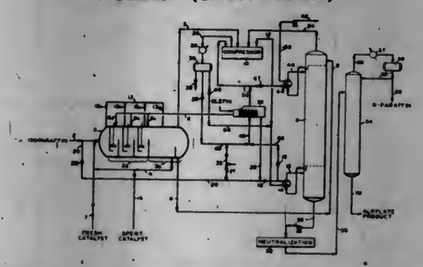


3,187,066

ALKYLATION OF HYDROCARBONS

Marvin F. Nathan, New York, N.Y., assignor to Pullman Incorporated, a corporation of Delaware

Filed June 3, 1959, Ser. No. 817,798
5 Claims. (Cl. 260—683.62)



1. In an alkylation process which comprises contacting isobutane with an olefin in the presence of sulfuric acid in an alkylation contactor to produce a vaporous hydrocarbon effluent containing isobutane and a liquid effluent containing sulfuric acid, alkylate and unreacted isobutane; separating the vaporous effluent from the liquid effluent; separately removing sulfuric acid from the liquid effluent; and subjecting the resulting liquid alkylate mixture to deisobutanization; the improvement which comprises: passing the liquid alkylate mixture to a deisobutanization zone; removing isobutane as a vaporous fraction from said zone; compressing the vaporous fraction and the vaporous effluent to the pressure levels within the range of between about 20 p.s.i.g. and about 125 p.s.i.g. at a condensation temperature of between about 40° F. and about 140° F.; maintaining as two distinct and separate streams the vapors compressed to different pressure levels supplying heat necessary to effect the aforementioned deisobutanization of said liquid alkylate mixture in said zone by passing the vapor compressed to the lower pressure in indirect heat exchange with the deisobutanization zone in a first heat exchanger to reboil said zone, and passing the vapor compressed to the higher pressure in indirect heat exchange with the deisobutanization zone at a point below said first heat exchanger to reboil said zone in a second heat exchanger; condensing the low pressure vapor in said first heat exchange operation; recycling the resulting liquid to the alkylation contactor as part of the isobutane feed thereto; condensing the higher pressure vapor and flashing the resulting condensate in a third heat exchanger to produce a vaporous phase and a liquid phase; recycling the vaporous phase to said compression step; recycling the liquid phase to the alkylation contactor as part of the isobutane feed thereto and recovering a deisobutanized alkylate mixture from the deisobutanization zone.

3,187,067

METHOD OF MAKING POLYSTYRENE-ETHYLENE GRAFT COPOLYMER AND PRODUCT THEREFROM

Nicky Beredjick, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed July 20, 1960, Ser. No. 44,118
7 Claims. (Cl. 260—877)

1. A process for preparing graft copolymer compositions which comprises the steps of reacting a copolymer of styrene and monobromostyrene in an inert hydrocarbon medium with a member selected from the group consisting of alkali and alkaline earth metals and hydrocarbon compounds thereof to form a polymeric organo-metallic compound, contacting said polymeric organo-metallic compound with an alpha-olefin under polymerization reaction conditions in the presence of a co-catalyst comprising a metal salt of a metal selected from the class consisting of Groups 4*a*, 5*a* and 6*a* of the Periodic Table and separating a graft copolymer of said copolymer and said alpha-olefin therefrom.

7. As a new composition of matter, a crystalline graft copolymer of ethylene on a polystyrene backbone wherein said ethylene is grafted onto benzene nuclei of said polystyrene backbone, said crystalline graft copolymer having an intrinsic viscosity (measured in decalin at 130° C.) between about 2 and 12, a Vicat softening point of about 129° C., a density of 0.93 to 0.95 and an IR absorption characterized by maxima at 9.3, 9.7, and 14.3 microns.

3,187,068

METHOD OF MAKING REFLEX REFLECTIVE SHEETING

Eduard R. de Vries, Huntingdon, and William H. Riley, Jr., Altoona, Pa., assignors to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania

Filed Oct. 11, 1961, Ser. No. 144,426
7 Claims. (Cl. 264—1)



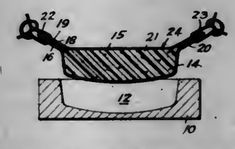
1. A method of making a flat top reflex reflective sheeting which comprises applying a plurality of small transparent glass spheres having an index of refraction of at least 1.90 onto a silicone rubber surface, said spheres having an average diameter in the range of 3–40 mils, the amount of glass spheres applied being in excess of that needed to form a substantially perfect mono-layer of said spheres, removing the excess glass spheres thereby leaving a substantially perfect mono-layer of said spheres adherent to said surface, said spheres being retained thereon by the attraction between said silicone rubber surface and said glass spheres due to their high dielectric constants, applying a transparent solidifiable binder material onto said spheres until said spheres are completely embedded in said binder material with a layer of said binder material uniformly covering the upper surfaces of said spheres as a spacing layer, solidifying said binder material, applying a thin reflective coating onto the upper surface of said solidified spacing layer of binder, and stripping said sheeting from said silicone rubber surface to yield a flat top sheeting wherein said glass spheres are in point contact with said flat top surface of said sheeting.

3,187,069

MAKING FOAMED ARTICLES

Seymour Pincus, Brooklyn, and Edwin G. Krakauer, Roslyn Heights, N.Y., assignors to Kay Manufacturing Corp., Brooklyn, N.Y., a corporation of New York

Filed Sept. 28, 1962, Ser. No. 226,839
10 Claims. (Cl. 264—45)



1. The method of molding, removing and curing articles of foamable plastic ingredients which require externally applied heat for curing and which gel set into fragile and collapsible shaped form before curing comprising

lining the walls of an openable and closeable mold with a relatively strong release liner of plastic sheet having a mold release surface and adapted to have the foam adhere to the opposite surface of the sheet, the mold being of material not required to withstand the external temperature needed to cure the gel set foam, inserting the foamable ingredients within the liner, closing the mold,

maintaining the mold closed until expansion of the ingredients is complete and until the foam has reached the gelation stage but before significant curing of the foam has occurred, opening the mold,

separating the release liner from the walls of the mold to leave the walls clean and bare and ready for immediate re-use,

removing the liner and its fragile gel state contents as a unit from the mold preparatory to curing said contents, and

heat-curing said contents at a temperature deleterious to the mold and at a curing station independent of the location of the mold.

3,187,070

PROCESS FOR PRODUCING SEALING MATERIAL

Ivan L. Marra, Butler, Pa., assignor to Fre-Mar Industries, Butler, Pa., a corporation of Pennsylvania

Filed Feb. 21, 1963, Ser. No. 260,191
7 Claims. (Cl. 264—171)

1. A process for producing puncture repair materials of the cord-type, outside-in construction, comprising: forming a continuous interwoven sleeve with internal

spacings and peripheral openings recurring along the length of the sleeve throughout its length, said sleeve being of substantial tensile strength and flexible composition to be adaptable for bending back and forth upon itself; imposing external pressure upon a curable plastic flowable material while said sleeve is passed through a mass of such plastic flowable material contained within a chamber to translate such plastic material under pressure through the peripheral openings of said sleeve to fill



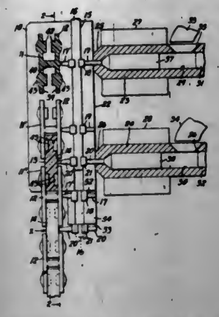
substantially all of the voids internally of the sleeve and thereby form a solid core of tire sealant which is permanently malleable and substantially inert to the surrounding sleeve acting as a flexible, non-flowable phase carrier for the plastically flowable phase core sealant; and drawing the combination of core and sleeve through a sizing orifice which is of greater diameter than said sleeve to produce a continuous lamination of such plastic material over the outer surface of the sleeve throughout the length of the cord material.

3,187,071
CHEMICAL BONDING OF RUBBER LAYERS
Jerzy Radziejowski, Brookline, Mass., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed July 18, 1962, Ser. No. 210,764
5 Claims. (Cl. 264—174)

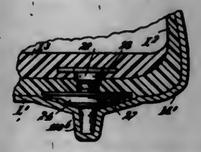
1. The method of fabricating an electrical cable characterized by its void-free structure which comprises extruding a first layer of peroxide curable rubber compound thereon, vulcanizing said first layer, applying a lubricant composition, said composition being a bonding-promoting composition carrying organic peroxide, extruding a second layer of peroxide curable rubber compound over said first layer, and vulcanizing said second layer to provide a bond formation between said layers whereby a cable with a void-free rubber covering is fabricated.

3,187,072
METHOD OF PRODUCING MULTIPLE INTERCAST PLASTIC PRODUCTS
Louis H. Morin, 125 Beechwood Ave., Bronx, N.Y.
Filed June 20, 1962, Ser. No. 203,777
7 Claims. (Cl. 264—242)

1. The method of producing multiple intercast products, which comprises forming a first plastic element at one molding station, simultaneously forming another plastic element at another molding station spaced with respect to said first station, uniting the second named element with two of the first named elements while positioned at said second named casting station in coupling said two elements with said second named element, and forming the second named element of a plastic material having a melting point lower than the melting point in the plastic material of the first named element in providing free relative movement of the two first named elements on the second named element when coupled together.



3,187,073
METHOD OF MAKING A SPIKED, WATERPROOF SHOE
George H. Bingham, Jr., Westminster, Md., assignor to Cambridge Rubber Company, Taneytown, Md., a corporation of Maryland
Filed Apr. 26, 1962, Ser. No. 190,398
2 Claims. (Cl. 264—255)

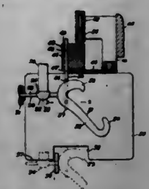


1. That method of making a waterproof shoe having spikes projecting downwardly from its bottom which comprises as steps: preparing a mold whose inner surface is a replica, but in reverse, of the exterior of the shoe to be made, the bottom of the mold having cavities of a shape corresponding to the shape of the desired spikes, providing spike assemblies, each comprising a spike element and an abutment element, and an anchorage element spaced from the abutment element, disposing the spike element of each assembly in one of the cavities in the bottom of the mold, filling the mold with fluid plastic and causing said plastic to gel in contact with the inner surface of the mold wall thereby to provide a layer of desired thickness, pouring out surplus plastic, introducing more fluid plastic to form a second layer in the bottom portion only of the mold and causing sufficient of said latter plastic to gel to embed the anchorage element of the spike assembly, pouring out surplus plastic, completely curing the plastic within the mold and withdrawing the thus formed shoe from the mold thereby providing a spike shoe the outer ply of whose upper and the bottom ply, at least, of the sole being of plastic.

3,187,074
METHOD AND APPARATUS FOR PRODUCING TRAVELERS WITH WEAR RESISTANT INSERTS
Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 24,351, Apr. 25, 1960, which is a division of application Ser. No. 735,844, May 16, 1958, now Patent No. 2,966,026. This application June 13, 1962, Ser. No. 205,480
4 Claims. (Cl. 264—275)

1. The method of producing a cast object by die casting a castable material about a preformed straight rod-like insert with the aid of an apparatus having

a pair of relatively movable dies, said dies being movable between a closed position and an open position, and said dies when in the closed position having cavity surfaces defining a die cavity of the shape of the desired cast object;
aperture surfaces on the dies defining, when the dies are in the closed position, an aperture extending from outside the dies into the die cavity;
a pusher-rod for closing the outer end of the aperture when the dies are in the closed position;



and inner surfaces on the dies, said inner surfaces being part of the cavity surfaces, said inner surfaces being adapted to grip the insert when the dies are in the closed position with the insert in place between them in a final position, and said inner surfaces together with the aperture surfaces defining an entrance channel when the dies are in an intermediate position between the open and closed positions, said entrance channel being so shaped that an insert may be passed therethrough from an outside position outside the dies to the final position with the entrance channel guiding the insert during such passage so that the insert cannot leave the entrance channel; comprising the steps of

(a) positioning the dies in the intermediate position;
(b) passing an insert through the entrance channel from the outside position to the final position while guiding the motion of the insert with the inner surfaces;
(c) moving the dies from the intermediate position to the closed position and thereby gripping the insert with the inside surfaces;
(d) closing the aperture with the pusher-rod;
(e) filling the die cavity with castable material;
(f) moving the dies into the open position.

3,187,075
PROCESS FOR THE MANUFACTURE OF SHRINKABLE POLYTEREPHTHALIC ACID GLYCOL ESTER FILMS
Walter Selfried and Olaf Müller, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany
Filed May 26, 1961, Ser. No. 115,591
Claims priority, application Germany, May 28, 1960, K 40,843
1 Claim. (Cl. 264—289)

A process for biaxially stretching polyterephthalic acid glycol ester film to form a heat-shrinkable film which comprises stretching a previously formed unoriented film in a first direction at a temperature ranging from 80 to 95° C. to 2 to 3 times its original dimension in said first direction, cooling the film, stretching it in a second direction which is substantially perpendicular to said first direction to 1.5 to 5 times its original dimension in said second direction, at a temperature which is 3 to 8° C. below the temperature of stretching in the first direction, and cooling the film.

ELECTRICAL

3,187,076
APPARATUS FOR PRODUCING FINE FIBERS
George R. Machlan, Newark, and Charles L. McKinnis, Granville, Ohio, and Hellmut I. Glaser, Anderson, S.C., assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware
Filed June 7, 1962, Ser. No. 200,854
14 Claims. (Cl. 13—6)

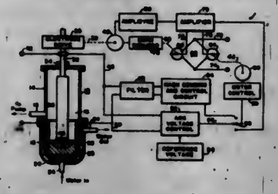


1. A feeder for delivering molten glass in streams to be drawn into fiber form, said feeder comprising
(1) an electrically heated vessel having connected upstanding side and end walls, a bottom wall having at least one fiber forming orifice therein and electrical connection means, said vessel being adapted to conduct electricity and emit infra-red radiation substantially in the range of 1 to 5 microns,
(a) two of said walls being opposed and spaced apart a distance equal to about twice the "maximum absorption distance" under exposure to infra red radiation substantially in the range of about 1 to 5 microns issuing from said walls whereby substantially all the material in said vessel will be directly heated by infra red radiation,
(b) said side and end walls possessing at least one peripheral area of reduced wall thickness to thereby define, in an otherwise integral vessel, at least two vertically spaced substantially electrically-independent sections,
(2) an electric heater strip for heating material connecting two of said opposed walls, said strip being of corrugated configuration, and
(3) a plate member substantially spanning said vessel and located above said orifice, said plate member having major upper and lower surfaces and containing a plurality of passageways which extend through said plate in fluid conveying relationship, said passageways including a segment thereof which has a central axis extending beyond only one of said major surfaces, whereby molten glass therebeneath is essentially thermally isolated from the material in the feeder above said plate.

ERRATUM

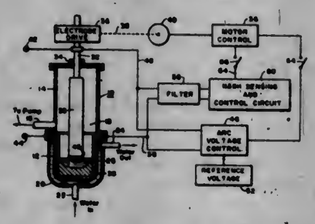
For Class 13—9 see:
Patent No. 3,186,510

3,187,077
CONTROL SYSTEM FOR CONSUMABLE ELECTRODE FURNACE
James B. Murtland, Jr., and Charles F. Rebbun, Natrona Heights, Pa., and Harold S. Jackson, Troy, N.Y., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed June 18, 1963, Ser. No. 288,644
9 Claims. (Cl. 13—13)



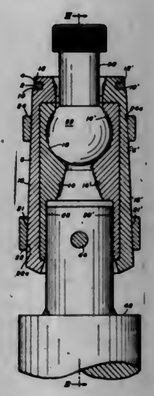
1. In a consumable electrode furnace of the type in which an arc is struck between a consumable electrode and a molten pool of metal beneath it and in which an electrically-controlled drive device is employed to move the electrode downwardly toward the molten pool as it is consumed; the improvement comprising first means for producing a first electrical signal which increases in magnitude as the electrode moves downwardly toward said molten pool, second means for producing a second electrical signal which increases in magnitude as the electrode is consumed by melting, said first and second signals being of equal magnitude when the electrode is properly positioned with respect to the molten pool, means for electrically comparing said first and second signals to produce a difference signal, and circuit means for controlling said electrically-controlled drive device as a function of said difference signal to cause the drive device to move the electrode downwardly.

3,187,078
ELECTRODE REGULATING SYSTEM FOR ARC MELTING FURNACES
James B. Murtland, Jr., and Charles F. Rebbun, Natrona Heights, Pa., and Harold S. Jackson, Troy, N.Y., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 270,087, Apr. 2, 1963. This application Oct. 8, 1964, Ser. No. 405,646
19 Claims. (Cl. 13—13)



1. In a consumable electrode furnace of the type in which an arc is struck between a consumable electrode and a molten pool of metal beneath it, the combination of control apparatus for maintaining the arc gap between said electrode and the molten pool within a desired range, comprising means for detecting recurring fluctuations in an electrical characteristic of said arc gap, which fluctuations occur as a result of momentary increases in the impedance across the arc gap, said momentary increases in impedance being superimposed on the impedance associated with base arc voltage and current, means coupled to said detecting means for producing an electrical signal which varies in response to variations in said fluctuations, and apparatus responsive to said electrical signal for controlling the position of said electrode with respect to said molten pool.

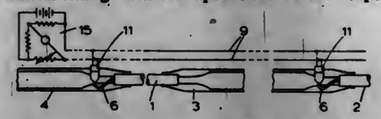
3,187,079
ELECTRODE CLAMP
Guenter Pestel, Syracuse, N.Y., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
Filed Nov. 8, 1962, Ser. No. 236,303
13 Claims. (Cl. 13—15)



1. A holder for a metal electrode in consumable-electrode vacuum arc remelting apparatus, said holder comprising, in combination, a pair of opposed gripper members, a pair of opposed hanger members, said gripper and hanger members being assembled to form a structure presenting an exterior face tapered from a first portion of predetermined cross section to another portion of cross section substantially greater than said cross section of said first portion, said gripper and hanger members having interior portions shaped in the vicinity of one of their respective ends to form a joint of substantial contact area and in the vicinity of the other of the respective ends to receive snugly a member of predetermined dimensions, said hanger members having opposed openings therein, a first lock piece having effective interior dimensions substantially the same as the exterior dimensions of the said structure in the vicinity of said openings, a second lock piece having effective interior dimensions larger than the exterior dimensions of said structure at its said first end but smaller than the effective interior dimensions of said first lock piece, an axially movable shaft having at one extremity a portion adapted to cooperate with said interior portions of said gripper and hanger members to form said joint, an adapter welded to the top of said electrode and having an aperture registrable with said openings, and a removable pin adapted to be received in said openings.

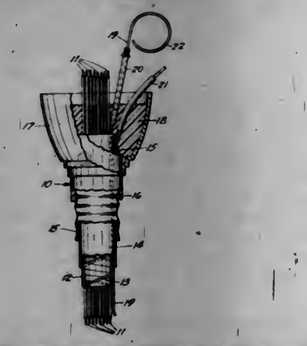
3,187,080
TEMPERATURE INDICATING MEANS FOR ELECTRIC CABLES AND DIFFERENT SECTIONS THEREOF
Edmund Hugh Ball, Southampton, England, assignor to Pirelli General Cable Works Limited, London, England, a British company
Filed Apr. 30, 1962, Ser. No. 191,053
7 Claims. (Cl. 174—11)

1. An electric cable route providing a near end and a far end and comprising at least two cable lengths in tandem, said route having (a) an auxiliary twin cable extending throughout all the cable lengths, except that at the far end of the route, (b) small-bore tubes embedded respectively in the cable lengths, each tube extending substantially throughout its cable length and being closed at one end and open at the other end and containing a liquid having a boiling point equal to that of the temperature to which it is desired to limit the cable length in which that tube is situated, (c) volume-responsve switches respectively connected to the conductors of the twin cable and communicating with the open ends of the respective



tubes and operated by liquid expelled therefrom as a result of boiling of such liquid and (d) a detecting device connected to the conductors of the twin cable in closest proximity to the near end of said cable route, and arranged on operation of the signals received from the respective volume-responsive switches to indicate abnormal temperature rise in any of the cable lengths.

3,187,081
CABLE CONNECTION
Emil Wayne Bollmeier, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application Jan. 19, 1962, Ser. No. 167,380. Divided and this application Mar. 25, 1963, Ser. No. 273,255
2 Claims. (Cl. 174—21)



1. A terminally gas-plugged shielded and sheathed communications cable having a large number of small insulated wires compactly bundled together within an enclosing insulating film, an intermediate closely fitting surrounding flexible metal shield, and a closely fitting outermost plastic sheath; said film, shield and sheath terminating within a close-fitting outwardly flaring open-ended container, the free ends of the said wires extending beyond the open end thereof; a mass of resinous filler filling the closed end of said container, surrounding said wires in a zone adjacent the closed end of said container, and plugging the cable against passage of gas therethrough; at least one elongate tubular tap terminally embedded and sealed within said mass of resinous filler and supported thereby; the resinous filler having an elongate narrow opening therethrough interconnecting the interior of said cable and the tubular tap.

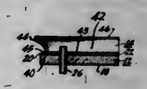
3,187,082
HEAT DISSIPATING ELECTRICAL SHIELD
Donald K. Allison, Albuquerque, N. Mex., assignor to Cool Fin Electronics Corporation, Los Angeles, Calif., a corporation of Nevada
Filed Feb. 1, 1961, Ser. No. 86,537
5 Claims. (Cl. 174—35)

1. A heat dissipating, electrical shield for electronic components comprising: an electrical and heat conducting member adapted to be placed over the envelope of an electrical component and having slots extending through a component enclosing portion thereof; a liner within at least said portion of said member having portions engaging inner surfaces of the member between said slots so



as to be pressed against the component envelope in good heat conducting relation therewith, the parts of said liner opposite said slots being return-bent outwardly and projecting through said slots to form heat dissipating fins extending outwardly of said member; and slots in said fins exposing the component envelope therethrough.

3,187,083
CONTAINER FOR AN ELECTRICAL COMPONENT
Milton Jacob Grimes, Flemington, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,144
1 Claim. (Cl. 174—50.5)

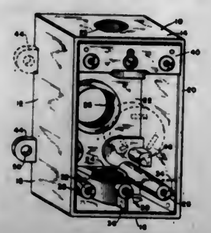


A container for electrical components comprising, in combination,
(a) a base comprising a wafer of alumina for supporting said components thereon, said wafer having a flat upper and lower side,
(b) a metalized coating on at least a portion of one of said sides of said base,
(c) a tubular member of copper open at both ends and comprising a tubular wall disposed substantially perpendicularly to said metalized coating, one end of said tubular wall having only its edge fixed to said metalized coating with a brazed butt joint, the other of said ends of said tubular member comprising an outwardly extending flange, and
(d) a cover of a soft metal cold pressed sealed to said metal flange, whereby to provide a hermetically sealed container for said components.

3,187,084
JUNCTION BOX WITH DETACHABLE SUPPORTING MEANS
Harry L. Stillman, Frank G. Bellek, and Paul J. Zerwes, Chicago, Ill., assignors to Bell Electric Company, Chicago, Ill., a corporation of Illinois
Filed May 4, 1962, Ser. No. 192,537
11 Claims. (Cl. 174—58)

5. In combination with an electrical junction box having bottom, end and side walls defining a cavity for the receipt of an electrical fixture, a securing device comprising:
a plurality of elongated securing lugs secured in spaced apart relationship to the outer surface of the bottom wall of the box and having recesses in their exposed faces,
said outer surface of the bottom wall having elongated recessed grooves formed therein partially receiving said securing lugs, and
a screw member passing through each of said securing lugs threadably engaging the bottom wall securing

said lugs to the bottom with their heads disposed in said recesses, release of said screw members permitting the lugs to be disposed in either one of two al-



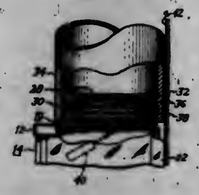
ternate positions in one of which the said lugs extend outwardly past the side walls, the extended end of each lug having an aperture therethrough for securing the box to a mounting surface.

3,187,085

HUB FOR METER SOCKETS AND THE LIKE, SAID HUB SIZED TO INTERNALLY ACCEPT ONE SIZE OF CONDUIT AND EXTERNALLY ACCEPT ANOTHER SIZE CONDUIT AND HAVING AN ECCENTRIC WALL THICKNESS

Robert Brackett, Westboro, Mass., assignor to General Electric Company, a corporation of New York

Filed Feb. 21, 1962, Ser. No. 174,862
4 Claims. (Cl. 174—65)



1. A metallic enclosure comprising a rear wall, a second wall perpendicular to said rear wall, at least one hub formed as part of said second wall, said hub having an opening therein sized to receive a standard size conduit, said hub having an eccentric wall thickness, the outside diameter of said hub being eccentric with reference to said inside diameter of said hub, said wall thickness being selected such that the outside diameter of said hub will fit snugly within a second standard size conduit, said hub being formed on said second wall such that a conduit fitting over said hub will have a portion of its outside circumference falling within the plane of said rear wall of said metallic enclosure.

3,187,086

BUS DUCT WITH PARTICULAR HOUSING, INSULATION, AND BUS BARS

Ernest W. Moodie, Downsview, Ontario, and Merle R. Holman, Rexdale, Ontario, Canada, and Harris I. Stanbeck, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Sept. 5, 1961, Ser. No. 135,852
25 Claims. (Cl. 174—68)

1. A bus duct comprising housing means and an assembly of bus bars, said housing means including a first pair of spaced parallel channels, each channel of said first pair having a bottom portion and a pair of side wall portions extending from the bottom portion toward the other channel of said first pair, and a second pair of spaced parallel channels at right angles to said first pair, each channel of said second pair having a bottom portion and a pair of side wall portions extending from the bottom portion, the side wall portions of said second pair of channels being respectively secured to the bottom portions of said first pair of channels, and the bottom portions of said second pair of channels being spaced closer together than the



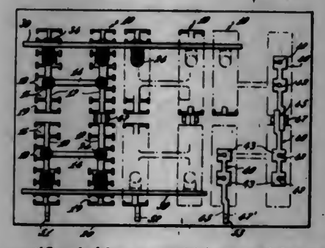
bottom portions of said first pair, said assembly of bus bars being disposed in said housing means and electrically insulated from and secured on opposite sides solely to the respective bottom portions of said second pair of channels in spaced relationship to the bottom portions of said first pair of channels by an electrically insulating heat conducting adhesive material.

3,187,087

HEAT RADIATOR AND ELECTRIC CONNECTION APPARATUS FOR RECTIFIERS AND THE LIKE

Leonhard Katz, Woburn, and Samuel Schweitzer, Cambridge, Mass., assignors to Astro Dynamics, Inc., Burlington, Mass., a corporation of Massachusetts

Filed July 17, 1961, Ser. No. 124,715
3 Claims. (Cl. 174—70)



1. A rectifier bridge assembly comprising: a plurality of heat radiators each of which includes a plurality of spaced parallel plates joined by a transverse thermal bus bar, a plurality of mounting apertures passing through each of said plates, and a plurality of fins extending from at least one face of each of said plates, the arrangement of each radiator being such that all sections parallel to a given plane are substantially similar; a plurality of electrical bus elements each of which has at least two holes corresponding to the mounting apertures in a single one of said plates, and a flat electrical connection surface the plane of which extends through the axes of said holes; and mounting rod means adapted to pass through corresponding apertures and holes in said radiators and said bus elements respectively, whereby adjacent pairs of radiators can be electrically connected by a pair of said bus elements, the respective electrical connection surfaces of each element being in contact with that of the other.

3,187,088

HIGH VOLTAGE CABLE SPLICE

Joe H. Warner, Chicago, Ill., assignor to Minerallac Electric Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 1, 1962, Ser. No. 234,724
4 Claims. (Cl. 174—91)

2. In a high voltage cable joint, in combination, a pair of insulated flexible conductors having bared end portions in end to end relation, a connector sleeve telescoped over said juxtaposed bared end portions and mechanically and electrically interconnecting them, and a pair of sleeves of heat shrinkable plastic insulation successively shrunk



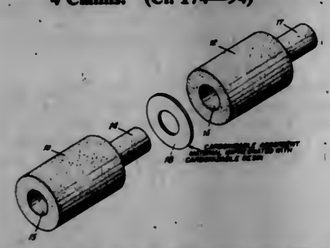
onto said connector sleeve with at least the ends of one shrunk onto the respective ends of the insulation surrounding the respective conductor.

3,187,089

CARBONIZED JOINT BETWEEN CARBON ELECTRODES

John W. Cosby, White Plains, N.Y., and Wilbur R. Lauzau and Marvin R. Riek, Fostoria, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed June 21, 1962, Ser. No. 204,266
4 Claims. (Cl. 174—94)



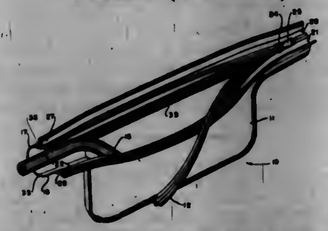
1. An assembly of carbon electrodes suitable for use in an arc lamp, said assembly comprising a first carbon electrode having a recess in one end, a second carbon electrode having a protrusion on one end fitted against said first carbon electrode with said protrusion fitting in said recess, and a carbonized joint holding said first and second electrodes together, said joint being formed by the carbonization of a carbonizable washer disposed over said protrusion between said first and second electrodes, said washer comprising prior to carbonization an annular piece of carbonizable absorbent material and a carbonizable resin impregnated in said piece.

3,187,090

CABLE SPLICING BOOTS

Hugh Robert Edwards, Corona del Mar, Calif., assignor to Walter A. Plummer, Sherman Oaks, Calif.

Filed Jan. 3, 1961, Ser. No. 80,149
8 Claims. (Cl. 174—138)



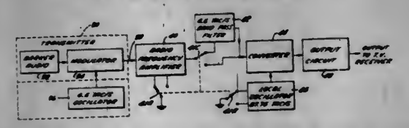
8. An inexpensive one-piece generally tubular boot adapted for use in protecting a cable splice, said boot being formed entirely of impervious nonconductive supple thin plastic material and comprising an elongated tubular body of substantially uniform cross-section throughout the major portion of its length, the opposite ends of said boot converging to form relatively small diameter tapering sleeves adapted to snugly embrace cable sheathing immediately adjacent the opposite ends of a cable splice, said tapering sleeves having fused seams along their diametrically opposed sides which seams converge toward the opposite ends of said boot to diameters snugly to embrace cable sheathing to either end of a splice, and flexible plastic seam-forming means extending throughout the length of said boot and including complementally shaped interlocking tongue and groove means cooperating to form a fluid-tight seam when closed together, said seam forming means being located along one side of said boot and between the converging fused seams of said tapering sleeves.

3,187,091

SUBSCRIPTION-TELEVISION AUDIO-RECEIVING SYSTEM

Wasson Quan and Richard C. Cardin, Jr., Los Angeles, Calif., assignors to Paramount Pictures Corporation, New York, N.Y., a corporation of New York

Filed June 13, 1961, Ser. No. 116,728
3 Claims. (Cl. 178—5.1)



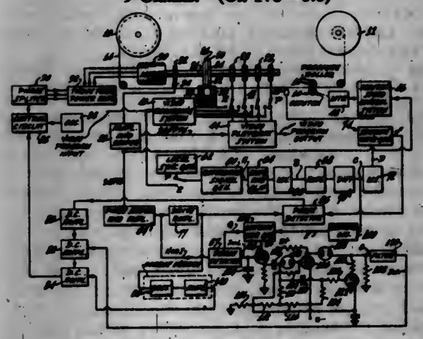
2. A subscription-television system comprising a transmitter having means for generating audio signals, means for generating a carrier having a frequency of 4.5 mc./s., means for frequency modulating said audio signals on said carrier, a receiver having an intercarrier sound-demodulating system, means for transmitting said frequency-modulated carrier to said receiver, means at said receiver for generating a local unmodulated carrier having a frequency which, when combined with a frequency-modulated carrier having a frequency which is 4.5 mc./s. different, can be processed by said receiver intercarrier sound system, means for mixing said frequency-modulated carrier and said local carrier, and means for applying said means for mixing output to said receiver intercarrier sound-demodulating system.

3,187,092

SPEED CONTROL SYSTEM USING PARALLEL CONTROL LOOPS

Fred E. Shashoua, Wilmington, Del., and Roy C. Wilcox, Haddonfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Apr. 27, 1959, Ser. No. 809,047
9 Claims. (Cl. 178—6.6)



1. A control system which comprises means for providing first signals, means for providing a reference signal, means defining a first control circuit for comparing

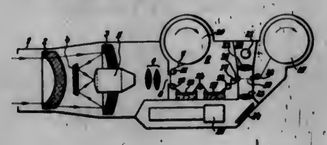
only said first signals and said reference signal, means defining a second control circuit for comparing only said first signals and said reference signal, means included in at least one of said control circuits for providing a different sensitivity of comparison by said one control circuit as compared to that of the other of said control circuits at the same time and means coupled to both of said control circuits and responsive to the comparisons by said control circuits of said first signals and said reference signal.

3,187,093

ELECTRONIC AND PHOTOGRAPHIC IMAGE INTENSIFICATION

Albert Bouwers, The Hague, Netherlands, assignor to N.V. Optische Industrie de Oude Delft, Delft, Netherlands

Filed Sept. 21, 1961, Ser. No. 139,681
Claims priority, application Netherlands, Sept. 24, 1960, 256,242; Feb. 27, 1961, 261,739
1 Claim. (Cl. 178—6.7)



In an image forming device the combination of a first optical objective, an image intensifier having a photo-emissive screen in the focal surface of said first optical objective, a luminescent screen, and electron-optical means to reproduce an image on said photo-emissive screen on said luminescent screen, a second optical objective arranged to project an image of said luminescent screen onto an exposure window, a photographic film in said exposure window, means to develop latent images on said photographic film, a projection window, means to transfer said photographic film to said projection window, a light source associated with said projection window, and a third optical objective arranged to project a real image of said film when in said projection window onto a receiving surface, said image intensifier reproducing said image with a substantial demagnification on said luminescent screen, said second and third optical objectives being arranged so as to work as a magnification of substantially unity and a magnification substantially exceeding unity, respectively.

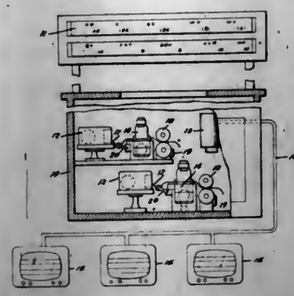
3,187,094

DATA-REPRODUCING APPARATUS FOR SIMULTANEOUS DISPLAY OF SEPARATE AND MOVING LIGHT IMAGES DEFINING INDICIA DERIVED FROM SEPARATE SOURCES

Aquila C. Giles, Southampton, N.Y., assignor to Trans-Lux Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 762,294, Sept. 22, 1958. This application Nov. 1, 1961, Ser. No. 149,317
4 Claims. (Cl. 178—6.8)

1. An apparatus to simultaneously display upon a single screen separate and moving light images defining indicia derived from separate sources, said apparatus including in combination a plurality of strips, mechanisms for individually imprinting said strips with indicia, separate means for exerting a pull upon and moving said strips at different speeds, supporting means for guiding said strips in movements with respect to each other, means for illuminating said supporting means and the strips guided thereon, a television camera, means providing separate light-image paths extending away from said illuminated strips, an image-receiving member operatively disposed with respect to said camera and paths and common to the latter whereby to transmit the light images of the indicia upon different strips to the mosaic of said



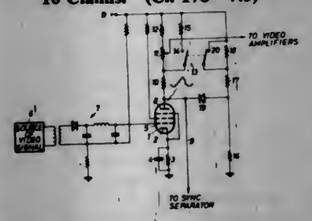
camera and a television receiver connected to said camera for reproducing those light images.

3,187,095

CONTRAST CONTROL ARRANGEMENT FOR TELEVISION RECEIVERS PROVIDING NON-LINEAR GRAY SCALE

Armin Rappold, Neuenburg, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 20, 1961, Ser. No. 146,459
Claims priority, application Germany, Oct. 25, 1960, 17,042
16 Claims. (Cl. 178—7.3)



1. In a television receiver, a contrast control arrangement comprising a first means having a linear contrast control characteristic between the black and white levels of a television signal, and a second means selectively coupled to said first means to modify said contrast control characteristic to include a first portion extending from a first point disposed in juxtaposition to the one quarter point of the entire range between said black level and said white level to a second point disposed in juxtaposition to the one half point of said entire range having a slope steeper than the slope of said linear characteristic and a second portion extending for the remainder of said modified characteristic having a slope less than the slope of said linear characteristic whereby the value of the white level of said modified characteristic is lower than the value of the white level of said linear characteristic.

3,187,096

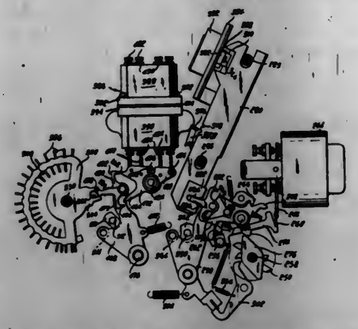
RECEIVER AND SELECTOR MECHANISM

Edward F. Kleinschmidt, Wilmette, Carl P. Anderson, Evanston, Hilding A. Anderson, Lake Zurich, Clayton H. Clark, Mundelein, Ill., and David C. Sherrick, Bethesda, Md., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Original application Dec. 13, 1956, Ser. No. 628,110, now Patent No. 2,982,810, dated May 2, 1961. Divided and this application Mar. 1, 1961, Ser. No. 92,503
18 Claims. (Cl. 178—33)

1. Signal data communication equipment comprising: receiving-translating mechanism including first means for

receiving sequential forms of electrical code signal combinations and second means for receiving simultaneous forms of electrical code signal combinations; with means



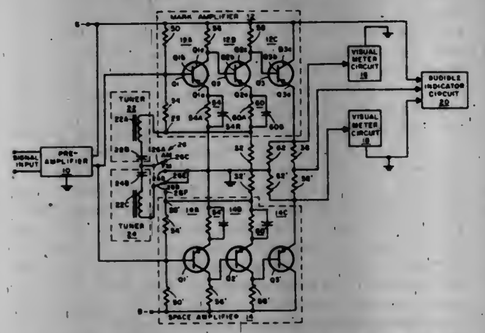
connecting to both of said first and second means selectively enabling reception of sequential and simultaneous signals.

3,187,097

TELEGRAPH CARRIER ANALYZER

Stanley I. Feldman, Norwalk County, Conn., assignor to Stelma, Incorporated, Stamford, Conn., a corporation of Connecticut

Filed Jan. 11, 1961, Ser. No. 82,088
12 Claims. (Cl. 178—69)



1. Telegraph test means comprising input means for receiving both amplitude and frequency modulated signals, first and second detector means for recognizing the presence of signals of predetermined frequencies, switch means connected between said input means and said first and second detector means and having control means movable between a first and a second position; said first and second detector means being responsive to first and second predetermined frequencies respectively when said control means is in said first position, and one of said detector means being responsive to a third predetermined frequency which is a function of said first and second frequencies when said switch means is in said second position.

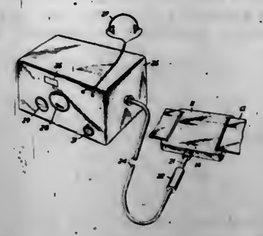
3,187,098

FOETAL HEART-BEAT DETECTOR

Walter Farrar and Jack Lawrence Leonard, Edinburgh, Scotland, assignors to Bruce Peebles & Co., Limited, Edinburgh, Scotland, a company of Great Britain

Filed Mar. 28, 1962, Ser. No. 183,252
Claims priority, application Great Britain, Mar. 30, 1961, 11,860/61
5 Claims. (Cl. 179—1)

1. A foetal heartbeat detector including a slab member having a rigid flat surface for mounting against the mother's body, an elastic belt attached to the slab for holding the slab member in position, a capsule positioned in a cavity in the slab member, a vibratory rod of piezo-electric crystal mounted as a cantilever in the capsule



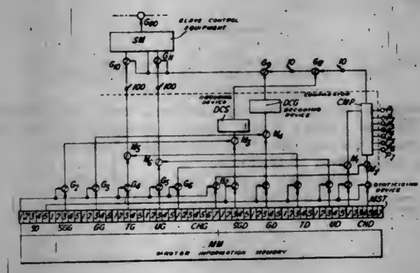
with a natural vibration frequency just above 50 cycles per second, liquid in the capsule for damping vibrations of the rod and electrical conductors carried on opposed faces of the rod.

3,187,099

MASTER-SLAVE MEMORY CONTROLLED SWITCHING AMONG A PLURALITY OF TDM HIGHWAYS

Hans Helmut Adelaar, Frans Clemens, and Jean Louis Masure, Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 7, 1960, Ser. No. 74,434
Claims priority, application Belgium, July 28, 1960, 39,938, Patent 593,489
5 Claims. (Cl. 179—15)



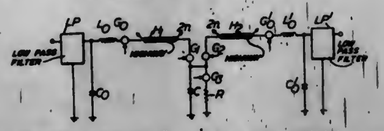
1. A time division multiplex telephone system comprising a plurality of line circuits, a plurality of time division multiplex hghways having associated gate means for individually interconnecting said highways with successive ones of said line circuits during sample periods in sequentially recurring time slots, thereby establishing communication between selected ones of said line circuits during discrete time slots carried by said highways, means comprising a slave control equipment associated with each of said highways for memorizing the time slots during which particular gates associated with said highways are unblocked, common equipment comprising master memory means associated with a plurality of said slave control equipments for reading and recording line-connection information stored in said slave equipments to control the establishment, routing and release of calls over said highways, means for driving said master memory means through a cycle of operation at a speed such that said master memory means exercises control over said slave equipment by offering control signals to said slave equipments during time intervals which are at least equal to the duration of said sample periods.

3,187,100

RESONANT TRANSFER TIME DIVISION MULTIPLEX SYSTEM UTILIZING NEGATIVE IMPEDANCE AMPLIFICATION MEANS

Hans Helmut Adelaar, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 24, 1961, Ser. No. 104,967
Claims priority, application Netherlands, July 21, 1960, 254,030
10 Claims. (Cl. 179—15)



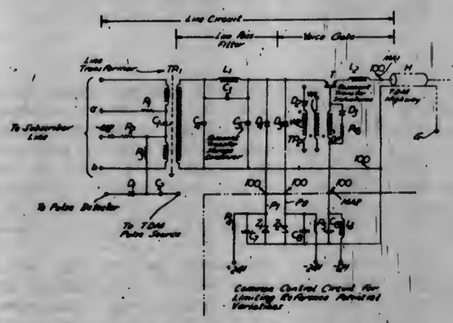
1. A resonant transfer circuit for a time division multiplex system comprising at least a pair of multiplex highways, first electrical energy storage means coupled to one end of a first of said highways, second electrical energy storage means coupled to one end of a second of said highways, third electrical energy storage means for coupling together the other ends of said pair of highways, means for providing a plurality of time slot signals, means responsive to a first time slot signal for resonantly transferring energy in digital form from said first storage means over said first highway to said third storage means, said energy being stored in said digital form in said third storage means, means responsive to another time slot signal for resonantly transferring said energy in said digital form from said third storage means over said second highway to said second storage means, and means effective during the interval between said first and other time slots and comprising a negative impedance device for increasing the energy stored in said digital form on said third storage means.

3,187,101

TIME DIVISION MULTIPLEX RESONANT TRANSFER SYSTEM

Joseph A. Broux, Antwerp, Belgium, and Jean Frederic Fernand Gittler, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 4, 1961, Ser. No. 156,609
6 Claims. (Cl. 179—15)



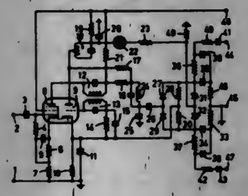
1. A time division multiplex telephone system comprising a plurality of subscriber lines, at least one time division multiplex highway, and groups of line circuits for selectively connecting said lines to said highway on a time division multiplex basis, gate means comprising a resonant transfer circuit in each of said line circuits for selectively transferring signals from one of said lines over said highway to another of said lines, means including a source of potential common to each group of line circuits for supplying each of said resonant transfer circuits whereby said common source constitutes a source of crosstalk within said group, and common voltage variation isolating means interposed between said resonant transfer circuits of each group of line circuits and said source of potential to regulate said potential thereby eliminating said source of crosstalk within said group.

3,187,102

STEREO MULTIPLEX RECEIVER WITH AUTOMATIC STEREO OR MONAURAL DETECTION AND INDICATING MEANS

Erich Gschwandtner, Agincourt, Ontario, Canada, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 21, 1963, Ser. No. 260,125
Claims priority, application Canada, Feb. 22, 1962, 842,905
6 Claims. (Cl. 179—15)



1. A system for producing A and B audio frequency signals from a composite signal constituted by an $(A+B)$ signal, a pilot signal, and the sideband frequencies of a supersonic carrier of a frequency harmonically related to said pilot signal and suppressed carrier amplitude modulated by an $(A-B)$ signal, comprising; means for amplifying said pilot signal and altering its frequency to correspond to the said supersonic carrier frequency, means for applying the produced supersonic carrier, the $(A+B)$ and the $(A-B)$ sideband frequencies signals to the common junction of two unilaterally conducting devices connected in series aiding sense, a pair of serially-connected load circuits connected across the non-common terminals of said unilaterally conducting devices, means connecting the common junction of the load circuits to a source of reference potential, switch means shunting said unilaterally conducting devices, and means responsive to the pilot signal for opening the switch when the pilot signal attains a predetermined minimum value to produce the A signal across one of the load circuits and the B signal across the other and for closing said switch to short-circuit the non-common terminals of the series aiding unilaterally conducting devices when the pilot signal falls below a predetermined value to connect both circuits in parallel to produce the same signal in each half.

3,187,103

MONO-STEREO CONTROL APPARATUS FOR AN F.M. STEREO SIGNAL RECEIVER SYSTEM

Bernard D. Loughlin, Huntington, N.Y., and Emmet J. Duffy, Oak Park, Ill., assignors to Hazeltine Research, Inc., a corporation of Illinois

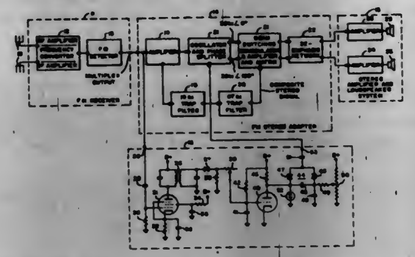
Original application Feb. 26, 1962, Ser. No. 175,736. Divided and this application Oct. 21, 1963, Ser. No. 317,662
2 Claims. (Cl. 179—15)

1. For use in a broadcast stereo signal receiver system, apparatus for controlling the operation of stereo circuits therein comprising:

means for deriving a voltage indicative of the presence or absence of stereo signals in a received broadcast signal;

means responsive to said indication for deriving therefrom a control effect capable of disabling operation of the stereo circuits in the absence of a received stereo signal and for otherwise enabling operation thereof;

means for applying said control effect to the stereo circuits to so control them;



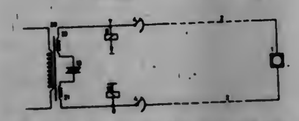
and means responsive to said stereo indicating voltage for presenting a visual indication of the presence of said stereo signal and for stabilizing said control effect means against possible variations in said control effect during the operation of said stereo circuits.

3,187,104

CIRCUIT FOR ELIMINATING ATTENUATION DIFFERENCES IN COMMUNICATION LINES

Herbert Ebel, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Sept. 18, 1961, Ser. No. 138,733
Claims priority, application Germany, Sept. 30, 1960, S 70,663
14 Claims. (Cl. 179—16)



1. A circuit arrangement for eliminating the attenuation difference occurring in connection with communication lines of different length, wherein a communication line is utilized for the transmission of communication signals as well as for the transmission of battery energy to a load disposed at the end of the communication line, and wherein the communication line is connected over at least one feed-in resistor to a common direct voltage source, whereby a voltage divider is formed by the feed-in resistor and the input resistance of the communication line, comprising a network connected in the communication line and adapted to conduct direct current, said network having a controllable attenuator disposed in the signal path for effecting variable attenuation of the communication signals, and means for operatively connecting the attenuator to said network whereby the attenuation value of said attenuator is controllable by at least one of the direct voltages obtained at the resistors of said voltage divider.

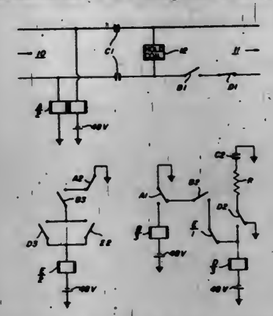
3,187,105

PULSE CORRECTOR

Leonard William Parry, Montreal, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Apr. 20, 1962, Ser. No. 189,188
2 Claims. (Cl. 179—16)

1. A pulse corrector for receiving direct current pulses from an input circuit and causing corrected direct current pulses in an output circuit carrying direct current, comprising an input relay responsive to direct current pulses from the input circuit, a slow-to-release relay responsive to operation of said input relay, a timing circuit relay responsive to a combined effect of operation of the slow-to-release relay and restoration of said input relay, a start-timing relay responsive to a combined effect of operation of the slow-to-release relay and operation of the timing circuit relay and restoration of said input relay, a timing circuit adapted to restore the timing circuit relay at a predetermined time after operation of the start-timing relay, a switch controlled by the slow-to-release relay and adapted to be open when the slow-to-release relay is in non-operated state, a switch controlled by the timing circuit relay and adapted to be closed when the timing circuit relay is in non-operated state, each said switch being in series connection in the output circuit and upon operation adapted to cause direct current pulses in the output circuit.

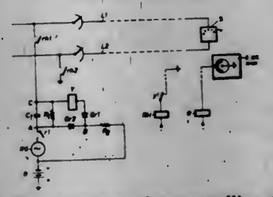


3,187,106

TELEPHONE RING-TRIP ARRANGEMENT

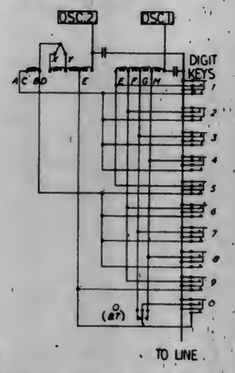
Otto Steinmetz, Neunkirchen (Saar), Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 19, 1961, Ser. No. 125,231
Claims priority, application Germany, July 21, 1960, St 16,703
3 Claims. (Cl. 179—18)



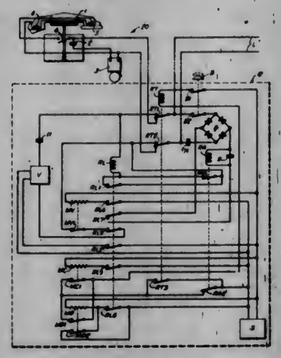
1. A circuit arrangement for controlling the application and removal of alternating current ringing signals to and from a telephone line and called station thereon, trip means comprising a relay winding and associated current conductive bypass means, means for applying a direct current to said line through said trip means, means for periodically applying alternating current superimposed on said direct current to said line through said trip means, and blocking means associated with said trip means, said blocking means excluding direct current flow and superimposed alternating current flow through said relay winding and allowing said direct current flow and alternating current flow through said bypass means when said station is unanswered, said blocking means permitting direct current flow and superimposed alternating current flow through said relay winding when said station is answered, said blocking means including a uni-directional current device which is back-biased against current flow therethrough when said called station is in an unanswered condition and which is forward-biased to permit current flow therethrough when said called station is in an answered condition.

3,187,107
VOICE-FREQUENCY KEY-DIALING SUBSCRIBER'S STATION
Ronald George Knight and Anthony Crisp Beadle, London, England, assignors to International Standard Electric Corporation, New York, N.Y.
Filed Mar. 3, 1961, Ser. No. 93,227
Claims priority, application Great Britain, Mar. 4, 1960, 7,721/60, 7,722/60
6 Claims. (Cl. 179—84)



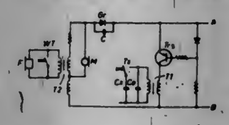
1. In a voice-frequency key-dialing subscriber's station for multi-station telephone lines, a plurality of generator means, each generating a group of steady state, separate voice-frequency signals, a plurality of digit-selection keys corresponding respectively to the digit values of any digit of a telephone number, means controlled by the operation of any of said keys for transmitting a unique combination of voice-frequency signals characteristic of the digit key operated, and selectively operable restricting means associated with a predetermined one of said keys for altering the said unique combination of voice-frequency signals transmitted thereby to a different combination of voice-frequency signals.

3,187,108
SUBSCRIBERS' TELEPHONE EQUIPMENT
Roland Jean Henry Clin, 37 Rue la Fontaine, Paris, France, and Raoul Charles Eloi Charlet, 22 Bis Rue de Malleville, Enghien les Bains, Seine et Oise, France
Filed Mar. 7, 1962, Ser. No. 178,068
Claims priority, application France, Mar. 8, 1961, 854,974, Patent 1,283,074
7 Claims. (Cl. 179—84)



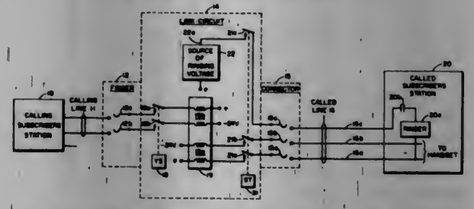
1. In a telephone system, a line, a subscriber station including audible indicating means responsive to a ringing signal, switching means for selectively connecting the station to the line and normally in a condition in which the line is not connected to the station, detecting means connected to the line and responsive to the ringing signal, timing means, and control means including said timing means and said detecting means for operating the switching means to connect the line to the subscriber station a selected time interval after the ringing signal has been removed from the line.

3,187,109
VOICE FREQUENCY SIGNALLING SYSTEM
Georg Vogel, Auenweg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 7, 1962, Ser. No. 178,122
Claims priority, application Germany, Mar. 25, 1961, St 17,623
7 Claims. (Cl. 179—84)



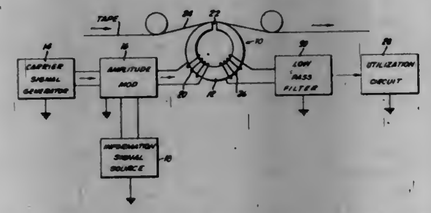
1. A voice frequency signalling arrangement for use in transmitting data and speech signals from a remote station to central equipment over an interconnecting transmission line, data recording means in said central equipment, means responsive to a calling condition at said station for interconnecting said data recording means and said station over said transmission line, current supply means in the said central equipment responsive to said interconnection for supplying said station with alternating control current, a speech circuit and a data signalling circuit in said station and means for alternately energizing said circuits on successive half cycles of said alternating current, and current switching means responsive to the operation of said energized data signalling circuit for controlling said current supply means to substitute current of a constant polarity for the said alternating current.

3,187,110
RING TONE FEEDBACK CIRCUIT
Bruce D. Lummis, Pine Beach, N.J., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 184,067
6 Claims. (Cl. 179—89)



1. In a telephone system, a ring tone feedback circuit for feeding back ring tone to a calling line comprising, a calling line, a called line, a subscriber station connected to said called line, said subscriber station having a ringer, a source of ringing voltage, a talking path including said called and calling lines, means operable for completing said talking path from said calling line to said called line, means operable for connecting said source of ringing voltage across said ringer over that portion of said talking path which includes said called line when said talking path is completed so that a ringing signal is placed on said talking path and thus is fed back to said calling line only when a subscriber station with ringer is connected to said called line, and means for operating said completing means and said connecting means in response to the extension of a connection to said called line when said called line is idle.

3,187,111
MAGNETIC RECORDING HEADS WITH MONITOR OF RECORDED SIGNAL
Philip Smaller, Portola Valley, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Jan. 23, 1961, Ser. No. 84,429
7 Claims. (Cl. 179—100.2)



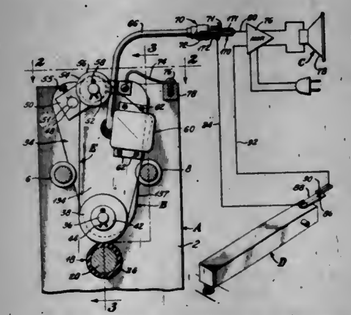
2. A magnetic recording and reproducing system comprising: a magnetic transducing device having at least one nonmagnetic gap; an input signal means coupled to said device for providing a high frequency carrier signal modulated by a relatively low frequency information signal; a movable magnetic storage medium for demodulating and recording said information signal at said gap; and an output signal processing means, including a low pass filter coupled to said transducing device for reproducing only said information signal simultaneously with the recording thereof.

3,187,112
AERODYNAMICALLY SUPPORTED MAGNETIC HEAD CONSTRUCTION FOR MAGNETIC DRUMS, DISCS AND THE LIKE
Joseph E. Smith, Jr., Birmingham, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 31, 1961, Ser. No. 86,198
7 Claims. (Cl. 179—100.2)



1. In a magnetic recording apparatus comprising at least one magnetic transducer head adapted to record and to read magnetic pulses recorded upon the magnetizable surface of a substantially fast moving record medium, an improved device for automatically establishing and maintaining a narrow air-gap spacing between the pole tip of the transducer head and the magnetizable record medium, said device comprising a molded shoe-like pad casing for the said transducer head and having a substantially unbroken underside surface, means supporting the said pad casing in spatial relationship with a support bar insulator adjustably mounted on the housing of the said recording apparatus, said supporting means being a pair of angled substantially parallel reed-like flat resilient metal members having one of their ends fastened to the said support bar insulator and their other ends, fastened to the said pad casing, said supporting means normally biasing the said pad casing away from the surface of the record medium while still maintaining the said pad casing in the stream of gas or air clinging to and in motion with the surface of the said record medium thereby causing the said stream of gas or air to induce hydrodynamic forces which normally oppose the said biasing means and bring the underside of the said pad casing into a predetermined closed air-gap spacing with the surface of the said record medium and to cause the underside of the said pad casing to be supported upon a laminar layer cushion of the said stream of gas or air, the said supporting means being electrically connected to the magnetic coil of the said transducer head and automatically retracting the said pad casing to a "fail-safe" retracted position as soon as the velocity of the record medium decreases below a predetermined value.

3,187,113
SOUND REPRODUCING MEANS
Fred A. Wesemann, 12001 Biscayne Blvd., Miami, Fla.
Filed Jan. 5, 1962, Ser. No. 164,565
6 Claims. (Cl. 179—100.2)



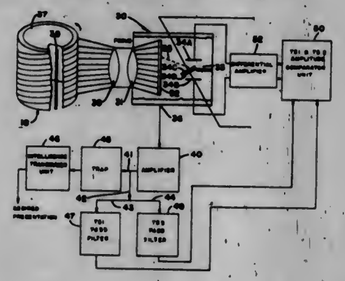
1. A musical instrument of the type described, comprising a cabinet and a carriage mounted in said cabinet, said carriage comprising two horizontal guide shafts and a horizontal drive shaft, said shafts all being parallel to each other, said guide shafts being spaced from each other in a common horizontal plane, said drive shaft being rotatably mounted about a horizontal axis which lies in a vertical plane located between the axes of said guide shafts and in a horizontal plane spaced below that of said drive shafts, said guide shafts being identical to each other and each comprising a set of circumferential grooves, said set of grooves comprising a central groove and a side groove on each axial side of said central groove, corresponding grooves in each of said guide shafts being aligned opposite each other in common vertical planes, a tape cartridge removably mounted in said carriage, said cartridge comprising a flat mounting plate having vertical faces bounded by downwardly converging opposite side edges, said plate being downwardly wedged between said two guide shafts with opposite ones of said edges respectively lying in opposite ones of said central grooves, said plate comprising an upper and lower roller means, said upper and lower means respectively comprising an idler and a drive roller rotatably mounted on each vertical face of said plate for rotation about respective axes which are parallel to the axis of said drive shaft, said drive rollers having a circumferential periphery which extends radially beyond the lower peripheral edge of said plate, said periphery of said rollers being in contact with said drive shaft whereby rotation of said drive shaft rotates said drive rollers through frictional contact therewith, said cartridge also comprising a pickup head on each said vertical face of said plate and positioned intermediate of said idler and drive rollers and to one side of a straight line connecting the axes of said idler and drive rollers, a signal cable leading from each of said heads, a sound amplifier circuit, each of said cables comprising a plug-jack removably plugged into said circuit, a keyboard

comprising one key for each aligned pair of said side grooves, each key being actuable to complete the amplifier circuit to a corresponding one of said pickup heads, a motor drivingly connected to said drive shaft, a sound tape on each said vertical side of said plate, said tape being entrained about said drive and idler rollers and through said pickup head, said tape being guided by passing through a pair of said opposite side grooves which are in a common vertical plane.

3,187,114
RECORDING AND REPRODUCTION OF INTELLIGENCE SIGNALS

Raymond R. McDaniel, 852 Berwin St., Akron, Ohio

Filed Aug. 14, 1958, Ser. No. 755,104
3 Claims. (Cl. 179—100.3)



1. A system of the type described wherein an intelligence signal is recorded and reproduced upon photosensitive material, comprising, light valve means for projecting said intelligence signal as a modulated beam, regulated supply sources for originating tracking signals, additional light valve means for projecting said tracking signals as distinct modulated beams, means for movably mounting a portion of said photosensitive material, means to control impingement of all of said projected beams on said material portion so that said beams are simultaneously recorded as parallel images, a camera means having light sensitive mosaic and an electron gun with beams scanning said mosaic in only one direction, means projecting said parallel images on said mosaic, means following said mosaic to separate the signal therefrom into said intelligence signal and tracking signals, transducer means for presenting said intelligence signal, means for comparing the strength of said tracking signals, and means associated with said electron gun and activated by said comparing means controlling the deflection of said electron beam to a point where the tracking signals are of equal strength.

3,187,115
TRANSDUCER MOUNTING

Clayton D. Mullin, St. Paul, Minn., assignor to Maico Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Feb. 21, 1962, Ser. No. 174,774
4 Claims. (Cl. 179—107)



1. Transducer apparatus for mounting in an acoustical device,

comprising an electro-acoustical transducer having a diaphragm lying generally in a plane and moving in a direction normal to the plane, said transducer having an outer shell confining said diaphragm, said shell having opposite sides lying normal to said plane and having a top and bottom in juxtaposition with said plane, said top and bottom being spaced from each other by a predetermined distance,

a pair of mounting slabs constructed of resiliently compressible material and disposed in confronting and spaced relation with each other and respectively lying against said opposite sides of the transducer shell and substantially normal to said plane, said slabs having edge surfaces facing in multi-directions and spaced outwardly of the transducer shell for engaging the acoustical device,

and means securing each of said slabs to the corresponding side of the transducer shell along only a band extending parallel to said plane and between said top and bottom, said band having a width considerably less than said distance.

3,187,116
TRANSDUCER

Garold D. Sears and Patrick M. Sullivan, Houston, Tex., assignors of one-third to E. J. Mosher and one-third to Harry J. Mosser, both of Houston, Tex.

Filed Sept. 20, 1961, Ser. No. 139,401
3 Claims. (Cl. 179—115)



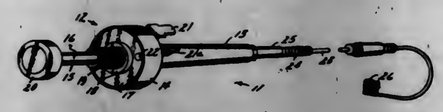
1. A sound reproducer including a central panel member having a plurality of surfaces and a plurality of apertures, a rear panel member in spaced relation to said central panel member, first fastening means coupled between one surface of said central panel member and said rear panel member, a front panel member in spaced relation to said central panel member, said front and said rear panel members being on opposite sides of said central panel member, second fastening means coupled between a surface of said central panel member and said front panel member, sounding post means coupled between said front panel member and said rear panel member through one of said apertures in said central panel member, and driving means coupled to said central panel member and to said front panel member for imparting acoustical output thereto in response to electrical energy supplied to said driving means.

3,187,117
MULTIPLE CONTACT ROTARY AND LINEAL SWITCH

Robert M. Dyksterhouse, Charlevoix, Mich., assignor, by mesne assignments, to Circuit Controls Corporation, Petoskey, Mich., a corporation of Michigan

Filed Jan. 25, 1962, Ser. No. 168,680
6 Claims. (Cl. 200—4)

1. A switch comprising: an elongate cylindrical case; a rotor coaxially positioned in said case; a resiliently biased contactor radially extending from said rotor; pairs of contact posts mounted in said case in an interference path for selective contact with said contactor, said contactor selectively closing selected circuits across adjacent of said posts; and a shaft coaxially mounted through said

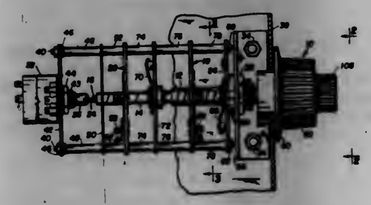


case and said rotor and being keyed to said rotor whereby said shaft is axially reciprocable while providing rotational movement to said rotor.

3,187,118
ELECTRICAL SWITCH HAVING MEANS FOR INTERCONNECTING CONCENTRIC SWITCH SHAFTS

Marlow D. Butler, Hillsboro, and Oswald C. Svehaug, Portland, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Jan. 18, 1962, Ser. No. 167,117
7 Claims. (Cl. 200—5)



1. An electrical switch assembly, comprising:

a pair of switch shafts coaxially supported with the first of said shafts having a hollow tubular shape and the second of said shafts being mounted for rotation inside said first shaft;

a plurality of switch plates each having a rotatable contact member and a stationary contact member;

means for connecting said switch plates to said shafts so that at least one of said switch plates is attached to said first shaft and at least one other of said switch plates is attached to said second shaft by their rotatable contact members for rotation with said shafts to change the electrical connection of the switch contacts; and

knob means for connecting said first shaft to said second shaft by rotation of one portion of said knob means so that both of said shafts can rotate together in order to operate said switch assembly as a gang switch, and for disconnecting said shafts from each other by movement parallel to the axis of said shafts and rotation of said portion of said knob means so that each of said shafts can rotate independently from the other in order to operate said switch assembly as two separate switches, said knob means including a spring biased detent member supported for longitudinal movement with said one portion of said knob means.

3,187,119
SWITCH CONTACT STRUCTURE WITH EMBEDDED SPRING BIASING MEANS

Robert M. Dyksterhouse, Charlevoix, Mich., assignor, by mesne assignments, to Circuit Controls Corporation, Petoskey, Mich., a corporation of Michigan

Filed Aug. 4, 1961, Ser. No. 129,378
5 Claims. (Cl. 200—16)

1. An electrical switch comprising: a pair of conducting balls; an actuator spacing said balls apart from each other; a case of insulating material in which said actuator is movable; a communicating gap defined in said case, said communicating gap constituting a path for said balls; a plurality of pairs of contactors through said case, each

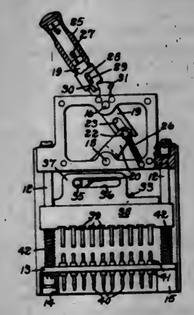


pair spaced apart from the adjacent pair and each contactor in said pairs in spaced-apart gapping relation in said path; and a spring bias located beneath and parallel to said gap acting through said gap upon said actuator.

3,187,120
MULTI-CONTACT MANUALLY-OPERATED ELECTRIC SWITCH WITH LEVER ACTUATING MEANS

Harold Akst, Freeport, N.Y., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 8, 1962, Ser. No. 229,137
3 Claims. (Cl. 200—16)



1. An electric switch comprising a frame, a first manually operable lever having a spring-biased handpiece thereupon, said first lever pivoted on said frame and rotatable between two extreme positions, a second lever pivoted on said frame, said second lever in sliding engagement with and rotatable in response to the rotation of said first lever, a stop means on said frame, said stop means engaging said handpiece when said first lever is in one of the two extreme positions and preventing the rotation thereof in the absence of a manual force overcoming the spring bias of said handpiece, a support means depending from said frame, a movable contact assembly slidably positioned on said support means, a terminal board carried by said support means, and actuating means urging said assembly along said support means in response to the rotation of said second lever.

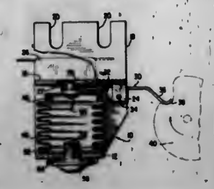
3,187,121
TIME DELAY ACTUATOR HAVING A FILTER ELEMENT

Frank V. Mingrone, Milford, Conn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Oct. 16, 1961, Ser. No. 145,302
2 Claims. (Cl. 200—34)

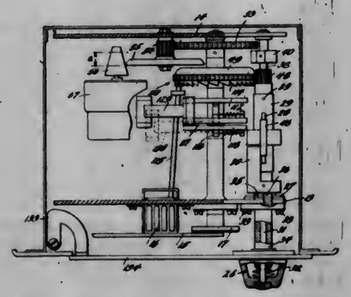
1. A time delay actuator comprising a support means having an opening, a resilient hollow capsule having a threaded opening at one end, said capsule being mounted on said support means with said threaded opening in coaxial alignment with the opening in said capsule thereby forming a path of fluid flow to and from the interior of the

capsule, a screw loosely threaded in the opening in said capsule and having a flange portion spaced from said support means on the side opposite that of the capsule, a porous compressible filter means disposed between said support means and said flange portion of the screw in the path of flow to and from the interior of the capsule, said



screw securing the capsule to said support means while being rotatable in said threaded opening in the capsule for selectively increasing or decreasing the density of the filter means, and means for contracting said capsule, said capsule thereafter expanding at a rate determined by the flow of fluid through said filter means.

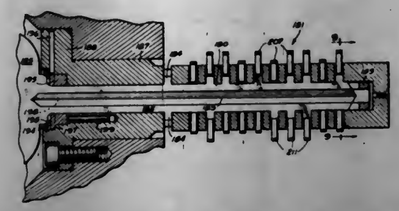
3,187,122
CHECK OPERATED TIME SWITCH
August Schmid, Schwerzenbach, Zurich, Switzerland
Filed Feb. 21, 1962, Ser. No. 174,802
Claims priority, application Switzerland, Feb. 21, 1961, 2,197/61
6 Claims. (Cl. 200—38)



1. Check operated time switch with a time control particularly for an automatic bowling pin setting device with variable time changes comprising a motor mounted for adjustment axially thereof on an axle, a driving cone on the motor and operable thereby, a friction disk connected to contact the driving cone, adjustable means to shift the motor and cone on its axle through a distance depending upon the time of use as controlled by the number of checks used, and check control mechanism connected to the disk by gear elements to regulate the operation of the time interval available in dependence of the number of checks employed.

3,187,123
BINARY KEY IDENTIFIER FOR MACHINE TOOLS
Myron L. Anthony, La Grange, Ill., assignor to Scully-Anthony Corporation, La Grange, Ill., a corporation of Illinois
Filed Apr. 3, 1961, Ser. No. 100,349
5 Claims. (Cl. 200—44)

4. In a tool identification system for a machine tool, a code key receptacle and data transfer device comprsing: an elongated cylindrical housing having a plurality of radial lug-receiving openings at predetermined spaced code locations along said housing; orienting means, mounted within said housing, for orienting a code key therein with individual lugs projecting into said lug-receiving openings; and a plurality of electrical contact elements, comprising individual spring fingers, mounted on said housing and each aligned with a respective one of said lug-receiving openings in position for engagement



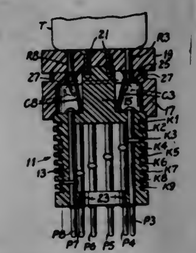
by a code lug on a code key inserted in said housing, said contact elements each being radially and angularly movable between a first position and a second position in accordance with the presence or absence of a code lug in the lug-receiving opening upon rotation of a key, within said housing. to a given data transfer position.

3,187,124
DOOR INTERLOCK MECHANISM FOR ENCLOSED CIRCUIT BREAKERS
Harris I. Stanback and Harry W. Curtis, both of Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Nov. 10, 1961, Ser. No. 151,542
9 Claims. (Cl. 200—50)



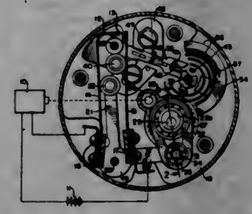
9. The combination comprising:
(a) an enclosure adapted to house a circuit breaker mountable therein with an operating handle thereof extending toward the front of said enclosure,
(b) said enclosure having a front door connected thereto by a hinge,
(c) a handle member slidably mounted on said door for movement away from said hinge to a first position and toward said hinge to a second position,
(d) said handle member being operatively connected to said operating handle of said circuit breaker when said circuit breaker is mounted in said enclosure and having a plate member secured thereto on the inner side of said door for sliding movement with said handle member, and
(e) an interlock latch member rotatably mounted in said enclosure adjacent an end of said plate member remote from said hinge for rotary movement between first and second positions independently ot the position of said handle member and having an interfering portion interfering with said plate member to prevent opening of said door when said handle member and said interlock latch member are respectively in said first positions thereof, the interfering relationship between said interlock latch member and said plate member being changeable to a non-interfering relationship by movement of said handle member to said second position thereof while said interlock latch member remains in said first position thereof and also by rotary movement of said interlock latch member to said second position thereof while said handle member remains in said first position thereof.

3,187,125
TEST ADAPTER WITH PLUG-IN PINS ELECTRICALLY CONNECTED TO CONDUCTIVE ELEMENTS AXIALLY SPACED ABOUT ITS EXTERIOR PERIPHERY
Simon A. Bergauer, 2311 A. 36th St., Los Alamos, N. Mex.
Filed June 5, 1963, Ser. No. 285,645
12 Claims. (Cl. 200—51.05)



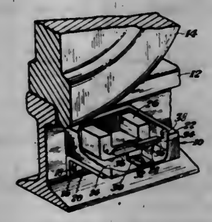
1. A test adapter for a plug-in type electronic circuit component to be interfitted between said component and a socket therefor, said adapter comprising a body, a plurality of contact pins secured to said body at one end thereof adapted to be received in said socket, a plurality of pin-receiving recesses in the other end of said body adapted to receive contact pins of said circuit component, conductive means electrically interconnecting each of the contact pins of said circuit component with a corresponding contact pin of said adapter, and a plurality of conductive elements on the exterior of said body axially spaced along said body between the ends thereof, each of said conductive elements presenting a conductive surface substantially about the periphery of said body and each being electrically connected to a respective one of the contact pins of said adapter whereby test apparatus may be electrically interconnected through a respective conductive element with any of the contact pins of said electronic circuit component from substantially any peripheral position about said adapter.

3,187,126
CHRONOMETRIC GOVERNOR
Albert E. De Barba, Wolcott, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware
Filed June 28, 1962, Ser. No. 205,978
9 Claims. (Cl. 200—52)



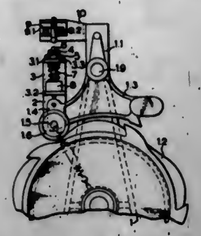
7. In a motor and governor assembly of the type comprising
(a) a motor adapted when connected to a predetermined power source to operate at a speed in excess of a predetermined governed speed,
(b) circuit means for controlling said motor including a pair of governor contacts and resilient supporting elements for said contacts,
(c) motor driven means for repetitively opening said contacts at instants determined by the instantaneous speed of the motor,
(d) and constant speed means including pallet lever means for closing said contacts periodically at predetermined instants independent of the speed of the motor,
the improvement in said motor driven means comprising
(e) an actuating lever means pivoted for reciprocating movement and having a portion engageable alternatively with said governor contacts to displace and open said contacts in accordance with the instantaneous speed of the motor,
(f) eccentric means driven by the motor,
(g) bearing means joining said eccentric means and said actuating lever means, whereby to effect positive, sinusoidal movements of said lever by rotations of said motor, said constant speed means, said link, and said bearing means being so related that under normal conditions of load and voltage said governor contacts are closed by said constant speed means at periods in which the rate of change of the sinusoidal movement of said lever is at a substantial minimum and
(h) banking means cooperating with said pallet lever means for temporarily restraining alternate individual ones of said governor contacts in a position of predetermined displacement,
(i) said banking means being effective to restrain said contacts in positions not substantially inward from positions of maximum sinusoidal displacement effected by said actuating lever.

3,187,127
MAGNETIC REED PROXIMITY SWITCH
Richard C. Hess, Monroeville, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Jan. 9, 1962, Ser. No. 165,144
3 Claims. (Cl. 200—61.41)



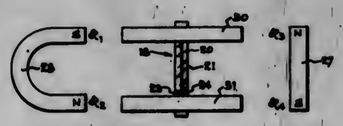
1. A device responsive to the presence at a point along a predetermined path of a passing permeable object comprising, a housing including a base mounted adjacent said point, a U-shaped magnet mounted on said base and arranged to project its main flux field in an upwardly direction from said base into the path of said object, with a portion of the fringe area of said field extending horizontally from said magnet during the absence of a permeable object within said main field, a bracket mounted on said base in spaced relation to said magnet, and a magnetically operated switch secured to said bracket in juxtaposed relation to said U-shape magnet and actuated to a first condition when within a portion of the fringe area of said main field and to a second condition when without the fringe area of said field.

3,187,128
SPEED CONTROL SWITCHING MECHANISM
Josef Hammer, St. Annastrasse 1, Ebikon, Switzerland
Filed Aug. 9, 1962, Ser. No. 215,924
Claims priority, application Switzerland, Aug. 12, 1961, 9,498/61
1 Claim. (Cl. 200—61.45)



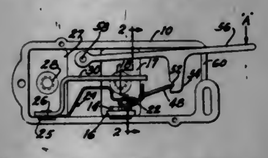
In combination with an elevator governor having a rotating cam responsive to the speed of travel of said elevator, and a cam follower mounted on one end of a lever pivoted about a point lying on a vertical line through the axis of said rotating cam, apparatus for operating the control contact of the electrical circuit of the elevator system comprising, a guide member disposed on said cam follower lever and movable therewith in a position substantially parallel to said vertical line, a weight slidably mounted in said guide member for reciprocal vertical movement relatively therewith, upper and lower stop means for limiting movement of said weight, means coacting with said weight in its upward movement for operating said control contact and adjustable spring means for normally urging said weight toward said lower stop, said weight being caused to act on said means for operating said control contact when the upward inertia caused by the rotation of said cam exceeds a predetermined speed.

3,187,129
MAGNETIC SWITCH ASSEMBLY
John E. McBrian, Trumbull, Conn., assignor to Mosler Research Products, Inc., Danbury, Conn., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,292
5 Claims. (Cl. 200—61.62)



1. A magnetic switch assembly for indicating the position of a closure member in an alarm circuit comprising a switch housing adapted to be mounted upon a stationary frame adjacent to a movable closure member, a magnet housing adapted to be mounted upon said closure member adjacent to a free edge thereof, whereby when said closure member is closed the magnet housing and switch housing are disposed in juxtaposition, two ferromagnetic pole pieces mounted within said switch housing in parallel spaced relationship with one another, a magnetic reed switch, means mounting said reed switch within said housing with the axis of said reed switch transverse to said pole pieces, one end of the reed switch being adjacent to each of the pole pieces, one of said pole pieces having an opening formed therein, a local magnet telescopically disposed within the opening and extending parallel to said reed switch toward the second of said pole pieces, a remote magnet, means mounting said remote magnet within said magnet housing, the pole of said remote magnet adjacent a pole piece being of opposite polarity to the pole of the local magnet adjacent to the same pole piece, said local magnet, said remote magnet and said pole pieces forming a magnetic bridge circuit, said reed switch including a movable contact shiftable between a first and second position, said contact being shifted to said first position only when said magnetic bridge circuit is balanced.

3,187,130
SNAP-ACTING ELECTRICAL SWITCH WITH CONTACT WIPING ACTION
John E. Bye, Belleville, Ill., and Richard E. Gould, Mehlville, Mo., assignors, by mesne assignments, to White-Rodgers Company, a corporation of Missouri
Filed Jan. 25, 1962, Ser. No. 168,781
3 Claims. (Cl. 200—67)

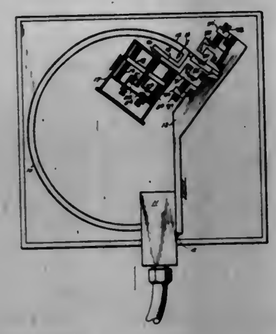


1. In a snap action switch, a casing, a switch blade fixed at one end in said casing and having a free end, a stationary contact mounted in said casing at one side of said blade at its free end, a movable contact attached to said one side of said blade for engagement with said stationary contact, said blade having an intermediate flexible portion which flexes freely to permit transverse and longitudinal movement of its free end thereby permitting sliding movement of said movable contact on said stationary contact, an inflexible toggle link arranged end to end with the free end of said blade and having its adjacent end pivotally connected to the free end of said blade, an actuating member having a portion thereof pivotally connected to the remote end of said toggle link, means mounting said actuating member on said casing for movement of the said portion thereof and the pivotally connected remote end of said toggle link in a path transversely and longitudinally toward said stationary contact when said toggle link is moved by said actuating member from a returned position of misalignment with said blade to a position of alignment therewith, said intermediate flexible portion of said blade having a free form which biases the free end of said blade and said attached movable contact transversely toward said stationary contact and longitudinally outward from the fixed end of said blade thereby to bias said toggle link in a returned position of misalignment.

3,187,131
PRESSURE AND TEMPERATURE OPERATED MAGNETIC SNAP-ACTION SWITCH
William W. Blase, Chicago, Ill., assignor to G.P.E. Controls, Inc., Chicago, Ill., a corporation of Illinois
Filed June 26, 1962, Ser. No. 205,252
7 Claims. (Cl. 200—67)

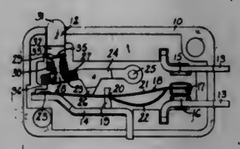
1. A condition-operated switch assembly, comprising, in combination, a condition-to-mechanical force transducer including a spring element having a predetermined spring force, a switch-actuating member connected to said spring element, said spring element including means responsive to the condition for displacing said switch-actuating member against the spring force of said spring element; an electrical switch having a movable contact-operating member, said contact-operating member being positioned adjacent said switch-actuating member for operative engagement thereby; magnetic means operable to apply a force opposing said spring force including a magnetic core rigidly connected to said spring element,

and first and second magnets, each of said magnets having first and second poles, said magnets being disposed on opposite sides of said core with the opposite poles thereof facing each other; and stop means positioned to limit movement of said magnetic core between two limit positions within the distance between said magnets, said



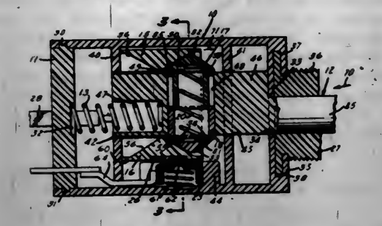
magnets having a magnetomotive force such that the net force applied by said magnets to said core at a given displacement of said core exceeds the opposing spring force applied to said switch-actuating member at a displacement thereof corresponding to said given displacement of said core.

3,187,132
OVERTRAVEL ACTUATING MECHANISM FOR A SNAP ACTION ELECTRICAL SWITCH
John Joseph Dennison, Cheshire, Conn., assignor to Maxson Electronics Corporation, New York, N.Y.
Filed Nov. 14, 1962, Ser. No. 237,556
3 Claims. (Cl. 200—67)



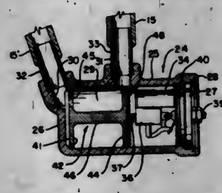
1. In an overtravel actuating mechanism for a snap switch having a housing and a resilient contact arm mounted on the housing and having a stable position and having an unstable position in which it contacts a contact mounted on the housing, the improvement which comprises an arm-actuating lever pivoted on the housing engaging said arm and being swingable toward one extreme position to move the arm to said unstable position thereof and being swingable in the opposite direction toward a second extreme position, switch-operating plunger means for actuating said lever, including a first plunger slidably mounted in the housing, a second plunger, said second plunger being engageable with the first plunger and slidable in said lever, and a spring coacting between said lever and said second plunger urging the latter toward the first plunger, said first plunger having a normal position and being movable from the latter to a position in which the lever assumes the first-mentioned extreme position and the contact arm assumes said unstable position in which it contacts said contact on the housing, said arm being effective to return said first plunger to the normal position thereof through movement of the lever to said second extreme position thereof.

3,187,133
SNAP ACTION, PUSH BUTTON ELECTRIC SWITCH
Edwin F. Pierce, Pasadena, Calif., assignor to Schulz Tool and Manufacturing Co., San Gabriel, Calif., a corporation of California
Filed Mar. 7, 1963, Ser. No. 263,497
12 Claims. (Cl. 200—77)



1. A snap action, push button switch comprising:
(a) a push button adapted to be depressed from a normal to an actuated position;
(b) first spring means urging said push button into its normal position;
(c) cam means having two cam surfaces forming an edge projecting toward and disposed adjacent said push button, said cam means being movable independently of the movement of said push button from a normal to an actuated position and back again;
(b) cam follower slidably disposed in said push button and movable therewith;
(e) second spring means urging said cam follower against the surfaces of said cam means, whereby upon depressing said push button, said cam follower will ride over one of said surfaces to force said cam means to move suddenly in a direction opposite the direction of movement of said push button, and whereby said cam means will return suddenly to its original position upon release of said push button;
(f) a movable carrier secured to said cam means and movable therewith;
(g) two brushes fixedly disposed about said carrier and in contact therewith and;
(h) a contact member having portions disposed in said carrier so as to be engageable with both of said brushes in one position of said carrier and as to be dissengaged from at least one of said brushes in the other position thereof.

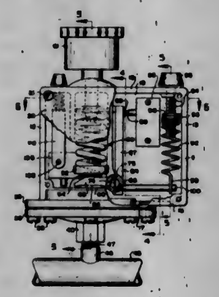
3,187,134
AIR ACTUATED ELECTRICAL SWITCH
Erhard Kock, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana
Filed Mar. 22, 1961, Ser. No. 97,599
2 Claims. (Cl. 200—81.9)



1. In an air flow actuated electrical apparatus, a casing having a unitary chamber of substantially uniform cross-section throughout at least the length of the chamber through which a switch-actuating piston moves and provided with an air inlet port and an air outlet port in axially spaced relationship, an electrical switch mounted in said chamber and having an outwardly biased, actuating con-

tact button, and said piston being carried wholly within said chamber and freely slidable therein, said piston having a plurality of heads interconnected by an elongated web having a cross-section substantially smaller than said heads and axially spacing the heads to prevent the edges of the heads from binding against the chamber walls and the piston from becoming cocked in said chamber, at least one of said heads retained between said inlet and outlet ports in circumferentially closely spaced relation to the chamber walls to cause at least one of said heads to restrict the free flow of air from said inlet port to said outlet port and to cause said piston to move into actuating engagement with said contact button to actuate said switch upon a predetermined air flow through said chamber.

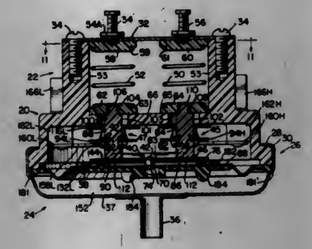
3,187,135
PRESSURE OPERATED PRESSURE REGULATING SWITCH
Ernst Singer, 3491 Puget Drive, Vancouver, British Columbia, Canada
Filed Jan. 26, 1960, Ser. No. 4,776
10 Claims. (Cl. 200—83)



1. In a pressure operated switch, a pressure element adapted to be moved by pressure to which it is exposed during use, pressure means opposing the movement of the element, a pivotally mounted lever near the pressure element so as to be swung around its pivotal mounting by said element, resiliently compressible means extending from the lever to the pressure element and opposing the movement of said element, said compressible means being weaker than the pressure means, a plunger-operated switch for controlling an electric circuit and positioned to have its plunger moved by the lever when the latter is moved by the pressure element through the compressible means, said switch requiring a certain operating force and having a smaller return force, said lever operating the switch when the force of the compressible means equals said switch operating force, and said switch remaining operated until the force of the compressible means is reduced by movement of the lever below the switch return force, and a second switch mounted near the pressure element and positioned to be operated thereby after a predetermined movement thereof by the pressure.

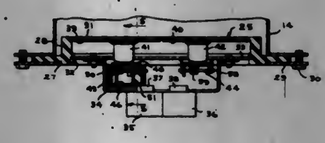
3,187,136
MULTIPLE PRESSURE SWITCH CONSTRUCTION
James Bernard Corder, Grove City, and Jack Ellsworth Herrman, New Albany, Ohio, assignors to Robertshaw Controls Company, a corporation of Delaware
Filed Oct. 16, 1961, Ser. No. 145,076
15 Claims. (Cl. 200—83)

1. A combination comprising: a casing having a fluid passage opening; a flexible diaphragm secured to said casing; a rigid disc having a central part and being attached to one side of said diaphragm; a T-shaped flexible balance member having a cross member and a foot member, said cross member having a central fulcrum part and opposite pushing sides, said foot member being secured to said casing; an actuating member spacing and forming actuating means between said central part of said disc and said central fulcrum part of said cross member; a first pressure connector and a second pressure connector each having one end engaged and actuated respectively



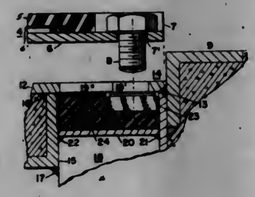
by said opposite pushing sides of said cross member; a first pressure switch connected with and actuated by said first pressure connector; a second pressure switch connected with and actuated by said second pressure connector; a first pressure opposition spring producing an opposing thrust on the other end of said first pressure connector; and a second pressure opposition spring producing an opposing thrust on the other end of said second pressure connector.

3,187,137
ADJUSTABLE PRESSURE RESPONSIVE CONTROL MEANS
Everett D. Morey, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 25, 1962, Ser. No. 197,669
3 Claims. (Cl. 200—83)



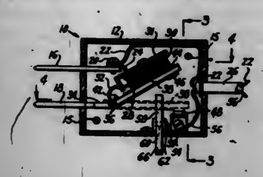
3. A pressure responsive control means comprising:
a flexible diaphragm including spaced first and second portions positioned to be independently moved in response to variations in fluid pressure on said diaphragm,
a first pressure switch having a switch arm normally in engagement with a back contact and movable to engage a front contact,
a second pressure switch having a switch arm movable from a normally open to a closed position,
a first actuator movable in response to movement of said first portion of said diaphragm for actuating said first switch and comprising a switch operating arm, a second arm pivotally connected to switch arm and movable by said movable member and a toggle spring between said arms for providing an overcenter movement of switch operating arm relative to said second arm,
low strength spring means biasing said first actuator to a normal pressure position in which the switch arm of said first switch engages said back contact,
whereby a low fluid pressure moves the switch arm of said first switch into engagement with said front contact, and a higher fluid pressure causes overcenter movement of said switch operating arm to permit the switch arm of said first switch to move into contact with its back contact,
a second actuator for operating said second switch in response to movement of said second portion of said diaphragm for closing said second switch, said second actuator including spring means permitting operation thereof at an intermediate pressure on said diaphragm.

3,187,138
READILY DISCONNECTIBLE TRAFFIC DETECTOR SWITCH AND FRAME HAVING TWO DIFFERENT SIZE FASTENING HOLES
Robert D. Culver, Norwalk, Conn., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,236
5 Claims. (Cl. 200—86)



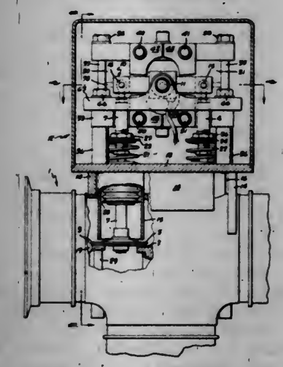
1. In a traffic detector for roadways, the combination of an easily disconnectible elongated frame member, and a treadle switch, said frame member comprising a top-supporting plate member having individual spaced apertures extending along the length thereof, each individual aperture including two connected openings of different sizes, and a plurality of correspondingly spaced fastener retaining means attached to said top-supporting member under said apertures; disconnectible threaded fasteners having cooperating smaller and larger parts comparable in size to the respective two connected openings and said fasteners being connectible together through said smaller of the two openings for connecting the frame to the switch, a removable plate mountable on said frame member, mounting means for mounting said removable plate in a fixed position upon said top-supporting plate member; said treadle switch comprising, a first rigid electrical contact plate, a resilient insulator pad supported by and attached to said first rigid plate, a second flexible electrical contact plate secured to a part of the underside of said resilient insulator pad and movable toward said fixed plate for contact therewith, said resilient insulator pad having a plurality of slot openings above said rigid contact plate, these slot openings being aligned with holes in said rigid plate and above corresponding said smaller openings in said top-supporting member, said holes being smaller than said slots to permit passage of only the smaller part of the fasteners, and said first rigid plate being fastened to said frame adjacent to said removable plate when mounted on the supporting member by insertion of the fastener in the hole in the rigid contact plate and in the corresponding smaller opening and by coupling the inserted fastener with its associated disconnectible fastener, whereby the mounting of said removable plate on said top-supporting member in adjacent relation to said rigid plate maintains the treadle switch and fasteners in fixed position along said supporting plate member and the removal of said removable plate permits the sliding of the treadle switch and its associated fastener to the larger opening of said two different size openings.

3,187,139
REMOTELY CONTROLLED ELECTRICAL SWITCH DEVICE
Thomas D. Hardesty, 3004 Broadway, Lorain, Ohio
Filed Dec. 27, 1960, Ser. No. 78,446
3 Claims. (Cl. 200—87)



1. An electrical switch device comprising a housing, a low voltage actuated circuit completing switch means in said housing comprising a through conductor and two spaced apart conductor portions, a first contact means pivotally mounted in said housing and electrically connected to one of said conductor portions, a second contact means fixed in said housing in the path of said pivotally mounted first contact means, said second contact means being electrically connected to the other of said conductor portions to thereby complete a circuit between said conductor portions and said through conductor when said pivoted contact means is in contact with said fixed contact means, an electromagnet means connected in a circuit between one of said conductor portions and said through conductor and fixed in said housing adajcent said pivoted contact means to bias and hold said pivoted contact means in circuit interrupting position on normal voltage through said electromagnet means, and biasing means, of less biasing power than said electromagnet means, biasing said pivoted contact means to circuit completing position with said fixed contact means, on less than normal voltage through said electromagnet means.

3,187,140
MAGNETIC SWITCH ACTUATOR
Wesley N. Lindsay, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,327
8 Claims. (Cl. 200—87)



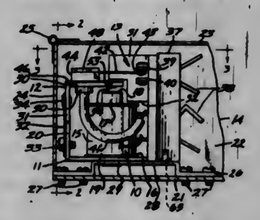
1. An actuator for a switch having a switch element and a shaft supporting said switch element for movement of the latter to one or the other of two positions, comprising: an armature supported for oscillation about a pivot and connected at one of its ends to said shaft, a permanent magnet including a pair of pole pieces of opposite polarity on opposite sides respectively of said one end, resilient means for holding said armature in an

intermediate position between and spaced from said pole pieces and for yieldably resisting movement of said one end toward either of said pole pieces, means on said armature for establishing a flux in said armature having a direction opposite to the flux created by said permanent magnet whereby said armature is swung about said pivot to a position with said one end in engagement with one of said pole pieces and with said switch element in one of said two positions whereby said armature is held in said last mentioned position by the magnetic force of said one pole piece against the force of said resilient means when said flux establishing means is deenergized.

3,187,141
ARMATURE MOUNTING MEANS FOR ELECTROMAGNETIC RELAYS

Paul Alexander Hanold, Fort Branch, Ind., assignor to American Machine & Foundry Co., a corporation of New Jersey

Filed Nov. 9, 1961, Ser. No. 151,259
3 Claims. (Cl. 200—87)

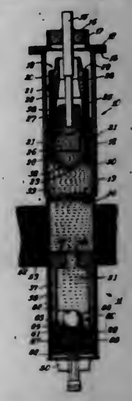


1. An electromagnetic relay comprising;
a field member of magnetic material having a generally rectangular base and a generally rectangular leg extending substantially perpendicular to said base
a magnetic armature including
a first generally rectangular leg which extends substantially parallel to said base of said field member, and
a second generally rectangular leg extending substantially perpendicular to said first leg in a direction toward said base of said field member;
an electromagnet mounted on said base and extending substantially perpendicular thereto in a direction toward said armature,
said rectangular leg of said field member and said second leg of said armature being coplanar and each having a length substantially less than the axial length of said electromagnet so that an edge of said second leg of said armature terminates closely adjacent to an edge of said field member leg.
said edges being in sufficiently close face to face relation so that a magnetic field induced in said field member passes readily into said armature,
a generally flat prestressed leaf type restoring spring comprising:
a generally flat body portion;
an arcuately bent medial portion;
and having at least one opening at each end of said body portion said spring being secured to said field member leg and to said second leg of said armature by enlarged head compression fasteners extending through said openings of said body portion;
an arcuately curved pressure plate between said spring and the enlarged head of one of said compression fasteners, said plate having edges engaging said spring on each side of said compression fastener;
said spring being operable to maintain said edge of said second leg of said armature in closely adjacent relation to said edge of said field member leg, said spring being further operable to pivot said armature away from said electromagnet when said relay is deenergized,
fixed and movable contacts associated with said relay, and
means connected to said armature to operate said movable contacts in response to movement of said armature.

3,187,142
TIME DELAY ACTUATOR FOR MERCURY RELAY

George H. Elenbaas, Elkhart, Ind., assignor to Durakool, Inc., Elkhart, Ind., a corporation of Indiana

Filed Apr. 4, 1963, Ser. No. 270,740
10 Claims. (Cl. 200—97)



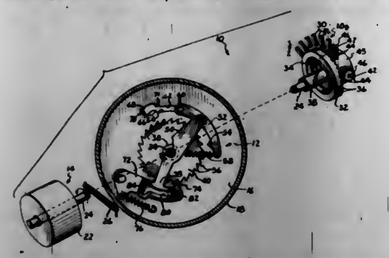
2. A mercury relay assembly comprising a pair of electrode means insulated from each other with one of said electrode means having contacting engagement with a first body of mercury for said relay and the other of said electrode means having contacting engagement with a second body of mercury for said relay, first plunger means adapted in a first operative position to maintain said two bodies of mercury out of contact and in a second operative position to maintain said two bodies of mercury in contact to establish a circuit between said pair of electrode means, second hollow plunger means movable in a viscous fluid, coil means adapted when energized to attract said second plunger means within said coil means whereby the magnetic flux intensity in said second plunger means is increased and said first plunger means is attracted thereby and moved from one operative position to the other operative position, and said second plunger means having metering means through which said viscous fluid must flow for effecting a time delay in the movement of said second plunger means within said coil means.

3,187,143
ROTARY STEPPING SWITCH

Willis A. Kropp, Stamford, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 25, 1962, Ser. No. 232,928
4 Claims. (Cl. 200—105)

1. A stepping switch comprising, in combination, a circular fixed rack, a ratchet wheel having an output shaft disposed coaxially with respect to said rack, a pinion coupled to said shaft for bodily movement and meshed with said rack, a pawl lever coaxially mounted with respect to said ratchet wheel and oscillatable between initial and final positions, a drive pawl pivotally mounted on said pawl lever and biased toward said ratchet wheel, a first cam and follower holding said drive pawl from said ratchet wheel as said pawl lever leaves its initial position and urging said drive pawl against said ratchet wheel as said pawl lever approaches its final position, a lock pawl biased against said ratchet wheel, a second cam and follower connecting said pawl lever and lock pawl preventing said lock pawl from ratcheting over said ratchet wheel

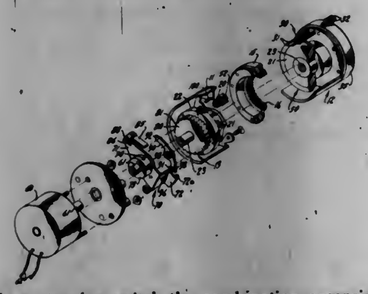


until said pawl lever approaches its final position and said drive pawl engages said wheel, means to oscillate said pawl lever between said initial and final positions for angularly stepping said shaft so that said pinion rolls on said rack, and a plurality of switch operators adjacent the path of said pinion for successive actuation thereby so that rolling actuation of said operators takes place.

3,187,144
ROTARY STEPPING SWITCH

Willis A. Kropp, Duxbury, Mass., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 14, 1964, Ser. No. 396,301
8 Claims. (Cl. 200—105)



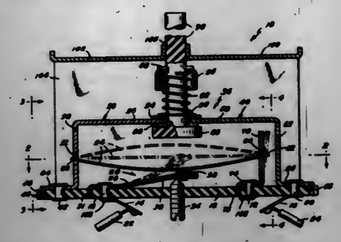
2. In a stepping switch the combination comprising a ring gear, a plurality of planet pinions spaced about the ring gear and in mesh therewith, means including a drive shaft for rotating the planet pinions in an orbital path about the axis of the ring gear, means for indexing the drive shaft, a plurality of switch elements arranged in a circular locus adjacent the path of movement of the pinions, each of said pinions having a multi-pointed cam drivingly connected to the pinion and coaxial therewith for actuating the switch elements in succession as the pinions are orbited by the indexing movement.

3,187,145
CIRCUIT BREAKER WITH AUXILIARY CONTACT MEANS

Joseph Grabinski, Providence, R.I., assignor to Sightmaster Corp., Providence, R.I., a corporation of New York

Filed Apr. 17, 1961, Ser. No. 103,349
8 Claims. (Cl. 200—113)

7. In a circuit breaker for low current circuits, a nonmetallic base having terminals secured thereto in spaced relation, a temperature responsive actuating element mounted on said base and having one end electrically connected to one of said terminals, a bracket mounted on said base and electrically connected to the other of said terminals, a retaining member secured to said base within the confines of said bracket, a spring contact member having one end engaging said bracket and the other end mounted in said retaining member for normally locating said spring member in engagement with said actuating

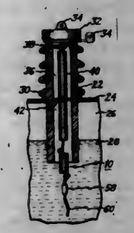


element for establishing an electrical circuit therewith, said spring member being movable to a circuit breaking position out of contact therewith in response to movement of said actuating element when an overload of current is applied thereto, means mounted on said bracket for resetting said spring member to the normal position thereof, and spring means for normally retaining said resetting means in a circuit ho ding position, wherein an electrical circuit is established through said bracket.

3,187,146
BUSHING FUSE PROVIDED WITH A FUSE BODY OF STRONG INSULATING MATERIAL HAVING FLATTENED ENDS

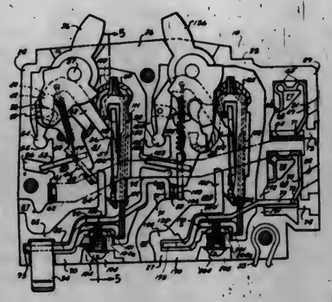
Roger F. Schrader, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Feb. 16, 1962, Ser. No. 173,736
3 Claims. (Cl. 200—113)



1. A protective device for electrical apparatus which has a tank and a cover therefor, comprising, in combination; a bushing member secured to the cover of the electrical apparatus and extending therethrough, an insulated lead connected to one end of said bushing and extending through the major portion thereof, a fuse member having a fuse body of strong, rigid, insulating material, flattened end portions on each end of said fuse body, an electrical connector secured to each of said flattened end portions, one said electrical connector secured to said insulated lead, the other said electrical connector connectible to an internal lead of the electrical apparatus, a fuse wire electrically connected to each said electrical connector and extending through a bore in said fuse body, said fuse body being held in said bushing by said one electrical connector connected to said insulated lead with substantially half of said fuse extending below the bottom of said bushing, whereby when said fuse wire melts the gases generated thereby expel said fuse from said bushing.

3,187,147
TANDEM ELECTRIC CIRCUIT BREAKER
Robert E. Dietz and Edward P. Dessert, Cedar Rapids, Iowa, David A. Pickett, Detroit, Mich., and Martin V. Zabaty, Philadelphia, Pa., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 14, 1960, Ser. No. 62,740
3 Claims. (Cl. 200—144)



1. An electrical panelboard comprising:
(a) a mounting panel assembly, and
(b) a pair of substantially identical molded-case electric circuit breakers mounted thereon in abutting end-to-end relationship and reversely positioned with respect to each other so that a particular end wall of the case of one circuit breaker abuts a corresponding end wall of the case of the other circuit breaker,
(c) each circuit breaker having a first circuit breaker mechanism and a second circuit breaker mechanism disposed in the case thereof in tandem relationship from its said end wall,
(d) each circuit breaker mechanism including a pair of separable contacts between which an arc tends to form upon separation thereof when energized, and
(e) each circuit breaker having a first arc chute and a second arc chute respectively associated with the separable contacts of the first and second circuit breaker mechanisms therein, said first arc chutes venting respectively through said end walls whereby arc by-products can be discharged from said first arc chute of one circuit breaker into the first arc chute of the other through said abutting end walls, and said second arc chutes venting respectively through walls of said casings facing said mounting panel assembly.

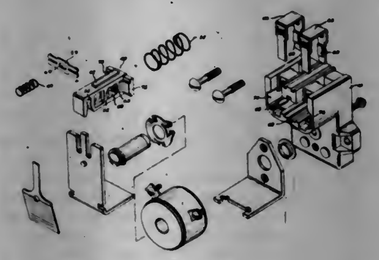
3,187,148
BIASED LEVER ARM SWITCH
Robert M. Dyksterhouse, Charlevoix, Mich., assignor, by mesne assignments, to Circuit Controls Corporation, Petoskey, Mich., a corporation of Michigan
Filed Jan. 25, 1962, Ser. No. 168,637
1 Claim. (Cl. 200—164)

In a safety switch for coordination with mechanical disconnect, the combination comprising:
(a) a first switch case shell half of insulating material including a cavity therein defining one-half of an arcuate groove path;
(b) a second switch case shell half of conducting material including a cavity therein defining one-half of an arcuate groove path, said second switch case shell half mating with said first switch case shell half so as to form a switch case defining an arcuate groove path therein;
(c) a conductive insert provided through said first shell half and forming a portion of the arcuate groove path defined in said case;
(d) a transverse pivot through said case halves;
(e) a bell crank lever pivotal on said pivot and extending into said switch case and extending externally therefrom;



(f) a ball carriage assembly carrying a conducting ball, said assembly being fixedly attached to the portion of said lever extending into said case, said ball carriage assembly being selectively movable within said base in response to selected movement of said lever; said conducting ball held captive within said arcuate groove path by said ball carriage assembly, said conducting ball selectively movable in said arcuate groove path into and out of contact with said conductive insert in response to selective movement of said ball carriage assembly by said lever; and
(g) a spring acting upon said ball carriage assembly, between said carriage assembly and said switch case, so as to bias said ball carriage assembly into a predetermined normal position whereby said ball in said arcuate groove path is held out of contact from said conductive insert.

3,187,149
STATIONARY CONTACT AND TERMINAL MEMBER
Nobel H. Koertge, Elm Grove, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Original application Aug. 31, 1960, Ser. No. 53,200, now Patent No. 3,088,007, dated Apr. 30, 1963. Divided and this application Oct. 23, 1962, Ser. No. 232,386
3 Claims. (Cl. 200—166)

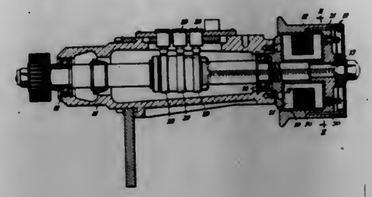


1. A reversible electric stationary terminal comprising, a U-shaped member having a pair of spaced legs, said legs having alined threaded apertures and a binding screw having a threaded shank end portion which screws into either of the leg apertures while the remainder of the shank can freely pass through said leg aperture whereby the screw can be taken down into the leg with which it is threadably engaged to compress said legs together and a contact tip secured to the inside of a leg of said member.

ERRATUM

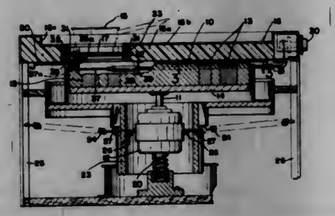
For Class 200—169 see:
Patent No. 3,186,981

3,187,150
HEATING ARRANGEMENTS
Joseph France, Bolton, England, assignor to T.M.M. (Research) Limited, Oldham, England
Filed Sept. 25, 1962, Ser. No. 226,030
Claims priority, application Great Britain, Sept. 26, 1961, 34,478/61
5 Claims. (Cl. 219—10.49)



4. A textile processing machine comprising a plurality of heating zones in which yarn fed through the machine is to be locally heated, each heating zone including a hollow roller over which the yarn is adapted to pass, a stationary magnetizable core arranged within said roller, and an electric coil wound on said core concentrically with respect to said roller within the latter for producing within said core an alternating magnetic flux which extends through said roller in paths lying in planes parallel to the axis of rotation of the roller.

3,187,151
EDDY CURRENT HEATING DEVICE
Max Baermann, Bensberg Wulfshof, Bezirk Cologne (Rhine), Germany
Filed Apr. 4, 1963, Ser. No. 274,894
8 Claims. (Cl. 219—10.61)



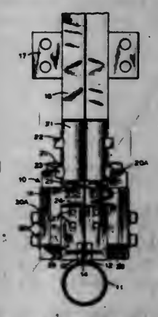
1. An apparatus for heating a strip of electrically conductive material traveling in a predetermined path, said apparatus comprising a channel of electrically non-conductive, non-magnetic material, said channel surrounding said path and thus said moving strip, a magnet rotor outside said channel and in close spaced relationship with said channel with a rotor face generally parallel to said strip, a plurality of permanent magnets arranged in a generally circular pattern with adjacent magnets having opposite polarities, said magnets being secured onto said rotor and having outwardly extending poles defining said rotor face, a high permeability member joining said members at the side of said rotor remote from said rotor face, and drive means for rotating said rotor about an axis generally coinciding with the center of said pattern, said axis being through the plane of said strip said circular pattern of said magnets having a given diameter, said channel having a length along said path at least as great as said diameter and said channel extending between all of said rotating magnets and said strip.

3,187,152
HEATING CONVEYOR BELT
Kunio Itoya, 740 Magome-machi Higashi 3-chome, Ota-ku, Tokyo, Japan
Filed Mar. 19, 1962, Ser. No. 180,626
1 Claim. (Cl. 219—10.69)



In conveyor apparatus, the combination comprising a plurality of spaced electrical heating means each including a frame-type iron core and an electric coil wound on said core to define a primary winding, an endless conveyor belt adapted for movement through each iron core, said endless conveyor belt including electroconductive material and defining a secondary winding for each iron core whereby said endless conveyor belt is heated in response to alternating current impressed on each primary winding, said endless conveyor belt including a plurality of flat sheets each having a top surface member defining a supporting surface and an undersurface member having a higher electroconductive property than said top surface member, means electrically connecting said flat sheets to each other in series arrangement, and a movable iron piece for each iron core to adjust flux leakage and thereby control heating temperatures in said endless conveyor belt.

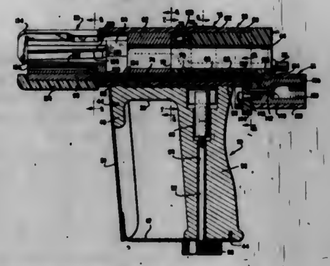
3,187,153
RESISTANCE WELDER
Ernst W. Allardt, Harry B. Gruman, and Daniel E. Yoho, Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed July 17, 1962, Ser. No. 210,445
8 Claims. (Cl. 219—65)



1. Apparatus for welding together a pair of metallic strip edges defining therebetween a longitudinal gap comprising means for longitudinally advancing said strips, means for applying pressure thereto to close said gap at a welding point, a pair of electrodes mounted to slidably engage said strips adjacent said gap edges at positions in advance of said welding point, means for urging said electrodes into engagement with said strips with substantially equal and constant force, each of said electrodes including a fixed current carrying member and a movable current carrying member, said movable member being slidably engaged with said fixed member and having mounted thereon a contact surface, and means for applying a radio frequency current to said fixed current carrying member portions of said electrodes whereby current

flows from said fixed members, through said movable current carrying members containing said contact surfaces, and along said gap edges to and from said welding point, so that the resistance heating effect of said current is concentrated in the approaching gap edges.

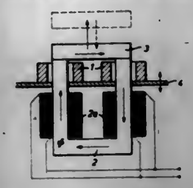
3,187,154
ELECTRIC ARC-GAS JET CUTTING AND GOUGING TORCH
Myron D. Stepath, Lancaster, Ohio, assignor to Arcair Company, Bremerton, Wash., a partnership
Filed July 5, 1962, Ser. No. 207,715
8 Claims. (Cl. 219—70)



1. An electric arc-gas jet torch comprising an elongate hollow tubular body open at its front and rear ends to permit feeding of an elongated electrode axially therethrough, a plurality of elongate current carrying jaw members integrally joined rearwardly of their forward ends and fixed to the front end of said tubular body and projecting forwardly from said tubular body in symmetrically spaced relationship about the longitudinal axis of said tubular body, means on the radially inner surfaces of each of said jaw members cooperatively defining an electrode seat for resiliently gripping and supporting an electrode in a position extending coaxially of said tubular body with the forward end of the electrode projecting forwardly beyond said jaw members, connector means for supplying electric power and gas under pressure to said tubular body, means for conducting electric power from said connector means to all of said jaw members, means for conducting gas under pressure from said connector means through one of said jaw members and discharging said gas in forwardly directed jets along the sides of the forwardly projecting portion of an electrode supported by said electrode seat defining means, and means for circulating a liquid coolant through the other jaw members.

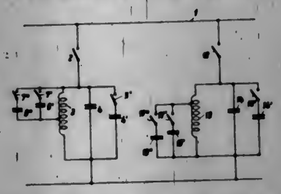
3,187,155
METHOD OF HEATING ANNULAR METALLIC BODIES BY ELECTRICAL INDUCTION
Ernst Beckert, Schweinfurt, and Wilhelm Völkening, Dittelbrunn, near Schweinfurt, Germany, assignors to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany
Filed Oct. 10, 1960, Ser. No. 61,454
Claims priority, application Germany, Oct. 12, 1959, K 38,889
1 Claim. (Cl. 219—10.75)

An apparatus for heating inductively metal rings by electrical means and for subsequently eliminating residual magnetism comprising a transformer-type core enclosing at least two limbs, a first and a second yoke connecting neighboring ends of said limbs, said second yoke being detachable in order to place a ring over at least one of said limbs, at least one primary winding on at least one of said limbs, a first source of alternating exciting voltage, magnetic amplifier means with an inherent time constant, said amplifier means including a first amplifying branch and a second control branch, said primary winding being connected to said first source, said first branch of said magnetic amplifier means being interconnected between said source and said primary, said second control branch being provided with an RC-network to adjust said time constant of said amplifier means, a second source of direct control voltage connected to said second control branch of said amplifier means, means to interrupt the connection between said second source of voltage and said second control branch



in order to reduce the influence of said exciting voltage of said first source on said primary steadily to at least substantially zero due to the time constant of said amplifier means, and a relay, said relay being connected in parallel to said primary and adapted to change its position when the voltage of said primary has dropped to about two percent of its maximum value, said change of said position effecting a release of said second detachable yoke.

3,187,156
CIRCUIT FOR CONTROLLING THE POWER OF INDUCTIVE HEATING OR MELTING EQUIPMENT
Gerhard W. Seulen, Friedrich W. Scheffler, and Leonhard Springob, Remscheid, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany
Filed July 23, 1962, Ser. No. 211,709
Claims priority, application Germany, July 25, 1961, D 36,654
8 Claims. (Cl. 219—10.75)



1. A circuit arrangement for controlling the power of inductive heating or melting equipment independently of the supply or bus bar voltage, in combination with said equipment the improvement in said circuit comprising at least one capacitor connected across the equipment, said equipment being divided into at least two series-connected groups, and a plurality of second capacitors controllably connected in parallel across one of the said groups to sectionally control the power of said inductive equipment.

3,187,157
STUD WELDING GUN
Willem Pieter van den Blink, Karel Christiaan ter Haar, and Elke Herman Ettema, all of Utrecht, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Original application June 6, 1958, Ser. No. 740,438, now Patent No. 3,021,418, dated Feb. 13, 1962. Divided and this application Oct. 5, 1961, Ser. No. 151,118
Claims priority, application Netherlands, June 12, 1957, 218,074
3 Claims. (Cl. 219—98)

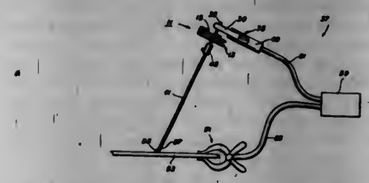
1. A stud-welding gun for attaching a stud to a workpiece with the aid of a slag-building body positioned on

the operative end of the stud, comprising means for holding the stud, a member movably suported on said means and having an operative position in which it engages the slag-building body to hold the same against the stud and



an inoperative position spaced therefrom, resilient means urging said member into the operative position, and means actuated as the gun is positioned on the workpiece to place said member in the inoperative position when the gun is operatively positioned with respect to the workpiece.

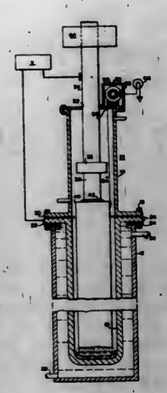
3,187,158
DEVICE FOR USE IN ARC WELDING
James M. Foster, Jr., 141 N. Highland, Memphis, Tenn.
Filed Aug. 28, 1962, Ser. No. 220,004
4 Claims. (Cl. 219—130)



1. A device for use with arc welding equipment comprising a pair of substantially flat and parallel spaced members, means on one of said members for coupling said one of said members to the arc welding equipment, means on the other of said members for coupling said other of said members to a welding rod, resilient means urging said members apart, at least one of said members comprising substantially flat spirally-wound coil means for magnetically attracting the other of said members to urge said members towards one another against the force of said resilient means when current is passed therethrough.

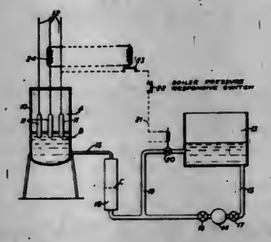
3,187,159
CONSUMABLE ELECTRODE CONSUMPTION INDICATOR
Thaddeus F. Kilian, Watervliet, N.Y., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1964, Ser. No. 353,915
3 Claims. (Cl. 13—9)

1. In a consumable electrode furnace having an enclosed melting chamber, an elongated electrode secured within said chamber by a clamp device to a movable ram which extends outwardly of said chamber, said electrode being disposed to be consumed toward said clamp and moved downwardly by said ram as said electrode is consumed, the combination of, a signalling device disposed external of said furnace, a wire means having one end thereof electrically connected at a predetermined position along said electrode relative to said clamp and the other end carried by said furnace, said wire means having a supply length thereof disposed to be extended as the electrode moves downwardly in said furnace to prevent breakage of said wire means by downward movement of said ram and electrode, means for electrically connecting said ram and said wire means to an external source of electrical supply to provide for the flow of a signal current through said wire means, electrode, clamp and ram, said signalling device being connected in circuit relation with said wire means, said one end connection of said wire means to said electrode and said



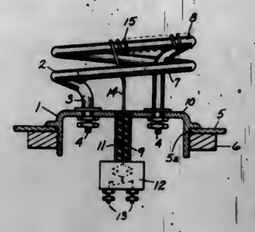
flow of signal current being interrupted when said electrode is consumed to said predetermined position, said signalling device being responsive to said interruption of said one end connection of said wire means and the flow of signal current therethrough to produce a signal indicative of the consumption of said electrode to said predetermined position.

3,187,160
ELECTRODE STEAM BOILER APPARATUS
Gerald Austen Williams, Harrow, England, assignor to Bastian and Allen Limited, Harrow, England, a company of Great Britain
Filed Jan. 10, 1962, Ser. No. 165,446
Claims priority, application Great Britain, Jan. 12, 1961, 1,384/61
4 Claims. (Cl. 219—286)



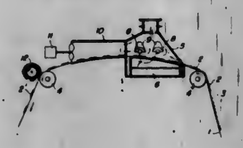
4. Electrode steam boiler apparatus comprising an electrode steam boiler, a closed container having an upper end and a lower end, said container having a volume substantially equal to the volume of water contained between minimum and maximum levels of said boiler during normal operation, a pipe connecting the upper end to the boiler at a point below the minimum water level during normal operation, means for pumping cold water from a water source into the lower end of said container and means responsive to at least one predetermined physical condition associated with the generation of steam within said boiler for bleeding cold water from the lower end of said container to a point at atmospheric pressure.

3,187,161
IMMERSION HEATER CONTROL
John J. Finn, Erie, Pa., assignor of one-half to Glenn Electric Heater Corporation, Erie, Pa., a corporation of Pennsylvania
Filed June 11, 1963, Ser. No. 287,154
4 Claims. (Cl. 219—331)



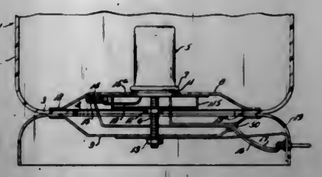
1. A liquid heater comprising a vessel containing liquid to be heated, said vessel having a wall with a submerged opening, a base closing said opening having its inner side presented to the interior of the vessel and its outer side presented to the exterior of the vessel, a heating element having a sheath sealed to the inner side of the base and terminals accessible from the outside of the base, a nipple screwed into the outer side of the base, a thermostat mounted on the outer end of the nipple and having terminals for connection into a control circuit for the heating element, a capillary tube containing a thermally responsive liquid extending from the thermostat through the nipple and base and wrapped around the uppermost part of said sheath whereby thermally responsive liquid in the tube is heated to operate the thermostat upon low liquid level exposing the uppermost part of said sheath, and a sealing compound filling the nipple around the tube.

3,187,162
APPARATUS FOR THERMALLY FIXING ELECTRONICALLY IMPRINTED IMAGES
Toku Hojo and Motoji Matsuda, Yokohama, Japan, assignors to Hitachi Ltd., Tokyo, Japan, a corporation of Japan
Filed June 12, 1963, Ser. No. 287,276
Claims priority, application Japan, June 14, 1962, 37/24,282
1 Claim. (Cl. 219—388)



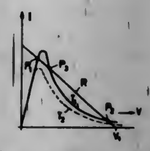
An apparatus for thermally fixing electronically imprinted images on a recording sheet comprising a heating unit having an exposed surface adapted to be held at a definite temperature, means for directing said recording sheet over said exposed surface in close sliding contact therewith, at least one source of heat radiation of tubular configuration effective to cause said recording sheet being directed over said exposed surface to heat and cool with an extremely small time delay, means for controlling the rate of heat radiation of said source in accordance with the speed at which said recording sheet is directed over said exposed surface so that only the imprinted image on said recording sheet is selectively fused thereto, and rotary brush means for removing any unfixed fogging contamination from said recording sheet.

3,187,163
COMBINATION CONTAINER, HEATER AND CONTROL UNIT
Alton R. Wells, 4573 W. Tradewinds Ave., Lauderdale-by-the-Sea, Fla., and Robert M. Wells, 4371 Ira Road, Akron, Ohio
Filed Oct. 25, 1962, Ser. No. 232,018
12 Claims. (Cl. 219—441)



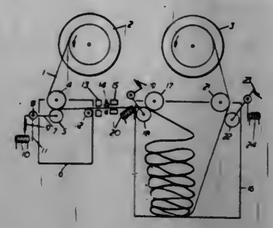
1. In combination,
a plastic container having a flat disc-like base with a center aperture therein,
an electrical heater unit having a stud operatively carried thereby and extending downwardly therefrom,
a pair of similar dished metal plates of greater size than said aperture, said plates being made from stainless steel,
said plates being positioned in opposed relation and opposite vertical sides of said base and having said stud extending therethrough,
means securing the upper one of said metal plates and said heater unit together,
means engaging said stud to secure said plates to said container to seal said aperture,
a thermostat operatively positioned between said plates,
circuit means connecting said thermostat and heater unit together for controlled supply of electrical energy to said heater unit, and
a base means operatively secured to said container to provide a support therefor.

3,187,164
DEVICE FOR THE PROTECTION OF ELECTRICAL APPARATUS
Ekkehard Andrich, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 5, 1962, Ser. No. 242,387
Claims priority, application Germany, Sept. 27, 1962, N 22,142
7 Claims. (Cl. 219—504)



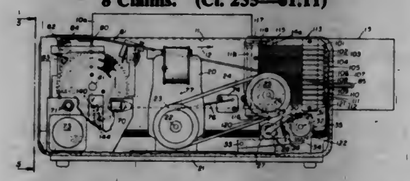
6. A temperature control device for protecting a body from thermal overload, comprising resistance means arranged in thermal coupling relationship with said body, said resistance means having a high positive temperature coefficient and exhibiting a first region having a substantially linear current versus voltage characteristic and a second negative resistance region, an electric heating element for heating said body connected in series circuit with said resistance means, and input means supplying electric energy to said series circuit thereby to heat said body, said resistance means being adapted to operate in said first region below a given temperature of said body and abruptly shifting to said negative resistance region whenever said body attains said given temperature thereby substantially reducing the heating current flowing in said series circuit.

3,187,165
TAPE STORAGE DEVICES
Frederick James Leslie Turner and Royston Geoffrey Moore, Croydon, England, assignors to Creed & Company Limited, Croydon, England, a British company
Filed Mar. 18, 1960, Ser. No. 15,943
Claims priority, application Great Britain, Apr. 10, 1959, 12,219/59
2 Claims. (Cl. 235—61.11)



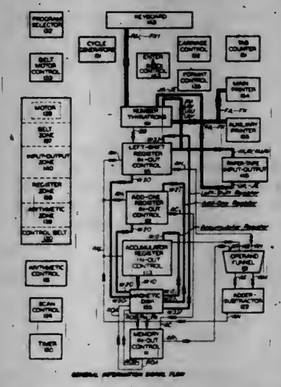
1. A tape storage device comprising a storage tape, slow and high speed tape feeding devices, first and second tape winding reels, means for coupling said high speed device to said tape and to said reels to feed said tape from said first to said second reel at a speed substantially greater than the maximum speed at which the stored intelligence thereon can be reliably sensed, means for sensing a given section on said tape during operation of said high speed device, first braking means coupled to said sensing means for instantly stopping the motion of said tape at a point intermediate the said first and second reels upon detection of said given section, second braking means coupled to said sensing means for gradually stopping the motion of said first and second reels upon detection of said given section, first storage means associated with said first reel for storing tape due to the gradual stopping of said first reel and the instantaneous stopping of said intermediate point of said tape, second storage means associated with said second reel for storing tape due to differences in the diameters of the tape on said reels during operation of said high speed device, third means coupled to said sensing means for releasing said first braking means at a predetermined time following actuation of said second braking means, and means associated with said third means for coupling said slow speed device to said tape for feeding said tape stored in said first storage means for the purpose of sensing the intelligence stored thereon.

3,187,166
PUNCHED CARD READING SYSTEM
Harley F. Bean, Dallas, Tex., assignor, by mesne assignments, to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,536
8 Claims. (Cl. 235—61.11)



1. In a card-reading mechanism having a columnar reader including fingers for sensing perforations in each of a plurality of card information columns as a card is moved along a way past said reader the combination which comprises a plurality of card-propelling elements adapted to engage the trailing edges of cards placed in said way, a carrier mounted for movement adjacent to one side of said way as to have a component of movement parallel to the length of said way, means for advancing said carrier in uniform steps, and independently adjustable mounting means at each of a plurality of spaced points along said carrier for mounting said elements on said carrier in predetermined positions relative to said columnar reader.

3,187,167
ELECTRONIC CALCULATOR WITH DYNAMIC RECIRCULATING STORAGE REGISTER
Evelyn Berezin, New York, N.Y., assignor, by mesne assignments, to Curtiss-Wright Corporation, Carlstadt, N.J., a corporation of Delaware
Original application Feb. 24, 1956, Ser. No. 567,567, now Patent No. 2,973,141, dated Feb. 28, 1961. Divided and this application Feb. 27, 1961, Ser. No. 92,036
17 Claims. (Cl. 235—159)



1. A dynamic recirculating storage register for serially receiving during an initial entry pass, the multi-bit digits of a multi-digit operand number of digit radix greater than two, and for recirculating the same in subsequent normal, non-shifting recirculation passes and in shifting recirculation passes, said register having at least one shift count digit position intermediate the positions of the extremely significant digits of said operand number, namely, its least and most significant digits, and comprising:
(a) principal dynamic storage means,
(b) read-in and read-out means for respectively reading in and out of said storage means serially the operand number and shift count digits,
(c) an initial entry path including a transitory storage register having a minimum capacity of essentially one digit, a unit value changer, and said read-in-means,
(d) a normal recirculation path including said read-out means, said transitory storage register, said unit value changer, and said read-in means,
(e) a shifting path having a transitory time that differs from that of the normal recirculation path by one digit time, and including said read-out means, normally blocked shift gating means, and said read-in means,
(f) means for enabling said unit value changer to alter by one the value of the operand number digit in one of the extremely significant digit positions during recirculation passes,
(g) decoding means for examining the contents of said transitory storage register,
(h) a "shift in the next pass" signal generating means responsive to said decording means sensing a predetermined value for the digit which during the current pass reaches said read-in means in the position of said one extremely significant position, namely during the initial entry pass and during a shifting

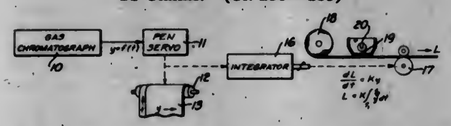
pass a first predetermined value, and a second value differing from the latter by one during a normal recirculation pass,

(i) means responsive to said "shift in the next pass" command signal to generate a "shift in this pass" command signal,

(j) means activated by the latter command signal for enabling said unit value changer to alter by a unit the shift count number incoming in its original position from said transitory storage register to maintain the shift count number in its original position, for effectively blocking the normal recirculation path onward of said transitory storage register for the operand number digit positions, and for unblocking said shift gating means to open said shift path to effect positional shift of the operand number digits,

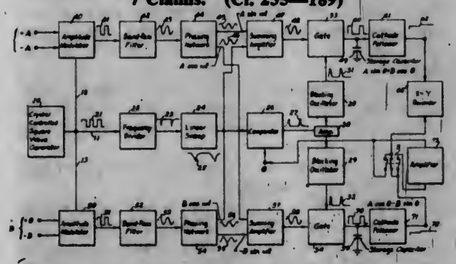
(k) and circuit means responsive to coincidence of said decoding means reflecting a predetermined shift count value and of a "shift in the next pass" command signal for generating a terminating signal effective to disable in any subsequent pass, generation of the latter command signal.

3,187,168
INTEGRATOR
Allen Strickler, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 23, 1960, Ser. No. 10,284
11 Claims. (Cl. 235—183)



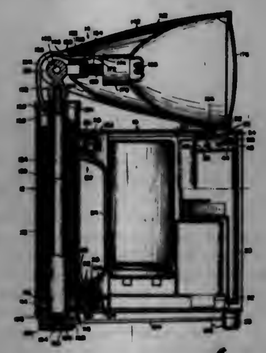
3. In an apparatus for recording the integral of a varying quantity, the combination of: an integrator having an output which is the integral of the input thereto; means for applying said quantity as an input value to said integrator input; a recording medium; marking means for marking on said recording medium and producing marks of maximum density when said quantity is at a minimum; a drive unit for advancing said recording medium with respect to said marking means; and means for coupling said integrator output to said drive unit in driving relation to advance said recording medium in proportion to the integral of the quantity whereby the distance between maximum density marks on the resulting record is proportional to said integral.

3,187,169
ELECTRONIC RESOLVER
Robert D. Trammell, Jr., Fort Knox, Ky., and Robert S. Johnson, Decatur, Ga., assignors to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia
Filed Feb. 28, 1961, Ser. No. 92,228
7 Claims. (Cl. 235—189)



1. An electronic resolver comprising means for generating an initial waveform capable of transformation to a sinusoidal waveform, means for modulating said initial waveform to provide a modulated waveform, gate means for deriving an electrical effect which is the function of a variable input and the frequency of said sinusoidal waveform, and means for sampling the modulated waveform with said electrical effect.

3,187,170
ELECTRONIC FLASH APPARATUS
Leonard A. Kille, Stoneham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,996
5 Claims. (Cl. 240—1.3)



1. A portable flash device for remote use with photographic cameras comprising, in combination:
a main housing formed from a molded material;
a collapsible telescopic mast;
an insertable molded member;
a cylinder vertically connected to said housing at the rear thereof, said cylinder providing storage means for said mast;
said housing having an access means thereto, said access means being a door pivotally mounted at the front of said housing, said access means permitting entry to one or more storage areas, said storage areas being formed within said insertable member;
said insertable molded member being constructed of a substantially magnetically and electrically nonconductive material, said member having a plurality of fins molded on the outer sides thereof, said member fitting within said main housing, said member being located proximate to said access means, said fins providing an air circulation space between the inner wall of said housing and the outer sides of said insertable member; and
a flash means pivotally mounted on the top of said mast, said means being secured to a semiuniversal mount located on the top of said mast.

3,187,171
ELECTRIC LAMP ASSEMBLY AND MOUNTING
Wagn Trautner, Overland Park, and Don R. Armacost, Mission Hills, Kans., assignors to Peterson Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed June 4, 1962, Ser. No. 199,979
11 Claims. (Cl. 240—7.1)

1. A lamp assembly comprising,

(a) a housing member of resilient material and having a rear wall and an integral peripheral wall defining an opening spaced from said rear wall, said peripheral wall being of a thickness to normally retain its shape,

(b) a light transmitting lens element, means forming a seal between said lens element and the peripheral wall to close the opening and cooperate with the housing walls to define a substantially sealed closed chamber that is subject to changing temperatures therewithin and resulting expansion and contraction of gases in the chamber,

(c) a mounting member mounted within said chamber on said peripheral wall and spaced from said lens element and said rear wall and dividing said chamber into front and rear substantially enclosed chamber portions, a bulb socket mounted on said mounting member and adapted to support a light bulb between said mounting member and said lens element, said mounting member having an opening



therein to permit passage of gases between said chamber portions, means adjacent said mounting member and on said peripheral wall for mounting said lamp assembly,

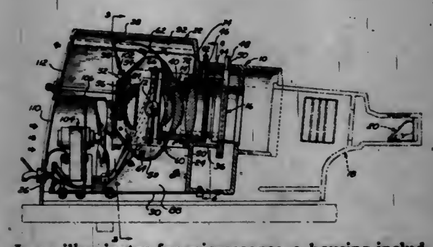
(d) said rear wall having a thin normally inwardly dished unobstructed diaphragm section that is flexible and yieldable in response to changes in pressure between the interior and exterior of the chamber, said diaphragm section being bent outwardly in response to increase in pressure in the chamber resulting from increase of temperature therein to change the volume of the chamber and thereby substantially equalize the pressure internally and externally of said chamber to substantially eliminate a tendency for breathing across said seal.

3,187,172
VEHICLE LIGHT
George A. Knapp, De Witt, and Fred F. Stube, Syracuse, N.Y., assignors to R. E. Dietz Company, Syracuse, N.Y., a corporation of New York
Filed Nov. 23, 1962, Ser. No. 239,707
2 Claims. (Cl. 240—8.2)



1. In an apparatus including a metallic vehicle body having an elongated groove therein, an elongated insulated cable positioned in said groove, and a plurality of light housings, each housing including a base secured in contact with the vehicle body and overlying said groove, each base having a pair of bulb terminals, said terminals being insulated from one another, each housing having electrically conductive means in contact with the vehicle body and connected to one terminal for making a ground contact for the bulb, the other terminal being connected to a sharp electrically conductive spur projecting from said base, said spur piercing the insulation of said cable to complete the electrical circuit for the bulb; the improvement comprising: said vehicle body having an elongated projecting rib on either side of said elongated groove, and each of said light bases having therein an aligning groove that receives said ribs with a close fit, said sharp conductive spur being disposed in the center of said aligning groove so that it is precisely aligned with the center of the cable when each light base in secured to the vehicle body.

3,187,173
ILLUMINATOR COOLING SYSTEM
William E. Foley and Henry T. Wilton, Buffalo, N.Y., assignors to American Optical Company, Southbridge, Mass.
Filed Nov. 15, 1962, Ser. No. 237,926
2 Claims. (Cl. 240—47)

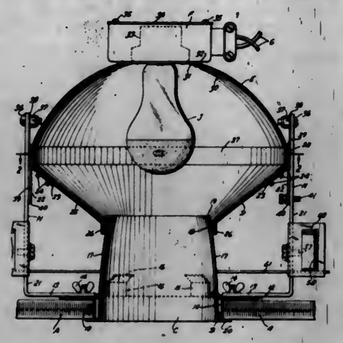


1. In an illuminator for microscopes, a housing including front, rear, top, bottom and side walls defining an enclosure with said rear wall having upper and lower openings,
a condenser lens assembly extending through said front wall and slidably received therein,
a light chamber envelope mounted within said housing in rearwardly spaced relation to said front wall and having an opening therein receiving the rearward extremity of said condenser lens assembly,
a light source mounted in said envelope for projecting light through said condenser lens assembly,
said envelope extending from closely adjacent one of said side walls to closely adjacent the opposite side wall of the housing and being spaced from both the top and bottom walls thereof,
fan means mounted in said enclosure rearwardly of said envelope and positioned to direct air through said lower opening in the rear wall of the housing against the lower region of said envelope and toward said front wall of the housing whereby to channel incoming air below said envelope, upwardly across the front thereof, and rearwardly over the top thereof toward said upper opening in said rear wall of the housing,
said envelope having openings in the upper and lower regions thereof to permit restricted air flow upwardly therethrough,
said envelope having a front wall extension overlying the opening in the upper region of the envelope and spaced below the top wall of the housing.

3,187,174
LIGHTING FIXTURE
Harry M. Gerstel, Lawrence, and Joseph Langer, Fresh Meadows, N.Y. (both of 37—01 31st St., Long Island City, N.Y.)
Filed May 7, 1962, Ser. No. 192,700
12 Claims. (Cl. 240—78)

5. A recessed low brightness incandescent light reflector fixture for mounting interiorly of a plaster and acoustical ceiling, said ceiling having an opening and an interior mounting structure, said fixture having a top half spherical aluminum inverted dome like reflector member, a junction inlet box carried by said top dome like reflector at the top thereof, an incandescent lamp projecting downwardly therewithin terminating at the lower edge of the reflector, a lower downwardly converging cone connected

to the lower periphery of the reflector, said cone having a lower opening with a downwardly extending peripheral flange larger than the diameter of the lamp, a removable hollow elongated curved side black interior finish baffle extending through the ceiling opening into the lower part of the cone and mounting brackets carrying said reflector from said mounting structure, said convergent cone having a downwardly depending sleeve at the lower portion thereof and said baffle having an upwardly projecting con-



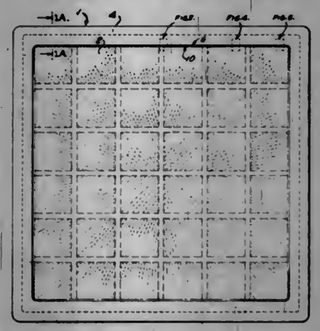
vergent curved end projecting through said sleeve into said cone, the lower edges of said spherical dome and the upper edge of said cone having telescoping cylindrical portions and the lower edge of said cylindrical baffle having an upturned lower edge closely fitting into the ceiling opening and said removable baffle having a diameter larger than the diameter of the incandescent lamp and pivot mount being above the lower edge of the dome reflector and the pivotal connection being mounted onto the conical member adjacent its widest portion.

3,187,175
POWER DISTRIBUTION SYSTEM
Richard J. Lang, Grand Rapids, Mich., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 21, 1963, Ser. No. 266,952
11 Claims. (Cl. 240—84)



8. In an electrical power system, in combination, concrete support means at ground level having an aperture therethrough, a base enclosure supported on said concrete support means, a hollow pole supported at its lower end on said base enclosure and having the interior thereof registering with the interior of said base enclosure, a street light mounted adjacent the upper end of said pole, an electrical transformer within said base enclosure including a sealed tank supported on said concrete support means, dielectric fluid within said tank, and a transformer core and coil assembly having inductively related primary and secondary windings immersed in said dielectric within said tank, a primary electrical cable extending into the interior of said base enclosure and being connected to said primary winding, said enclosure base having an opening adjacent the upper surface of said concrete support means permitting access to the interior thereof and a door normally closing said access opening and being movable relative to said enclosure base to permit opening and closing thereof, said sealed electrical transformer tank being removable from said base enclosure to permit change in the size of said transformer, electrical conductor means within said hollow pole for connecting said street light to said transformer secondary winding, and an underground secondary cable buried directly in the earth and extending through said aperture in said concrete support means into the interior of said enclosure base and being connected at one end to said transformer secondary winding and adapted to be connected at the other end to an adjacent electrical load.

3,187,176
LUMINAIRE
Kurt Franck, Newark, and Dale E. Welty, Jacksontown, Ohio, assignors to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,781
10 Claims. (Cl. 240—106)



1. In combination with a point light source, a lens including at least one substantially vertically oriented light transmissive side wall extending laterally to the far ends thereof from both sides of a vertical plane through the transverse center of said wall and through said light source, said wall having an outer light emergent surface and an inner light incident surface, said wall receiving light from the source at varying angles of incidence from said transverse center to said far ends, the outer surface including a plurality of vertically adjacent horizontally extending linear light reflecting-refracting prisms, the inner surface including a first set of vertically extending and horizontally adjacent prisms, each prism of said first set having two active surfaces symmetrically disposed on either side of a plane through the apex thereof, said first set of prisms being centrally located at and laterally of said vertical plane, said inner surface including second sets of vertically extending and horizontally adjacent prisms formed laterally of either side of said first set of prisms; the improvement comprising each prism of said second set consisting of two active curved surfaces asymmetrically disposed on either side of a plane extending through the apex thereof, one of said curved surfaces being entirely convex and sloping toward said vertical plane and away from said light source and the other of said curved surfaces being entirely convex and sloping away from said vertical plane and away from said light source, said curved surface of each prism receiving an amount of incident light substanitally equal to that recieved by said other of said curved surface of the same prism.

3,187,177
LENS
Sylvanus Meyer, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,159
4 Claims. (Cl. 240—106)



1. A lens having an outer reflecting side and an inner side, a thermoplastic rim on said inner side projecting axially therefrom and adapted to be spin welded to a thermoplastic surface of a lens support member, an optical ring disposed radially inwardly of said rim and adjacent thereto capable of totally reflecting light entering said lens from said outer side and an annular baffle disposed adjacent said optical ring radially inwardly thereof and extending axially a greater distance than said rim, said rim and said baffle forming an annular cavity therebetween operative to contain the flash produced in spin welding said lens to a support member axially of said ring.

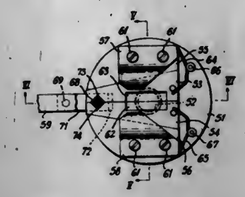
3,187,178
SUPPORTS FOR LIGHT DIFFUSER LAMINAS
José Antonio Coderch de Sentmenat, 4 Plaza Calvo, Barcelona, Spain
Filed Apr. 9, 1962, Ser. No. 186,163
Claims priority, application Spain, Aug. 4, 1961, 269,568
7 Claims. (Cl. 240—108)



1. Means for securing a lighting diffuser system to a lamp comprising a disc shaped engagement member, a flange upon said engagement member extending radially outwardly of said disc shaped member, a backing flange spaced from said first mentioned flange also upon said member, spaced pins upon said first mentioned flange extending towards said backing flange and a diffuser shade having one end thereof fixed between said flanges engaging said pins.

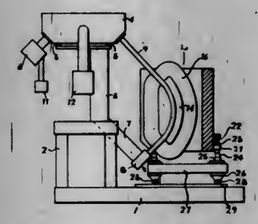
3,187,179
VARIABLE SLIT SYSTEMS FOR MASS SPECTROMETER ION SOURCES
Robert Derek Craig, Bowdon, Edward Wildig, Stretford, and Frank Edmund Bancroft, Sale, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 30, 1962, Ser. No. 220,411
Claims priority, application Great Britain, Sept. 4, 1961, 31,743/61
5 Claims. (Cl. 250—41.9)

1. A mass spectrometer ion source comprising a chamber adapted to be evacuated, means for producing a beam of ions from a sample located within said chamber, an end wall to said chamber, surfaces defining a unique channel leading through said end wall to the analyzer section of said mass spectrometer, two relatively moveable plates located so that their adjacent edges define a slit extending across said channel so as to define a unique passage into said channel, means for causing said beam of ions to pass through said slit and along said chan-



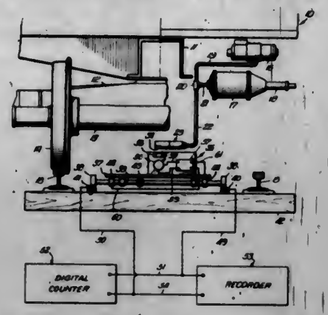
nel, guide means including two relatively inclined guiding surfaces against which said two moveable plates abut respectively, means for resiliently biasing said plates against their respective guiding surfaces, and means for moving said plates along their guide means so that they move relatively and vary the width of said slit, said moving means being located partially outside said chamber and extending through the wall of said chamber in a vacuum tight manner.

3,187,180
MASS SPECTROMETER ASSEMBLIES
Edward Wildig, Stretford, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Sept. 11, 1962, Ser. No. 222,841
Claims priority, application Great Britain, Sept. 15, 1961, 33,216
2 Claims. (Cl. 250—41.9)



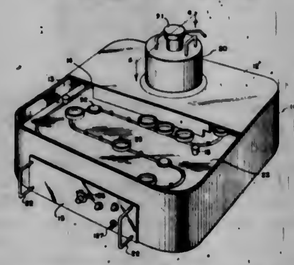
1. A mass spectrometer assembly comprising an ion source, an electrostatic analyzer and a collector, a rigid supporting frame, means for supporting from said frame said ion source, said electrostatic analyzer and said collector so that ions from said source can travel through said electrostatic analyzer in a substantially vertical plane, a duct for the passage of ions extending between said electrostatic analyzer and said collector in a substantially vertical plane, a magnetic analyzer assembly including a magnet adapted to produce a magnetic field extending substantially horizontally through at least part of said duct, means independent of said frame for supporting said magnetic analyzer and for moving said magnet so as to vary the position of said magnetic field relative to said duct, the means for mounting the magnet comprising a three point support mechanism for the magnet and in which each of the three mechanisms is independently adjustable to vary the angular position of the magnet with respect to the duct.

3,187,181
RAILWAY CAR BRAKE INSPECTION UTILIZING A RADIOACTIVE SOURCE AND DETECTOR
William M. Keller, 8864 E. Prairie Road, Skokie, Ill.
Filed Feb. 5, 1963, Ser. No. 256,404
11 Claims. (Cl. 250—83)



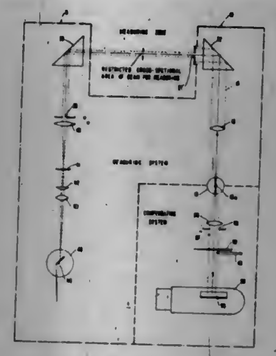
1. An automatic inspection system for railway car brakes, comprising first means associated with a brake cylinder and piston, said first means including a source of radiation, second means relatively movable with respect to said first means and adapted to convert radiation received from said first means into electrical currents, said source of radiation being urged to a shielded position with respect to said second means in the absence of a fluid pressure application against the brake cylinder piston, said source being moved from said shielded position to another position wherein radiation from said source impinges upon said second means when there is a fluid pressure application against the brake cylinder piston, and means associated with said second means to process and record said electrical currents.

3,187,182
RADIOACTIVE SAMPLE PROCESSING APPARATUS INCLUDING A CLOSED LOOP HORIZONTAL CONVEYOR SYSTEM AND AN ELEVATOR POSITIONED BENEATH THE LOOP FOR ELEVATING THE SAMPLES TO A DETECTOR
Joseph Fratantuno, Waltham, Mass., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Dec. 19, 1960, Ser. No. 76,685
13 Claims. (Cl. 250—106)



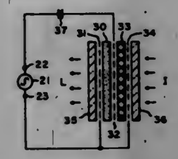
7. Radioactive sample processing apparatus comprising, a flexible closed-loop conveyor system for storing and transporting a plurality of radioactive samples in a horizontal plane, a radiation detector disposed above said conveyor system, said conveyor being arranged to transport said samples sequentially in said horizontal plane to a position beneath said detector, and an elevator disposed beneath said conveyor system, said elevator comprising means for lifting each sample in said position off said conveyor system upward into operative juxtaposition with said radiation detector, and means for actuating said lifting means when a sample is disposed in said position.

3,187,183
BALANCED OUTPUT PHOTOELECTRIC GAGE
Daniel J. Mindheim, Glen Cove, and Howard C. Lindemann, Westbury, N.Y., assignors to Lindly & Company, Inc., Nassau, N.Y., a corporation of New York
Filed Oct. 17, 1960, Ser. No. 62,971
4 Claims. (Cl. 250—208)



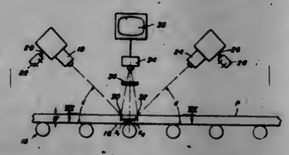
1. A comparative photoelectric gage for automatically gaging and measuring plus and minus deviations from preselected desired respective values of preselected physical properties of a material or substance and for measuring plus and minus deviations of physical characteristics of given articles of manufacture alternatively in a static or a dynamic condition comprising, a light source having a filament and an optical system cooperative with said light source providing a measuring beam of light and means defining a light passage area for directing a preselected cross-sectional measuring area of said measuring beam of light to a measuring and gaging zone in which an article is received in operation for photoelectrically measuring deviations from a preselected, desired value of a preselected physical variable thereof, photoelectric means responsive to light including a pair of photoelectric transducer means having photoresponsive surfaces disposed to receive light from said source and from said light beam measuring area respectively to develop an output in operation, means connecting said transducer means cooperatively in a variable balanced output condition corresponding to an adjusted set condition of operation in which the balanced output corresponds to a preselected value of the physical variable being measured when a preselected profile area of said article is disposed in said zone in said measuring area of said measuring light beam, said optical system having means to transmit an image of at least a portion of said filament in said measuring beam of light on one of said transducer means to constantly illuminate a given photoresponsive area of constant dimensions on said photoresponsive surfaces of said one transducer, compensating means comprising the other transducer means and means to control both the area and intensity of light energy impinging on said other transducer means to match decay curves of both of said transducer means, and output means for receiving in operation any output imbalance between the two transducer means due to lesser or greater interruption of light rays in said measuring area of the beam than are interrupted at said balanced output condition and due to deviation of the variable being measured from the desired value thereof.

3,187,184
ELECTROLUMINESCENT-PHOTOCONDUCTIVE DEVICE WITH IMPROVED LINEARITY RESPONSE
Terence Bernard Tomlinson, Harrow, England, assignor to Hazeltine Research, Inc., Chicago, Ill., a corporation of Illinois
Original application Apr. 3, 1957, Ser. No. 650,468, now Patent No. 3,084,262, dated Apr. 2, 1963. Divided and this application July 27, 1962, Ser. No. 219,801
Claims priority, application Great Britain, Apr. 9, 1956, 10,776/56
4 Claims. (Cl. 250—213)



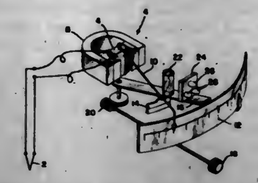
1. An electroluminescent device comprising contiguous layers of different materials positioned one after the other in the following order: a first layer of conductive material; a layer of photo-impedance material; a second layer of conductive material; a layer of electroluminescent material; a third layer of conductive material; first and second layers of dielectric material contiguous with the outer side of said first and third conductive layers, respectively; and fourth and fifth layers of conductive material contiguous with the other side of said first and second layers of dielectric material, respectively.

3,187,185
APPARATUS FOR DETERMINING SURFACE CONTOUR
James A. Milnes, Pitcairn, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Dec. 22, 1960, Ser. No. 77,780
4 Claims. (Cl. 250—222)



1. Apparatus for measuring the thickness of an article comprising a table for supporting said article, a first means for producing a beam of energy, a second means for producing a beam of energy, both of said beam producing means being situated on the side of the article opposite the table, means for rotating said first beam producing means on an axis at a fixed oblique angle with the plane of the table surface, means for rotating said second beam producing means on an axis at a fixed oblique angle with the plane of the table surface, said axes being in the same plane, said beam producing means being so positioned that their respective beams will intersect at a line the location of which with respect to said table is known, and means for measuring the distance between the images of the beams on the article while maintaining the angles of impingement of said beams fixed with respect to said table, said measuring means including means for photographing the images formed by the said beam producing means, and means for measuring the distance between the lines on the photograph, said last named means being calibrated to compensate for the difference in the true distance between said images and the distance between the lines on the photograph.

3,187,186
ELECTRICAL MEASURING APPARATUS WITH AUTOMATIC INTEGRATING ACTION
Albert V. Martin, Willowick, Ohio, assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 12, 1962, Ser. No. 165,763
10 Claims. (Cl. 250—231)



10. A process control instrument comprising a first arm movable about an axis in response to applied signals, a second arm selectively movable about said axis to a preselected position representative of a predetermined value of said applied signals, photoelectric means carried by said second arm, said photoelectric means including a light source means and a pair of photocells positioned in side-by-side relationship, and a vane carried by said first arm, said vane being characterized in varying degrees of density from a maximum opacity to a maximum transparency, said vane including a transverse area having one of said maxima at the center thereof and progressive gradations to the opposite maxima at both ends, said area of said vane positioned on said first arm for cooperative association with said pair of photocells to produce an output signal representative of the deviation of said first arm from said predetermined value.

3,187,187
PHOTOELECTRIC SHAFT ANGLE ENCODER
Sidney A. Wingate, Concord, Mass., assignor to Wayne-George Corporation, Newton, Mass., a corporation of Massachusetts
Filed Jan. 24, 1962, Ser. No. 168,473
10 Claims. (Cl. 250—233)



1. In an optical shaft angle encoder having an optical code disc with an array of opaque and transparent code elements, means for projecting light through said disc at a selected point, and means including a first photoelectric unit for generating output signals in response to light admitted through said disc and detected by said photoelectric unit, the combination comprising means for supporting said disc for rotational motion relative to said first-mentioned means and said second-mentioned means for precisely determining when said disc has reached a predetermined angular position, said system comprising a stator plate having a plurality of slits, a plurality of transparent zero code elements on said disc, each of said zero code elements and each of said slits being extremely nar-

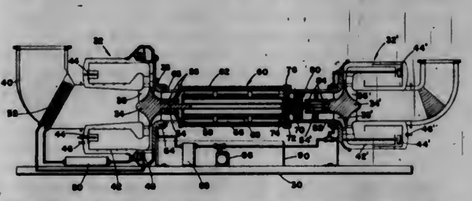
row transversely in order that certain minute relative motions transversely between said zero code elements and said slits result in large proportional changes in the quantity of light capable of passing through both said zero code elements and said slits as a function of said minute relative motions, said slits staggered with unequal spacing therebetween, said zero code elements staggered with the same unequal spacing therebetween, and means including a second photoelectric unit for generating an output reference signal in response to light passing through both said slits and said zero code elements, the quantity of light detected by said second photoelectric unit having a value at or below a predetermined relatively small threshold value at all but one position of said code disc and having a value exceeding said threshold value by a relatively large amount at said one position, said one position being when said slits and zero code elements are in maximum registration with each other.

3,187,188

HIGH SPEED TURBO-GENERATOR

Harold T. Adkins, St. Clair Shores, and Raymond I. Schneyer, Beverly Hills, Mich., assignors to Curtiss-Wright Corporation, Utica, Mich., a corporation of Delaware

Filed July 21, 1959, Ser. No. 828,481
3 Claims. (Cl. 290—4)



1. A high speed induction generator and gas turbine combination comprising an elongated housing for enclosing the induction generator, one end of said housing terminating in an enlarged portion for enclosing the gas turbine, said gas turbine having a rotor disc with turbine and compressor blades on opposite sides thereof respectively, said enlarged housing portion having a turbine exhaust passage extending axially of the housing and an annular combustion chamber for supplying a pressure medium radially to the turbine blades surrounding said exhaust passage, the compressor side of said rotor disc having radial connections with the aforesaid combustion chamber and being in closely aligned communication with the elongated generator housing for induction of cooling air therethrough, said generator having a toothed rotor and stator with the generator field and power windings both mounted in the stator for generating a high frequency power current according to rotor speed, the turbine and generator rotors being in axially compact alignment and connected for unit rotation.

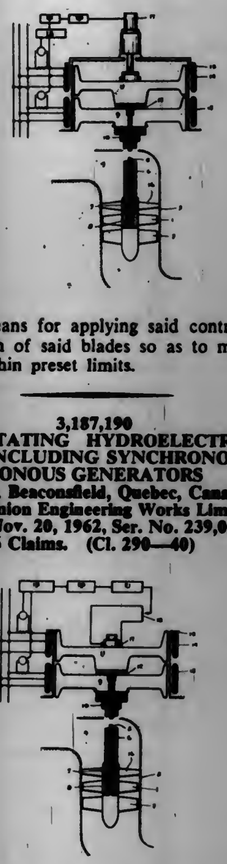
3,187,189

CONTRAROTATING HYDROELECTRIC MACHINES INCLUDING TWO SYNCHRONOUS GENERATORS

Johann H. Lang, Beaconsfield, Quebec, Canada, assignor to Dominion Engineering Works Limited

Filed Nov. 20, 1962, Ser. No. 238,842
5 Claims. (Cl. 290—40)

4. In combination, a hydroelectric machine having contrarotating, axial flow, coaxial water wheels operating in closely spaced axial relation in a common water stream and a shaft for each water wheel for driving the machine, and means for controlling the torque ratio of said shafts, at least one of said water wheels having variable pitch blades, said torque control means comprising means for obtaining for each shaft a signal representing the torque developed therein, means for comparing said signals to obtain a control signal representing the difference of said



torques, and means for applying said control signal to control the pitch of said blades so as to maintain said torque ratio within preset limits.

3,187,190

CONTRAROTATING HYDROELECTRIC MACHINES INCLUDING SYNCHRONOUS AND ASYNCHRONOUS GENERATORS

Johann H. Lang, Beaconsfield, Quebec, Canada, assignor to Dominion Engineering Works Limited

Filed Nov. 20, 1962, Ser. No. 239,003
6 Claims. (Cl. 290—40)

4. In combination, a hydroelectric machine having contrarotating, axial flow, fixed pitch, coaxial water wheels operating in closely spaced axial relation in a common water stream and a shaft for each water wheel for driving the machine; means for controlling the torque ratio of said shafts comprising means for obtaining for each shaft a signal representing the torque developed therein; means for comparing said signals to obtain a control signal representing the difference of said torques; and means for applying said control signal to vary the speed of one water wheel in relation to the other water wheel so as to maintain said torque ratio within preset limits.

3,187,191

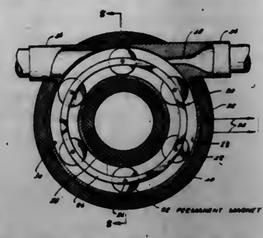
TURBINE DEVICE HAVING A PERMANENT MAGNET ROTOR

Albert J. Baggs, Los Angeles, Calif.
(3029 Yale Ave., Venice, Calif.)

Filed Jan. 4, 1960, Ser. No. 283
10 Claims. (Cl. 290—52)

2. A turbine device comprising a hollow, generally toroidal turbine casing defining an annular space within the casing and an axial opening at the center of the casing, a rotary annular impeller in said casing including a

plurality of circumferentially spaced, axially extending rollers which roll on an inner cylindric surface of the cas-



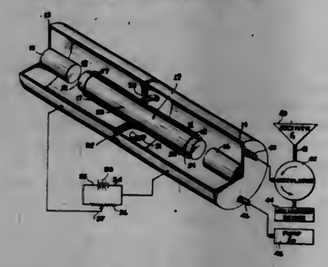
ing, and means to direct a fluid against said rollers to drive the impeller in rotation.

3,187,192

COMPOUND PARAMETRIC AND ELASTIC WAVE SOLID-STATE AMPLIFIERS

Ervin J. Nalos, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Feb. 3, 1964, Ser. No. 341,888
20 Claims. (Cl. 307—88.3)



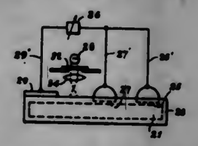
1. An amplifier comprising in combination: an amplification element having a variable capacitance first section and a piezoelectric second section; means applying an electron accelerating field to said second section; means resonant at first and second frequencies coupled with said first section; means coupled with said element applying signals thereto at said first frequency causing compressional waves to be launched in said second section and variations in the capacitance of said first section; means coupled with said element applying signals at said second frequency thereto; and signal output means coupled with said element.

3,187,193

MULTI-JUNCTION NEGATIVE RESISTANCE SEMICONDUCTING DEVICES

Paul Rappaport, Princeton, and Edward Pasierb, Jr., Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Oct. 15, 1959, Ser. No. 846,665
4 Claims. (Cl. 307—88.5)



1. A circuit including a semiconductor device comprisin a single crystal body of semiconductor material and a plurality of abrupt p-n junctions in operative relationship therewith, each junction being less than 200 A. thick and both sides of said junctions having high concentrations of free charge carriers, each junction being characterized by exhibiting a voltage-controlled negative resistance characteristic when biased in a range of low voltage in the forward direction, a resonant circuit means connected to each of said junctions, and means for applying a variable voltage across two of said junctions, said circuit means including also a frequency-determining inductance in series with each of said junctions.

3,187,194

MONOSTABLE TUNNEL DIODE LOGIC CIRCUIT WITH THE OUTPUT PULSE AMPLITUDE PROPORTIONAL TO THE INPUT PULSE AMPLITUDE

Abdul R. Habayeb, Lawrence, Kans., assignor to Honeywell Inc., a corporation of Delaware

Filed Dec. 29, 1960, Ser. No. 79,319
20 Claims. (Cl. 307—88.5)



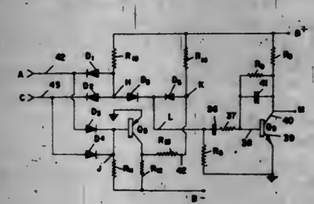
1. A self-resetting, multistable circuit for performing logical functions comprising a resistive and an inductive impedance connected in series combination and having one terminal connected to a junction point, a plurality of tunnel diodes connected in series combination between said junction point and a reference point, each of said diodes having a characteristic including a pair of positive resistance regions each adjacent an instability point, said individual diode characteristics forming a composite characteristic of said series-connected diodes adapted to provide a plurality of stable diode operating regions, means for applying a bias voltage between the other terminal of said series impedance combination and said reference point adapted to provide monostable diode operation at an initially chosen one of said stable operating regions, means for selectively applying input trigger pulses having selectively different levels of amplitude to said junction point each adapted to shift said circuit to a different one of said stable operating regions and to substantially maintain it there for the pulse duration, said circuit being adapted to return to said initially chosen stable operating region upon the termination of each of said trigger pulses, and means for deriving output signals from said circuit between at least one of said diodes and said reference point.

3,187,195

FREQUENCY DIFFERENCE MEASURING CIRCUIT

Boris Stefanov, Los Angeles, Calif., assignor to Kauke and Company, Inc., a corporation of California

Filed Jan. 16, 1961, Ser. No. 82,971
2 Claims. (Cl. 307—88.5)

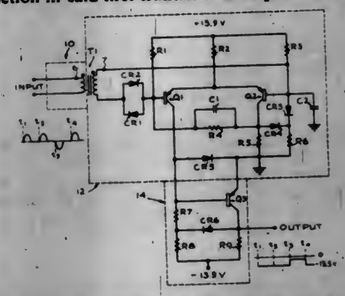


1. A circuit for providing an output wave form having a frequency equal to the difference in frequency between first and second input wave forms, including, in combina-

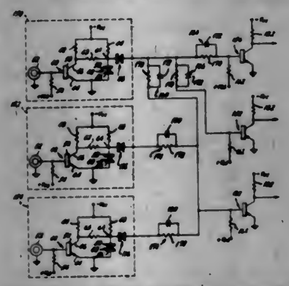
tion: square wave generating means connected to receive and convert said first and second input wave forms to first and second square wave forms; converting means connected to said square wave generating means to receive both said first and second square wave forms and responsive to said square wave forms when of like polarity for providing a first given voltage and when of unlike polarity for providing a second given voltage; and integrating means connected to said converting means to receive and integrate said first and second voltages to provide said output wave form, said converting means including a voltage source; first and second switching means having their inputs connected to said source and their outputs connected to said integrating means; and first and second control means connected to operate said first and second switching means, said first and second control means being respectively connected to receive said first and second square wave forms, one of said first and second given voltages being derived from said source at said integrating means when both of said switching means are open and the other of said first and second given voltages being derived from said source at said integrating means when either one of said switching means is closed, said first and second control means opening and closing said switching means in accordance with the relative polarities of said first and second wave forms, said first and second switching means comprising front-to-front diodes respectively with their common junction constituting said outputs connected to said integrating means and their backs constituting said inputs connected to said voltage source, said first and second control means comprising repectively, a first pair of reverse diodes having their fronts respectively connected to receive said first and second square wave forms and their backs connected to the input of said first switching means, and a second pair of forward diodes having their backs respectively connected to receive said first and second square wave forms; an inverting transistor having its input connected to the fronts of said forward diodes and its output connected to the output of said second switch means, said first given voltage being derived from said source at said integrating means when either one of said switching means is closed and said second given voltage being derived from said source at said integrating means when both of said switching means are open, said first and second control means closing one of said switching means when said first and second wave forms are of like polarity and opening both of said switching means when said first and second wave forms are of unlike polarity.

3,187,196
TRIGGER CIRCUIT INCLUDING MEANS FOR ESTABLISHING A TRIGGERED DISCRIMINATION LEVEL
Raymond C. Corbell, Canoga Park, and Robert N. Mellott, Northridge, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Jan. 31, 1961, Ser. No. 86,163
5 Claims. (Cl. 307—88.5)

4. A bistable state circuit comprising:
first and second transistors each including an emitter, a collector, and a base;
first means interconnecting said bases including a pair of oppositely poled diodes connected directly in parallel with each other;
a potential source;
means coupling said potential source to said first and second transistors for conducting current between the emitters and collectors thereof;
means responsive to said first transistor conducting current for driving a current through said pair of diodes in a first direction from the base of said first transistor to the base of said second transistor;
means responsive to said second transistor conducting current for driving a current through said pair of diodes in a second direction from the base of said second transistor to the base of said first transistor;
means interconnecting said emitters of said first and second transistors;
means for causing current conduction in said first transistor and for inhibiting current conduction in said second transistor in response to the voltage drop between the base and emitter of said first transistor exceeding the volatge drop between the base and emitter of said second transistor and for causing current conduction in said first transistor in response to the voltage drop between the base and emitter of said second transistor exceeding the voltage drop between the base and emitter of said first transistor;
source means connected in series with said pair of diodes for selectively developing pulses of first and second polarities;
a third transistor including an emitter, a collector, and a base;
a second potential source;
impedance means connecting said first transistor collector to said second potential source; and
means coupling said third transistor base to said impedance means for controlling said third transistor in response to said first transistor.

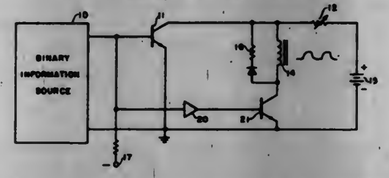


3,187,197
TRANSISTOR CONTROLLED TUNNEL DIODE SWITCHING NETWORK
John A. Ekiss, Lansdale, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 6, 1961, Ser. No. 115,242
12 Claims. (Cl. 307—88.5)



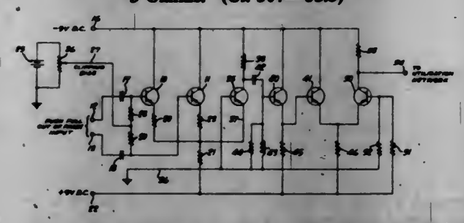
1. A switching circuit comprising: a transistor having an emitter, a collector and a base; a first impedance element connected to said collector, means for impressing an operating voltage between said emitter and a terminal of said first impedance element remote from said collector, a tunnel diode having first and second electrodes, a second impedance element connected to said first electrode of said tunnel diode, means for impressing an operating voltage between said second electrode of said tunnel diode and a terminal of said second impedance element remote from said first electrode of said tunnel diode, a resistive element connected between said collector and said first electrode of said tunnel diode, means coupling said emitter directly to said second electrode of said tunnel diode, means for supplying a switching signal to said base and means for deriving an output signal from said first electrode of said tunnel diode.

3,187,198
SEMICONDUCTOR PULSE CONTROL CIRCUIT
Lawrence S. Lewis, Lockport, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 6, 1961, Ser. No. 157,338
4 Claims. (Cl. 307—88.5)



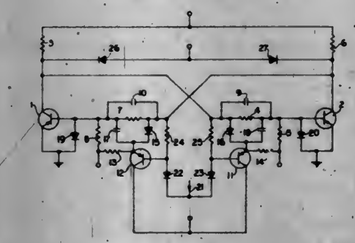
1. A pulse control circuit comprising, in combination, a source of substantially constant current having first and second terminals, a first transistor having base, emitter and collector electrodes, means connecting the emitter electrode of said first transistor to said first terminal, a load connected between the collector electrode of said first transistor and said second terminal, a second transistor having base, emitter and collector electrodes, means connecting the collector electrode of said second transistor to said second terminal, means connecting the emitter electrode of said second transistor to the emitter electrode of said first transistor, a source of binary signals connected across the base and emitter electrodes of said second transistor to control the on-off conduction of said second transistor, and an inverter connected between the base electrode of said second transistor and the base electrode of said first transistor to control the on-off conduction of said first transistor in alternate synchronism with respect to said second transistor.

3,187,199
PEAK DETECTING AND RESHAPING CIRCUIT
Sung Pal Chae, Los Angeles, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Jan. 31, 1962, Ser. No. 170,117
5 Claims. (Cl. 307—88.5)



4. A peak detector and pulse shaper comprising a first transistor connected in the grounded collector configuration, means including first and second series resistors connected in circuit with the emitter of the first transistor, means connected to the base of said first transistor for maintaining the first transistor non-conductive in the absence of peaks of an input signal, means for applying an input signal including peaks to the base of said first transistor, a second transistor connected in the grounded base configuration, said second transistor having its emitter connected between said first and second resistors whereby the emitter current paths of said first and second transistors include said second resistor in common, means for rendering said second transistor conducting with the collector current thereof being thereby representative of clipped peaks of said input signal, differentiating means including an inductor and a resistor connected in parallel and coupled to the collector of said second transistor for developing a differentiated output voltage across said inductor representative of the rate of change of the collector current, said output voltage having zero crossing points corresponding to peaks of said collector current, and means coupled to said differentiating means in receiving relation to said differentiated output voltage for generating pulses in response to and having leading edges in coincidence with said zero crossing points.

3,187,200
TRIGGER CIRCUIT FOR A HIGH SPEED FLIP-FLOP
Stephen Gardner, Passaic, and Jonel D. Sutton, Clifton, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,391
1 Claim. (Cl. 307—88.5)

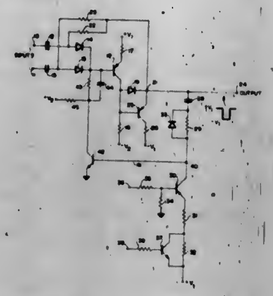


In combination with a high speed bistable multivibrator circuit including a pair of trigger transistors cross-coupled for alternate switching between conductive and non-conductive stable states upon the application of a control signal pulse:
an input terminal for said control signal pulse;
an emitter-follower transistor for each trigger transistor;
respective resistive impedances directly cross-connecting the bases of the emitter-follower transistors and the collectors of the trigger transistors;
a respective RC parallel network directly cross-connecting the base of each trigger transistor to the collector of the other;
a capacitor directly coupling the base of each trigger transistor to the emitter of the respective corresponding emitter-follower transistor;
a pair of diodes connected with like polarity each directly coupling the emitter of one emitter-follower transistor to the collector of the opposite trigger transistor; and
a second pair of diodes connected with like polarity each directly coupling the base of a respective one of the emitter-follower transistors to said input terminal.

3,187,201
ONE-SHOT LATCH
Robert E. Eastman, Fullerton, and John R. Kolden, Riverside, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed May 18, 1962, Ser. No. 195,812
6 Claims. (Cl. 307—88.5)

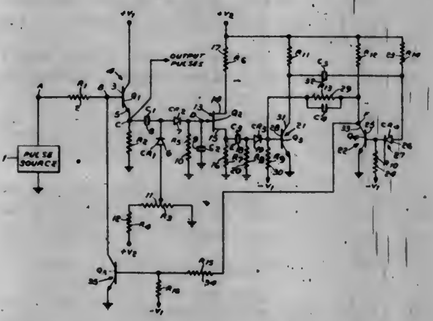
6. A latch for providing output signals in response to predetermined input signals comprising

a first transistor for receiving said input signals,
a second transistor connected with said first transistor,
a capacitor,
an impedance network,
a current source,
said capacitor, impedance network and current source being connected in series with said second transistor, an output terminal connected to the junction of said second transistor and said capacitor,
a third transistor connected with said first transistor to maintain said first transistor in a state of conduction or nonconduction,



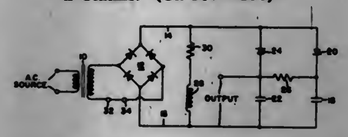
means for controlling said current source to affect the charge on said capacitor, and
means connecting said impedance network with said third transistor, whereby predetermined input signals cause said first transistor to become nonconducting, said first transistor causes said second transistor to become conducting, said second transistor causes said third transistor to become nonconducting, said third transistor holds said first transistor in said nonconducting state until the charge on said capacitor reaches a predetermined level.

3,187,202
PULSE-COUNT CONTROL CIRCUIT WHEREIN THE INPUT IS SAMPLED AND INHIBITED UPON INPUT EXCEEDING PREDETERMINED FREQUENCY
Thomas Case, Yonkers, N.Y., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Oct. 25, 1962, Ser. No. 232,957
9 Claims. (Cl. 307—88.5)



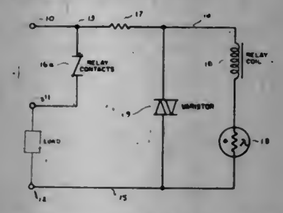
1. A pulse count control circuit responsive to a source of pulses comprising:
input means, output means coupled to said input means, means coupled to said input means to sample the pulses, means coupled to said sampling means to set a reference pulse count rate level,
means coupled to said sampling means and responsive to the pulse input exceeding the reference count rate level to generate a control pulse;
and means coupled to said control pulse generating means and responsive to said control pulse to inhibit the pulse input during a predetermined time interval whereby the pulse output at said output means is maintained at a rate not exceeding said reference pulse count rate.

3,187,203
WAVE GENERATING CIRCUIT
Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Sept. 26, 1960, Ser. No. 58,570
2 Claims. (Cl. 307—106)



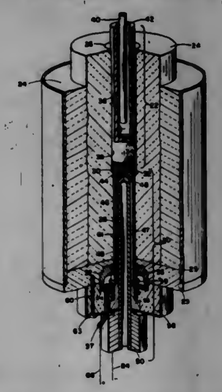
1. A wave generating circuit comprising a source of rectified alternating current potential, a first rectifier, a first capacitor, means coupling said first rectifier and said first capacitor in a first series circuit across said source, said first rectifier being poled to permit current to flow through said first series circuit in one direction in response to potentials of said source above a predetermined level, a second rectifier, a second capacitor, means coupling said second rectifier and said second capacitor in a second series circuit across said source, said second rectifier being poled to permit current to flow through said second series circuit in the opposite direction in response to potentials of said source below said predetermined level, a charging path including an impedance coupled between the junction of said first rectifier and capacitor and between the junction of said second rectifier and capacitor, a discharging circuit including a resistance and an inductance coupled in a series circuit across said source, and means coupled to said second capacitor for deriving an output signal therefrom.

3,187,204
CONDITION-RESPONSIVE CONTROL CIRCUIT
Harold T. Adkins, Marshfield, Mass., assignor to Sigma Instruments, Inc., a corporation of Massachusetts
Filed June 13, 1963, Ser. No. 287,701
6 Claims. (Cl. 307—117)



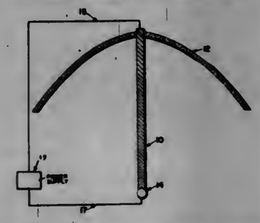
3. A circuit, for controlling the flow of electric power between a load and a power source in response to a predetermined illumination level, comprising: a pair of terminals constructed and arranged for connection to power sources having different voltages; contact means connected, in series with the load, across said terminals; a non-linear voltage divider including a current-limiting resistor connected to one of said terminals and a varistor connected in series between said resistor and the other of said terminals; a relay coil for operating said contacts; a photoconductor connected in series with said relay coil; the series combination of said relay coil and said photoconductor being connected between said other terminal and the junction of said resistor and said varistor, whereby said varistor is connected in shunt with the series combination of said relay coil and said photoconductor; said photoconductor, responsive to a predetermined illumination level, enabling passage of an effective contact operating current through said relay coil; said varistor maintaining the voltage across the series combination of said relay coil and said photoconductor within predetermined relatively narrow limits irrespective of variations in the voltage across said terminals.

3,187,205
THERMIONIC CONVERTER
William R. Martini, Northridge, and Raleigh L. McKisson, Woodland Hills, Calif., assignors to North American Aviation Inc.
Filed Nov. 22, 1961, Ser. No. 154,242
5 Claims. (Cl. 310—4)



1. A thermionic converter comprising a heating zone and an adjacent conversion zone, with a combustion chamber in said heating zone; means for introducing air and fuel into said combustion chamber; means in said combustion chamber for stabilizing the combustion of said fuel in said chamber; a thermionic diode in said conversion zone having a cathode, an anode spaced from said cathode, and a source of ionizable gas connected to said diode and communicating with the space between said anode and cathode; and means for removably supporting said diode with said cathode in heat exchanging relationship with said combustion chamber.

3,187,206
ELECTROKINETIC APPARATUS
Thomas Townsend Brown, Walkertown, N.C., assignor, by mesne assignments, to Electrokinetics, Inc., a corporation of Pennsylvania
Filed May 9, 1958, Ser. No. 734,342
23 Claims. (Cl. 310—5)



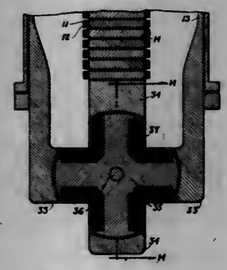
1. A device for producing thrust comprising a field shaping surface formed of stitched, closely spaced conductors and having a dielectric material therebetween to define a smooth surface, a dielectric member connected to said field shaping surface and an electrode on the end of said dielectric member remote from said field shaping surface, and means for applying electrical potential between said electrode and said closely spaced conductors.

3,187,207
TRANSDUCERS
Sidney R. Tomes, Whitestone, N.Y., assignor, by mesne assignments, to Giannini Controls Corporation, Duarte, Calif.
Filed Aug. 8, 1960, Ser. No. 48,275
8 Claims. (Cl. 310—8.7)



1. A compressional wave transducer comprising a pair of passive terminal elements, both electrically conductive, a pair of non-metallic electrically active elements between the terminal elements, a metallic conductive plate element between the active elements, a ductile element of conductive material between each pair of said adjacent elements, each ductile element being bonded with cement to the adjacent elements whereby stresses between the adjacent elements are accommodated by the ductile element.

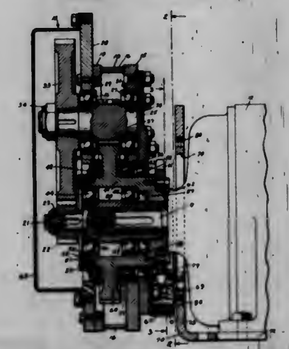
3,187,208
HIGH VOLTAGE ELECTROMAGNETIC APPARATUS HAVING AN INSULATING MAGNETIC CORE
Robert J. van de Graaff, Lexington, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 647,915, Mar. 22, 1957. This application Nov. 21, 1961, Ser. No. 154,937
21 Claims. (Cl. 310—40)



10. A high-voltage generator comprising a first electrode and a second electrode, a magnetic circuit including at least one core magnetically connecting but electrically separating said electrodes, at least one winding encircling various portions of said core and electrically connecting said electrodes, said magnetic circuit including a member of magnetic material movable with respect to said winding, and means for moving said movable member, where-

by a changing magnetic flux is produced and maintained within said winding, so that a high voltage is generated between said electrodes.

3,187,209
MOTOR SHAFT MOUNTED SPEED REDUCER
Walter P. Schmitter, deceased, late of Wauwatosa, Wis., by A. Louise Schmitter, Wauwatosa, and Robert V. Abendroth, Whitefish Bay, Wis., co-executors, assignors to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 21, 1961, Ser. No. 118,743
19 Claims. (Cl. 310—83)

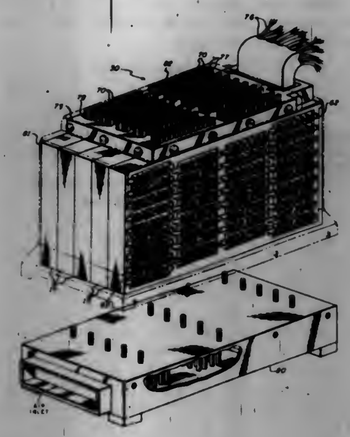


1. In a power transmission of the type comprising a motor with a rotatable motor output shaft, a speed reducer and power take-off means; said speed reducer comprising an input shaft adapted for mounting on the motor output shaft, an output shaft interconnected to the input shaft through speed change gearing which has an overall speed reduction ratio of G.R., a housing enclosing the gearing with a portion of the output shaft projecting through the housing; said power takeoff means including a chain sprocket with a pitch radius of R attached to the projecting portion of the speed reducer output shaft in driving engagement therewith and a chain arranged over the chain sprocket for the transmission of an output force with a line of action lying in a vertical plane substantially perpendicular to the axis of the speed reducer output shaft and in an axial plane spaced from the axis of the speed reducer output shaft, said output force thereby imposing a bending moment on the motor output shaft; the combination with said power transmission of a motor mount comprising a base portion upon which the motor rests and a vertical portion positioned between the speed reducer and the motor, said vertical portion having an aperture for the passage therethrough of the motor output shaft; and torque reaction localizing means comprising a first member attached to the speed reducer housing and a second member attached to the vertical portion of the motor mount, the radial positions of the two members being selected so that both intersect a plane that is parallel to the aforesaid axial plane of the output force and spaced from the axis of the speed reducer output shaft at a perpendicular distance substantially equal to

$$R\left(\frac{G.R.-1}{G.R.}\right)$$

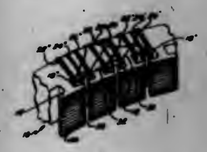
and the axial positions of the two members being selected so that both intersect the aforesaid vertical plane of the output force, said members thereby being arranged to localize therebetween the torque reaction forces exerted upon the speed reducer housing during operation of the power transmission so as to develop a force that will substantially counterbalance the bending moment imposed upon the motor output shaft by the output force.

3,187,210
HIGH DENSITY PACKAGING COMPACT ELECTRICAL ASSEMBLY
Robert J. Ost, Old Bethpage, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of New York
Filed Apr. 23, 1962, Ser. No. 189,366
7 Claims. (Cl. 317—100)



1. In combination,
(1) a structural member having a high thermal conductance and having a cross section in the shape of an inverted T formed by a web portion disposed perpendicular to a flange base portion,
(2) a plurality of electrical components encapsulated to form a building block,
(3) a plurality of said building blocks each having a first side adjacent to said web portion,
(4) the electrical components of each of said blocks having their terminals extending through a second side of respective blocks opposite from said first side,
(5) said blocks forming a plurality of rows of stacked blocks,
(6) each of said rows being spaced with respect to the adjacent row to form spaces therebetween,
(7) and a plurality of conductors disposed within each of said spaces, each of said conductors having one extremity connected to a respective terminal and its other extremity for connecting to a signal source.

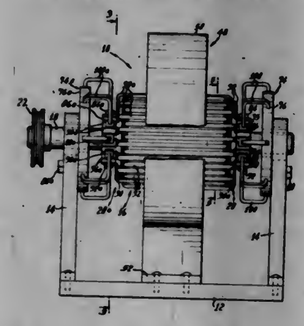
3,187,211
STATOR CONSTRUCTION FOR HIGH-PRECISION ELECTRICAL INSTRUMENTS
Dan L. Ve Nard, Grand Rapids, Mich., assignor to Lear Siegler, Inc.
Filed May 3, 1962, Ser. No. 192,249
12 Claims. (Cl. 310—166)



1. In a polyphase electromagnetic induction device having a rotor and a toothed stator cooperating to establish a plurality of distinct magnetic flux paths through said teeth, each having a portion in common with others of said flux paths in the yoke of said stator, and having

electrical windings for each phase coupled to said flux paths in a pattern symmetrical about a phase axis associated with said phase, the improvement comprising: said windings being toroidally disposed about said yoke in groups, each group located within one of a plurality of windows formed between each of said teeth; said windows each containing an equal number of windings consisting of a number of windings from each phase winding, which number for each phase winding differing for different windows; the physical arrangement of each phase winding as pertains to winding direction and the number of turns per group being in symmetrical relationship with respect to their respective phase axes.

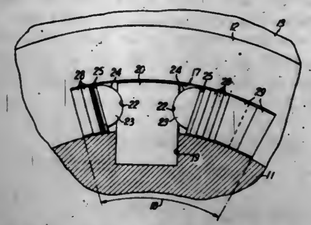
3,187,212
DIRECT CURRENT GENERATOR
Anthony Sears, New York, N.Y.
(88-00 Shore Front Parkway, Rockaway Beach, N.Y.)
Filed Apr. 19, 1963, Ser. No. 274,130
7 Claims. (Cl. 310—178)



6. A generator comprising a field structure having a plurality of circumferentially disposed pole pieces, each of said pole pieces being alternately of opposite magnetic polarity, a circular rotor, said rotor comprising a plurality of separate conductive cages, said cages each having a plurality of inductors between said rotor and field structure, means to endlessly connect together the inductors of each of said respective cages, said inductors of one of said cages being mounted circumferentially about said rotor in alternate intersticed relationship with respect to said inductors of others of said plurality of cages, said rotor providing a continuous and simultaneous magnetic path for each one of said plurality of inductors mounted about the circumference thereof, current collecting means cooperating with respective ones of said cages and engaging at least one of said inductors of its respective cage continuously during the rotation of said rotor.

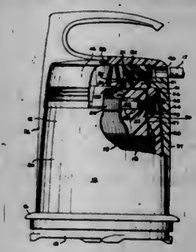
3,187,213
ROTOR SHIFTING MECHANISM
Alois C. Seidl, Wauwatosa, and Frank Walker, New Berlin, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 12, 1962, Ser. No. 186,973
6 Claims. (Cl. 310—209)

1. An adjusting device for paralleling synchronous dynamoelectric machines comprising: a shaft having a longitudinally extending keyway in its external surface, a rotor having a hub mounted on said shaft with slip clearance therebetween, the bore of said hub having an axially extending keyway, one of said keyways having a greater arcuate length than the other said keyway, a driving key snugly fitted into the smaller of said keyways and extending into the larger said keyway, and means associated with said driving key for adjusting the angular position of said rotor relative to said shaft, said adjusting means comprising a plurality of various thickness spacers positioned within said larger keyway on either side of said key, and wedge means positioned between said driving key and one side wall of said larger



keyway to fill said larger keyway and prevent relative angular movement between said rotor and said shaft and to provide means for transmitting torque between said shaft and said rotor.

3,187,214
BRUSH RETAINING MEANS FOR ELECTRIC MOTOR
Bernard J. Brezosky, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 14, 1962, Ser. No. 223,745
2 Claims. (Cl. 310—239)

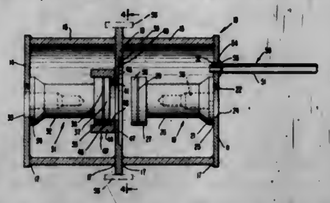


1. A series motor comprising an armature and a stator encapsulated in an epoxy resin to form a non-magnetic motor housing, a commutator included as a part of the armature, the motor housing having a pair of diametrically opposed brush-receiving openings formed in the side walls thereof to be in alignment with the commutator, a carbon brush positioned in each opening, spring means positioned behind each brush to urge the brush into wiping engagement with the commutator, each brush including a flexible lead and a terminal plate, said lead connected between the brush and the plate, conductor means for making electrical contact with the plate for carrying current to the armature, a plug member of resilient material positioned in each opening behind the terminal plate, and a push-in retainer forced into the opening to compress the plug solidly within the opening so that the terminal plate is in good electrical contact with the said conductor means and the opening is sealed tight against moisture by the plug, the terminal plate being in tight-fitting engagement with the inner walls of the opening so as to be held firmly in place.

3,187,215
SPARK GAP DEVICE
Irving E. Linkroum, Hancock, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,197
4 Claims. (Cl. 313—193)

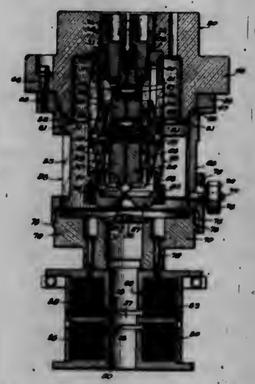
1. In a spark gap device, two axially aligned insulating tubes, a metallic center plate interposed between and

sealed to adjacent ends of said tubes, two metallic end plates extending across and sealed to the remote ends of said tubes, each of said plates having a central opening therein, end electrodes supported by and extending inwardly toward each other from said end plates into spaced relation with opposed faces of said center plate in alignment with the opening in the latter, said electrodes comprising stem portions filling the openings in and sealed to said end plates, and a tubular sleeve closely sur-



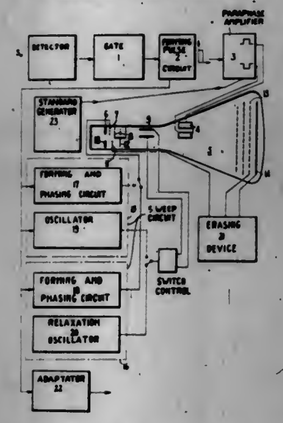
rounding the inner end portion of one of said end electrodes and having an internal flange projecting between and spacing the peripheral marginal portion of the inner end face of said one end electrode from the adjacent face of said center plate around the opening therein, the internal surface of said flange and the internal surface of the opening in said center plate being in substantial registry, whereby said internal surface of the flange constitutes a shunting surface between the inner face of said one end electrode and said center plate.

3,187,216
ELECTRON GUN HAVING A RELEASABLY CLAMPED ELECTRON EMITTING ELEMENT
David Sciaky, Chicago, Ill., assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois
Filed May 12, 1961, Ser. No. 109,575
12 Claims. (Cl. 313—237)



1. In a device of the character described, in combination, a body portion of insulating material, a cylindrical cage of metal depending from the body portion, a pair of current conducting electrodes extending longitudinally within the cage and being supported from the body portion, clamping means carried by each of the electrodes for releasably clamping an electron emitting element to said electrodes at the depending terminal end of the same, each clamping means including a clamping bar and a member for spring loading the bar, a cathode adapted to be releasably secured to the depending terminal end of the cage and in position for coacting relation with the electron emitting element, and means for releasably securing the cathode to said cage.

3,187,217
AMPLITUDE ANALYSING SPECTROMETER
Georges Fraysse, Ganshoren-Brussels, Belgium, Georges Mirat, Bourg-la-Reine, Paul Mirat, Antony, and Yves Pichoff, Bourg-la-Reine, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Oct. 19, 1960, Ser. No. 63,628
Claims priority, application France, Oct. 28, 1959, 808,739
5 Claims. (Cl. 315—12)



1. An amplitude analysing spectrometer, comprising a cathode tube with fluoroescent screen, a first pair of deflection plates connected to a means for delivering for each signal to be analysed a first difference of potential of value proportional to the amplitude of the signal and of constant duration, a second pair deflection plates connected to a sweeping means for delivering a difference of potential of predetermined form released simultaneously with the start of the first difference of potential and with the beginning of an impulse produced by a generator of an unblocking signal to a Wehnelt control electrode of the tube, the spectrometer having a memory electrode disposed between the screen and the deflection system of the cathode beam, said memory electrode being capable of locally accumulating charges due to successive passages of the beam following a plurality of releases and of presenting, with the beam being blocked, as relief image of charges as a function of the locally accumulating charges, a reading electron gun being provided in said tube to bombard the said memory electrode, after the reception of a plurality of signals to be analyzed, to display the accumulated charges on the screen.

3,187,218
ELECTRON DYNAMIC BEAM CONVERGENCE APPARATUS FOR COLOR RECEIVER
Ralph R. E'del, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 5, 1962, Ser. No. 207,744
13 Claims. (Cl. 315—22)

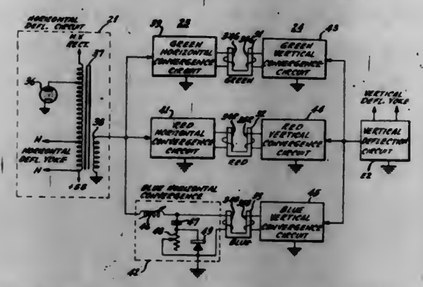
1. In a color television receiver including, a multiple-beam color kinescope image-reproducing device, and line deflection means for deflecting said beams in a series of vertically spaced horizontal lines during successive beam trace periods to form a raster,

the combination for converging said beams at all points of said raster, comprising:

a dynamic convergence electromagnet having an energizing winding;

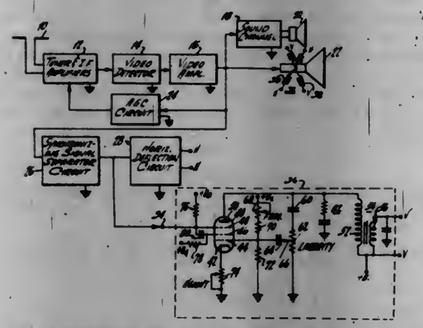
inductive means connected with said energizing winding to cooperate with said winding in converting voltage pulses derived from said deflection means into a substantially parabolic current wave for traversal of said winding;

means including a series arrangement of a capacitor and a resistor connected in parallel with said energizing winding to produce a sawtooth current wave component for traversal of said winding; and



a unilateral conducting device connected only across said resistor in such manner as to be rendered conducting only during the latter portions of said beam trace periods to improve the shape of the substantially parabolic current wave traversing said energizing winding.

3,187,219
PENTODE OSCILLATOR DEFLECTION CIRCUIT WITH FEED BACK
Wayne M. Austin, Hanover, and Jack Allen Dean, East Brunswick, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed June 1, 1962, Ser. No. 199,495
13 Claims. (Cl. 315—27)



1. In a television receiver having a cathode ray image tube reproducing device and electromagnetic deflection windings for supplying current varying at a given periodicity to said device, a deflection waveform generator for said deflection windings, comprising in combination:

an electron tube having an anode, a cathode and a plurality of electrodes intermediate between said cathode and anode;

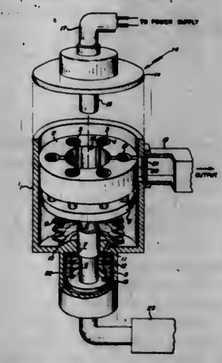
circuit means connected to a first of said electrodes for deriving a signal at said given periodicity in response to space current flow to a first of said electrodes;

means for applying said signal to a second of said electrodes to increase the space current flow to said first of said electrodes and decrease the space current flow to said anode at said given periodicity;

feedback means connected between said anode and a third of said electrodes to cause self-oscillations at said given periodicity in said circuit to sequentially initiate and cut off space current flow in said tube in response to the current flow from said anode; and

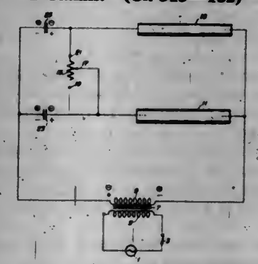
coupling means connected between said deflection windings and the anode-to-cathode path of said tube for applying deflection current at said given periodicity to said windings.

3,187,220
HYDRAULICALLY TUNED MAGNETRON
Edward C. Dench, Needham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Jan. 30, 1961, Ser. No. 85,540
7 Claims. (Cl. 315—39.55)



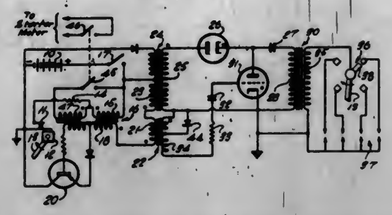
1. An electron discharge device including an evacuated envelope enclosing at least one cavity for propagating electromagnetic waves and a body composed substantially of conductive material movably disposed within said cavity comprising means within said envelope for supporting said body, flexible means coupled to said support body and said envelope and enclosing a sealed spaced between said support body and said envelope, means attached to said support body extending through said envelope into a second sealed space and attached to actuating means located therein and means conducting a pressurized fluid to at least one of said sealed spaces for moving said actuating means whereby the position of said body in said cavity is controlled.

3,187,221
CONTROL APPARATUS
Philip J. Walsh, 239 Phelan Ave., San Francisco, Calif.
Filed Apr. 10, 1963, Ser. No. 272,164
2 Claims. (Cl. 315—182)



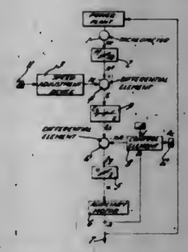
1. In a gas-discharge tube lighting circuit, a pair of gas discharge tubes adapted for connection to a source of alternating current power, a single reactor comprising a condenser connected in series with each tube, and variable impedance means connected from one condenser to the other condenser, whereby the timing of the switching action of said tubes and the waveform of the current in said tubes can be changed by adjustment of said variable impedance.

3,187,222
IGNITION SYSTEM
Halsey P. Quinn, Morris Plains, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Mar. 23, 1962, Ser. No. 181,992
4 Claims. (Cl. 315—209)



1. An ignition system for internal combustion engines, having a plurality of combustion chambers each including a piston comprising:
(a) a source of direct current;
(b) a pair of contacts controlled to open and close in timed relation with the movement of the pistons in the combustion chambers;
(c) a control transformer having a primary winding and a secondary winding on a ferromagnetic core;
(d) a first magnetic storage circuit for generating a magnetic flux in the core of the control transformer when the pair of contacts close; said first magnetic storage circuit including in series connection, the source of direct current, the pair of contacts, and the primary winding of the control transformer;
(e) a transistor having a base, a co lector, and an emitter, the base being connected to one terminal of the secondary winding of the control transformer, the emitter coupled to another terminal of the secondary winding, and its collector connected to the negative terminal of the source of direct current;
(f) a charging transformer including a primary winding and a secondary winding on a ferromagnetic core;
(g) a second magnetic storage circuit for generating a magnetic flux in the core of the charging transformer when the contacts open; said second magnetic storage circuit including the source of direct current, the primary winding of the charging transformer, the secondary winding of the control transformer, and the emitter-collector electrodes of the transistor;
(h) a storage capacitor for storing an electrical charge;
(i) a distributor;
(j) a plurality of spark plugs;
(k) an output transformer having a primary winding and a secondary winding, said secondary winding connected to the plurality of spark plugs through the distributor;
(l) a charging circuit for charging the storage capacitor when the current in the primary winding of the charging transformer is cut off; said charging circuit including in series connection, the secondary winding of the charging transformer, a rectifier diode, the storage capacitor, and the primary winding of the output transformer;
(m) a gaseous discharge device for discharging the storage capacitor, said device including an anode, a cathode, and a firing electrode;
(n) a discharge circuit for discharging the storage capacitor when the contacts open, said discharge circuit including in series connection, the storage capacitor, the anode-cathode electrodes of the discharge device, and the primary winding of the output transformer;
(o) and coupling means connected between the control transformer and the firing electrode of the discharge device for making the device conductive when the contact points open.

3,187,223
REGULATING SYSTEM CHIEFLY FOR ROTARY POWER UNITS
Victor Raeber, Vevey, Switzerland, assignor to Ateliers de Constructions Mecaniques de Vevey S.A., Vevey, Switzerland, a corporation of Switzerland
Filed Dec. 19, 1960, Ser. No. 76,737
4 Claims. (Cl. 317—5)



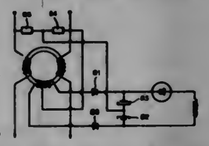
1. A speed regualting system for a rotary fluid-operated power system comprising, in combination, (1) means for producing an input signal depending on the value of the input speed, said input signal producing means being responsive to said input speed, (2) means for producing an adjustable reference signal, (3) means for forming a differential signal corresponding to the difference between said input signal formed by said input signal producing means and said adjustable reference signal, (4) means for producing an output signal depending on the value of said differential signal beyond a predetermined value, said output signal producing means being responsive to said differential signal whenever said differential signal absolute value is higher than said predetermined value, and (5) means for controlling said input speed, said input speed control means being controlled by said output signal.

3,187,224
CONTROLLING APPARATUS FOR PROTECTING LOW CURRENT SENSITIVE MEASURING INSTRUMENTS
Robert A. Le Massena, Denver, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Aug. 21, 1961, Ser. No. 132,891
8 Claims. (Cl. 317—16)



1. Protecting apparatus, comprising an electrical element which operates over a first current-voltage drop characteristic portion for currents up to a critical value, and which operates over a second, displaced current-voltage drop characteristics portion for currents above said critical value, the voltage drops associated with said second characteristic portion being significantly greater than those associated with said first characteristics portion, means connecting to a source of current said element and a current-sensitive interrupting means in a series circuit with an electrical device to be protected from the flow therethrough of currents in excess of a predetermined value, said element operating over said second characteristic portion to tend to limit the current flow through said device to values below said predetermined value whenever the current flow through said element exceeds said critical value therefor, and a diode connected in series with said interrupting means and in parallel with said element and said device in series to conduct current through said interrupting means and around said element and said device in series whenever the current flow through said device approaches said predetermined value therefor, the current flows through said device and said diode in parallel being operative to cause said interrupting means to interrupt said series circuit.

3,187,225
CONTROL SYSTEM FOR A RELAY PROTECTING A FEED CIRCUIT
Ferdy Mayer, Grenoble, Isere, France, assignor to Laboratoire d'Electronique & d'Automatique Dauphinois L.E.A.D. and Appareillage Thermoflex, Etablissements J. M. Dard, both of Isere, France
Filed June 2, 1961, Ser. No. 126,384
Claims priority, application France, June 9, 1960, 829,463, Patent 1,267,270
7 Claims. (Cl. 317—26)

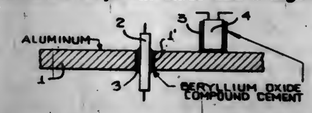


1. A safety system for an A.C. feed circuit the leads of which are liable to be subjected to unequal loads, comprising:
at least one transformer including two primary windings fed by corresponding leads of the feed circuit and adapted to deliver a first A.C. control voltage rising with the difference between the currents in said primary windings as a consequence of unequal loads in the feed circuit leads;
a voltage dividing means adapted to tap off from said feed circuit a second A.C. control voltage proportional to the actual value of the voltage across said leads;
a D.C. electric energy storing means;
a rectifying circuit energized by superposed action of both said first and second A.C. control voltages and feeding said storing means;
a relay including an energizing winding connected across said storing means; and
an electronic switch inserted between the energizing winding and the said storing means and adapted to discharge said storing means when the energy stored therein exceeds a predetermined threshold level.

ERRATUM
For Class 317—100 see:
Patent No. 3,187,210

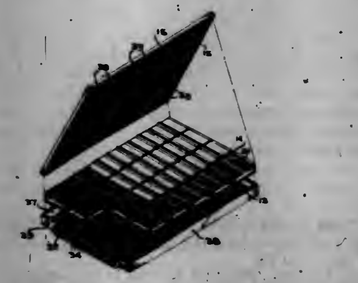
3,187,226
MINIATURIZED ELECTRICAL APPARATUS WITH COMBINED HEAT DISSIPATING AND INSULATING STRUCTURE
Maurice Kates, Newton, Mass., assignor, by mesne assignments, to Curtiss-Wright Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 7, 1961, Ser. No. 129,771
2 Claims. (Cl. 317—100)

1. Electrical miniaturized apparatus including an electrical unit that generates heat during normal operation thereof, comprising a supporting heat-dissipating chassis for said unit, and an integral, compact structure for securing to and insulating said unit from said chassis and for effectively conducting the aforesaid heat to the chassis, said integral structure consisting of an adhering cement of comminuted beryllium oxide and a high-temperature



plastic binder for mechanically uniting the electrical unit to said chassis, said cement effectively adhering to both said unit and chassis so as to form both an electrically insulating barrier and a short and direct heat transfer path therebetween.

3,187,227
PACKAGING TECHNIQUE FOR MICRO-ELECTRONIC CIRCUITS
Yaohan Chu, Chevy Chase, Md., and John C. Mould, McLean, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed July 19, 1962, Ser. No. 210,990
13 Claims. (Cl. 317—101)

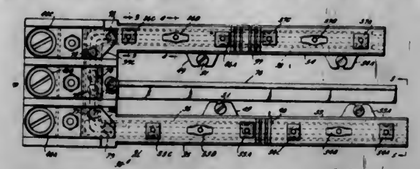


1. A system for interconnecting a plurality of individual circuits comprising a first set of mutually insulated, elongated, conductors, a second set of mutually insulated elongated conductors spaced from said second set of conductors, said first and second sets of conductors being oriented at a predetermined angle greater than zero, a plurality of containers each containing one of said circuits, said containers extending in a two dimensional array wherein a plurality of containers is disposed in each dimension of said array, said containers including a pair of opposed sides in contact with and fitting between said sets of conductors, each of said sides including a plurality of mutually insulated, elongated conductors on the external portions thereof, the conductors on said containers being connected to the circuit within its respective container and to the set adjacent thereto, the conductors on one side being oriented at said angle to the conductors on the other side and mated with the conductors in said sets, said first and second sets of conductors extending between a plurality of said containers, and means for maintaining said containers and the conductors in said planes in fixed relation.

3,187,228
SEQUENCED PHASE PANELBOARD
John A. Herrmann and Elwood T. Platz, Grosse Pointe Farms, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 5, 1963, Ser. No. 285,680
11 Claims. (Cl. 317—119)

6. A panelboard comprising a mounting member having a plate-like portion, a plurality of U-shaped bus bars, U-shaped means mounting said bus bars in insulating re-

lationship to said mounting member forward of said plate-like portion, said U-shaped means comprising a web portion and two extending arm portions, a first and second of said bus bars each having a main portion and a plurality of offset connecting members defining locations for making electrical connections to said respective bus bars, said offset connecting members of said first and second bus bars having portions thereof remote from said plate-like portion and positioned in a plane parallel to said plate-like portion; said portions of said offset connecting members of said first bus bar projecting in a first direction from the main portion of one arm of said first U-

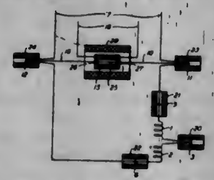


shaped bus bar, said portions of said offset connecting members of said second bus bar projecting in a second direction from said main portions of the other arm of said second U-shaped bus bar, said first direction being different than said second direction, a third U-shaped bus bar having a main portion and a plurality of offset connecting members defining locations for making electrical connections thereto, said offset connecting members of said third bus bar having a portion thereof remote from said plate-like portion and positioned in said plane, said portions being capable of being electrically connected to circuit breakers mounted between the extending arm portions of said U-shaped means.

3,187,229
SUPERCONDUCTING MAGNET UTILIZING SUPERCONDUCTIVE SHIELDING AT LEAD JUNCTIONS

John E. Kunzler, Pleasant Grove, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 1, 1961, Ser. No. 149,442
10 Claims. (Cl. 317—123)



1. A superconducting device comprising two superconducting members suspended in a low temperature environment and a contact between said members, said contact being magnetically shielded by an electrically closed superconducting magnetic shielding member, and in which at least one of the said superconducting members consists essentially of a plurality of convolutions about a substantially common axis.

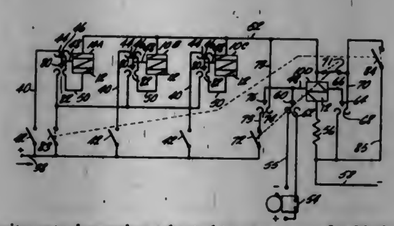
3,187,230
ELECTRIC RESET GRAVITY DROP ADAPTED FOR USE IN ANNUNCIATORS

Thomas G. Bristovish, Norwalk, Conn., assignor to Edwards Company, Incorporated, a corporation of New York

Filed May 26, 1959, Ser. No. 815,860
9 Claims. (Cl. 317—137)

6. An electromagnetic device comprising a winding for generating a magnetic field, a first electric circuit for supplying current to the winding, a second electric circuit for supplying current to the winding, an armature, yieldable means for holding the armature within the confines of the area of said magnetic field in position spaced away from said winding, said armature being adapted to move out of said position towards the winding when a magnetic field is generated by the winding and to move back into position spaced away from the winding when both circuits for supplying current to the winding are open, a gravity drop circuit control member, means for pivotally mounting a circuit control member, said means being positioned at a point between opposite end portions of the circuit control member whereby when the circuit control member is caused to pivot opposite end portions will move in different directions, said armature being adapted to hold the circuit control member in an initial starting position when the armature is in position spaced away from said winding and to release said circuit control member when the armature is moved out of said position towards the winding so that the circuit control member will be free to pivot and drop down under the influence of gravity into a second position, means controlled by said





circuit control member adapted to open one of said circuits for supplying current to the winding and to close the second one of said circuits as the circuit control member moves from one of the said positions into the other, said means for opening and closing the second circuit for supplying current to the winding being further adapted to hold one of the said circuits closed when the circuit control member is in the said positions, mechanical means for coupling the armature with the said end portion of the circuit control member which means are adapted to pivot such end portion of the circuit control member and move the circuit control member from the second position into the initial starting position when the armature is forced by the magnetic field to move towards the winding, a first open switch positioned in the first circuit, a second open switch positioned in the second circuit whereby when one of the said switches are closed the armature will be attracted to the winding to cause the circuit control member to change its position and whereby the circuit control member in changing position will open the electric circuit closed by the switch and prepare the other one of said electric circuits so that it may be closed by the switch.

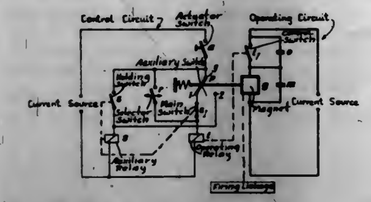
3,187,231
SWITCHING DEVICE FOR FIRING AUTOMATIC FIREARMS

Armin Schönherr, Hamburg-Niendorf, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Mar. 1, 1962, Ser. No. 176,693
6 Claims. (Cl. 317—139)

1. A fire circuit arrangement comprising, in combination:

(1) an operating circuit incorporating
(a) an operating magnet, and
(b) a single control switch electrically connected to said magnet for energizing the same; and

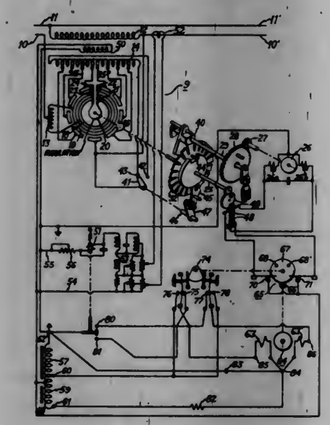


(2) a control circuit incorporating
(a) an operating relay mechanically connected to said control switch,
(b) an actuator switch, and
(c) switch means interconnecting said operating relay and said actuator switch for switching said control circuit between a first position in which said operating relay, and consequently said magnet, remain continuously actuated so long as said actuator switch is actuated, and a second position in which each actuation of said actuator switch produces but one short actuation of said operating relay, and consequently of said magnet.

3,187,232
TIME DELAY CONTROL SYSTEM

Charles W. Schoendube, Lee, Mass., assignor to General Electric Company, a corporation of New York

Filed Dec. 27, 1961, Ser. No. 162,451
6 Claims. (Cl. 317—141)

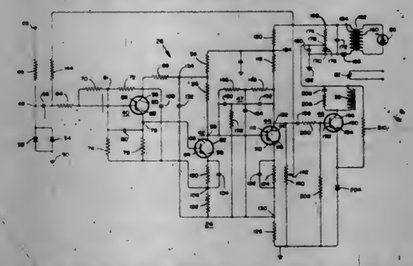


5. A time delay control system for an automatic regulator comprising, in combination, a supply transformer winding having a pair of main output terminals and an intermediate tap output terminal, a capacitor and a resistor permanently connected in series between said main output terminals, a reversible motor driven time delay relay having separate forward and reverse direction of operation controlling inductive windings each with a terminal permanently connected to the junction of said capacitor and resistor, a regulating relay for selectively connecting said direction of operation controlling windings in parallel with said capacitor, said direction of operation control windings and said capacitor being substantially tuned for parallel resonance, and separate pairs of run-back controlling contacts on said relay for selectively connecting said direction of operation controlling winding to said intermediate tap output terminal, the position of said intermediate tap being such that its voltage is substantially equal to the voltage of the junction between said capacitor and resistor when a direction of operation controlling winding is connected in parallel with said capacitor.

3,187,233
MONITORING DEVICE

Hans D. Kubach, Waterbury, Conn., and John C. Martin, Wickliffe, Ohio, assignors to Bailey Meter Company, a corporation of Delaware

Filed Nov. 18, 1960, Ser. No. 70,280
12 Claims. (Cl. 317—146)



1. A malfunction detector for an electric circuit having a circuit terminal at zero potential during normal functioning of the circuit, comprising, an electric oscillator having oscillatory and non-oscillatory states provided with an input circuit connected to the circuit terminal, an output circuit having a current flow therein of one magnitude during the non-oscillatory state of said oscillator and a current flow therein of a different magnitude during the oscillatory state of said oscillator, a feedback circuit connected from the output circuit to the input circuit to provide positive feedback during the oscillatory state of said oscillator, a first variable impedance device connected to said input circuit responsive to the existence of a zero potential at the circuit terminal to maintain one of said oscillatory states and responsive to the existence of a positive potential at the circuit terminal to maintain the other oscillator state, a second variable impedance device connected to said input circuit responsive to the existence of a zero potential at the circuit terminal to maintain said one oscillatory state and responsive to the existence of a negative potential at the circuit teminal to maintain said other oscillatory state, and means connected to said output circuit to manifest the existence of said oscillatory and non-oscillatory states of said oscillator.

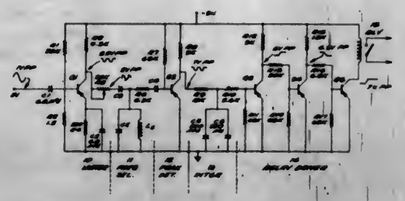
3,187,234
SELECTIVE SIGNAL-RESPONSIVE CIRCUIT

Dwight M. Muranaka, Yujiro Yamamoto, and Edwin S. Hamberg, Santa Ana, and Lindy T. Ikegami, Anaheim, Calif., assignors to Y 2 Associates, Inc., a corporation of California

Filed Nov. 8, 1962, Ser. No. 236,384
3 Claims. (Cl. 317—147)

1. An electrical circuit for responding to a signal of a predetermined frequency having at least a predetermined amplitude for at least a predetermined period of time, said circuit comprising, in combination:
an amplitude limiting circuit for receiving an incoming signal;
a frequency selection circuit coupled to the output of said amplitude limiting circuit;
a peak detector circuit coupled to the output of said frequency selection circuit, and operable for amplifying only such portion of each cycle of the signal as exceeds a predetermined reference amplitude level;

an integrator coupled to the output of said peak detector circuit;



and a relay driver having an input coupled to said integrator to be actuated thereby.

3,187,235
MEANS FOR INSULATING SUPERCONDUCTING DEVICES
Ted G. Berlincourt, Woodland Hills, and Richard R. Hake, Northridge, Calif., assignors to North American Aviation, Inc.
Filed Mar. 19, 1962, Ser. No. 180,686
7 Claims. (Cl. 317—158)



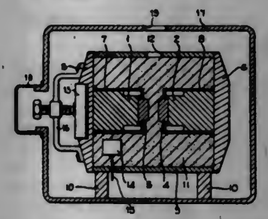
1. In a superconducting electromagnet comprising a coil wound on a magnet form, the coil having a plurality of layers of superconducting wire with each layer having a plurality of adjacent turns of said wire, wherein when said magnet in an energized superconductive state goes to a normally conductive state, substantial voltage stresses occur ordinarily damaging to dielectric material present for providing insulation between adjacent coil layers of the magnet, whereby the life of the magnet is shortened, the improvement for increasing magnet life and efficiency comprising a thin sheet of normally conductive material positioned between said adjacent coil layers, and means separating said adjacent turns of superconducting wire to electrically insulate these turns from each other.

3,187,236
MEANS FOR INSULATING SUPERCONDUCTING DEVICES
Don H. Leslie, Northridge, Calif., assignor to North American Aviation, Inc.
Filed Mar. 19, 1962, Ser. No. 180,739
5 Claims. (Cl. 317—158)



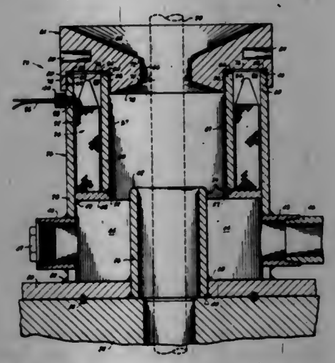
1. In a superconducting electromagnet comprising a coil wound on a magnet form, the coil having a plurality of layers of bare superconducting wire with each layer having a plurality of adjoining turns in direct contact, wherein when said magnet in an energized superconductive state goes to a normally conductive state, substantial voltage stresses occur ordinarily damaging to dielectric material present for providing insulation between adjacent coil layers of the magnet, whereby the life of the magnet is shortened, the improvement for increasing magnet life comprising a thin sheet of normally conductive material positioned between said adjacent coil layers.

3,187,237
PERMANENT MAGNET ASSEMBLY
Robert Derek Craig, Bowdon, John Lewis Williams, Wilmslow, and Edward Willdig, Stretford, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Apr. 30, 1962, Ser. No. 191,130
Claims priority, application Great Britain, May 2, 1961, 15,883/61
5 Claims. (Cl. 317—158)



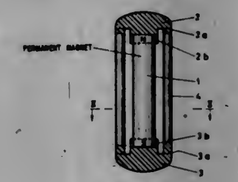
1. A magnet assembly comprising two magnets extending axially towards each other with their adjacent ends defining a gap in which is produced a high intensity magnetic field, and means providing a screen against external magnetic fields and protection against ambient temperature variations comprising a cylindrical yoke of a good thermally conducting high permeability material connecting said magnets and extending co-axially around said magnets.

3,187,238
MAGNETIC BELL NIPPLE
Gerald G. Wilson, 4365 El Paso St., and Homer W. O'Haver, 5025 Haden Road, both of Beaumont, Tex.
Filed Aug. 16, 1962, Ser. No. 217,348
5 Claims. (Cl. 317—163)



4. A device for catching magnetically attractable articles which may fall into a vertically disposed well bore, the device comprising:
an elongated cylindrical housing having a cylindrical inner wall and a longitudinal passageway extending therethrough;
magnet means disposed around the outer periphery of the cylindrical inner wall;
guide means connected to the housing for maintaining an elongated tool passing through the longitudinal passageway generally centered and spaced from the inner wall; and,
annular trap means disposed within the housing and below the inner wall for catching articles which drop from the inner wall,
whereby free-falling, magnetically attractable articles passing through the inner wall will be caught and held against the inner wall by the magnetic force of attraction of the magnet means and the elongated tool will be maintained in spaced relation to the inner wall so as not to loosen articles held against the inner wall.

3,187,239
HOLDING MAGNET FOR FERROMAGNETIC FOREIGN BODIES IN RUMINANTS
Gustav Rosenberger, Bischofsholer Damm 74, and Matthaeus Stöber, Rauteinstr. 27, both of Hannover, Germany
Filed Nov. 16, 1962, Ser. No. 238,257
7 Claims. (Cl. 317—201)



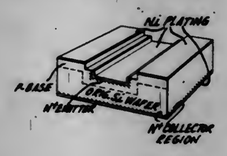
1. A holding magnet device for attracting and holding ferromagnetic foreign bodies in animal internal organs comprising an elongated magnet, a cage enclosing said magnet, said cage having a plurality of slots therein, said slots extending substantially parallel to said magnet and being substantially coextensive with said magnet, said cage being nonmagnetic and said magnet being rigidly secured in said cage, whereby elongated ferromagnetic bodies are aligned with the magnet as they are attracted by the magnet and pass into one of the slots.

3,187,240
SEMICONDUCTOR DEVICE ENCAPSULATION AND METHOD
James E. Clark, Coopersburg, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 8, 1961, Ser. No. 131,706
7 Claims. (Cl. 317—234)



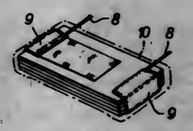
5. A semiconductor device comprising a metal sleeve member, a glass disc sealed within said sleeve member and extending beyond said sleeve member at one end, said sleeve member extending beyond said glass disc at the other end, said extended sleeve portion having a flanged portion and defining with said disc a cavity, a plurality of short, thick metal pins sealed in said disc, said pins being flush with the surface of said disc at its extended end, said pins extending into said cavity, and a metal cover member joined to said flanged portion of said sleeve thereby to enclose said cavity and metal ribbon members bonded to the external ends of said pins, said ribbon members being radially disposed, and a semiconductor element mounted in said cavity on the end of one of said pins and a plurality of wire leads interconnecting said element and said other pins within said cavity.

3,187,241
TRANSISTOR WITH EMITTER AT BOTTOM OF GROOVE EXTENDING CROSSWISE THE BASE
Herbert Nelson, Princeton, N.J., and John Bernath, Los Angeles, Calif., assignors to Radio Corporation of America, a corporation of Delaware
Original application Mar. 27, 1957, Ser. No. 648,855, now Patent No. 3,022,568, dated Feb. 27, 1962. Divided and this application Jan. 3, 1962, Ser. No. 163,992
7 Claims. (Cl. 317—234)



1. A junction transistor comprising a given conductivity type monocrystalline semiconductive wafer bearing across one major face a groove between two lands,
the top of said groove being broader than the bottom,
said groove and lands having below the surface a zone of the opposite conductivity type for the base,
a thin surface layer of said given conductivity type on said groove bottom for the emitter,
a major face opposite said grooved face as the collector connection,
a metal plating over the top only of said lands and over the bottom only of said groove and on said wafer face opposite said grooved face,
said plating consisting of a metal which makes a good ohmic contact to said wafer but does not affect the conductivity type of said wafer,
and electrical leads to said metal plating on said lands, on said groove bottom, and on said opposite face.

3,187,242
STACKED ELECTRICAL CAPACITORS
Walter Schick, 90 Manor Road, Chigwell, England
Filed Oct. 2, 1961, Ser. No. 142,091
Claims priority, application Great Britain, Oct. 7, 1960, 34,485/60
5 Claims. (Cl. 317—261)

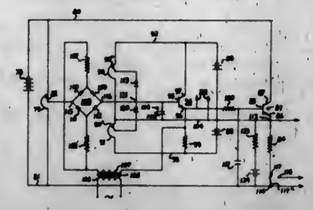


5. An electric capacitor comprising a plurality of thin dielectric layers each having metallised coatings which form electrodes and extend onto opposed edges of said layers, said layers being stacked with said electrodes of adjacent layers in contact, pieces of sheet metal folded about opposed ends of said stack in direct contact with but only partly covering said metallised edges thereby to provide at least one sheet metal boundary edge contiguous with said metallised edges at each end of the stack, solder reinforcement on said edge coatings at said opposed ends of the stack uniting said edge coatings of different layers to each other and to said end pieces, and terminals connected to said end pieces.

3,187,243
MOTOR ACCELERATION CONTROL FOR A TENSIONING SYSTEM

James Long, Erie, Pa., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 105,064, Apr. 24, 1961. This application Dec. 5, 1962, Ser. No. 243,204
11 Claims. (Cl. 318—6)

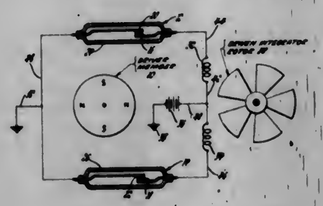


1. In combination with a dynamoelectric machine adapted to drive a load, means for supplying controlled electric energy to said machine, regulating means for regulating the speed of said dynamoelectric machine by controlling the power supply means in response to a speed reference input signal, means for selecting a signal indicative in magnitude of a desired speed of said machine, and means responsive to change in magnitude of said selected signal for providing an acceleration control signal to said regulating means to supply accelerating energy to said machine comprising circuit means for integrating a constant reference signal to provide a first signal varying at a linear rate with respect to time, means for obtaining the negative integral of said constant reference signal after a time interval predetermined by the magnitude of change of said selected signal to provide a second signal varying at an equal but opposite linear rate with respect to said first signal and of equal time duration to said first signal to thereby provide an acceleration reference signal having equal but opposite leading and trailing edges, means for integrating said acceleration reference signal to provide an acceleration control signal initiating and terminating at substantially constant change of rate of change, the time of integration of said acceleration reference signal being substantially longer than any time constants of said regulating means, and means for applying said acceleration control signal to said regulating means to cause accelerating energy to be applied to and removed from said machine at a substantially constant rate of change to smoothly change the speed of said machine to the value selected by said speed selecting means.

3,187,244
IMPULSE INTEGRATOR DRIVE FOR MEASURING ROTARY MOTION

Raymond E. Summerer, Grand Blanc, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 22, 1963, Ser. No. 253,075
3 Claims. (Cl. 318—27)

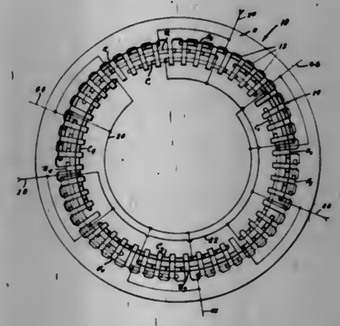


1. An impulse integrator drive for measuring rotary motion, said drive comprising a magnetic driving member having at least two effective poles, multiple pairs of hermetically sealed and magnetically sensitive contacts mounted near the path of movement of said poles, a stepping motor having a field coil for each of said pairs of contacts, a voltage supply source, and each pair of contacts and its associated field coil being connected in a separate series circuit with said voltage supply source.

3,187,245
POLYPHASE MOTOR WITH PLURAL WINDING SECTIONS

Hollis D. Sisk, St. John, Mo., and Robert F. Munler, O'Fallon, Ill., assignors to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed July 20, 1961, Ser. No. 125,423
8 Claims. (Cl. 318—225)



1. In a three-phase motor having P poles and including a primary core member provided with a plurality of slots, a three-phase winding comprising P phase pole groups of coils per phase disposed in said slots and distributed around said core member for three-phase operation, said winding being divided into two similar sections, each of said sections including a selected group of adjacent phase pole groups from each phase connected together to form a three-phase circuit, said selected groups in the three phases in each of said sections being disposed circumferentially of said core member 60P electrical degrees apart, means for connecting one of said sections to a supply source to energize all of the coils in each of said pole groups in said one section for starting the motor, and means for connecting the other of said sections in parallel with said one section after the motor has started.

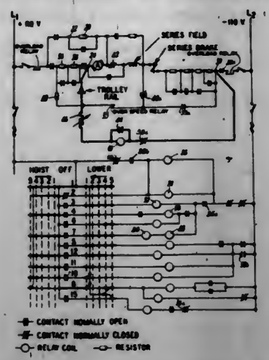
3,187,246
PROTECTIVE RELAY CIRCUITRY FOR HOIST MOTOR CONTROLS

Harry G. Garten, Alloy, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Original application Nov. 8, 1957, Ser. No. 695,282, now Patent No. 3,021,465, dated Feb. 13, 1962. Divided and this application Apr. 19, 1961, Ser. No. 104,101
1 Claim. (Cl. 318—247)

In combination with a direct current hoist motor and controller therefor supplied by a two-wire line, said controller being adapted to provide series operation for hoisting and shunt operation for dynamic lowering whereby in shunt operation the motor field winding is paralleled by a shunt circuit which includes the motor armature winding, a magnetic brake and electrical resistors; a protective device operable in the event of a discontinuity in the shunt circuit external to the motor armature winding,

said device comprising relay means connected across said shunt circuit, said relay means having associated con-

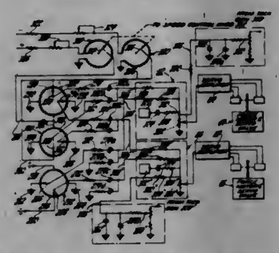


tactor means arranged to remove power from the entire motor when the relay is actuated.

3,187,247
REPRODUCING APPARATUS

Robert B. Colten, Santa Barbara, Calif., Glenn E. Wanttaja, Hales Corners, Wis., and August F. Scarpelli, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application Sept. 2, 1959, Ser. No. 837,607. Divided and this application Oct. 12, 1961, Ser. No. 144,678
3 Claims. (Cl. 318—257)



1. In combination, drive means for maneuvering a tool relative to a workpiece, and a control system for the drive means including a manually operable speed control including two variable impedances maneuverable by the speed control to develop D.C. speed signals each of opposite polarity corresponding in magnitude to the desired speed and a manually operable direction control including a sine-cosine potentiometer in communication with the two variable impedances for the speed control and adapted when the direction control is actuated to develop a combined D.C. speed and direction signal of a polarity corresponding to the direction and speed of tool movement desired thereby facilitating 180° arcuate maneuvering of the tool relative to the workpiece in all directions at a constant speed determined by the setting of the speed control.

3,187,248
POWER TOOL OVERLOAD PROTECTION

Wilfred W. Cardin, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 21, 1961, Ser. No. 118,636
18 Claims. (Cl. 318—473)

16. In combination, a power tool having an operating trigger and a fan-cooled motor winding, a protective starting and stopping switch assembly located in the air path of the fan and including terminals connecting the motor winding with a supply circuit, said assembly also including a thermostatic switch and a manual switch adapted for series-circuit connection between said terminals, said thermostatic switch being located in close heat-exchange relation to the motor winding, a movable member ex-

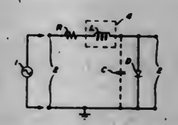


tending from said assembly, means operatively connecting the movable member with both switches, means biasing the movable member to hold the thermostatic switch closed while opening the manual switch, and means connecting the trigger with said movable member to move it against said bias when the trigger is squeezed to close the manual switch while freeing the thermostatic switch to operate thermostatically.

3,187,249
FREQUENCY DIVIDER CIRCUIT

George W. Jordan, Jr., Parsippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 5, 1960, Ser. No. 73,946
2 Claims. (Cl. 321—68)



1. A frequency divider comprising a pair of input terminals, an impedance means effectively consisting solely of substantially pure resistance, an inductor and a diode connected in series between said pair of input terminals, said diode having hole storage properties, and a pair of output terminals for connecting an output circuit directly across said diode.

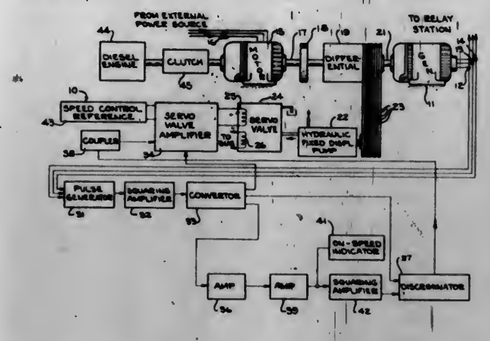
3,187,250
FREQUENCY CONTROL SYSTEM FOR A.C. GENERATING APPARATUS

Ellis H. Born and Richard E. Porter, Columbus, and Paul B. Wolfe, Dublin, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1961, Ser. No. 137,256
6 Claims. (Cl. 322—32)

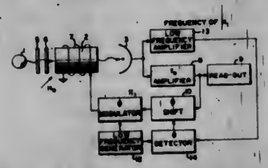
6. A frequency-control system for A.C. generating apparatus comprising a prime mover and an A.C. generator, said system comprising: a variable-ratio transmission connecting the prime mover in mechanical driving relation to the A.C. generator, said transmission being effective to drive said A.C. generator above its rated speed when said prime mover operates at its rated speed, said transmission including speed-modifying means for modifying the input-output speed ratio thereof; control means for the speed-modifying means of said transmission, including an electrically actuated speed adjustment apparatus; input means connected to said generator, for developing an initial control signal having a frequency proportional to the generator output frequency; analog converter

means, connected to said input means, for developing a first continuously variable actuating signal having an amplitude directly proportional to the frequency of said initial control signal; narrow-band frequency-selection means connected to said input means for developing a second control signal having a frequency equal to said initial control signal but shifted in phase through an angle proportional to any variation of said initial control signal



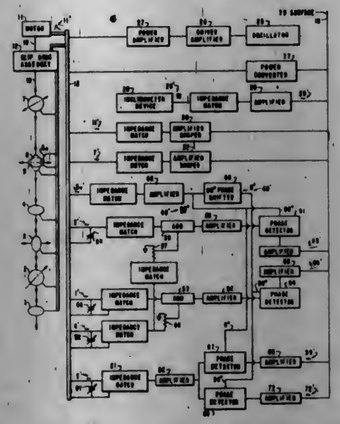
from a selected normal frequency; phase discriminator means coupled to said frequency-selection means and to said input means for developing a second continuously variable actuating signal proportional in amplitude to the frequency of said initial control signal; and means, connecting said converter means and said discriminator means to said speed adjustment apparatus, for actuating said speed adjustment apparatus conjointly in response to both said actuating signals.

3,187,251
QUANTUM OSCILLATORS
William E. Bell, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 21, 1962, Ser. No. 174,840
12 Claims. (Cl. 324—.5)



1. A quantum oscillator comprising: a sample of matter characterized by a resonance line for quantum transitions between quantum mechanical states of atoms of said sample; means for irradiating said sample with optical radiation so that a plurality of said sample atoms are raised from an optically absorbing quantum mechanical state to an optically excited quantum mechanical state; means responsive to optical radiation passing through said sample without absorption for developing a first signal at a frequency which depends on the frequency of said quantum transitions and also for developing a second signal which depends on the average intensity of optical radiation passing through said sample; means responsive to said first signal for developing a feedback signal which regeneratively induces quantum transitions in said sample, thereby establishing a condition of self-oscillation at said transition frequency; and means responsive to said second signal for stabilizing said oscillation frequency at the resonance frequency of said transitions.

3,187,252
ELECTROMAGNETIC WELL SURVEYING METHOD AND APPARATUS FOR OBTAINING BOTH A DIP AND CONDUCTIVITY ANISOTROPY OF A FORMATION
Ernest T. Hungerford, Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 160,019
3 Claims. (Cl. 324—6)

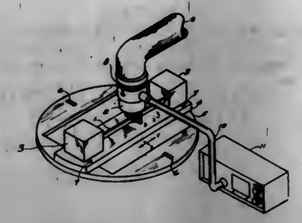


1. An electromagnetic surveying instrument for use in determining the characteristics of earth formations traversed by a borehole, said surveying instrument comprising: two solenoids, the axis of one solenoid being substantially aligned with the axis of the borehole and the axis of said other solenoid being substantially normal to the axis of said one solenoid; circuit means for coupling a source of alternating current to said solenoids; a first detector coil spaced from said solenoids and having its axis substantially perpendicular to the axis of the borehole and the axis of said other solenoid; a pair of detector coils spaced from both said solenoids and said first detector coil, the axes of said pair of detectors being aligned substantially parallel to the axis of the borehole; a fourth detection coil spaced from both said solenoids and said first and said pair of detector coils and having its axis aligned with the axis of said other solenoid; a support member, said solenoids and detector coils being mounted on said support member in a spaced position; rotation means coupled to said support member for rotating said solenoids and said detector coils in synchronism about an axis substantially parallel with the axis of the borehole, circuit means coupling said detector coils together to form detector coil systems and recording means coupled to said detector coil systems to record signals related to the signals induced in said detector coils when said solenoids are energized from said alternating current source.

3,187,253
APPARATUS FOR MEASURING THE STRAIGHTNESS OF TRAVEL OF A MOVABLE MEMBER
John H. Whitmore, Binghamton, N.Y., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Apr. 27, 1961, Ser. No. 106,113
4 Claims. (Cl. 324—61)

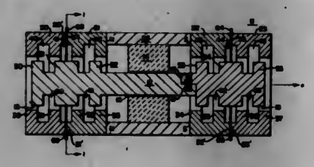
1. An apparatus for dynamically measuring the straightness of travel of a movable member comprising;
(a) elongated conductive straightness reference means consisting of a plurality of independent wire members maintained in a longitudinally tensioned state;

(b) means mounting said reference means upon said movable member in a direction parallel to the direction of travel of said movable member;
(c) first and second conductive pickup means;



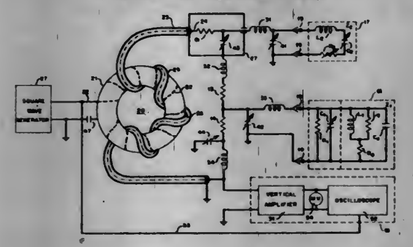
(d) means mounting said first and second conductive pickup means independently of said movable member and adjacent opposite sides of said reference means to thereby form first and second capacitors electrically connected in series with said reference means being a common element of said first and second capacitors;
(e) the variation in the capacitance of said first and second capacitors as said movable member travels a linear path in the direction of the length of the wire members being indicative of the deviation from straight travel of said movable member; and
(f) means for dynamically measuring the variation in the capacitance of said first and second capacitors as said movable member traverses said path.

3,187,254
CONTROL APPARATUS WITH MAGNETORESISTIVE PICKOFF MEANS
Seymour N. Wasserman, Natick, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 6, 1961, Ser. No. 101,236
3 Claims. (Cl. 324—45)



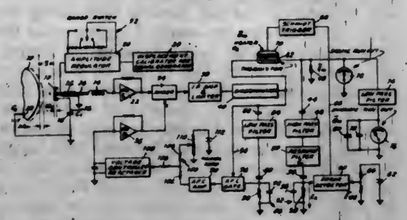
1. Control apparatus, comprising:
(a) a rigid cylindrical housing member with first and second ends having a longitudinal bore therethrough, and comprising a first magnetic section at said first end, a second magnetic section at said second end, and a third magnetized section mounted between said first and second sections; said first and second sections each comprising a pair of cylindrical portions having a plurality of raised circumferential flanges formed thereon perpendicular to said bore and extending into said bore;
(b) a first cylindrical magnetoresistive element mounted between said portions of said first section; a second cylindrical magnetoresistive element mounted between said portions of said second section; said magnetoresistive elements being characterized by a change of resistivity with a change of magnetic flux therethrough;
(c) a cylindrical bearing member mounted within said bore on said third section;
(d) an elongated armature member constructed from a magnetic material and comprising first and second opposing end portions and a central bearing portion separating said end portions; said armature member being mounted in said bore with said bearing member surrounding said bearing portion to prevent lateral movement of said armature member in said bore while allowing longitudinal movement therein; said first and second end portions each having a plurality of raised circumferential flanges formed thereon generally opposite said corresponding flanges on said housing member; said flanges on said armature member having an outside diameter that is slightly smaller than the inside diameter of said flanges on said housing member whereby first and second variable air gaps are provided between said opposite flanges; said housing member and said armature member defining a series magnetic circuit from one pole of said magnetized third section to the other pole thereof including said first section, said first air gap, said first end portion, said bearing portion, said second end portion, said second air gap and said second section; the magnetic flux in said circuit thereby passing through said magnetoresistive elements and through said opposite flanges; the longitudinal movement of said armature member in said bore causing a change in magnetic reluctance between said opposite flanges as said first and second air gaps are changed to thereby change the flow of magnetic flux through said magnetoresistive elements; and
(e) means connected to said magnetoresistive elements to detect the change in resistance thereof as an indication of the degree of movement of said armature member with respect to said housing member.

3,187,255
SQUARE WAVE INDUCTANCE BRIDGE
Bradford Howland, Cambridge, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Jan. 30, 1961, Ser. No. 85,544
5 Claims. (Cl. 324—57)



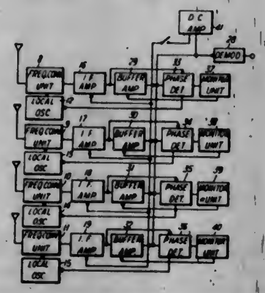
1. A square wave inductance bridge comprising a first arm including a first impedance and first and second resistors, one terminal of each being connected together at a common junction to form a T network, a second arm including a second impedance and a third resistor, one terminal of each being connected together, the second terminal of each of said impedances being connected to a common ground point, a first square wave source connected between the second terminal of said first resistor and said ground point, a second square wave source connected from the second terminal of said second resistor to the second terminal of said third resistor, a voltage indicator connected between said second terminal of said second resistor and said ground point, whereby said indicator shows a null balance when the transfer impedance of said T network equals the series impedance of said second arm with the voltage of said first source equal and opposite to the voltage of said second source.

3,187,256
SYSTEM FOR MONITORING AND INDICATING THE ECCENTRICITY OF CIRCULAR OBJECTS IN BOTH A STATIC AND DYNAMIC CONDITION
George B. Foster, Worthington, Ohio, assignor to Raydata Corporation, Worthington, Ohio, a corporation of Ohio
Filed Sept. 9, 1960, Ser. No. 54,987
19 Claims. (Cl. 324—61)



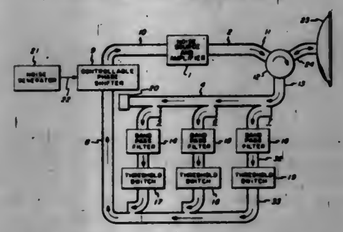
18. A measuring device comprising a mechanical to electrical transducer for transforming a physical displacement phenomenon to be measured into an electrical signal, means for imparting a known calibration variation of the physical displacement phenomenon to be measured to the input of said transducer whereby said transducer output comprises a measuring component and a calibration component, means for evaluating said measuring component, and feedback means responsive to variations in said calibration component for maintaining the mechanical to electrical transfer characteristic of said transducer constant.

3,187,257
FREQUENCY-(OR PHASE)-MODULATION INTERMEDIATE-FREQUENCY COMBINING RECEPTION SYSTEM
Masahisa Miyagi, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed May 10, 1961, Ser. No. 109,643
Claims priority, application Japan, May 16, 1960, 35/24,673
7 Claims. (Cl. 325—305)



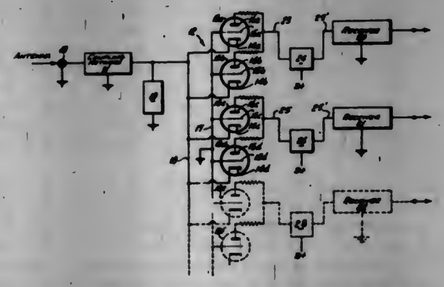
4. In an angle modulation intermediate-frequency combining system in which at least two receiving channels are connected in parallel to an R.-F. source and in which the output signals of said channels are interconnected to provide combined channel output signals, each of said channels including a frequency converter controlled by a local oscillator for converting the R.-F. signals to I.-F. signals, an I.-F. amplifier for amplifying said I.-F. signals, a phase detector for comparing said I.-F. signals with the combined channel output signals and producing detector output signals in response to said comparison that are connected to control the phase of said local oscillator, the improvement comprising: channel signal interrupting means connected into each channel and controlled by an output of the phase detector in the channel associated therewith for preventing the transmission of undesired signals through the channel whereby degradation of the combined channel output signals by undesired signals being generated in one or more channels is prevented.

3,187,258
SATURABLE MULTI-MODE RESPONDER
Charles R. Zolnik, Plainview, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Nov. 27, 1962, Ser. No. 240,224
11 Claims. (Cl. 325—132)



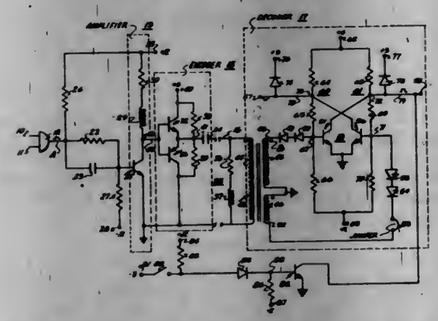
1. A saturable multi-mode responder having a regenerative oscillatory loop, said responder comprising,
a source of noise signals within said loop, said loop being characterized by a buildup time for signals which are delayed substantially an integral number of wave lengths in traversing said loop and being further characterized by a decay time for signals which are delayed substantially a non-integral number of wave lengths in traversing said loop,
means within said loop for recurrently changing the electrical length of said loop from one value to another at a rate whereby said electrical length remains substantially fixed for a time less than said buildup time at any one frequency and reverts to the same electrical length within said decay time,
a threshold switch coupled to said loop, said switch introducing in said loop a lower transmission loss when said switch is actuated and a higher transmission loss when said switch is not actuated,
and means coupled to said loop for actuating said switch in response to received signals.

3,187,259
MULTI-COUPLING APPARATUS
Aldo M. Scandurra, Greenlawn, and Martin Dolin and Nicholas M. Poulos, Plainview, N.Y., assignors to Applied Research, Inc., Port Washington, N.Y., a corporation of New York
Filed July 10, 1961, Ser. No. 122,746
7 Claims. (Cl. 325—308)



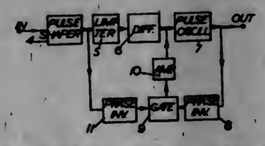
1. Apparatus for coupling a single energy source to at least two receivers comprising at least two low impedance input amplifiers each having at least one amplifying device with a cathode, a plate and at least one grid, connections between said source and the cathodes of said amplifying devices to effect a voltage reduction, and connections between each plate and one of said receivers.

3,187,260
CIRCUIT EMPLOYING CAPACITOR CHARGING AND DISCHARGING THROUGH TRANSMISSION LINE PROVIDING OPPOSITE-POLARITY PULSES FOR TRIGGERING BISTABLE MEANS
Donald E. Dove, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Apr. 19, 1963, Ser. No. 274,152
7 Claims. (Cl. 328—57)



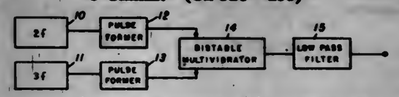
1. In a communication system, generating means supplying signals carrying information, capacitive translating means for receiving said signals and for translating them into polarized pulses, an electric circuit coupled at one end to said capacitive translating means for transmittal of said pulses, impedance mismatching means for terminating said circuit, and a bistable means connected to said circuit at the other end thereof for reconstituting said signals, said pulses comprising a set and reset trigger for said bistable means.

3,187,261
PULSE SELECTING CIRCUIT
Takao Matsushima, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Sept. 27, 1960, Ser. No. 58,827
Claims priority, application Japan, Oct. 28, 1959, 34/33,232
6 Claims. (Cl. 328—110)



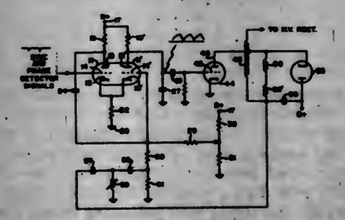
1. A pulse selection circuit for selecting a periodic pulse group having a predetermined pulse repetition rate from the pulses of a series of random pulse trains containing said periodic pulse group comprising: an externally synchronized free running oscillator having a pulse repetition rate equal to that of said periodic pulse group means for triggering said oscillator with the pulses of said random pulse trains to produce output pulses, said oscillator, once triggered, being insensitive to subsequent random pulses during the period determined by said predetermined repetition rate; a gating circuit having an inhibiting input and a normally-through input; a negative feedback path from the output of said oscillator through said normally-through input of said gating circuit to the input of said oscillator for inhibiting the triggering of said oscillator in the absence of a signal on said inhibiting input of said gating circuit; and means for applying the pulses of said random pulse trains to said inhibiting input of said gating circuit; whereby when the pulses of said pulse trains are coincident with said oscillator output pulses said negative feedback circuit is without effect.

3,187,262
DETECTOR OF PHASE DIFFERENCES BETWEEN CURRENTS OF DIFFERENT FREQUENCIES
Lawrence S. Crane, Los Angeles, Calif., assignor to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,154
5 Claims. (Cl. 328—133)



1. Apparatus for determining phase changes of a first alternating current wave of frequency f_1 with respect to a second alternating current wave of frequency f_2 in which f_1 and f_2 are different harmonics of a base frequency f_b constituting the greatest common divisor of f_1 and f_2, said apparatus comprising:
first pulse-forming means responsive to said first wave for generating a first train of pulses synchronized in fixed phase relation with said first wave;
second pulse-forming means responsive to said second wave for generating a second train of pulses synchronized in fixed phase relation with said second wave;
the pulses of said first and second trains being sharp spikes shorter than the half wavelength of either of said waves;
bistable means connected to said first and second pulse-forming means and operable into a first condition in response to each pulse of said first train and into a second condition in response to each pulse of said second train, said bistable means generating outputs of equal magnitudes but of opposite polarities in said first and second conditions respectively;
filter means connected to said bistable means for integrating the output thereof over a time at least equal to the period of said base frequency, the magnitude of the D.C. output of said filter means varying linearly with phase change between said first and second alternating waves over the period of the cycle of the least common frequency of f_1 and f_2.

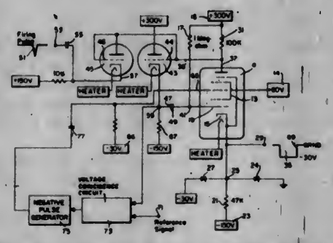
3,187,263
SWEEP SIGNAL GENERATING CIRCUIT STABILIZED AGAINST NOISE AND COMPONENT DRIFT PROBLEMS
Milton Rosenstein, Bayside, N.Y., assignor to Hazeltine Research, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 24, 1960, Ser. No. 51,708
10 Claims. (Cl. 328—185)



1. A stable sweep-signal generating circuit in a television receiver comprising: a sawtooth oscillator to be

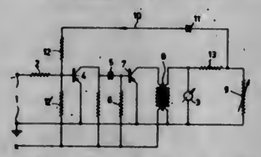
controlled by a predetermined portion of a control signal; a damper circuit including a boost capacitor across which is developed a signal in the form of a repetitive series of parabolic waves; and means for modifying said control signal to reduce the possibility that the oscillator will be undesirably controlled by a portion of the control signal other than said predetermined portion by supplying the boost capacitor signal to said oscillator for improving the stability of the oscillator against noise and component drift.

3,187,264
SIGNAL MODULATING CIRCUIT WITH A CATHODE COUPLED PHANTASTRON AND COMPARATOR
David A. Starr, Jr., Paoli, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 25, 1960, Ser. No. 10,967
6 Claims. (Cl. 328—247)



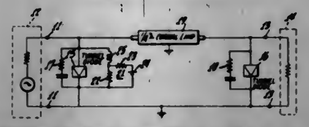
1. A voltage-controlled delay phantastron circuit comprising: a cathode coupled phantastron circuit having a cathode follower in its timing capacitor recharge path, an amplitude comparator having a first and a second input terminal and an output terminal, said first and second input terminals connected respectively to an output voltage terminal of the cathode coupled phantastron circuit and a reference voltage source, said comparator output terminal connected to a control electrode of the phantastron multigrid tube to thereby provide a phantastron circuit having a fixed period in its triggered state with a means of prematurely terminating said fixed period under control of a voltage reference level.

3,187,265
AMPLIFIER WITH CIRCUITRY FOR PRODUCING A CONSTANT INPUT SIGNAL LEVEL INDICATION
Willem Hermes, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 17, 1960, Ser. No. 36,931
Claims priority, application Netherlands, July 11, 1959, 241,196
4 Claims. (Cl. 330—2)



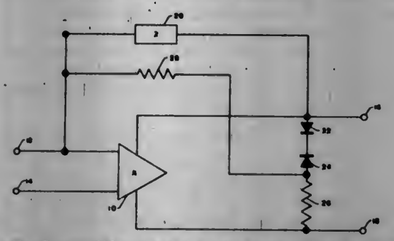
1. An amplifier having an input circuit and an output circuit, variable impedance load circuit means, a compensation resistor, means serially connecting said load circuit and compensation resistor to said output circuit, means connected between said load circuit means and input circuit providing a negative feedback voltage to said input circuit, and signal level indicating means connected in parallel with said series connected load circuit and resistor, said resistor having a value substantially equal to the effective internal resistance of said amplifier, whereby signal levels indicated by said indicating means are substantially independent of the value of said variable impedance load circuit.

3,187,266
IMPEDANCE INVERTER COUPLED NEGATIVE RESISTANCE AMPLIFIERS
Thomas G. Marshall, Jr., Stillman, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 12, 1960, Ser. No. 55,554
7 Claims. (Cl. 330—34)



1. A signal translating circuit comprising a pair of negative resistance devices, input circuit means for applying an input signal to said devices, output circuit means for deriving an output signal from said devices, and means coupled between said pair of devices for providing an impedance inversion.

3,187,267
AMPLIFIER INCLUDING REFERENCE LEVEL DRIFT COMPENSATION FEEDBACK MEANS
Richard N. Merington, Irving, Tex., assignor, by mesne assignments, to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed July 24, 1961, Ser. No. 126,146
1 Claim. (Cl. 330—110)

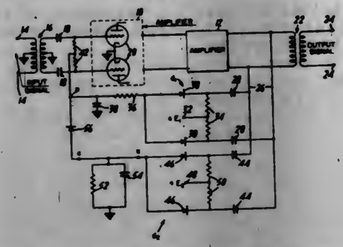


In a D.-C. amplifier having an input circuit and an output circuit wherein the signals ordinarily passing through said amplifier are constant-amplitude sine wave signals, the combination comprising means connected to said output circuit for sampling the amount of reference level drift at the peak portions of either half cycle of the signals appearing on said output circuit, means connected in series relationship with said sampling means for establishing a regenerative feedback signal having a value indicative of the value of said peak portion, and means connected to said last-named means for supplying said feedback signal to said input circuit 90 degrees out of phase with the signals appearing on the input circuit whereby the sampled value is applied in phase with the next half cycle of opposite polarity.

3,187,268
GAIN CONTROL APPARATUS PROVIDING CONSTANT GAIN INTERVAL
Benjamin B. Bauer, Stamford, and Arthur Kaiser, Trumbull, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Feb. 14, 1962, Ser. No. 173,281
11 Claims. (Cl. 330—123)

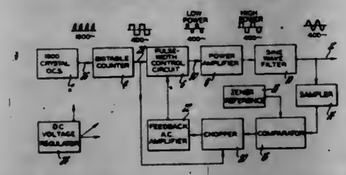
1. A gain control arrangement for a variable gain amplifier comprising, first and second detector means

both responsive to the same signal output voltage provided by said amplifier for developing unidirectional potentials having magnitudes respectively proportional to the magnitudes of said amplifier signal output voltage above first and second different predetermined levels, said first level being higher than said second level, storage means for retaining a potential equal to the unidirectional potential developed by said first detector means and for applying



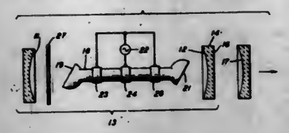
said retained potential to said amplifier to control the gain thereof, and circuit means including a unidirectionally conducting device connecting the output of said second detector means to said storage means for preventing a decrease in said retained potential until the output of said amplifier has diminished by a preselected value determined by the difference between said first and second predetermined levels.

3,187,269
STATIC INVERTER SYSTEM
Wesley G. Runyan, Marion, Iowa, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 8, 1961, Ser. No. 150,975
2 Claims. (Cl. 331—74)



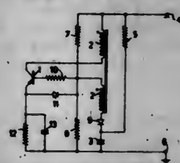
1. In static inverter means, generating means for developing square wave alternating current pulses of a desired output frequency, modifying means connected to the output of the generating means including a plurality of saturating reactor means through which the pulses flow to change their overall width for regulating purposes, a power amplifier connected to the modifying means to amplify the variable width alternating current pulses, filter means connected to the power amplifier and converting the square wave output to a sine wave train, a source of standard D.C. voltage, a feedback circuit connected to the output of the filter circuit, rectifier means connected to the feedback circuit and to the standard D.C. voltage providing direct current voltage proportional to the variation of the voltage on the final output line compared to the standard voltage resulting in an error D.C. voltage representative of the difference between the two, chopping means to which the rectifier means is connected and the error signal is fed connected to the generating means and driven at the same frequency to convert the D.C. error signal into A.C. of the output signal frequency and means interconnecting the output of the chopping means to the saturating reactor means in the modifying means to alter the width of the alternating current pulses as they are transmitted through that section for regulatory purposes.

3,187,270
OPTICAL MASER MODE SELECTOR
Herwig W. Kogelnik and Chandra K. N. Patel, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 27, 1962, Ser. No. 219,693
3 Claims. (Cl. 331—94.5)



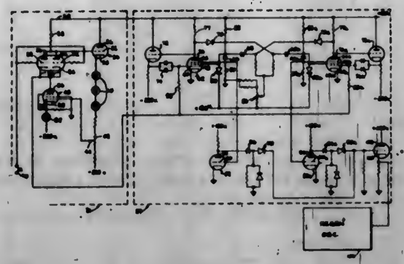
1. An optical maser comprising
a pair of axially spaced reflectors defining first and second ends of a stable nonconfocal primary optical cavity resonator,
said first end reflector having a concave spherical shape and said second end reflector being partially transmissive of light wave energy at the operating frequency,
an auxiliary reflector adjacent said primary cavity and axially spaced from said second end reflector,
said auxiliary reflector and said first end reflector forming an effective confocal cavity resonator with reflectors of equal radii of curvature,
a negative temperature medium disposed within said primary cavity,
means for pumping said negative temperature medium,
and means for abstracting output energy from said primary cavity.

3,187,271
RELAXATION OSCILLATOR WITH TIMING CAPACITOR CHARGE PATH ISOLATED FROM TRANSISTOR LEAKAGE CURRENT
Coos de Vries, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 3, 1961, Ser. No. 107,484
Claims priority, application Netherlands, June 3, 1960, 252,324
4 Claims. (Cl. 331—109)



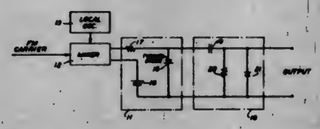
1. A transistor relaxation oscillator comprising a transistor having a control electrode, an output electrode, and a common electrode, a source of operating potential having first and second terminals, a series circuit comprising a capacitor and a resistor connected in that order between said first and second terminals, means connecting said common and output electrodes to said first and second terminals respectively, positive feedback circuit means coupled between said output and control electrodes, circuit means connected to said control electrode for providing a substantially constant bias voltage to said control electrode whereby said transistor is biased for continuous conduction with substantially maximum amplification, rectifier means, and circuit means connecting said rectifier means between said control electrode and the junction of said resistor and capacitor, said rectifier means being poled to be unblocked only when the voltage at said junction has a polarity with respect to said bias voltage that would sustain the conduction of said transistor and blocked when the junction voltage has a polarity with respect to said bias voltage that would reduce the conduction of the transistor.

3,187,272
VOLTAGE CONTROLLED OSCILLATOR
John F. Betts, Farmington, Paul A. Michaels, Livonia, and William G. Welber, Detroit, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed Jan. 27, 1960, Ser. No. 4,963
6 Claims. (Cl. 331—144)



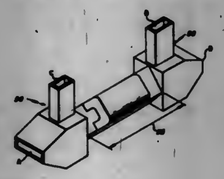
1. A voltage controlled oscillator comprising two pentodes, each having a cathode, a control grid, a screen grid, a suppressor grid and a plate, plate supply voltage, the screen grid of each tube being connected through a diode, the cathode and grid of a cathode follower, and a capacitor means to the control grid of the other tube so that when one tube stops plate conduction the fall in screen grid voltage will cause a fall in control grid voltage of the other tube thereby causing said other tube to fire, in each tube the screen grid being coupled to the suppressor grid through a capacitance connection and said suppressor grid being coupled through a resistor to a potential equal to or larger than the potential required to cause firing of the tube so that discharge of said last named capacitor to said last named potential through said resistance will raise the suppressor grid voltage sufficiently to fire the tube.

3,187,273
ZERO AXIS CROSSING PULSE MODULATOR
Norman E. Chasek, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,817
4 Claims. (Cl. 332—1)



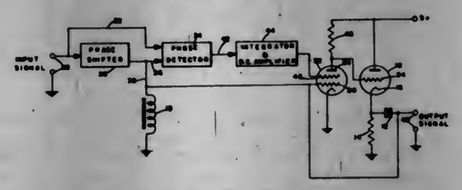
4. A pulse position modulator for converting an applied frequency modulated signal to a pulse position modulated signal which comprises, in combination: a negative resistance active element; means including a direct current bias source and a resistive load in circuit relation with said negative resistance active element for biasing said active element near instability in a bistable configuration such that a first stable state exhibits a high current-low voltage characteristic and a second stable state exhibits a low current-high voltage characteristic; means including a source of frequency modulated signals for superimposing on said direct current bias applied to said active element an alternating voltage of sufficient magnitude when passing through zero into the positive half of each cycle to trigger said active element from said first stable state to said second stable state and when passing through zero into the negative half of each cycle to trigger said active element back to said first stable state; means responsive to transitions from said first stable state to said second stable state and from said second stable state to said first stable state, including a differentiator, for producing a train of sharp spikes of large amplitude which accurately marks said transitions; and means for utilizing said train of spikes as a pulse position modulated signal.

3,187,274
SQUARE WAVEGUIDE NONRECIPROCAL DIFFERENTIAL PHASE SHIFTER WITH OPPOSITELY BIASED FERRITES
John Q. Owen, Natick, and Colin Bowness, Weston, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Nov. 22, 1961, Ser. No. 154,225
2 Claims. (Cl. 333—1.1)



1. A nonreciprocal differential phase shift device comprising:
a single section of square waveguide;
bodies of ferromagnetic material disposed along the inside of two opposing walls of said waveguide;
fixed magnetic fluix field means magnetizing said bodies in directions substantially perpendicular to said opposing walls to interact in a nonreciprocal manner with a wave propagating therethrough, the direction of magnetization of opposing bodies being reversed in one-half of said waveguide with respect to the remaining half;
plural E and H plane port hybrid input means launching waves into one end of said square waveguide polarized in directions forming substantial angles with all the walls of said waveguide;
and plural E and H plane port hybrid output means at the other end of said waveguide conducting waves polarized substantially parallel to said launched wave, said input and output means being symmetrically disposed about at least two transverse planes through the center of said waveguide section.

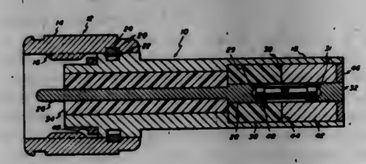
3,187,275
SIGNAL TRACKING FILTER HAVING TUNING REACTANCE AUTOMATICALLY CONTROLLED BY VACUUM TUBE CAPACITANCE RESPONSIVE TO PHASE COMPARATOR
Oliver C. Stanley, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Apr. 5, 1963, Ser. No. 270,868
1 Claim. (Cl. 333—17)



In a signal tracking filter, the combination comprising:
a phase shifter for changing the phase of an input reference signal;

a phase detector connected to receive said input signal as a comparison signal and the reference signal output of said phase shifter whereby said phase detector has no output when said comparison and reference signals are 90 degrees out of phase;
an integrator-amplifier connected to receive an output from said phase detector when the relative phase of said reference and comparison signals changes from 90 degrees;
filter means connected to the output of said phase shifter for passing signals in a narrow band of the frequency spectrum and rejecting all other signals; and
means for tuning said filter means to resonate at the center of said narrow band, said tuning means having a first input and an output both connected to the output of said phase shifter and a second input connected to the output of said integrator-amplifier whereby said filter means is tuned automatically to the output signal frequency of said phase shifter when said integrator-amplifier has an output.

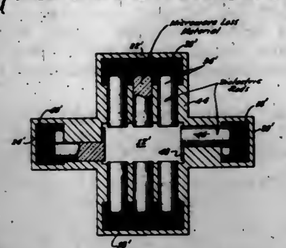
3,187,276
TRANSMISSION LINE TERMINATION
Scott H. Walker, Gaithersburg, Md., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed Nov. 16, 1962, Ser. No. 238,196
3 Claims. (Cl. 333—22)



1. A device for terminating the end of a coaxial line comprising
a conductive outer member of tubular configuration,
a conductive inner member disposed axially within the outer member,
a resistance axially disposed within the outer member and having its first terminal in electrical contact with the inner member,
an insulating annular member disposed between the inner and outer members and extending to a position between the first and second terminals of the resistance,
and a conductive annular slug disposed within the outer member in contiguous relationship with the annular member to provide capacitive reactance between the slug and the first terminal of the resistance, said slug also providing electrical communication between the second terminal of the resistance and the outer member.

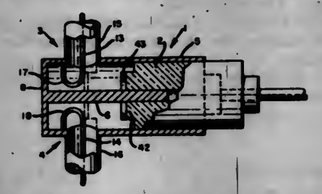
3,187,277
WAVEGUIDE HARMONIC SUPPRESSOR EMPLOYING SUBSIDIARY WAVEGUIDES, CUT OFF FOR FUNDAMENTAL, FOR COUPLING MAIN WAVEGUIDE HARMONICS TO ABSORBER
Ernest Wantuch, Livingston, N.J., assignor to Airtron, Inc., Morris Plains, N.J.
Filed May 14, 1962, Ser. No. 194,282
11 Claims. (Cl. 333—73)

3. In a microwave harmonic suppressor, a main section of conductive waveguide, a lossy waveguide space adjacent said waveguide, a plurality of conductively bounded passageways extending between said waveguide and said lossy space, the length of said passageways being



greater than their largest transverse dimension, and dielectric material located in said passageways.

3,187,278
TUNABLE COAXIAL CAVITY RESONATOR WITH PLUNGER MOUNTED RING FOR SHORTING COUPLING LOOPS
Gershon J. Wheeler, Los Altos, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,711
1 Claim. (Cl. 333—82)

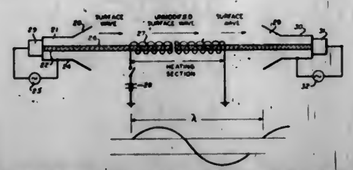


A tunable cavity resonator comprising
a quarter wavelength coaxial-cavity having one end closed and the other end open and comprising
an outer conductor,
an inner conductor, and
a conductive member extending transversely of and electrically connecting said conductors at said closed end of the cavity,
input and output coupling loops for transferring energy between said cavity and external associated circuits,
a dielectric plunger extending into said cavity through said open end and having a dielectric constant greater than one,
a conductive strip secured to the end of said plunger facing said loops and electrically insulated from said conductors,
said strip being engageable with said loops at one limit of plunger movement for short circuiting said loops whereby to electrically isolate said cavity from said external circuits, and
means for moving said dielectric plunger longitudinally in said cavity whereby to change the electrical length of said cavity to vary the resonant frequency of said cavity.

3,187,279
HEATING MEANS FOR SURFACE WAVE CONDUCTORS
Theodore Hafner, 265 Riverside Drive, New York, N.Y.
Filed Dec. 28, 1964, Ser. No. 421,540
11 Claims. (Cl. 333—95)

1. In a surface wave transmission system, for a predetermined frequency range, a longitudinally extending conducting element having a dielectric coating for maintaining a surface wave at said frequency range, means for launching a surface wave onto said conducting element at one end thereof and means for receiving said

surface wave from said conducting element at another end thereof, electric heating means substantially independent from said launching and receiving means and including a further conducting element wound around said dielectric coating for heating the outer surface of said dielectric coating; adjacent windings of said further



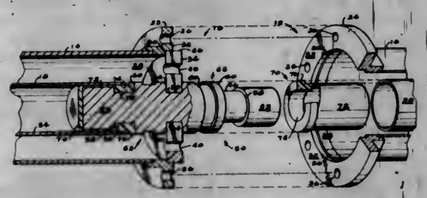
conducting element being spaced from each other at such a distance small against operating wave length as to permit propagation of said surface wave along the outside of both said further conducting element and said dielectric coating substantially without being affected by said further conducting element.

3,187,280

QUICK DISCONNECT COAXIAL LINE COUPLING WITH CAPACITIVE SERIES COUPLING AT INNER CONDUCTOR

William H. Harrison, Woodland Hills, Calif., assignor, by mesne assignments, to Emerson Electric Company, St. Louis, Mo.

Filed June 17, 1963, Ser. No. 288,249
10 Claims. (Cl. 333—97)



10. In a connection system for joining axially juxtaposed ends of a pair of coaxial transmission lines each of the character having an outer metallic hollow cylindrical conductor and an inner tubular metallic conductor, a metallic conductor element having first and second ends formed substantially in the form of a figure of revolution about a predetermined axis and having:

a cylindrical body portion formed contiguously to said first end and having an outer diameter less than the inner diameter of said tubular inner conductor by a predetermined annular thickness;

a first portion having a reduced diameter with respect to that of said cylindrical portion and formed contiguously thereto at its end opposite from said first end;

a full diameter portion with at least an axial part thereof having a diameter approximately equal to that of said tubular conductor;

and a tubular plastic dielectric sleeve member having:

a body portion with an inner diameter substantially equal to said outer diameter of said cylindrical portion of said conductor element and an outer diameter approximately equal to said inner diameter of said tubular inner conductor;

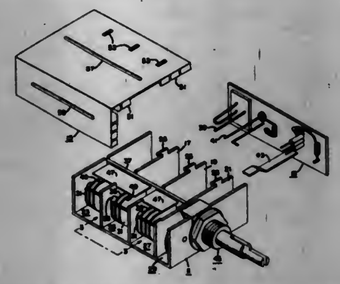
a base portion formed contiguously to said body portion and having an inner diameter approximately equal to that of said first reduced diameter portion of said element and an outer diameter approximately equal to the outer diameter of said tubular inner conductor.

3,187,281

ULTRA HIGH FREQUENCY CONVERTER HAVING AUXILIARY SHIELD PREVENTING DETUNING CAUSED BY CLOSING OF COVER PLATE

Albert P. Weiner, North Syracuse, and Adolf E. Wolfram, Jamesville, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 22, 1963, Ser. No. 267,275
5 Claims. (Cl. 334—82)



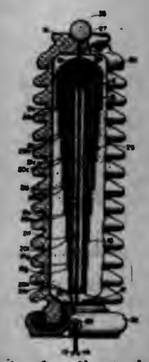
1. In a frequency converter a band trimmer arrangement comprising: a composite enclosure for the converter, said enclosure having first and second components thereof; an adjustable tuning means for the converter positioned in said first enclosure component; said second enclosure component having a surface area segment spaced from said tuning means and maintained at a constant potential; and means comprising a relatively flat metal strip mounted in said enclosure and disposed between said tuning means and said surface area segment in a plane parallel to said surface and maintained at a constant potential, said strips spaced from said tuning means for providing trimming of a desired frequency band, said strip having a surface area adapted for providing decoupling between said tuning means and said surface area portion.

3,187,282

CURRENT PROBE FOR HIGH TENSION LINES

Robert H. Pierce, Duxbury, and Laurence B. Stein, Jr., Hingham, Mass., assignors to Sigma Instruments, Inc., a corporation of Massachusetts

Filed Sept. 24, 1962, Ser. No. 225,477
8 Claims. (Cl. 336—70)



1. A current probe for direct electrically conductive contact with a high voltage line, said probe comprising, in combination, a grounded relatively elongated electrically conductive tubular shell having a closed operative end and an open and grounded base end; a pickup coil mounted within said shell adjacent the operative end thereof; a pair of leads connected to respective opposite

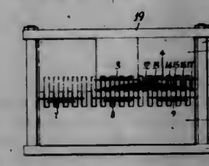
terminals of said coil and extending through said shell and brought out at the base end thereof; whereby a high dielectric stress will be present between said coil and a high voltage line in direct electrically conductive contact with said probe; alternating layers of insulating material and electrically conductive material completely covering the operative end of said shell, the ends of said layers of conductive material being at progressively increasing distances from the base end of said shell radially outwardly of said shell; the ends of the innermost layer of electrically conductive material and the innermost layer of insulating material being substantially adjacent the base end of said shell, and the outermost layer of insulating material and the outermost layer of electrically conductive material extending over only the operative end of said shell; and electric conductor means, including the outermost layer of electrically conductive material and a connector for direct electrically conductive contact with a high voltage line.

3,187,283

VARIABLE VOLTAGE TRANSFORMER

William Kober, Fairport, N.Y., assignor, by mesne assignments, to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed July 5, 1961, Ser. No. 121,874
10 Claims. (Cl. 336—119)



1. A transformer comprising first and second permeable cores both having similar parallel slots in one face separating a plurality of teeth and these faces of the cores abutting in mutual sliding engagement at the ends of the teeth; primary windings inserted in the slots of the first core and interconnected to energize at least two magnetic poles therein, each pole having a pitch encompassing the same predetermined number of teeth and the polarities of the poles alternating; secondary windings in the slots of the second core and interconnected to energize alternating magnetic poles therein, each pole having the same pitch as those on the first core and there being at least one more pole in the second core than in the first, and means for sliding one core relative to the other in a direction normal to the direction of the slots.

3,187,284

VARIABLE INDUCTANCE DEVICE

Johannes Josephus Alphonsus Peek, Herre Rinia, and Simon Duinker, all of Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Original application June 24, 1957, Ser. No. 667,619, now Patent No. 3,100,852, dated Aug. 13, 1963. Divided and this application Oct. 30, 1962, Ser. No. 230,174
Claims priority, application Netherlands, July 28, 1956, 209,395
2 Claims. (Cl. 336—135)



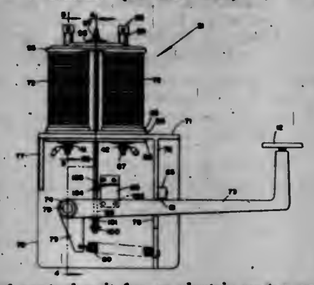
1. A transformer comprising a pair of windings and in the vicinity of said winding a rotatable magnetic member for varying the coupling between the windings, said rotatable member having a magnetic portion constituted substantially completely of soft magnetic material and possessing substantially different magnetic permeabilities in mutually-perpendicular directions.

3,187,285

SPEED CONTROL FOR ELECTRIC TRUCK

James W. Dawson, Seattle, Wash., assignor to Electro Mech Corporation, Portland, Oreg., a corporation of Washington

Filed Apr. 18, 1961, Ser. No. 103,835
9 Claims. (Cl. 338—110)



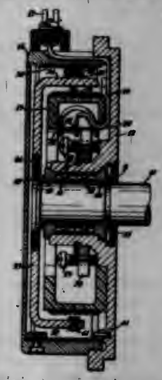
9. A speed control unit for an electric motor comprising a base member, an accelerator pedal mounted for relative movement on said member, a pair of elongated insulators mounted in side-by-side upright position on said member, a stack of centrally apertured carbon discs mounted for sliding movement on said insulators, a circuit terminal connected with the bottom disc in each stack, a pressure plate having apertured ends slidable on said insulators and bearing on the top discs in said stacks, said plate constituting a circuit conductor between the top ends of said stacks, and a tension rod connected between said pedal and the center of said pressure plate and insulated from said pressure plate, said rod extending between said stacks and passing slidably through an aperture in said base member.

3,187,286

PRECISION MULTITURN POTENTIOMETER

James W. Weidenman, Westbury, Long Island, and Gilbert J. Orozco, New Rochelle, N.Y., assignors to Litton Industries Inc., Beverly Hills, Calif.

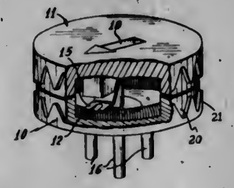
Filed July 1, 1963, Ser. No. 292,016
8 Claims. (Cl. 338—149)



5. In a multiturn potentiometer having a helically wound multiturn resistance element, and an input shaft concentric with said resistance element, the improvement comprising,

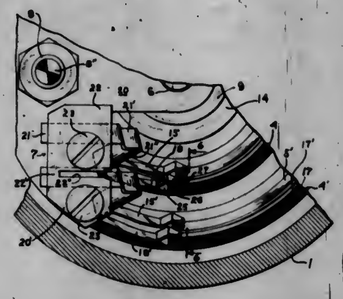
a rotatable arm attached to said input shaft,
a stop-nut provided with external screw threads slidably mounted on said rotatable arm,
means providing a fixed circumferential thread surrounding said rotatable arm with said thread adapted to be engaged by the threads on said stop-nut, and
a fixed stop in the path of said stop-nut to limit the rotation of said input shaft.

3,187,287
POTENTIOMETER WITH VERNIER ADJUSTMENT MEANS
James W. Weidenman, Westbury, N.Y., assignor to Litton Industries, Inc., Beverly Hills, Calif.
Filed July 31, 1964, Ser. No. 387,553
3 Claims. (Cl. 338—163)



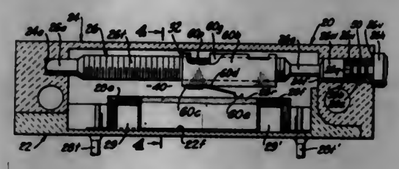
1. An adjustable device requiring vernier angular adjustment, comprising
a base member, and
a cap member or knob pivoted on said base member,
said base and cap members being of circular cross-section perpendicular to the pivotal axis,
said members being provided with substantially coaxial soft rubber bands, one on each member extending around the circumference thereof for frictional engagement with a spatulate vernier-adjusting tool.

3,187,288
PRECISION POTENTIOMETER
Elwyn H. Peters, Hasbrouck Heights, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,650
11 Claims. (Cl. 338—174)



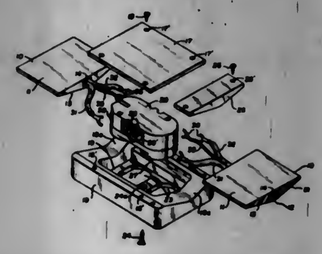
1. A precision potentiometer comprising a cylindrical support for a card wound along its transverse axis with fine-guage resistance wire, said card being wrapped around said support so that one edge of the wound card is in corresponding position with one end of the support at its edge, a rotatable operating shaft aligned with the longitudinal axis of said support, pick-off contact structure carried by said shaft at a point adjacent the aforesaid edges of the card and support respectively, and a slip-ring concentrically mounted with respect to the aforesaid card edge on said one end of the support, said contact structure having at least two contact-making portions, one of which engages respective loop ends of the resistance wire at said card edge and the other engages the slip-ring, each contact-making portion arranged to make oblique wiping contact respectively with the slip-ring and the resistance wire loops so that right-angle components of contact pressure, referring to said axis, act on both the resistance wire and slip-ring during angular adjustment of the contact structure by said shaft.

3,187,289
SCREWSHAFT-ADJUSTED VARIABLE RESISTOR AND METHOD
John E. Rolwes, Riverside, Calif., assignor to Bourns, Inc., a corporation of California
Filed Apr. 23, 1963, Ser. No. 275,105
26 Claims. (Cl. 338—180)



1. A leadscrew-adjusted variable resistor comprising:
first means, comprising an elongate housing comprising wall-forming means providing an elongate chamber in the interior thereof and having an opening through an end wall thereof communicating with said cavity;
second means, comprising a leadscrew disposed longitudinally of said housing with a screw thread exposed in said chamber and a shank portion disposed in said opening, said shank portion comprising portions forming a circumferential groove bounded at its ends by shoulders;
third means, comprising a return conductor, a resistance element, contact means operable by said leadscrew and brushing on said element and conductor, and respective terminal means for said element and said conductor; and
fourth means, comprising a generally cylindric seal and retainer means tightly engaged in the said circumferential groove and adhesively secured to said housing means in said opening,
whereby said leadscrew is rotatably secured in a fixed longitudinal position relative to said housing.

3,187,290
OUTLET FOR A FLOOR DUCT
George L. Wieders, Casper, Wyo., assignor to Electriduct Company, a copartnership
Filed Oct. 1, 1962, Ser. No. 227,269
2 Claims. (Cl. 339—23)



1. In the combination of an outlet housing assembly including a shell adapted for prefabricated connection

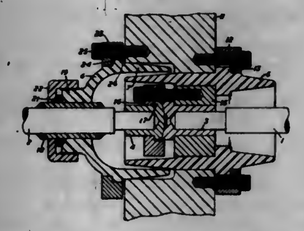
to the end of a flat ribbon-like, crowned floor duct having a longitudinal wire-carrying conduit at the crown portion thereof, and an electrical receptacle body having a pair of spaced apart shaped upstanding socket turrets projecting from its top surface and wire connecting posts on its sides for attachment of the wires from said conduit, the improvement in said shell for accommodation of said receptacle body, comprising:
said shell being fabricated of elastomeric insulating material and having a top wall having an inner and an outer surface, side walls depending from opposite ends of said top wall and side walls depending from opposite sides of said top wall;
said side walls and end walls being integrally connected and depending downwardly and terminating in bottom edges disposed beneath said top wall inner surface to thus circumscribe and define an internal chamber;
said top wall having a pair of spaced apart openings therein with said openings having a size and shape corresponding to that of said projecting socket turrets whereby when said receptacle body is disposed within said internal chamber, said socket turrets will be snugly received within said openings;
a pair of ledges disposed within said internal chamber on opposite sides thereof, extending the length of said side walls, and each being formed by a side face and a bottom face;
said ledge side faces being spaced inwardly from said side walls to provide therebetween a channel having a width corresponding substantially to that of said receptacle body, with said receptacle body being disposed within said channel when said outlet housing is assembled;
said ledge bottom faces being disposed in substantially coplanar relationship between said top wall inner surface and the bottom edges of said side walls, and being adapted to support the wires extending from said conduit to said receptacle body connecting posts; and
cover means secured in underlying relation to said shell in contact with said side and end wall bottom edges for enclosing said internal chamber to maintain said receptacle body therein.

3,187,291
ELECTRICAL LOCKING PLUG
Charles Webster Hinze, 10 NE. 3rd Ave., Miami, Fla.
Filed Jan. 23, 1963, Ser. No. 255,714
8 Claims. (Cl. 339—74)



3. A plug for a conventional socket, said plug comprising a body having prongs, at least one of said prongs having a pair of resilient sides joined together and spreadable with respect to each other, one of said sides being straight and the other side having first and second straight portions integrally united, the first portion being integrally united at its end remote from said plug with the remote end of said other side and forming an acute angle therewith, the second portion extending toward said plug substantially parallel with said first portion, and a locking device movable relative to said body and engageable between said sides to spread said sides when said prongs are inserted in the socket, an electrical cord having conductors directly and permanently connected to said prongs, said locking device including a stem having a pointed end of the same shape as the space between said sides and disposed therebetween, a plug member to which said stem is secured, said body having a cavity accommodating said plug member, and said plug member being slidably disposed in said cavity.

3,187,292
JUNCTION DEVICE FOR ELECTRICAL CABLES
George Robert Small and William Ernest Beck, Edinburgh, Scotland, assignors to Bruce Peebles & Co., Limited, Edinburgh, Scotland, a company of Great Britain
Filed Nov. 30, 1962, Ser. No. 241,239
Claims priority, application Great Britain, Dec. 8, 1961, 44,107/61
5 Claims. (Cl. 339—94)



1. A junction device for connecting two electric power carrying cables one of which leads through an opening in a conducting wall comprising a continuous imperforate insulating sleeve supported on its outside in the opening in the wall and in contact with the wall only at a position spaced from the sleeve ends, contact members for connection to the respective cables positioned within the sleeve, a metal member having a high heat capacity compared with that of said contact members, said metal member supporting one of said contact members within said sleeve, a releasable clamp within the sleeve for holding the contact members together, and an apertured sealing cover with means for sealing the aperture around one of the cables and for sealing the cover to the wall, the cover being spaced radially from the sleeve.

3,187,293
ELECTRICAL PLUG CONNECTION PROTECTORS
Louis Jacobus, 282 E. 35th St., Brooklyn, N.Y.
Filed Nov. 20, 1963, Ser. No. 325,088
1 Claim. (Cl. 339—103)



In combination with an electrical male plug of the type comprising a dielectric body member having conductive

prongs securely mounted thereon and extending in one direction therefrom and insulated lead-in wire extending in the opposite direction from said body member and connected to binding posts within said member for the prongs, but otherwise loose in said body member, a connection protector consisting of a dielectric strip of pliable material coated on one surface thereof with a pressure-sensitive adhesive, encompassing said body member whereby its end sections extend along said body member and are bent in towards said lead-in wire; said surface being against said body member and adhered thereto; the distal ends of said strip being wound at a first region on and adhered to said lead-in wire exterior and close to said body member; said strip having slots; said prongs being through and fitted in said slots respectively; there being slack in that portion of the lead-in wire which is between the binding posts and said first region; said mounted strip being taut whereby on holding the body member stationary and thereupon pulling said lead-in wire in a direction away from said body member at a region further from said member than said first region, that portion of the lead-in wire which is between the binding posts and said first region will remain unstressed in tension.

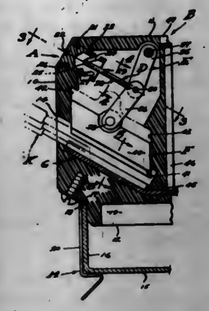
3,187,294
QUICK MOUNTING STRAP FOR ELECTRIC RECEPTACLE
Hallam Gillis Murray and Paul H. Winter, Syracuse, N.Y., assignors to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of New York
Filed May 29, 1963, Ser. No. 284,123
4 Claims. (Cl. 339—126)



3. An electrical receptacle adapted for mounting with access only from the front thereof in and through an opening in a fixture wall, said receptacle comprising a generally cylindrical insulating housing, a flat annular plate attached to and extending outwardly from near the front face of the housing and sized to overlap the fixture wall surrounding said opening, screws disposed about 180° apart extending through said plate and alongside the receptacle and spaced to enter through the fixture opening, a mounting strap threadedly engaged by said screws, extending more than half-way about the receptacle and normally size to loosely pass through said fixture opening, and cooperating means on said mounting strap and receptacle to laterally spread said strap as the screws are rotated from the front to draw the strap toward the fixture wall whereby portions of its upper face engage beneath the under surface of said fixture wall to clamp the housing and plate thereto.

3,187,295
ELECTRICAL TERMINAL BLOCK
Paul Huska, 739 Moreno, Los Angeles, Calif.
Filed June 1, 1962, Ser. No. 199,420
8 Claims. (Cl. 339—149)

7. A terminal block for the reception of electrical conductors and including:
(a) a body having an opening therein for the reception of electrical conductors,
(b) a rotatable operator with a head accessible at the exterior of the body and with a cam,
(c) a clamp carried by the body and operable into said opening therein to engage the conductors,
(d) a means comprising movable, connected levers carried by the body and movably supporting the clamp,
(e) and a resilient link extending between the operator and said levers and reciprocated by the cam to move the clamp into and out of yielding pressured engagement with the conductors.

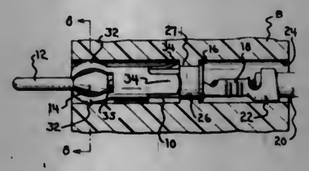


3,187,296
PLUG-IN TERMINAL AND TERMINAL BLOCK FOR METER SOCKET
Robert Brackett, Berwick, Maine, assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1961, Ser. No. 135,216
5 Claims. (Cl. 339—217)



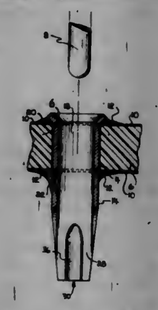
5. A plug-in terminal for use with a meter socket, said terminal comprising a terminal jaw for receiving the terminals of a meter, a wire connecting means attached to said terminal jaw, a U-shaped spring means attached to said terminal jaw, said spring means having side-turned ends for automatically connecting to a terminal block of a meter socket when said terminal is inserted into the terminal block.

3,187,297
MEANS FOR CENTERING AND STABILIZING A PIN-TYPE ELECTRICAL CONNECTOR
Glenn H. Gluntz, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 21, 1962, Ser. No. 218,335
1 Claim. (Cl. 339—217)



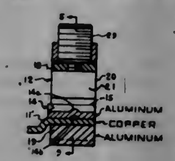
The combination of a pin-type electrical connector and a device for centering it and stabilizing, it comprising: a barrel member having a pin extending axially from one end thereof, means on the other end of said barrel for receiving an electrical conductor, and adapted to be cold-forged thereto, said barrel adapted to fit into the cavity of an insulating block with said pin protruding therefrom, and means for retaining said barrel in said insulating block whereby said pin is coaxial with the cavity and stabilized therein, said means comprising a sleeve surrounding said barrel and tightly engaging it, a plurality of resilient fingers emanating from said sleeve in the direction of said pin, said fingers being longitudinally arcuate with their free ends engaging said pin, said arcuate portion adapted to bear against the inside surface of the cavity, means on said opposite end of said ferrule for centering the ferrule in the cavity and retaining it therein, and means for locking said sleeve on said barrel, said means comprising an aperture in said sleeve, a tab forming part of said sleeve, said tab extending through said aperture and deformed whereby the sleeve is securely fastened to the barrel.

3,187,298
PIN RECEPTACLE FOR PRINTED CIRCUIT BOARD
Suel G. Shannon, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 25, 1961, Ser. No. 112,626
2 Claims. (Cl. 339—258)



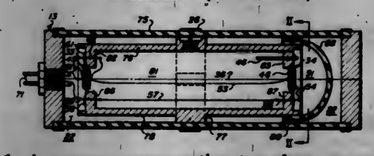
1. A pin receptacle comprising a sheet metal blank formed to define a cylindrical barrel portion having overlapping sides for resiliently fitting in an aperture of a printed circuit board, and a pair of opposed spring legs extending from one end of said barrel portion and converging to a tip to grip a pin inserted through said barrel portion, a longitudinal indentation in each of said legs being transversely curved, the radius of curvature of the indentation of one leg being significantly greater than that of the other leg.

3,187,299
ELECTRICAL CONNECTOR
Francis A. Martin, Cleveland, Ohio, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Apr. 13, 1962, Ser. No. 188,614
3 Claims. (Cl. 339—272)



3. An electrical connector and terminal strap assembly forming a part of an electrical device and comprising:
(a) a connector body having an opening extending therethrough from one side to another side thereof and partially defined by opposed first and second wall portions, said first wall portion being aluminum,
(b) a copper terminal strap separate from said connector body and having an end portion extending into said opening between said first and second wall portions of said connector body, said end portion being disposed adjacent said first wall portion in spaced relationship to said second wall portion,
(c) a homogeneous aluminum plate separate from said connector body and disposed in said opening between said first and second wall portions in direct engagement with said end portion of said copper terminal strap on the other side thereof from said first wall portion, said opening being adapted to receive an end portion of an aluminum wire in direct engagement with said homogeneous aluminum plate, and
(d) a clamping screw threadedly received by said second wall portion of said connector body and extensible therethrough into said opening toward said first wall portion and cooperable with said first wall portion in urging said end portions of said aluminum wire and said copper terminal strap toward each other to clamp said homogeneous aluminum plate therebetween.

3,187,300
PRESSURE-COMPENSATED TRANSDUCER
Donald C. Brate, Annapolis, Md., assignor to Chesapeake Instrument Corporation, Shady Side, Md.
Filed Jan. 29, 1963, Ser. No. 254,794
2 Claims. (Cl. 340—10)

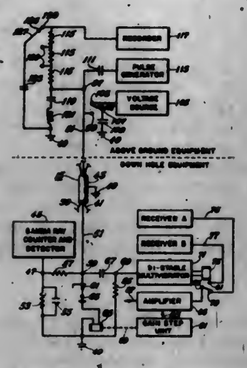


1. A pressure-compensating transducer comprising: a rigid casing having a central cavity to define a first fluid reservoir; end wall means for said reservoir including a pair of axially spaced piezoelectric disc elements; means for electrically interconnecting said pair of disc elements to provide cancellation of generated voltages resulting from acceleration reaction forces acting on said transducer; means including a flexible diaphragm for defining a second fluid reservoir in fluid-pressure transmitting relationship with at least one of said disc elements; pressure equalization means for providing restricted fluid-pressure communication between said first and second reservoirs.

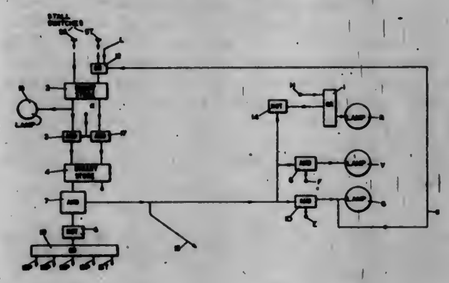
3,187,301
TELEMETERING SYSTEM FOR USE IN BOREHOLE LOGGING TO CONTROL DOWNHOLE TOOL FROM SURFACE
Gerald C. Summers, Dallas, Tex., assignor, by mesne assignments, to PGAC Development Company, Houston, Tex., a corporation of Texas
Filed June 5, 1959, Ser. No. 818,374
27 Claims. (Cl. 340—18)

1. In a borehole logging system wherein a plurality of relatively low signal level functions are to be transmitted between above ground equipment and a borehole instrument assembly, and one or more low impedance devices are to be operated downhole at occasional intervals in response to signals from above ground equipment; the combination comprising, a cable conductor and a ground return, a first terminal at the above ground end portion of said conductor, a second terminal at the downhole end portion of said conductor, means for applying a plurality of relatively low level signals between said second terminal and the ground return, a first "Zener" diode, a second semiconductor diode, means connecting the cathode of said first diode to said second terminal and for connecting the anode of said first diode to the anode of said second diode, a low impedance device connected between the cathode of said second diode and said ground return, said "Zener" diode having a predetermined reverse breakdown voltage, and said second diode having a predeter-

mined reverse breakdown voltage, above ground means for generating a direct current pulse of positive polarity and of voltage magnitude greater than the reverse breakdown voltage of said "Zener" diode, and means for selectively applying said pulse to said second terminal to energize said low impedance device.

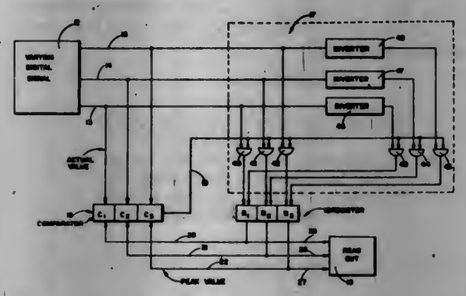


3,187,302
CONTROL SYSTEMS FOR PARKING GARAGES
Norman James Royce, Richmond, England, assignor to Kins Developments, Ltd., a company of Great Britain
Filed Mar. 16, 1962, Ser. No. 180,177
21 Claims. (Cl. 340—51)



1. A vehicle parking control system for controlling the movement of vehicles in a parking area provided with a power source and comprising a plurality of vehicle stalls together with a common access aisle into which each of said stalls opens, said system comprising release indicating means associated with each stall which, when energized, indicates that a vehicle may leave that stall, common control means for connecting and disconnecting said indicating means to said power source as a group, individual selector means for connecting and disconnecting each of said indicating means with said power source through said control means, individual driver-operable operating means and additional operating means associated with and connected to operate each selector means, each operating means having both an operative and an inoperative position, and said operating means being connected to operate the associated selector means to connect an indicating means to said power source only when both operating means associated with that selector means are in their operative positions, the additional operating means for a given stall being linked to the operating means of at least one nearby stall for movement to its inoperative position whenever the operating means of said nearby stall are brought into their operative positions.

3,187,303
DIGITAL PEAK READER
Anton Chiapuzio, Jr., Downey, and Howard A. Topp, Jr., Fullerton, Calif., assignors to North American Aviation, Inc.
Filed Mar. 30, 1960, Ser. No. 18,631
2 Claims. (Cl. 340—146.2)

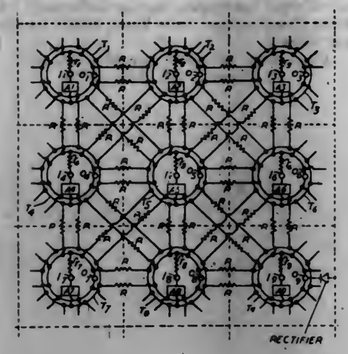


1. Extreme value reading apparatus comprising an input device providing first and second groups of digital signals, a register for storing said first group of digital signals representing a numerical value, said second group of digital signals representing the actual value of a signal of which the extreme value is to be read, gating means for passing said first group of digital signals to said register, a comparator having a first group of input terminals for receiving said first group of digital signals from said register and a second group of input terminals for receiving said second group of digital signals from said input device, said comparator producing an output signal when said second group of digital signals from said input device represent a value having a predetermined relation in magnitude to a value represented by said first group of digital signals stored in said register, and a gate controlling means connected from said comparator to said gating means for enabling said gating means to pass said second group of digital signals from said input device into said register in response to said comparator output signal.

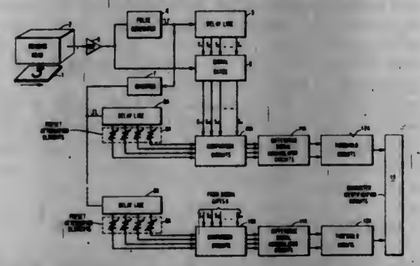
3,187,304
SYSTEM FOR ANALYSING THE SPATIAL DISTRIBUTION OF A FUNCTION
Wilfred Kenelm Taylor, Chiswick, London, England, assignor, by mesne assignments, to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 28, 1958, Ser. No. 757,873
Claims priority, application Great Britain, Aug. 29, 1957, 27,274/57
3 Claims. (Cl. 340—146.3)

1. A system for analysing the distribution of a variable quantity comprising a two-dimensional matrix of transducers for simultaneously producing signals having a magnitude proportional to the magnitude of the quantity at a plurality of zones in the distribution, a resistance network including a plurality of associated output and transfer terminals, each associated output and transfer terminal corresponding to a respective transducer, and a plurality of resistors having resistance values substantially equal one to the other and connecting each output and transfer terminals corresponding to one transducer with the transfer and output terminals respectively corresponding to transducers in said matrix surrounding said one transducer, and means for applying the signal from

each transducer through a further respective resistor to the corresponding output terminal and through amplifying and sign reversing means to the transfer terminal associated with said last-mentioned output terminal.

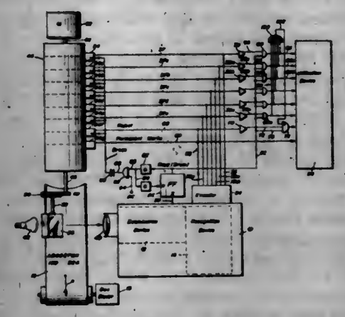


3,187,305
CHARACTER RECOGNITION SYSTEMS
Franklin C. Chiang, Palo Alto, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 3, 1960, Ser. No. 60,010
7 Claims. (Cl. 340—146.3)



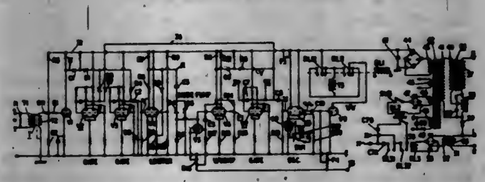
1. A character recognition circuit including the combination of scanning means generating an electrical signal having a waveform representing a character to be identified, a timing signal generator coupled to said scanning means for providing an electrical signal which is synchronized in time with respect to the waveform of an electrical signal provided by the scanning means, sampling means coupled between said scanning means and said timing signal generator for passing a portion of the electrical signals generated by said scanning means at predetermined times, reference signal generating means coupled to said timing signal generator for providing reference signals having amplitude characteristics corresponding to the waveform produced by scanning a known character, signal comparison means coupled between said sampling means and said reference signal generating means for providing an output signal corresponding to the difference in amplitude between the waveform of the signal provided by said scanning means and the amplitude of the reference signals supplied by the reference signal generating means, and means responsive to the output signal from said comparison means for identifying the character being scanned whenever the degree of difference between the waveform of the signal provided by the scanning means and the reference signals provided by said reference signal generating means falls below a predetermined level.

3,187,306
SYNCHRONIZED IMAGE EXAMINING AND STORAGE DEVICES
Jacob Rabinow, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 14, 1962, Ser. No. 244,766
18 Claims. (Cl. 340—146.3)



8. In a character reading machine system for characters arranged in lines on a document which is constrained to move in a path approximately normal to the lines, and the reading machine has an examination device and recognition means which provide that identify the read characters, the improvement comprising: movable reflective means in optical alignment with said examination device and a line of characters, means to sweep said reflective means relative to said lines more than once in a manner to form, in turn, images of successive characters of the line on said examination device, a storage device operated in synchronism with the sweep of said reflective means so that the instantaneous positions of said storage device correspond to the positions of said reflective means, an encoder for said character-identify signals, means to load the encoded signals into said storage device in the time order of recognition but in the spatial order corresponding to the positions of the characters in said line so that any characters which are unrecognized during an earlier sweep of said reflective means but recognized in a later sweep are inserted in said storage device in their proper spatial places as determined by their occurrence in said line.

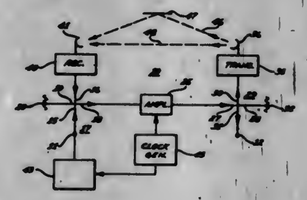
3,187,307
REMOTE INDICATION SYSTEM
Kenneth Jones, Loudwater, England, assignor of one-half to Attwood Statistics Limited, London, England, a British company
Filed May 9, 1960, Ser. No. 27,642
Claims priority, application Great Britain, Feb. 22, 1960, 6,140/60
11 Claims. (Cl. 340—147)



1. A responder for a condition-indicating system, said responder comprising line terminals, interrogation-signal-receiving means, response-pulse-generating means, condition-responsive means differently responsive to each of a plurality of different conditions to be indicated, first

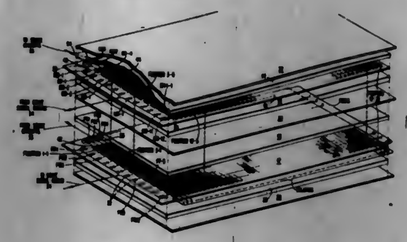
connecting means connecting said line terminals to said interrogation-signal-receiving means for feeding interrogation signals periodically applied to said line terminals to interrogate said responder to said interrogation-signal-receiving means, second connecting means connecting said response-pulse-generating means to said line terminals to apply response pulses generated by said generating means to said line terminals, said interrogation-signal-receiving means being responsive to the reception of a predetermined number of said interrogation signals over said first connecting means to generate a response-initiating signal, third connecting means connecting said interrogation-signal-receiving means to said response-pulse-generating means to apply said response-initiating signal to said response-pulse-generating means to cause said latter means to apply response pulses over said second connecting means to said line terminals, and variable timing means connected to said interrogation-signal-receiving means to receive said response-initiating signal to commence timing a time interval and connected to said condition-responsive means to be selectively controlled, thereby to terminate such time interval after a time determined by the condition to which said condition-responsive means is currently responsive, whereby to time a different time interval for each such different condition and to apply an end-of-timing-period signal to said response-pulse-generating means to terminate the application of said response pulses to said line terminal at the end of such timing period, whereby the number of response pulses applied to said line terminals by said pulse-generating means, in response to the reception of said predetermined number of interrogation signals, is different for each different condition to be indicated and is indicative of the particular condition to which said condition-responsive means is currently responsive.

3,187,308
INFORMATION STORAGE SYSTEM FOR MICROWAVE COMPUTER
Stanley P. Frankel, Los Angeles, Calif., assignor to General Electric Company, a corporation of New York
Filed July 3, 1961, Ser. No. 121,707
6 Claims. (Cl. 340—173)



1. In an information storage system for storing digital information, a source of electromagnetic signals containing information in digital form, a recirculation loop coupled to said source for recirculating said electromagnetic signals comprising, means for amplifying said electromagnetic signals, a directional radiating means coupled to said amplifying means for radiating said electromagnetic signals through an unconfined non-guiding fluid, redirecting means in fixed spaced-apart relation to said radiating means for redirecting said electromagnetic signals radiated by said radiating means, receiving means in fixed spaced-apart relation to said redirecting means for receiving the electromagnetic signals redirected by said redirecting means, and means for permitting the recirculation of said electromagnetic signals including means coupling the electromagnetic signals received by said receiving means to said amplifying means.

3,187,309
COMPUTER MEMORY
Paul David Dodd, San Jose, and George L. Owens, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 16, 1963, Ser. No. 302,508
12 Claims. (Cl. 340—173)



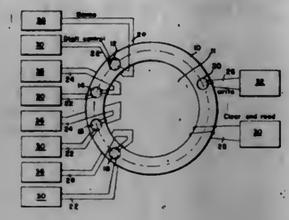
1. A computer memory, comprising:
- a first planar matrix having a fixed number of overlapping conductors and a capacitive junction associated with each point of overlap, each junction formed by extensions of the conductors and capable of being removed if not required for storage;
- a second planar matrix having the same number of overlapping conductors as said first planar matrix and a capacitive junction associated with each point of overlap, the junctions being formed by extensions of the conductors, said second matrix having removed those junctions corresponding to the junctions remaining in said first matrix; and,
- a single terminating impedance for a plurality of conductors of both said matrices connected to said matrices such that they comprise a single memory plane.

3,187,310
SOLID STATE DATA STORAGE AND SWITCHING DEVICES
James E. Drummond, Bellevue, Roy R. Johnson, Vashon, and Betsy Ancker-Johnson, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,941
19 Claims. (Cl. 340—173)



1. A bistable memory device comprising a solid-state element, first means applying an electric field to such element to inject an electron-hole plasma therein, second means applying a magnetic field to such element with flux lines oriented generally parallel to the lines of electric field, read-in means operable upon at least one of said first and second means to increase the magnetic-electric field product to a value corresponding to the plasma's helical instability threshold for initiating oscillations in the element and to terminate such oscillations by decreasing such product to a value sufficiently below the first value to overcome hysteresis in the plasma, and sensing means operatively associated with the element and selectively responsive to the presence and absence of such oscillations.

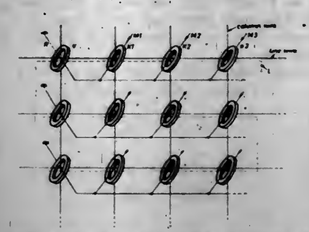
3,187,311
MEMORY CORE DEVICE
Arthur E. Wennstrom, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 1, 1960, Ser. No. 12,229
4 Claims. (Cl. 340—174)



1. A magnetic memory element comprising an annulus of magnetic material having a substantially rectangular hysteresis characteristic, said annulus having a principal aperture and a plurality of secondary apertures therein; a first winding magnetically coupled to said annulus through said principal aperture and responsive to first and second electrical signals for controlling inner and outer magnetic flux paths through said annulus simultaneously; a pulse coupled to said first winding source for providing said first and said second electrical signals; a write signal source producing a write electrical signal; a second winding magnetically coupled to said annulus through a first of said secondary apertures and connected to said write signal source and responsive to said write electrical signal for controlling the magnetic state of the area surrounding said first secondary aperture to produce discontinuities in said inner and outer flux paths; a plurality of control signal sources, each producing a control electrical signal; a plurality of windings magnetically coupled to said annulus, one through each of the remaining secondary apertures, and each winding being further connected to a respective one of said control signal sources, each winding of said plurality of windings being responsive to a respective one of said plurality of control electrical signals for controlling the magnetic state of the area surrounding each of said remaining secondary apertures; a plurality of output windings magnetically coupled to said annulus, one through each of said remaining secondary apertures for producing electrical signals in response to energization of said first winding by said second signal, indicative of said magnetic states; means coupled to said control and write signal sources for simultaneously operating said signal sources; and a plurality of output devices respectively coupled to said output windings and responsive to said last mentioned electrical signals.

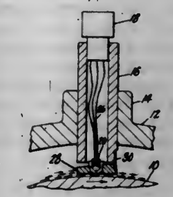
3,187,312
CIRCUIT ARRANGEMENT FOR BINARY STORAGE ELEMENTS
Friedrich Ulrich, Neustadt, near Waiblingen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 25, 1961, Ser. No. 84,946
Claims priority, application Germany, Feb. 19, 1960, St 16,134
8 Claims. (Cl. 340—174)

1. An apparatus for decreasing the interrogation time of a plurality of storage elements, comprising a plurality of groups of storage elements arranged for random access, an additional storage element corresponding to each said group, means for conditioning said additional element only if at least one element in said corresponding group is conditioned, means for alternately interrogating said additional elements and said associated groups, and means for omitting the interrogation of any one of said



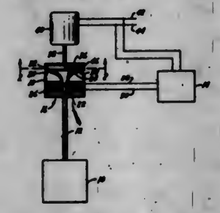
groups if said associated additional element has not been conditioned prior thereto.

3,187,313
POSITIONING METHOD AND APPARATUS FOR MAGNETIC HEAD IN A MAGNETIC RECORDING DEVICE
Joseph E. Smith, Jr., Springfield, Vt., assignor, by mesne assignments, to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 10, 1958, Ser. No. 772,861
11 Claims. (Cl. 340—174.1)



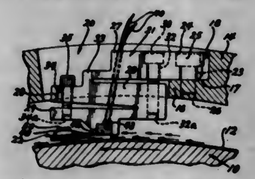
1. In a magnetic recording and playback apparatus of the type including a stationary housing, at least one magnetic transducer head mounted thereon and means for moving a magnetizable record surface to create a laminar film of pressurized air thereon, the improved transducer head consisting of: a tubular member fixedly mounted through an aperture in said stationary housing and having an outer end closed by a lead-in wire connecting cap and an inner end a predetermined distance away from said record surface; a magnetic transducer core and coil assembly; a support block supporting said assembly for movement toward and away from the record surface, said support block being placed in the space between the end of the tubular member and the record surface; said support block being of substantially low inertia and having a surface proximate the record surface being of a substantial area; a resilient reed hingedly securing the support block to the end of the tubular member and normally biasing said support block away from the record surface when the latter is at rest; said resilient reed substantially preventing side motion and longitudinal motion of the support block in relation to the end of tubular member and being adapted to allow the support block to be attracted toward the record surface by the hydrodynamic forces created by the movement of the laminar film of pressurized air clinging to the record surface when the latter is in motion until the support block rides on a cushion of pressurized air, whereby the support block is positioned a predetermined distance from the record surface at a predetermined velocity thereof regardless of the irregularity of said record surface; and lead-in wires connecting the magnetic transducer coil to the connecting cap on the outer end of the tubular member, said lead-in wires being routed through the interior of said tubular member.

3,187,314
ELECTROMAGNETIC RESOLVER
Leif Eric de Neergaard, deceased, late of Chicago, Ill., by The Northern Trust Company, executor, Chicago, Ill., assignor to Frederic W. Olmstead, Washington, D.C., Hans W. Trechsel, Madison, Wis., Deryck A. Gerard, Minneapolis, Minn., and Norman S. Parker, Evanston, Ill., as trustees
Filed Sept. 1, 1959, Ser. No. 837,478
9 Claims. (Cl. 340—174.1)



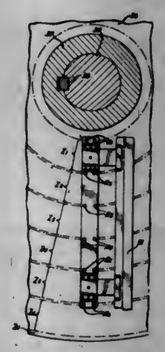
1. An electromagnetic resolver including a magnetic storage member having areas of different flux density thereon, a rotatable scanning member, said scanning member carrying at least one generally arcuate member having predetermined magnetic flux conductive properties, said arcuate member being positioned adjacent said storage member, an induction element adjacent said storage member adapted to establish a magnetic flux path therebetween, means for transmitting an electrical signal from said induction element, said storage member being rotatable with respect to said scanning member, means for rotating said scanning member at a predetermined speed to thereby continuously generate a cyclic signal of a predetermined frequency in said induction element, rotation of said flux storage member, during rotation of said scanning member, being effective to produce a phase change in the signal generated.

3,187,315
POSITIONING APPARATUS FOR MAGNETIC HEADS IN RECORDING DEVICES
George D. Cheney, Walpole, N.H., assignor, by mesne assignments, to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed June 21, 1960, Ser. No. 37,688
7 Claims. (Cl. 340—174.1)



1. In a recording apparatus, a magnetic transducer head mounted on a pad which is movable by hydrodynamic forces caused by the motion of fluid clinging to the surface of a movable record medium, said pad having a bearing surface adapted to confront said record medium and comprising at least one raised land surface and one recessed surface disposed so that the raised land surface extends from end to end of said bearing surface along the general direction of motion of said record member, biasing means normally urging said pad away from said record medium while still maintaining it in the stream of fluid clinging to the surface of said record medium in such a way as to cause a drop of ambient pressure between said bearing surface and said record medium surface, said drop of pressure causing said pad to be displaced to a position of equilibrium where said land surface is supported by a moving layer of fluid a minute distance away from said record medium surface.

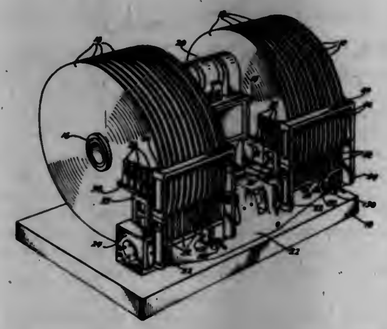
3,187,316
MAGNETIC DATA STORAGE DEVICE UTILIZING DISCS WITH PREDETERMINED FREQUENCY ZONES
Forrest A. Johnson, Springfield, Vt., and Herbert E. Miller, Brookline, Mass., assignors to Ex-Cell-O Corporation, Detroit, Mich.
Original application Nov. 13, 1958, Ser. No. 773,586, now Patent No. 3,056,962, dated Oct. 2, 1962. Divided and this application July 31, 1961, Ser. No. 128,190
4 Claims. (Cl. 340—174.1)



3. In a magnetic data storage apparatus comprising at least one disc having a magnetizable surface layer on at least one side thereof, the combination of: a plurality of concentric track zones on said magnetizable surface layer; a plurality of concentric data tracks in each of said zones; a recording and playback frequency assigned to each of said zones, the several assigned frequencies increasing from the center zone to the peripheral zone; at least one recording and playback transducer head for each zone servicing solely all the tracks in said zone for recording and playback of data information on said tracks; and means for timing the recording and playback of data information on any one of said tracks according to the assigned frequency of the zone of said signal, said means comprising a timing track for each said zone providing timing pulses of the frequency assigned to said zone.

3,187,317
DISC FILE
Joseph E. Smith, Jr., Birmingham, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 7, 1961, Ser. No. 157,667
12 Claims. (Cl. 340—174.1)

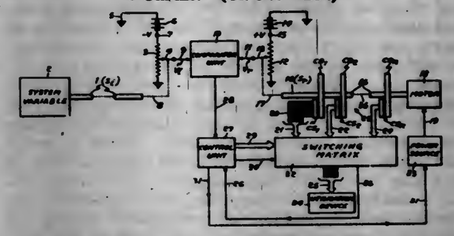
1. A magnetic data storage apparatus comprising in combination:
a ground supported deformable base frame;
a rigid pedestal member affixed to said base frame and supporting all the components of said apparatus;
a spindle bearing housing on the top of said pedestal;
an electric motor affixed to the top of said spindle bearing housing;
a spindle journaled in said spindle bearing housing and extending outwardly on both sides thereof;
means for driving said spindle from said electric motor;
a plurality of evenly spaced discs coaxially mounted upon said spindle and having concentric data tracks on a magnetizable surface on both faces thereof;
means individually locking said discs upon said spindle and means collectively fastening said discs together for simultaneous rotation by said spindle;
a box-like open top rocker arm shaft housing fastened to one side of said pedestal proximate the bottom thereof and extending outwardly substantially parallelly said spindle;
two rocker arm shafts rotatable through a predetermined arc, said rocker arm shafts being disposed end to end in said rocker arm shaft housing;
a plurality of substantially equally spaced rocker arms keyed to said rocker arm shafts, each of said rocker arms normally extending between two consecutive discs and the last ones of said rocker arm extending parallelly the faces of the outermost and innermost discs;
evenly spaced data transducer heads supported on the end of each of said rocker arms in equal numbers for recording and playback of data pulses on said disc magnetizable surfaces on concentric tracks thereon;



each one of said transducer heads being supported by a fluid bearing pad fastened to one end of a flat reed spring member, the other end of said spring member being attached to said rocker arm end which is provided with actuating means adapted to bend said spring member in a direction that causes said pad to be displaced toward the disc magnetizable surface as soon as said disc reaches a velocity sufficient to develop a fluid bearing capable of supporting said pad a minute distance away from said surface;
two swing arms each of which is connected to the innermost end of each of said rocker arm shafts through an aperture in said pedestal;
a yoke member rigidly coupling said swing arms together;
a digital signal actuated positioner having an output member capable of occupying any one of a series of equally spaced discrete positions in response to control electrical signals in a binary form;
means connecting said output member to said yoke member whereby linear displacement of said output member are transferred into angular displacements of said rocker arms thereby causing said data transducer head to be indexed for recording and playback in relation to said concentric data tracks;
a timing track close to the edge of some of the disc faces with timing pulses recorded thereon for synchronization of recording and playback of said data pulses;
and a clock transducer head per said timing track for reading of said timing pulses recorded thereon.

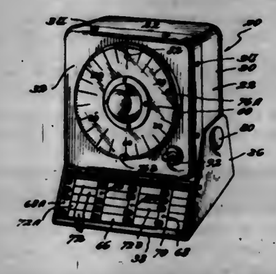
ERRATUM
For Class 340—201 see:
Patent No. 3,187,337

3,187,318
FUNCTION ENCODING SYSTEM
Richard F. Chapman, Nutley, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed May 17, 1960, Ser. No. 29,710
4 Claims. (Cl. 340—204)



1. A system for encoding according to a function of the position of a movable member comprising an input movable member and a reference movable member, each having an associated reference position; means for producing a control signal only when the relative displacements of said input and reference members from said respectively associated reference positions correspond; an encoding member mounted on said reference movable member, said encoding member including a plurality of digit signal channels and an ambiguity mark channel; a stationary sensing member coacting with said encoding member to transfer digit signals representing a numerical value which varies according to a predetermined function of the position of said reference movable member from said digit signal channels, said sensing member also operating to transfer ambiguity mark signals from said ambiguity mark channel; means coupled to said control signal producing means and said sensing member and responsive to said control signals to immediately transfer said digit signals from said sensing member providing said ambiguity mark signal is absent, or, to transfer said digit signals upon termination of said ambiguity mark signal if said ambiguity mark signal is present coincidentally with said control signal; and means for independently moving said reference movable member in relation to said input movable member.

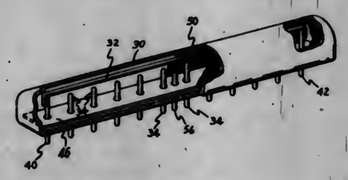
3,187,319
TIME INTERVAL INDICATOR HAVING A ROTATABLE TRANSPARENT PLATE CONCENTRIC WITH A FIXED CALIBRATED PLATE
Jack F. Crawford, South Miami, Fla., assignor to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Filed Sept. 4, 1962, Ser. No. 221,845
1 Claim. (Cl. 340—309.1)



A timing device for signalling elapse of a plurality of predetermined time periods sequentially comprising, an instrument case including, an electrical motor having a drive shaft, a first plate having a chronometer scale on the face thereof, a second plate mounted for rotation

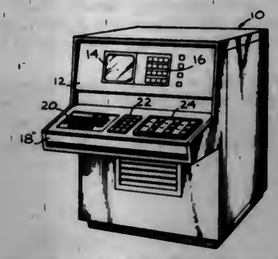
with said shaft in a position overlying said first plate and having said scale visible therethrough, said rotary plate having a circular array of individual sockets in registry with the calibrations of said scale, an electrical signal circuit including switch means and signal means connected to be energized upon actuation of said switch means, and electrical circuit means for connecting said motor and signal circuit to a source of electrical current for rotating said rotary plate continuously and independently of said signal circuit, said switch means being normally biased to a position rendering said signal means inoperative, and switch actuating means removably carried by said rotary plate in selected ones of said sockets for sequentially operating said switch means to render said signal means operative to signal elapse of each of said time periods in accurate sequence, said device having a storage base for supporting said instrument case thereon vertically oriented on a horizontal surface and including, an elevated wall having a pair of parallel plates spaced apart and upstanding along opposite lateral edges of said wall, said case being removably secured between said parallel plates upon said elevated wall, said base having a canted storage panel wall for said switch actuating means extending forwardly and downwardly from said elevated wall on the same side of the device as said rotary plate and separate from said first plate.

3,187,320
SEGMENT DISPLAY DEVICE
George A. Kupsky, Plainfield, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 13, 1962, Ser. No. 202,286
8 Claims. (Cl. 340—336)



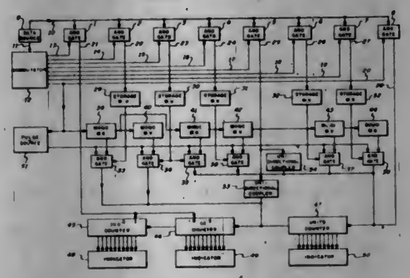
1. A display device comprising
a plurality of separate glow tubes,
each glow tube comprising a gas-filled envelope containing a glow cathode and a plurality of anode electrodes, each cathode being adapted to glow when operating potential is applied between it and any one of its associated anodes,
a plurality of conductive pins, one connected to the cathode and one to each anode, said pins extending outside the envelope of each tube,
an apertured insulating plate,
each tube being mounted on said insulating plate with said pins inserted in and extending through holes in said plate,
a plurality of conductive lines present on a surface of said insulating plate and electrically connecting the anodes of said tubes in groups with each group including one anode from each of a plurality of said tubes,
each group of anodes being adapted to cause a different group of cathodes to glow with each group of cathodes representing a different character,
a plurality of contact terminals on said insulating plate,
each conductive line which connects together a group of anodes being electrically connected to one of said contact terminals on said insulating plate whereby an electrical signal applied to a terminal is also applied to a selected group of anode electrodes to cause a selected group of cathodes to glow and provide a representation of a character.

3,187,321
OPERATOR-COMPUTER COMMUNICATION CONSOLE
Stanley L. Kameny, Woodland Hills, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed May 11, 1961, Ser. No. 109,372
21 Claims. (Cl. 340—345)



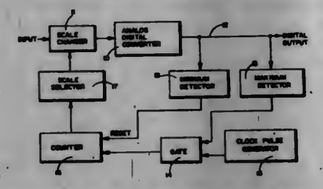
1. In combination with a computer including means storing a plurality of routines, in which each routine includes at least one subroutine, a code signalling device coupled to the computer and including first and second means for dispatching coded messages to the computer respectively identifying a unique stored routine and a particular subroutine in any of said routines, said second means including a plurality of subroutine actuating keys each operable to send a code to initiate the performance of a single subroutine by said computer, said plurality of keys being no greater in number than the maximum number of subroutines in any single routine.

3,187,322
BINARY SIGNAL CONVERTER
Arthur W. Dahlberg, Binghamton, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Aug. 18, 1961, Ser. No. 132,320
7 Claims. (Cl. 340—347)



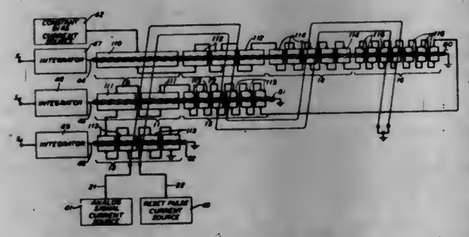
7. Digital data conversion apparatus adapted to respond to a series of pulsed input signals, each signal representing the value unity of a respective digit of a binary numerical expression, the signal representing the most significant digit occurring first and the signal representing the least significant digit occurring last, said apparatus comprising a plurality of pulse storage means each being coupled to receive a respective one of said signals other than the signals representing the most and the least significant digits of said binary numerical expression and being operative to produce an output signal in response thereto, a source of clock pulses, a plurality of multiple input coincidence gates connected to receive said clock pulses, each gate being coupled to receive the output signal from a respective one of said storage means, means for producing a succession of gating pulses, each said gating pulse having a predetermined duration proportional to the desired weighting value of a respective digit of said binary numerical expression, each said gating pulse being applied to a respective one of said gates whereby each gate receiving a respective output signal is rendered conductive for the duration of its respectively applied gating pulse to pass a predetermined number of said clock pulses proportional to the desired weighting value associated with said respectively applied gating pulse, pulse counting means coupled to receive the clock pulses passed by said gates, means for applying the input signal representing said most significant digit to other than the least significant digit place of said counting means for presetting the count therein to a predetermined value, and means for applying the input signal representing said least significant digit to said counting means for increasing the count therein.

3,187,323
AUTOMATIC SCALER FOR ANALOG-TO-DIGITAL CONVERTER
John F. Flood and Frank L. Rosen, Anaheim, Calif., assignors to North American Aviation, Inc.
Filed Oct. 24, 1961, Ser. No. 147,252
10 Claims. (Cl. 340—347)



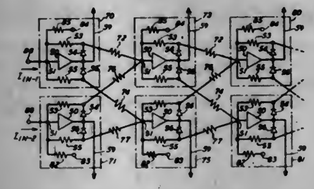
10. In combination with an analog-to-digital converter, means for sensing an output of the analog-to-digital converter having a given relation to a pre-determined digital value, an input amplifier and an attenuating network of discretely variable impedance series connected between the input to said converter and a source of analog signal to be converted, means responsive to said sensing means for causing the impedance of said network to change in discrete steps of like sense for each of a plurality of successive outputs of the analog-to-digital converter having said given relation, a minimum detector responsive to the converter output, and means responsive to said minimum detector for causing said network impedance to change to its lowest value whereby lowest scale is selected for a selected minimum converter output.

3,187,324
MAGNETIC ANALOG-TO-DIGITAL ENCODER
William A. Barrett, Jr., Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 21, 1961, Ser. No. 153,922
14 Claims. (Cl. 340—347)



1. In combination in a magnetic analog-to-digital encoder, a plurality of magnetic elements each of arbitrary hysteresis characteristic, means for selectively biasing each of said magnetic elements to a different point on its hysteresis curve, means for applying equal analog flux drives to all of said elements in a sense opposite to the bias conditions thereon, means for simultaneously applying an equal reset flux pulse to each of said elements in the same sense as the applied bias to reset each of said elements, and a plurality of output means in one to one correspondence with said plurality of magnetic elements and responsive to a flux change in the corresponding one of said magnetic elements by having a voltage induced therein, selected combinations of said output means being serially interconnected in alternating polarities to form a plurality of output circuits.

3,187,325
ANALOG-TO-DIGITAL CONVERTER
Frederick D. Waldhauer, Morris Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 2, 1962, Ser. No. 206,633
12 Claims. (Cl. 340—347)



12. In combination, an amplifier having an input and an output and having a gain substantially greater than unity, a source of an analog signal connected to said input, first and second parallel feedback paths connected between said input and said output, each of said paths including the series combination of a resistor and a diode, said diode in said first path being poled to conduct positive current from said input to said output, said diode in said second path being poled to conduct positive current from said output to said input, means for deriving a first subsignal from the voltage existing across the resistance in said first path, means for deriving a second subsignal from the voltage existing across the resistance in said second path, means for inverting the polarity of one of said subsignals, and means for combining the inverted subsignal with the other of said subsignals to form an output signal having an amplitude which is accurately related to the absolute magnitude of said analog signal.

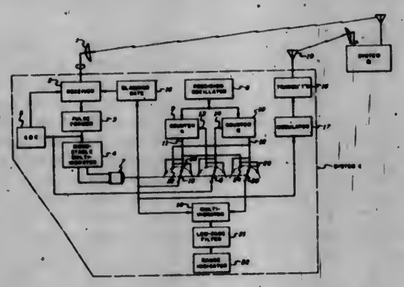
3,187,326
DATA DISPLAY INDICATORS
Oswald S. Nock and Eric J. Harris, London, England, assignors to Westinghouse Brake and Signal Company Limited, London, England
Filed Sept. 30, 1960, Ser. No. 60,253
Claims priority, application Great Britain, Oct. 13, 1959, 34,627/59
2 Claims. (Cl. 340—378)



1. A data display indicator including a case provided at one end with a viewing screen, a rotary disc having character information thereon located within said case, means for projecting the image of at least one of the characters on said disc onto said screen, shaft means concentric with said disc for supporting it, a permanent magnet

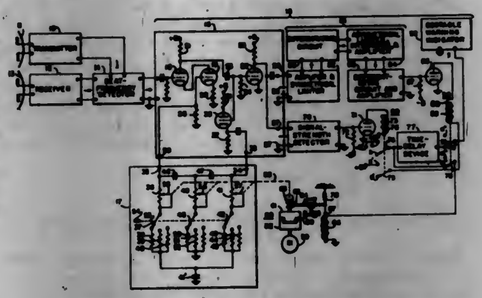
rotor rigidly mounted on said shaft to effect synchronous movement of the rotor and said disc, a plurality of core members arranged circumferentially about and parallel to the axis of said shaft means and presenting pole faces facing the side of said rotor opposite that facing said disc, said pole faces being angularly displaced from an adjacent pole face by the same pitch, a winding on each of said core members for selectively polarizing said core members individually, the centers of the rotor poles being displaced angularly by a multiple of half the pitch of said pole faces, means enclosed by said core members between their ends for completing a magnetic flux path between the ends of a core member when said core member is polarized, said permanent magnet rotor having two distinct positions for each polarity of each one of said core members, said permanent magnet rotor moving into attracted magnetic relation with said core member in accordance with the polarization of said core members to cause the projection onto said screen of a character determined by the position of said rotor.

3,187,327
MULTIPLEX BEACON RANGE DETERMINING SYSTEM
Joseph R. Schneider, Larchmont, and Russell B. French, Plainview, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 14, 1959, Ser. No. 859,532
6 Claims. (Cl. 343—6.5)



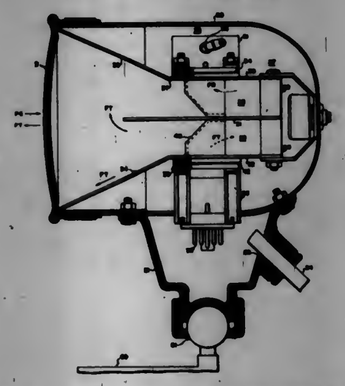
1. Beacon apparatus comprising
first and second sources of repetitive pulses,
first means for synchronizing the pulses of said first source,
second means for synchronizing the pulses of said second source,
pulse transmitting means,
pulse receiving means,
coupling means connected to both said synchronizing means, to said transmitting means and to said receiving means, said coupling means having two modes of operation,
said coupling means in one mode applying received pulses to said first synchronizing means to synchronize the pulses of said first source with said received pulses and applying the pulses of said second source to said pulse transmitting means,
said coupling means in the other mode applying received pulses to said second synchronizing means to synchronize the pulses of said second source with said received pulses and applying the pulses of said first source to said pulse transmitting means,
and means connected to said pulse receiving means and to said coupling means for changing the operation of said coupling means from one of said modes to the other of said modes in response to said received pulses.

3,187,328
OBSTACLE INDICATING DOPPLER SYSTEM
William F. Vetter, Huntington Station, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois
Continuation of abandoned application Ser. No. 535,066, Sept. 19, 1955. This application Feb. 4, 1960, Ser. No. 7,056
14 Claims. (Cl. 343—7)



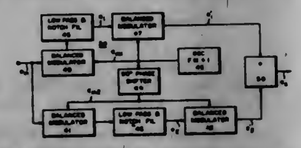
1. A system for indicating collision course between two objects including apparatus on one of the objects comprising: means for radiating a signal toward the second object; means for receiving reflections of said signal; means for deriving Doppler frequency signals from said reflections; and means responsive jointly to amplitude and frequency for distinguishing between Doppler frequency signals representative of the second object and those representative of other objects not on the collision course to provide an output signal indicating the presence of said second object on a collision course.

3,187,329
APPARATUS FOR VEHICULAR SPEED MEASUREMENTS
Bernard J. Midlock, Norwalk, Conn., assignor, by mesne assignments, to Laboratory for Electronics Inc., Boston, Mass., a corporation of Delaware
Filed Sept. 30, 1960, Ser. No. 59,757
12 Claims. (Cl. 343—8)



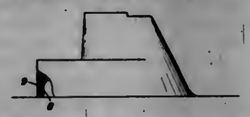
1. Vehicle speed measuring apparatus comprising first means for transmitting high frequency radio waves along a vehicular pathway and for receiving Doppler speed modified high frequency waves reflected from the vehicle, means for mixing the reflected and transmitted waves to provide a beat frequency representing the speed of a detected vehicle, a stabilized low frequency transistor amplifier for amplifying the beat frequency waves and providing an output signal substantially independent of temperature and voltage variations, and means responsive to the frequency of the output signal for indicating the speed of the vehicle detected, said first means including individual waveguide sections for transmitting and receiving and a single waveguide horn member commonly attached to both the transmitting and receiving waveguides.

3,187,330
RADAR LEAKAGE EFFECT ELIMINATION CIRCUIT
Sol Boles, Bronx, and Gus Stavis, Briarcliff Manor, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Feb. 7, 1963, Ser. No. 256,891
6 Claims. (Cl. 343—8)



1. A leakage effect elimination circuit for use in a Doppler radar altimeter comprising,
first and second identical conversion channels each including modulator means for receiving a Doppler radar signal containing altitude information as well as a leakage signal at a predetermined frequency,
and means for applying a fixed frequency slightly different in frequency from said leakage frequency to the modulator means of said first and second conversion channels whereby said leakage signal is converted to a frequency displaced from its original frequency by an amount equal to the difference in frequency between the original leakage frequency and the frequency applied to the modulator means.

3,187,331
MICRO-WAVE ABSORBER
Hans Beller, Cranford, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1949, Ser. No. 88,858
3 Claims. (Cl. 343—18)



1. In combination with a body having normally a reflecting surface of high conductivity and high permeability which, when subjected to high-frequency electromagnetic waves, causes reflections of easily detectable amplitudes, means for altering said conductivity and thereby substantially preventing reflections of detectable magnitudes comprising a protective layer of finely divided particles of carbonyl iron powder having an average particle size of about 5 microns, said layer dispersed in an insulating medium having low dielectric constant, low permeability, and exhibiting no cohesion between individual particles.

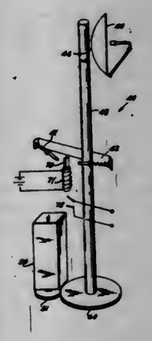
3,187,332
PRESSURE-SENSITIVE SCRIBER
Francis B. Barter, Westwood, and Nicholas L. De Meo, Woburn, Mass., assignors to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts
Filed Feb. 6, 1963, Ser. No. 256,743
8 Claims. (Cl. 346—139)

1. A scriber for marking a chart comprising a stiff pen arm, means at one end adapted to support said pen arm for arcuate movement parallel to the surface of the chart about an axis perpendicular thereto, a flexible element coinciding with the lower side of the arm with one end secured to the arm forwardly of the first means and the other end extending forwardly of the distal end of the arm, a stylus fixed to the forwardly extending portion of the flexible element so as to extend downwardly



therefrom into engagement with the chart, said flexible element being unconnected to said arm from its point of attachment thereto at said one end throughout its length forwardly toward the stylus, and means associated with the arm and flexible element operative, on a portion of the flexible element intermediate its ends, to displace the unconnected portion of the flexible element downwardly relative to the arm.

3,187,333
ANTENNA SCAN TORQUE REDUCER
Marek W. Clotek and Kurt Muller, Philadelphia, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 27, 1962, Ser. No. 205,623
2 Claims. (Cl. 343—766)



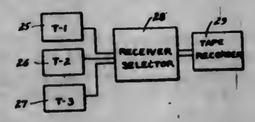
1. In an oscillatory antenna scan system including an antenna carrying shaft and a drive means oscillating said shaft about its axis between arcuate first and second end positions; the improvement comprising an energy storage means operatively connected to said shaft in a region including said first and second end positions; means restraining the movement of said energy storage means; said energy storage means and restraining means operatively engaged to store energy during a deceleration period of oscillating antenna scan, and transfer said stored energy to said shaft during an acceleration period of antenna scan, whereby the torque requirement of said drive means is reduced; said energy storage means comprising a torsion means having a first and second end; one of said ends being twisted with respect to the other of said ends, about a longitudinal axis, to effect energy storage; said first end being directly connected to a first gear; said first gear

being in mesh engagement with said antenna drive means; said restraining means comprising a brake limiting the movement of said second end about said longitudinal axis; the releasing of said brake providing substantially unrestrained movement of said torsion means about said longitudinal axis, whereby said first gear is in idler relationship with said antenna drive.

3,187,334
DATA TRANSMITTING AND RECORDING DEVICE AND SYSTEM

John H. Humphrey, Los Angeles, Calif., assignor, by mesne assignments, to Dashew Business Machines, Inc., Los Angeles, Calif., a corporation of Delaware

Continuation of and substitution for abandoned application Ser. No. 745,176, June 27, 1958. This application Apr. 19, 1962, Ser. No. 191,661
20 Claims. (Cl. 346—34)



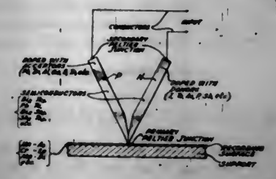
1. A data transmitter system for transmitting and recording data comprising: a plurality of transmitter stations which may be widely separated in locations distant from a central office; a receiver-selector circuit connected to all of said transmitter stations and located at the central office; a data transmitter at said central office; a data recorder also at the central office; and a plurality of data plates having data-bearing formations included thereon for representing coded data, said data plates also having groove formations built into the body of the plates for selective insertion into slots in said transmitter stations; each of said transmitter stations including a plurality of first contact assemblies for operation by said data plates, mechanical means for actuating said first contact assemblies to complete electrical circuits representing said data, and a first transmitter stepping switch having a plurality of contacts for sequential operation to said contact assemblies; said receiver-selector including a second stepping switch having a plurality of contacts connected to said transmitter stations and operable to be sequentially connected to a plurality of rotatable contact bars, and means for operating said second stepping switch to select a desired transmitter station; said data transmitter at the central office including contact assemblies representing coded values for transmission to the data recorder with the data from said transmitter, and a third stepping switch having a plurality of contacts for sequential connection to said data recorder to transmit data; said data recorder including a plurality of electromechanical means for recording said coded data in a tape.

3,187,335
MAGNETIC RECORDING BY MEANS OF A THERMAL TRANSDUCER

Louis E. Fay III, Oxford, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.

Filed Dec. 20, 1961, Ser. No. 160,826
7 Claims. (Cl. 346—74)

3. In combination: a thermoelectric Peltier junction capable of becoming heated during the period of time that an electromotive force is applied to said junction to cause a current to flow thereacross in one direction and capable of being cooled as soon as the current reverses itself, said junction tapering to a narrow gap; a record medium having a magnetic surface thereon which has been premagnetized to a predetermined level, said record medium being translated in relation to said junction in contact with said gap; whereby some portions of said surface are selectively demagnetized by heating above the

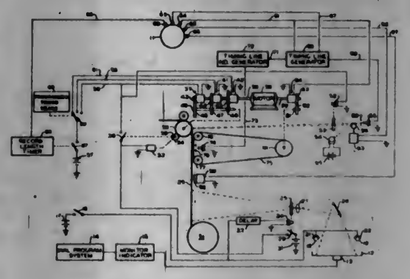


Curie point of the materials of said surface, and the remaining of said surface is left substantially undisturbed.

3,187,336
AUTOMATIC CAMERA

Orin C. Montgomery, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 23, 1962, Ser. No. 189,385
7 Claims. (Cl. 346—109)



1. Apparatus for visually recording an electrical signal comprising a photographic recording medium, a first light source, a mirror-supporting galvanometer positioned with respect to said first light source and said medium so that a beam of light from said first light source is reflected from said mirror to said medium, a synchronous motor driving a first shaft, a plurality of first gears loosely mounted on said first shaft, a second shaft, a plurality of second gears mounted on said second shaft and spaced from one another, each of said second gears engaging a respective one of said first gears, a plurality of clutch couplers each associated with a respective one of said first gears and adapted to cause the respective first gear to rotate with said first shaft, each of said clutch couplers being actuated by electrical coils, a recording medium drive roller for moving said medium relative to said galvanometer and said first light source so that said beam is deflected perpendicular to the direction of movement of said medium by the rotation of said mirror, means for rotating said roller responsive to the rotation of said second shaft, an electrical power supply, a first switch having a contactor and a plurality of contacts corresponding to the number of clutch couplers, means for connecting one terminal of said power supply to said contactor, means adapted to connect each of said contacts to a first terminal of a respective one of said electrical coils, and means for connecting each of the second terminals of said electrical coils to the second terminal of said power supply.

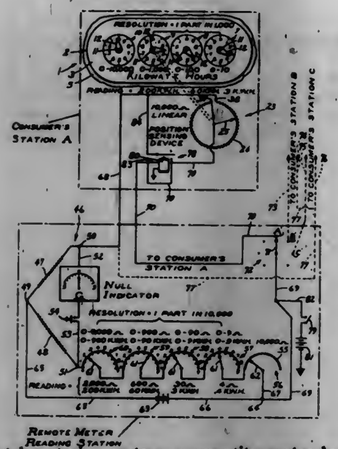
ERRATUM

For Class 346—139 see:
Patent No. 3,187,332

3,187,337
TELEMETERING SYSTEM

Jon L. Otterlei, Hopkins, Minn., assignor to Zodiak Electronics Corporation, St. Paul, Minn., a corporation of Minnesota

Filed Sept. 5, 1961, Ser. No. 135,956
2 Claims. (Cl. 340—201)



1. In a telemetering system, a quantity meter located at the station of a consumer of a commodity and operative to indicate the quantity of the commodity consumed, said quantity meter being of the generally standard type having a series of indicators each indicating a different quantity of the same commodity, said indicators each comprising a unidirectionally driven rotary indicator shaft; said indicator shafts being geared together to rotate at uniformly, progressively decreasing speeds from one end of the series toward the other thereof; a single position sensing means operatively associated with said quantity meter; said single sensing means comprising a rotary element and a non-rotary element; positive drive means mechanically coupling for common rotation the said rotary element of the sensing means and a selected one of said meter indicator shafts, other than the one of the indicator shafts at the fastest rotating end of the series of indicator shafts, that advances less than 360° between said meter reading periods of pre-established spacing; said single sensing means comprising an electrical impedance which carries progressively throughout substantially 360° of rotation of its rotary element to assume a value dependent on the angular position of the selected shaft relative to a fixed index point, the other indicator shafts of the meter being free and unencumbered by sensing means, an electrical measuring circuit for determining the value of said impedance with sufficient precision to provide an unambiguous indication of the angular positions of the selected and faster rotating shafts relative to respective index points and the corresponding quantity of the commodity consumed by a meter located at a meter reading station remote from the consumer's station, and electrical transmission means connecting said measuring circuit to said sensing means.

3,187,338
CORNEAL CONTACT LENS OF WIDE FITTING RANGE WITH SINE CURVE CONCAVE SURFACE

Charles W. Neefe, Big Spring, Tex., assignor to Neefe-Hamilton Research Company, Big Spring, Tex.

Filed Feb. 19, 1962, Ser. No. 174,047
3 Claims. (Cl. 351—160)

2. A corneal contact lens of concavo-convex form in section, of a size to lie within the area defined by the limbus, having a concave, aspheric surface whose curvature is a sine curve, and an outer area having a radius of curvature longer than the cornea to which the lens is

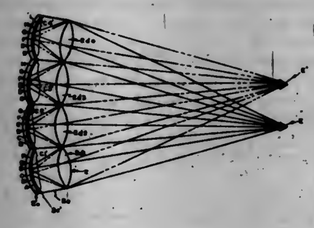


applied, whereby a satisfactory fit will result if the cornea or contact lens is of a different radius than the radius designated as correct.

3,187,339
THREE DIMENSIONAL VIEWING APPARATUS

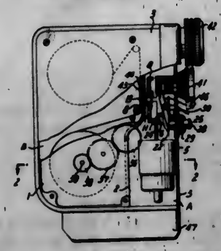
Wallace A. Clay, Box 120, R.F.D. 3, Ogden, Utah

Filed Oct. 16, 1961, Ser. No. 145,058
6 Claims. (Cl. 352—61)



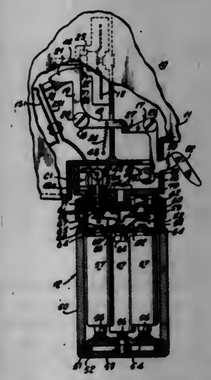
1. Apparatus for reproducing on a viewing screen, before an audience, and in stereoscopic relief, a scene employing a progressive series of stereoscopically related pictures adjacent ones of which are stereoscopic doublets, said apparatus comprising: a composite contiguous viewing screen including a horizontal series of viewing cells each havng a back, projected image receiving projection surface and a front lens in light communication therewith and spaced therefrom a distance less than the focal length of the lens, the respective distances between the individual lenses and their respective projection surfaces being equivalent, and the widths of the respective viewing cells being equal; a plurality of horizontally spaced projector means each directed solely toward the projection surface of a single associated cell to cast thereon a respective one of a regularly progressive plurality of pictures of overlapping scene-sectors of a scene photographed, said front lenses being anamorphoscopic to magnify horizontally, selected vertical strips of said pictures, selection being determined by the position of the observer; and means for distorting the vertical-to-horizontal proportions of the pictures prior to casting them onto the projection surfaces to compensate for the horizontal magnification of said lenses, said lenses being so constructed and so arranged, of themselves and with repect to their respective, projected image receiving projection surfaces, that from each viewing angle in the audience there will be seen by the respective eyes of an observer through each front lens respective images which are coextensive in angle subtended with said lens, with respect to said respective eyes, and which correspond to adjacent ones of said narrow vertical strips of each distorted picture but are magnified horizontally to restore the original proportions thereof, and that said images as seen through all the lenses combine and blend together in two independent series, seen by the respective eyes, to produce two, independent, composite scenes, each viewable by a single eye, corresponding portions of said composite scenes being stereoscopically related.

3,187,340
MOTION PICTURE CAMERA
Mutsumi Misawa, Tokyo, Japan, assignor to Seiko Denki Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Oct. 24, 1960, Ser. No. 64,601
1 Claim. (Cl. 352—166)



In a motion picture camera, in combination, a housing having front and rear walls and a pair of opposed side walls; a partition in said housing dividing the interior thereof into a magazine chamber and a mechanism chamber, said partition having a transverse portion located substantially in a plane normal to the optical axis between and spaced from said front and rear camera walls and said partition having a side portion extending from said transverse portion to the rear wall of said housing in the interior of the latter and spaced from and extending substantially parallel to one of said side walls of said housing; rotary shutter means located between said front wall of said camera housing and said transverse portion of said partition and including a shaft parallel to the optical axis and extending between said transverse portion of said partition and said front wall of said camera housing; drive means cooperating with said rotary shutter means for rotating the latter; a worm carried by said shaft for rotation therewith; a worm wheel meshing with said worm to be rotated thereby; a first gear fixed coaxially to said worm wheel for rotation therewith; a train of gears supported for rotation by said side portion of said partition and located between said side portion of said partition and said one side wall of said camera housing, said train of gears including a gear which meshes with said first gear and said train of gears terminating in a last gear; a shaft connected to said last gear for rotation therewith and extending through said side portion of said partition into said magazine chamber to rotate in the latter, whereby a take-up spool in said magazine chamber may be driven from said shaft which is connected to said last gear for rotation therewith.

3,187,341
BATTERY POWERED MOTION PICTURE CAMERA WITH REMOTE CONTROL
Isamu Kubota, Hirakata City, and Takeo Ataka, Sumiyoshiku, Osaka, Japan, assignors to Minolta Camera Co. Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 5, 1962, Ser. No. 242,407
9 Claims. (Cl. 352—174)

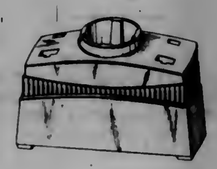


1. A motion picture camera comprising a body member, a shutter member located in said body member, an electric drive motor connected to said shutter member, a battery housing handle member separably mounted on said body member, a first switch mounted on said handle member, means for releasably locking said first switch in a closed position when said handle is mounted on said body member and means connecting said motor through said first switch to said battery.

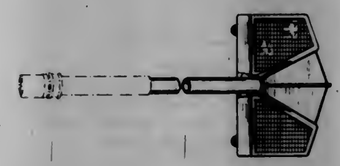
DESIGNS

JUNE 1, 1965

201,239
COMBINED CHARGER AND HOLDER FOR AN ELECTRIC TOOTHBRUSH OR SIMILAR ARTICLE
Carl N. Johnson, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed Aug. 10, 1964, Ser. No. 81,214
Term of patent 14 years
(Cl. D4—3)



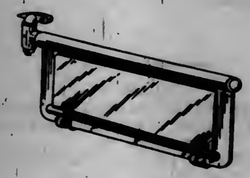
201,240
MOVABLE SPRAYER
John D. Beinert, Babylon, N.Y., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 80,231
Term of patent 7 years
(Cl. D9—2)



201,241
COMBINATION BATH TUB AND SHOWER MAT OR SIMILAR ARTICLE
James B. Clift, 2 Concord Place, Coshocton, Ohio
Filed Mar. 5, 1963, Ser. No. 73,827
Term of patent 14 years
(Cl. D9—6)



201,242
AUTOMOBILE VISOR EXTENSION SHADE
Danny L. Deaver, 2150 Cheryl Way, San Jose, Calif.
Filed Sept. 2, 1964, Ser. No. 81,567
Term of patent 14 years
(Cl. D14—6)



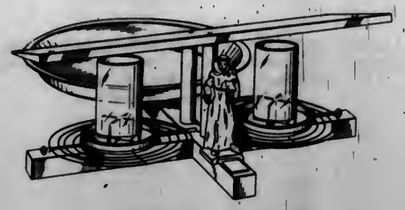
201,243
BUTTON
Robert B. Moise, P.O. Box 1442, Sumter, S.C.
Filed Sept. 18, 1963, Ser. No. 76,629
Term of patent 14 years
(Cl. D17—2)



201,244
COMBINED SWITCH AND END COVER THEREFOR
Kazuma Tateisi, Kyoto-shi, Japan, assignor to Tateishi Denki Kabushiki Kaisha, Kyoto-shi, Japan
Continuation of design applications Ser. No. 67,119 and Ser. No. 67,121, Oct. 17, 1961. This application Mar. 31, 1964, Ser. No. 79,373
Term of patent 14 years
(Cl. D26—13)



201,245
COMBINATION BIRD BATH AND FEEDER
Frank X. Cruikshank, Rte. 2, Coshocton, Ohio
Filed Oct. 29, 1964, Ser. No. 82,385
Term of patent 14 years
(Cl. D31—2)



201,246
HINGE-MOUNTED UMBRELLA HOLDER
William S. Spangle, 627 Orchard Hill Drive, Pittsburgh, Pa.
Filed Oct. 14, 1963, Ser. No. 76,965
Term of patent 7 years
(Cl. D33—17)



201,247
DOLL
Jorge Argemi Vidal, Calle Maignon 10, Barcelona, Spain
Filed Dec. 15, 1964, Ser. No. 83,040
Term of patent 3½ years
(Cl. D34—4)



201,248
DOLL
Jorge Argemi Vidal, Calle Maignon 10, Barcelona, Spain
Filed Dec. 15, 1964, Ser. No. 83,041
Term of patent 3½ years
(Cl. D34—4)



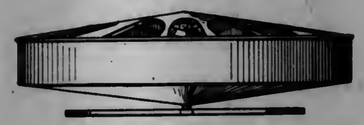
201,249
DOLL
Jorge Argemi Vidal, Calle Maignon 10, Barcelona, Spain
Filed Dec. 15, 1964, Ser. No. 83,046
Term of patent 3½ years
(Cl. D34—4)



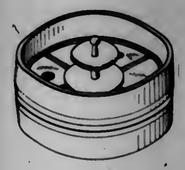
201,250
GOLF CLUB
Richard Martinez, 6111 Gotham St., Bell Gardens, Calif.
Filed Nov. 16, 1964, Ser. No. 82,637
Term of patent 14 years
(Cl. D34—5)



201,251
PLAYGROUND ROUNDABOUT
Lee S. Watlington, 1204 N. Linden Ave., Bloomington, Ill.
Filed Dec. 28, 1964, Ser. No. 83,193
Term of patent 7 years
(Cl. D34—5)



201,252
AERIAL TOP
Stephen J. Salayka, 103 Berry St., Brooklyn, N.Y.
Filed Dec. 10, 1964, Ser. No. 83,118
Term of patent 14 years
(Cl. D34—15)



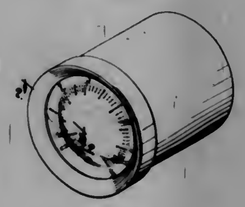
201,253
HANDLE FOR CULINARY TOOLS OR THE LIKE
Austin H. Munson, Arlington Heights, and Casimir F. Gruska, Chicago, Ill., assignors to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 79,000
Term of patent 14 years
(Cl. D44—29)



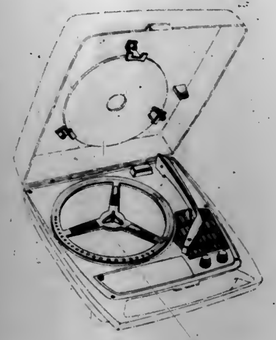
201,254
ROSARY
Walter E. Sloan, 1035 E. Grandview Blvd., Erie, Pa.
Filed Mar. 2, 1964, Ser. No. 78,831
Term of patent 14 years
(Cl. D45—16)



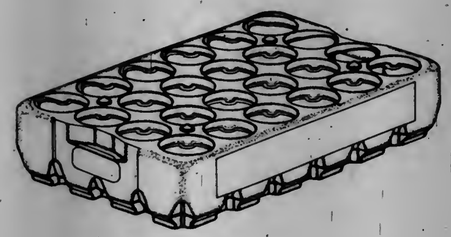
201,255
GAUGE
William A. Czapar, Chicago, and Marshall Miles, Wilmette, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed May 15, 1963, Ser. No. 74,896
Term of patent 14 years
(Cl. D52—6)



201,256
PORTABLE PHONOGRAPH
Tobin Wolf, 447 Essex Ave., Bloomfield, N.J.
Filed Aug. 13, 1964, Ser. No. 81,270
Term of patent 14 years
(Cl. D56—4)



201,257
BOTTLE CARRIER OR SIMILAR ARTICLE
Eugene L. Vidal, Avon, Conn., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 76,136
Term of patent 14 years
(Cl. D58—5)



201,258
JUG
William E. Fillmore, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 8, 1964, Ser. No. 79,881
Term of patent 14 years
(Cl. D58—5)



201,259
BOTTLE
Melvin Earl St. Clair, Punch Brook Road, Burlington, Conn.
Filed June 17, 1964, Ser. No. 80,435
Term of patent 14 years
(Cl. D58—8)



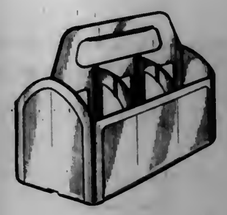
201,260
BOTTLE
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 13, 1964, Ser. No. 82,153
Term of patent 14 years
(Cl. D58—8)



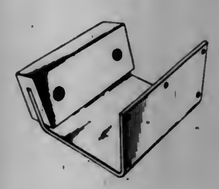
201,261
BOTTLE
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation
Filed Oct. 13, 1964, Ser. No. 82,156
Term of patent 14 years
(Cl. D58—8)



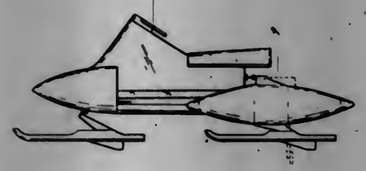
201,262
COMPARTMENTED BOTTLE CARTON
Ray D. Stroud, 2421 NW. 59th St., Oklahoma City, Okla.
Filed Dec. 21, 1964, Ser. No. 83,112
Term of patent 14 years
(Cl. D58—26)



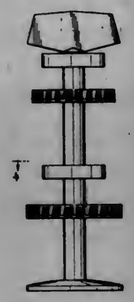
201,263
OUTBOARD MOTOR BRACKET
Ralph F. Chambers, Seattle, Wash., assignor to Chambers & Chambers, a partnership composed of Ralph F. Chambers and Jack E. Chambers
Filed Sept. 16, 1963, Ser. No. 76,594
Term of patent 14 years
(Cl. D71—1)



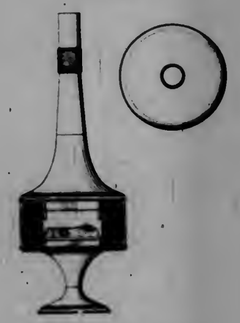
201,264
WATER CRAFT
Shely W. McGuire, 2355 Olivia Ave., Yuma, Ariz.
Filed Oct. 27, 1964, Ser. No. 82,342
Term of patent 14 years
(Cl. D71—1)



201,265
MERCHANDISING DISPLAY STAND FOR WRITING INSTRUMENTS AND THE LIKE
Charles K. Lovejoy and Frank H. Stephens, Jr., both % Scripto, Inc., P.O. Box 4847, Atlanta, Ga.
Filed Jan. 15, 1964, Ser. No. 78,203
Term of patent 14 years
(Cl. D60—9)



201,266
COMBINATION FIREPLACE AND HEATER
Bernard R. Rose, West Los Angeles, Calif., assignor to Dyna Manufacturing Co., Los Angeles, Calif., a corporation of California
Filed Apr. 13, 1964, Ser. No. 79,455
Term of patent 14 years
(Cl. D61—7)



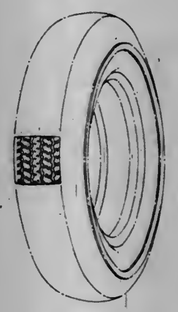
201,267
UNDERWATER FACE MASK
Robert Gentile, Billerica, Mass., assignor to Sea-All, Inc., Billerica, Mass., a corporation of Massachusetts
Filed Sept. 30, 1964, Ser. No. 82,212
Term of patent 14 years
(Cl. D83—1)



201,268
FRUIT JUICE SQUEEZER
William P. Bode, 8455 Beatty St., Massillon, Ohio
Filed Nov. 18, 1964, Ser. No. 82,669
Term of patent 14 years
(Cl. D69—1)



201,269
TIRE
George W. MacWherter, Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 82,595
Term of patent 14 years
(Cl. D90—20)



201,270
ESCUTCHEON PLATE FOR PLUMBING FIXTURES OR THE LIKE
William Taylor, 2222 Malcolm Ave., Los Angeles, Calif., and Nathan Holzberg, Los Angeles, Calif.; said Holzberg assignor to said Taylor
Filed Nov. 19, 1962, Ser. No. 72,527
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 1ST DAY OF JUNE, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Barnes, Marion D., to Monsanto Chemical Co. Method and composition for brightening aluminum. Re. 25,789, 6–1–65, Cl. 252—79.2.

Beers, Roland F., Jr. Process for preparing a nucleic acid. Re. 25,785, 6–1–65, Cl. 195—29.

Chancellor, Forrest E. and R. O. Deep well pumping system. Re. 25,786, 6–1–65, Cl. 103—170.

Chancellor, Robert O.: *See*—
Chancellor, Forrest E. and R. O. Re. 25,786.

Eastman Kodak Co.: *See*—
Miller, Walter C., and Schmitt. Re. 25,790.

Gary, Wright W. Catalytic converter system for internal combustion engines. Re. 25,787, 6–1–65, Cl. 60—30.

Miller, Walter C., and H. O. Schmitt, Jr., to Eastman Kodak Co. Camera cover lock and footage indicator mechanism. Re. 25,790, 6–1–65, Cl. 95—31.

Monsanto Chemical Co.: *See*—
Barnes, Marion D. Re. 25,789.

Schmitt, Henry O., Jr.: *See*—
Miller, Walter C., and Schmitt. Re. 25,790.

Sheridan, David S. Medico-surgical tubes having integral connectors formed in their ends. Re. 25,788, 6–1–65, Cl. 128—348.

LIST OF PLANT PATENTEES

Amling-Devor Nurseries, Inc.: *See*—
Lammerts, Walter E. 2,526.

Great Western Rose Co., Inc.: *See*—
Howard, Arthur P. 2,522.
Howard, Arthur P. 2,523.
Howard, Arthur P. 2,524.

Howard, Arthur P., to Great Western Rose Co., Inc. Rose plant. 2,522, 6–1–65, Cl. 14.

Howard, Arthur P., to Great Western Rose Co., Inc. Rose plant. 2,523, 6–1–65, Cl. 11.

Howard, Arthur P., to Great Western Rose Co., Inc. Rose plant. 2,524, 6–1–65, Cl. 11.

Kinney, Charles L. Pear tree. 2,527, 6–1–65, Cl. 36.

Lammerts, Walter E., to Amling-Devor Nurseries, Inc. Rose plant. 2,526, 6–1–65, Cl. 20.

Moore, Ralph S. Rose plant. 2,525, 6–1–65, Cl. 1.

LIST OF DESIGN PATENTEES

Beinert, John O., to International Patent Research Corp. Movable sprayer. 201,240, 6–1–65, Cl. D9—2.

Bode, William P. Fruit juice squeezer. 201,268, 6–1–65, Cl. D69—1.

Chambers & Chambers: *See*—
Chambers, Ralph F. 201,263.

Chambers, Ralph F., to Chambers & Chambers. Outboard motor bracket. 201,263, 6–1–65, Cl. D71—1.

Clift, James B. Combination bath tub and shower mat. 201,241, 6–1–65, Cl. D9—6.

Crulkshank, Frank X. Combination bird bath and feeder. 201,245, 6–1–65, Cl. D31—2.

Czapar, William A., and M. Miles, to Stewart-Warner Corp. Gauge. 201,255, 6–1–65, Cl. D52—6.

Deaver, Danny L. Automobile visor extension shade. 201,242, 6–1–65, Cl. D14—6.

Dyna Mfg. Co.: *See*—
Rose, Bernard A. 201,266.

Ekco Products Co.: *See*—
Munson, Austin H., and Gruska. 201,253.

Fillmore, William E., to Owens-Illinois Glass Co. Jug. 201,258, 6–1–65, Cl. D58—5.

General Electric Co.: *See*—
Johnson, Carl N., and Judson. 201,239.

Gentile, Robert, to Sea-All, Inc. Underwater face mask. 201,267, 6–1–65, Cl. D63—1.

Goodrich, B. F., Co., The: *See*—
MacWherter, George W. 201,269.

Gruska, Casimir F.: *See*—
Munson, Austin H., and Gruska. 201,253.

Holsberg, Nathan: *See*—
Taylor, William, and Holsberg. 201,270.

International Patent Research Corp.: *See*—
Beinert, John O. 201,240.

Johnson, Carl N., and W. V. Judson, to General Electric Co. Combined charger and holder for an electric toothbrush or similar article. 201,239, 6–1–65, Cl. D4—3.

Judson, William V.: *See*—
Johnson, Carl N., and Judson. 201,239.

Lovejoy, Charles K., and F. H. Stephens, Jr. Merchandising display stand for writing instruments and the like. 201,265, 6–1–65, Cl. D60—9.

MacWherter, George W., to The B. F. Goodrich Co. Tire. 201,269, 6–1–65, Cl. D90—20.

Martinez, Richard. Golf club. 201,250, 6–1–65, Cl. D34—5.

McGuire, Shely W. Water craft. 201,264, 6–1–65, Cl. D71—1.

Miles, Marshall: *See*—
Czapar, William A., and Miles. 201,255.

Moise, Robert B. Button. 201,243, 6–1–65, Cl. D17—2.

Munson, Austin H., and C. F. Gruska, to Ekco Products Co. Handle for culinary tools or the like. 201,253, 6–1–65, Cl. D44—29.

Owens-Illinois Glass Co.: *See*—
Fillmore, William E. 201,258.
Roberts, Bruce L. 201,260.
Roberts, Bruce L. 201,261.

Phillips Petroleum Co.: *See*—
Vidal, Eugene L. 201,257.

Roberts, Bruce L., to Owens-Illinois Glass Co. Bottle. 201,260, 6–1–65, Cl. D58—8.

Roberts, Bruce L., to Owens-Illinois Glass Co. Bottle. 201,261, 6–1–65, Cl. D58—8.

Rose, Bernard R., to Dyna Mfg. Co. Combination fireplace and heater. 201,266, 6–1–65, Cl. D81—7.

St. Clair, Melvin E. Bottle. 201,259, 6–1–65, Cl. D58—8.

Salayka, Stephen J. Aerial top. 201,252, 6–1–65, Cl. D34—15.

Sea-All, Inc.: *See*—
Gentile, Robert. 201,267.

Sloan, Walter E. Rosary. 201,254, 6–1–65, Cl. D45—16.

Spangle, William S. Hinge-mounted umbrella holder. 201,246, 6–1–65, Cl. D32—17.

Stephens, Frank H., Jr.: *See*—
Lovejoy, Charles K., and Stephens. 201,265.

Stewart-Warner Corp.: *See*—
Czapar, William A., and Miles. 201,255.

Stroud, Ray D. Compartmented bottle carton. 201,262, 6–1–65, Cl. D58—26.

Tateishi Denki Kabushiki Kaisha: *See*—
Tateisi, Kasuma. 201,244.

Tateisi, Kasuma, to Tateishi Denki Kabushiki Kaisha. Combined switch and end cover therefor. 201,244, 6–1–65, Cl. D26—13.

Taylor, William, and N. Holsberg; said N. Holsberg assor. to W. Taylor. Escutcheon plate for plumbing fixtures or the like. 201,270, 6–1–65, Cl. D91—3.

Vidal, Eugene L., to Phillips Petroleum Co. Bottle carrier or similar article. 201,257, 6–1–65, Cl. D58—5.

Vidal, Jorge A. Doll. 201,247, 6–1–65, Cl. D34—4.

Vidal, Jorge A. Doll. 201,248, 6–1–65, Cl. D34—4.

Vidal, Jorge A. Doll. 201,249, 6–1–65, Cl. D34—4.

Watlington, Lee S. Playground roundabout. 201,251, 6–1–65, Cl. D34—5.

Wolf, Tobin. Portable phonograph. 201,256, 6–1–65, Cl. D56—4.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 1st DAY OF JUNE, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Bradley, William A. 3,186,351.
Compton, Donald E., and Fitzgerald. 3,186,349.
Fitzgerald, John B. 3,186,350.
Korte, Alfred C. 3,186,470.
Lowrey, William E. 3,186,681.

A. J. Industries, Inc.: *See*—
Fossard, Thomas E. 3,186,731.

AMP Inc.: *See*—
Cobaugh, Robert F. 3,186,072.
Cobaugh, Robert F. 3,186,074.
Cobaugh, Robert F. 3,186,076.
Cobaugh, Robert F. 3,186,078.
Cobaugh, Robert F., and Long. 3,186,073.
Glunts, Glenn H. 3,187,297.
Shannon, Suel G. 3,187,298.
Vickery, John R., Jr. 3,186,075.
Vickery, John R., Jr. 3,186,077.

Abbott Laboratories: *See*—
Beall, Glenn L., and Scislowicz. 3,186,450.
Jeffries, James F. 3,187,019.

Abbott, Terence A.: *See*—
McPherson, Norman S., Clachan, Tatchell, and Abbott. 3,187,065.

Abbott, William B., and H. Klepper, to Eltra Corp. Justification mechanism for linecasting machines. 3,186,538, 6–1–65, Cl. 199—51.

Abendroth, Robert V.: *See*—
Schmitter, Walter P. 3,187,209.

Accumulateurs Fixes et de Traction, (Societe Anonyme), Societe des: *See*—
Piechon, Jean C. 3,186,876.
Stanimirovitch, Douchan. 3,186,877.

Acme Highway Products Corp.: *See*—
Crone, Alfred F. 3,186,676.

Adamo, Robert J., E. A. Gregor, F. W. Pierson, and F. W. Pierson, Jr., to said F. W. Pierson and said F. W. Pierson, Jr. Method and apparatus for distributing molten metal and the like. 3,186,040, 6–1–65, Cl. 22—80.

Adams, Clifford B., to National Rejectors, Inc. Money-actuating devices. 3,186,531, 6–1–65, Cl. 194—10.

Adelaar, Hans H., to International Standard Electric Corp. Resonant transfer time division multiplex system utilising negative impedance amplification means. 3,187,100, 6–1–65, Cl. 179—15.

Adelaar, Hans H., F. Clements, and J. L. Masure, to International Standard Electric Corp. Master-slave memory controlled switching among a plurality of TDM highways. 3,187,099, 6–1–65, Cl. 179—15.

Adkins, Harold T., to Sigma Instruments, Inc. Condition-responsive control circuit. 3,187,204, 6–1–65, Cl. 307—117.

Adkins, Harold T., and R. I. Schneyer, to Curtiss-Wright Corp. High speed-turbo-generator. 3,187,188, 6–1–65, Cl. 290—4.

Adkins, Malcolm W. to Continental Oil Co. Glass spiral winding machine. 3,186,820, 6–1–65, Cl. 65—271.

Adriaan Honig's Kunsthars-Industrie N.V.: *See*—
Knots, Jacob A. 3,186,960.

Aerojet-General Corp.: *See*—
Klager, Karl. 3,187,053.

Agfa Aktiengesellschaft: *See*—
Berger, Heins, and Berghaus. 3,186,841.
Püschel, Walter, Wahl, Pels, Schellenberger, and Loffler. 3,186,840.

Airtron, Inc.: *See*—
Wantuch, Ernest. 3,187,277.

Akaboshi, Michijiro, T. Kominami, S. Fukuda, and K. Uragami, to Kurashiki Rayon Co., Ltd. Apparatus for mixing a relatively viscous liquid with a relatively non-viscous liquid. 3,186,803, 6–1–65, Cl. 23—285.

Akst, Harold, to Burroughs Corp. Multi-contact manually-operated electric switch with lever actuating means. 3,187,120, 6–1–65, Cl. 200—16.

Albritton Engineering Corp.: *See*—
Roll, Jack A. 3,186,496.

Alfieri, Giuseppe, to Fabbrica Italiana Magneti Marelli S.p.A. Device for proportionating the pneumatic braking of motor vehicles to the load transported by the vehicle. 3,186,771, 6–1–65, Cl. 303—22.

Allardt, Ernst W., H. B. Grunau, and D. E. Yoho, to The Babcock & Wilcox Co. Resistance welder. 3,187,153, 6–1–65, Cl. 219—65.

Allegheny Ludlum Steel Corp.: *See*—
Killian, Thaddeus F. 3,187,159.
Murtland, James B., Jr., Rebhun, and Jackson. 3,186,043.
Murtland, James B., Jr., Rebhun, and Jackson. 3,187,077.
Murtland, James B., Jr., Rebhun, and Jackson. 3,187,078.
Rebhun, Charles F. 3,186,510.

Allen, Archelaius D., to Gullick Ltd. Roof supports for mines. 3,186,178, 6–1–65, Cl. 61—45.

Allen, Herbert, to Cameron Iron Works, Inc. Device for diverting a pipeline separator or like object. 3,186,014, 6–1–65, Cl. 15—3.51.

Alles, Francis P., and C. W. Smith, to E. I. du Pont de Nemours and Co. Flexible photopolymerizable element. 3,186,844, 6–1–65, Cl. 96—87.

Alles, Francis P., and C. W. Smith, to E. I. du Pont de Nemours and Co. Flexible photopolymerizable element. 3,186,844, 6–1–65, Cl. 96—87.

Allied Chemical Corp.: *See*—
Duggan, Raymond J., and Winstom. 3,187,050.
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Litke, Alvin C. 3,186,960.
Nelson, Dorsey C., and Mueller. 3,187,052.
Shriver, Donald S., MacGregor, and Moore. 3,186,959.

Allis-Chalmers Mfg. Co.: *See*—
Seidl, Alois C., and Walker. 3,187,213.

Allison, Donald K., to Cool Fin Electronics Corp. Heat dissipating electrical shield. 3,187,082, 6–1–65, Cl. 174—35.

Allmänna Svenska Elektriska Aktiebolaget: *See*—
Flinth, Rune. 3,186,220.

All-Steel Equipment Inc.: *See*—
Buhrmaster, Bruce O. 3,186,664.
Buhrmaster, Bruce O. 3,186,669.

Alpha Molykote Corp.: *See*—
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Amcodyne Corp., The: *See*—
Ross, David S. and G. W. 3,186,644.

American Air Filter Co., Inc.: *See*—
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Sylvan, Stig. 3,186,389.

American Bosch Arma Corp.: *See*—
Hogeman, Hans. 3,186,844.
Nystrom, Carl H., and Galis. 3,186,396.

American Brake Shoe Co.: *See*—
Born, Ellis H., Porter, and Wolfe. 3,187,250.
Gorcyca, Edward R. 3,186,777.
Neff, Darby B., and Rader. 3,186,310.

American Can Co.: *See*—
Borkmann, Frank F., and Kluesner. 3,186,143.
Dobbins, Walter J., Ecklund, and Polka. 3,186,028.
Grimsley, Arvid K. 3,186,606.
Marchak, Nicholas. 3,186,601.
Schneider, Alden J., Taylor, and Eckman. 3,186,581.
Zundel, Arthur P. 3,186,585.

American Colloid Co.: *See*—
Clegs, Arthur G. 3,186,896.

American Cyanamid Co.: *See*—
Klingsberg, Erwin. 3,186,995.
Klingsberg, Erwin. 3,187,009.

American Envelope Co.: *See*—
Hanrahan, William J. 3,186,735.

American Flange & Mfg. Co. Inc.: *See*—
Pentesco, Walter J. 3,186,604.

American Home Products Corp.: *See*—
Deghenghi, Romano, and Marshall. 3,186,987.

American Instrument Co., Inc.: *See*—
Hampton, William C. 3,186,801.

American Machine & Foundry Co.: *See*—
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Hebble, Keith A. 3,186,715.
Hogg, Stanley T. 3,186,173.
Williamson, William R. 3,186,924.

American Optical Co.: *See*—
Foley, William E., and Wilton. 3,187,173.

American Safety Table Co., Inc.: *See*—
Haas, Kenneth C., and Spinrad. 3,186,386.

Ampex Corp.: *See*—
Chur, Sung P. 3,187,199.
Landgraf, William C. 3,186,829.
Smaller, Philip. 3,187,111.

Anaconda Wire and Cable Co.: *See*—
Menasoff, George N., and Haase. 3,186,618.

Ancker-Johnson, Betsy: *See*—
Drummond, James E., Johnson, Ancker-Johnson. 3,187,310.

Anderson, Arthur F., to Gar Wood Industries, Inc. Variable displacement piston pump. 3,186,352, 6–1–65, Cl. 103—162.

Anderson, Carl P.: *See*—
Kleinschmidt, Edward F., and C. P. and H. A. Anderson, Clark, and Sherrick. 3,187,096.

Anderson, Herbert R., to Tri-Wall Containers, Inc. Steel rule die cutter for cutting crushable materials. 3,186,263, 6–1–65, Cl. 83—623.

Anderson, Hilding A.: *See*—
Kleinschmidt, Edward F., and C. P. and H. A. Anderson, Clark, and Sherrick. 3,187,096.

Anderson, John R., and G. S. Somekh, to Union Carbide Corp. Separation of aromatic hydrocarbons from nonaromatic hydrocarbons. 3,186,937, 6–1–65, Cl. 208—314.

Andrich, Ekkehard, to North American Philips Co., Inc. Device for the protection of electrical apparatus. 3,187,164, 6–1–65, Cl. 219—504.

Angell, James W. Variable ratio fluid drive. 3,186,172, 6–1–65, Cl. 60—54.

Angell, James W. Fluid suspension system for vehicles. 3,186,730, 6–1–65, Cl. 280—104.

Angelus, Anthony D.: *See*—
Costantini, Anthony R., and Angelus. 3,186,364.

Angold, John A., to Keystone Railway Equipment Co. Freight car underframe with hydraulic cushioning. 3,186,562, 6–1–65, Cl. 213—8.

Angus, Hamish C.: *See*—
Betteridge, Walter, and Angus. 3,186,084.

Anscherlik, Arnöst. Device for dosing reagents in automatic analyzers or other intermittently operating chemical apparatus. 3,186,808, 6–1–65, Cl. 23—292.

Anthony, Myron L., to Scully-Anthony Corp. Binary key indentifier for machine tools. 3,187,128, 6–1–65, Cl. 200—44.

Anthony, Roy. Cup containing beverage ingredient. 3,186,850, 6–1–65, Cl. 99—78.

Appareillage Thermoflex, Etablissements J. M. Dard: *See*—
Mayer, Ferdy. 3,187,225.

Appleton Wire Works Corp.: *See*—
Godschalx, Adrian T., Purdy, and Vloesak. 3,186,663.

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Bricout, Constant. 3,186,161.
Bricout, Constant. 3,186,388.

Applied Research, Inc.: *See*—
Scandurra, Aldo M., Dolin, and Poulos. 3,187,259.

Arapahoe Chemicals, Inc.: *See*—
Robertson, Dale N. 3,187,044.

Arcair Co.: *See*—
Stepath, Myron D. 3,187,154.

Archer, Robert L., and S. Hirsch, to Fairchild Camera and Instrument Corp. Self-starting timing escapement. 3,186,238, 6–1–65, Cl. 74—1.5.

Archer, Virgil L., to Hawts Development Co., Inc. Flour dropper for cookie making machine. 3,186,358, 6–1–65, Cl. 107—7.

Arcos, Inc.: *See*—
Weder, William J. 3,186,672.

Arens Controls, Inc.: *See*—
Quarfoot, Axel L. 3,186,251.

Armacost, Don R.: *See*—
Trautner, Wagn, and Armacost. 3,187,171.

Armour and Co.: *See*—
Baarson, Robert E., and Ohlsen. 3,186,828.
McBride, Joseph J., Jr. 3,187,003.

Armstrong, Godfrey P., R. H. Hall, D. C. Quin, and K. H. W. Turck, to Hercules Powder Co. Manufacture of peroxidic compounds. 3,187,055, 6–1–65, Cl. 260—610.

Arneson, Edwin L., to Federal Paper Board Co., Inc. Reclosable carton. 3,186,624, 6–1–65, Cl. 229—51.

Arnold, Carter H. Device for coiling and storing wire rope and the like. 3,186,659, 6–1–65, Cl. 242—129.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Tsunoda, Yoshio, Seko, Ebara, Ogawa, and Yamakoshi. 3,186,476.

Aschner, Thomas C.: *See*—
Julian, Percy L., Magnani, Hill, and Aschner. 3,187,025.

Asher, Sidney, to Pages, Inc. Orthodontic force system utilising a face-bow and arch wire hooks. 3,186,089, 6–1–65, Cl. 32—14.

Ashland Oil & Refining Co.: *See*—
Askew, Andrew L., Jr., and Reynolds. 3,186,687.
McNay, Ralph E., and Peterson. 3,186,901.
Ripple, Charles W. 3,186,929.
Williams, David C. 3,186,796.

Askew, Andrew L., Jr., and R. H. Reynolds, to Ashland Oil & Refining Co. Rotary pelletizing apparatus. 3,186,687, 6–1–65, Cl. 259—7.

Associated Electrical Industries Ltd.: *See*—
Craig, Robert D., Willdig, and Bancroft. 3,187,179.
Craig, Robert D., Williams, and Willdig. 3,187,237.
Willdig, Edward. 3,187,180.

Astro Dynamics, Inc.: *See*—
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Ataka, Takeo: *See*—
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Atlantic Machine Tool Works, Inc.: *See*—
Budney, Michael P., H. S., and T. W., and Saczawa. 3,186,257.

Attwood Statistics Ltd.: *See*—
Jones, Kenneth. 3,187,307.

Attwood, William S., and H. E. Coverley, to General Motors Corp. Latches. 3,186,746, 6–1–65, Cl. 292—19.

Audio Matrix, Inc.: *See*—
Gelfand, Milton, and Scott. 3,186,932.

Austin Continental Industries, Inc.: *See*—
Berger, Albert E., Jr. 3,186,785.

Austin, Harold A., and A. M. Waldo, to The Brundage Co. Method for assembling a centrifugal blower wheel. 3,186,066, 6–1–65, Cl. 29—156.8.

Austin, Wayne M., and J. A. Dean, to Radio Corp. of America. Pentode oscillator deflection circuit with feed back. 3,187,219, 6–1–65, Cl. 315—27.

Automatic Voting Machine Corp.: *See*—
Detering, James M., Johnson, Molner, and Nutting. 3,186,638.

Automotive Products Co. Ltd.: *See*—
Chonings, Leslie C. 3,186,521.
Rodway, John. 3,186,518.

Ayers, Joseph G., to Flanders Filters, Inc. Filter box assembly. 3,186,149, 6–1–65, Cl. 55—387.

Azechi, Masayoshi. Valve device for aerosol vessel. 3,186,683, 6–1–65, Cl. 251—342.

B-D Laboratories, Inc.: *See*—
Carski, Theodore J. 3,186,592.

Baarson, Robert E., and D. T. Ohlsen, to Armour and Co. Coating compositions for particulate materials. 3,186,828, 6–1–65, Cl. 71—64.

Babcock & Wilcox Co., The: *See*—
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Urban, Adolf. 3,186,243.

Badgett, Charles O., to Industrial Nucleonics Corp. Concrete batch blending control system. 3,186,596, 6–1–65, Cl. 222—14.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Gaeth, Rudolf, Schmitt, and Breu. 3,186,888.

Baermann, Max. Eddy current heating device. 3,187,151, 6–1–65, Cl. 219—10.61.

Baggs, Albert J. Turbine device having a permanent magnet rotor. 3,187,191, 6–1–65, Cl. 290—52.

Bailey, Hubert C., and G. W. Godin, to The Distillers Co. Ltd. Pyrazolidone antioxidants for chloroprene. 3,187,069, 6–1–65, Cl. 260—652.5.

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Bailey, Robert E., and R. C. Leaverton. Inflatable splint. 3,186,405, 6–1–65, Cl. 128—87.

Baird, William, J. W. Batty, A. Parkinson, and K. A. Williams, to Imperial Chemical Industries Ltd. Process for preparing sulfated inner sulfonium salts. 3,187,006, 6–1–65, Cl. 260—327.

Baker Perkins Granbull Ltd.: *See*—
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Baker, Thomas R., and C. J. Pierce, Jr., to Bradford Speed Packaging and Development Corp. Drive mechanism for the plunger of a plunger-and-die type folding box machine. 3,186,244, 6–1–65, Cl. 74—103.

Baker, William H., to Big Drum, Inc. Process for maintaining the crispness in a pastry product filled with a frozen confection. 3,186,852, 6–1–65, Cl. 99—136.

Ball, Arthur F., to Essex Products, Inc. Heel-reinforcing insert. 3,186,112, 6–1–65, Cl. 36—34.

Ball, Edmund H., to Pirelli General Cable Works Ltd. Temperature indicating means for electric cables and different sections thereof. 3,187,080, 6–1–65, Cl. 174—11.

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Banks, William F.: *See*—
Weisner, Edward F., Churchill, and Banks. 3,186,913.

Banning, Thomas A., Jr., and E. L. Ranseen, deceased, by A. J. Ranseen, executrix; said A. J. Ranseen to said Banning. Magnetizable tape and the like, for signal carriers. 3,186,707, 6–1–65, Cl. 274—41.4.

Barber-Colman Co.: *See*—
Kennedy, Walter W. 3,186,329.

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Barlow, Paul D., to Monsanto Co. Thermoelectric sensing apparatus. 3,186,227, 6–1–65, Cl. 73—359.

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Barrett, William A. Jr., to Bell Telephone Laboratories, Inc. Magnetic analog-to-digital encoder. 3,187,324, 6–1–65, Cl. 340—347.

Barry, Leonard D. Automatic farming system. 3,186,493, 6–1–6., Cl. 172—26.

Barter, Francis B., and N. L. De Meo, to United Controls Co. Pressure-sensitive scriber. 3,187,332, 6–1–65, Cl. 346—139.

Barthauer, Gerald L., to Safety Development Corp. Foam method for atmosphere control. 3,186,943, 6–1–65, Cl. 252—3.

Bartz, Frank J., to Princeton Laboratories, Inc. Drainage bag. 3,186,409, 6–1–65, Cl. 128—275.

Bass, Andrew L., Jr.: *See*—
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Bassett, Raymond C., to International Telephone and Telegraph Corp. Perspective vectorcardioscope. 3,186,403, 6–1–65, Cl. 128—2.06.

Bastian and Allen Ltd.: *See*—
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Bauer, Benjamin B., and A. Kaiser, to Columbia Broadcasting System, Inc. Gain control apparatus providing constant gain interval. 3,187,268, 6–1–65, Cl. 330—123.

Baumgartner, Pierre, to Institut Francais du Petrole des Carburants et Lubrifiants. Process for improving physical and chemical properties of high polymers. 3,186,976, 6–1–65, Cl. 260—93.7.

Baumle, Rudolph K. F., to Illinois Tool Works Inc. Thread forming screw and method and apparatus for making the same. 3,186,464, 6–1–65, Cl. 151—22.

Beach, David E., to Eastman Kodak Co. Film transport and metering mechanism for cameras. 3,186,322, 6–1–65, Cl. 95—31.

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Beamer, Robert L. Cosmetic emulsion. 3,186,912, 6-1-65, Cl. 167—91.

Bean, Harley F., to Sperry Rand Corp. Punched card reading system. 3,187,166, 6-1-65, Cl. 235—61.11.

Bear, Ralston E. Overhead door operator. 3,186,038, 5-1-65, Cl. 20—16.

Bebo-Plastik G.m.b.H.: *See*—
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Beckert, Ernst, and W. Völkening, to Kugelfischer Georg Schafer & Co. Method of heating annular metallic bodies by electrical induction. 3,187,155, 6-1-65, Cl. 219—10.75.

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Buono, Frank S. 3,186,437.
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Beehler, Vernon D.: *See*—
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Begg, Donald, to Midland-Ross Corp. Temperature control system for jet convection strip heating furnace. 3,186,694, 6-1-65, Cl. 263—3.

Beha, Walter, and W. Bender, to Schoeller & Co., Elektrotechnische Fabrik. Cigarette dispenser. 3,186,590, 6-1-65, Cl. 221—147.

Behnke, George W., to Simplicity Engineering Co. Screen tensioning and clamping means. 3,186,547, 6-1-65, Cl. 209—403.

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Bell, William W., Jr., to Carrier Corp. Heat pump control. 3,186,477, 6-1-65, Cl. 165—2.

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Benger, Michael, to The British Petroleum Co. Ltd. Oxidation of sulphides in aqueous solutions. 3,186,942, 6-1-65, Cl. 210—63.

Bennett, John H., to Minnie Punch & Die Co., Inc. Punching die set. 3,186,284, 6-1-65, Cl. 83—623.

Bentley Engineering Co. Ltd., The: *See*—
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Bently, George K., and G. W. Mathis, to McCray Refrigerator Co., Inc. Refrigerated display unit. 3,186,185, 6-1-65, Cl. 62—255.

Benyl, Alexander, Jr.: *See*—
Miller, Guy W., and Benyl. 3,186,720.

Beredjick, Nicky, to Standard Oil Co. Method of making polystyrene-ethylene graft copolymer and product therefrom. 3,187,067, 6-1-65, Cl. 260—877.

Berek, Eberhard: *See*—
Linke, Johannes, and Berek. 3,186,303.

Berenbom, George: *See*—
Rieger, Martin M., and Berenbom. 3,186,911.

Berendt, Carol D.: *See*—
Berendt, Ralph S. and C. D., and Bernthal. 3,186,127.
Berendt, Ralph S. and C. D., and Bernthal. 3,186,714.

Berendt, Ralph S. and C. D., and M. Bernthal, to Caple, Inc. Bottle cap toys. 3,186,127, 6-1-65, Cl. 46—151.

Berendt, Ralph S. and C. D., and M. Bernthal, to Caple, Inc. Blank foldable to form a paper paddle. 3,186,714, 6-1-65, Cl. 273—96.

Beresin, Evelyn, to Curtiss-Wright Corp. Electronic calculator with dynamic recirculating storage register. 3,187,167, 6-1-65, Cl. 235—159.

Bergauer, Simon A. Test adapter with plug-in pins electrically connected to conductive elements axially spaced about its exterior periphery. 3,187,125, 6-1-65, Cl. 200—51.05.

Berger, Albert E., Jr., to Austin Continental Industries, Inc. Three member slide mechanism for cabinet drawers. 3,186,785, 6-1-65, Cl. 312—339.

Berger, Heinz, and H. Berghaus, to Agfa Aktiengesellschaft. Method of influencing the graduation of color-photographic printing material. 3,186,841, 6-1-65, Cl. 96—23.

Berghaus, Hans: *See*—
Berger, Heinz, and Berghaus. 3,186,841.

Bergstein, Leonard. Child's combination storage chest and easel. 3,186,784, 6-1-65, Cl. 312—316.

Berkley Machine Co.: *See*—
Lenk, James W. 3,186,316.
Winkler, Richard, and Dunnebier. 3,186,274.

Berlincourt, Ted G., and R. R. Hake, to North American Aviation, Inc. Means for insulating superconducting devices. 3,187,235, 6-1-65, Cl. 317—158.

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Bernthal, Murray: *See*—
Berendt, Ralph S. and C. D., and Bernthal. 3,186,127.
Berendt, Ralph S. and C. D., and Bernthal. 3,186,714.

Bertas, Charles S. Optical device for reading golf greens. 3,186,092, 6-1-65, Cl. 33—64.

Berther, Clau: *See*—
Giesen, Johann, and Berther. 3,187,037.

Bertram, Paul F., to Lee-Rowan Co. Combined coat and trousers hanger. 3,186,610, 6-1-65, Cl. 223—91.

Bethlehem Steel Corp.: *See*—
Costenbader, Earl A., and Durkin. 3,186,471.

Betteridge, Walter, and H. C. Angus, to The International Nickel Co., Inc. Process for securing a conductor to a semiconductor. 3,186,084, 6-1-65, Cl. 29—472.9.

Betts, John F., P. A. Michaels, and W. G. Wolber, to The Bendix Corp. Voltage controlled oscillator. 3,187,272, 6-1-65, Cl. 331—144.

Betts Machine Co.: *See*—
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Betts, Peter, to International Business Machines Corp. Matrix positioning device. 3,186,317, 6-1-65, Cl. 95—4.5.

Bexford Ltd.: *See*—
McPherson, Norman S., Clachan, Tatchell, and Abbott. 3,187,065.

Beyer, Conrad S., and A. L. Van Nest, to Western Electric Co., Inc. Forming and assembling apparatus. 3,186,061. 6-1-65, Cl. 29—33.

Beyerstedt, Ralph L., to Elgin Sweeper Co. Street sweeper. 3,186,015, 6-1-65, Cl. 15—84.

Biehl, Arthur T., to MB Associates. Hypervelocity gun. 3,186,304, 6-1-65, Cl. 89—7.

Big Drum, Inc.: *See*—
Baker, William H. 3,186,852.

Bills, Lloyd W., and D. I. Holberg, to Mark Chemical Co. Faucet. 3,186,433, 6-1-65, Cl. 137—609.

Binder, Wolfgang, 50% to G. Kersten. Inside micrometer. 3,186,003, 6-1-65, Cl. 33—164.

Bingham, George H., Jr., to Cambridge Rubber Co. Method of making a spiked, waterproof shoe. 3,187,073, 6-1-65, Cl. 264—253.

Biochemical Processes, Inc.: *See*—
Gerhardt, Philipp, and Gallup. 3,186,917.

Birfield Engineering Ltd.: *See*—
Cull, William. 3,186,189.

Birkenwald, S., Co.: *See*—
Story, Thomas. 3,186,668.

Birtcher Corp., The: *See*—
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Bjorklund, John O., J. A. D. Eldh, and G. V. Gustafsson. Igniter with separated layers of explosive. 3,186,341, 6-1-65, Cl. 102—98.5.

Black and Decker Mfg. Co., The: *See* —
Filander, Arthur H. 3,186,878.
Kohler, Samuel H., and Stanley. 3,186,454.
Wilhelm, David E., and Raum. 3,186,726.

Blair, Calvin B. Self loading and unloading vehicle. 3,186,567, 6-1-65, Cl. 214—510.

Blanding, Leonard C., and C. H. Will, Jr., to Lear Siegler, Inc. Caging system for gyroscopic devices. 3,186,241, 6-1-65, Cl. 74—5.12.

Blase, William W., to G.P.E. Controls, Inc. Pressure and temperature operated magnetic snap-action switch. 3,187,131, 6-1-65, Cl. 200—67.

Blood, Peter B., to Isora Illuminating Ceilings Ltd. Ceilings or walls. 3,186,129, 6-1-65, Cl. 50—267.

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Sleszk, Frank B., and Bluestone. 3,187,004.

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Bodet, Jean A. Methods of preparing sheets or strips containing doses of products and in particular suppositories. 3,186,138, 6-1-65, Cl. 53—37.

Bodley, Robert W.: *See*—
Ulm, Reign C., and Bodley. 3,186,578.

Boehringer Ingelheim G.m.b.H.: *See*—
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Seeger, Ernst, and Kottler. 3,186,997.

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Nalos, Ervin J. 3,187,192.

Bofors, Aktiebolaget: *See*—
Johanson, Nils O., and Qvarnström. 3,186,171.

Bogdanovich, Joseph M. Packing machines. 3,186,140, 6-1-65, Cl. 53—124.

Bogen, Oliver T.: *See*—
Sexe, Richard W., and Bogen. 3,186,231.

Bohnsack, John A., to The E. F. Hauserman Co. Door construction. 3,186,528, 6-1-65, Cl. 189—46.

Boice, Elvin G., to Reed Roller Bit Co. Gage maintaining arrangement for drill bit cutter. 3,186,500, 6-1-65, Cl. 175—374.

Boldrini, Elvio R., and J. J. Pruszkowski, to Interchemical Corp. Method of making a laminated material. 3,186,889, 6-1-65, Cl. 156—333.

Bolek, Ted J., to Universal Oil Products Co. Converter-mufler. 3,186,807, 6-1-65, Cl. 23—288.

Boles, Sol, and G. Stavis, to General Precision, Inc. Radar leakage effect elimination circuit. 3,187,330, 6-1-65, Cl. 343—8.

Bollmeier, Emil W., to Minnesota Mining and Mfg. Co. Cable connection. 3,187,081, 6-1-65, Cl. 174—21.

Bolt, Artie F. Safety device for vehicles. 3,186,017, 6-1-65, Cl. 15—87.

Bolton, John W., & Sons, Inc.: *See*—
Danforth, Donald W. 3,186,215.

Bond, Donald C., to The Pure Oil Co. Secondary recovery of oil. 3,186,482, 6-1-65, Cl. 166—9.

Bondy, Wilhelm. Method and apparatus for controlling the movement of a tool member of a tool machine. 3,186,270, 6-1-65, Cl. 82—14.

Bonin, George E., to Corning Glass Works. Edge grinding. 3,186,134, 6-1-65, Cl. 51—283.

Boothe, Willis A., to General Electric Co. Fluid amplifier. 3,186,422, 6-1-65, Cl. 137—81.5.

Boots Pure Drug Co. Ltd.: *See*—
Stevenson, Herbert A., Marshall, and Hams. 3,186,904.

Borchardt, Hans J., to E. I. du Pont de Nemours and Co. Rare earth tungstate and molybdate luminophors. 3,186,950, 6-1-65, Cl. 252—301.5.

Borden Co., The: *See*—
Salzberg, Harold K., and Simonds. 3,186,918.

Borgardt, Detta, and G. Müller, to Bebo-Plastik G.m.b.H., and Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius. Apparatus for continuously closing thermoplastic containers by heat sealing with thermoplastic covers. 3,186,142, 6-1-65, Cl. 53—373.

Borkmann, Frank F., and H. H. Kluesner, to American Can Co. Carton sealing machine. 3,186,143, 6-1-65, Cl. 53—379.

Borland, John H.: *See*—
Stone, Joseph J., and Borland. 3,186,839.

Born, Ellis H., R. E. Porter, and P. B. Wolfe, to American Brake Shoe Co. Frequency control system for A.C. generating apparatus. 3,187,250, 6-1-65, Cl. 322—32.

Botstiber, Dietrich W. Liquid filtering device with indicating means. 3,186,549, 6-1-65, Cl. 210—86.

Bourns, Inc.: *See*—
Rolwes, John E. 3,187,289.

Boutwell, Ernest D. Antifriction split-nut device. 3,186,250, 6-1-65, Cl. 74—459.

Bouwers, Albert, to Optische Industrie de Oude Delft, N.V. Electronic and photographic image intensification. 3,187,093, 6-1-65, Cl. 178—6.7.

Bovay, H. E., Jr.: *See*—
Green, Mavis J. 3,186,453.

Bowers, Albert, to Syntex Corp. 19-halo pregnane derivatives. 3,186,988, 6-1-65, Cl. 260—239.55.

Bowman, Joe, and R. H. Jordan, to Kingston Products Corp. Mechanical movement for a timer. 3,186,245, 6-1-65, Cl. 74—128.

Bowness, Colin: *See*—
Owen, John O., and Bowness. 3,187,274.

Box, Theodor. Plastic carrying case. 3,186,586, 6-1-65, Cl. 220—97.

Boyer, William M.; and C. T. Gannon, to Dow Corning Corp. Polymerization of silazanes by selected catalysts. 3,187,030, 6-1-65, Cl. 260—448.2.

Brackett, Robert, to General Electric Co. Hub for meter sockets and the like, said hub sized to internally accept one size of conduit and externally accept another size conduit and having an eccentric wall thickness. 3,187,085, 6-1-65, Cl. 174—65.

Brackett, Robert, to General Electric Co. Plug-in terminal and terminal block for meter socket. 3,187,296, 6-1-65, Cl. 339—217.

Bradford Speed Packaging and Development Corp.: *See*—
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Bradley, William A., to ACF Industries, Inc. Fuel pump. 3,186,351, 6-1-65, Cl. 103—150.

Bradley, William E.: *See*—
Wood, Frederick C., Bradley, and Peralta. 3,186,936.

Brady, Francis E., Jr., and P. L. Johnson; said Johnson assor. to said Brady, Jr. Method of and apparatus for forming tubular members. 3,186,203, 6-1-65, Cl. 72—56.

Brate, Donald C., to Chesapeake Instrument Corp. Pressure-compensated transducer. 3,187,300, 6-1-65, Cl. 340—10.

Bratton, Francis H., F. J. Buescher, A. H. Frye, and V. G. Soukup, to The Cincinnati Milling Machine Co. Organo-magnesium complexes having enhanced storage stability. 3,187,061, 6-1-65, Cl. 260—665.

Braun, Dieter, to Fortuna-Werke Spezialmaschinenfabrik A.G. Transporting arrangements for leather and similar materials. 3,186,195, 6-1-65, Cl. 69—10.

Braun, Gunther: *See*—
Holtschmidt, Hans, Degener, and Braun. 3,187,034.

Bray, Donald L.: *See*—
Radcliffe, Milton R., and Bray. 3,186,118.

Breed, Arie E., to Deere & Co. Tine and mounting for rakes and the like. 3,186,153, 6-1-65, Cl. 56—400.

Breen, Alvin L., and H. G. Lauterbach, to E. I. du Pont de Nemours and Co. Textile product of synthetic organic filaments having randomly varying twist along each filament. 3,186,155, 6-1-65, Cl. 57—140.

Breger, Joseph L. Contact lens container. 3,186,540, 6-1-65, Cl. 206—5.

Breu, Rudolf: *See*—
Gaeth, Rudolf, Schmitt, and Breu. 3,186,888.

Brezosky, Bernard J., to General Electric Co. Brush retaining means for electric motor. 3,187,214, 6-1-65, Cl. 310—239.

Bricout, Constant, to Les Applications Technique Industrielles L.A.T.I. Device to control the rate of supercharging internal combustion engines. 3,186,161, 6-1-65, Cl. 60—13.

Bricout, Constant, to Les Applications Technique Industrielles L.A.T.I. Feeding of air for combustion in supercharged internal combustion engines. 3,186,388, 6-1-65, Cl. 123—75.

Brinton, David B. Educational testing system. 3,186,109, 6-1-65, Cl. 35—9.

Briolini, Enzo, to Polysius G.m.b.H. Crusher. 3,186,651, 6-1-65, Cl. 241—186.

Brisse, William C., to Laconia Malleable Iron Co., Inc. Ground anchoring system. 3,186,523, 6-1-65, Cl. 189—2.

Bristol Siddeley Engines Ltd.: *See*—
Denning, Ralph M., Lewis, Gardiner, and Davis. 3,186,661.

Bristovish, Thomas G., to Edwards Co., Inc. Electric reset gravity drop adapted for use in annunciators. 3,187,230, 6-1-65, Cl. 317—137.

British Aluminium Co. Ltd., The: *See*—
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British Petroleum Co. Ltd., The: *See*—
Benger, Michael. 3,186,942.
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Brociner, Ronald E., and V. H. Miller, to English Clays Lovering Pochin & Co. Ltd. Method of drying an insoluble particulate material. 3,186,102, 6-1-65, Cl. 34—10.

Brooks, E. J., Co.: *See*—
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Broux, Joseph A., and J. F. F. Gittler, to International Standard Electric Corp. Time division multiplex resonant transfer system. 3,187,101, 6-1-65, Cl. 179—15.

Brown, Clarence K., to E. J. Burns. Mending press. 3,186,334, 6-1-65, Cl. 100—51.

Brown, David, A. V. Cowan, and J. H. Lutz, to Halcon International, Inc. Recovery of phthalic anhydride. 3,187,016, 6-1-65, Cl. 260—346.4.

Brown, Gordon F., and J. K. Mosher, to Schuls Tool and Mfg. Co. Plug-in valve. 3,186,426, 6-1-65, Cl. 137—315.

Brown, Harry W., Sr., to The National Acme Co. Fluid motor drive mechanism and control therefor. 3,186,012, 6-1-65, Cl. 10—139.

Brown, Robert A., and D. S. Fetterman, to Callery Chemical Co. Production of nitronium perchlorate. 3,186,790, 6-1-65, Cl. 23—14.

Brown, Thomas T., to Electrokinetics, Inc. Electrokinetic apparatus. 3,187,206, 6-1-65, Cl. 310—5.

Brownlie, Isaac A., and G. A. Wemyss, to Scottish Agricultural Industries Ltd. Manufacture of granular fertilisers. 3,186,827, 6-1-65, Cl. 71—34.

Brubaker, David W., and D. E. Danly, to Monsanto Co. Recovery of vanadium and copper values from chemical process streams by ion-exchange. 3,186,952, 6-1-65, Cl. 252—413.

Brundage, Benjamin W. External rotary seal for a swivel joint. 3,186,737, 6-1-65, Cl. 285—45.

Brundage Co., The: *See*—
Austin, Harold A., and Waldo. 3,186,068.

Brunner, Eugen, to Lonza Electrical and Chemical Works Ltd. Granulating apparatus for plastic sheet material. 3,186,277, 6-1-65, Cl. 83—355.

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Buckeye Cellulose Corp., The: *See*—
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Budney, Michael P., H. S. and T. W., and Sacsawa. 3,186,257.

Budney, Michael P., H. S. and T. W., and M. F. Sacsawa, to Atlantic Machine Tool Works, Inc. Jig borer. 3,186,257, 6-1-65, Cl. 74—665.

Budney, Thaddeus W.: *See*—
Budney, Michael P., H. S. and T. W., and Sacsawa. 3,186,257.

Budsyna, Joseph M., to Draper Corp. Take-up mechanism. 3,186,443, 6-1-65, Cl. 139—291.

Buescher, Francis J.: *See*—
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Buhrmaster, Bruce O., to All-Steel Equipment Inc. Method of making a chair base. 3,186,064, 6-1-65, Cl. 29—150.

Buhrmaster, Bruce O., to All-Steel Equipment Inc. Chair base construction. 3,186,669, 6-1-65, Cl. 248—158.

Bullard, Billy J., and R. A. Malott, to Shell Oil Co. Well drilling method. 3,186,499, 6-1-65, Cl. 175—5.

Bulman, E. O., Mfg. Co., Inc.: *See*—
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Bundy, Francis P., to General Electric Co. High density germanium. 3,186,835, 6-1-65, Cl. 75—134.

Bunker-Ramo Corp., The: *See*—
Corbell, Raymond C., and Mellott. 3,187,196.
Kameny, Stanley L. 3,187,321.

Bunnell, Neal E. Camping body loading and unloading device. 3,186,570, 6-1-65, Cl. 214—515.

Buono, Frank S., to Becton, Dickinson and Co. Closed system urinary drainage set. 3,186,410, 6-1-65, Cl. 128—275.

Buono, Frank S., to Becton, Dickinson and Co. Stopcock. 3,186,437, 6-1-65, Cl. 137—625.42.

Burchett, Ray L., to Jacques Kreisler Mfg. Corp. Regulatable lighter valve. 3,186,603, 6-1-65, Cl. 222—189.

Burgdorf, Kurt, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Nitrodiaminobenzenes and process for preparing them. 3,187,048, 6-1-65, Cl. 260—578.

Burgess, Warren C., Jr. Method of conveying titanium dioxide. 3,186,537, 6-1-65, Cl. 198—220.

Burk, Emmett H., Jr., and S. M. Kovach, to Sinclair Research, Inc. Alkylation of aromatics. 3,187,063, 6-1-65, Cl. 260—671.

Burns, Doris E. Music teaching device. 3,186,292, 6-1-65, Cl. 84—470.

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Burrell, Alfred A. Sheaves. 3,186,247, 6-1-65, Cl. 74—230.4.

Burrell, Alfred A. Belt and splice therefor. 3,186,248, 6-1-65, Cl. 74—233.

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Akst, Harold. 3,187,120.
Kupsky, George A. 3,187,320.
Starr, David A., Jr. 3,187,264.
Zweig, Gilbert, and Kershaw. 3,186,435.

Burt, Robert V.: *See*—
Spinanger, Arthur, and Burt. 3,186,566.
Spinanger, Arthur, and Burt. 3,186,568.

Burton, Georges, to Institut National de l'Industrie Charbonniere. Method of removing liquid from a niter cake used in a vacuum process. 3,186,103, 6-1-65, Cl. 34—15.

Buschers, Herbert H., to Martin-Marietta Corp. Missile release system. 3,186,301, 6-1-65, Cl. 89—1.7.

Butler, Marlow D., and O. C. Svehaug, to Tektronix, Inc. Electrical switch having means for interconnecting concentric switch shafts. 3,187,118, 6-1-65, Cl. 200—5.

Butterworth, Archibald J. Hydraulic rams. 3,186,308, 6-1-65, Cl. 91—169.

Bye, John E., and R. E. Gould, to White-Rodgers Co. Snap-acting electrical switch with contact wiping action. 3,187,130, 6-1-65, Cl. 200—67.

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Cabbage, John T., to Phillips Petroleum Co. Activation of a nickel-Kieselguhr catalysts. 3,186,956, 6-1-65, Cl. 252—469.

Caldo, Cornelio, and G. Leicht, to Montecatini Societa Generale per L'Industria Mineraria e Chimica. Method for purifying oledin polymers. 3,186,978, 6-1-65, Cl. 260—93.7.

California Research Corp.: *See*—
Dreher, John L. 3,186,944.
Duffek, Edward F., Jr. 3,186,837.
Sweeney, William A. 3,186,948.

Callahan, James L., J. J. Szabo, and B. Gertisser, to The Standard Oil Co. Bismuth-molybdenum oxidation catalyst promoted with a Ba-Si oxide mixture. 3,186,955, 6-1-65, Cl. 252—435.

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Cambridge Rubber Co.: *See*—
Bingham, George H., Jr. 3,187,073.

Cameron Iron Works, Inc.: *See*—
Allen, Herbert. 3,186,014.

Capsle, Inc.: *See*—
Berendt, Ralph S. and C. D., and Bernthal. 3,186,127.
Berendt, Ralph S. and C. D., and Bernthal. 3,186,714.

Caravella, Frank S. Signal system. 3,186,472, 6-1-65, Cl. 158—122.

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Cardin, Richard C., Jr.: *See*—
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Carlini, Richard E. Protective helmet. 3,186,004, 6-1-65, Cl. 2—3.

Carlson, Carl M. Air impulse counter. 3,186,311, 6-1-65, Cl. 91—443.

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Carrier Corp.: *See*—
Bell, William W., Jr. 3,186,477.
Emberry, Joseph E., and Leonard. 3,186,187.

Caraki, Theodore J., to B-D Laboratories, Inc. Single disc dispenser. 3,186,592, 6-1-65, Cl. 221—276.

Carson, Frank J., and H. A. Ledet, Jr., to Libbey-Owens-Ford Glass Co. Apparatus for bending glass sheets. 3,186,821, 6-1-65, Cl. 65—288.

Carter, Louis J. Label holder for loose-leaf binders. 3,186,114, 6-1-65, Cl. 40—10.

Cass, Lester E. Valve apparatus for tilting outboard motor. 3,186,375, 6-1-65, Cl. 115—41.

Case, Thomas, to International Telephone and Telegraph Corp. Pulse-count control circuit wherein the input is sampled and inhibited upon input exceeding predetermined frequency. 3,187,202, 6-1-65, Cl. 307—88.5.

Cassiers, Paul M.: *See*—
De Haes, Louis M., Cassiers, Rott, Wage, and Willems. 3,186,642.

Cato, Carl P.: *See*—
Englander, Robert A., and Cato. 3,186,587.

Cech, Robert E., to General Electric Co. Method for reducing copper oxide. 3,186,833, 6-1-65, Cl. 75—72.

Centrone, Eugene. Pastry dough spreading and rolling machine. 3,186,359, 6-1-65, Cl. 107—9.

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Champagnat, Alfred, to The British Petroleum Co. Ltd. Process for recovering pure yeasts. 3,186,922, 6-1-65, Cl. 195—82.

Chapman, James E., and E. S. Cox, to The Garrett Corp. Resilient mount assembly for shaft structure. 3,186,779, 6-1-65, Cl. 308—184.

Chapman, Marvin W. Coin operated dispenser having a message means. 3,186,588, 6-1-65, Cl. 221—3.

Chapman, Richard F., to International Telephone and Telegraph Corp. Function encoding system. 3,187,318, 6-1-65, Cl. 340—204.

Charles, Harold H., to Reynolds Metals Co. Hyperbolic paraboloidal construction. 3,186,128, 6-1-65, Cl. 50—52.

Charlet, Raoul C. E.: *See*—
Clin, Roland J. H., and Charlet. 3,187,108.

Chasek, Norman E., to Bell Telephone Laboratories, Inc. Zero axis crossing pulse modulator. 3,187,273, 6-1-65, Cl. 332—1.

Chatfield, Victor G. M., J. A. Desbaillets, and R. A. Newey, to Dominion Engineering Works Ltd. Method for construction of hydraulic turbine spiral cases. 3,186,685, 6-1-65, Cl. 253—26.

Chatman, William C.: *See*—
Wang, Hsioh W., Chen, and Chatman. 3,187,064.

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Cheney, George D., to Ex-Cell-O Corp. Positioning apparatus for magnetic heads in recording devices. 3,187,315, 6-1-65, Cl. 340—174.1.

(Cherniak)-Cherniaew, Vladimir, ½ to D. Ratner. Puncture sealing means. 3,186,468, 6-1-65, Cl. 152—347.

Chesapeake Instrument Corp.: *See*—
Brate, Donald C. 3,187,300.

Chew, Roy T. Close-up coupling for motor-driven unit. 3,186,188, 6-1-65, Cl. 64—4.

Chiang, Franklin C., to International Business Machines Corp. Character recognition systems. 3,187,305, 6-1-65, Cl. 340—146.3.

Chiapuzio, Anton, Jr., and H. A. Topp, Jr., to North American Aviation, Inc. Digital peak reader. 3,187,303, 6-1-65, Cl. 340—146.2.

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Freedman, Edward J. 3,186,116.

Chillson, Charles W., and W. F. Johnson, Jr., to Curtiss-Wright Corp. Mechanical pitch control system for aircraft propellers. 3,186,492, 6-1-65, Cl. 170—135.29.

Choulngs, Leslie C., to Automotive Products Co. Ltd. Automatic adjusting devices for brake actuating mechanisms. 3,186,521, 6-1-65, Cl. 188—196.

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Chu, Yaohan, and J. C. Mould, to Melpar, Inc. Packaging technique for microelectronic circuits. 3,187,227, 6-1-65, Cl. 317—101.

Chudner, Joseph. Attachment for sewing machines. 3,186,365, 6-1-65, Cl. 112—153.

Chur, Sung P., to Ampex Corp. Peak detecting and reshaping circuit. 3,187,199, 6-1-65, Cl. 307—88.5.

Churchill, John A., to Foster-Mallard Ltd. Sound reproducing machines. 3,186,718, 6-1-65, Cl. 274—10.

Churchill, John R.: *See*—
Weisner, Edward F., Churchill, and Banks. 3,186,913.

Churchill Machine Tool Co. Ltd., The: *See*—
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Chute, Richard, to Continental Motors Corp. Control for gas turbine fuel pump system. 3,186,167, 6-1-65, Cl. 60—39.28.

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Weber, Kurt. 3,187,021.

Cincinnati Milling Machine Co., The: *See*—
Bratton, Francis H., Buescher, Frye, and Soukup. 3,187,061.

Ciotek, Marek W., and K. Muller, to I-T-E Circuit Breaker Co. Antenna scan torque reducer. 3,187,333, 6-1-65, Cl. 343—766.

Circuit Controls Corp.: *See*—
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Dykstertiouse, Robert M. 3,187,119.
Dykstertiouse, Robert M. 3,187,148.

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McPherson, Norman S., Clachan, Tatchell, and Abbott. 3,187,065.

Claeys, Etienne, to Syncoglas N.V. Glass fiber reinforced plastic and method. 3,186,866, 6-1-65, Cl. 117—126.

Clark, Charles W.: *See*—
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Clark, Clayton H.: *See*—
Kleinschmidt, Edward F., C. P. and H. A. Anderson, Clark, and Sherrick. 3,187,096.

Clark, Edward B., and W. Hamilton, III, to Jones and Laughlin Steel Corp. Swaging tool. 3,186,205, 6-1-65, Cl. 72—125.

Clark Equipment Co.: *See*—
Killebrew, Clarence E. 3,186,309.

Clark, George M. Suction-type matrix drier with means for controlling drying time and suction. 3,186,108, 6-1-65, Cl. 34—053.

Clark, James E., to Bell Telephone Laboratories, Inc. Semiconductor device encapsulation and method. 3,187,240, 6-1-65, Cl. 317—234.

Clark, Robert C., to Engineering Associates Inc. Method and apparatus for filling and packing containers. 3,186,448, 6-1-65, Cl. 141—12.

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Claus, Kurt, and F. Pollmeier, to Schloemann Aktiengesellschaft. Apparatus for rolling sections from metal powder. 3,186,030, 6-1-65, Cl. 18—9.

Clauss, Harry W., to Rudd-Melikian, Inc. Packaging of material in pockets formed between tape strips. 3,186,139, 6-1-65, Cl. 53—124.

Clay, Wallace A. Three dimensional viewing apparatus. 3,187,339, 6-1-65, Cl. 352—61.

Clem, Arthur G., to American Colloid Co. Moisture impervious panel. 3,186,896, 6-1-65, Cl. 161—133.

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Cleveland, Charles W., to Sweetco, Inc. Sheet cleat. 3,186,372, 6-1-65, Cl. 114—199.

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Clin, Roland J. H., and R. C. E. Charlet. Subscribers' telephone equipment. 3,187,108, 6-1-65, Cl. 179—84.

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Clow, James B., & Sons, Inc.: *See*—
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Coate, William C. E., to The Lodge & Shipley Co. Tool changer for lathe tool holder. 3,186,266, 6-1-65, Cl. 82—1.

Coate, William C. E., to The Lodge & Shipley Co. Multiple tool lathes. 3,186,085, 6-1-65, Cl. 29—568.

Coats & Clark Inc.: *See*—
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Cobaugh, Robert F., to AMP Inc. Apparatus for making electrical connections. 3,186,072, 6-1-65, Cl. 29—203.

Cobaugh, Robert F., to AMP Inc. Apparatus for connecting wires to terminal posts. 3,186,076, 6-1-65, Cl. 29—203.

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Cobaugh, Robert F., and R. A. Long, to AMP Inc. Tool for making electrical connections. 3,186,073, 6-1-65, Cl. 29—203.

Cobb, Clifton A., and J. T. Williams, to Whirlpool Corp. Drier having flow rate-responsive control means. 3,186,106, 6-1-65, Cl. 34—45.

Coe, Paul L.: *See*—
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Bobrow, Abraham D. 3,186,052.

Colebrook, James N., to The Lodge & Shipley Co. Boring and turning lathes. 3,186,269, 6-1-65, Cl. 82—14.

Collier, Herman E., Jr., and G. S. Hammond, to E. I. du Pont de Nemours and Co. Process for purifying tetramethyl lead. 3,187,028, 6-1-65, Cl. 260—437.

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George, Philip F., and Collins. 3,186,643.

Colorado Fuel and Iron Corp., The: *See*—
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Colten, Robert B., G. E. Wenttaja, and A. F. Scarpelli, to General Motors Corp. Reproducing apparatus. 3,187,247, 6-1-65, Cl. 318—257.

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Commissariat a' l'Energie Atomique: *See*—
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Compagnie Financiere pour le Developpement Industriel C.O.F.I.D.I. Societe Anonyme: *See*—
Guignard, Boris. 3,186,600.

Compagnie Industrielle Francaise des Tubes Electroniques: *See*—
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Compton, Donald R., and J. B. Fitzgerald, to ACF Industries, Inc. Fuel pump. 3,186,849, 6-1-65, Cl. 103—150.

Cones, Ben. Room air circulating system. 3,186,328, 6-1-65, Cl. 98—38.

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Nye, Dudley D., Jr., Connaught, and Milgram. 3,186,105.

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Continental Oil Co.: *See*—
Adkins, Malcolm W. 3,186,820.

Control Data Corp.: *See*—
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Cook, Gerhard A., to Union Carbide Corp. Method for the production of ozone. 3,186,930, 6-1-65, Cl. 204—176.

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Coover, Harry W., Jr., and F. B. Joyner, to Eastman Kodak Co. Three-component alkyl aluminum catalysts for olefin polymerization. 3,186,977 6-1-65, Cl. 260—93.7

Corbell, Raymond C. and R. N. Mellott, to The Bunker-Rame Corp. Logical level sense amplifier. 3,187,196, 6-1-65, Cl. 307—88.5.

Corder, James B., and J. E. Herrman, to Robertshaw Controls Co. Multiple pressure switch construction. 3,187,136, 6-1-65, Cl. 200—83.

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McKnight, William H. 3,186,572.
Novack, Theodore. 3,186,817.
Novack, Theodore. 3,186,823.

Cosby, John W., W. R. Lausau, and M. R. Riek, to Union Carbide Corp. Carbonized joint between carbon electrodes. 3,187,089, 6-1-65, Cl. 174—94.

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Costenbader, Earl A., and P. G. Durkin, to Bethlehem Steel Corp. Fluid fuel injection apparatus for blast furnace. 3,186,471, 6-1-65, Cl. 158—76.

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Cowan, Alfred V.: *See*—
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Cox, Eugene F., W. H. Cook, and F. Hostettler, to Union Carbide Corp. Vicinal epoxide adducts of phenol-aromatic amineformaldehyde condensation products. 3,186,969, 6-1-65 Cl. 260—51.5.

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Cox, Robert E., and J. F. Sullivan, to Deere & Co. Reversible disk plow. 3,186,496, 6-1-65, Cl. 172—211.

Craig, Robert D., E. Wildig, and F. E. Bancroft, to Associated Electrical Industries Ltd. Variable slit systems for mass spectrometer ion sources. 3,187,179, 6-1-65, Cl. 250—41.9.

Craig, Robert D., J. L. Williams, and E. Wildig, to Associated Electrical Industries Ltd. Permanent magnet assembly. 3,187,237, 6-1-65, Cl. 317—156.

Crane, Lawrence S. to The Bendix Corp. Detector of phase differences between currents of different frequencies. 3,187,262, 6-1-65, Cl. 328—133.

Crawford, Jack F., to Coulter Electronics, Inc. Time interval indicator having a rotatable transparent plate concentric with a fixed calibrated plate. 3,187,319, 6-1-65, Cl. 340—309.1.

Crean, John E., to The Carborundum Co. Abrasive disc. 3,186,135, 6-1-65, Cl. 51—394.

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Crocker, H. S., Co., Inc.: *See*—
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Crone, Alfred F., to Acme Highway Products Corp. Keyway-forming member for use on highway forms. 3,186,676, 6-1-65, Cl. 249—9.

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Cuffey, James. Iris photographic photometer. 3,186,295, 6-1-65, Cl. 88—14.

Cull, William, to Birfield Engineering Ltd. Universal joints. 3,186,189, 6-1-65, Cl. 64—21.

Culver, Robert D., to Laboratory For Electronics, Inc. Readily disconnectible traffic detector switch and frame having two different size fastening holes. 3,187,138, 6-1-65, Cl. 200—86.

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Curtis, Harris L., to Polaroid Corp. Reduction of nitroolefins to amines. 3,187,046, 6-1-65, Cl. 260—570.6.

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Daman, Arthur C., to Denver Equipment Co. Apparatus for promoting liquid-gas contact. 3,186,700, 6–1–65, Cl. 266—15.
Dames, Hans-Joachim. Machine for peeling produce. 3,186,457, 6–1–65, Cl. 146—43.
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Danforth, Donald W., to John W. Bolton & Sons, Inc. Freeness testing apparatus and method. 3,186,215, 6–1–65, Cl. 73—63.
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Davidson, James P., and E. A. Glassey, to Exactel Instrument Co. Density control instrument. 3,186,423, 6–1–65, Cl. 137—91.
Davies, Phineas, to Imperial Chemical Industries Ltd. Oxidation of sulphur dioxide to sulphur trioxide and catalysts therefor. 3,186,794, 6–1–65, Cl. 23—175.
Davies, Reginald B. Apparatus for mixing and dispensing feed and like materials. 3,186,689, 6–1–65, Cl. 259—44.
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De Belder, Maurice H., to Gevaert Photo-Producten N.V. Developing device. 3,186,325, 6–1–65, Cl. 95—89.
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De Felice, Amedio P. Vise construction. 3,186,706, 6–1–65, Cl. 269—136.
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De Groote, Melvin, and K.-T. Shen, to Petrolite Corp. Oxyalkylated condensates. 3,186,951, 6–1–65, Cl. 252—331.
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Dench, Edward C., to Raytheon Co. Hydraulically tuned magnetron. 3,187,220, 6–1–65, Cl. 315—39.55.
De Neergaard, Leif E., deceased, by The Northern Trust Co., executor, to F. W. Olmstead, H. W. Trechsel, D. A. Gerard, and N. S. Parker, as trustees. Electromagnetic resolver. 3,187,314, 6–1–65, Cl. 340—174.1.
Denning, Ralph M., W. J. Lewis, T. E. G. Gardiner, and P. W. Davis, to Bristol Siddeley Engines Ltd. Aircraft propulsion power plants. 3,186,661, 6–1–65, Cl. 244—53.
Dennison, John J., to Maxson Electronics Corp. Overtravel actuating mechanism for a snap action electrical switch. 3,187,132, 6–1–65, Cl. 200—67.
Denny, James M., and S. A. Carlsson, to Manufacturers Aluminum Products of U.S.A. Building construction. 3,186,131, 6–1–65. Cl. 50—360.
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Detje, Henry. Easel-type picture frame. 3,186,117, 6–1–65, Cl. 40—152.1.
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De Vries, Eduard R., and W. H. Riley, Jr., to Prismo Safety Corp. Method of making reflex reflective sheeting. 3,187,068, 6–1–65, Cl. 264—1.
De Young, Frederick B., to Hercules Powder Co. Sizing paper under substantially neutral conditions with a preblend of rosin and cationic polyamideepichlorohydrin resin. 3,186,900, 6–1–65, Cl. 162—164.
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Slesak, Frank B., and Bluestone. 3,187,004.
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Dixon, Glenn R., to Olin Mathieson Chemical Corp. Barrel detent. 3,186,163. 6–1–65, Cl. 60—26.1.
Dixon, Ronald H. T., and A. J. Rickard, to The International Nickel Co., Inc. Duplex mill liners. 3,186,650, 6–1–65, Cl. 241—183.
Dobbins, Walter J., O F. Ecklund, and E. F. Polka, to American Can Co. Apparatus for thermally conditioning blow molding machine elements. 3,186,028, 6–1–65, Cl. 18—5.
Dodd, Paul D., and G. L Owens, to International Business Machines Corp. Computer memory. 3,187,309, 6–1–65, Cl. 340—173.
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Kleist, Herman W. 3,186,186.

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Dolin, Martin: *See*—
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Lang, Johann H. 3,187,190.
Waterhouse, Peter. 3,186,282.
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Donohue, Walter A., to The Electric Storage Battery Co. Method for producing porous sintered plate. 3,186,871, 6–1–65, Cl. 136—29.
Dopp, Homer R. Method of constructing roll shells. 3,186,063, 6–1–65, Cl. 29—148.4.
Dora, Ralph A.: *See*—
Solnick, Robert L., and Dora. 3,186,234.
Dorn, Ronald V., and R. E. Logan; 30% to said Logan and 70% to said Dorn. Sealing and stamping machine. 3,186,890, 6–1–65, Cl. 156—363.
Dornauf, Arnold, to Faudi Feinban G.m.b.H. Jet fuel filtering, emulsion breaking and drying device. 3,186,551, 6–1–65, Cl. 210—243.
Dotsko, Martin: *See*—
Hayes, Woodrow L., and Dotsko. 3,186,094.
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Joanson, Francis, Gurowitz, and Stiles. 3,186,989.
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Lang, John L., and Pavelich. 3,186,972.
Robbins, Frank E. 3,186,881.
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Dow Corning Corp: *See*—
Boyer, William M., and Gannon. 3,187,030.
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Plueddemann, Edwin P. 3,186,965.
Weyenberg, Donald R. 3,187,031.
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Bidzyna, Joseph M. 3,186,443.
Dreher, John L., to California Research Corp. Grease compositions. 3,186,944, 6–1–65, Cl. 252—18.
Dreiblatt, Milton L. Magnetic surface projectile game. 3,186,715, 6–1–65, Cl. 273—108.
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Wilson, John C. 3,186,223.
Druey, Jean, and P. Schmidt, to Ciba Corp. N-substituted pyrazoles and method of preparing same. 3,187,006, 6–1–65, Cl. 260—310.
Drummond, James E., R. R. Johnson, and B. Ancker-Johnson, to The Boeing Co. Solid state data storage and switching devices. 3,187,310, 6–1–65, Cl. 340—173
Dudognon, Jean-Pierre. High fidelity loudspeaker system. 3,186,509, 6–1–65, Cl. 181—31.
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Loughlin, Bernard D., and Duffy. 3,187,103.
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Duggan, Raymond J., and L. O. Winstrom, to Allied Chemical Corp. Process for conditioning reducible cyclic organic compounds. 3,187,050, 6–1–65, Cl. 260—582.
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Dyksterhouse, Robert M., to Circuit Controls Corp. Switch contact structure with embedded spring biasing means. 3,187,119, 6–1–65, Cl. 200—16.
Dyksterhouse, Robert M., to Circuit Controls Corp. Biased lever arm switch. 3,187,148, 6–1–65, Cl. 200—164.
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Stimson, Allen G. 3,186,320.
Eastman, Robert E., and J. R. Kolden, to Beckman Instruments, Inc. One-shot latch. 3,187,201, 6–1–65, Cl. 307—88.5.
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Previte, Dominick L. 3,186,580.
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Schneiter, Ali. 3,186,159.
Ebel, Herbert, to Siemens & Halske Aktiengesellschaft. Circuit for eliminating attenuation differences in communication lines. 3,187,104, 6–1–65, Cl. 179—16.
Eberlein, Roberta R. Spray nozzle for pressurised containers. 3,186,645, 6–1–65. Cl. 239—587.
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Edkins, Denis P., to General Electric Co. Turofan engine speed synchronising arrangement. 3,186,165, 6–1–65, Cl. 60—35.6.
Edminson, John A., and G. H. Martin, to C. A. Parsons & Co., Ltd. Steam turbine plants. 3,186,176, 6–1–65, Cl. 60—95.
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Bristovish, Thomas G. 3,187,230.
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Tsunoda, Yoshio, Seko, Ehara, Ogawa, and Yamakoshi. 3,186,476.
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Ekiss, John A., to Philco Corp. Transistor controlled tunnel diode switching network. 3,187,197, 6–1–65, Cl. 307—88.5.
Elenbaas, George H., to Durakool, Inc. Time delay actuator for mercury relay. 3,187,142, 6–1–65, Cl. 200—97.
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Bjorklund, John O., Eldh, and Gustafsson. 3,186,841.
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Forslund, Ake E. 3,186,022.
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Beyerstedt, Ralph L. 3,186,015.
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Thomas, Richard B., and Elliott. 3,186,276.
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Ellis, Ray G., and J. N. Sturdy, to National Rejectors, Inc. Money-handling devices. 3,186,532, 6–1–65, Cl. 194—10.
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Eltra Corp.: *See*—
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Embury, Joseph E., and L. H. Leonard, Jr., to Carrier Corp. Hermetic pump for use in refrigeration systems. 3,186,187, 6–1–65. Cl. 62—483.
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Emmerich, Claude L., to United Aircraft Corp. Magnetic torque and bearing force regulator. 3,186,239, 6-1-65, Cl. 74—5.

Empson, Kenneth G. Draft gear. 3,186,563, 6-1-65, Cl. 213—43.

Engels, Walter, to Southern Machinery Co. Tension bar bearing for looms. 3,186,441, 6-1-65, Cl. 139—114.

Engineering Associates Inc.: *See*—
Clark, Robert C. 3,186,446.

Englander, Robert A., and C. P. Cato, to Dacam Corp. Article carrier. 3,186,587, 6-1-65, Cl. 220—115.

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Brociner, Ronald E., and Miller. 3,186,102.

Eppes, William E.: *See*—
West, John A., and Eppes. 3,186,589.

Epstein, Isidore, to G. W. Davis Corp. Rotary mower. 3,186,-152, 6-1-65, Cl. 56—202.

Equitable Paper Bag Co. Inc.: *See*—
Davis, John S. 3,186,378.

Erban, Richard T. Method and apparatus for microscopic inspection using colored illumination. 3,186,296, 6-1-65, Cl. 88—24.

Erickson, Edna L. Purses and their method of fabrication. 3,186,461, 6-1-65, Cl. 150—26.

Essex Products, Inc.: *See*—
Ball, Arthur F. 3,186,112.

Estebar, Inc.: *See*—
Estephanian, Estephan D. 3,186,413.

Estephanian, Estephan D., to Estebar, Inc. Method of and means for holding front panels for women's knitted swimsuits to be trimmed. 3,186,413, 6-1-65, Cl. 128—516.

Etchison, Gibson O., and C. E. Poe, to West Point Mfg. Co. Process of manufacturing fusible interlining. 3,186,886, 6-1-65, Cl. 156—253.

Ethyl Corp.: *See*—
Knapp, Gordon G. 3,186,993.
Pinkerton, Richard C. 3,187,014.

Evans, David D. and D. E., and P. J. Palmer, to Parke, Davis & Co. 3-(ω-haloalkoxy)-estra-1,3,5(10)-trien-17-one compounds. 3,187,024, 6-1-65, Cl. 260—397.4.

Evans, David E.: *See*—
Evans, David D. and D. E., and Palmer. 3,187,024.

Evenblij, Johan C. J., to Dutch Co. "Polypress N.V." Bag valve. 3,186,627, 6-1-65, Cl. 229—62.5.

Ewing, Bland. Continuous gas concentration cell energy conversion. 3,186,872, 6-1-65, Cl. 136—86.

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Jonsson, Bror E. 3,186,598.

Exactel Instrument Co.: *See*—
Davidson, James P., and Glassey. 3,186,423.

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Cheney, George D. 3,187,815.
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Smith, Joseph E., Jr. 3,187,112.
Smith, Joseph E., Jr. 3,187,313.
Smith, Joseph E., Jr. 3,187,317.

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Faber, Raymond M.: *See*—
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Schmitter, Walter P. 3,187,209.

Falottico, Vincent L. Selectively operated stacked columns for controlling amount of discharge from flush tank. 3,186,007, 6-1-65, Cl. 4—37.

Fansteel Metallurgical Corp.: *See*—
Maki, William M. 3,186,133.

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Glee, Helmut, and Happe. 3,186,787.

Farrar, Walter, and J. L. Leonard, to Peebles, Bruce, & Co., Ltd. Foetal heart-beat detector. 3,187,093, 6-1-65, Cl. 179—1.

Farrar, Willie W., and W. R. Lewis, to Totem Oil Tools Inc. Retrievable plugs and packers for deep wells. 3,186,489, 6-1-65, Cl. 166—138.

Faudi Feinbau G.m.b.H.: *See*—
Dornauf, Arnold. 3,186,551.

Favret, Maxime A., and J. Egger, to The United States Time Corp. Balance wheel assembly for an electric timepiece. 3,186,157, 6-1-65, Cl. 58—28.

Fay, John A., to Waste King Corp. Dishwasher heating system with dual electrical heating means. 3,186,417, 6-1-65, Cl. 134—57.

Fay III, Louis E., to Ex-Cell-O Corp. Magnetic recording by means of a thermal transducer. 3,187,335, 6-1-65, Cl. 346—74.

Federal Paper Board Co., Inc.: *See*—
Arneson, Edwin L. 3,186,624.

Feldman, Stanley I., to Stelma, Inc. Telegraph carrier analyzer. 3,187,097, 6-1-65, Cl. 178—69.

Fenwick Products, Inc.: *See*—
Clock, Philip T., White, and Green. 3,186,122.

Ferrara, Rudolph A., to General Motors Corp. Headrest. 3,186,763, 6-1-65, Cl. 297—410.

Ferrari, Andrés, to Technicon Instruments Corp. Sample supply means for analysis apparatus. 3,186,235, 6-1-65, Cl. 73—423.

Fertig, Joseph, M. Skoultchi, and A. I. Goldberg, to National Starch and Chemical Corp. Polymeric compositions resistant to ultra-violet light from acryliyloxymethyl benzoates. 3,186,968, 6-1-65, Cl. 260—47.

Fetterman, David S.: *See*—
Brown, Robert A., and Fetterman. 3,186,790.

Fiddler, Theodore E. Fastener. 3,186,049, 6-1-65, Cl. 24—73.

Fields, Marvin C., and R. D. Rice, to United States Steel Corp. Method of recovering ammonia. 3,186,795, 6-1-65, Cl. 23—196.

Filander, Arthur H., to The Black and Decker Mfg. Co. Quick release latching means for separable cases adapted to be telescoped within a housing. 3,186,878, 6-1-65, Cl. 136—173.

File, William G. Stock tank water heater. 3,186,402, 6-1-65, Cl. 126—360.

Fillion, Stanley H., to Waugh Equipment Co. Railway cars for transporting cylindrical objects. 3,186,357, 6-1-65, Cl. 105—367.

Filters, Inc.: *See*—
Cutler, Mac C. 3,186,552.

Finch, Gerald H., to Thot Research, Inc. Stringed instrument of the viol type. 3,186,288, 6-1-65, Cl. 84—275.

Finn, John J., ⅓ to Glenn Electric Heater Corp. Immersion heater control. 3,187,161, 6-1-65, Cl. 219—331.

Fischer, Emil, to Schnellpressenfabrik Frankenthal Albert & Cie Aktiengesellschaft. Stapling apparatus. 3,186,617, 6-1-65, Cl. 227—81.

Fischer, Lee J., to General Electric Co. Helicopter drive system utilising tip mounted fans. 3,186,491, 6-1-65, Cl. 170—135.4.

Fisher, Charles E., to Norris-Thermador Corp. Catalytic muffler with end ports for emptying and filling. 3,186,804, 6-1-65, Cl. 23—288.

Fitch, Frederick T., and J. G. Smith, to W. R. Grace & Co. Process for preparing soils. 3,186,949, 6-1-65, Cl. 252—301.1.

Fitt, Peter W., and F. S. Moores, to Normalair Ltd. Breathing apparatus. 3,186,406, 6-1-65, Cl. 128—186.

Fitzgerald, John B., to ACF Industries, Inc. Fuel pump. 3,186,350, 6-1-65, Cl. 103—150.

Fitzgerald, John B.: *See*—
Compton, Donald R., and Fitzgerald. 3,186,349.

Flanders Filters, Inc.: *See*—
Ayers, Joseph G. 3,186,149.

Fleck, Peter J. Center mark transferring device. 3,186,098, 6-1-65, Cl. 33—189.

Flenner, Albert L., to E. I. du Pont de Nemours and Co. Defoliating and desiccating composition and method. 3,186,-824, 6-1-65, Cl. 71—2.3.

Fletcher, William N., to Ternes Steel Co. Method of roll-forming metal product. 3,186,059, 6-1-65, Cl. 29—11.

Flintab, Rune, to Allmänna Svenska Elektriska Aktiebolaget. Device for measuring forces in two or several directions. 3,186,220, 6-1-65, Cl. 73—141.

Flood, John F., and F. L. Rosen, to North American Aviation, Inc. Automatic scaler for analog-to-digital converter. 3,187,323, 6-1-65, Cl. 340—347.

Florko, Nicholas, Jr. Level with magnetic holding means. 3,186,099, 6-1-65, Cl. 33—207.

Flynn & Emrich Co.: *See*—
Turner, Charles T., and Ward. 3,186,339.

Foley, Francis D., Jr., to Hughes Aircraft Co. Process for plating ceramic bodies. 3,186,863, 6-1-65, Cl. 117—45.

Foley, William E., and H. T. Wilton, to American Optical Co. Illuminator cooling system. 3,187,173, 6-1-65, Cl. 240—47.

Foltz, Robert E., to Lawrence Bros., Inc. Magnetic catch. 3,186,748, 6-1-65, Cl. 292—251.5.

Forbes, John M. Land packer. 3,186,497, 6-1-65, Cl. 172—548.

Forrest, Lew, to Litton Systems, Inc. Piezoelectric transducer. 3,186,237, 6-1-65, Cl. 73—517.

Forslund, Ake E., to Electrolux, Aktiebolaget. Surface treating apparatus. 3,186,022, 6-1-65, Cl. 16—345.

Forslund, Herbert B., and R. G. Hirst, to General Electric Co. Process for coating ferrous material and material coated by such process. 3,186,867, 6-1-65, Cl. 117—127.

Forsstrom, Bo G., to LKB-Produkter Aktiebolag. Test tube rack. 3,186,656, 6-1-65, Cl. 211—74.

Forth, Murray W., W. M. Roll, and G. W. Jenkins, to Deere & Co. Wafering apparatus. 3,186,360, 6-1-65, Cl. 107—14.

Fortuna-Werke Spezialmaschinenfabrik A.G.: *See*—
Braun, Dieter. 3,186,195.

Fossard, Thomas E., to A.J. Industries, Inc. Vehicle suspensions. 3,186,731, 6-1-65, Cl. 280—104.5.

Foster, Alan, and R. O. Parmenter, to International Computers and Tabulators Ltd. Data recording apparatus. 3,186,634, 6-1-65, Cl. 234—112.

Foster, George B., to Raydata Corp. System for monitoring and indicating the eccentricity of circular objects in both a static and dynamic condition. 3,187,256, 6-1-65, Cl. 324—61.

Foster, James M., Jr. Device for use in arc welding. 3,187,-158, 6-1-65, Cl. 219—130.

Foster, Kenneth W., to Shell Oil Co. Method and apparatus for determining the orientation or directional features of a well. 3,186,481, 6-1-65, Cl. 166—4.

Foster, Stephen F., to Hercules Powder Co. Explosive container with yieldable seal. 3,186,340, 6-1-65, Cl. 102—24.

Foster Wheeler Corp.: *See*—
Sidener, Roger D. 3,186,526.
Wang, Hsioh W., Chen, and Chatman. 3,187,064.

Foster-Mallard Ltd.: *See*—
Churchill, John A. 3,186,718.

France, Joseph, to T.M.M. (Research) Ltd. Heating arrangements. 3,187,150, 6-1-65, Cl. 219—10.49.

Franck, Kurt, and D. E. Welty, to Holophane Co., Inc. Luminaire. 3,187,176, 6-1-65, Cl. 240—106.

Frank, Heinrich H.: *See*—
McCloskey, Richard G., and Frank. 3,186,704.

Frankel, Adolf, and J. A. Lorett, to Richardson, Westgarth & Co. Ltd. Flexible joint for duct system. 3,186,742, 6-1-65, Cl. 285—114.

Frankel, Stanley P., to General Electric Co. Information storage system for microwave computer. 3,187,308, 6-1-65, Cl. 340—173.

Frantzen, John J., to Buckbee-Mears Co. Etching polyester film. 3,186,883, 6-1-65, Cl. 156—7.

Fratantuno, Joseph, to Laboratory for Electronics, Inc. Radioactive sample processing apparatus including a closed loop horizontal conveyor system and an elevator positioned beneath the loop for elevating the samples to a detector. 3,187,182, 6-1-65, Cl. 250—106.

Fraysse, Georges, G. and P. Mirat, and Y. Pichoff, to Commissariat a l'Energie Atomique. Amplitude analysing spectrometer. 3,187,217, 6-1-65, Cl. 315—12.

Frazier, Marion R. Cartoning machine. 3,186,314, 6-1-65, Cl. 93—53.

Frederick, Joseph. Straw chopping apparatus. 3,186,460, 6-1-65, Cl. 146—117.

Freedman, Edward J., to Chicago Show Printing Co. Display device. 3,186,116, 6-1-65, Cl. 40—106.3.

Freeman, Donald C., Jr., Union Carbide Corp. Solid state battery. 3,186,875, 6-1-65, Cl. 136—153.

Freeman, Donald C., Jr., and D. N. Stamires, to Union Carbide Corp. Moisture sensing method and apparatus. 3,186,-225, 6-1-65, Cl. 73—336.5.

Freeman, George W. Line-end tackle for fishing. 3,186,123, 6-1-65, Cl. 43—42.1.

Fre-Mar Industries: *See*—
Marra, Ivan L. 3,187,070.

French, Russell B.: *See*—
Schneider, Joseph R., and French. 3,187,327.

Freyhold, Helmut V., and A. Spange, to Philadelphia Quartz Co. Method for decreasing adhesion of silicate adhesives to heated metal surfaces. 3,186,857, 6-1-65, Cl. 106—62.

Friedman, Jack. Coated film for laundry package. 3,186,669, 6-1-65, Cl. 117—138.8.

Friedman, Robert G., to The National Machinery Co. Method of cold forming an elongated hollow article. 3,186,209, 6-1-65, Cl. 72—334.

Frump, John A., and A. P. Miller, to Commercial Solvents Corp. Method for changing the crystal habit of monosodium glutamate. 3,187,039, 6-1-65, Cl. 260—534.

Frye, Alfred H.: *See*—
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Fuka, Vaclav. Fuel injection system. 3,186,395, 6-1-65, Cl. 123—139.

Fukuda, Seigo: *See*—
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Fuller, John W. Mechanism for rocking cradles, chairs and the like. 3,186,006, 6-1-65, Cl. 5—109.

G.P.E. Controls, Inc.: *See*—
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Gaeth, Rudolf, B. Schmitt, and R. Breu, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Heat insulating metal sheets. 3,186,888, 6-1-65, Cl. 156—326.

Gale, Harold G. Apparatus and method for forming a decorative fringe. 3,186,442, 6-1-65, Cl. 139—119.

Galic, Cvjetko. Method of reducing the carbon monoxide content in exhaust gases of Otto carburetor engines. 3,186,-390, 6-1-65, Cl. 123—119.

Galis, Leon A.: *See*—
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Gardner, Stephen, and J. D. Sutton, to General Precision Inc. Trigger circuit for a high speed flip-flop. 3,187,200, 6-1-65, Cl. 307—88.5.

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Garner, Grady E., to Slane Hosiery Mills, Inc. Pattern mechanism for circular knitting machines. 3,186,191, 6-1-65, Cl. 66—50.

Garrett Corp., The: *See*—
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Kober, William. 3,187,283.
Silver, Alexander. 3,186,642.

Garten, Harry G., to Union Carbide Corp. Protective relay circuitry for hoist motor controls. 3,187,246, 6-1-65, Cl. 318—247.

Gaulin, Joseph G. Inking mechanism. 3,186,335, 6-1-65, Cl. 101—157.

Gauthier, Robert, and F. Dumas, to Societe Industrielle Generale de Mecanique Appliquee S.I.G.M.A. Variable ratio hydraulic transmissions. 3,186,170, 6-1-65, Cl. 60—53.

Geer, Ronald L., and L. G. Otteman, to Shell Oil Co. Underwater well guide system. 3,186,487, 6-1-65, Cl. 166—.6.5.

Gehman, Roland P., E. G. Martin, and E. H. Smith, to MGS, Inc. Street sweeping machine. 3,186,016, 6-1-65, Cl. 15—85.

Gehrie, Charles S., to Presto Lock Co., Inc. Luggage lock. 3,186,197, 6-1-65, Cl. 70—71.

Geier, Ulf, to Schloemann Aktiengesellschaft. Rolling mills for producing strip from granular and pulverulent material. 3,186,031, 6-1-65, Cl. 18—9.

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Gelfand, Milton, and W. Scott, to Audio Matrix, Inc. Apparatus for forming phonograph record masters, mothers, and stampers. 3,186,932, 6-1-65, Cl. 204—216.

Gelling, Homer R., R. M. Goodwin, P. R. Malone, and W. E. Thompson, to General Motors Corp. Apparatus for joining thermoplastic elements. 3,186,891, 6-1-65, Cl. 156—502.

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Genth, Hermann, and O. Paull, to Farbenfabriken Bayer Aktiengesellschaft. Processes for disinfecting non-perishable articles. 3,186,906, 6-1-65, Cl. 167—33.6.

Gentile, Robert, to Sea-All, Inc. Underwater face mask. 3,186,005, 6-1-65, Cl. 2—9.

Gentoso, Andrew L., to Faberge, Inc. Method of making a brush. 3,186,765, 6-1-65, Cl. 300—21.

George, Philip F., and L. M. Collins; said collins assor. to M. J. Manetti and F. P. Manetti. Spray gun having disk, diaphragm and plug construction. 3,186,643, 6-1-65, Cl. 239—318.

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Gerrard, John S., to Simon-Carves Ltd. Apparatus for the production of ammonium sulphate. 3,186,802, 6-1-65, Cl. 23—260.

Gerstel, Harry M., and J. Langer. Lighting fixture. 3,187,174, 6-1-65, Cl. 240—78.

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De Belder, Maurice H. 3,186,325.
De Haes, Louis M., Cassiers, Rott, Wage, and Willems. 3,186,842.
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Willems, Josef F., and Vrancken. 3,186,848.

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Giesen, Johann, and C. Berther, to Inventa A.G. fuer Forschung und Patentverwertung. Process for the manufacture of p-hydroxybensoic acid. 3,187,037, 6-1-65, Cl. 260—521.

Gijsenberg, Joost. Seed bed harrow. 3,186,495, 6-1-65, Cl. 172—102.

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Gilbert, Margaret A. Hand traveling case. 3,186,529, 6-1-65, Cl. 190—51.

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Giles, Aquila C., to Trans-Lux Corp. Data-reproducing apparatus for simultaneous display of separate and moving light images defining indicia derived from separate sources. 3,187,094, 6-1-65, Cl. 178—6.8.

Gillberg, Johannes. Method and apparatus for the manufacture of reinforcing bars. 3,186,206, 6-1-65, Cl. 72—194.

Gillis, Marvin B., and J. G. Gilchrist, Jr., to International Minerals & Chemicals Corp. Clarification of acidic phosphatic solutions. 3,186,793, 6-1-65, Cl. 23—165.

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Giurlando, Angelo C., and H. H. Yousoufian, to Worthington Corp. Induction unit for air conditioning systems. 3,186,327, 6-1-65, Cl. 98—38.

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Glassman, Joel, G. F. Jonas, A. L. Bass, Jr., and S. H. Pate, to Genesco, Inc. Method of making shoe soles. 3,186,013, 6-1-65, Cl. 12—146.

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Goetzewerke Friedrich Goetze Aktiengesellschaft: *See*—
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Goodman, William. Control for vapor flow valve. 3,186,641, 6-1-65, Cl. 236—40.

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Gelling, Homer R., Goodwin, Malone, and Thompson. 3,186,891.

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Gorski, Daniel A., to The Harshaw Chemical Co. Photovoltaic cell. 3,186,874, 6-1-65, Cl. 136—89.

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Grabinski, Joseph, to Sightmaster Corp. Circuit breaker with auxiliary contact means. 3,187,145, 6-1-65, Cl. 200—113.

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Graff, William P., Jr., and R. W. Gundlach, to Xerox Corp. and Bell & Howell Co. Xerographic plate cleaning method utilizing the relative movement of a cleaning web. 3,186,838, 6-1-65, Cl. 96—1.

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Graue, Georg, O. Pfrengle, and T. Rossel, to Alpha Molykote Corp. High temperature lubricants. 3,186,945, 6-1-65, Cl. 252—25.

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Gravos, Leif H. and A. F. 3,186,575.

Gravos, Leif H. and A. F. Pastry container and carrier. 3,186,575, 6-1-65, Cl. 220—20.

Gray, William C. Building block sealing construction. 3,186,130, 6-1-65, Cl. 50—370.

Greco, Frank, to Singer Co. of Canada Ltd. Thread cut-off device. 3,186,367, 6-1-65, Cl. 112—252.

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Green, Milton, to Polaroid Corp. Reductive amination of ketones. 3,187,047, 6-1-65, Cl. 260—570.8.

Green, Milton, and H. G. Rogers, to Polaroid Corp. Mono azo dyes. 3,186,982, 6-1-65, Cl. 260—202.

Green, Milton, and W. E. Solodar, to Polaroid Corp. Process for the preparation of amino-methyl-phenols. 3,187,049, 6-1-65, Cl. 260—580.

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Grella, Michael L. Bird feeder. 3,186,379, 6-1-65, Cl. 119—51.

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Grimes, Milton J., to Radio Corp. of America. Container for an electrical component. 3,187,083, 6-1-65, Cl. 174—50.5.

Grimsley, Arvid K., to American Can Co. Container dispensing device. 3,186,608, 6-1-65, Cl. 222—554.

Groll, Herbert P. A. Fractionation of oils by selective extraction. 3,186,938, 6-1-65 Cl. 208—316.

Gronegress, Hans W., to Paul Ferd. Peddinghaus, Firma. Apparatus for the hardening and tempering of workpieces. 3,186,699, 6-1-65, Cl. 266—4.

Gross, Henry and S. Cash registers and like adding machines. 3,186,637, 6-1-65, Cl. 235—6.

Gross, Samuel: *See*—
Gross, Henry and S. 3,186,637.

Grossmann, Ugo C., and J. J. Moon, to Phillips Petroleum Co. Low-temperature, low-pressure separation of gases. 3,186 182. 6-1-65, Cl. 62—26.

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Grote, Walter F., to The Grote Mfg. Co. Radiator cap remover. 3,186,263, 6-1-65, Cl. 81—3.1.

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Svensson, Soldan A. 3,186,621.

Gullick Ltd.: *See*—
Allen, Archelaius D. 3,186,178.

Gundlach, Robert W.: *See*—
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Gupner, Otto, to Metallgesellschaft Aktiengesellschaft. Apparatus for the electric separation of emulsions. 3,186,933, 6-1-65, Cl. 204—302.

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Haag, Franz, to Junkers & Co. G.m.b.H. Multiple pulse jet burner with cooling means. 3,186,881, 6-1-65, Cl. 122—24.

Haas, Howard C., to Polaroid Corp. Photographic developer containing hindered phenols. 3,186,843, 6-1-65, Cl. 96—66.

Haas, Kenneth C., and M. Spinrad, to American Safety Table Co., Inc. Needle positioning control mechanism. 3,186,366, 6-1-65, Cl. 112—219.

Haase, Bernd W.: *See*—
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Hach, Clifford C. 3,186,799.

Hach, Clifford C., to Hach Chemical Co. Apparatus for automatic analysing. 3,186,799, 6-1-65, Cl. 23—253.

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Hott, Ion V. K., and Haddix. 3,186,312.

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Hadley, Wilfred N., to Hadley Co., Inc. Thread trimming method. 3,186,057, 6-1-65, Cl. 26—7.

Haedike, Edward J., and S. W. Zavodny, to Mid-Continent Metal Products Co. Gas-fired heater. 3,186,697, 6-1-65, Cl. 263—19.

Hafner, Theodore. Heating means for surface wave conductors. 3,187,279, 6-1-65, Cl. 333—95.

Hake, Richard R.: *See*—
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Halcon International, Inc.: *See*—
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Colton, John W. 3,186,984.

Haldex Aktiebolag: *See*—
Wallqvist, Sven H. 3,186,514.

Hall, Frank, and I. D. Rattee, to Imperial Chemical Industries Ltd. Reactive dyestuffs having a dithlocarbamyl-substituted triazine ring substituent. 3,186,979, 6-1-65, Cl. 260—153.

Hall, Reginald H.: *See*—
Armstrong, Godfrey P., Hall, Quin, and Turck. 3,187,055.

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Haltof, Henry, to United States Steel Corp. Coal breaker. 3,186,649, 6-1-65, Cl. 241—81.

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Walker, Hamilton, Rotary Engines Ltd.: *See*—
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Hamilton Watch Co.: *See*—
James, John O. 3,186,156.

Hamilton, William, III: *See*—
Clark, Edward B., and Hamilton. 3,186,205.

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Hamm, Theodore F., deceased (by M. L. Hamm, executrix), and A. S. Lord, to Tool Research and Engineering Corp. Deadlocking latch for house trailers. 3,186,747, 6-1-65, Cl. 292—169.

Hammer, Josef. Speed control switching mechanism. 3,187,128, 6-1-65, Cl. 200—61.45.

Hammond, George S.: *See*—
Collier, Herman E., Jr., and Hammond. 3,187,028.

Hampden Specialty Products Corp.: *See*—
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Hampton, William C., to American Instrument Co., Inc. Pyrolyzer assembly. 3,186,801, 6-1-65, Cl. 23—253.

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Stevenson, Herbert A., Marshall, and Hams. 3,186,904.

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Peach, Richard G. 3,186,806.

Hancock, Albert S., Jr. Two-stage bullet. 3,186,342, 6-1-65, Cl. 102—93.

Hanold, Paul A., to American Machine & Foundry Co. Armature mounting means for electromagnetic relays. 3,187,141, 6-1-65, Cl. 200—87.

Hanrahan, William J., to American Envelope Co. Multiple copy business report assembly. 3,186,735, 6-1-65, Cl. 282—26.

Hanson, Bernard S., to Wilkinson Sword Ltd. Cutters for grass and other vegetable matter. 3,186,151, 6-1-65, Cl. 56—25.4.

Hanson, John R.: *See*—
Pierson, Kari B., and Hanson. 3,186,682.

Happe, Wilhelm: *See*—
Gies, Helmut, and Happe. 3,186,787.

Hardesty, Thomas D. Remotely controlled electrical switch device. 3,187,139, 6-1-65, Cl. 200—87.

Hardy, Albert L., C. E. Hauser, and J. E. Stiner, to General Electric Co. Comminuting assembly for a food waste disposer. 3,186,652, 6-1-65, Cl. 241—257.

Harris, Alva F., to Monsanto Co. Suspension polymerization of styrene in presence of amino polyacetic acid compound. 3,186,975, 6-1-65, Cl. 260—93.5.

Harris, Eric J.: *See*—
Nock, Oswald S., and Harris. 3,187,326.

Harris, Glen H., and D. E. Sable. Rod guide applicators. 3,186,079, 6-1-65, Cl. 29—236.

Harris, Glen H., and D. E. Sable. Sucker rod guides. 3,186,773, 6-1-65, Cl. 308—4.

Harrison, Anthony W., to Girling Ltd. Caliper type disc brakes. 3,186,517, 6-1-65, Cl. 188—73.

Harrison, William H., to Emerson Electric Co. Quick disconnect coaxial line coupling with capacitive series coupling at inner conductor. 3,187,280, 6-1-65, Cl. 333—97.

Harshaw Chemical Co., The: *See*—
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Harte, Walter H., to DCA Food Industries Inc. Comestible treating apparatus. 3,186,534, 6-1-65, Cl. 198—33.

Hartvig-Johansen, Leif. Dispensing carton and method of dispensing the contents therefrom. 3,186,595, 6-1-65, Cl. 222—1.

Harwood, Norman F., to Baker Perkins Granbell Ltd. Variable area cross-head. 3,186,032, 6-1-65, Cl. 18—14.

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Hattori, Junnosuke, H. Sugiyama, K. Yoshioka, and S. Koike, to Sumitomo Chemical Co., Ltd. Bactericidal and fungicidal dichloro-nitro-quinoxalines. 3,186,905, 6-1-65, Cl. 167—32.

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Havens, Robert W., and E. A. Nowak, to Owens-Illinois Glass Co. Mold for forming thermoplastic material. 3,186,818, 6-1-65, Cl. 65—169.

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Heimburger, Norbert, R. Schmidtberger, and G. Schwick, to Behringwerke Aktiengesellschaft. Process for preparing a streptokinase. 3,186,920, 6-1-65, Cl. 195—66.

Helms, Harold E., and R. L. Stedfeld, to General Motors Corp. Joint for plastic rocket cases. 3,186,584, 6-1-65, Cl. 220—75.

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Henderson, William D. Liquid metering and dispensing system. 3,186,597, 6-1-65, Cl. 222—30.

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Hofmann, Hans, and K. W. Sassenroth. Electroplating solution containing a diester of selenious acid. 3,186,926, 6-1-65, Cl. 204—49.

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Howard, James E., and W. I. Gibbs. Trepanning drill machine for industrial use. 3,186,261, 6-1-65, Cl. 77—13.

Howard, Norman B., and P. M. Koren, to The Procter & Gamble Co. Fluid shortening composition. 3,186,551, 6-1-65, Cl. 99—123.

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Howlett, Thomas W., Jr., to Union Tank Car Co. Pumping system. 3,186,769, 6-1-65, Cl. 302—17.

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Huff, Mitchell F., to G. W. Hueschen. Apparatus for erecting a self-supporting building and the like. 3,186,071, 6-1-65, Cl. 29—200.

Huffington, Russell D., and H. O. Linde, to United States Steel Corp. Method and apparatus for handling coils of strip. 3,186,655, 6-1-65, Cl. 242—79.

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Hunt, Robert E. to Sylvania Electric Products Inc. Apparatus for attaching filamentary material. 3,186,446, 6-1-65, Cl. 140—93.

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Bamford, William R. 3,186,966.
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Hall, Frank, and Rattee. 3,186,979.
Mills, Walter P., O'Neill, and Price. 3,186,788.
Pearce, Thomas J. P., and Young. 3,186,797.
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Imperial-Eastman Corp.: *See*—
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Industrial Nucleonics Corp.: *See*—
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International Nickel Co., Inc., The: *See*—
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Adelaar, Hans H., Clemens, and Masure. 3,187,099.
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Itoya, Kunio. Heating conveyor belt. 3,187,152, 6-1-65, Cl. 219—10.69.

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Murtland, James B., Jr., Rebhun, and Jackson. 3,187,077.
Murtland, James B., Jr., Rebhun, and Jackson. 3,187,078.

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Jamison, Will B., and R. W. Barnes, to Specialties Development Corp. Fire-fighting method employing high expansion foam. 3,186,490, 6-1-65, Cl. 169—15.

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Jones, Kenneth, ⅓ to Attwood Statistics Ltd. Remote indication system. 3,187,307, 6-1-65, Cl. 340—147.

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Jonsson, Bror E., to Ewos, Aktiebolaget. Dispensing apparatus. 3,186,598, 6-1-65, Cl. 222—57.

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Julian, Percy L., A. Magnani, J. M. Hill, and T. C. Aschner, to Smith, Kline & French Laboratories. Process for preparing compound S. 3,187,025, 6-1-65, Cl. 260—397.47.

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Kannenberg, August J. Safety device for excavations. 3,186,177, 6-1-65, Cl. 61—41.

Kaplan, Louis G., and Y. Couillais. Lifter with substantially constant inward jaw pressure. 3,186,752, 6-1-65, Cl. 294—104.

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Kaufmann, Robert R. Coil spring cutter having resiliently mounted means to separate the coil prior to cutting. 3,186,272, 6-1-65, Cl. 83—18.

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Kelite Corp.: *See*—
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Kennedy, Walter W., to Barber-Colman Co. Tubular air diffuser. 3,186,329, 6-1-65, Cl. 98—40.

Kennedy, Wilfred D., and C. E. Schiman; said Kennedy assor. to Whirlpool Corp. Expendable spray nousle. 3,186,646, 6-1-65, Cl. 239—602.

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Zweig, Gilbert, and Kershaw. 3,186,435.

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Kessler, Milton. Coil-up bowling return gutter. 3,186,712, 6-1-65, Cl. 273—51.

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Kesterton, Henry M., to Howard Clayton-Wright Ltd. Floor-engaging members for articles of furniture and the like. 3,186,025, 6-1-65, Cl. 16—18.

Kett Tool Co.: *See*—
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Kikuchi, Takefusa. Ball rolling apparatus. 3,186,204, 6-1-65, Cl. 72—89.

Kilian, Thaddeus F., to Allegheny Ludlum Steel Corp. Consumable electrode consumption indicator. 3,187,159, 6-1-65, Cl. 13—9.

Kille, Leonard A., to Polaroid Corp. Electronic flash apparatus. 3,187,170, 6-1-65, Cl. 240—1.3.

Killebrew, Clarence E., to Clark Equipment Co. Dual speed lifter for material handling machines. 3,186,509, 6-1-65, Cl. 91—412.

Kimrey, Kenneth L., and R. L. Dintaman. Exposed film magazines for periodic cameras. 3,186,321, 6-1-65, Cl. 95—31.

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Klingsberg, Erwin, to American Cyanamid Co. 1,3-dithiolium derivatives and intermediates therefor. 3,187,009, 6-1-65, Cl. 260—327.

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Koertge, Nobel H., to Cutler-Hammer, Inc. Stationary contact and terminal member. 3,187,149, 6-1-65, Cl. 200—166.

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Kreevoy, Maurice M., and L. T. Ditsch, to General Mills, Inc. Extraction of mineral acids using dodecylphenol. 3,186,800, 6-1-65, Cl. 23—312.

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Krier, Keith N., and R. C. Peabody, to G. H. Tennant Co. Power sweeper. 3,186,021, 6-1-65, Cl. 15—340.

Kropp, Willis A., to General Time Corp. Rotary stepping switch. 3,187,143, 6-1-65, Cl. 200—105.

Kropp, Willis A., to General Time Corp. Rotary stepping switch. 3,187,144, 6-1-65, Cl. 200—105.

Kubach, Hans D., and J. C. Martin, to Bailey Meter Co. Monitoring device. 3,187,233, 6-1-65, Cl. 317—146.

Kubota, Isamu, and T. Ataka, to Minolta Camera Co. Ltd. Battery powered motion picture camera with remote control. 3,187,341, 6-1-65, Cl. 352—174.

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Kupsky, George A., to Burroughs Corp. Segment display device. 3,187,320, 6-1-65, Cl. 340—336.

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Kurland, William, to Lily of France, Inc. Brassiere with elastic support tapes. 3,186,412, 6-1-65, Cl. 128—483.

Kurts, Ralph W. to James B. Clow & Sons, Inc. Cushioned pipe joint. 3,186,741, 6-1-65, Cl. 285—111.

Kushner, John A., to General Motors Corp. Chromium plating process with a pure nickel strike. 3,186,925, 6-1-65, Cl. 204—41.

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Culiver, Robert D. 3,187,138.
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La Brie, Eugene A. Multiple speed bicycle hub. 3,186,259, 6-1-65, Cl. 74—750.

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Lamberton, Ralph E., O. R. Lowther, and R. A. Redding, to The Jaeger Machine Co. Rotary compressor. 3,186,631, 6-1-65, Cl. 230—26.

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Hensley, William H., and Lambrech. 3,186,990.

Lambrech, Vallah G.: *See*—
Hensley, William H., and Lambrech. 3,186,990.

Lamont, Lewis H. Emergency control for a vehicle. 3,186,508, 6-1-65, Cl. 180—82.

Landgraf, William C., to Ampex Corp. Process of preparing magnetic particles. 3,186,829, 6-1-65, Cl. 75—.5.

Lang, Johann H., to Dominion Engineering Works Ltd. Contrarotating hydroelectric machines including two synchronous generators. 3,187,189, 6-1-65, Cl. 290—40.

Lang, Johann H., to Dominion Engineering Works Ltd. Contrarotating hydroelectric machines including synchronous and asynchronous generators. 3,187,190, 6-1-65, Cl. 290—40.

Lang, John L., and W. A. Pavelich, to The Dow Chemical Co. Polymeric maleic anhydride and method of making. 3,186,972, 6-1-65, Cl. 260—78.4.

Lang, Richard J., to McGraw-Edison Co. Power distribution system. 3,187,175, 6-1-65, Cl. 240—84.

Lange, Paul O. H., and P. Regul, to Werkzeugmaschinenfabrik Gildemeister & Comp., Akt.-Ges. Single-spingle chucking automatic. 3,186,062, 6-1-65, Cl. 29—38.

Langehennig, William L. Trailer steering control device. 3,186,733, 6-1-65, Cl. 280—446.

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Lawrence, Stanley L., to Massey-Ferguson Inc. Hay wafering method and apparatus. 3,186,361, 6-1-65, Cl. 107—14.

Lax, Michael S. Display booth. 3,186,781, 6-1-65, Cl. 312—200.

Layson, Alfred M. Decoys. 3,186,120, 6-1-65, Cl. 43—2.

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League, George F. 3,186,440.

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Lee, Norman, to Keelavite Hydraulics Ltd. Couplings for connecting tubular conduits. 3,186,740, 6-1-65, Cl. 285—101.

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Carson, Frank J., and Lefiet. 3,186,821.

Legatt, Theodore, and E. L. Shapiro, to Schering Corp. Epoxy estranes and processes for the manufacture thereof. 3,186,986, 6-1-65, Cl. 260—239.55.

Leicht, Giorgio: *See*—
Caido, Cornelio, and Leicht. 3,186,978.

Leitinen, Lauri A. Electric current control apparatus. 3,184,618, 5-18-65, Cl. 307—114.

Le Massena, Robert A., to Honeywell Inc. Controlling apparatus for protecting low current sensitive measuring instruments. 3,187,224, 6-1-65, Cl. 317—16.

Lenk, James W., to Berkley Machine Co. Scoring and folding mechanisms of an envelope making machine and drive therefor. 3,186,316, 6-1-65, Cl. 93—62.

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Le Roy, Robert B., and R. B. Pool, to Weyerhaeuser Co. Shipping container. 3,186,619, 6-1-65, Cl. 229—4.5.

Lesher, Robert D., C. W. Clark, and R. O. Konopka, to The Cleveland Twist Drill Co. Extrusion die. 3,186,210, 6-1-65, Cl. 72—467.

Leslie, Don H., to North American Aviation, Inc. Means for insulating superconducting devices. 3,187,236, 6-1-65, Cl. 317—158.

Leutzinger, John F. Composition stick for filling small regular cavities. 3,186,856, 6-1-65, Cl. 106—245.

Leever, Ray C., and T. O. Paine, to General Electric Co. Time-temperature integrator. 3,186,228, 6-1-65 Cl. 73—362.

Levin, Alfred A., and S. B. Richter, to Velsicol Chemical Corp. Polyhalo-4,7-endomethylene - 3a,4,7,7a - tetrahydrophthalides. 3,187,010, 6-1-65, Cl. 260—343.3.

Levinson, Benjamin L., and E. E. Brush; said Levinson assor. to Evelyn S. Levinson. Dispenser for liquid in upright container with controlled atmosphere. 3,186,599, 6-1-65, Cl. 222—82.

Levinson, Evelyn S.: *See*—
Levinson, Benjamin L., and Brush. 3,186,599.

Levitas, Harry. Window shade construction. 3,186,474, 6-1-65, Cl. 160—238.

Lewis, John T., and N. Page, to Midland Silicones Ltd. Siloxane elastomers. 3,186,963, 6-1-65, Cl. 260—46.5.

Lewis, Lawrence S., to Sylvania Electric Products Inc. Semiconductor pulse control circuit. 3,187,198, 6-1-65, Cl. 307—88.5.

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Liben, William. Temperature-sensitive device. 3,186,229, 6-1-65 Cl. 73—362.

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Lightfoot, William A, to Pilkington Brothers Ltd. Methods of and apparatus for correcting a deviation from true form of a casting roll. 3,186,811, 6-1-65. Cl. 65—29.

Liles, Lewis R., and H. H. Geiger, to The B. F. Goodrich Co. Engraving gum. 3,186,894, 6-1-65, Cl. 161—84.

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Lindemann, Howard C.: *See*—
Mindheim, Daniel J., and Lindemann. 3,187,183.

Lindler & Co., Inc.: *See*—
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Linkroum, Irving E., to The Bendix Corp. Spark gap device. 3,187,215, 6-1-65, Cl. 313—193.

Litke, Alvin C., to Allied Chemical Corp. Triazine containing azo dyestuffs. 3,186,980, 6-1-65, Cl. 260—157.

Littmann, Hans, to Carl Zeiss. Double stereo-microscope and illuminator for surgical operations. 3,186,300, 6-1-65, Cl. 88—39.

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Weidenman, James W., and Orosco. 3,187,286.

Litton Systems, Inc.: *See*—
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Lohr, Thomas E., and R. O. Umanos, to General Motors Corp. Combination seat belt anchoring and seat braking mechanism. 3,186,760, 6-1-65, Cl. 297—216.

Long, Arthur H., and A. Shashaty, to Wm. K. Stamets Co. Workpiece consecutive selection and alignment machine. 3,186,332, 6-1-65, Cl. 100—7.

Long, James, to General Electric Co. Motor acceleration control for a tensioning system. 3,187,248, 6-1-65, Cl. 318—6.

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Lord, Albert S.: *See*—
Hamm, Theodore F., and Lord. 3,186,747.

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Lorimer, John D., to Ex-Cell-O Corp. Hydraulic actuator mechanism. 3,186,305, 6-1-65, Cl. 89—37.

Loudon, Donald C., to The Bendix Corp. Electrical apparatus. 3,186,397, 6-1-65. Cl. 123—148.

Loughlin, Bernard D., and E. J. Duffy, to Haseltine Research, Inc. Mono-stereo control apparatus for an F.M. stereo signal receiver system. 3,187,103, 6-1-65, Cl. 179—15.

Lowrey, William E., to ACF Industries, Inc. Stem seal for rotary plug valve. 3,186,681, 6-1-65, Cl. 251—214.

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Lamberton, Ralph E., Lowther, and Redding. 3,186,631.

Lubenow, Lewis W. Container. 3,186,607, 6-1-65, Cl. 222—547.

Lucas, Gary B. Safety seat belt combination for vehicles. 3,186,762, 6-1-65, Cl. 297—385.

Lucas, Joseph, (Industries) Ltd.: *See*—
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Ludbrook, Leslie C., and R. B. Sims, to Steelworks Automation Ltd. Production of metal strip. 3,186,201, 6-1-65, Cl. 72—9.

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Lummis, Bruce D., to General Dynamics Corp. Ring tone feedback circuit. 3,187,110, 6-1-65, Cl. 179—89.

Lunt, Gordon H., and T. K. Clark. Lintel member for fireplaces. 3,186,400, 6-1-65, Cl. 126—142.

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Lyles, Cecil E. Weil tool. 3,186,745, 6-1-65, Cl. 287—119.

Lyles, Douglas K. Automobile rear tire attachment. 3,186,612, 6-1-65, Cl. 224—42.01.

Lyness, Warren I., to The Buckeye Cellulose Corp. Process for improving the low molecular weight yield in bark pyrolysis. 3,186,923, 6-1-65, Cl. 202—10.

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MacDonald, Donald, to Owens-Corning Fiberglas Corp. Integrating films and porous bodies. 3,186,895, 6-1-65, Cl. 161—119.

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Schriver, Donald S., MacGregor, and Moore. 3,186,959.

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Mack, Rodney L., and A. M. Weisman, to The Birtcher Corp. Retainer for printed circuit boards. 3,186,554, 6-1-65, Cl. 211—41.

MacNair, Donald, to Bell Telephone Laboratories. Method for processing oxide coated cathodes. 3,186,786, 6-1-65, Cl. 316—17.

Madison, Elmo H., and W. H. McPherson, to Minnesota and Ontario Paper Co. Groundwood pulp. 3,186,899, 6-1-65, Cl. 162—24.

Maeder, Arthur, to Ciba Ltd. Process for the polymerization of strongly basic compounds using 1,2-dichloroethane as solvent. 3,186,973, 6-1-65, Cl. 260—80.3.

Magee, Charles. Support frame. 3,186,420, 6-1-65, Cl. 135—7.1.

Magic Decorator Co.: *See*—
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Magnani, Arthur: *See*—
Julian, Percy L., Magnani, Hill, and Aschner. 3,187,025.

Magnussen, Harold. Guide track for pneumatic and electric portable circular saws. 3,186,452, 6-1-65, Cl. 143—47.

Mahoff, George A., and L. L. Rice, to Gamah Corp. Flexible coupling. 3,186,739, 6-1-65, Cl. 285—95.

Mahoney, Earl R., to Reynolds Oil Well Pumps, Inc. Oil well pump. 3,186,354, 6-1-65, Cl. 103—179.

Maico Electronics, Inc.: *See*—
Mullin, Clayton D. 3,187,115.
Todt, Joachim H., and Johnson. 3,186,115.

Maillot, Robert R., to Peugeot & Cie. Coupling device. 3,186,190, 6–1–65, Cl. 64—30.

Mair, Brian A., to Inertia Switch Ltd. Conductive liquid level sensing device. 3,186,224, 6–1–65, Cl. 73—304.

Makl, William M., to Fansteel Metallurgical Corp. Apparatus for making contact discs. 3,186,133, 6–1–65, Cl. 51—105.

Mallory, James D., to Owens-Illinois Glass Co. Chuck apparatus. 3,186,060, 6–1–65, Cl. 29—238.

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Manning, William O., Jr., to Holley Carburetor Co. Control means for the secondary induction passage of a two-stage carburetor. 3,186,691, 6–1–65, Cl. 261—23.

Mantovanello, Giovanni, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process and apparatus for the continuous feeding of electrolytic aluminum cells. 3,186,927, 6–1–65, Cl. 204—67.

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Maras, Thomas, and R. W. Pitcher. Device for projecting an aerial target. 3,186,119, 6–1–65, Cl. 42—1.

Marchak, Nicholas, to American Can Co. Leakproof dispensing tube. 3,186,801, 6–1–65, Cl. 222—107.

Mark Chemical Co.: *See*—
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Marra, Ivan L., to Fre-Mar Industries. Process for producing sealing material. 3,187,070, 6–1–65, Cl. 264—171.

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Marshall, John E.: *See*—
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Marshall, Thomas G., Jr., to Radio Corp. of America. Impedance inverter coupled negative resistance amplifiers. 3,187,266, 6–1–65, Cl. 330—34.

Marta, Francis A., to Square D Co. Electrical connector. 3,187,299, 6–1–65, Cl. 339—272.

Martin, Albert V., to Honeywell Inc. Electrical measuring apparatus with automatic integrating action. 3,187,186, 6–1–65, Cl. 250—231.

Martin, Bertice A., and V. W. H. Rassbach, to Stardi Mfg. Co. Base for washing machines. 3,186,247, 6–1–65, Cl. 137—343.

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Martin, George H.: *See*—
Edminson, John A., and Martin. 3,186,176.

Martin, Harold B.: *See*—
Schwester, Daniel P., Martin, and O'Loughlin. 3,186,047.

Martin, James. Ejection of one body from another. 3,186,662, 6–1–65, Cl. 244—122.

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Martin, Philip W. Well signaling system. 3,186,222, 6–1–65, Cl. 73—151.

Martinez, Martin G. Compressors. 3,186,633, 6–1–65, Cl. 230—190.

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Mayer, Peter. Haydraulic jacking system. 3,186,686, 6–1–65, Cl. 254—86.

Mayne, Robert A., deceased, by R. D. Mayne, executrix. Method of blower wheel manufacture. 3,186,069, 6–1–65, Cl. 29—156.8.

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McBride, Joseph J., Jr., to Armour and Co. Zwitterions of 1-(2-aminoethylimidasolines). 3,187,003, 6–1–65, Cl. 260—309.6.

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McCarroll, Lila K. Automobile shelter tent. 3,186,419, 6–1–65, Cl. 135—1.

McCauley, George W. Structural surfaces. 3,186,522, 6–1–65, Cl. 189—1.

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McDonald, Louis, to Kelite Corp. Composition for cleaning hard surfaces. 3,186,947, 6–1–65, Cl. 252—137.

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McKnight, William H., to Corning Glass Works. Container closure. 3,186,572, 6–1–65, Cl. 215—46.

McLemore, Terrell R., to Marsh Stencil Machine Co. Fountain roller. 3,186,024, 6–1–65, Cl. 15—547.

McLennan, Charles A., and D. G. Dixon. Buoyant article transporter. 3,186,369, 6–1–65, Cl. 114—43.5.

McMurtry, Grayce E., and J. J. Marvinay. Stabilized vitamin composition and method of making same. 3,186,909, 6–1–65, Cl. 167—81.

McNay, Ralph E., and W. R. Peterson, to Ashland Oil & Refining Co. Method of sizing cellulose fibers with resinous material from the plant Grindelia and product thereof. 3,186,901, 6–1–65, Cl. 162—180.

McPherson, Norman S., M. L. Clachan, K. R. Tatchell, and T. A. Abbott, to Bexford Ltd. Polymer comprising alternating polyurethane and polycarbonate groups and process for making the same. 3,187,065, 6–1–65, Cl. 260—857.

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Mead, Harry A., and L. Siegel. Bags for milk and the like. 3,186,625, 6–1–65, Cl. 229—53.

Meijers, Antonie H., to Inland Steel Co. Shipping container. 3,186,620, 6–1–65, Cl. 229—5.7.

Meldola, Frederic C., to Chrysler Corp. Limited slip differential. 3,186,258, 6–1–65, Cl. 74—710.5.

Melink, George E., to Sperry Rand Corp. Laminated circuit structure and method of preparing same. 3,186,898, 6–1–65, Cl. 161—214.

Mellott, Robert N.: *See*—
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Mentzer, Robert G., to Libbey-Owens-Ford Glass Co. Process for removing thin films of cobalt oxide from vitreous surfaces. 3,186,870, 6–1–65, Cl. 134—3.

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Merington, Richard N., to Ling-Temco-Vought, Inc. Amplifier including reference level drift compensation feedback means. 3,187,267, 6–1–65, Cl. 330—110.

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Meuer, William V. Paper sack holder. 3,186,667, 6–1–65, Cl. 248—97.

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Meyer, Robert F., and B. L. Cummings, to Parke, Davis & Co. Certain 2,1-benzisothiazole compounds. 3,187,001, 6–1–65, Cl. 260—304.

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Michael, Vesta F., to Rock Island Oil & Refining Co., Inc. Resin dispensing apparatus and process. 3,186,688, 6–1–65, Cl. 259—23.

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Miller, Guy W., and A. Benyi, Jr., to United Aircraft Corp. Seal plate arrangement. 3,186,720, 6–1–65, Cl. 277—9.

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Mills, Walter P., W. A. O'Neill, and R. Price, to Imperial Chemical Industries Ltd. Process for dyeing polypropylene and polyformaldehyde fibers containing zinc compounds with metallizable dyestuffs. 3,186,788, 6–1–65, Cl. 8—42.

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Mindheim, Daniel J., and H. C. Lindemann, to Lindley & Co., Inc. Balanced output photoelectric gage. 3,187,183, 6–1–65, Cl. 250—208.

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Minisci, Francesco and R. Galli, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process for preparing diazides. 3,187,020, 6–1–65, Cl. 260—349.

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Mittelsteadt, Glen L. to Herter's Inc. Swaged bullet forming apparatus. 3,186,058 6–1–65, Cl. 29—1.2.

Miyagi, Masahisa, to Nippon Electric Co., Ltd. Frequency-(or phase)-modulation intermediate-frequency combining reception system. 3,187,267, 6–1–65, Cl. 325—305.

Moberg, Sigurd M., to E. J. Brooks Co. Plunger-type lock. 3,186,196, 6–1–65, Cl. 70—34.

Mock, Gene V., to E. I. du Pont de Nemours and Co. Process for the preparation of unsymmetrical dialkyl hydrazines. 3,187,051, 6–1–65, Cl. 260—563.

Modrey, Henry J., to Norco, Inc. Shackle coupling. 3,186,055, 6–1–65, Cl. 24—241.

Modrin, Louis, to L'Auxiliaire de l'Industrie et des Mines "Auxim." Cocks and the like fluid distributors, chiefly those controlling the pneumatic braking of vehicles. 3,186,436, 6–1–65, Cl. 137—625.22.

Mohs, Bruce B. Sidecar for a bicycle. 3,186,732, 6–1–65, Cl. 280—203.

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Moodie, Ernest W., M. R. Holman, and H. I. Stanback, to Square D Co. Bus duct with particular housing, insulation, and bus bars. 3,187,086, 6–1–65, Cl. 174—68.

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Moore, Donald L., to Hamilton Cosco, Inc. Chair pedestal. 3,186,675, 6–1–65, Cl. 248—410.

Moore, George A. Speedboat stabilizer. 3,186,371, 6–1–65, Cl. 114—125.

Moore, Harold C. Collapsible shelving. 3,186,363, 6–1–65, Cl. 108—114.

Moore, James R., to Minerals & Chemicals Philipp Corp. Weigh feeder system. 3,186,503, 6–1–65, Cl. 177—71.

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Morey, Everett D., to General Electric Co. Adjustable pressure responsive control means. 3,187,137, 6–1–65, Cl. 200—83.

Morin, Louis H. Lock slider. 3,186,053, 6–1–65, Cl. 24—205.14.

Morin, Louis H. Method of producing multiple intercast plastic products. 3,187,072, 6–1–65, Cl. 264—242.

Morin, Louis H., to Coats & Clark Inc. Method and apparatus for producing travelers with wear resistant inserts. 3,187,074, 6–1–65, Cl. 264—275.

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Morrow, Robert C. Playground toy and exercising device. 3,186,711, 6–1–65, Cl. 272—85.

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Muranaka, Dwight M., Y. Yamamoto, E. S. Hamberg, and L. T. Ikegami, to Y 2 Associates, Inc. Selective signal-responsive circuit. 3,187,234, 6–1–65, Cl. 317—147.
Murdoch, John P. Air conditioning system. 3,186,183, 6–1–65, Cl. 62—183.
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Murray, Hallam G., and P. H. Winter, to Pass & Seymour, Inc. Quick mounting strap for electric receptacle. 3,187,294, 6–1–65, Cl. 339—126.
Murray, Patrick J., to Halmur, Inc. Method of and system for sewage treatment. 3,186,939, 6–1–65, Cl. 210—7.
Murtland, James B., Jr., C. F. Rebhun, and H. S. Jackson, to Allegheny Ludlum Steel Corp. Metallurgical furnace control. 3,186,043, 6–1–65, Cl. 22—200.
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Murtland, James B., Jr., C. F. Rebhun, and H. S. Jackson, to Allegheny Ludlum Steel Corp. Electrode regulating system for arc melting furnaces. 3,187,078, 6–1–65, Cl. 13—13.
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Nathan, Marvin F., to Pullman Inc. Alkylation of hydrocarbons. 3,187,066, 6–1–65, Cl. 260—683.62.
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Nebout, Noel, to Societe Anonyme des Pneumatiques Dunlop. Method and apparatus for fitting bands of fabric or other material around wires for outer covers of pneumatic tires. 3,185,607, 5–25–65, Cl. 156—443.
Neefe, Charles W., to Neefe-Hamilton Research Co. Corneal contact lens of wide fitting range with sine curve concave surface. 3,187,338, 6–1–65, Cl. 351—160.
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Negishi, Eiisaburo. Spindle apparatus for unwinding yarn bunch. 3,186,154, 6–1–65, Cl. 57—54.
Nell, Joseph L., to Panhandle Industrial Co. Fuel injection valve cage for gas burning internal combustion engines and engine and fuel system employing same. 3,186,393, 6–1–65, Cl. 123—120.
Nelson, Dorsey C., and M. B. Mueller, to Allied Chemical Corp. Process for preparing phenols and carbonyl alkanes. 3,187,052, 6–1–65, Cl. 260—593.
Nelson, Fred W. Shield for a scoop shovel. 3,186,750, 6–1–65, Cl. 294—56.
Nelson, Herbert, and J. Bernath, to Radio Corp. of America. Transistor with emitter at bottom of groove extending crosswise the base. 3,187,241, 6–1–65, Cl. 317—234.
Nerwin, Hubert, to Eastman Kodak Co. Photoelectric exposure control systems for cameras. 3,186,818, 6–1–65, Cl. 95—10.
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Nitzsche, Siegfried, E. Riedle, and K.-H. Wegehaupt, to Wacker-Chemie G.m.b.H. Method of preparing high molecular weight organosiloxane polymers. 3,186,967, 6–1–65, Cl. 260—46.5.
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Sosalla, Harry L., and Bylsma. 3,186,719.
Nock, Oswald S., and E. J. Harrie, to Westinghouse Brake and Signal Co. Ltd. Data display indicators. 3,187,326, 6–1–65, Cl. 340—378.
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Nominé, Gerard, R. Bucourt, and J. Tessier, to Roussel-UCLAF, S.A. 19-nor-testosterone derivatives, their process of preparation and their method of utilisation. 3,186,907, 6–1–65, Cl. 167—74.
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Nystrom, Carl E., and L. A. Galia, to American Bosch Arma Corp. Apparatus for preventing reversal of fuel injection engines. 3,186,396, 6–1–65, Cl. 123—139.
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Havens, Robert W., and Nowak. 3,186,818.
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Pfaender, Lawrence V. 3,186,812.
Pfaender, Lawrence V. 3,186,813.
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Oxx, Gordon D., Jr., to General Electric Co. Protective coatings and process for producing the same. 3,186,070, 6–1–65, Cl. 29—194.
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Pabst, Carl F., and P. Neumann, to The Lodge & Shipley Co. Lathe. 3,186,267, 6–1–65, Cl. 82—2.
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Lewis, John T., and Page. 3,186,963.
Pages, Inc.: *See*—
Asher, Sidney. 3,186,069.
Pahlitzsch, Bruno. Method and apparatus for manufacturing envelopes, bags and like objects. 3,186,315, 6–1–65, Cl. 93—62.
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Parenti, Gino, to Ottico Meccanica Italiana Soc.p.As. Device to increase the resolving power in projections on a translucent screen, particularly fit for photogrammetric appliances. 3,186,299, 6–1–65, Cl. 88—28.98.
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Pfaender, Lawrence V., to Owens-Illinois Glass Co. Method and apparatus for forming hollow glass articles. 3,186,812, 6–1–65, Cl. 65—55.

Pfaender, Lawrence V., to Owens-Illinois Glass Co. Forming thin glass foil. 3,186,813, 6-1-65, Cl. 65—90.

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Pignolet, Louis, and F. Dumas, to Societe Industrielle Generale de Mecanique Appliquee S.I.G.M.A. Prime mover systems. 3,186,162, 6-1-65, Cl. 60—19.

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Porter, Henry T.: *See*—
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Post, Herman D. Data section replacement arrangement. 3,186,280, 6-1-65, Cl. 53—451.

Postless Steering By Dual Wheels Co., Inc.: *See*—
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Potdevin Machine Co.: *See*—
Bechle, Rudolph P. 3,186,313.

Potocsky, Joseph B. Gas pressure type dispensing container valve. 3,186,605, 6-1-65, Cl. 222—394.

Potrafke, Werner. Cashier's table for self-service stores. 3,186,515, 6-1-65, Cl. 186—1.

Potter, Galen D., and W. T. Peterson, to H. S. Crocker Co., Inc. Method and apparatus for photocomposing. 3,186,097, 6-1-65, Cl. 33—184.5.

Potter, Martin C., to Potters Insulations Ltd. Internal combustion engines. 3,186,383, 6-1-65, Cl. 123—11.

Potters Insulations Ltd.: *See*—
Potter, Martin C. 3,186,383.

Poulos, Nicholas M.: *See*—
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Previte, Dominick L., to Eaton Mfg. Co. Closure device. 3,186,580, 6-1-65, Cl. 220—44.

Price, David S., to E. I. du Pont de Nemours and Co. Mixed fertilizers having a urea source of nitrogen in excess of a nitrate source. 3,186,825, 6-1-65, Cl. 71—28.

Price, Hollas K. Rocket-propelled vehicle with ground anchoring means. 3,186,302, 6-1-65, Cl. 89—1.7.

Price, Raymond: *See*—
Mills, Walter P. O'Neill, and Price. 3,186,788.

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Prismo Safety Corp.: *See*—
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Howard, Norman B., and Koren. 3,186,851.
Spinanger, Arthur, and Burt. 3,186,566.
Spinanger, Arthur, and Burt. 3,186,568.

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Projahn, Emil, to G. Kollisch. Pocket lighter. 3,186,193, 6-1-65, Cl. 67—7.1.

Propst, Robert L., to Herman Miller, Inc. Movable chair. 3,186,761, 6-1-65, Cl. 297—349.

Pruitt, Cary H., ½ to Portable Equipment, Inc. Air conditioning control apparatus. 3,186,184, 6-1-65, Cl. 62—243.

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Purdy, Bruce B.: *See*—
Godschalx, Adrian T., Purdy, and Vlossak. 3,186,663.

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Püschel, Walter, O. Wahl, W. Pels, H. Schellenberger, and K. Loffler, to Agfa Aktiengesellschaft. Direct positive colored photographic elements containing dihydrazones and process for forming colored masks therefrom. 3,186,840, 6-1-65, Cl. 96—9.

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Quan, Wasson, and R. C. Cardin, Jr., to Paramount Pictures Corp. Subscription-television audio-receiving system. 3,187,091, 6-1-65, Cl. 178—5.1.

Quarfoot, Axel L., to Arena Controls, Inc. Remote control device. 3,186,251, 6-1-65, Cl. 74—501.

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Radcliffe, Milton R., and D. L. Bray, to United Shoe Machinery Corp. Attachment of shoe insoles to lasts. 3,186,113, 6-1-65, Cl. 36—43.

Rademacher, Friedrich J. C., to Shell Oil Co. Spudding-in-seismometers. 3,186,502, 6-1-65, Cl. 175—422.

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Raeber, Victor, to Ateliers de Constructions Mecaniques de Vevey S.A. Regulating system chiefly for rotary power units. 3,187,223, 6-1-65, Cl. 317—5.

Raley, Howard F., to General Electric Co. Control system for clothes dryers. 3,186,107, 6-1-65, Cl. 34—45.

Ramillon, René. Pivotal system for lever arms. 3,186,253, 6-1-65, Cl. 74—540.

Ramser, Walter O., to Clevite Corp. Apparatus for the preparation of alloy contacts. 3,186,046, 6-1-65, Cl. 22—216.

Ramun, Michael. Air supply for internal combustion engines. 3,186,894, 6-1-65, Cl. 123—122.

Randall, Harry. Gravity feed oven with selecting roller. 3,186,695, 6-1-65, Cl. 263—6.

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Ransley, Charles E., to The British Aluminum Co, Ltd. Method of producing current conducting elements. 3,186,044, 6-1-65, Cl. 22—202.

Ranson, Derek, to Imperial Chemical Industries Ltd. Polyethylene terephthalate stabilized with a condensation product of a phenol with an unsaturated aldehyde. 3,186,962, 6-1-65, Cl. 260—45.95.

Rappaport, Paul, and E. Pasierb, Jr., to Radio Corp. of America. Multi-junction negative resistance semi-conducting devices. 3,187,193, 6-1-65, Cl. 307—88.5.

Rappold, Armin, to International Standard Electric Corp. Contrast control arrangement for television receivers providing non-linear gray scale. 3,187,096, 6-1-65, Cl. 178—7.3.

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Murtland, James B., Jr., Rebbun, and Jackson. 3,187,078.

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Lamberton, Ralph E., Lowther, and Redding. 3,186,631.

Redfield, Paul H. Cleaning attachment for mixers. 3,186,020, 6-1-65, Cl. 15—230.19.

Reed, Charles B., and C. G. Sutter, to Sperry Rand Corp. Self checking gyroscopic apparatus. 3,186,211, 6-1-65, Cl. 73—1.

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Reeves, William E. Invalid chair. 3,186,759, 6-1-65, Cl. 297—188.

Regul, Paul: *See*—
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Remy, E. P., & Cie: *See*—
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Skinner, Ralph L., Sr. 3,186,701.

Reuter, Walter. Pressure-sensitive transfer sheets. 3,186,862, 6-1-65, Cl. 117—36.3.

Reynolds Metals Co.: *See*—
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Dalrymple, Robert S. 3,186,788.
Gresham, George S., Webster, and Barker. 3,186,525.
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Mahoney, Earl R. 3,186,354.

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Reznick, Louis. Safety guards for brakes, punch presses and similar machines. 3,186,256, 6-1-65, Cl. 74—615.

Rhodes, Allen F., J. G. Jackson, Jr., and W. C. Triplett. Well completion. 3,186,486, 6-1-65, Cl. 166—66.5.

Ricciardi, Ronald J., to J. L. Muscarelle. Feeding apparatus for particulate material. 3,186,602, 6-1-65, Cl. 222—161.

Rice, Leonard L.: *See*—
Mahoff, George A., and Rice. 3,186,739.

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Richter, Sidney B., to Velsicol Chemical Corp. N-alkoxy benzamides. 3,187,042, 6-1-65, Cl. 260—558.

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Rieger, Martin M., and G. Berenbom, to Warner-Lambert Pharmaceutical Co. Hair setting composition comprising an aqueous dispersion of a tertiary aminoalkyl ether of starch. 3,186,911, 6-1-65, Cl. 167—87.1.

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Rightsel, Wilton A., and E. E. Schuler, to Parke, Davis & Co. Calcium lactobionate stabilization of labile antigenic virus vaccine materials. 3,186,906, 6-1-65, Cl. 167—78.

Riley, Willim H., Jr.: *See*—
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Robbins, Frank E., to The Dow Chemical Co. Aluminum flux. 3,186,881, 6-1-65, Cl. 148—26.

Roberts, John A., to General Electric Co. Leak test station. 3,186,214, 6-1-65, Cl. 73—40.7.

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Robertson, Dale N., to Arapahoe Chemicals, Inc. Bromic acid process for the preparation of certain aliphatic N-bromo compounds. 3,187,044, 6-1-65, Cl. 260—561.

Robinson, Cecil H., to Schering Corp. Novel 6-keto-4-dehydro-steroids and processes for their manufacture. 3,186,935, 6-1-65, Cl. 260—239.55.

Robinson, Cecil H., to Schering Corp. 16,16-difluoro-17a-halogenoethinyl androstanes. 3,187,023, 6-1-65, Cl. 260—397.4.

Robinson, Preston, to Sprague Electric Co. Ceramic capacitor. 3,184,660, 5-18-65, Cl. 317—258.

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Rockmont Envelope Co.: *See*—
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Rodder, Jerome A. Positioning apparatus. 3,186,705, 6-1-65, Cl. 269—60.

Rodway, John, to Automotive Products Co. Ltd. Closed loop, spot-type disc brakes. 3,186,518, 6-1-65, Cl. 188—73.

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Roe, Justus G., to Justus Roe and Sons, Inc. Tape measure unit. 3,186,657, 6-1-65, Cl. 242—84.8.

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Roll, Jack A., to Albritton Engineering Corp. Impact tool. 3,186,496, 6-1-65, Cl. 173—123.

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Roney, George M. Clamp type animal restraining device. 3,186,380, 6-1-65, Cl. 119—103.

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Rosenberger, Gustav, and M. Stober. Holding magnet for ferromagnetic foreign bodies in ruminants. 3,187,239, 6-1-65, Cl. 317—201.

Rosenstein, Milton, to Hazeltine Research, Inc. Sweep signal generating circuit stabilized against noise and component drift problems. 3,187,263, 6-1-65, Cl. 328—185.

Ross, David S. and G. W., to The Amcodyne Corp. Diffuser head. 3,186,644, 6-1-65, Cl. 239—534.

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Ross, David S. and G. W. 3,186,644.

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Roux, André. Boat and luggage carrier. 3,186,569, 6-1-65, Cl. 214—450.

Royce, Norman J., to Kias Developments, Ltd. Control systems for parking garages. 3,187,302, 6-1-65, Cl. 340—51.

Rudd-Melikian, Inc.: *See*—
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Wenturine, Anthony J., and Rudolph. 3,186,265.

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Rupe, Chauncey O., to Miles Laboratories, Inc. Process for preparing galactose oxidase by fermentation. 3,186,919, 6-1-65, Cl. 195—66.

Rupe, Chauncey O., to Miles Laboratories, Inc. Process for preparing galactose oxidase by fermentation. 3,186,921, 6-1-65, Cl. 195—66.

Russell, Harold W., Jr., to Consolidated Vacuum Corp. Glass-to-metal tube coupling having indium seal means. 3,186,743, 6-1-65, Cl. 285—238.

Ryan Aeronautical Co., The: *See*—
Stanley, Oliver C. 3,187,275.
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Ryan, William H., and J. Carlisle, to Polaroid Corp. Process for producing silver halide emulsions containing gelatin derivatives. 3,186,946, 6-1-65, Cl. 96—94.

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Harris, Glen H., and Sable. 3,186,773.

Sacsawa, Matthew F.: *See*—
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Saffores, Louis J. Pocket instrument. 3,186,086, 6-1-65, Cl. 30—358.

Saijo, Shigeya, and K. Ohisumi, to Sumitomo Chemical Co., Ltd. Method of producing vitamin A acid esters. 3,187,027, 6-1-65, Cl. 260—410.9.

St. Peter, Lawrence A. Adjustable stilt. 3,186,710, 6-1-65, Cl. 272—70.1.

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Salminen, Paavo V. L., to Etablissement Pastinvest. Bottle closure. 3,186,573, 6-1-65, Cl. 215—52.

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Samuel, Herbert J., to The Loewy Engineering Co. Ltd. Multi-container presses. 3,186,208, 6-1-65, Cl. 72—263.

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Satsinger, Gerhard, to Warner-Lambert Pharmaceutical Co. Substituted 4-thiazolidinones and process therefor. 3,187,002, 6-1-65, Cl. 260—306.7.

Sauer, Harold A., to Bell Telephone Laboratories, Inc. Temperature and environment controlling system. 3,186,480, 6-1-65, Cl. 165—27.

Saut, Jules F., and L. B. Barker, to Reynolds Metals Co. Cargo transporting vehicle construction. 3,186,756, 6-1-65, Cl. 296—100.

Scandurra, Aldo M., M. Dolin, and N. M. Poulos, to Applied Research, Inc. Multi-coupling apparatus. 3,187,259, 6-1-65, Cl. 325—308.

Scarpelli, August F.: *See*—
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Schaerf, Stefan. Sewing machine cabinets. 3,186,780, 6-1-65, Cl. 312—30.

Schäffer, Heinrich, to C. A. Delius & Sohne. Process and an apparatus for controlling the weft threads in weaving looms. 3,186,444, 6-1-65, Cl. 139—370.

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Scheffler, Friedrich W.: *See*—
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Schell, Burt E., Jr.: *See*—
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Scherer, James F. Thermo-actuator. 3,186,230, 6-1-65, Cl. 73—368.3.

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Schick, Walter. Stacked electrical capacitors. 3,187,242, 6-1-65, Cl. 317—261.

Schiman, Carl E.: *See*—
Kennedy, Wilfred D., and Schiman. 3,186,646.

Schlesinger, Arnošt, and A. Horváth, to Meopta, narodni podnik. Portable projector with a slide magazine. 3,186,298, 6-1-65, Cl. 88—28.

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Claus, Kurt, and Pollmeier. 3,186,030.
Geier, Ulf. 3,186,031.

Schmid, August. Check operated time switch. 3,187,122, 6-1-65, Cl. 200—38.

Schmidt, Gunther, to Houston Schmidt Ltd. Fluid bearings for strip material. 3,186,326, 6-1-65, Cl. 95—94.

Schmidt, Paul: *See*—
Druey, Jean, and Schmidt. 3,187,006.

Schmidt, Richard, to Frans Morat G.m.b.H. Pattern selecting arrangement for a circular knitting machine. 3,186,192, 6-1-65, Cl. 66—50.

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Schmitt, Anthony J. Guide for rolling mills. 3,186,207, 6-1-65, Cl. 72—250.

Schmitt, Bernhard: *See*—
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Schmitter, A. Louise: *See*—
Schmitter, Walter P. 3,187,209.
Schmitter, Walter P. 3,186,255.

Schmitter, Walter P., deceased (by A. L. Schmitter, and R. V. Abendroth, co-executors), to The Falk Corp. Gear drive enclosure. 3,186,255, 6-1-65, Cl. 74—606.

Schmitter, Walter P., deceased (by A. L. Schmitter, and R. V. Abendroth, co-executors), to The Falk Corp. Motor shaft mounted speed reducer. 3,187,209, 6-1-65, Cl. 310—83.

Schnable, George L., to Philco Corp. Semiconductor devices utilizing cadmium alloy regions. 3,186,879, 6-1-65, Cl. 148—1.5.

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Schneckloth, Raymond C. Hydraulic actuating and control systems. 3,186,432, 6-1-65, Cl. 137—596.13.

Schneider, Alden J., W. E. Taylor, and G. E. Eckman, to American Can Co. Container. 3,186,581, 6-1-65, Cl. 220—53.

Schneider, Charles R. Pumps and compressors. 3,186,343, 6-1-65, Cl. 103—38.

Schneider, Joseph R., and R. B. French, to Sperry Rand Corp. Multiplex beacon range determining system. 3,187,327, 6-1-65, Cl. 343—6.6.

Schneiter, Ali, to Ebauches S.A. Calendar timepiece. 3,186,159, 6-1-65, Cl. 58—58.

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Schneyer Raymond L.: *See*—
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Schoendube, Charles W., to General Electric Co. Time delay control system. 3,187,232, 6-1-65, Cl. 317—141.

Schönherr, Armin, to Licentia Patent-Verwaltungs-G.m.b.H. Switching device for firing automatic firearms. 3,187,231, 6-1-65, Cl. 317—139.

Schorn, Carl F., to Holly Carburetor Co. Machine control device. 3,186,306, 6-1-65, Cl. 91—27.

Schrader, Gerhard, to Farbenfabriken Bayer Aktiengesellschaft. O-chloroalkyl O-alkylmercapto-alkyl and O-chloroalkyl S-alkylmercaptoalkyl esters of alkyl phosphonic acids. 3,187,035, 6-1-65, Cl. 260—461.

Schrader, Roger F., to General Electric Co. Bushing fuse provided with a fuse body of strong insulating material having flattened ends. 3,187,146 6-1-65, Cl. 200—113.

Schuessler, Jerome E. Cam controlled, diverse, co-acting doctors on a roller applicator. 3,186,377, 6-1-65, Cl. 118—1.

Schuler, Edward E.: *See*—
Rightsel, Wilton A., and Schuler. 3,186,908.

Schuler, Norman W., to Polaroid Corp. Preparation of polyhydroxyaryl partial acetals of polyvinyl alcohol. 3,186,970, 6-1-65, Cl. 260—73.

Schultz, Ralph L., to Victor Comptometer Corp. Carriage and ribbon mechanism for calculating machines. 3,186,533 6-1-65, Cl. 197—157.

Schultz, Ralph L., to Victor Comptometer Corp. Access hood for calculating machine. 3,186,635, 6-1-65, Cl. 235—1.

Schultz, Ralph L., to Victor Comptometer Corp. Control mechanism for calculating machines. 3,186,640, 6-1-65, Cl. 235—60.

Schultz, Robert A., to United States Steel Corp. Yielding anchorage. 3,186,664, 6-1-65, Cl. 248—25.

Schuls Tool and Mfg. Co.: *See*—
Brown, Gordon F., and Mosher. 3,186,426.
Pierce, Edwin F. 3,187,133.

Schwab, Carl M., to Otis Engineering Corp. Method and means for treating wells. 3,186,483, 6-1-65, Cl. 166—42.

Schwartz, Jerome, to Taylor Lock Co. Lock construction. 3,186,199, 6-1-65, Cl. 70—370.

Schweitzer, Samuel: *See*—
Katz, Leonhard and Schweitzer. 3,187,067.

Schwester, Daniel P., H. B. Martin, and F. A. O'Loughlin, to The Thomas & Betts Co. Self clinching bundling strap. 3,186,047, 6-1-65, Cl. 24—16.

Sciaky, David, to Welding Research, Inc. Electron gun having a releasably clamped electron emitting element. 3,187 216, 6-1-65, Cl. 313—237.

Scislowicz, Henry M.: *See*—
Beall, Glenn L., and Scislowicz. 3,186,450.

Scott, Wallace: *See*—
Gelfand, Milton, and Scott. 3,186,932.

Scottish Agricultural Industries Ltd.: *See*—
Brownlie, Isaac A., and Wemyss. 3,186,827.

Scully-Anthony Corp.: *See*—
Anthony, Myron L. 3,187,123.

Sea-Air, Inc.: *See*—
Gentile, Robert. 3,186,005.

Sears, Anthony. Direct current generator. 3,187,212, 6-1-65, Cl. 310—178.

Sears, Garold D., and P. M. Sullivan; ½ to R. J. Mosher, and ½ to H. J. Mosser. Transducer. 3,187,116, 6-1-65, Cl. 179—115.

Sears, James K., to Monsanto Co. Plasticised polycarbonate resins. 3,186,961, 6-1-65, Cl. 260—30.4.

Seeburg Corp., The: *See*—
Von Gunten, Lee L. 3,186,285.

Seeger, Ernst, and A. Kottler, to Boehringer Ingelheim G.m.b.H. 1-phenyl-2-pyrrolidino-pentane and salts. 3,186,997, 6-1-65, Cl. 260—295.5.

Seidl, Alois C., and F. Walker, to Allis-Chalmers Mfg. Co. Rotor shifting mechanism. 3,187,213, 6-1-65, Cl. 310—209.

Seifried, Walter, and O. Müller, to Kalle Aktiengesellschaft. Process for the manufacture of shrinkable polyterephthalic acid glycol ester films. 3,187,075, 6-1-65, Cl. 264—289.

Seiko Denki Kogyo Kabushiki Kaisha: *See*—
Misawa, Mutsumi. 3,187,340.

Seiler, Wolfgang, to Vereenigde Towfabrieken, N.V. Jacquard looms. 3,186,439, 6-1-65, Cl. 139—59.

Seko, Maomi: *See*—
Tsunoda, Yoshio, Seko, Ehara, Ogawa, and Yamakoshi. 3,186,476.

Selnes, Arnold. Safety lock for a safety belt. 3,186,054, 6-1-65, Cl. 24—230.

Serio, James W. Detachable handle apparatus. 3,186,026, 6-1-65, Cl. 16—114.

Seulen, Gerhard W., F. W. Scheffler, and L. Springob, to Deutsche Edelstahlwerke Aktiengesellschaft, and Allgemeine Elektricitats-Gesellschaft. Circuit for controlling the power of inductive heating or melting equipment. 3,187,156, 6-1-65, Cl. 219—10.75.

Sevrigne, Frank J., to General Mills, Inc. Preparation of tocopherols. 3,187,011, 6-1-65, Cl. 260—345.5.

Sexe, Richard W. and O. T. Bogen. Mechanical exerciser. 3,186,231, 6-1-65, Cl. 73—381.

Shabarick, Anthony A. Modified checker game. 3,186,716, 6-1-65, Cl. 273—137.

Shannon, Suel G., to AMP Inc. Pin receptacle for printed circuit board. 3,187,298, 6-1-65, Cl. 339—256.

Shapiro, Elliot L.: *See*—
Legatt, Theodore, and Shapiro. 3,186,986.

Sharko, Sam, to Intercontinental Dynamics Corp. Annular ring suction cup testing and holding means. 3,186,212, 6-1-65, Cl. 73—4.

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Long, Arthur H., and Shashaty. 3,186,332.

Shashoua, Fred E., and R. C. Wilcox, to Radio Corp. of America. Speed control system using parallel control loops. 3,187,092, 6-1-65, Cl. 178—6.6.

Shaw, Gilbert. Brush construction. 3,186,018, 6-1-65, Cl. 15—159.

Shechter, Harold, to Cities Service Research and Development Co. Cyclooleﬁn production. 3,187,062, 6-1-65, Cl. 260—666.

Shell Oil Co.: *See*—
Bullard, Billy J., and Malott. 3,186,490.
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Geer, Ronald L., and Otteman. 3,186,487.
Hungerford, Ernest T. 3,187,252.
Johnson, Glenn D., and Watkins. 3,186,488.
Rademacher, Friedrich J. C. 3,186,502.
Swanlund, Clifford A., Jr., and Siebenhausen. 3,186,180.
Verberg, Govert. 3,186,974.

Shen, Kwan-Ting: *See*—
De Groote, Melvin, and Shen. 3,186,951.

Shenk, George C., to Waldorf Paper Products Co. Clock packages. 3,186,541, 6-1-65, Cl. 206—46.

Sherman, Charles A. Multiple length defect trim saw. 3,183,950, 5-18-65, Cl. 144—2.

Sherrick, David C.: *See*—
Kleinschmidt, Edward F., C. P. and H. A. Anderson, Clark, and Sherrick. 3,187,096.

Shriver, Donald S., R. R. MacGregor, and W. P. Moore, to Allied Chemical Corp. Method and apparatus for producing ureaformaldehyde foams. 3,186,956, 6-1-65, Cl. 260—2.5.

Shuttler, Ellen J.: *See*—
Ward, Douglas M., and Shuttler. 3,186,789.

Shuttler, James D.: *See*—
Ward, Douglas M., and Shuttler. 3,186,789.

Shvets, Roman E. Bag embodying one or more tie-strip portions, and sheet material providing the same. 3,186,626, 6-1-65, Cl. 229—62.

Sidener, Roger D., to Foster Wheeler Corp. Device for attaching an enclosure about a high temperature casing. 3,186,526, 6-1-65, Cl. 189—34.

Sidenstick, Harry L.: *See*—
Hoffman, Henry R., and Sidenstick. 3,186,333.

Siebenhausen, Christian H., Jr.: *See*—
Swanlund, Clifford A., Jr., and Siebenhausen. 3,186,180.

Siemens & Halske Aktiengesellschaft: *See*—
Ebel, Herbert. 3,187,104.

Sightmaster Corp.: *See*—
Grabinski, Joseph. 3,187,145.

Sigma Instruments, Inc.: *See*—
Adkins, Harold T. 3,187,204.
Pierce, Robert H., and Stein. 3,187,282.

Silver, Alexander, to The Garrett Corp. Pneumatic control apparatus. 3,186,642, 6-1-65, Cl. 236—79.

Silverman, Joseph, to Radiation Applications, Inc. Removal of contaminants from milk. 3,186,849, 6-1-65, Cl. 99—60.

Simmons, Rufus P. Multi-purpose hand tool. 3,186,009, 6-1-65, Cl. 7—16.

Simon-Carves Ltd.: *See*—
Gerrard, John S. 3,186 792.
Gerrard, John S. 3,186,802.

Simonds, Milton R.: *See*—
Salsberg, Harold K., and Simonds. 3,186,918.

Simplicity Engineering Co.: *See*—
Behnke, George W. 3,186,647.

Sims, Jannice. Artist's compact palette. 3,186,539, 6-1-65, Cl. 206—1.8.

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Ludbrook, Leslie C., and Sims. 3,186,201.

Sinclair Research, Inc.: *See*—
Burk, Emmett H., Jr., and Kovach. 3,187,063.

Singer Co. of Canada Ltd.: *See*—
Greco, Frank. 3,186,367.

Singer, Ernst. Pressure operated pressure regulating switch. 3,187,135, 6-1-65, Cl. 200—83.

Sisk, Hollis D., and R. F. Munier, to Wagner Electric Corp. Polyphase motor with plural winding sections. 3,187,245, 6-1-65, Cl. 318—225.

Skaggs, Clyde W., and E. A. Leary, to Martin-Marietta Corp. Method of producing unsupported epitaxial films of germanium by evaporating the substiate. 3,186,880, 6-1-65, Cl. 148—1.6.

Skidmore, William D. Luminous pacifier. 3,186,411, 6-1-65, Cl. 128—360.

Skiens, William E., to The Dow Chemical Co. Water softening with fine cation exchange tubes. 3,186,941, 6-1-65, Cl. 210—30.

Skinner, Ralph L., Sr., to Renniks Co. Spring. 3,186,701, 6-1-65, Cl. 267—1.

Sklaroff, Herbert. Floor or roof structure. 3,186,037, 6-1-65, Cl. 20—6.

Skoultchi, Martin: *See*—
Fertig, Joseph, Skoultchi, and Goldberg. 3,186,968.

Slack, Ronald, S. L. Squires, and K. R. H. Wooldridge, to May & Baker Ltd. Isothiazole derivatives. 3,186,999, 6-1-65, Cl. 260—302.

Slagel, Lamont: *See*—
Mead, Harry A., and Slagel. 3,186,625.

Slane Hosiery Mills, Inc.: *See*—
Garner, Grady E. 3,186,191.

Slezak, Frank B., to Diamond Alkali Co. Carboxy and carboxymethyl glucolurils and process. 3,187,005, 6-1-65, Cl. 260—309.7.

Slezak, Frank B., and H. Bluestone, to Diamond Alkali Co. Halogenated alkyl and aryl substituted glycolurils. 3,187,004, 6-1-65, Cl. 260—309.7.

Slinker, Virgil J. Indexing mechanism. 3,186,246, 6-1-65, Cl. 74—128.

Sloat, Robert J.: *See*—
Dunn, James T. E., and Sloat. 3,186,513.

Sluhan, Clyde A., to Master Chemical Corp. Aqueous cutting fluid. 3,186,946, 6-1-65, Cl. 252—49.3.

Small, George R., and W. E. Beck, to Bruce Peebles & Co., Ltd. Junction device for electrical cables. 3,187,292, 6-1-65, Cl. 339—94.

Smaller, Philip, to Ampex Corp. Magnetic recording heads with monitor of recorded signal. 3,187,111, 6-1-65, Cl. 179—100.2.

Smidth, F. L., & Co.: *See*—
Bacher, Jan P. 3,186,647.

Smith, Albert. Vial opener. 3,186,615, 6-1-65, Cl. 225—103.

Smith, Andrew L., to Monsanto Co. Preparation of trans 1,2-diaminocyclohexane. 3,187,045, 6-1-65, Cl. 260—563.

Smith, Arthur J., and C. R. Hughes. Pipe coupling device with dual clamping means. 3,186,744, 6-1-65, Cl. 285—373.

Smith, Charles W.: *See*—
Allen, Francis P., and Smith. 3,186,844.

Smith, Edgar H.: *See*—
Gehman, Roland P., Martin, and Smith. 3,186,016.

Smith, George W. Molded article. 3,186,118, 6-1-65, Cl. 40—154.

Smith, Jean G.: *See*—
Fitch, Frederick T., and Smith. 3,186,949.

Smith, John J.: *See*—
Smith, John W. and John J., and Hawkins. 3,186,861.

Smith, John W. and John J., and E. A. Hawkins, to The Mead Corp. Process for producing pressure sensitive record paper. 3,186 861, 6-1-65, Cl. 117—36.1.

Smith, Joseph E., Jr., to Ex-Cell-O Corp. Aerodynamically supported magnetic head construction for magnetic drums, discs and the like. 3,187,112, 6-1-65, Cl. 179—100.2.

Smith, Joseph E., Jr., to Ex-Cell-O Corp. Positioning method and apparatus for magnetic head in a magnetic recording device. 3 187,313, 6-1-65, Cl. 340—174.1.

Smith, Joseph E., Jr., to Ex-Cell-O Corp. Disc file. 3,187,317, 6-1-65, Cl. 340—174.1.

Smith, Kline & French Laboratories: *See*—
Julian, Percy L., Magnani, Hill, and Aschner. 3,187,025.

Smith, S. W., Jr.: *See*—
Denny, Orion B. 3,186,585.

Smyth, Frederick J., to General Precision, Inc. Training apparatus. 3,186,110, 6-1-65, Cl. 35—11.

Snow, Richard K., G. J. Gendron, and L. J. Phares, to Raymond International Inc. Filling of pile shells with concrete. 3,186,181, 6-1-65, Cl. 61—53.5.

Societe d'Etudes et d'Applications Industrielles Commerciales et "Immobilieres Inter-Technique": *See*—
Danvauthier, Marcel. 3,186,507.

Societe Industrielle Generale de Mecanique: *See*—
Gauthier, Robert, and Dumas. 3,186,170.

Societe Industrielle Generale de Mecanique Appliquee S.I.G.M.A.: *See*—
Pignolet Louis, and Dumas. 3,186,162.

Socony Mobil Oil Co., Inc.: *See*—
Steininger, Erwin. 3,187,017.

Solnick, Robert L., and R. A. Dora, to Beckman Instruments, Inc. Sampling valve. 3,186,234, 6-1-65, Cl. 73—422.

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Green, Milton, and Solodar. 3,187,049.

Solomon, Benjamin, to Topps Chewing Gum, Inc. Container. 3,186,591, 6-1-65, Cl. 321—260.

Soltes, William T. Synergistic pyrethrum insecticide. 3,186,-903. 6-1-65. Cl. 167—24.

Somekh, George S. : *See*—
Anderson, John R., and Somekh. 3,186,937.

Somerville, Gareth G., to General Electric Co. Method of making single turn core for transformer or the like. 3,186,-067. 6-1-65. Cl. 29—155.57.

Sonderman, John A., to Philip S. Olt Co. Game call holders. 3,186,611. 6-1-65. Cl. 224—5.

Sosalla, Harry L., and S. Bylsma, to Noble Mfg. Co. Multiple applicators. 3,186,719. 6-1-65. Cl. 275—14.

Soukup, Victor G. : *See*—
Bratton, Francis H., Buescher, Frye, and Soukup. 3,187,-061.

South River Metal Products Co. Inc. : *See*—
Cohn, Max. 3,186,772.

Southern Machinery Co. : *See*—
Engels, Walter. 3,186,441.

Spaeth, Otto L., Jr. Panelized building construction. 3,186,-524. 6-1-65. Cl. 189—2.

Spange, Arno : *See*—
Freyhold, Helmut V., and Spange. 3,186,857.

Sparwald, Volker, to Vereinigte Aluminium-Werke Aktiengesellschaft. Method of producing aluminum. 3,186,832, 6-1-65. Cl. 75—68.

Specialties Development Corp. : *See*—
Jamison, Will B., and Barnes. 3,186,490.
Olandt, John W. 3,186,252.

Speedrack Inc. : *See*—
Konstant, Anthony N., and Schell. 3,186,527.

Speier, John L. : *See*—
Kookootsedes, Gust J., and Speier. 3,186,964.

Sperry, Phillip R. : *See*—
Fryer, Michael J., Sperry, and Keir. 3,186,836.

Sperry Rand Corp. : *See*—
Bean, Harley F. 3,187,106.
Dahlberg, Arthur W. 3,187,322.
Melink, George E. 3,186,898.
Ost, Robert J. 3,187,210.
Reed, Charles B., and Sutter. 3,186,211.
Schneider, Joseph R., and French. 3,187,327.
Zolnik, Charles E. 3,187,258.

Speziale, Angelo J., and K. W. Ratts, to Monsanto Co. Monohalophosphonium halides. 3,187,043. 6-1-65. Cl. 260—558.

Spinanger, Arthur, and R. V. Burt, to The Procter & Gamble Co. Apparatus for loading and unloading vehicles. 3,186,-566. 6-1-65. Cl. 214—38.

Spinanger, Arthur, and R. V. Burt, to The Procter & Gamble Co. Method for loading and unloading vehicles. 3,186,568. 6-1-65. Cl. 214—152.

Spinrad, Malcolm : *See*—
Haas, Kenneth C., and Spinrad. 3,186,366.

Sprague Electric Co. : *See*—
Robinson, Preston. 3,184,660.

Springfield-Greene Industries, Inc. : *See*—
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Square D Co. : *See*—
Dietz, Robert E., Dessert, Pickett, and Zubaty. 3,187,147.
Marta, Francis A. 3,187,299.
Moodie, Ernest W., Holman, and Stanback. 3,187,086.
Stanback, Harris I., and Curtis. 3,187,124.

Squires, Sydney L. : *See*—
Slack, Ronald, Squires, and Wooldridge. 3,186,999.

Stacey, Maurice : *See*—
Patrick, Colin R., Stacey, and Tatlow. 3,187,058.

Staller, Karel J., to International Telephone and Telegraph Corp. Mechanically variable elements to calculate check symbols. 3,186,639. 6-1-65. Cl. 235—60.

Stamets, Wm. K., Co. : *See*—
Long, Arthur H., and Shashaty. 3,186,332.

Stamires, Dennis N. : *See*—
Freeman, Donald C., Jr., and Stamires. 3,186,225.

Stanback, Harris I. : *See*—
Moodie, Ernest W., Holman, and Stanback. 3,187,086.

Stanback, Harris I., and H. W. Curtis, to Square D Co. Door interlock mechanism for enclosed circuit breakers. 3,187,-124. 6-1-65. Cl. 200—50.

Standard Oil Co. (Indiana) : *See*—
Beredjick, Nicky. 3,187,067.
Hundley, John G. 3,187,038.
Peter, Hugo H., and Hoff. 3,187,057.

Standard Oil Co. (Ohio), The : *See*—
Callahan, James L., Szabo, and Gertisser. 3,186,955.

Standley, Henderson B. Receptacle holder. 3,186,671. 6-1-65. Cl. 248—224.

Stanimirovitch, Douchan, to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Separators for alkaline accumulators. 3,186,877. 6-1-65. Cl. 136—143.

Stanley, Allen C. : *See*—
Kohler Samuel H., and Stanley. 3,186,454.

Stanley, Oliver C., to The Ryan Aeronautical Co. Signal tracking filter having tuning reactance automatically controlled by vacuum tube capacitance responsive to phase comparator. 3,187,278. 6-1-65. Cl. 333—17.

Stanley, Richard B. to The Kartridg Pak Co. Filling apparatus. 3,186,451. 6-1-65. Cl. 141—360.

Stapp, Lloyd D., 50% to H. T. Porter. Vehicle window control device. 3,186,703. 6-1-65. Cl. 268—126.

Starcher, Paul S. : *See*—
Tinsley, Samuel W., and Starcher. 3,187,018.

Starr, David A., Jr., to Burroughs Corp. Signal modulating circuit with a cathode coupled phantastron and comparator. 3,187,264. 6-1-65. Cl. 328—247.

Startron Corp. : *See*—
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O'Link, Maurice H. 3,186,674.

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Helms, Harold E., and Stedfeld. 3,186,584.

Steelworks Automation Ltd. : *See*—
Ludbrook, Leslie C., and Sims. 3,186,201.

Stefanikayra, John J., to Northern Electric Co. Ltd. Centrifugal self-cleaning snagger. 3,186,653. 6-1-65. Cl. 242—25.

Stefanov, Boris, to Kauke and Co., Inc. Frequency difference measuring circuit. 3,187,195. 6-1-65. Cl. 307—88.5.

Steffanoff, Denue N. Wind silencer for sun-roofs of passenger vehicles. 3,186,753. 6-1-65. Cl. 296—1.

Steib, Ben R. Tac-meter. 3,186,221. 6-1-65. Cl. 73—150.

Stein, Laurence B., Jr. : *See*—
Pierce, Robert H., and Stein. 3,187,282.

Steinberg, Howard : *See*—
Willcokson, George W., and Steinberg. 3,187,054.

Steininger, Erwin, to Socony Mobil Oil Co., Inc. Tetrahydrofurans and a method for their preparation. 3,187,-017. 6-1-65. Cl. 260—347.8.

Steinmetz, Otto, to International Standard Electric Corp. Telephone ring-trip arrangement. 3,187,106. 6-1-65. Cl. 179—18.

Stelma, Inc. : *See*—
Feldman, Stanley I. 3,187,097.

Stepath, Myron D., to Arcair Co. Electric arc-gas jet cutting and gouging torch. 3,187,154. 6-1-65. Cl. 219—70.

Stern, Hansjoerg, to General Electric Co. Apparatus for minimizing spots on articles washed in automatic dishwashers. 3,186,418. 6-1-65. Cl. 134—58.

Stevenson, Herbert A., J. R. Marshall, and A. F. Hams, to Boots Pure Drug Co. Ltd. Fungicidal sulphones and sulphoxides. 3,186,904. 6-1-65. Cl. 167—30.

Stiles, Alvin B., to E. I. du Pont de Nemours and Co. Catalytic exhaust converter. 3,186,806. 6-1-65. Cl. 23—288.

Stiles, Alvin B., to E. I. du Pont de Nemours and Co. Method of preparing a nickel oxide-alumina catalyst composition and the product thereof. 3,186,957. 6-1-65. Cl. 252—466.

Stiles, Martin : *See*—
Johnson, Francis, Gurowitz, and Stiles. 3,186,969.

Stillman, Harry L., F. G. Bellek, and P. J. Zerwes, to Bell Electric Co. Junction box with detachable supporting means. 3,187,084. 6-1-65. Cl. 174—58.

Stillwell, William E., Jr., to Hupp Corp. Clothes drier with variable speed centrifuge and heat supply. 3,186,104. 6-1-65. Cl. 34—45.

Stimson, Allen G., to Eastman Kodak Co. Exposure control system for photographic cameras. 3,186,320. 6-1-65. Cl. 95—10.

Stiner, James E. : *See*—
Hardy, Albert L., Hauser, and Stiner. 3,186,652.

Stober, Matthaeus : *See*—
Rosenberger, Gustav, and Stober. 3,187,239.

Stoll, Gottlieb. Roller feed mechanism for woodworking machines. 3,186,455. 6-1-65. Cl. 144—246.

Stoll, Paul A., and E. Umbricht. Automated storage systems. 3,186,355. 6-1-65. Cl. 104—162.

Stone, Joseph J., and J. H. Borland, to A. B. Dick Co. Light-to-electrostatic image converter and process for manufacturing same. 3,186,839. 6-1-65. Cl. 96—1.

Story, Thomas, to S. Birkenwald Co. Shelf unit support. 3,186,668. 6-1-65. Cl. 248—158.

Striessle, Marcel. Profiled bar. 3,186,561. 6-1-65. Cl. 211—182.

Strickler, Allen, to Beckman Instruments, Inc. Automatic titrator. 3,186,800. 6-1-65. Cl. 23—253.

Strickler, Allen, to Beckman Instruments, Inc. Integrator. 3,187,168. 6-1-65. Cl. 235—183.

Stroburg, Clark E. and E. L. Leveling device for the chaffer and sieve on a combine. 3,186,548. 6-1-65. Cl. 209—416.

Stroburg, Eldon L. : *See*—
Stroburg, Clark E. and E. L. 3,186,548.

Strohmeyer, Charles, Jr., to Gilbert Associates, Inc. Heat absorption balancing system for a steam generator having a primary steam circuit and a reheating steam circuit. 3,186,175. 6-1-65. Cl. 60—73.

Stube, Fred F : *See*—
Knapp, George A., and Stube. 3,187,172.

Stueben, Kenneth C., to Union Carbide Corp. Cyclic amides and a process for the preparation thereof. 3,186,983. 6-1-65. Cl. 260—239.3.

Stump, Eugen, to Daimler-Benz Aktiengesellschaft. Brake installation for motor vehicles. 3,186,516. 6-1-65. Cl. 188—18.

Sturdi Mfg. Co. : *See*—
Martin, Bertice A., and Rassbach. 3,186,427.

Sturdy, James N. : *See*—
Ellis, Ray G., and Sturdy. 3,186,532.

Sudhaus, Heinrich, Soehne : *See*—
Noerrenberg-Sudhaus, Ernst. 3,186,198.

Sugiyama, Hiroshi : *See*—
Hattori, Junnosuke, Sugiyama, Yoshioka, and Koike. 3,186,905.

Sullivan, James F. : *See*—
Cox, Robert E., and Sullivan. 3,186,406.

Sullivan, Patrick M. : *See*—
Sears, Garold D., and Sullivan. 3,187,116.

Sumitomo Chemical Co., Ltd. : *See*—
Hattori, Junnosuke, Sugiyama, Yoshioka, and Koike. 3,186,905.
Saito, Shigeya, and Ohizumi. 3,187,027.
Yoshioka, Kosuke, and Horie. 3,187,036.

Summerer, Raymond E., to General Motors Corp. Impulse integrator drive for measuring rotary motion. 3,187,244. 6-1-65. Cl. 318—27.

Summers, Gerald C., to PGAC Development Co. Telemetering system for use in borehole logging to control downhole tool from surface. 3,187,301. 6-1-65. Cl. 340—18.

Sun Oil Co. : *See*—
Donnell, Conrad K. 3,186,213.

Sundt, Edward V. Torque meter. 3,186,219. 6-1-65. Cl. 73—136.

Surowitz, Philip, to Johnson & Johnson. Method for marking cloth and the resulting article. 3,186,859. 6-1-65. Cl. 117—1.7.

Süs, Oskar, G. Von Poser, and G. Werner, to Keuffel & Esser Co. Two-component diazotype material. 3,186,845. 6-1-65. Cl. 96—91.

Sutter, Clair G. : *See*—
Reed, Charles B., and Sutter. 3,186,211.

Sutton, Jonel D. : *See*—
Gardner, Stephen, and Sutton. 3,187,200.

Svehaug, Oswald C. : *See*—
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Svensson, Soldan A., to Gulf States Paper Corp. Fluid storage and dispensing carton. 3,186,621. 6-1-65. Cl. 229—17.

Swanlund, Clifford A., Jr., and C. H. Siebenhausen, Jr., to Shell Oil Co. Offshore well drilling and oil storage platform. 3,186,180. 6-1-65. Cl. 61—46.5.

Sweeney, William A., to California Research Corp. Detergent toilet bars. 3,186,948. 6-1-65. Cl. 252—161.

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Swensson, Folke H. T. Educational musical toys. 3,186,-286. 6-1-65. Cl. 84—93.

Sylvan, Stig, to American Air Filter Co., Inc. Rotary filter apparatus. 3,186,389. 6-1-65. Cl. 123—119.

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Lewis, Lawrence S. 3,187,198.
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Sylvester, Edmund Q. Casting ingate arrangement. 3,186,-039. 6-1-65. Cl. 22—69.

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Tann, David. Self-tightening connector. 3,186,048. 6-1-65. Cl. 24—31.

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Taylor, Paul H., to Tayco Developments, Inc. Liquid spring. 3,186,702. 6-1-65. Cl. 267—1.

Taylor, Roderick, ½ to The Nuclear Power Plant Co. Ltd. Solid moderator core structures for nuclear reactors. 3,186,916. 6-1-65. Cl. 176—65.

Taylor, Wilfred K., to International Business Machines Corp. System for analysing the spatial distribution of a function. 3,187,304. 6-1-65. Cl. 340—146.3.

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Tissot, Hans. Rotary pump. 3,186,848. 6-1-65. Cl. 103—135.

Tissot-Dupont, Lucien F. S., to S.A.R.L.G.T. Dupont. Safety filling valve for liquefied gas containers. 3,186,449. 6-1-65. Cl. 141—295.

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Tomberg, Victor T., to Topps Chewing Gum Inc. Proportioning control device. 3,186,273. 6-1-65. Cl. 83—74.

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Turlington, William M. Merchandise cart. 3,186,728. 6-1-65. Cl. 280—33.99.

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CLASSIFICATION OF PATENTS

ISSUED JUNE 1, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,186,004	29–203	3,186,072	60– 39.16:	3,186,166	74–103	3,186,244	96– 23	3,186,841	123–120	3,186,393
9	3,186,005		3,186,073	39.28:	3,186,167	128	3,186,245	29	3,186,842	122	3,186,394
3– 19	3,186,006		3,186,074	39.32:	3,186,168		3,186,246	66	3,186,843	139	3,186,395
4– 37	3,186,007		3,186,075	51	3,186,169	230.4	3,186,247	87	3,186,844		3,186,396
5–109	3,186,008		3,186,076	53	3,186,170	233	3,186,248	91	3,186,845	148	3,186,397
7– 16	3,186,009		3,186,077		3,186,171	409	3,186,249	94	3,186,846	126– 37	3,186,398
8– 41	3,186,787		3,186,078	54	3,186,172	459	3,186,250	111	3,186,847	94	3,186,399
42	3,186,788	236	3,186,079	54.5	3,186,173	501	3,186,251		3,186,848	142	3,186,400
9– 6	3,186,010	238	3,186,080	54.6	3,186,174	502	3,186,252	98– 38	3,186,327	200	3,186,401
24	3,186,011	434	3,186,081	73	3,186,175	540	3,186,253		3,186,328	360	3,186,402
10–139	3,186,012	456	3,186,082	95	3,186,176	594.4	3,186,254	40	3,186,329	128– 2.06:	3,186,403
12–146	3,186,013	470.9	3,186,083	61– 41	3,186,177	606	3,186,255	46	3,186,330	87	3,186,404
13– 6	3,187,076	472.9	3,186,084	45	3,186,178	615	3,186,256	99– 60	3,186,849		3,186,405
9	3,186,510	568	3,186,085		3,186,179	665	3,186,257	78	3,186,850	186	3,186,406
	3,187,159	30– 43.1	3,186,087	46.5	3,186,180	710.5	3,186,258	123	3,186,851	203	3,186,407
13	3,187,077	279	3,186,088	53.5	3,186,181	750	3,186,259	136	3,186,852	221	3,186,408
	3,187,078	358	3,186,086	62– 26	3,186,182	822	3,186,260	159	3,186,853	275	3,186,409
15	3,187,079	32– 14	3,186,089	183	3,186,183	75– .5	3,186,829	163	3,186,854		3,186,410
15– 3.51:	3,186,014	33– 1	3,186,090	243	3,186,184	43	3,186,830	445	3,186,331	348	Re.25,788
84	3,186,015		3,186,091	255	3,186,185	60	3,186,831	100– 7	3,186,332	360	3,186,411
85	3,186,016	64	3,186,092	263	3,186,186	68	3,186,832	9	3,186,333	483	3,186,412
87	3,186,017	164	3,186,093	483	3,186,187	72	3,186,833	51	3,186,334	516	3,186,413
159	3,186,018	174	3,186,094	64– 4	3,186,188	84.5	3,186,834	101–157	3,186,335	131–236	3,186,414
179	3,186,019		3,186,095	21	3,186,189	134	3,186,835	216	3,186,336	132– 42	3,186,415
230.19:	3,186,020	178	3,186,096	30	3,186,190	138	3,186,836	228	3,186,337	79	3,186,416
340	3,186,021	184.5	3,186,097	65– 29	3,186,811	174	3,186,837	352	3,186,338	134– 3	3,186,870
345	3,186,022	189	3,186,098	55	3,186,812	77– 13	3,186,261	365	3,186,339	57	3,186,417
364	3,186,023	207	3,186,099	90	3,186,813	81– 3	3,186,262	102– 24	3,186,340	58	3,186,418
547	3,186,024	211	3,186,100	110	3,186,814	3.1	3,186,263	86.5	3,186,341	135– 1	3,186,419
16– 18	3,186,025	212	3,186,101	115	3,186,815	57	3,186,264	93	3,186,342	7.1	3,186,420
114	3,186,026	34– 10	3,186,102	116	3,186,816	177.9	3,186,265	103– 38	3,186,343	20	3,186,421
170	3,186,027	15	3,186,103	130	3,186,817	82– 1	3,186,266	54	3,186,344	136– 29	3,186,871
18– 5	3,186,028	45	3,186,104	169	3,186,818	2	3,186,267	87	3,186,345	86	3,186,872
5.3	3,186,029		3,186,105	244	3,186,819	11	3,186,268		3,186,346	89	3,186,873
9	3,186,031		3,186,106	271	3,186,820	14	3,186,269	121	3,186,347		3,186,874
12	3,186,030		3,186,107	288	3,186,821		3,186,270	135	3,186,348	143	3,186,876
14	3,186,032	53	3,186,108	335	3,186,823	83– 4	3,186,271	150	3,186,349		3,186,877
	3,186,033	35– 9	3,186,109	348	3,186,822	18	3,186,272		3,186,350	153	3,186,875
19	3,186,034	11	3,186,110	66– 50	3,186,191	74	3,186,273		3,186,351	173	3,186,878
26	3,186,035	17	3,186,111		3,186,192	103	3,186,274	162	3,186,352	137– 81.5	3,186,422
19–203	3,186,036	36– 34	3,186,112	67– 7.1	3,186,193	170	3,186,275		3,186,353	91	3,186,423
20– 6	3,186,037	43	3,186,113	68–210	3,186,194	206	3,186,276	179	Re.25,786	117	3,186,424
16	3,186,038	40– 10	3,186,114	69– 10	3,186,195	355	3,186,277		3,186,354	270	3,186,425
22– 69	3,186,039	28	3,186,115	70– 34	3,186,196		3,186,278	104–162	3,186,355	315	3,186,426
80	3,186,040	106.3	3,186,116	71	3,186,197	398	3,186,279	105–276	3,186,356	343	3,186,427
129	3,186,041	152.1	3,186,117	74	3,186,198	451	3,186,280	367	3,186,357	376	3,186,428
200	3,186,043	154	3,186,118	370	3,186,199	469	3,186,281	106– 38.23:	3,186,855	463	3,186,429
202	3,186,044	42– 1	3,186,119	71– 2.3	3,186,824	497	3,186,282	82	3,186,857	516.29:	3,186,430
204	3,186,045	43– 2	3,186,120	6	3,186,826	623	3,186,283	122	3,186,858	561	3,186,431
216	3,186,046	17.2	3,186,121	28	3,186,825		3,186,284	245	3,186,856	596.13:	3,186,432
23– 3	3,186,789	18	3,186,122	34	3,186,827	84– 20	3,186,285	107– 7	3,186,358	609	3,186,433
14	3,186,790	42.1	3,186,123	64	3,186,828	83	3,186,286	9	3,186,359	625.11:	3,186,434
59	3,186,791	44– 62	3,186,810	72– 8	3,186,200	251	3,186,287	14	3,186,360	625.19:	3,186,435
119	3,186,792	46– 51	3,186,124	9	3,186,201	275	3,186,288		3,186,361	625.22:	3,186,436
165	3,186,793	104	3,186,125	10	3,186,202	411	3,186,289	47	3,186,362	625.42:	3,186,437
175	3,186,794	118	3,186,126	56	3,186,203		3,186,290	108–114	3,186,363	138–121	3,186,438
196	3,186,795	151	3,186,127	89	3,186,204	470	3,186,291	146	3,186,364	139– 59	3,186,439
209.4	3,186,796	50– 52	3,186,128	125	3,186,205		3,186,292	112–153	3,186,365	88	3,186,440
212	3,186,797	267	3,186,129	194	3,186,206	85– 9	3,186,293	219	3,186,366	114	3,186,441
230	3,186,798	360	3,186,131	250	3,186,207	88– 14	3,186,294	252	3,186,367	118	3,186,442
253	3,186,799	370	3,186,130	263	3,186,208		3,186,295	113–121	3,186,368	291	3,186,443
	3,186,800	51– 11	3,186,132	334	3,186,209	24	3,186,296	114– 43.5	3,186,369	370	3,186,444
	3,186,801	105	3,186,133	467	3,186,210		3,186,297	66.5	3,186,370	140– 71.5	3,186,445
260	3,186,802	283	3,186,134	73– 1	3,186,211	28	3,186,298	125	3,186,371	93	3,186,446
285	3,186,803	394	3,186,135	4	3,186,212	28.93:	3,186,299	199	3,186,372	147	3,186,447
288	3,186,804	53– 3	3,186,136	36	3,186,213	39	3,186,300	210	3,186,373	141– 12	3,186,448
	3,186,805	24	3,186,137	40.7	3,186,214	89– 1.7	3,186,301	115– 17	3,186,374	295	3,186,449
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42 : 3,186,014
3,186,023
3,186,036
3,186,079
3,186,082
3,186,144
3,186,146
3,186,223
3,186,260
3,186,393
3,186,402
3,186,420
3,186,453
3,186,481
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3,186,487
3,186,489
3,186,498
3,186,500
3,186,511
3,186,555
3,186,558
3,186,681

42 : 3,186,703	42 : 3,187,252	44 : 3,187,316	46 : 3,186,098	47 : 3,187,000	48 : 3,186,663
3,186,733	3,187,267	45 : 3,186,128	3,186,513	3,187,018	3,186,665
3,186,745	3,187,301	3,186,330	3,186,856	3,187,246	3,186,696
3,186,754	3,187,338	3,186,356	3,187,192	48 : 3,186,063	3,186,732
3,186,773	43 : 3,186,109	3,186,503	3,187,285	3,186,221	3,186,833
3,186,796	3,186,570	3,186,525	3,187,310	3,186,255	3,187,149
3,186,901	3,187,339	3,186,587	47 : 3,186,302	3,186,428	3,187,209
3,186,928	44 : 3,186,008	3,186,738	3,186,957	3,186,472	3,187,213
3,187,116	3,186,018	3,186,756	3,186,969	3,186,550	49 : 3,186,405
3,187,166	3,186,057	3,186,959	3,186,971	3,186,564	3,187,290
3,187,238	3,187,313	3,187,203			

DESIGN PATENTS

2 : 201,264	6 : 201,239	12 : 201,253	31 : 201,252	34 : 201,261	37 : 201,246
4 : 201,242	201,257	201,255	34 : 201,241	201,268	201,254
201,250	201,259	20 : 201,267	201,245	201,269	39 : 201,243
201,266	10 : 201,265	29 : 201,256	201,258	35 : 201,262	46 : 201,263
201,270	12 : 201,251	31 : 201,240	201,260		

PLANT PATENTS

4 : 2,522	4 : 2,523	4 : 2,524	4 : 2,525	4 : 2,526	36 : 2,527

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
June 1, 1965 Volume 815 Number 1

TRADEMARKS

NOTICES

Annual Index of Trademarks

The 1964 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.50.

International Convention for the Protection of Industrial Property

Accession by Southern Rhodesia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by Southern Rhodesia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

May 4, 1965. EDWARD J. BRENNER, *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Accession by Zambia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by the Republic of Zambia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

May 4, 1965. EDWARD J. BRENNER, *Commissioner of Patents.*

CONDITION OF TRADEMARK APPLICATIONS AS OF APRIL 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] 16,093
Date of oldest new application ..... Sept. 21, 1964
Date of oldest amended application ..... August 17, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-21-64	8-17-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	10-6-64	10-1-64
Renewals (All Classes)	4-12-65	4-26-65
Sec. 12 (c) Publications (All Classes)	4-14-65	.....

Applications filed during the month of April 1965—2,447

Registrations Issued ..... 374—No. 790,156 to No. 790,529
Renewals Issued 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 188,935. Maurice Villency, Inc., New York, N.Y. Filed Mar. 17, 1964.

MAURICE VILLENCY

"Maurice Villency" is the name of a living individual whose consent is of record.

Class 32—Furniture and Upholstery

For Bedroom Dressers, Bedroom Chests, Night Tables, Headboards, Bedding, Bed Frames, Dining Room Buffets, Desks, Dining Tables, Desk Chairs, Dining Chairs, Hutches, Bookcases, End Tables, Lamp Tables, Cocktail Tables, Lamps, Sofas, Settees, Love Seats, Lounge Chairs, Club Chairs, Ottomans, Stools, Reclining Chairs, Rocking Chairs, Mirrors, Nest of Tables, Bars, Bar Stools, Planters, Tea Carts, Vanities, Wall Hung Cabinets and Shelves, Modular Stacking Bookcases and Shelves.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Area Rugs.

First use Oct. 4, 1956.

SN 192,147. Acoustica Associates, Inc., Los Angeles, Calif. Filed Apr. 28, 1964.

acoustica

Class 21—Electrical Apparatus, Machines, and Supplies

For Ultrasonic Cleaners and Electro-Acoustic Transducers.

Class 26—Measuring and Scientific Appliances

For Liquid Level Sensor and Gaging Instruments and Electronic Computers.

Class 31—Filters and Refrigerators

For Liquid Filtering Elements.

First use in or about June 1958.

SN 196,913. Specialty Distributing Co., Inc., Atlanta, Ga. Filed July 1, 1964.

SPECIAL T

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio and Television Antennas; Transformers; By-Pass Capacitors; Sound Speakers; Volume Control Switch; Television Picture Tubes; Tubular Capacitors; Wire; Controls for Electronic, Radio and Television Equipment.

Class 36—Musical Instruments and Supplies

For Replacement Magnetic Recording Tape and Stylus for Phono Cartridges.

First use Mar. 20, 1963.

SN 198,085. Clifford E. Schiffer, d.b.a. Calusa Associates, Los Angeles, Calif. Filed July 17, 1964.

FAMILY TREE

Class 6—Chemicals and Chemical Compositions

For Household Dry Bleach and Laundry Fabric Softener.

Class 52—Detergents and Soaps

For Laundry Detergent, Toilet Bowl Cleaner, and Mechanical Dishwashing Compound.

First use Nov. 5, 1963.

SN 201,486. Svenska Aeroplan Aktiebolaget, Linkoping, Sweden. Filed Sept. 8, 1964.

SAAB

Owner of U.S. Reg. Nos. 714,948 and 717,857.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Horns and Horn Buttons, Switches, Rheostats and Control Knobs, Direction Indicators, Lamps, Relays, Capacitors, Coils, Fuses and Fuse Boxes, Batteries, Ignition Apparatus Including Distributors, Breaker Points and Spark Plugs, Motors, Dynamos, Cables, Cable Tags and Terminals, Junction Boxes, Jointing Sleeves, Protective Hoses for Cables, Solenoid Operated Pumps, Electrically Driven Clocks, Electrical Cigarette Lighters, and Electrically Driven Automobile Heating and Ventilating Apparatus.

Class 26—Measuring and Scientific Appliances

For Electrical Instruments for Measuring Fuel Level, Speedometers, and Ammeters.

First use July 1, 1949; in commerce January 1957.

SN 201,623. W. A. Sheaffer Pen Company, Fort Madison, Iowa. Filed Sept. 10, 1964.



The mark comprises the letter "S" in novel form. Owner of Reg. No. 219,435.

Class 11—Inks and Inking Materials

For Writing Fluid.

Class 37—Paper and Stationery

For Pens, Pencils, and Parts Therefor, Desk Stands, Pencil Leads, Erasers, Writing Fluid Cartridges and Refills.

First use on or about May 15, 1964.

SN 201,624. W. A. Sheaffer Pen Company, Fort Madison, Iowa. Filed Sept. 10, 1964.

SHEAFFER

Owner of Reg. Nos. 226,426, 693,194, and others.

Class 11—Inks and Inking Materials

For Writing Fluid.

Class 37—Paper and Stationery

For Pens, Pencils, and Parts Therefor, Desk Stands, Pencil Leads, Erasers, Writing Fluid Cartridges and Refills.

First use 1913.

SN 202,268. Tyer Rubber Corporation, Andover, Mass., assignee of Hodgman Rubber Company, Framingham, Mass. Filed Sept. 21, 1964.

HORCO-TEX

Owner of Reg. Nos. 328,199, 757,424, and others.

Class 22—Games, Toys, and Sporting Goods

For Surf Riders and Surf Floats.

Class 32—Furniture and Upholstery

For Pneumatic Mattresses.

First use 1960.

SN 205,645. Stein, Hall & Co., Inc., New York, N.Y. Filed Nov. 6, 1964.

GENULACTA

Class 18—Medicines and Pharmaceutical Preparations

For Carrageenan (Irish Moss Extract) for Use in Pharmaceutical Products.

Class 46—Foods and Ingredients of Foods

For Carrageenan (Irish Moss Extract) for Use in Food Products.

First use April 1960.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 183,984. Elsa M. McIntyre, d.b.a. Sure-Live Mealworm Co. Torrance, Calif. Filed Jan. 3, 1964.

SURE-LIVE

For Live or Processed, Worm-Type Pet Foods for Birds, Small Mammals, Reptiles, and Tropical Fish.

First use Apr. 1, 1948.

SN 189,826. E. D. Wilkinson Grain Co., Stockton, Calif. Filed Mar. 27, 1964.



The representation of the man is fanciful.

For Seed Grain—Namely, Barley Seed.

First use on or about Nov. 1, 1962.

SN 198,997. American Cyanamid Company, Wayne, N.J. Filed Aug. 3, 1964.

CYREZ

For Synthetic Resin.

First use Mar. 23, 1964.

SN 199,444. Francis H. Bezdek, d.b.a. Boulder Spring Farm, Lisbon, Ohio. Filed Aug. 7, 1964.



No claim is made to the representation of the fish and the words "Jumbo Hybrids," and "Boulder Spring Farm, Lisbon, Ohio."

For Hybrid Fish.

First use Aug. 4, 1964.

SN 201,407. Fiberfil, Inc., Evansville, Ind. Filed Sept. 8, 1964.

ABSAFIL

For Synthetic Plastic Injection Molding Materials in Pellet or Granular Form.

First use on or about Aug. 18, 1964.

SN 201,488. H. I. Thompson Fiber Glass Company, Gardena, Calif. Filed Sept. 8, 1964.

Hitco-C

Owner of Reg. Nos. 685,612 and 711,972.
For Carbon Products—Namely, Carbon Fibers, Yarn, Carbon Tapes, Carbon Cloth Fabrics, Carbon Sleevings, Carbon Cordage, Carbon Felt, and Carbon Rovings.
First use Feb. 12, 1961.

SN 201,929. Eagle Ottawa Leather Company, Grand Haven, Mich. Filed Sept. 15, 1964.

FIESTA

For Leather.
First use June 1, 1964.

SN 203,357. Union Carbide Corporation, New York, N.Y. Filed Oct. 5, 1964.

UCAR

Owner of Reg. Nos. 696,264 and 779,748.
For Silica for General Use in the Industrial Arts.
First use on or about Sept. 15, 1964.

SN 204,258. Hercules Powder Company, Wilmington, Del. Filed Oct. 19, 1964.

HERCOPRIME

For Synthetic Resins for Use in Coatings and Adhesives.
First use Sept. 15, 1964.

SN 204,561. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Oct. 22, 1964.

DESMOPAN

Owner of German Reg. No. 684,654, dated Nov. 24, 1955; and U.S. Reg. No. 584,842.
For Synthetic Plastic Materials in Suitable Forms, Such as Granules and Liquids, Having Various Uses in the Industrial Arts.

SN 204,562. Fiberfil, Inc., Evansville, Ind. Filed Oct. 22, 1964.

ETHOGLAS

For Synthetic Plastic Injection Molding Materials in Pellet or Granular Form.
First use Sept. 9, 1964.

SN 205,208. Union Carbide Corporation, New York, N.Y. Filed Oct. 30, 1964.

UNION CARBIDE

For Asbestos.
First use on or about Nov. 1, 1963.

SN 205,228. American Cyanamid Company, Wayne, N.J. Filed Nov. 2, 1964.

PAREZ

Owner of Reg. No. 411,134.
For Synthetic Resins for Use by the Paper Industry.
First use June 21, 1944.

SN 205,589. Illinois Minerals Company, Cairo, Ill. Filed Nov. 5, 1964.

IMSIL

For Amorphous Silica.
First use Oct. 1, 1964.

SN 205,702. Lakeview Hamster Colony, Newfield, N.J. Filed Nov. 6, 1964.



Applicant disclaims the pictorial representation of the hamsters, apart from the mark as shown.
For Live Hamsters.
First use Oct. 5, 1964.

SN 205,731. Skånska Ättikfabriken Aktiebolag, Perstorp, Sweden. Filed Nov. 6, 1964.

ISOMIN

Owner of Swedish Reg. No. 89,046, dated Mar. 4, 1960.
For Synthetic Resins and Plastic Moulding Compounds.

SN 206,527. Eastman Kodak Company, Rochester, N.Y. Filed Nov. 19, 1964.

COMPTRUSION

For Plastic Molding Composition.
First use Sept. 5, 1964.

SN 206,701. Crown Rubber Company, Fremont, Ohio. Filed Nov. 23, 1964.

AIRBREEZ

For Sheet Material Consisting of Latex Foam Bonded to Fabrics Used as Padding or Insole Material in Shoes.
First use June 2, 1964.

SN 206,767. Shell Oil Company, New York, N.Y. Filed Nov. 23, 1964.

ALIFIN

For Polymer for Elastic Thread Compounds.
First use Sept. 2, 1964.

SN 207,547. Alkor-Werk Karl Lissmann, Munich-Solln, Germany. Filed Dec. 7, 1964.

ALKOR

Owner of German Reg. No. 762,792, dated Mar. 23, 1962; and U.S. Reg. Nos. 635,367 and 637,569.
For Synthetic Plastics in Semi-Fabricated Forms, Such as Sheets, Films, Panels, Webs and Foam, for Use in the Manufacture of Various Finished Products.

SN 207,592. W. R. Griffith, d.b.a. Griffith Seed Company, Bloomington, Ill. Filed Dec. 7, 1964.

GRIFFITH HYBRIDS

The word "Hybrids" is disclaimed apart from the mark shown. Owner of Reg. No. 600,195.
For Seed Corn.
First use Feb. 24, 1964.

SN 207,605. Ingram-Richardson, Inc., Frankfort, Ind. Filed Dec. 7, 1964.

DIG-RICH

For Frits.
First use Aug. 3, 1953.

SN 208,059. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Dec. 14, 1964.

BAYGAL

Owner of German Reg. No. 371,782, dated Apr. 4, 1927.
For Synthetic Resinous Composition Useful for Casting and Filling Purposes.

SN 208,060. Rally Farms, Millbrook, N.Y. Filed Dec. 14, 1964.

RALLY

For Registered Beef Cattle.
First use Oct. 19, 1964.

SN 208,197. Johns-Manville Corporation, New York, N.Y. Filed Dec. 15, 1964.

PAPERBESTOS

For Asbestos Fiber Sold Especially for Use as an Ingredient of Paper.
First use at least on or about May 15, 1963.

SN 210,718. Acme Markets, Inc., Philadelphia, Pa. Filed Jan. 27, 1965.

GOLD LINE

The drawing is lined for the color gold.
For Sponges.
First use Jan. 2, 1965.

Class 2—Receptacles

SN 189,471. Herrin Transfer & Warehouse Co., Inc., Shreveport, La. Filed Mar. 24, 1964.

U

PAC KIT

The word "Kit" is disclaimed apart from the mark shown.
For Cardboard Cartons for General Household Packing of Miscellaneous Items Pursuant to Moving and/or Storage.
First use Jan. 10, 1964.

SN 201,157. Tower Packaging Company, Wheeling, Ill. Filed Sept. 2, 1964.

TOWER-TEAR

For Plastic Bags.
First use Nov. 2, 1962.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 204,751. Berkeley Bags, Inc., Jim Thorpe, Pa. Filed Oct. 26, 1964.

BERKEDGE

For Handbags.
First use May 6, 1963.

SN 205,046. Doral Handbags, Inc., New York, N.Y. Filed Oct. 29, 1964.

DORAL

For Ladies' Handbags.
First use on or about Jan. 3, 1962.

Class 4—Abrasives and Polishing Materials

SN 182,813. The Cello Chemical Company, Baltimore, Md. Filed Dec. 4, 1963.

CELLOTHANE

Owner of Reg. No. 444,860.
For Waxing and Polishing Compositions Particularly for Use on Floors of All Types.
First use at least as early as July 1, 1959.

SN 192,973. Anti-Hydro Waterproofing Co., Newark, N.J. Filed May 8, 1964.

A-H EMERY

The word "Emery" and the representation of the emery grain or particle are disclaimed apart from the mark as shown.
For Abrasive Particles for Forming Nonslip Floor Topping.
First use February 1964.

Class 5—Adhesives

SN 196,072. Standard Chemical Products, Inc., Hoboken, N.J. Filed June 19, 1964.

STANMELT

For Synthetic Resin Adhesives.
First use May 27, 1964.

Class 6—Chemicals and Chemical Compositions

SN 140,546. Eaton Chemical Corporation, Detroit, Mich. Filed Mar. 23, 1962.



The drawing is lined for red and blue. Owner of Reg. No. 782,982.
For Chemicals and Chemical Compositions, Specifically Bleaching, Stripping and Sizing Chemicals as Well as a Variety of Acids and Bases.
First use Jan. 22, 1962.

SN 140,688. Calumet & Hecla, Inc., Calumet, Mich. Filed Mar. 26, 1962.

C LINE

For Iron Carbonate and Copper Concentrates.
First use Oct. 30, 1961, on iron carbonate.

SN 166,885. C. P. Steuber & Company, Inc., New York, N.Y. Filed Apr. 8, 1963.



For Petrochemicals—Namely, Fractionated Aliphatic Hydrocarbons, Aliphatic and Aromatic Solvents.
First use at least as early as March 1963.

SN 170,976. Avon Products, Inc., New York, N.Y. Filed June 14, 1963.

NURSERY FRESH

For Air Freshener.
First use June 3, 1963.

SN 199,464. Faultless Starch Company, Kansas City, Mo. Filed Aug. 7, 1964.



Owner of Reg. Nos. 51,025 and 746,087.
For Laundry Preparation—Namely, a Sizing and Finishing Agent for Fabrics.
First use July 23, 1964.

SN 200,635. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Aug. 26, 1964.

MOLLIT

Owner of German Reg. No. 781,632, dated Dec. 17, 1963.
For Plasticisers for Lacquers and Plastics.

SN 200,837. Ferro Corporation, Cleveland, Ohio. Filed Aug. 28, 1964.



Owner of Reg. Nos. 419,064, 757,972 and others.
For Plastic Stabilizers.
First use on or about June 1, 1964.

SN 200,888. Alcolac Chemical Corporation, Baltimore, Md. Filed Aug. 31, 1964.

ALACSOFT

For Textile Softeners of the Cationic Type.
First use July 31, 1964.

SN 202,471. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 23, 1964.

NU-TOX

Owner of Reg. Nos. 164,491, 218,039, and 261,556.
For Insecticide.
First use July 21, 1952.

SN 203,442. Texaco Inc., New York, N.Y. Filed Oct. 6, 1964.



The drawing is lined for red and green, but no claim is made to any particular colors for the design.
For Liquid Anti-Freeze Solutions, and Wax Acids Derived From the Oxidation of Heavy Petroleum Products.
First use July 27, 1948, on anti-freeze.

SN 204,642. Drew Chemical Corporation, New York, N.Y. Filed Oct. 23, 1964.

CRYSTOL

For Catalyst Used in the Hydrogenation of Edible Oils.
First use Sept. 29, 1964.

SN 204,710. The Quaker Oats Company, Chicago, Ill. Filed Oct. 23, 1964.

Q O POLYMEG

For Polytetramethylene Ether Glycol.
First use Aug. 25, 1964.

SN 204,749. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Oct. 26, 1964.

AMIGASE

For Enzyme Utilized To Convert Starch to Dextrose.
First use Oct. 9, 1964.

SN 204,796. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Oct. 26, 1964.

KAISER

Owner of Reg. No. 559,485.
For Calcined, Hydrated, Tabular and Active Alumina, Fluorocarbons, Chlorine, Isocyanates, Aluminum Fluoride, and Potash.
First use Feb. 18, 1950, on calcined and hydrated alumina.

SN 204,945. Amerace Corporation, New York, N.Y. Filed Oct. 28, 1964.

BriteSil

For Sodium Silicate.
First use Sept. 22, 1964.

SN 204,946. Amerace Corporation, New York, N.Y. Filed Oct. 28, 1964.

BriteSorb

For Magnesium Silicate.
First use Sept. 15, 1964.

SN 205,107. Shell Oil Company, New York, N.Y. Filed Oct. 29, 1964.

SHELLSOLVE

For Solvent.
First use Aug. 19, 1964.

SN 205,319. Moser Paper Company, Chicago, Ill. Filed Nov. 2, 1964.

airdrop

For Air Deodorising Agent.
First use Sept. 20, 1957.

SN 205,399. Geigy Chemical Corporation, Ardsley, N.Y. Filed Nov. 3, 1964.

JARBEL

For Chemical Compound Used as an Ingredient of Insecticides.
First use Aug. 19, 1964.

Class 7 — Cordage

SN 205,171. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Oct. 30, 1964.

DU PONT

Owner of Reg. No. 871,580.
For Wire Reinforced Plastic Ribbon.
First use Oct. 5, 1964.

SN 205,172. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Oct. 30, 1964.

TYBEX

For Wire Reinforced Plastic Ribbon.
First use Oct. 5, 1964.

Class 10 — Fertilizers

SN 140,684. Calumet & Hecla, Inc., Calumet, Mich. Filed Mar. 26, 1962.

C LINE

For Copper Concentrates Formulated as a Soil Nutrient.
First use Jan. 10, 1962.

SN 206,244. The Eagle-Picher Company, Cincinnati, Ohio. Filed Nov. 16, 1964.

DIALOAM

For Soil Conditioner Mulch.
First use Sept. 30, 1964.

Class 12 — Construction Materials

SN 180,430. The O'Malley Lumber Company, Phoenix, Ariz. Filed Nov. 4, 1963.

Q*Lite

For Decorative Acoustical Ceiling and Wall Tile.
First use May 4, 1963.

SN 183,779. Nardoni Floor Company, Southfield, Mich. Filed Dec. 30, 1963.

ARM-R-COTE

For Surface Hardener for Imparting a Metal-Like Hardness to Concrete Floors Consisting of a Ground Metallic Aggregate Containing a Cement Dispersing Agent.
First use Apr. 19, 1963.

SN 184,416. Alkco Manufacturing Company, Chicago, Ill. Filed Jan. 13, 1964.

ALKCONDITIONED

For Modular Ceiling Systems, Comprising Acoustical Tile, Suspension Supports, Air Transfer and Diffusing Ducts, Lighting Elements, and Trimming Strips Sold as a Unit.
First use Oct. 21, 1963.

SN 187,658. Dacar Chemical Products Company, Pittsburgh, Pa. Filed Feb. 28, 1964.

CELTHANE

For Rigid Polyurethane and Plastic Foam Material in Sheet, Block or Slab Form, for Use as Insulation, Packaging, Cushioning, Pipe Coverings, Flotation Devices, and Core Material for Doors and Panels.
First use Dec. 18, 1963.

SN 188,721. J. E. Chilton Millwork & Lumber Co., Inc., Nashville, Tenn. Filed Mar. 16, 1964.

Finecraft

For Architectural Millwork, Including Built-In Kitchen Cabinets, Stairway Parts, Door Frames and Window Frames, and Plastic Clad Doors.
First use Feb. 21, 1964, on plastic clad doors.

SN 189,309. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Mar. 23, 1964.

TROWLEZE

For Refractory Mortar.
First use on or about Sept. 12, 1962.

SN 191,487. Basic Incorporated, Cleveland, Ohio. Filed Apr. 20, 1964.

BASALOX

Owner of Reg. Nos. 291,227, 751,516, and others.
For High Alumina Content Refractory Shapes.
First use Mar. 6, 1964.

SN 192,325. Revere Copper and Brass Incorporated, New York, N.Y. Filed Apr. 29, 1964.

REVERE COPPER DRYSEAL FLASHING

Applicant disclaims the words "Copper," "Brass," "Aluminum," "Copper Flashing," and "Dryseal" apart from the mark as shown without prejudice to applicant's common law rights therein. Owner of Reg. Nos. 266,371, 698,000, and others.
For Copper Flashing.
First use July 17, 1963.

SN 195,038. Durward C. Abbott, d.b.a. Abbott Industries/Abco Products Division, Mishawaka, Ind. Filed June 8, 1964.

Acrilean

For Imitation Marble.
First use July 19, 1963.

SN 195,985. Ure-Al Corporation, Jamestown, N.Y. Filed June 18, 1964.

URE-AL

For Pipe Insulation.
First use Apr. 27, 1964.

SN 197,833. Huron Portland Cement Company, Detroit, Mich. Filed July 14, 1964.

THERMO-CURE

For Portland Cement With Additives for Improved Molding and Curing of Concrete Products Involving High Temperature, Low Pressure Curing.
First use Apr. 20, 1964.

SN 201,050. The Philip Carey Manufacturing Company, Cincinnati, Ohio. Filed Sept. 1, 1964.

ASBESTOSEAL

For Asphalt and Asbestos Vapor Barrier in Sheet or Board Form.
First use July 10, 1964.

SN 201,310. Shamrock-Neatway Products, Inc., Minneapolis, Minn. Filed Sept. 4, 1964.

CRETE-SLEEVE

For Polyethylene Forms for Use in Making Openings in Concrete Walls and the Like.
First use July 27, 1964.

SN 201,482. Stern Swimming Pool Corporation, Fairview Park, Ohio. Filed Sept. 8, 1964.

AQUA-STEEL

For Steel Swimming Pools.
First use on or about June 1, 1960.

SN 201,844. International Pipe and Ceramics Corporation, Los Angeles, Calif. Filed Sept. 14, 1964.

MAMMOTH

For Tile Products—Namely, Ceramic Wall and Floor Tile.
First use July 1948.

SN 202,080. Edward Hines Lumber Co., Chicago, Ill. Filed Sept. 17, 1964.

SILVER ARROW

For Lumber—Namely, Studs.
First use June 16, 1964.

SN 206,042. Max Kats Bag Co., Inc., Indianapolis, Ind. Filed Nov. 12, 1964.

FIBERLENE

Owner of Reg. Nos. 678,204 and 739,863.
For Flame Retardant Acoustic Pads for Ceiling or Wall Installation.
First use Aug. 14, 1964.

SN 206,267. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Nov. 16, 1964.

K/R

For Refractory Products and Materials Primarily for Use in Industrial Furnaces—Namely, Bricks; Castable, Plastic, Moldable and Coating Materials; Gunning, Ramming and Firebrick Mixes; Mortars; and Gun Grains.
First use at least as early as June 30, 1957, on refractory gunning mix.

SN 206,945. Johns-Manville Corporation, New York, N.Y. Filed Nov. 25, 1964.

SPINTONE

For Acoustical Tile and Panels.
First use July 23, 1962.

SN 207,104. American Plywood Association, Tacoma, Wash. Filed Nov. 30, 1964. COLLECTIVE MARK.

SIGNATURE INSPECTION
DFPA
INSPECTOR

Owner of Reg. No. 579,860 and others.
For Plywood.
First use Nov. 13, 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 192,135. The Lamson & Sessions Co., Cleveland, Ohio Filed Apr. 24, 1964.

LAM LOC

For Bolts and Screws for Use in Tapped Holes.
First use July 9, 1963.

SN 194,956. Color Craft Corporation, Indianapolis, Ind. Filed June 5, 1964.

COLOR CRAFT

The word "Color" is disclaimed apart from the mark as shown.

For Anodized Aluminum Ware—Namely, Baby Cups and Bowls, Egg Poacher and Baby Food Warmer, Mixer Measure, Measuring Cup and Spoon Set, Ring Mold, Individual Decorator Molds, Cookie Cutters, Cake and Pipe Servers, Measuring Scoops, Pans, Tumblers, Pitchers, Sugar, Creamer and Tray Set, Bread and Butter Sets, Bonbon Dishes, Serving Trays, Shot Glasses, Bacon Decurler, Poultry Stuffing Plate, Spoon and Egg Holders, Sink Strainers, Ice Cream Dippers, Funnels, Salt and Pepper Sets, Planters, and Snack Bowls.

First use Jan. 15, 1949.

SN 199,477. Joe Lowe Corporation, Englewood, N.J. Filed Aug. 7, 1964.

SPACE-SHOTS

Owner of Reg. No. 776,728.

For Handle Sticks for Confectionery Products Sold Separately From Said Products.

First use May 1, 1964.

SN 207,827. Nibco, Inc., Elkhart, Ind. Filed Dec. 9, 1964.

NIBCO SCOTT

Owner of Reg. Nos. 513,598, 632,522, and 725,797.

For Hardware and Plumbing and Steamfitting Supplies—Namely, Valves for Controlling the Pressure and Flow of Fluids Including Check, Gate, Globe, and Angle Valves.

First use on or about Nov. 20, 1964.

SN 207,828. Nibco, Inc., Elkhart, Ind. Filed Dec. 9, 1964.

NIBCO SCOTT

Owner of Reg. Nos. 513,598, 632,522, and 725,797.

For Hardware and Plumbing and Steamfitting Supplies—Namely, Valves for Controlling the Pressure and Flow of Fluids Including Check, Gate, Globe, and Angle Valves.

First use on or about Nov. 20, 1964.

SN 207,956. Flexello Castors & Wheels Limited, Slough, England. Filed Dec. 11, 1964.

CERCLO

Owner of British Reg. No. 856,054, dated Nov. 1, 1963.

For Furniture Castors Made Wholly or Principally of Plastics.

SN 207,994. Uni-Grip Hanger Company, Southgate, Calif. Filed Dec. 11, 1964.

UNI-GRIP

For Insulated Pipe Hangers.

First use Nov. 24, 1964.

SN 208,069. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. Filed Dec. 14, 1964.

THUM-TROL

For Hose Nozzles.

First use Aug. 20, 1964.

SN 208,235. Calfax, Inc., Redondo Beach, Calif. Filed Dec. 16, 1964.

BOYDBOLT

For Self-Locking Fasteners.

First use Oct. 8, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 187,977. Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany. Filed Mar. 4, 1964.

VEROXAL

Owner of German Reg. 767,191, dated June 15, 1962.

For Aluminum and Aluminum Alloys in Sheet, Ingot, Bar, and Extruded Profile Form.

SN 211,500. Cameron Iron Works, Inc., Houston, Tex. Filed Feb. 8, 1965.

CAMVAC

For Alloys in the Form of Forgings and Mill Products Including Sheet, Strip, Plate, Bars, and Billets.

First use on or about Nov. 12, 1963, on forgings.

Class 15—Oils and Greases

SN 207,040. Hy-Test 303 Corp., Rutherford, N.J. Filed Nov. 27, 1964.

DI-333 SUPERDIESEL

Applicant disclaims the term "Superdiesel" in the composite mark.

For Diesel Fuel Additive (Chemical).

First use Nov. 25, 1963.

SN 210,918. Texaco Inc., New York, N.Y. Filed Jan. 28, 1965.

TEXRO

For Hydrocarbon Oils Used as a Rubber Extender.

First use Nov. 12, 1964.

Class 16—Protective and Decorative Coatings

SN 169,937. H. A. Kimura, d.b.a. H. A. Kimura Imports, San Francisco, Calif. Filed May 29, 1963.

SAN-SUI

The word "San-Sui" literally translated means "mountains and streams" and connotes a pleasing landscape, as in a painting.

For Artists' Oil Colors.

First use Aug. 10, 1959.

SN 196,995. Agate Lacquer Manufacturing Co., Inc., Long Island City, N.Y. Filed Aug. 3, 1964.

AGATEEN

For Baking and Air Dry Lacquers for Industrial and General Use, and Lacquer Thinners.

First use at least prior to Jan. 1, 1934.

SN 201,581. GK Industries, Inc., Atlanta, Ga., assignee of General Kinetics, Inc. of West Palm Beach, West Palm Beach, Fla. Filed Sept. 10, 1964.

WUNDER KOTE

For Fabric Color Spray.

First use Dec. 18, 1963.

Class 17—Tobacco Products

SN 191,735. Anna Wilke, d.b.a. Wilke Pipe Shop, New York, N.Y. Filed Apr. 21, 1964.

ROYAL CHERRY

The word "Cherry" is disclaimed apart from the mark as shown.

For Pipe Tobacco.

First use Feb. 13, 1964.

Subj. to Intf. with SN 194,904 and SN 194,905.

SN 192,705. Freeman & Gossage, Inc., San Francisco, Calif. Filed May 5, 1964.

WREN'S RELISH

For Snuff.

First use Apr. 15, 1964.

SN 194,904. John Middleton, Inc., King of Prussia, Pa. Filed June 4, 1964.

MIDDLETON'S CHERRY BLEND

Applicant disclaims the word "Blend" apart from the mark as shown. Owner of Reg. No. 361,414.

For Smoking Tobaccos.

First use March 1947.

Subj. to Intf. with SN 191,735.

SN 194,905. John Middleton, Inc., King of Prussia, Pa. Filed June 4, 1964.

Middleton's cherry BLEND

Applicant disclaims the word "Blend" apart from the mark as shown. Owner of Reg. No. 361,414.

For Smoking Tobaccos.

First use March 1947.

Subj. to Intf. with SN 191,735.

Class 18—Medicines and Pharmaceutical Preparations

SN 168,180. Fellows Medical Mfg. Co. Inc., Detroit, Mich. Filed May 6, 1963.

SOLU-BARB

For Phenobarbital Tablets for Infants and Children.

First use in or about November 1962.

SN 170,888. Carnation Company, Los Angeles, Calif. Filed June 13, 1963.

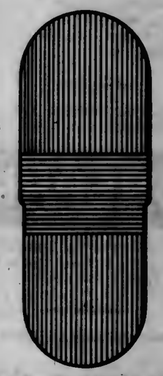
ALBERS MEDICATED PIG-GLOW

Applicant disclaims any exclusive rights to the word "Medicated" as it appears in the drawing. Owner of Reg. Nos. 351,047 and 553,367.

For Animal Feed—Namely, Medicated Pig Feed.

First use Mar. 27, 1959.

SN 178,217. Parke, Davis & Company, Detroit, Mich. Filed Oct. 2, 1963.



The mark consists of a blue band with straight sides, approximately five-thirty-seconds of an inch wide, encircling the central portion of a pink capsule. The drawing is lined to indicate the colors blue and pink. The representation of the capsule is disclaimed. Owner of Reg. No. 753,207.

For Vitamin-Mineral Preparation.

First use on or before Nov. 17, 1952.

SN 188,405. Amol-Werk Vollrath Wasmuth, KG, Hamburg, Germany. Filed Mar. 11, 1964.

Radjosan

For Herb Tonic.
First use Jan. 1, 1948; in commerce Sept. 13, 1963.

SN 198,975. Neutrogena Corporation, Santa Monica, Calif. Filed July 31, 1964.

Kera-Derm

For Medicated Disks for Use in the Treatment of Acne, Blackheads and Scaley Skin.
First use June 11, 1964.

SN 200,163. Conal Pharmaceuticals, Inc., Chicago, Ill. Filed Aug. 19, 1964.



Owner of Reg. No. 763,357.
For Medicinal and Pharmaceutical Preparations Used in the Treatment and Diagnosis of Infections and Disorders of the Genital-Urinary Tract, Intestinal Tract, Digestive Tract, Upper Respiratory System, Skeletal Muscles, Blood, and Liver; and for the Treatment of Streptococci, Pneumococci, Staphylococci and Meningococci Infections, Fungus Infections, Gout, Arthritis, Neuritis, Rheumatism, Hemorrhoids, Cardiac Conditions, Certain Skin Conditions, Menopausal Symptoms, and Obesity; Preparations Used as Tonics, Dietary Supplement, Hormonal Supplements, Laxatives, Sedatives, Tranquilisers, Analgesics, Antispasmodics, Antihistaminics, Antianemics, and Anthelmintics; Cough Syrups; Vaginal Douche Powder; and Rubifacient Ointment; and Veterinary Medicinal Preparations—Namely, Preparations Used in the Treatment of Infections and Disorders of the Skin, the Intestinal Tract, the Upper Respiratory Tract and the Genital-Urinary Tract; Muscle Relaxant; Ointment for the Treatment of Wounds and Abrasions; and Preparations Used To Aid Metabolism and as a Nutritional Supplement.
First use May 2, 1962.

SN 202,845. Professional Pharmacal Co., Inc., San Antonio, Tex. Filed Sept. 28, 1964.

PRONEPHRINE

For Nasal Preparation for the Temporary Relief of Nasal Congestion and Irritation in Head Colds and Hay Fever.
First use July 10, 1964.

SN 203,386. The Emenel Company, Loma Linda, Calif. Filed Oct. 6, 1964.

FORMULA C-PR

The descriptive term "Formula" is disclaimed apart from the mark as shown.
For Preparation To Aid in the Prevention of Vitamin Deficiency.
First use Mar. 15, 1964.

SN 203,969. Interstate Industries, Inc., d.b.a. Interstate Chemical Company, Kansas City, Mo. Filed Oct. 14, 1964.

HOLY COW

For Veterinary Medicinal Preparation for Use as an Aid in the Prevention of Mastitis in Milking Dairy Cattle.
First use Apr. 1, 1964.

SN 203,994. Warren-Teed Pharmaceuticals Inc., East Detroit, Mich. Filed Oct. 14, 1964.

PHARMA-PLUS

For Medicines and Pharmaceuticals—Namely, a Vitamin-Mineral Supplement.
First use on or about Dec. 1, 1953.

SN 204,486. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Oct. 21, 1964.

DELANIBAL

Owner of Reg. No. 689,401.
For Anabolic Steroid Preparations.
First use Sept. 29, 1964.

SN 204,691. Milan Distributing Corporation, Milan, Ill. Filed Oct. 28, 1964.

FORMULA PLUS

Applicant disclaims the term "Formula" apart from the mark as shown.
For Vitamin Tablets.
First use Sept. 11, 1963.

SN 205,898. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Nov. 9, 1964.

HEMO-DEX

For Veterinary Preparation for the Prevention and Treatment of Iron Deficiency Anemia in Baby Pigs.
First use on or about Jan. 26, 1961.

SN 206,174. Park and Tilford, d.b.a. Norex Laboratories, New York, N.Y. Filed Nov. 13, 1964.

NORATONE

For Antacid Preparations.
First use July 25, 1963.

SN 206,349. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 17, 1964.

BIOTONIN

For Central Nervous System Stimulant.
First use on or about Jan. 18, 1963.

SN 206,478. The Shurjets Co. Inc., Spring Valley, Minn. Filed Nov. 18, 1964.

SHURJETS

For Veterinary Preparation for Use as an Aid in Milking Cows.
First use Oct. 1, 1964.

SN 206,480. Stiefel Laboratories, Inc., Oak Hill, N.Y. Filed Nov. 18, 1964.

SASTID

For Medicated Preparation Consisting of a Therapeutic Wash for the Treatment of Acne of the Skin.
First use Nov. 6, 1964.

SN 206,638. Merck & Co., Inc., Rahway, N.J. Filed Nov. 20, 1964.

THIBENZOLE "200"

Applicant disclaims the numeral "200" apart from the mark as shown. Owner of Reg. No. 728,798.
For Veterinary Medicinal Preparation Particularly Useful as an Anthelmintic.
First use on or about Nov. 10, 1964.

SN 206,674. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Nov. 23, 1964.

LIQUIFILM

Owner of Reg. No. 774,421.
For Ophthalmic Preparations—Namely, Contact Lens Wetting and Soaking Solutions.
First use Nov. 13, 1961.

SN 206,700. Ciba Corporation, New York, N.Y. Filed Nov. 23, 1964.

VERISEAL

For Coating Applied to a Particle or Other Solid Medicinal Form, Such as Capsules or Tablets.
First use Nov. 10, 1964.

SN 206,750. Norden Laboratories, Inc., Lincoln, Nebr. Filed Nov. 23, 1964.

LEPTOVAC C-I

Owner of Reg. No. 759,937.
For Vaccine for Immunization of Healthy Dogs Against Leptospira Canicola and Icterohemorrhagiae Infections, Used in Veterinary Medicine.
First use June 1964.

SN 208,097. Merck & Co., Inc., Rahway, N.J. Filed Dec. 14, 1964.

INDOCIN COMPOUND

Applicant disclaims the word "Compound" apart from the mark as shown. Owner of Reg. No. 758,725.
For Analgesic and Anti-Inflammatory Preparation.
First use Nov. 23, 1964.

SN 209,209. Frank A. Viscio, d.b.a. Anthony Products Company, El Monte, Calif. Filed Dec. 31, 1964.

SUPER ABSORPTION

For Veterinary Mineral Preparation for the Prevention and Treatment of Anemia in Horses.
First use 1945.

SN 209,361. Madland Laboratories, Inc., Milwaukee, Wis. Filed Jan. 5, 1965.

MIOLENE

For Ophthalmic Ointment.
First use on or about Dec. 10, 1964.

SN 209,377. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Jan. 5, 1965.

SYNACLYN

For Steroid Hormone Preparation.
First use Jan. 24, 1964.

SN 209,650. American Home Products Corporation, New York, N.Y. Filed Jan. 11, 1965.

DIPE KIN

For Medicated Cleansing Pads.
First use Dec. 28, 1964.

SN 209,804. Schering Corporation, Bloomfield, N.J. Filed Jan. 12, 1965.

MEDILETS

Owner of Reg. No. 540,029.
For Medicinal Preparation for the Relief of Cold Symptoms, Aches and Pains, for Oral Administration.
First use on or about Dec. 15, 1953.

SN 209,832. Barth Vitamin Corporation, Valley Stream, N.Y. Filed Jan. 13, 1965.

BEDFORD

For Vitamins.
First use Oct. 15, 1963.

SN 209,924. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Jan. 14, 1965.

TONI

For Medicated Skin Cream Containing Germicides.
First use Nov. 23, 1964.

SN 209,939. Merck & Co., Inc., Rahway, N.J. Filed Jan. 14, 1965.

DECADERM-F

Owner of Reg. Nos. 779,362 and 779,363.
For Medicinal Preparation for Dermatologic Use.
First use Dec. 3, 1964.

SN 209,954. Schering Corporation, Bloomfield, N.J. Filed Jan. 14, 1965.

GENTOCIN

For Veterinary Antibiotic Preparation.
First use on or about Nov. 17, 1964.

SN 210,030. Moorman Manufacturing Company of California, Inc., San Gabriel, Calif. Filed Jan. 15, 1965.

STRESS-TRATE

For Medicated Feed Supplement for Livestock and Poultry.
First use Nov. 6, 1964.

SN 210,091. Ciba Limited, Basel, Switzerland. Filed Jan. 18, 1965.

BETATONIL

Priority claimed under Sec. 44(d) on Swiss Reg. No. 205,148, dated July 21, 1964.
For Pharmaceutical Preparation for the Treatment of Hypotension.

SN 210,152. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 18, 1965.

MAGNA-TERRAMYCIN

Owner of Reg. Nos. 568,928 and 577,504.
For Antibiotic Preparation.
First use Dec. 31, 1964.

SN 210,248. American Home Products Corporation, New York, N.Y. Filed Jan. 21, 1965.

DYSORB

Owner of Reg. Nos. 538,995 and 706,540.
For Dimethyl Sulfoxide in Dosage Form.
First use Jan. 11, 1965.

SN 210,285. Dumas-Wilson & Co., St. Louis, Mo. Filed Jan. 21, 1965.

HYZYD

For Medicinal Preparations—Namely, Isoniazid for Use in the Treatment of Tuberculosis.
First use at least as early as June 27, 1961.

SN 210,486. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Jan. 22, 1965.

TOPSYM

For Pharmaceutical Steroid Hormone Preparation.
First use Dec. 8, 1964.

SN 210,494. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 22, 1965.

PAMINE PB

Owner of Reg. No. 573,713.
For Medicinal Preparation for Use as an Antispasmodic-Antisecretory Agent.
First use Dec. 31, 1964.

SN 210,495. Veterinary Supply Depot Incorporated, Dallas, Tex. Filed Jan. 22, 1965.

MULTI-PRIME

For High Potency Vitamin and Iron Supplement Enriched With Honey for Veterinary Use.
First use Nov. 9, 1964.

SN 210,638. Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany. Filed Jan. 26, 1965.

ABIADIN

For Cough Preparation.
First use December 1963; in commerce December 1963.

SN 210,661. Endo Laboratories Inc., Garden City, N.Y. Filed Jan. 26, 1965.

FENOVALPIN

Owner of Reg. No. 689,393.
For Medicinal Preparation Used as an Antispasmodic.
First use Feb. 1, 1959.

SN 210,663. Endo Laboratories Inc., Garden City, N.Y. Filed Jan. 26, 1965.

CUMADINE

Owner of Reg. No. 695,328.
For Medicinal Preparation Used as an Anticoagulant.
First use Aug. 1, 1941.

SN 211,084. Menley & James Laboratories, Ltd., Philadelphia, Pa. Filed Feb. 1, 1965.

CONTAC

Owner of Reg. Nos. 724,141 and 776,079.
For Pharmaceutical Preparations for the Treatment of the Symptoms of Upper Respiratory Infections, Colds, and Hay Fever.
First use Oct. 19, 1964.

Class 19—Vehicles

SN 200,105. Patrick E. Lilly, d.b.a. Ful-Vue Auto Clothes Rod Manufacturing Company, Athens, Ga. Filed Aug. 18, 1964.

FUL-VUE

For Auto Clothes Rod.
First use Mar. 1, 1958.

SN 203,203. Re-Trac Manufacturing Corporation, Minneapolis, Minn. Filed Oct. 2, 1964.



The drawing is lined for the colors gray and yellow.
For Rear View Mirrors for Vehicles.
First use Sept. 11, 1964.

SN 205,432. Ken Kay, d.b.a. Ken Kay Distributing Company, North Hollywood, Calif. Filed Nov. 3, 1964.

OMEGA

For Motorcycles.
First use June 5, 1964.

Class 20—Linoleum and Oiled Cloth

SN 207,083. Sandura Company, Jenkintown, Pa. Filed Nov. 27, 1964.

AIRTRED

For Flexible Waterproof Wall, Floor and Table Top Covering Materials.
First use Apr. 10, 1964.

SN 207,112. Congoleum-Nairn Inc., Kearny, N.J. Filed Nov. 30, 1964.

PUEBLO

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Oct. 30, 1964.

SN 207,115. Congoleum-Nairn Inc., Kearny, N.J. Filed Nov. 30, 1964.

CABANA

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Oct. 30, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 169,560. Odex Engineering Company, Houston, Tex., assignee of Houston Corporation, Houston, Tex. Filed May 23, 1963.

ODEX

For Electrical Monitoring and Control Circuits.
First use during 1945.

SN 178,664. Albert & J. M. Anderson Manufacturing Company, Boston, Mass. Filed Oct. 10, 1963.

POWER-STAC

For Single Pole Electrical Connectors.
First use on or about Mar. 1, 1963.

SN 180,549. A/S Dansk Akkumulator- & Elektromotorfabrik, Odense, Denmark. Filed Nov. 6, 1963.

PUREX

Priority claimed under Sec. 44(d) on Danish application filed May 7, 1963; Reg. No. 1755, dated Mar. 21, 1964.
For Electrical Floor Washing Machines, Electrical Polishers and Wet Suction Machines, Electrical Vacuum Cleaners, Electrical Cleaning Machines, Electrical Brushing Machines, and Electrical Polishing Machines.

SN 188,679. Tensor Corporation, Brooklyn, N.Y. Filed Mar. 18, 1964.

PERSONAL-LITE

For Electrical Lamps Adapted for Home and Office, Desk and Table Lamps.
First use Jan. 14, 1964.

SN 192,889. Bright Star Industries, Inc., Clifton, N.J. Filed May 7, 1964.

DIRECTOR-LITE

For Hand-Held Flashlights.
First use Apr. 10, 1964.

SN 195,587. The Bendix Corporation, Detroit, Mich. Filed June 15, 1964.

MICROVISION

For Antennas, Electronic Amplifiers, Image Producers for Producing an Image From an Electron Signal, Electronic Signal Processing Units, and Power Supplies.
First use May 10, 1962.

SN 199,455. Consumers Cooperative Association, Kansas City, Mo. Filed Aug. 7, 1964.



For Batteries for Motor Vehicles.
First use June 26, 1964.

SN 202,644. Trio Laboratories, Inc., Plainview, N.Y. Filed Sept. 24, 1964.



For Voltage-Regulating Devices.
First use July 10, 1964.

SN 204,924. Rome Cable Corporation, Rome, N.Y. Filed Oct. 27, 1964.

ROME-XLP

For Insulated Wire and Cable.
First use Nov. 20, 1962.

Class 22—Games, Toys, and Sporting Goods

SN 110,866. Brunswick Corporation, Chicago, Ill. by change of name and assignment from MacGregor Sport Products Inc., Cincinnati, Ohio. Filed Dec. 27, 1960.



For Baseball, Softball, Football, Basketball, Volleyball, Soccer, Tennis, Badminton, Golf, Boxing and Field and Track Playing Equipment Exclusive of Uniforms and Similar Wearing Apparel for Soccer and Field and Track; and Exclusive of Uniforms, Shoes and Similar Wearing Apparel for Basketball, Volleyball, Tennis, Badminton and Golf.
First use 1950.

SN 135,754. Gus G. Bosnos, d.b.a. Natural Manufacturing, Morton Grove, Ill. Filed Jan. 15, 1962.



Owner of Reg. No. 741,906.
For Golf Clubs.
First use Dec. 5, 1961.

SN 182,970. Beulah Harris Stolpen, d.b.a. The Rolling Reader Co., Westport, Conn. Filed Dec. 13, 1963.



For Apparatus for Playing Word Games.
First use Apr. 22, 1959.

SN 184,639. Mason City Tent & Awning Co., Mason City, Iowa. Filed Jan. 15, 1964.

RIP FLAG

No claim of exclusive right is made to "Flag" for the goods recited.
For Belt and Flag Set Used in Playing Games.
First use Nov. 30, 1962.

SN 189,326. La Mecanique Halieutique Etablissements Dubert, Grissoles, Tarn-et-Garonne, France. Filed Mar. 23, 1964.

RU

The word "Ru" means "rivulet" in French. Owner of French Reg. No. 109, dated June 16, 1951 (Castelsarrasin): Natl. Inst. No. 496,739.
For Fishing Reels, Fishing Rods, Fishing Threads.

..N 189,339. Thomas P. Meenan, New York, N.Y. Filed Mar. 23, 1964.

HANKY PANKY

For Equipment Sold as a Unit for Playing a Checker-Type Game.
First use May 21, 1963.

SN 189,881. Doughboy Industries, Inc., New Richmond, Wis. Filed Mar. 30, 1964.

FLIP-N-FILL

For Wading Pools.
First use July 15, 1963.

SN 201,906. Felipe M. Zubiate, d.b.a. F. M. Zubiate & Co., Berkeley, Calif. Filed Sept. 14, 1964.

ZUBIE

For Cushioned Shoulder Pads for Hikers, Campers, Hunters, and the Like.
First use Aug. 3, 1964.

SN 204,864. C. G. Wood Company, Girard, Pa. Filed Oct. 26, 1964.

DURA-SLATE

For Playing Beds Sold as a Component Part of Pool Tables.
First use Aug. 26, 1964.

SN 204,939. Wilson Sporting Goods Co., River Grove, Ill. Filed Oct. 27, 1964.

WALTER HAGEN

The name "Walter Hagen" is that of an individual whose consent is of record.
For Golf Clubs, Golf Balls, Golf Bags, and Golf Club Head Covers.
First use Aug. 30, 1928.

SN 205,061. Indian Archery Corporation, Evansville, Ind. Filed Oct. 29, 1964.

For Archery Equipment.
First use during January 1964.

SN 205,257. De Luxe Reading Corporation, Elizabeth, N.J. Filed Nov. 2, 1964.

RED RIVER

For Toy Gun.
First use Sept. 11, 1964.

SN 205,288. Hasseufeld Bros., Inc., Pawtucket, R.I. Filed Nov. 2, 1964.

BACKYARD PATROL

For Toy Military Kits.
First use on or about Oct. 9, 1964.

SN 205,643. Wolverine Shoe and Tanning Corporation, Rockford, Mich. Filed Nov. 5, 1964.

WOLVERINE

Owner of Reg. No. 730,465.
For Sporting Goods—Namely, Ski and Ski Boot Carriers.
First use on or about Oct. 21, 1964.

SN 205,691. Ideal Toy Corporation, Hollis, N.Y. Filed Nov. 6, 1964.

TEARIE DEARIE

For Dolls.
First use Aug. 13, 1964.

SN 205,910. The Allen Company, Inc., Charlottesville, Va. Filed Nov. 10, 1964.

FACULTY CARDS

No claim is made to the word "Cards" for game equipment.
For Equipment Sold as a Unit for Playing a Card Game.
First use Oct. 20, 1964.

SN 206,389. Venus Pen & Pencil Corporation, New York, N.Y. Filed Nov. 17, 1964.

AWFUL-AWFULS

For Toy Presketched Coloring Sets Comprising Outlined Uncolored Sketches and Colored Pencils.
First use Oct. 26, 1964.

SN 206,669. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed Nov. 20, 1964.

PETALS

For Dolls.
First use Sept. 9, 1964.

SN 206,827. Columbia Products Company, Columbia, S.C. Filed Nov. 24, 1964.

WONDER CUE

No claim is made for the word "Cue" apart from the mark shown. Owner of Reg. No. 731,087.
For Billiard Cue.
First use Oct. 24, 1964.

SN 206,961. Pflueger Corporation, Akron, Ohio. Filed Nov. 25, 1964.

PFLUEGER SILVERFLITE

Owner of Reg. Nos. 71,940, 718,896, and others.
For Fishing Rods.
First use Sept. 25, 1964.

SN 206,983. The Van Dam Rubber Co., Inc., New York, N.Y. Filed Nov. 25, 1964.

VAN DAM

For Toy Balloons, Toy Pumps for Balloons, Masks, Half Masks, Novelty Hats, Party Hats, and Party Favors.
First use fall of 1958.

SN 207,008. Champion Exercisers, Inc., Paramount, Calif. Filed Nov. 27, 1964.

CHAMPION

For Weight Lifting and Exercising Equipment—Namely, Dumbbells, Barbells and Parts Thereof, Barbell Racks, Stretch Exercisers, Rowing Machine Exercisers, Home Gyms, Skip Ropes, Hand Grips, Shots, Headstraps, Exercising Benches and Boards, Ankle, Wrist and Chest Weights, Exercising Wall Charts and Books, Latissimus Machines, Wrist and Forearm Exercisers and Door Bars.
First use Sept. 10, 1960.

SN 207,023. De Luxe Reading Corporation, Elizabeth, N.J. Filed Nov. 27, 1964.

FANCY FRILLS

For Doll Outfits.
First use Oct. 21, 1964.

SN 207,024. De Luxe Reading Corporation, Elizabeth, N.J. Filed Nov. 27, 1964.

WINTER ANGEL

For Doll Outfits.
First use Oct. 21, 1964.

SN 207,025. De Luxe Reading Corporation, Elizabeth, N.J. Filed Nov. 27, 1964.

SWEET DREAMS

For Doll Outfits.
First use Oct. 21, 1964.

SN 207,179. De Luxe Reading Corporation, Elizabeth, N.J. Filed Nov. 27, 1964.

JOHNNY EAGLE

For Toy Guns.
First use Oct. 28, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 176,529. Ingersoll-Rand Company, New York, N.Y. Filed Sept. 9, 1963.

OIL IR

The word "Oil" apart from the mark as shown or combined with "IR" as a single undivided word is hereby disclaimed. Owner of Reg. Nos. 551,752, 661,620, and others.
For Air-Line Lubricators.
First use September 1939.

SN 177,033. Graham Engineering Company, Inc., Palo Alto, Calif. Filed Sept. 16, 1963.

ROTA-CYL

For Hydraulic and Pneumatic Rotary Actuators of a Kind Suitable for the Rotation of Machine Tools, Spindles, or Other Applications Where There Is a Requirement for Constant-Torque, Controllable Rotary Motion, and Parts Therefor.
First use Sept. 11, 1961.

SN 192,040. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Apr. 27, 1964.



The representation of a knife is disclaimed apart from the mark as shown. The portrait is that of Dennis Webster, a living individual, whose consent is of record.

For Cutlery—Namely, Pocket Knives and Hunting Knives.

First use Dec. 15, 1963.

SN 199,104. Rain Jet Corp., Burbank, Calif. Filed Aug. 3, 1964.

BALLERINA

For Nozzle, Adequate Piping, a Pump, and a Motor for Driving the Pump, Sold as a Unit for Producing Ornamental Water Fountains.

First use June 6, 1962.

SN 199,105. Rain Jet Corp., Burbank, Calif. Filed Aug. 3, 1964.

BURSTING STARS

For Nozzle, Adequate Piping, a Pump, and a Motor for Driving the Pump, Sold as a Unit for Producing Ornamental Water Fountains.

First use June 6, 1962.

SN 199,108. Rain Jet Corp., Burbank, Calif. Filed Aug. 3, 1964.

VESUVIUS

For Nozzle, Adequate Piping, a Pump, and a Motor for Driving the Pump, Sold as a Unit for Producing Ornamental Water Fountains.

First use June 6, 1962.

SN 201,299. Paul Forkardt Kommanditgesellschaft, Dusseldorf, Germany. Filed Sept. 4, 1964.

Owner of German Reg. No. 729,329, dated Aug. 16, 1958.

For Tools, Machine Tools and Parts Thereof—Namely, Chucks, and Conveyor Means for Workpieces Operable Manually, Pneumatically, Hydraulically or Electrically, Drive Chucks and Vises; Box Clamps; Fixtures for Liquid and Air Conduits; Pneumatically and Hydraulically Operable Controls and Presses, and Pneumatic and Hydraulic Cylinders.

SN 207,787. Chicago Pneumatic Tool Company, New York, N.Y. Filed Dec. 9, 1964.

LITTLE GIANT

L G

Owner of Reg. Nos. 227,389 and 227,390.

For Pneumatic Tools.

First use 1964.

SN 207,788. Chicago Pneumatic Tool Company, New York, N.Y. Filed Dec. 9, 1964.

Little Giant

Owner of Reg. Nos. 227,389 and 227,390.

For Pneumatic Tools.

First use 1964.

SN 207,857. Howard M. Arneson, d.b.a. Arneson Products, San Rafael, Calif. Filed Dec. 10, 1964.

POOL-SWEEP

For Swimming Pool Cleaning Devices—Namely, Pumps for Pool Cleaners, Mechanical Pool Cleaners and Leaf Traps.

First use Feb. 26, 1963.

SN 208,686. Carl Buck & Associates, Essex Fells, N.J. Filed Dec. 22, 1964.

CAMAC

For Pumps.

First use Dec. 28, 1950.

SN 210,251. Anker-Phoenix Nähmaschinen A.G., Bielefeld, Germany. Filed Jan. 21, 1965.

CELERTA

Owner of German Reg. No. 487,734, dated Dec. 23, 1935.

For Sewing Machines and Parts Thereof.

SN 210,330. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Jan. 21, 1965.

SCOTCHGARD

Owner of Reg. No. 680,972 and others.

For Apparatus for Applying a Stain Repeller Liquid to Fabrics.

First use Dec. 16, 1964.

Class 24—Laundry Appliances and Machines

SN 210,719. Acme Markets, Inc., Philadelphia, Pa. Filed Jan. 27, 1965.

ACME

GOLD LINE

The drawing is lined for the color gold.

For Ironing Board Pad and Cover Sets, and Ironing Board Covers.

First use Jan. 2, 1965.

Class 26—Measuring and Scientific Appliances

SN 200,900. Benrus Watch Company, Inc., New York, N.Y. Filed Aug. 31, 1964.

BENRUS

For Oscilloscopes, Amplifiers, Oscillators, Voltmeters, Sweep Generators and Sweep Enablers.

First use Nov. 22, 1963.

SN 204,681. Kingmann-White, Inc., Placentia, Calif. Filed Oct. 28, 1964.

MINI-SINE

For Sine Bar Devices and Parts Thereof.

First use July 24, 1964.

SN 206,684. Automation Devices, Inc., Erie, Pa. Filed Nov. 23, 1964.

JET-TRON

For Air Flow Detector Unit, Comprising a Pneumatic Snap Action Control Switch Designed To Produce an Electric Signal When an Object Interrupts the Flow of Air Across an Opening.

First use June 7, 1961

SN 206,898. Technical Industries, Inc., Fort Lauderdale, Fla. Filed Nov. 24, 1964.

FEED-o-METER

Owner of Reg. No. 717,688.

For Apparatus for Use With Mechanism Which Continuously Measures the Amount of Milk When and as Delivered by a Producing Cow, To Automoatically Advance Feed Concurrently to the Cow in an Amount Selectively Proportionate to That of the Milk So Delivered.

First use Nov. 18, 1959.

Class 27—Horological Instruments

SN 210,144. Mattel, Inc., Hawthorne, Calif. Filed Jan. 18, 1965.

MIDGE

For Time Pieces, Specifically, Wrist Watches.

First use Dec. 9, 1964.

Class 28—Jewelry and Precious-Metal Ware

SN 207,857. Allied Stores Corporation, New York, N.Y. Filed Dec. 3, 1964.

CITADEL

For Silver Plated Holloware.

First use Sept. 15, 1964.

SN 211,607. Bibelot Creations, Inc., New York, N.Y. Filed Feb. 10, 1965.

BIB

For Precious Jewelry.

First use Jan. 1, 1965.

SN 212,169. Tube Benders, Inc., New York, N.Y. Filed Feb. 16, 1965.

FINGER MATE

For Fingers Rings, Finger Ring Shanks, and Mountings.

First use Nov. 6, 1964, on finger rings.

Class 29—Brooms, Brushes, and Dusters

SN 177,802. Magiklip Corporation, New York, N.Y. Filed Sept. 26, 1963.

GROOMAGIC

For Brushes for Clothes, Wearing Apparel, Fabrics, and Upholstery.

First use July 1, 1963.

Class 31—Filters and Refrigerators

SN 205,191. Morris & Associates, Inc., Raleigh, N.C. Filed Oct. 30, 1964.

ICE-MASTER

Owner of Reg. No. 707,851.

For Ice Handling Systems, Continuous Poultry Chillers, Ice Makers, Packaged Blast Freezers, Package Refrigeration Systems, Packaged Evaporator Coils, Packaged Sub-Zero Refrigeration Units, Ice Storage Bins, and Related Apparatus.

First use Aug. 22, 1957.

Class 32 — Furniture and Upholstery

SN 188,722. J. E. Chilton Millwork & Lumber Co., Inc., Nashville, Tenn. Filed Mar. 16, 1964.

Finecraft

For Commercial and Institutional Furniture and Fixtures, Including Dormitory Wardrobes, Store Counters, Bank Counters, and Wall Cases.
First use Feb. 29, 1964.

SN 204,968. Custom Marble Company, Morganton, N.C. Filed Oct. 28, 1964.

Glenstone

For Manufactured Product Which Is Used as a Top for Tables and Other Furniture.
First use Apr. 28, 1964.

SN 212,087. Young Radiator Company, Racine, Wis. Filed Feb. 15, 1965.

READI-VIEW

For Blueprint Stands.
First use Mar. 21, 1955.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 143,720. Citation Manufacturing Company, Inc., Siloam Springs, Ark. Filed May 3, 1962.

Citation Steam Cleaner

No claim is made to the words "Steam Cleaner." Owner of Reg. No. 736,430.
For Portable Steam Cleaners.
First use on or about Sept. 1, 1958.

SN 172,637. The Carbone Corporation, Boonton, N.J. Filed July 9, 1963.

BONITE

For Heat Exchangers and Components Thereof for Use in Integrated Heating Systems—Namely, Pump Units, Rupture Disks and Filters Therefor.
First use June 15, 1963.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 189,948. Wilhelm Schelkmann, d.b.a. Reifen Schelkmann, Witten, Ruhr, Germany. Filed Mar. 30, 1964.

Owner of German Reg. No. 759,184, dated Mar. 12, 1962.
For Pneumatic Tires, Solid Tires, Inner Tubes, Repair Patches and Parts Thereof for Repairing Inner Tubes and Tire Casings and Other Hollow Bodies Made of Rubber, Retreading Covering for Tire Casings, Self-Vulcanising Plugs and Paste.

SN 194,496. H. Krause Mfg. Co., Los Angeles, Calif. Filed May 28, 1964.

BLOCK

The word "Block" is disclaimed apart from the mark as shown.
For Brake Lining.
First use Mar. 17, 1964.

Class 37 — Paper and Stationery

SN 170,940. Morgan Paper Company, Inc., Lititz, Pa. Filed June 13, 1963.

Morgan

SPACE-SAVER

For Paper Napkins Packed in Bulk or Institutional Packs for Use in Napkin Dispensers.
First use Aug. 3, 1953.

SN 188,024. Carl K. McDaniel, Springfield, Mo. Filed Mar. 5, 1964.

HONEY DO REMINDER

The word "Reminder" is disclaimed apart from the mark as shown.
For Paper Reminder Note Pad.
First use Feb. 25, 1964.

SN 189,127. Westab Inc., Dayton, Ohio. Filed Mar. 19, 1964.

Smart Shopper

For Memo Books.
First use Apr. 10, 1958.

SN 192,552. Milton Bradley Company, Springfield, Mass. Filed May 4, 1964.

GLO-RITE

For Crayons.
First use Mar. 26, 1964.

SN 196,981. Park Sherman, Inc., Roseland, N.J. Filed July 2, 1964.

P S

For Stationery Items, Including Desk Pad, Pad of Paper, Pencil, Pen; Telephone Index, Desk Calendar; Paper Weight; Letter Opener; Clipboard; Pencil Well; Pencil Sharpener; Pen Base; Paper Holder; Bookend; and Appointment Pad.
First use at least as early as 1935.

SN 199,220. Precision Papers, Inc., Brooklyn, N.Y. Filed Aug. 4, 1964.

SURE-STAY

For Marking Cloth for Apparel Making Industry.
First use Dec. 31, 1954.

SN 199,567. International Paper Company, New York, N.Y. Filed Aug. 10, 1964.

WINROTO SUPER

For Printing and Writing Papers.
First use December 1948.

SN 200,117. St. Regis Paper Company, New York, N.Y. Filed Aug. 18, 1964.

POLLY★STAR

For Flexible Plastic Overwrap Sheet Material.
First use June 22, 1964.

SN 200,354. International Paper Company, New York, N.Y. Filed Aug. 21, 1964.

TI OFFSET

The word "Offset" is disclaimed apart from the mark as shown.
For Printing and Writing Papers.
First use December 1944.

SN 201,503. Acme Visible Records, Inc., Croset, Va. Filed Sept. 9, 1964.

VISI-FOLDER

For Folders Used in Filing Drawers.
First use on or about Apr. 8, 1938.

SN 202,928. Graphic Covers, Inc., Indianapolis, Ind. Filed Sept. 29, 1964.

CHRO-MATIC

For File Folders.
First use Apr. 27, 1964.

SN 203,728. Barnes-Hind Ophthalmic Products, Sunnyvale, Calif. Filed Oct. 12, 1964.

Gratiscript

For Partially Printed Paper Prescription Pad Used by a Medical Doctor in Prescribing an Ophthalmic Medication.
First use Mar. 20, 1964.

SN 203,793. Neatape Corporation, New York, N.Y. Filed Oct. 12, 1964.

NEATAPE

For Adhesive Paper Rolls and Pressure Sensitive Adhesive Plastic Strip and Sheet Material.
First use June 26, 1943.

Class 38 — Prints and Publications

SN 163,223. Color Activ S.A., Zurich, Switzerland. Filed Feb. 1, 1965.

FARBENPASS
PASSEPORT DE COULEURS
PASSAPORTO DEI COLORI
COLOR PASS

Owner of Swiss Reg. No. 194,684, dated Oct. 29, 1962.
For Color Comparators and Indicators, Such as Color Charts, Disks and Sliders With Color Scales.

SN 181,648. Kanrom, Inc., New York, N.Y. Filed Nov. 21, 1963.

RAT FINK

For Magazine, and a Reminder and Appointment Diary Published Periodically.
First use July 23, 1963.

SN 199,494. Publishers' Development Corporation, Skokie, Ill. Filed Aug. 7, 1964.

The PLAYERS

For Magazine Published Periodically.
First use July 29, 1964.

SN 202,082. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Sept. 17, 1964.

HOOKER NEWS

For House Organ Published at Regularly Recurring Intervals.
First use July 1958.

SN 202,406. American Soybean Association, Hudson, Iowa. Filed Sept. 28, 1964.

THE SOYBEAN DIGEST

Owner of Reg. No. 412,204.
For Magazine.
First use November 1940.

SN 203,126. Success Motivation Institute, Inc., Waco, Tex. Filed Oct. 1, 1964.

SMI WORLD

Owner of Reg. Nos. 722,588 and 773,220.
For Newsletter.
First use at least as early as Jan. 30, 1963.

SN 203,610. Record Club of America, Inc., York, Pa. Filed Oct. 8, 1964.

disc.

For Magazine Relating to Phonograph Records and Artists Who Record the Same.
First use Aug. 28, 1964.

SN 203,765. Inside Vending, Inc., Chicago, Ill. Filed Oct. 12, 1964.

AUTOMATIC MERCHANT'S MARKETPLACE

For Periodical Newsletter for the Coin-Operated Machine Industry.
First use Sept. 5, 1964.

SN 205,025. Wonder Books, Inc., New York, N.Y. Filed Oct. 26, 1964.

A SPOTLIGHT WONDER BOOK

Applicant disclaims exclusive right to the word "Book" apart from the mark as shown.
For Books Published From Time to Time in Series.
First use Oct. 1, 1964.

SN 205,469. Sunshine Art Studios, Inc., Springfield, Mass. Filed Nov. 3, 1964.

WESTMINSTER GALLERIES

For Greeting Cards.
First use on or about Dec. 1, 1963.

SN 205,741. Trade Service Publications, Inc., Los Angeles, Calif. Filed Nov. 6, 1964.

TAPE PARADE

For Periodical Publication Dealing With Current Tape Recordings of Musical and Other Composition.
First use July 29, 1964.

SN 206,596. Army Times Publishing Company, Washington, D.C. Filed Nov. 20, 1964.

FEDERAL TIMES

For Weekly Newspaper.
First use Nov. 11, 1964.

SN 206,606. Chicago Decal Company, Chicago, Ill. Filed Nov. 20, 1964.

WINDOW CAL

For Decalcomania Labels.
First use Sept. 30, 1964.

SN 206,851. Hunter Publishing Company, Chicago, Ill. Filed Nov. 24, 1964.

SERVICE STATION MANAGEMENT

Owner of Reg. No. 686,767.
For Periodical Published Monthly.
First use Feb. 27, 1958.

SN 207,475. Celebrity Publications, Ltd., New York, N.Y. Filed Dec. 4, 1964.

Teen-ville

The drawing is lined for the color red.
For Picture Magazine for Teenagers.
First use Aug. 15, 1964.

SN 213,761. Cashin Publishing Company, Cleveland, Ohio. Filed Mar. 10, 1965.

DARE

Owner of Reg. No. 786,036.
For Magazine for Men, Published Monthly.
First use Aug. 6, 1963.

Class 39—Clothing

SN 186,974. Stone Manufacturing Company, Greenville, S.C. Filed Feb. 18, 1964.

Fantastic

For Women's and Children's Apparel—Namely, Playsuits, Slacks, Shorts, Dresses, and Slips.
First use Feb. 8, 1956.

SN 187,193. Hartfield Stores, Incorporated, Los Angeles, Calif. Filed Feb. 21, 1964.

ZODYS

For Shoes and Sneakers.
First use Oct. 1, 1962.

SN 189,258. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

CASEY JR.

Owner of Reg. Nos. 416,313 and 632,756.
For Men's and Boys' Shirts, Dungarees, Slacks, Shorts, Jackets, and Sweaters.
First use Mar. 13, 1964.

SN 189,259. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

CASEY JONES GIRL

Owner of Reg. Nos. 416,313 and 632,756.
For Ladies' and Girls' Blouses, Shorts, Skirts, Slacks, Sweaters, and Jackets.
First use Mar. 13, 1964.

SN 189,260. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

CASEY'S WIFE

Owner of Reg. Nos. 416,313 and 632,756.
For Ladies' and Girls' Blouses, Shorts, Skirts, Slacks, Sweaters, and Jackets.
First use Mar. 13, 1964.

SN 189,261. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

SON OF CASEY

Owner of Reg. Nos. 416,313 and 632,756.
For Men's and Boys' Shirts, Dungarees, Slacks, Shorts, Jackets, and Sweaters.
First use Mar. 13, 1964.

SN 189,262. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

MISS CASEY JONES

Owner of Reg. Nos. 416,313 and 632,756.
For Ladies' and Girls' Blouses, Shorts, Skirts, Slacks, Sweaters, and Jackets.
First use Mar. 13, 1964.

SN 189,263. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

MISS CASEY

Owner of Reg. Nos. 416,313 and 632,756.
For Ladies' and Girls' Blouses, Shorts, Skirts, Slacks, Sweaters, and Jackets.
First use Mar. 13, 1964.

SN 189,264. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

CASEY'S KIDS

Owner of Reg. Nos. 416,313 and 632,756.
For Men's and Boys' Shirts, Dungarees, Slacks, Shorts, Jackets, and Sweaters.
First use Mar. 13, 1964.

SN 189,265. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

LITTLE CASEY JONES

Owner of Reg. Nos. 416,313 and 632,756.
For Men's and Boys' Shirts, Dungarees, Slacks, Shorts, Jackets, and Sweaters.
First use Mar. 13, 1964.

SN 189,266. Blue Bell, Inc., Greensboro, N.C. Filed Mar. 23, 1964.

LITTLE CASEY

Owner of Reg. Nos. 416,313 and 632,756.
For Men's and Boys' Shirts, Dungarees, Slacks, Shorts, Jackets, and Sweaters.
First use Mar. 13, 1964.

SN 192,949. Sawyer-Tower Products, Inc., Watertown, Mass. Filed May 7, 1964.

TUFFPRENE

For Industrial Protective Clothing—Namely, Coats, Jackets, Coveralls, Overalls, Hats, Hoods, Leggings, and Spats.
First use Apr. 27, 1964.

SN 210,721. Acme Markets, Inc., Philadelphia, Pa. Filed Jan. 27, 1965.

GOLD LINE

The drawing is lined for the color gold.
For Infants' Plastic Pants and Bibs, Training Pants; Men's and Boys' Socks and Underwear; and Girls' and Ladies' Panties.
First use Jan. 2, 1965.

SN 210,722. Acme Markets, Inc., Philadelphia, Pa. Filed Jan. 27, 1965.

GOLD LINE

The drawing is lined for the color gold.
For Bath Towels, Face Towels, Wash Cloths, Sheets, Pillow Cases, Dish Cloths, Kitchen Towels, Pot Holders and Oven Mitts, Plastic Table Covers, and Flannel-Back Table Covers.
First use Jan. 2, 1965.

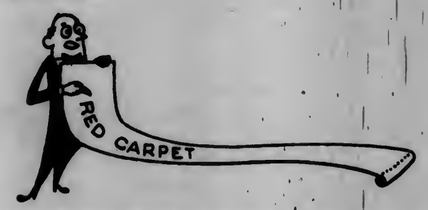
Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 189,232. Westwood Textile Manufacturing, Inc., Southbridge, Mass. Filed Mar. 20, 1964.

SCULPTURA

For Textile Fabrics of Wool, Worsted, Wool Worsted, and Mohair.
First use Dec. 1, 1963.

SN 201,055. A. Snider Original, Inc., Marshall, Tex. Filed Sept. 1, 1964.



Applicant disclaims the words "Red Carpet" and the representation of a carpet apart from the mark as shown.
For Carpets.
First use January 1964.

SN 208,520. Arkwright Merchandising Corporation, New York, N.Y. Filed Dec. 21, 1964.

CHARM HOUSE

Owner of Reg. No. 539,930.
For Carpets, Rugs, and Floor Coverings of Textile Construction.
First use June 2, 1944.

SN 208,552. Dan River Mills, Incorporated, Danville, Va. Filed Dec. 21, 1964.

LUCERN

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof for Use in Manufacturing Garments.
First use Nov. 13, 1964.

SN 208,595. Lister & Company Limited, Bradford, England. Filed Dec. 21, 1964.

LISTRAKHAN

Owner of British Reg. No. 804,242, dated Apr. 6, 1960.
For Fabrics Simulating Fur, Being Textile Piece Goods.

Class 43—Thread and Yarn

SN 188,960. Coats & Clark Inc., New York, N.Y. Filed Mar. 18, 1964.

TRU-FIT

For Ready Wound Bobbins of Thread.
First use on or about Apr. 10, 1959.

Class 44—Dental, Medical, and Surgical Appliances

SN 207,840. Simmons Company, New York, N.Y. Filed Dec. 9, 1964.

CUSTOM-CARE

For Patient Handling Equipment—Namely, Stretchers.
First use June 1, 1963.

SN 207,841. Simmons Company, New York, N.Y. Filed Dec. 9, 1964.

SIM-CARE

For Patient Handling Equipment—Namely, Stretchers.
First use June 1, 1963.

SN 208,442. Brunswick Manufacturing Company, Inc., North Quincy, Mass. Filed Dec. 18, 1964.

H-L-R

For Heart and Lung Resuscitators.
First use at least as early as Oct. 5, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 185,106. L. F. Beverage Corporation, Glen Cove, N.Y. Filed Jan. 22, 1964.

CAL-O-ETT

For Soft Drinks.
First use Dec. 12, 1963.

SN 203,005. John Groves, d.b.a. John Groves Company, Braddock, Pa. Filed Sept. 30, 1964.

CARLENE

For Fountain Syrup for Making Soft Drinks.
First use June 15, 1964.

Class 46—Foods and Ingredients of Foods

SN 161,094. Queen Bee Food Products, Inc., Detroit, Mich. Filed Jan. 21, 1963.

VICKIE BELL'S

The mark "Vickie Bell's" is fanciful.
For Baked Goods—Namely, Doughnuts.
First use on or about Mar. 8, 1961.

SN 161,770. Chesapeake Feed Company, Beltsville, Md. Filed Jan. 31, 1963.

OATIES

Owner of Reg. No. 742,442.
For Oats for Human Consumption.
First use Oct. 3, 1955.

SN 168,152. Calumet & Hecla, Inc., Calumet, Mich. Filed May 6, 1963.

C LINE

Owner of Reg. No. 764,932.
For Copper Concentrates for Use as a Constituent of Animal Feed Mixtures.
First use Mar. 26, 1962.

SN 173,358. Geo. A. Hormel & Company, Austin, Minn. Filed July 19, 1963.

CURE 81

No exclusive claim is made to the use of the word "Cure" apart from the mark as shown.
For Canned Ham.
First use Feb. 25, 1963.

SN 173,915. Hygrade Food Products Corporation, Detroit, Mich. Filed July 29, 1963.

GOLDEN NUGGET

For Capsule Which Contains Hydrogenated Vegetable Oil, Chicken Fat, Gelatin, and Glycerine and Which Is Sold as an Ingredient Incorporated in a Dry Soup Mix.
First use Feb. 12, 1939.

SN 176,516. General Grocer Company, Brentwood, Mo. Filed Sept. 9, 1963.

DINE WITH THE FINEST

Owner of Reg. No. 663,606.
For Canned, Bottled, Jarred, and Cartoned Foods—Namely, Fruit Juices, Vegetables, Fruits, Edible Oils, Alimentary Pastes, Condiments—Namely, Mustard, Chili Sauce, Peppers, Spices, Mayonnaise and Pickles; Spreads—Namely, Jellies, Jams, Marmalade and Peanut Butter; Pie Fillings—Namely, Fruit and Custard; and Dairy Products—Namely, Butter, Ice Cream, and Fresh Milk.
First use Sept. 13, 1956.

SN 180,393. General Candy Company, d.b.a. Royal Knight Candies, St. Louis, Mo. Filed Nov. 4, 1963.

Royal Knight



For Candy.
First use Jan. 4, 1963.

SN 183,786. Pet Milk Company, St. Louis, Mo. Filed Dec. 30, 1963.

STRIP CHEEZERS

For Cheese Flavored Corn Curls.
First use May 2, 1958.

SN 184,183. Sheridan Flouring Mills, Inc., Sheridan, Wyo. Filed Jan. 7, 1964.

BEST OUT WEST

For Wheat Flour.
First use 1912.

SN 184,758. Maurice R. Johnson, d.b.a. Smoky Canyon Products Company, Toledo, Ohio. Filed Jan. 16, 1964.

ORIGINAL COVERED WAGON

For Prepared Meat Products—Namely, Smoked Sliced Beef.
First use Nov. 3, 1963.
Subj. to Intf. with SN 180,699.

SN 189,148. Compania Nacional de Levaduras, Levapan Ltda., Bogota, Colombia. Filed Mar. 20, 1964.

LEVAPAN

Owner of Colombian Reg. No. 21,674, dated Mar. 11, 1953.
For Baking Ingredients—Namely, Yeast for Bread.

SN 198,779. The Sovereign Confectionery Company Limited, Lowton, near Newton-le-Willows, England. Filed July 29, 1964.

SOVEREIGN

Owner of British Reg. No. 473,493, dated Sept. 30, 1926.
For Candy, Not Including Marsipan, Fourres, Chocolate or Fondants.

SN 199,257. Bayou Candy Co., Inc., New Orleans, La. Filed Aug. 5, 1964.

Spikes

For Candy.
First use January 1960.

SN 199,258. Bayou Candy Co., Inc., New Orleans, La. Filed Aug. 5, 1964.

BIG JOE

For Candy.
First use 1947.

SN 199,956. Bayou Candy Co., Inc., New Orleans, La. Filed Aug. 17, 1964.

INKY DINK

For Candy.
First use September 1961.

SN 199,957. Bayou Candy Co., Inc., New Orleans, La. Filed Aug. 17, 1964.

GRASSHOPPER

For Candy.
First use May 1960.

SN 199,958. Bayou Candy Co., Inc., New Orleans, La. Filed Aug. 17, 1964.

FIRECRAKER

For Candy.
First use January 1960.

SN 201,803. Bowlby Candy Co., Inc., Appleton, Wis. Filed Sept. 14, 1964.

BLACK LADLE

For Candy.
First use August 1963.

SN 202,875. Ray B. Leach, d.b.a. Hie Foods Products, Omaha, Nebr. Filed Sept. 22, 1964.

HiE

For Potato Chips.
First use Sept. 10, 1964.

SN 203,359. The Wander Company, Chicago, Ill. Filed Oct. 5, 1964.

HI-GAIN

For Dietary Food Supplement in the Nature of a Concentrated Food Bar.
First use Sept. 24, 1964.

SN 203,430. Anne Rosen, d.b.a. Lady Anne Preserving Co., Clifton, N.J. Filed Oct. 6, 1964.

LADY ANNE

For Berry Preserves.
First use June 18, 1959.

SN 203,538. Standard Brands Incorporated, New York, N.Y. Filed Oct. 7, 1964.

VENDFLO

For Chocolate Flavor Mix for Making Food Beverages To Be Dispensed in Vending Machines.
First use Aug. 14, 1964.

SN 204,389. Mayflower Enterprises, Inc., Elizabethtown, Pa. Filed Oct. 20, 1964.

LITTLE ROASTIES

For Peanuts Roasted in the Shell.
First use Feb. 9, 1964.

SN 204,390. Mayflower Enterprises, Inc., Elizabethtown, Pa. Filed Oct. 20, 1964.

LITTLE SALTIES

No claim is made to the word "Little" apart from the mark as shown.
For Peanuts Salted in the Shell.
First use Feb. 9, 1964.

SN 204,863. Wilbur-Ellis Company, San Francisco, Calif. Filed Oct. 26, 1964.

SOUTHERN STAR

Owner of Reg. Nos. 561,890, 753,051, and others.
For Frozen Shellfish and Canned Fish.
First use Jan. 25, 1949.

SN 205,000. Quaker City Chocolate & Confectionery Co., Inc., Philadelphia, Pa. Filed Oct. 28, 1964.

oodle

For Candy.
First use Oct. 14, 1964.

SN 205,282. General Mills, Inc., Minneapolis, Minn. Filed Nov. 2, 1964.

MAGIC SWIRL

For Frosting.
First use Sept. 9, 1964.

SN 205,337. Post Houses, Inc., Forest Park, Ill. Filed Nov. 2, 1964.

POST HOUSE

For Candy.
First use Apr. 27, 1964.

SN 205,481. National Tea Co., Chicago, Ill. Filed Nov. 3, 1964.

CHAMP

Owner of Reg. No. 696,502.
For Canned Dog and Cat Food and Packaged Dog Food of the Dry Type.
First use Jan. 28, 1958, on dog food.

SN 205,549. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Nov. 4, 1964.

RAZZEROO

For Chewing Gum.
First use Aug. 12, 1964.

SN 205,649. Robert Alameda, d.b.a. Robert Alameda Company, and Robert Alameda Co., Salinas, Calif. Filed Nov. 6, 1964.

Angel Food

Owner of Reg. No. 365,675.
For Fresh Vegetables; Frozen Vegetables.
First use at least as early as the year 1956 on fresh vegetables.

SN 206,116. Abbott Laboratories, North Chicago, Ill. Filed Nov. 13, 1964.

HI-LIGHT

For Non-Dairy Preparation for Use as an Additive to Beverages To Enhance Flavor and Modify Color.
First use Oct. 23, 1962.

SN 206,539. Hallam & Son, Incorporated, Springfield, Mo. Filed Nov. 19, 1964.

Toot-Toot

For Peanut Butter.
First use Oct. 6, 1964.

SN 210,475. Rarity Packing Co., Inc., Oxnard, Calif. Filed Jan. 22, 1965.

BRASS BAND

Owner of Reg. No. 335,451.
For Fresh Vegetables.
First use at least as early as October 1963.

SN 210,525. Block Brothers, Incorporated, Nashville, Tenn. Filed Jan. 25, 1965.

TENNESSEE BELLE

For Black Walnuts.
First use November 1937.

SN 210,543. East India Spice Co., Ltd., Mount Vernon, N.Y. Filed Jan. 25, 1965.

IM-PROVE

For Monosodium Glutamate.
First use Dec. 22, 1964.

SN 211,149. Paul F. Beich Company, Bloomington, Ill. Filed Feb. 2, 1965.

BIKINI

For Candy.
First use Jan. 18, 1965.
Subj. to Intf. with SN 212,221.

SN 211,193. Rowntree and Company Limited, York, England. Filed Feb. 2, 1965.

AERO

Owner of British Reg. No. 561,268, dated July 3, 1935.
For Confectionery—Namely, Chocolate for Eating.

SN 211,247. The Borden Company, New York, N.Y. Filed Feb. 3, 1965.

SNACK-WICH

For Ice Cream Sandwiches.
First use May 6, 1964.

SN 211,416. Campbell Soup Company, Camden, N.J. Filed Feb. 5, 1965.

FLEXI-PACK

For Frozen Individually Packed Entrees Composed Principally of One or More of the Following: Meats, Fish, Shellfish, Poultry, Alimentary Paste, and Vegetables.
First use Sept. 7, 1961.

SN 211,434. Harvo Limited, Birmingham, Warwick, England. Filed Feb. 5, 1965.

HARVO

Owner of British Reg. No. 397,348, dated Nov. 19, 1919.
For Cakes—Namely, Richly Malted Cake, Malt and Honey Fruit Cake, Richly Malted Cake Without Fruit, Ginger Cake, and Cherry and Pineapple Cake.

SN 211,467. Richview, Inc., Oxnard, Calif. Filed Feb. 5, 1965.

IM-PAK

For Fresh Vegetables.
First use Jan. 8, 1965.

SN 211,503. Cargill, Incorporated, Minneapolis, Minn. Filed Feb. 8, 1965.

HORSE KWIK

For Horse Feed.
First use Jan. 7, 1965.

SN 211,684. Traders, Inc., Seattle, Wash. Filed Feb. 9, 1965.

TRADERS

For Peanut Butter, Flour, and Tea.
First use during December 1953.

SN 211,832. National Dairy Products Corporation, Chicago, Ill. Filed Feb. 11, 1965.

CHED-R-LAC

For Cheese.
First use Dec. 11, 1964.

SN 212,221. Leaf Brands, Inc., Chicago, Ill. Filed Feb. 17, 1965.

BIKINIS

For Candy.
First use Jan. 28, 1965.
Subj. to Intf. with SN 211,149.

Class 47—Wines

SN 167,227. Cucamonga Vineyard Company, d.b.a. Cucamonga Vineyard Co., Cucamonga, Calif. Filed Apr. 22, 1963.

Cu Vallée & Cie

For Wines and Champagnes.
First use Mar. 21, 1963.

SN 202,600. Julius Wile Sons & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

CORDON DE BOURGOGNE

The word "Bourgogne" is disclaimed apart from the mark as shown. The English translation of "Cordon de Bourgogne" is "ribbon of Bourgogne." Owner of Reg. No. 768,485.
For Wines.
First use July 1963.

Class 48—Malt Beverages and Liquors

SN 167,489. N.V. Phoenix Brouwerij, d.b.a. Castle Brewery, Klaver Brouwerij, Mill Brewery, Klaver Holland Beer Brewery, and Falcon Brewery, Amersfoort, Netherlands. Filed Apr. 24, 1963.

FALCON BEER

No claim of exclusive right is made to the word "Beer" as the name of the goods herein.
For Beer.
First use June 30, 1955; in commerce June 30, 1955.

SN 203,638. August Wagner Breweries, Inc., Columbus, Ohio. Filed Oct. 9, 1964.

MARK V

For Beer.
First use Sept. 18, 1964.

SN 203,674. Mayer-Bass, Inc., Hackensack, N.J. Filed Oct. 9, 1964.

AMOPEX

For Hop Extract.
First use July 7, 1964.

Class 49—Distilled Alcoholic Liquors

SN 49,371. The American Distilling Company, New York, N.Y. Filed Apr. 16, 1958.

Bourbon Supreme

Applicant disclaims exclusive right to the word "Bourbon" apart from the mark as shown.
For Bourbon Whiskey.
First use Apr. 1, 1941.

SN 184,724. The Huntington Creek Corporation, d.b.a. Leroux & Company, Ruffsdale, Pa. Filed Jan. 16, 1964.

VAN DER MINT

Applicant claims no exclusive right in the word "Mint" apart from the mark as shown.
For Liqueur.
First use Dec. 26, 1963.

SN 204,483. Majestic Distilling Company, Inc., Lansdowne, Md. Filed Oct. 21, 1964.

SETTER

For Whiskey.
First use April 1952.

Class 50—Merchandise Not Otherwise Classified

SN 181,405. Polychrome Corporation, Yonkers, N.Y. Filed Nov. 18, 1963.

POLYTINT

For Photographic Contact Screens for Use in Offset Lithography.
First use June 14, 1963.

SN 187,894. Silverlith Corporation, Edmonston, Md. Filed Mar. 3, 1964.

HYDROGLASSED

For Surface Treated Printing Plates, Including Smooth or Grained Printing Plates, Positive or Negative Printing-Plates, Presensitised Printing Plates, and Pre-Cut Printing Plates Suitable for Use in Lithography.
First use Feb. 18, 1964.

SN 200,984. Star Ribbons, Inc., d.b.a. Star Sales of Dallas, Dallas, Tex. Filed Aug. 31, 1964.

VAL-U-FLOWERS

For Artificial Flowers.
First use June 15, 1961.

SN 202,411. James L. Callan, d.b.a. The Callan Company, Minneapolis, Minn. Filed Sept. 23, 1964.

DRIBBLETS

For Floor Mats for Use in Bathrooms, Restrooms and Lavatories.
First use July 3, 1964.

SN 204,313. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Oct. 19, 1964.

WISE GUY

For Novelty Badges.
First use Sept. 23, 1964.

SN 204,388. Marlboro Molding Company, Marlboro, N.J. Filed Oct. 20, 1964.

m

For Molded Plastic Closures.
First use Oct. 5, 1964.

SN 205,273. Luther E. Freeman, d.b.a. Ten-Ten Co., San Diego, Calif. Filed Nov. 2, 1964.

PET-TECTOR

For Bait Holders Comprising an Anchored Plate-Like Base and Cover With Access Openings.
First use Oct. 22, 1964.

SN 206,565. Morton & Hall, Inc., Venice, Fla. Filed Nov. 19, 1964.

TROPAQUARIUM

For Aquariums.
First use Feb. 26, 1964.

SN 211,080. Samuel Mallinger Company, Pittsburgh, Pa. Filed Feb. 1, 1965.

Samco

For Closures for Glass Jars Used in Home Canning of Foods.
First use at least as early as 1936.

SN 211,405. Zak Machine Company, Toledo, Ohio. Filed Feb. 4, 1965.

SHORE-MATE

For Shoring Devices for Boats Consisting of Adjustable Devices Engaging the Sides of the Hull of the Boat for Holding It in Upright Position for Land Storage or for Painting Purposes and the Like.
First use October 1964.

SN 211,485. Donald L. Williams, Toledo, Ohio. Filed Feb. 5, 1965.

HELPFUL DON

For Presentation Easels.
First use Jan. 25, 1965.

Class 51—Cosmetics and Toilet Preparations

SN 127,599. Heluan GmbH, Zug, Switzerland. Filed Sept. 11, 1961.

POLOFF

For Nail Polish Remover.
First use June 18, 1960; in commerce June 18, 1960.

SN 165,182. C. B. Head, d.b.a. Char-N6 & Company, Ceres, Calif. Filed Mar. 21, 1963.

CHEVULU

For Cosmetics—Namely, Hair Shampoo, Hair Cream, and Hair Spray.
First use January 1960.

SN 174,748. Clairol Incorporated, New York, N.Y. Filed Aug. 9, 1963.

HEAT & TREAT

For Beauty Pack Treatment for General Reconditioning of the Hair.
First use May 17, 1963.

SN 182,221. Speert, Incorporated, New York, N.Y. Filed Dec. 2, 1963.



For Eye Creams, Eye Lotions, Eye Pencils, and Eye Make-Up Preparations.
First use Jan. 2, 1963.

SN 184,632. Lehn & Fink Products Corporation, Bloomfield, N.J. Filed Jan. 15, 1964.

V.I.PINK

Without prejudice to its rights now existing or hereafter arising and for the purpose of this registration only, applicant makes no claim to the notation "Pink" apart from the mark as shown.
For Lipstick.
First use Dec. 13, 1963.

SN 184,635. Lehn & Fink Products Corporation, Bloomfield, N.J. Filed Jan. 15, 1964.

V.I.PEACH

Without prejudice to its rights now existing or hereafter arising and for the purpose of this registration only, applicant makes no claim to the notation "Peach" apart from the mark as shown.
For Lipstick.
First use Dec. 13, 1963.

SN 200,544. Hazel Bishop Inc., Union, N.J. Filed Aug. 25, 1964.

BRUSH 'N BLUSH

For Pressed Tinted Make-Up and Brush Sold in a Compact.
First use Aug. 10, 1964.

SN 202,092. Lehn & Fink Products Corporation, d.b.a. Tussy Cosmetics, Bloomfield, N.J. Filed Sept. 17, 1964.

SLY BROWS

Without prejudice to its rights now existing or hereafter arising and for the purpose of this registration only, applicant makes no claim to the notation "Brows" apart from the mark as shown.
For Eyebrow Cosmetic Preparation.
First use Aug. 26, 1964.

SN 202,982. Hudson National, Inc., New York, N.Y., by change of name from Hudson Vitamin Products, Inc., New York, N.Y. Filed Sept. 29, 1964.

RADIANT

For Denture Cleanser.
First use Sept. 18, 1964.

SN 202,984. Hudson National, Inc., d.b.a. Hudson Toiletries, New York, N.Y., by change of name from Hudson Vitamin Products, Inc., New York, N.Y. Filed Sept. 29, 1964.

SECRECY

For Concentrated Cologne.
First use Sept. 19, 1964.

SN 203,111. Mauri Montay, Inc., Pittsburgh, Pa. Filed Oct. 1, 1964.

MAURI MONTAY

For Cosmetics.
First use Nov. 22, 1963.

SN 203,372. Avon Products, Inc., New York, N.Y. Filed Oct. 6, 1964.



For Men's Toiletries—Namely, After Shave Lotion.
First use Sept. 9, 1964.

SN 203,426. Marcel R. Pitet, d.b.a. Pitet Products, Billings, Mont. Filed Oct. 6, 1964.

SKINEX

For Lotion-Emollient for Temporary Relief of External Discomfort.
First use on or about July 1, 1964.

SN 203,447. Vapon, Inc., Montclair, N.J. Filed Oct. 6, 1964.

WIG-LIFE

For Liquid Hair and Wig Conditioner.
First use Aug. 6, 1964.

SN 204,397. Nutritional Science Corporation, El Monte, Calif. Filed Oct. 20, 1964.

DERMA-SATIN

For Lotion for the Care and Treatment of the Skin.
First use Aug. 28, 1964.

SN 204,822. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 26, 1964.

LIQUID LIFT

For Liquid Astringent and Skin Toner.
First use in early March 1956.

SN 204,829. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 26, 1964.

VITA DEW

For Skin Lotion.
First use Aug. 15, 1960.

SN 204,830. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 26, 1964.

VITA-TINT

For Tinted Make-Up Foundation.
First use early in March 1956.

SN 204,848. Adele Simpson, Inc., New York, N.Y. Filed Oct. 26, 1964.

YACHT SET

For Perfume.
First use Oct. 16, 1964.

SN 204,879. Beecham Products Inc., Clifton, N.J. Filed Oct. 27, 1964.

ONE SHOT

For Personal Deodorant.
First use Sept. 11, 1964.

SN 209,686. Fairway Foods, Inc., St. Paul, Minn. Filed Jan. 11, 1965.

FAIRWAY

Owner of Reg. Nos. 197,673, 513,494, and others.
For Creme Rinse, Bath Oil, and Hand Lotion.
First use on or about Apr. 1, 1964.
Subj. to Intf. with SN 197,291.

Class 52—Detergents and Soaps

SN 167,118. Coastal Chemical Company, Inc., Savannah, Ga. Filed Apr. 19, 1963.

Nu SPARKLE

Owner of Reg. No. 360,734.
For Household Dishwashing Detergent.
First use Oct. 11, 1937.

SN 168,448. Superior Laboratories, Inc., Florissant, Mo. Filed May 8, 1963.



For Whitewall Tire Cleaner, Car Wash Compound, Upholstery Shampoo, Toilet Bowl Cleaner, Automobile Cleaner and Glaze, and Rubber Cleaning and Renovating Compound.
First use Sept. 7, 1962, on automobile cleaner and glaze.

SN 188,693. Xttrium Laboratories, Inc., Chicago, Ill. Filed Mar. 13, 1964.

TURGEX

For Medical Skin Cleanser.
First use Feb. 26, 1964.

SN 188,776. Thomas R. McClintic, d.b.a. McClintic Products, Syracuse, Ind. Filed Mar. 16, 1964.

GREEN STUF

The drawing is lined for the color green.
For Non-Abrasive Solvent Cleaner.
First use Feb. 10, 1964.

SN 203,827. P.C. Products (1001) Limited, Salford, England. Filed Oct. 5, 1964.

CHEXSOL

Owner of British Reg. No. 853,121, dated Aug. 21, 1963.
For Cleaning Preparations—Namely, Carpet and Upholstery Shampoo.

SN 203,653. Diamond Alkali Company, Cleveland, Ohio. Filed Oct. 9, 1964.

DYNALITE

Owner of Reg. No. 764,831.
For Laundry Detergent for Industrial Use.
First use Sept. 27, 1964.

SN 204,367. Cussons (International) Limited, Kersal, Manchester, England. Filed Oct. 20, 1964.

ROYAL GUARD

Owner of British Reg. No. 862,363, dated Apr. 2, 1964; and U.S. Reg. No. 325,144.
For Toilet Soap.

SN 204,767. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 26, 1964.

IRISH SPRING

For Toilet Soap.
First use Oct. 5, 1964.

SN 204,802. Mac's Super Gloss Co., Inc., Los Angeles, Calif. Filed Oct. 26, 1964.

MAC'S

Owner of Reg. Nos. 648,046, 749,906, and others.
For Waterless Hand Cleaner.
First use Oct. 17, 1958.

SN 205,008. Sanford Chemical Co., Inc., Elk Grove Village, Ill. Filed Oct. 28, 1964.

LOFT

For All-Purpose Detergent for Household Use.
First use October 1964.

SN 207,544. A & J Chemical Corp., Yonkers, N.Y. Filed Dec. 4, 1964.

STEAM-MOR

For Cleaning Compound for Removing Scale and Mineral Deposits From Inside of Steam Irons.
First use Dec. 18, 1957.

SN 212,611. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Feb. 23, 1965.

U.S. BORAX

Owner of Reg. Nos. 768,953, 773,447, and 775,542.
For Special Purpose Cleaners—Namely, Glass Cleaner, Bowl Cleaner, Rug and Upholstery Shampoo, and Paste Cleaner for Tile and Porcelain.
First use Nov. 20, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 187,416. Happy Humpty Restaurants, Inc., Fort Wayne, Ind. Filed Feb. 25, 1964.

HAPPY HUMPTY

For Restaurant Services.
First use May 1, 1947.

SN 190,040. Ralph Walsh, d.b.a. Arlington Soft Water Company, Arlington Heights, Ill. Filed Mar. 31, 1964.

RENT-A-SOFT

For Services in Connection With Leasing of Water Softening Equipment.
First use November 1962.

SN 199,161. International Sea Van, Inc., Evansville, Ind. Filed Aug. 8, 1964.

STEEL-TAINER

For Leasing of Containers.
First use June 26, 1964.

SN 201,541. J. J. Newberry Co., New York, N.Y. Filed Sept. 9, 1964.



The drawing is lined for red.
For Restaurant Services.
First use Aug. 7, 1964.

SN 205,339. Post Houses, Inc., Forest Park, Ill. Filed Nov. 2, 1964.

POST HOUSE

Owner of Reg. No. 737,657.
For Restaurant Services.
First use Apr. 22, 1964.

Class 102 — Insurance and Financial

SN 198,118. American Foundation Life Insurance Company, Little Rock, Ark. Filed July 20, 1964.

American Foundation SECURITY GROWTH

The applicant disclaims the use of the terms "Security" and "Growth" apart from the mark as shown. Owner of Reg. No. 660,231.
For Underwriting Life Insurance.
First use at least as early as July 3, 1963; at least as early as June 1, 1956, in a different form.

SN 203,044. The Western Saving Fund Society of Philadelphia, Philadelphia, Pa. Filed Sept. 30, 1964.

"Wishing won't do it... Saving will"

Owner of Reg. No. 683,062.
For Banking Service.
First use Jan. 13, 1947.

Class 103 — Construction and Repair

SN 187,568. The Displayers, Inc., New York, N.Y. Filed Feb. 27, 1964.



The mark comprises the fanciful combination of the letters "T" and "D." The lining is fanciful and not to show any particular color designation. Owner of Reg. Nos. 528,017, 535,817, and 744,229.
For Designing, Constructing, and Erecting Exhibits and Displays.
First use on or about Jan. 1, 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 206,493. Club Internationale, Washington, D.C. Filed Nov. 17, 1964.



For Indicating Membership in Applicant's Vacation Club.
First use on or before Sept. 24, 1964.

SN 206,566. National Association of Home Builders of the United States, Washington, D.C. Filed Nov. 19, 1964.



For Indicating a Class of Members Within the Applicant Association.
First use Sept. 20, 1964.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

790,156. DUREZ. Hooker Chemical Corporation. MULTIPLE CLASS (Classes 1 and 6). SN 192,823. Pub. 3–16–65. Filed 5–6–64.

790,157. INDIAN HEAD AND DESIGN. C & F Manufacturing Products Co. SN 194,461. Pub. 3–16–65. Filed 5–28–64.

790,158. SUPRATHEN. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. SN 195,386. Pub. 3–16–65. Filed 6–11–64.

790,159. X (DESIGN). Borg-Warner Corporation. CONSOLIDATED CERTIFICATE. SN 195,605, pub. 3–16–65, filed 6–15–64, Cl. 1; SN 195,606, pub. 3–16–65, filed 6–15–64, Cl. 5; SN 195,607, pub. 3–16–65, filed 6–15–64, Cl. 12; SN 195,608, pub. 3–16–65, filed 6–15–64, Cl. 13; SN 195,609, pub. 3–16–65, filed 6–15–64, Cl. 14; SN 195,610, pub. 3–16–65, filed 6–15–64, Cl. 16; SN 195,611, pub. 3–16–65, filed 6–15–64, Cl. 19; SN 195,612, pub. 3–16–65, filed 6–15–64, Cl. 21; SN 195,613, pub. 3–16–65, filed 6–15–64, Cl. 23; SN 195,614, pub. 3–16–65, filed 6–15–64, Cl. 24; SN 195,615, pub. 3–16–65, filed 6–15–64, Cl. 26; SN 195,616, pub. 3–16–65, filed 6–15–64, Cl. 31; SN 195,617, pub. 3–16–65, filed 6–15–64, Cl. 32; SN 195,618, pub. 3–16–65, filed 6–15–64, Cl. 34; SN 195,619, pub. 3–16–65, filed 6–15–64, Cl. 35; SN 195,620, pub. 3–16–65, filed 6–15–64, Cl. 44.

790,160. AIRLIFT. Chris-Craft Industries, Inc. SN 197,673. Pub. 3–16–65. Filed 7–13–64.

790,161. CATTLE BRAND MARK (DESIGN). Ox-Bo Black Creek Ranch. SN 198,074. Pub. 3–16–65. Filed 7–17–64.

790,162. MULTICELL. International Paper Company. SN 199,372. Pub. 3–16–65. Filed 8–6–64.

Class 2—Receptacles

790,163. INSUL PLATE. Fashioncraft-Excello. SN 171,764. Pub. 3–16–65. Filed 6–25–63.

790,164. US AND DESIGN. Diamond National Corporation. MULTIPLE CLASS (Classes 2, 37, and 38). SN 176,894. Pub. 3–16–65. Filed 9–13–63.

790,165. OXWELD. Union Carbide Corporation. SN 184,855. Pub. 3–16–65. Filed 1–17–64.

790,166. QUALITY. Aladdin Industries, Incorporated. SN 184,867. Pub. 3–16–65. Filed 1–20–64.

790,167. TT AND DESIGN. Ticker and Treasure, Inc. SN 187,818. Pub. 3–16–65. Filed 3–2–64.

790,168. SUZETTE. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 191,599. Pub. 3–16–65. Filed 4–20–64.

790,169. BEACHCOMBER. Ketcham & McDougall, Inc. MULTIPLE CLASS (Classes 2 and 8). SN 191,693. Pub. 3–16–65. Filed 4–21–64.

790,170. GLOLOK. Globe Paper Box Company Limited. MULTIPLE CLASS (Classes 2 and 23). SN 194,174. Pub. 3–16–65. Filed 5–25–64.

790,171. KWIK-SIP. Nevil Enterprises, Inc. SN 197,977. Pub. 3–16–65. Filed 7–16–64.

790,172. SCUFF-MASTER. Olin Mathieson Chemical Corporation. SN 198,073. Pub. 3–16–65. Filed 7–17–64.

790,173. CAREFREE WARES AND DESIGN. Zellerbach Paper Company. SN 199,339. Pub. 3–16–65. Filed 8–5–64.

790,174. ECONO CANISTER. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 201,470. Pub. 3–16–65. Filed 9–8–64.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

790,175. JACK DANIEL'S COMFORT KIT. Jack Daniel Distillery, Lem Motlow, Prop., Inc. SN 189,052. Pub. 3–16–65. Filed 3–19–64.

790,176. DEL-JAY. Le Roy J. Hyman. MULTIPLE CLASS (Classes 3 and 18.) SN 194,801. Pub. 3–16–65. Filed 6–3–64.

Class 4—Abrasives and Polishing Materials

790,177. TCW AND DESIGN. Treibacher Chemische Werke Aktiengesellschaft. SN 186,977. Pub. 3–16–65. Filed 2–18–64.

Class 5—Adhesives

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,178. MATSTICK. Matcote Company, Inc. SN 167,156. Pub. 6–9–64. Filed 4–19–63.

790,179. FORM-A-GASKET NO 2. Permatex Company, Inc. SN 187,956. Pub. 3–16–65. Filed 3–4–64.

790,180. GUM-TAC. Corn Products Company. SN 199,891. Pub. 3–16–65. Filed 8–14–64.

790,181. CVV. Herculite Protective Fabrics Corporation. SN 201,030. Pub. 3–16–65. Filed 9–1–64.

Class 6—Chemicals and Chemical Compositions

790,156. (See Class 1 for this trademark.)

790,182. AMERICAN CHEMICALS & PLASTICS AND DESIGN. American Chemical Corporation. SN 150,490. Pub. 3–12–63. Filed 8–6–62.

790,183. PHOTO-SIGNET (DESIGN). Ciba Limited. SN 186,492. Pub. 3–16–65. Filed 1–2–64.

790,184. COTORAN. Ciba Limited. SN 186,496. Pub. 9–15–64. Filed 1–2–64.

790,185. ABSORBRILLE. Strohmeyer & Arpe Company. SN 188,399. Pub. 3–16–65. Filed 3–10–64.

790,186. CHEM-PELS C. Chemical Insecticide Corporation. SN 190,593. Pub. 3–16–65. Filed 4–8–64.

790,187. CHEM-PELS PLUS. Chemical Insecticide Corporation. SN 190,594. Pub. 3–16–65. Filed 4–8–64.

790,188. CHEM-PELS. Chemical Insecticide Corporation. SN 191,506. Pub. 3–16–65. Filed 4–20–64.

790,189. SS. Savin Business Machines Corporation. MULTIPLE CLASS (Classes 6 and 26). SN 194,753. Pub. 3–16–65. Filed 6–2–64.

790,190. ACODOL. Geigy Chemical Corporation. SN 197,948. Pub. 1–5–65. Filed 7–16–64.

790,191. BUTAFLOR. P. Robertet Inc. SN 198,776. Pub. 3–16–65. Filed 7–29–64.

790,192. DRI-NOXFISH. S. B. Penick & Company. SN 199,759. Pub. 3–16–65. Filed 8–12–64.

790,193. ALOX. Alox Corporation. SN 202,210. Pub. 3–16–65. Filed 9–21–64.

Class 8—Smokers' Articles, Not Including Tobacco Products

790,169. (See Class 2 for this trademark.)

790,194. ANTI-CIG. Bari-Tom Imitation Cigarette Co. SN 185,756. Pub. 3–16–65. Filed 1–31–64.

Class 9—Explosives, Firearms, Equipments, and Projectiles

790,195. MAXSON. Maxson Electronics Corporation. MULTIPLE CLASS (Classes 9, 21, and 26). SN 195,002. Pub. 3–16–65. Filed 6–5–64.

Class 10—Fertilizers

790,196. ZY-MAK! Zymak Biochemical Corp. SN 199,157. Pub. 3–16–65. Filed 8–3–64.

Class 11—Inks and Inking Materials

790,197. CHECK MARK AND DESIGN. The Buckeye Ribbon & Carbon Co. SN 206,813. Pub. 3–16–65. Filed 11–24–64.

Class 12—Construction Materials

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,198. SASHCO. Alice V. Burch, administratrix of the estate of Donald J. Burch, deceased, d.b.a. Colorado Steel Sash Co. SN 164,804. Pub. 3–16–65. Filed 3–18–63.

790,199. SASHCO AND DESIGN. Alice V. Burch, administratrix of the estate of Donald J. Burch, deceased, d.b.a. Colorado Steel Sash Co. SN 164,805. Pub. 3–16–65. Filed 3–18–63.

790,200. THREE DIAMOND. Mitsubishi Shoji Kaisha, Ltd. SN 174,779. Pub. 3–16–65. Filed 8–9–63.

790,201. CORKARPET. Eastern Rock Products, Inc. SN 177,691. Pub. 3–16–65. Filed 9–25–63.

790,202. LIQUI-BURN-IN. Finishine Laboratories, Inc. SN 184,011. Pub. 3–16–65. Filed 1–2–64.

790,203. LORD & BURNHAM AND DESIGN. Burnham Corporation. SN 184,691. Pub. 3–16–65. Filed 1–16–64.

790,204. H-W COPUR. Harbison-Walker Refractories Company. SN 189,070. Pub. 3–16–65. Filed 3–19–64.

790,205. H-W COPURBOND. Harbison-Walker Refractories Company. SN 189,071. Pub. 3–16–65. Filed 3–19–64.

790,206. ANACONDA. The Anaconda Company. SN 191,479. Pub. 3–16–65. Filed 4–20–64.

790,207. MONSANTO. Monsanto Company. SN 192,505. Pub. 3–16–65. Filed 5–1–64.

790,208. I-A MIX. Ingot Aid Company, Inc. SN 194,389. Pub. 3–16–65. Filed 5–27–64.

790,209. LA1202. E. J. Lavino and Company. SN 199,680. Pub. 3–16–65. Filed 8–11–64.

790,210. WAYSTONE. Thomson Industries, Inc. SN 200,893. Pub. 3–9–65. Filed 8–21–64.

790,211. FOUR SEASONS. Watson Manufacturing Company, Inc. SN 200,515. Pub. 3–16–65. Filed 8–24–64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,212. ELECTROMATIC. Dresser Industries, Inc., assignee of Manning, Maxwell & Moore, Incorporated. SN 184,636. Pub. 3–16–65. Filed 1–15–64.

790,213. PERSONAL MAID. La Fran Co. SN 184,729. Pub. 3–16–65. Filed 1–16–64.

790,214. FORM-LOK. Groov-Pin Corporation. SN 190,004. Pub. 3–16–65. Filed 3–31–64.

790,215. BRASSCO. National Distillers and Chemical Corporation. SN 191,059. Pub. 3–16–65. Filed 4–14–64.

790,216. HIFLEX. Sharon Steel Corporation. SN 192,849. Pub. 3–16–65. Filed 5–6–64.

790,217. CLEAR-FLO. John D. Yarnell, d.b.a. Clear-Flo Strainer Co. SN 194,545. Pub. 3–16–65. Filed 5–28–64.

790,218. REGAL. The Hale Company. SN 198,167. Pub. 3–16–65. Filed 7–20–64.

790,219. CARD-LOK. Card-Lok. SN 199,026. Pub. 3–16–65. Filed 8–3–64.

Class 14—Metals and Metal Castings and Forgings

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,220. INDEX. Index-Werke K.G. Hahn & Tessky. MULTIPLE CLASS (Classes 14 and 23). SN 183,066. Pub. 3–16–65. Filed 12–16–63.

790,221. WEIRFOILE. National Steel Corporation. SN 189,008. Pub. 3–16–65. Filed 3–18–64.

790,222. NRC-PLANSEE. National Research Corporation. MULTIPLE CLASS (Classes 14 and 21). SN 191,345. Pub. 3–16–65. Filed 3–31–64.

790,223. ARCMETAL. Arcos Corporation. SN 193,529. Pub. 3–16–65. Filed 5–15–64.

790,224. SILCOPOWDER. Handy & Harman. SN 206,040. Pub. 3–16–65. Filed 11–12–64.

Class 15—Oils and Greases

790,225. TRILAC. Imperial Chemical Industries Limited. MULTIPLE CLASS (Classes 15 and 16). SN 172,129. Pub. 3–16–65. Filed 6–18–63.

790,226. MISCELLANEOUS DESIGN. Richfield Oil Corporation. SN 177,445. Pub. 3–16–65. Filed 9–20–63.

790,227. MISCELLANEOUS DESIGN. Richfield Oil Corporation. SN 177,446. Pub. 3–16–65. Filed 9–20–63.

790,228. Z–7. Pennsoil Company. SN 188,266. Pub. 3–16–65. Filed 3–9–64.

790,229. PRIST. Hoffman-Taff, Inc. SN 192,177. Pub. 3–16–65. Filed 4–28–64.

790,230. FAF. Malco Products Inc. SN 197,407. Pub. 3–16–65. Filed 7–8–64.

790,231. HANCOCK. Signal Oil and Gas Company. SN 202,510. Pub. 3–16–65. Filed 9–23–64.

790,232. BEL RAY AND DESIGN. Bel-Ray Company, Inc. SN 204,230. Pub. 3–16–65. Filed 10–19–64.

Class 16—Protective and Decorative Coatings

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,225. (See Class 15 for this trademark.)

790,233. FLAT-AYD. Daniel Products Company. SN 159,964. Pub. 3–16–65. Filed 12–31–62.

790,234. TINT-AYD. Daniel Products Company. SN 159,965. Pub. 3-16-65. Filed 12-31-62.

790,235. CHROME 63. National Lock Co. SN 171,269. Pub. 3-16-65. Filed 6-18-63.

790,236. PENGUIN. International Paints and Plastics, Inc. SN 183,325. Pub. 3-16-65. Filed 12-20-63.

790,237. HERCOFLAT. Hercules Powder Company. SN 184,628. Pub. 3-16-65. Filed 1-15-64.

790,238. BROWN COW AND DESIGN. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co. SN 185,394. Pub. 3-16-65. Filed 1-27-64.

790,239. MYTRON. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co. SN 186,613. Pub. 3-16-65. Filed 2-13-64.

790,240. MODAC. National Coatings Corporation. SN 192,310. Pub. 3-16-65. Filed 4-29-64.

790,241. REL-CHEM. Reliance Universal Incorporated. SN 196,196. Pub. 3-16-65. Filed 6-22-64.

790,242. BI-KOROX. The Borden Company. SN 196,840. Pub. 3-16-65. Filed 7-1-64.

Class 17—Tobacco Products

790,243. VAN CLAYS. SPC Industries, Inc. SN 187,615. Pub. 3-16-65. Filed 2-27-64.

790,244. OFF-KOLOR PALMAS AND DESIGN. W. H. Snyder & Sons, Incorporated. SN 187,693. Pub. 3-16-65. Filed 2-28-64.

790,245. TIPARETTE. Consolidated Cigar Corporation. SN 187,857. Pub. 3-16-65. Filed 3-3-64.

Class 18—Medicines and Pharmaceutical Preparations

790,176. (See Class 3 for this trademark.)

790,246. EQUI-VERM. Texas Phenothiasine Company. SN 191,090. Pub. 3-16-65. Filed 4-14-64.

Class 19—Vehicles

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,247. UTEMCO. Hendrickson Tandem Corporation. SN 172,386. Pub. 3-16-65. Filed 7-3-63.

790,248. BERTRAM. Nautec Corporation. SN 187,133. Pub. 3-16-65. Filed 2-20-64.

790,249. EXCELLENCY. Globe Rubber Products Corp. SN 191,384. Pub. 3-16-65. Filed 4-17-64.

790,250. TUXEDO PARK MARK IV. Kaiser Jeep Corporation. SN 193,793. Pub. 3-16-65. Filed 5-19-64.

790,251. FCP. Rockwell-Standard Corporation (Delaware corporation), assignee of Rockwell-Standard Corporation (Pennsylvania corporation). SN 195,896. Pub. 3-9-65. Filed 6-17-64.

790,252. BELMONT. Guerdon Industries, Inc. SN 196,039. Pub. 3-16-65. Filed 6-19-64.

790,253. BAYVIEWER. D. B. Snider, Inc. SN 196,312. Pub. 3-16-65. Filed 6-23-64.

790,254. TINY STAR AND DESIGN. Highway Cruisers, Inc. SN 200,262. Pub. 3-16-65. Filed 8-20-64.

790,255. APOLLO. International Motor Cars Incorporated. SN 200,442. Pub. 3-16-65. Filed 8-24-64.

Class 20—Linoleum and Oiled Cloth

790,256. CN. Congoleum-Nairn Inc. SN 199,970. Pub. 3-16-65. Filed 8-17-64.

Class 21—Electrical Apparatus, Machines, and Supplies

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,195. (See Class 9 for this trademark.)

790,222. (See Class 14 for this trademark.)

790,257. DESIGN OF THREE POINTED STAR IN CIRCLE. Daimler-Benz Aktiengesellschaft. SN 45,030. Pub. 3-16-65. Filed 1-31-58.

790,258. ASTROLINE. Omni Spectra, Inc. SN 150,359. Pub. 3-16-65. Filed 8-2-62.

790,259. HI ETCH. The General Electric Company. SN 176,365. Pub. 3-16-65. Filed 9-5-63.

790,260. PEAKLITE. Penn Keystone Corporation. SN 177,369. Pub. 3-16-65. Filed 9-19-63.

790,261. GLASS-AMP. General Instrument Corporation. SN 178,275. Pub. 3-16-65. Filed 10-3-63.

790,262. ROTAMEC AND DESIGN. Production Service Co. SN 178,815. Pub. 3-16-65. Filed 10-11-63.

790,263. REVSPARK. William F. Palmer. SN 186,967. Pub. 3-16-65. Filed 2-18-64.

790,264. JAPAX. Japax Scientific Corporation. SN 189,080. Pub. 3-16-65. Filed 3-19-64.

790,265. JAVAMATE. Bopp-Decker Incorporated. SN 190,237. Pub. 3-16-65. Filed 4-3-64.

790,266. HYDREMA. Electricite, Mecanique et Applications, "E.M.A." Societe Anonyme. SN 191,755. Pub. 3-16-65. Filed 4-22-64.

790,267. DIRIVOX. Telefonaktiebolaget L M Ericsson. SN 192,233. Pub. 3-16-65. Filed 4-28-64.

790,268. POWER WATCH. All American Engineering Company. SN 192,656. Pub. 3-16-65. Filed 5-4-64.

790,269. BELTONE. Beltone Electronics Corporation. SN 196,342. Pub. 3-16-65. Filed 6-24-64.

790,270. RED SEAL AND DESIGN. Continental Motors Corporation. SN 197,089. Pub. 3-16-65. Filed 7-6-64.

790,271. AQUA-FRY. Lyons-Alpha Products Co., Inc., d.b.a. Welsbach. SN 198,062. Pub. 3-16-65. Filed 7-17-64.

790,272. ABCO DYNAMO. Abco, Inc. SN 203,239. Pub. 3-16-65. Filed 10-5-64.

Class 22—Games, Toys, and Sporting Goods

790,273. DIABOLO. Eugene Leoni, d.b.a. Eule of Florida. SN 188,551. Pub. 3-16-65. Filed 3-12-64.

790,274. LET'S PRETEND. Cleinman & Sons, Inc. SN 189,445. Pub. 3-16-65. Filed 3-24-64.

790,275. DOUBLE-X WEB. Rawlings Sporting Goods Company. SN 190,285. Pub. 3-16-65. Filed 4-3-64.

790,276. SPIN-O-FACE. Kenneth C. Kretschmar, d.b.a. Tri-Rite Publishing Company. SN 191,861. Pub. 3-16-65. Filed 4-23-64.

790,277. FANTASY. Jamison Manufacturing Company. SN 193,790. Pub. 3-16-65. Filed 5-19-64.

790,278. SKIMBOARD AND DESIGN. Bon-Aire Industries, Inc. SN 194,124. Pub. 3-16-65. Filed 5-25-64.

790,279. BONANZA 300. Columbia Industries, Inc. SN 196,504. Pub. 3-16-65. Filed 6-26-64.

790,280. BLACK KNIGHT. Golf Marks, N.V. SN 197,702. Pub. 3-16-65. Filed 7-13-64.

790,281. GP AND DESIGN. Golf Marks, N.V. SN 197,703. Pub. 3-16-65. Filed 7-13-64.

790,282. TRU CARRY. Dearborn Gage Company. SN 197,823. Pub. 3-16-65. Filed 7-14-64.

790,283. COMBAT. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 199,391. Pub. 3-16-65. Filed 8-6-64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,170. (See Class 2 for this trademark.)

790,220. (See Class 14 for this trademark.)

790,284. SWECO AND DESIGN. Southwestern Engineering Co. SN 183,515. Pub. 3-16-65. Filed 12-24-63.

790,285. ALL STATE STACKERS AND DESIGN. Dresser Industries, Inc., assignee of Manning, Maxwell & Moore, Incorporated. SN 183,691. Pub. 3-16-65. Filed 12-27-63.

790,286. PM AND DESIGN. PM Instrument Company. SN 187,320. Pub. 3-16-65. Filed 2-24-64.

790,287. UNI-TRACK. Albina Engine & Machine Works, Inc. SN 188,409. Pub. 3-16-65. Filed 3-11-64.

790,288. ELECTRO HYGIENE AND DESIGN. Electro Hygiene, Inc. SN 188,854. Pub. 3-16-65. Filed 3-17-64.

790,289. OMNIWAY. Gericke & Co. SN 189,287. Pub. 3-16-65. Filed 3-23-64.

790,290. DEKOR. Dekor Flocking Corporation. SN 189,769. Pub. 3-16-65. Filed 3-27-64.

790,291. DUAL SPEED. Dresser Industries, Inc. SN 189,772. Pub. 3-16-65. Filed 3-27-64.

790,292. GRIP-O-MATIC. Owatonna Tool Company. SN 189,931. Pub. 3-16-65. Filed 3-30-64.

790,293. HEALDHONE. The Heald Machine Company. SN 190,376. Pub. 3-16-65. Filed 4-6-64.

790,294. MODERN H.O.P. Slifer Manufacturing Co., Inc. SN 190,439. Pub. 3-16-65. Filed 4-6-64.

790,295. PRATT & WHITNEY ETC. AND DESIGN. United Aircraft Corporation. SN 194,334. Pub. 3-16-65. Filed 5-26-64.

790,296. TITEX PLUS. Guenther & Co. SN 195,661. Pub. 3-16-65. Filed 6-15-64.

790,297. DYNA-DECK. Lord Manufacturing Company. SN 198,423. Pub. 3-16-65. Filed 7-23-64.

790,298. COWAN. Cowan Pressroom Products, Inc. SN 198,720. Pub. 3-16-65. Filed 7-29-64.

790,299. ROTOMATIC AND DESIGN. Sam Stein Associates, Inc. SN 199, 413. Pub. 3-16-65. Filed 8-6-64.

790,300. DURAFLITE. Diamond Chain Company, Inc. SN 200,238. Pub. 3-16-65. Filed 8-20-64.

790,301. REPCO AND DESIGN. Rockford Engineered Products Co. SN 200,385. Pub. 3-16-65. Filed 8-21-64.

790,302. KENETIC. Kennametal Inc. SN 200,649. Pub. 3-16-65. Filed 8-26-64.

790,303. CLEWBRO. Clews Bros. SN 200,826. Pub. 3-16-65. Filed 8-28-64.

790,304. 3M. Minnesota Mining and Manufacturing Company. SN 200,851. Pub. 3-16-65. Filed 8-28-64.

790,305. KEYMATIC. Rapistan-Keystone, Inc. SN 201,144. Pub. 3-16-65. Filed 9-2-64.

790,306. DIE-LECTRIC. Beebe Bros., Inc. SN 201,565. Pub. 3-16-65. Filed 9-10-64.

790,307. M AND DESIGN. International Telephone and Telegraph Corporation, assignee of ITT Bell & Gossett Inc. SN 201,694. Pub. 3-16-65. Filed 9-11-64.

790,308. MISCELLANEOUS DESIGN. Tapco Products Company, Inc. SN 201,761. Pub. 3-16-65. Filed 9-11-64.

790,309. PACEMAKER. Associated Testing Laboratories, Inc. SN 202,217. Pub. 3-16-65. Filed 9-21-64.

790,310. PEACE ROSE. Imperial International Corp. SN 202,802. Pub. 3-16-65. Filed 9-28-64.

790,311. OXFORD. American Hardware Supply Company. SN 203,143. Pub. 3-16-65. Filed 10-2-64.

790,312. CARGO MASTER AND DESIGN. Wayne Engineering Corporation. SN 203,362. Pub. 3-16-65. Filed 10-5-64.

790,313. E. Eubanks Engineering Co. SN 204,780. Pub. 3-16-65. Filed 10-26-64.

790,314. HI TEMP. Feature Products, Inc. SN 204,782. Pub. 3-16-65. Filed 10-26-64.

790,315. BLADE SAVER. Crestline Products, Inc. SN 205,041. Pub. 3-16-65. Filed 10-29-64.

790,316. BARONESS. Riccar America Company. SN 205,348. Pub. 3-16-65. Filed 11-2-64.

790,317. WRIGHT. American Chain & Cable Company, Inc. SN 205,556. Pub. 3-16-65. Filed 11-5-64.

790,318. ULTRA FLOW. G. W. Davis Corporation. SN 207,371. Pub. 3-16-65. Filed 12-3-64.

790,319. ULTRASWEEP. G. W. Davis Corporation. SN 207,372. Pub. 3-16-65. Filed 12-3-64.

Class 24—Laundry Appliances and Machines

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,320. POLLY. Butts Manufacturing Co. SN 146,786. Pub. 3-16-65. Filed 6-13-62.

Class 26—Measuring and Scientific Appliances

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,189. (See Class 6 for this trademark.)

790,195. (See Class 9 for this trademark.)

790,321. THE FISHER. Fisher Radio Corporation. SN 149,382. Pub. 3-16-65. Filed 7-19-62.

790,322. QUIK LOAD. Hudson Photographic Industries, Inc. SN 159,781. Pub. 3-16-65. Filed 12-26-62.

790,323. PICTAPE. Simon Levin. SN 159,896. Pub. 3-16-65. Filed 12-28-62.

790,324. ROCHESTER. American Radiator & Standard Sanitary Corporation. SN 160,258. Pub. 3-16-65. Filed 1-7-63.

790,325. SKIPFINDER. Granger Associates. SN 166,278. Pub. 3-16-65. Filed 4-8-63.

790,326. INFRASCOPE. Huggins Laboratories, Inc., by merger from Applied Systems Corporation. SN 167,790. Pub. 3-16-65. Filed 4-30-63.

790,327. WATER SENTINEL. Ipsen Industries, Inc. SN 168,508. Pub. 1-12-65. Filed 5-9-63.

790,328. LUMIPAN. Air Photo Supply Corporation. SN 173,540. Pub. 3-16-65. Filed 7-23-63.

790,329. DATAFLASH. Consolidated Electrodynamics Corporation. SN 174,645. Pub. 3-16-65. Filed 8-8-63.

790,330. ORDCO. Optical Research and Development Corporation. SN 178,025. Pub. 3-16-65. Filed 9-30-63.

790,331. COREX. Corning Glass Works. SN 181,215. Pub. 3-16-65. Filed 11-15-63.

790,332. PERIVISIONS-OPTIK. Contina Bureaux- und Rechenmaschinenfabrik. SN 182,247. Pub. 3-16-65. Filed 12-3-63.

790,333. ULTRAMAT. Republic Steel Corporation. SN 182,968. Pub. 3-16-65. Filed 12-13-63.

790,334. CALYPSO. U.S. Divers Company. SN 184,527. Pub. 3-16-65. Filed 1-13-64.

790,335. TATTLE TALE. Paul M. Smith, d.b.a. Nationwide Sales Company, assignee of Ellen D. Borgolte and Alice G. Salembier (joint owners), d.b.a. Tattle-Tale Company. SN 184,883. Pub. 3-16-65. Filed 1-20-64.

790,336. ACCURSYN. Wayne-George Corporation. SN 185,737. Pub. 3-16-65. Filed 1-30-64.

790,337. RAYFLEX. Rayflex Exploration Company. SN 185,937. Pub. 3-16-65. Filed 2-3-64.

790,338. SEDITUBE. Becton Dickinson and Company. SN 186,051. Pub. 3-16-65. Filed 2-5-64.

790,339. PARAMAT. Agfa Aktiengesellschaft. SN 186,216. Pub. 3-16-65. Filed 2-7-64.

790,340. PHOTO-SIGNET (DESIGN). Ciba Limited. SN 186,497. Pub. 3-16-65. Filed 1-2-64.

790,341. RADI-FLUX. Hy-Cal Engineering. SN 186,946. Pub. 3-16-65. Filed 2-18-64.

790,342. GAMM-O-SWITCH. Instruments, Inc. SN 186,949. Pub. 3-16-65. Filed 2-18-64.

790,343. GAMM-O-TRON. Instruments, Inc. SN 186,951. Pub. 3-16-65. Filed 2-18-64.

790,344. PROPORTIONULL. Electronic Processes Corporation of California. SN 187,096. Pub. 3-16-65. Filed 2-20-64.

790,345. HIC AND DESIGN. Hoagland Instrument Company. SN 189,701. Pub. 3-16-65. Filed 3-26-64.

790,346. RHEOGRAPH. Interstate Bakeries Corporation. SN 189,899. Pub. 3-16-65. Filed 3-30-64.

790,347. CRONEX. E. I. du Pont de Nemours and Company. SN 190,246. Pub. 3-16-65. Filed 4-3-64.

790,348. DYNA-VUE AND DESIGN. Ward's Natural Science Establishment, Inc. SN 190,677. Pub. 3-16-65. Filed 4-8-64.

790,349. PHI. Computing Devises of Canada Limited. SN 192,271. Pub. 3-16-65. Filed 4-29-64.

790,350. JPI AND DESIGN. Irving Jacobson, d.b.a. Jacobson Photographic Instruments. SN 193,173. Pub. 3-16-65. Filed 5-11-64.

790,351. MOVIOLA. Moviola Manufacturing Company. SN 193,197. Pub. 3-16-65. Filed 5-11-64.

790,352. CANITROL. Great Lakes Runway Company, d.b.a. Great Lakes Runway & Engineering Co. SN 193,465. Pub. 3-16-65. Filed 5-14-64.

790,353. RIDG O GEL. Tobins Lake Studios, Inc. SN 194,000. Pub. 3-16-65. Filed 5-21-64.

790,354. RE CY CHROM. LKB-Produkter Aktiebolag. SN 194,497. Pub. 3-16-65. Filed 5-28-64.

790,355. TRI-LITE. Milton Rogin. SN 194,519. Pub. 3-16-65. Filed 5-28-64.

790,356. SENTRONIC. General Nucleonics Inc. SN 194,599. Pub. 3-16-65. Filed 6-1-64.

790,357. TOPATRON. E. Leybold's Nachfolger. SN 195,213. Pub. 3-16-65. Filed 6-9-64.

790,358. FOTOVAL. Heath Company. SN 195,297. Pub. 3-16-65. Filed 6-10-64.

790,359. ELEC TRO TEMP. Heat Timer Corporation. SN 195,406. Pub. 3-16-65. Filed 6-11-64.

790,360. THERMAL-RIBBON. Mincho Products, Inc. SN 195,426. Pub. 3-16-65. Filed 6-11-64.

790,361. MORGAN TEST. Morgan Manufacturing Corporation. SN 196,178. Pub. 3-16-65. Filed 6-22-64.

790,362. OMEGA GREEK SYMBOL (DESIGN). Simmon Omega, Inc. SN 196,311. Pub. 3-16-65. Filed 6-23-64.

790,363. G AND DESIGN. Gilson Screen Company. SN 196,520. Pub. 3-16-65. Filed 6-26-64.

790,364. DEBS. Debs Sunglass Corporation. SN 196,769. Pub. 3-16-65. Filed 6-30-64.

790,365. RCL AND DESIGN. Toko Kabushiki Kaisha, d.b.a. Toko, Inc. SN 196,821. Pub. 3-16-65. Filed 6-30-64.

790,366. GEOSTICK. Acker Drill Company, Inc. SN 196,933. Pub. 3-16-65. Filed 7-2-64.

790,367. CELLOGEL. Consolidated Laboratories, Inc. SN 197,876. Pub. 3-16-65. Filed 7-15-64.

790,368. THE WINDOWS ETC. AND DESIGN. Impcomation, Inc. SN 197,886. Pub. 3-16-65. Filed 7-15-64.

790,369. EDISON AND DESIGN. McGraw-Edison Company. SN 198,486. Pub. 3-16-65. Filed 7-24-64.

790,370. TORQ-A-GUIDE. The Lau Blower Company. SN 198,961. Pub. 3-16-65. Filed 7-31-64.

790,371. PROTECTOPLAST. The Plastic Contact Lens Co. SN 199,491. Pub. 3-16-65. Filed 8-7-64.

790,372. LO VAC. Titmus Optical Company, Inc. SN 199,772. Pub. 3-16-65. Filed 8-12-64.

790,373. GROUPSHOW. Hudson Photographic Industries, Inc. SN 201,032. Pub. 3-16-65. Filed 9-1-64.

790,374. MUSTANG. Botany Industries, Inc., d.b.a. Renauld Co. SN 201,360. Pub. 3-16-65. Filed 9-8-64.

Class 27 — Horological Instruments

790,375. TINY TIME. Saxony Watch Company. SN 205,615. Pub. 3-16-65. Filed 11-5-64.

Class 28 — Jewelry and Precious-Metal Ware

790,376. EMPIRE CRAFTS. Empire Crafts Corporation. SN 190,907. Pub. 3-16-65. Filed 4-13-64.

Class 29 — Brooms, Brushes, and Dusters

790,377. PRO-KAGE. E Z Paintr Corporation. SN 201,017. Pub. 3-16-65. Filed 9-1-64.

790,378. META-GRIP. Amsterdam Brush Corp. SN 204,125. Pub. 3-16-65. Filed 10-16-64.

Class 30 — Crockery, Earthenware, and Porcelain

790,379. CONCORD ROSE. Onondaga Pottery Company. SN 192,511. Pub. 3-16-65. Filed 5-1-64.

790,380. LYNNBROOKE. Vita Craft Corporation. SN 195,192. Pub. 3-16-65. Filed 6-8-64.

790,381. TAYLORSTONE. The Taylor, Smith & Taylor Company. SN 195,740. Pub. 3-16-65. Filed 6-15-64.

Class 31 — Filters and Refrigerators

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

Class 32 — Furniture and Upholstery

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,382. VILBED. Vyco, Inc. SN 183,236. Pub. 3-16-65. Filed 12-18-63.

790,383. VILLABED. Vyco, Inc. SN 183,237. Pub. 3-16-65. Filed 12-18-63.

790,384. SELECTION 120. Drexel Enterprises, Inc. SN 186,823. Pub. 3-16-65. Filed 2-17-64.

790,385. TILT-A-BABE. International Manufacturing Company. SN 190,009. Pub. 3-16-65. Filed 3-31-64.

790,386. UNI-ROOM. Leonard J. Gerweck, d.b.a. The Raum Co. SN 195,402. Pub. 3-16-65. Filed 6-11-64.

790,387. SCHURNITURE. The House of Schiller, Inc. SN 196,158. Pub. 3-16-65. Filed 6-22-64.

790,388. NI NATIONAL INDUSTRIES. National Industries, Inc. SN 197,897. Pub. 3-16-65. Filed 7-15-64.

790,389. DYTRON. Brunswick Corporation. SN 198,455. Pub. 3-16-65. Filed 7-24-64.

790,390. DUAL KING. Dayco Corporation. SN 202,243. Pub. 3-16-65. Filed 9-21-64.

790,391. DIMENSION 3. Plexowood, Inc. SN 202,500. Pub. 3-16-65. Filed 9-23-64.

790,392. FLEXENE. Bliscraft of Hollywood. SN 202,744. Pub. 3-16-65. Filed 9-28-64.

Class 33 — Glassware

790,393. REPRESENTATION OF A THREE POINTED STAR IN A CIRCLE. Daimler-Benz Aktiengesellschaft. SN 45,020. Pub. 3-16-65. Filed 1-31-58.

Class 34 — Heating, Lighting, and Ventilating Apparatus

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,394. REPRESENTATION OF A THREE POINTED STAR IN A CIRCLE. Daimler-Benz Aktiengesellschaft. SN 45,027. Pub. 3-16-65. Filed 1-31-58.

790,395. BROCO. The Broaster Co. SN 195,635. Pub. 3-16-65. Filed 6-15-64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

Class 36 — Musical Instruments and Supplies

790,396. ROBERTS X FIELD. Rheem Manufacturing Company, assignee of Roberts Electronics, Inc. SN 181,925. Pub. 3-16-65. Filed 11-26-63.

790,397. TREASURE HOUSE AND DESIGN. J. J. Newberry Co. SN 186,883. Pub. 10-20-64. Filed 2-17-64.

790,398. CAR MATE. J. Herbert Orr Enterprises, Inc. SN 189,010. Pub. 3-16-65. Filed 3-18-64.

790,399. TRAVELMATE. J. Herbert Orr Enterprises, Inc. SN 189,011. Pub. 3-16-65. Filed 3-18-64.

790,400. B.T. PUPPY RECORDS. B.T. Puppy Records Inc. SN 191,025. Pub. 3-16-65. Filed 4-14-64.

790,401. TAPE-ALONG. Channel Master Corporation. SN 194,133. Pub. 3-16-65. Filed 5-25-64.

790,402. MINI-MASS. Euphonics Corporation. SN 197,101. Pub. 3-16-65. Filed 7-6-64.

Class 37 — Paper and Stationery

790,164. (See Class 2 for this trademark.)

790,403. MISCELLANEOUS DESIGN. Bergstrom Paper Company. SN 144,668. Pub. 4-14-64. Filed 5-16-62.

790,404. V-BOARDS. The Qualitad Sales Corporation. SN 177,721. Pub. 3-16-65. Filed 9-25-63.

790,405. DIXON. The Joseph Dixon Crucible Company. SN 189,688. Pub. 3-16-65. Filed 3-26-64.

790,406. ISL-O-MATIC. Investors Syndicate Life Insurance and Annuity Company. SN 194,691. Pub. 3-16-65. Filed 5-28-64.

790,407. CHARMINETTES. The Procter & Gamble Company. SN 195,968. Pub. 3-16-65. Filed 6-18-64.

790,408. COLLEGIATE. Eberhard Faber Inc. SN 196,956. Pub. 3-16-65. Filed 7-2-64.

Class 38 — Prints and Publications

790,164. (See Class 2 for this trademark.)

790,409. SASCO. Self-Adhesive Sign Company Limited. SN 178,983. Pub. 3-16-65. Filed 10-14-63.

790,410. PHOTO-SIGNET (DESIGN). Ciba Limited. SN 186,494. Pub. 3-16-65. Filed 1-2-64.

790,411. HISTOMAP. Ann Sparks Glass. SN 194,384. Pub. 3-16-65. Filed 5-27-64.

790,412. AMDOC. Amdoc, Inc. SN 196,584. Pub. 3-16-65. Filed 6-29-64.

790,413. THE INDICATOR AND DESIGN. Numismatic Publications, Inc. SN 197,162. Pub. 3-16-65. Filed 7-6-64.

Class 39 — Clothing

790,414. MR. SCOTT. Cyrus W. Scott Manufacturing Co. SN 146,930. Pub. 3-16-65. Filed 6-14-62.

790,415. PEDEES. Sport-Wear Hosiery Mills, Inc. SN 185,725. Pub. 3-16-65. Filed 1-30-64.

790,416. RHODA LEE. Rhoda Lee, Inc. SN 185,907. Pub. 3-16-65. Filed 2-3-64.

790,417. HONEY TOGS. Honey Togs, Inc. SN 188,760. Pub. 3-16-65. Filed 3-16-64.

790,418. YAKKA. Yakka Overalls Pty. Limited. SN 190,682. Pub. 3-16-65. Filed 4-8-64.

790,419. SUMMER FUN AND DESIGN. Sadler Hosiery Mills, Inc. SN 194,520. Pub. 3-16-65. Filed 5-28-64.

790,420. FAMOUS FAIN. Irving Fain. SN 195,081. Pub. 3-16-65. Filed 6-8-64.

790,421. ARTY. Yunker Manufacturing Company, Inc. SN 195,193. Pub. 3-16-65. Filed 6-8-64.

790,422. RENEGADES. The Renegade Corp. SN 195,329. Pub. 3-16-65. Filed 6-10-64.

790,423. TIFI. Aileen, Inc. SN 196,333. Pub. 3-16-65. Filed 6-24-64.

790,424. MISS PANTS PARLOUR AND DESIGN. Pants Parlour Holding Company, Inc. SN 197,324. Pub. 3-16-65. Filed 7-7-64.

790,425. PANTS PARLOUR. Pants Parlour Holding Company, Inc. SN 197,325. Pub. 3-16-65. Filed 7-7-64.

790,426. BIG YANK JUNIOR. Puritan Fashions Corporation, assignee of Reliance Manufacturing Company. SN 197,507. Pub. 3-16-65. Filed 7-9-64.

790,427. BAROQUE. Joseph H. Cohen & Sons, Inc. SN 198,256. Pub. 3-16-65. Filed 7-21-64.

790,428. BIT 'O IRON. Karman, Incorporated. SN 198,562. Pub. 3-16-65. Filed 7-27-64.

Class 40 — Fancy Goods, Furnishings, and Notions

790,429. CAMEO HAIR FASHIONS. David and David, Inc. SN 192,372. Pub. 3-16-65. Filed 4-30-64.

790,430. PEACOCK BUTTONS AND DESIGN. William Henry Fisher, Jr., d.b.a. Henry Fisher Replacement Service. SN 194,167. Pub. 3-16-65. Filed 5-25-64.

790,431. C AND DESIGN. Clover Embroidered Trimmings, Inc. SN 195,372. Pub. 3-16-65. Filed 6-11-64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

790,432. HONEY COMB EIDERLON. Spun-Lo Elderlon Inc. SN 166,219. Pub. 3-16-65. Filed 4-5-63.

790,433. GLENGANNON. International Fabric Corporation. SN 174,868. Pub. 3-16-65. Filed 8-12-63.

790,434. VIRGINIA CHECKS. Dan River Mills, Incorporated. SN 184,218. Pub. 3-16-65. Filed 1-6-64.

790,435. PESO PLUMA. Burlington Industries, Inc., d.b.a. Pacific Mills Worsted Company. SN 187,392. Pub. 3–16–65. Filed 2–25–64.

790,436. SHOWERAY. The Showeray Company. SN 195,816. Pub. 3–16–65. Filed 6–16–64.

790,437. DANPLY. Dan River Mills, Incorporated. SN 201,107. Pub. 3–16–65. Filed 9–2–64.

790,438. MAURICE. Maurice Fabrics, Inc. SN 201,226. Pub. 3–16–65. Filed 9–3–64.

790,439. BARR-NETT. Markbar Corporation. SN 203,673. Pub. 3–16–65. Filed 10–9–64.

Class 43 — Thread and Yarn

790,440. ESCAPADE. Compagnie Francaise de Bonneterie, Societe Anonyme. SN 191,254. Pub. 3–16–65. Filed 4–16–64.

790,441. PHARR-65. Pharr Yarns, Inc. SN 201,142. Pub. 3–16–65. Filed 9–2–64.

Class 44 — Dental, Medical, and Surgical Appliances

790,159. CONSOLIDATED CERTIFICATE. See Class 1.

790,442. PAD-O-MATIC. Westinghouse Electric Corporation. SN 185,382. Pub. 3–16–65. Filed 1–24–64.

790,443. CONVALEX. E. F. Brewer Company. SN 189,039. Pub. 3–16–65. Filed 3–19–64.

790,444. SLIM-MASTER. H.G. Enterprises. SN 193,846. Pub. 3–16–65. Filed 5–13–64.

790,445. HER'S. Davol Rubber Company. SN 202,241. Pub. 3–16–65. Filed 9–21–64.

Class 45 — Soft Drinks and Carbonated Waters

790,446. VODKA BOATMAN. Max Grossmann, d.b.a. The Vodka Boatman Co. SN 196,522. Pub. 3–16–65. Filed 6–26–64.

Class 46 — Foods and Ingredients of Foods

790,447. PETITE. Knudsen Creamery Co. of California, d.b.a. Knudsen Creamery Co. SN 111,195. Pub. 9–19–61. Filed 1–3–61.

790,448. MISS-LOU. Farmer's Exchange, Inc. SN 153,639. Pub. 4–9–63. Filed 9–21–62.

790,449. MO-BISCUIT. Cosby-Hodges Milling Company. SN 179,399. Pub. 12–29–64. Filed 10–21–63.

790,450. JAZZ. Cosby-Hodges Milling Company. SN 179,400. Pub. 12–29–64. Filed 10–21–63.

790,451. WHITE TULIP. Cosby-Hodges Milling Company. SN 179,401. Pub. 12–29–64. Filed 10–21–63.

790,452. JAZZ GREEN PASTURES. Cosby-Hodges Milling Company. SN 179,402. Pub. 12–29–64. Filed 10–21–63.

790,453. MILLER EXTRAFINE AND DESIGN. United States Baking Company, Inc., by change of name from Miller-Parrott Baking Company, Inc. SN 190,530. Pub. 3–16–65. Filed 4–7–64.

790,454. KIBBLES. George P. Chapman, d.b.a. Millers Dog Food Company. SN 193,448. Pub. 3–16–65. Filed 5–14–64.

790,455. MILLER'S. George P. Chapman, d.b.a. Millers Dog Food Company. SN 193,449. Pub. 3–16–65. Filed 5–14–64.

790,456. NIFTIES. George P. Chapman, d.b.a. Millers Dog Food Company. SN 193,450. Pub. 3–16–65. Filed 5–14–64.

790,457. HI-C. The Coca-Cola Company. SN 196,623. Pub. 3–16–65. Filed 6–29–64.

790,458. CANYON STATE. Coastal Valley Canning Co., assignee of Coastal Valley Canning Co. SN 196,950. Pub. 3–16–65. Filed 7–2–64.

790,459. PETER PAUL MAKERS OF DISTINCTIVE CANDIES AND DESIGN. Peter Paul, Inc. SN 197,899. Pub. 3–16–65. Filed 7–15–64.

Class 47 — Wines

790,460. CLAUSS. Achaia Clauss Wine Company Limited. SN 188,497. Pub. 3–16–65. Filed 3–12–64.

Class 49 — Distilled Alcoholic Liquors

790,461. SCOTSMAN'S HEAD CURTIS AND DESIGN. The Curtis Distillery Company Limited. SN 192,998. Pub. 3–16–65. Filed 5–8–64.

Class 51 — Cosmetics and Toilet Preparations

790,462. DERMA SOFT. John E. Hipskind, d.b.a. m c brambilla. SN 143,132. Pub. 4–2–63. Filed 4–26–62.

790,463. TENDER MIST. Revlon, Inc. SN 153,681. Pub. 7–2–63. Filed 9–21–62.

790,464. LENCY. Norda Essential Oil & Chemical Company, Inc. SN 188,568. Pub. 3–16–65. Filed 3–12–64.

790,465. BEACH BOY. Browny of Honolulu, Ltd., d.b.a. Browny. SN 197,815. Pub. 3–16–65. Filed 7–14–64.

790,466. MADRAS. The Andrew Jergens Company. SN 197,888. Pub. 3–16–65. Filed 7–15–64.

790,467. NEOBUMIN. Wilson & Co., Inc. SN 197,927. Pub. 3–16–65. Filed 7–15–64.

790,468. TOUCHOMATIC. Clairol Incorporated. SN 199,883. Pub. 3–16–65. Filed 8–14–64.

790,469. MIST-MISER. Clairol Incorporated. SN 199,887. Pub. 3–16–65. Filed 8–14–64.

Class 52 — Detergents and Soaps

790,470. TOUCH 'N CLEEN. Bunlap Corporation. SN 188,950. Pub. 3–16–65. Filed 3–18–64.

790,471. TOUCH 'N CLEEN AND DESIGN. Bunlap Corporation. SN 191,124. Pub. 3–16–65. Filed 4–15–64.

790,472. TOUCH 'N CLEEN AND DESIGN. Bunlap Corporation. SN 191,125. Pub. 3–16–65. Filed 4–15–64.

790,473. JADE EAST. Swank, Inc. SN 193,305. Pub. 12–8–64. Filed 5–12–64.

790,474. DOCTOR SPOT. Joseph D. Conway, d.b.a. The Certified Chemical and Equipment Company. SN 198,407. Pub. 3–16–65. Filed 7–23–64.

790,475. TANNO-GEN. Joseph D. Conway, d.b.a. The Certified Chemical and Equipment Co. SN 198,408. Pub. 3–16–65. Filed 7–23–64.

790,476. COOLITE. American Home Products Corporation. SN 199,526. Pub. 3–16–65. Filed 8–10–64.

790,477. LIME-EATER. Tri-Brom. Chemical Corp. SN 199,705. Pub. 3–16–65. Filed 8–11–64.

Service Marks

Class 100 — Miscellaneous

790,478. TELE-TOUR. Tele-Tour, Inc. SN 190,212. Pub. 3–16–65. Filed 4–2–64.

790,479. SCOTTI'S AND DESIGN. Scotti's Drive-In Restaurants, Inc. SN 190,758. Pub. 3–16–65. Filed 4–9–64.

790,480. NATIONAL AA NATIONAL AUTO ASS'N AND DESIGN. National Automobile Association, Inc. SN 196,289. Pub. 3–16–65. Filed 6–22–64.

790,481. ARROW (DESIGN). Applied Power Industries. Inc. SN 198,453. Pub. 3–16–65. Filed 7–24–64.

Class 102 — Insurance and Financial

790,482. MAYFLOWER. Mayflower Life Insurance Company of Illinois. SN 173,265. Pub. 5–5–64. Filed 7–18–63.

790,483. HERITAGE. American Heritage Life Insurance Company. SN 192,458. Pub. 12–22–64. Filed 5–1–64.

790,484. AM-QUOTE. American Stock Exchange. SN 194,565. Pub. 3–16–65. Filed 6–1–64.

790,485. AM-QUOTE. American Stock Exchange. SN 194,568. Pub. 3–16–65. Filed 6–1–64.

Class 103 — Construction and Repair

790,486. KERR-McGEE. Kerr-McGee Oil Industries, Inc. SN 187,934. Pub. 2–23–65. Filed 3–4–64.

Class 106 — Material Treatment

790,487. MONOLITH. Monolith Inc. SN 175,779. Pub. 11–3–64. Filed 8–26–63.

Class 107 — Education and Entertainment

790,488. HEMISFAIR. San Antonio Fair, Inc. SN 189,110. Pub. 3–16–65. Filed 3–19–64.

790,489. ART LINKLETTER-TOTTEN AND DESIGN. Linkletter-Totten Dance Studios, Inc., d.b.a. Art Linkletter-Totten Dance Studios, Inc. SN 190,396. Pub. 3–16–65. Filed 4–6–64.

790,490. MIDWESTERN HAYRIDE. Crosley Broadcasting Corporation. SN 192,796. Pub. 3–16–65. Filed 5–6–64.

Certification Mark

Class A — Goods

790,491. CERTIFIED DUCTILE IRON. Ductile Iron Society. SN 194,146. Pub. 3–16–65. Filed 5–25–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

790,492. Monterey Sand Co., Monterey, Calif. SN 190,819. Filed P.R. 4–10–64; Am. S.R. 3–31–65.

MONTEREY WHITE

For Sand.
First use Mar. 24, 1964.

Class 2 — Receptacles

790,493. Owens-Illinois Glass Company, Toledo, Ohio. SN 169,160. Filed P.R. 5–17–63; Am. S.R. 3–29–65.

FLARE-TOP

For Plastic Bags.
First use Mar. 5, 1963.

Class 6 — Chemicals and Chemical Compositions

790,494. Dainihon Jochugiku Company, Limited, d.b.a. Ueyamayei's Japan Insecticide Mfg. Co., Nishi-ku, Osaka, Japan. SN 175,978. Filed 8–29–63.



Owner of U.S. Reg. No. 652,912.
For Insecticides and Incense Sticks.
First use October 1909; in commerce July 25, 1950.

790,495. Flame-Out, Inc., Kenner, La. SN 203,961. Filed 10-14-64.

FLAME-OUT

For Liquid Concentrate for Mixing With Aqueous Liquids To Be Applied in Extinguishing Fires.
First use Mar. 30, 1961.

Class 12—Construction Materials

790,496. Simpson Timber Company, Seattle, Wash. SN 189,949. Filed P.R. 3-30-64; Am. S.R. 3-9-65.

TAWNY

For Prefinished Paneling.
First use Feb. 2, 1964.

Class 16—Protective and Decorative Coatings

790,497. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. SN 185,381. Filed P.R. 1-27-64; Am. S.R. 4-5-65.

WEATHER COAT

For Exterior House Paint.
First use July 30, 1962.

Class 17—Tobacco Products

790,498. Cigarette Manufacturing Company "Ethnos," G. A. Kerasis, S.A., Piraeus, Greece. SN 201,250. Filed P.R. 9-3-64; Am. S.R. 12-10-64.



The drawing is lined for brown color but color is not claimed as a feature of the mark.
For Cigarettes.
First use June 18, 1963; in commerce Sept. 18, 1963.

Class 19—Vehicles

790,499. Georg Fritzmeier, Kommanditgesellschaft, Großhelfendorf, Munich, Germany. SN 205,497. Filed 11-4-64.

FRITZMEIER

Owner of German Reg. No. 792,836, dated July 7, 1964.
For Roofs, Seats and Cushions for Land Vehicles, Aircraft and Boats.

790,500. The AP Parts Corporation, Toledo, Ohio. SN 205,646. Filed 11-6-64.

LEVELIZERS

For Hydraulic Shock Absorbers.
First use June 28, 1961.

Class 22—Games, Toys, and Sporting Goods

790,501. Henry D. Whittlesey, d.b.a. Whittlesey, Powers & Cameron, Hayward, Calif. SN 191,971. Filed P.R. 4-24-64; Am. S.R. 3-29-65.

DUAL TAPER

For Ski Poles.
First use Sept. 7, 1962.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

790,502. Defibrator Aktiebolag, Stockholm, Sweden. SN 157,476. Filed P.R. 11-19-62; Am. S.R. 1-15-65.

DEFIBRATOR

For Machines and Apparatus for the Production and Refining of Pulp and Parts Thereof.
First use 1958.

Class 27—Horological Instruments

790,503. Hamilton Watch Company, Lancaster, Pa. SN 211,892. Filed 2-12-65.

LAVELLE

For Watches, Watch Movements, and Parts Thereof.
First use Jan. 24, 1964.

Class 28—Jewelry and Precious-Metal Ware

790,504. Max Berger, d.b.a. Trim Fit Watchbands, San Antonio, Tex. SN 187,647. Filed P.R. 2-28-64; Am. S.R. 1-27-65.

TRIM FIT

For Watchbands and Straps.
First use Jan. 4, 1960.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

790,505. Chicago Specialty Manufacturing Co., Skokie, Ill. SN 164,701. Filed P.R. 3-15-63; Am. S.R. 3-19-65.

HANDI-PAC

For Faucet Washers, Faucet Seats, Plumbing Packings and Plumbing Seals.
First use Mar. 5, 1963.

Class 37—Paper and Stationery

790,506. Louisiana Paper Co., Ltd., Shreveport, La. SN 172,920. Filed P.R. 7-12-63; Am. S.R. 3-23-65.



For Printed Wrapping Paper, Gift Wrap, Paper Bags, and Cardboard Boxes.
First use on or about Nov. 1, 1961.

Class 38—Prints and Publications

790,507. Finn-Jaske, Incorporated, Cincinnati, Ohio. SN 167,461. Filed P.R. 4-24-63; Am. S.R. 3-31-65.



For Printed Self Sticking Pressure Sensitive Labels and Printed Advertising and Information Specialties.
First use Mar. 4, 1962.

790,508. Lane Magazine Company, Menlo Park, Calif. SN 199,076. Filed 8-3-64.

WESTERN HOME FURNISHINGS NEWS

For Trade Bulletins Issued From Time to Time.
First use July 1, 1963.

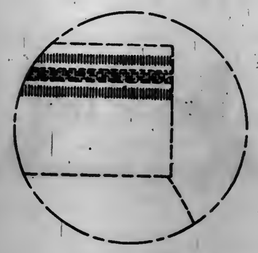
790,509. Success Motivation Institute, Inc., Waco, Tex. SN 202,870. Filed P.R. 9-28-64; Am. S.R. 4-12-65.

PERSONAL SUCCESS PACKAGE

For Educational and Training Courses Comprising Books, Booklets and Related Printed Instructional Material and Sound Recordings Pertaining Thereto.
First use at least as early as Jan. 31, 1963.

Class 39—Clothing

790,510. Munsingwear, Inc., Minneapolis, Minn. SN 176,223. Filed P.R. 9-3-63; Am. S.R. 8-31-64.



The mark consists of a pair of maroon stripes on opposite sides of a gold stripe extending around the waistband of the goods. The drawing is lined for color, maroon and gold.
For Men's Underwear.
First use Aug. 21, 1963.

790,511. Hanes Hosiery Mills Company, Winston-Salem, N.C. SN 189,581. Filed P.R. 3-25-64; Am. S.R. 3-15-65.

Barely Black

For Hosiery.
First use Aug. 1, 1957.

790,512. Royce Hosiery Mills, Inc., New York, N.Y. SN 196,562. Filed P.R. 6-26-64; Am. S.R. 3-25-65.

"Shadow Rib"

For Men's Hosiery.
First use Feb. 5, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

790,513. Angus Park Woolen Co., Inc., Hanover, Conn. SN 188,944. Filed P.R. 3-18-64; Am. S.R. 3-1-65.

WELSHLAND

For Textile Fabrics Comprised of Woolen, Worsted and Synthetic Fibers or Blends Thereof.
First use Feb. 14, 1964.

Class 43—Thread and Yarn

790,514. Angus Park Woolen Co., Inc., Hanover, Conn. SN 188,945. Filed P.R. 3-18-64; Am. S.R. 3-1-65.

WELSHLAND

For Yarns Comprised of Woolen, Worsted and Synthetic Fibers or Blends Thereof.
First use Feb. 18, 1964.

Class 46 — Foods and Ingredients of Foods

790,515. Max Zakutinsky, d.b.a. Zakutinsky Milk Products, Brooklyn, N.Y. SN 181,439. Filed 11-18-63.



For Bottled Food Beverage of a Fermented Milk Nature.
First use Jan. 21, 1954.

790,516. General Foods Corporation, White Plains, N.Y. SN 186,457. Filed P.R. 2-11-64; Am. S.R. 3-26-65.

TOP CHOICE

For Dog Food.
First use Nov. 18, 1963.

Class 49 — Distilled Alcoholic Liquors

790,517. Continental Distilling Corporation, d.b.a. J. MacArthur, Jr. & Co., Philadelphia, Pa. SN 189,049. Filed P.R. 3-19-64; Am. S.R. 4-12-65.

MacARTHUR'S

The drawing is lined for the color red.
For Scotch Whisky.
First use Jan. 7, 1964.

Class 50 — Merchandise Not Otherwise Classified

790,518. Pete Palma, d.b.a. Deco's Distribution Company, Venice, Calif. SN 157,128. Filed P.R. 11-13-62; Am. S.R. 4-2-65.

DECO'S

For Party Cake Decorations.
First use on or before July 27, 1961.

Class 51 — Cosmetics and Toilet Preparations

790,519. Clairol Incorporated, New York, N.Y. SN 185,569. Filed P.R. 1-29-64; Am. S.R. 3-30-65.

GENTLE BLUSH

For Hair Tinting, Dyeing and Coloring Preparation.
First use Oct. 10, 1963.

790,520. Clairol Incorporated, New York, N.Y. SN 185,571. Filed P.R. 1-29-64; Am. S.R. 3-30-65.

MOONLIT MURMER

For Hair Tinting, Dyeing and Coloring Preparation.
First use Oct. 10, 1963.

790,521. Clairol Incorporated, New York, N.Y. SN 185,574. Filed P.R. 1-29-64; Am. S.R. 3-30-65.

HUSHABYE BLONDE

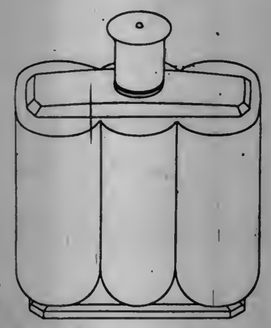
For Hair Tinting, Dyeing and Coloring Preparation.
First use Oct. 9, 1963.

790,522. Maradel Products, Inc., New York, N.Y. SN 188,896. Filed P.R. 3-17-64; Am. S.R. 3-22-65.

SILVERY STEEL

For Hair Coloring.
First use Jan. 23, 1964.

790,523. Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. SN 193,969. Filed 5-21-64.



For Perfumes and Colognes.
First use in or about June 1962.

Class 52 — Detergents and Soaps

790,524. Fast Chemical Products Corp., Yonkers, N.Y. SN 179,524. Filed P.R. 10-22-63; Am. S.R. 1-25-65.



For Oven Cleaner.
First use Aug. 23, 1963.

Service Marks

Class 100 — Miscellaneous

790,525. The Geotechnical Corporation, Garland, Tex. SN 187,659. Filed P.R. 2-28-64; Am. S.R. 4-7-65.

SEARCHES THE EARTH

For Geophysical Surveys—Namely, for Services Involving the Performance of Seismic, Gravity, and Aeromagnetic Surveys for Obtaining Information for Others Relative to the Location of Oil, Gas, and Other Mineral Deposits.
First use January 1947.

Class 101 — Advertising and Business

790,526. Jerome J. Berger, d.b.a. International Fashion Festival, Miami Beach, Fla. SN 182,402. Filed P.R. 12-5-63; Am. S.R. 9-22-64.



For Promoting, Arranging and Staging Annual Fashion Exhibits for Designers and Manufacturers of Women's Fashions.
First use Feb. 1, 1960.

Class 102 — Insurance and Financial

790,527. Swiss Credit Bank, Zurich, Switzerland. SN 191,342. Filed P.R. 4-10-64; Am. S.R. 4-7-65.

TRUST IS OUR ANCHOR

For Banking Services.
First use December 1963.

Class 105 — Transportation and Storage

790,528. Lyons Transportation Lines, Inc., Erie, Pa. SN 158,005. Filed P.R. 9-12-62; Am. S.R. 4-2-65.



For Motor Freight Transportation Services.
First use Dec. 15, 1960.

Class 107 — Education and Entertainment

790,529. David Astor, Portland, Maine. SN 142,594. Filed P.R. 4-19-62; Am. S.R. 3-24-65.

FOR TEEN-AGERS ONLY

For Title of a Television Show—Namely, a Variety Show Featuring High School Students in Acting, Singing, Dancing, and Interviews.
First use Nov. 5, 1956.

TRADEMARK REGISTRATIONS RENEWED

26,587. SALTS AND DESIGN. Cl. 42. 5-28-1895.
26,749. BLATZ AND DESIGN. Cl. 46. 7-2-1895.
44,765. REPRESENTATION OF DEVIL (DESIGN). Cl. 46. 7-25-05.
45,145. F.S.R. AND DESIGN. Cl. 10. 8-8-05.
45,429. NADINE FLESH. Cl. 52. 8-15-05
45,617. 4711. Cl. 51. 8-22-05.
46,540. ECHO. Cl. 52. 9-26-05.
195,693. CHARM SHOP. Cl. 30. 3-3-25.
197,550. PLEDGE-WORTH. Cl. 39. 4-21-25.
197,753. TYCOL. Cl. 15. 4-21-25.
198,608. COMMANDER. Cl. 15. 5-19-25.
198,782. ACTOL. Cl. 15. 5-26-25.
198,843. WARRIOR. Cl. 15. 5-26-25.
199,097. NEMO-FLEX. Cl. 39. 6-2-25.
199,327. AFCO. Cl. 34. 6-9-25.
199,514. PAN PAN AND DESIGN. Cl. 46. 6-9-25.
199,591. BOX BOUNTIFUL. Cl. 46. 6-16-25.
200,091. BABY DIGGER. Cl. 23. 6-23-25.
200,293. SANI-TRAY. Cl. 2. 6-30-25.
200,316. CALCIPHOS. Cl. 18. 6-30-25.
200,580. HANROL CREME. Cl. 46. 7-7-25.
200,766. HOT-GLO AND DESIGN. Cl. 1. 7-7-25.
200,923. REPRESENTATION OF COW'S HEAD WITHIN A CAN. Cl. 46. 7-14-25.
200,978. CALCIPHOS. Cl. 46. 7-14-25.
201,184. SINTEX. Cl. 15 7-21-25.
201,200. PHANTOM. Cl. 39. 7-21-25.
201,528. HI-SPEED. Cl. 9. 7-28-25.
201,636. CARPULE. Cl. 44. 8-4-25.
202,164. NITEY NITE. Cl. 39. 8-18-25.
203,616. BETTER HOMES AND GARDENS. Cl. 38. 9-22-25.
203,870. NYAFAT. Cl. 46. 9-29-25.
203,931. WELDWOOD. Cl. 12. 9-29-25.
411,071. TEXTRON. Cl. 42. 1-2-45.
412,512. RED HEAD. Cl. 38. 3-13-45.
412,695. WHITE STAR. Cl. 18. 3-20-45.
412,721. STETHETRON. Cl. 44. 3-20-45.
412,766. TURBO TUF. Cl. 21. 3-27-45.
412,779. TOP KNOT. Cl. 38. 3-27-45.
412,946. W.S. Cl. 15. 4-3-45.
413,029. CELATAPE. Cl. 21. 4-3-45.
413,130. TELO-CREAM. Cl. 42. 4-10-45.
413,390. MR. RED HEAD. Cl. 38. 4-24-45.
413,402. E-Z. Cl. 18. 4-24-45.
413,579. TELOMARS. Cl. 42. 5-1-45.
413,703. BONUS. Cl. 52. 5-8-45.
413,744. SENTINEL. Cl. 44. 5-8-45.
413,806. DUPONT. Cl. 44. 5-15-45.
413,839. TRIPLE-CHANGE. Cl. 44. 5-15-45.
414,158. SANA-LOK. Cl. 44. 5-29-45.
414,423. QUENCHOL. Cl. 15. 6-12-45.
414,523. INFRON. Cl. 18. 6-12-45.
415,103. WOODHEALTH. Cl. 6. 7-10-45.
415,151. HYLAND LABORATORIES. Cl. 18. 7-10-45.
415,194. DESIGN OF THREE PLUME CREST. Cl. 26. 7-31-45.
415,214. SOUR PUSS AND DESIGN. Cl. 46. 7-31-45.
415,360. GOLD DREDGER. Cl. 46. 8-7-45.
415,379. CALSCORBATE. Cl. 18. 8-7-45.
415,440. ENMETHYL. Cl. 6. 8-7-45.

415,441. OENETHYL. Cl. 6. 8–7–45.
415,571. X-TRUDO-PAK. Cl. 2. 8–7–45.
415,694. NAUGALON. Cl. 42. 8–14–45.
415,815. JET. Cl. 34. 8–14–45.
415,918. RIDGWAYS. Cl. 46. 8–21–45.
416,000. MARBEET. Cl. 28. 8–21–45.
416,077. KREAMEX. Cl. 46. 8–28–45.
416,114. LANDPLANE. Cl. 23. 8–28–45.
416,217. MONARCH. Cl. 22. 9–4–45.
416,432. SPEED GRAPHIC. Cl. 26. 9–11–45.
416,488. PRUDENTIAL. Cl. 37. 9–18–45.
416,750. LOVE LETTERS. Cl. 37. 9–25–45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Apr. 14, 1959

676,826. ROYAL AND DESIGN. Cl. 2.
676,832. PROCHEM. Cl. 6.
676,834. PENCELLS. Cl. 6.
676,836. FENN. Cl. 6.
676,838. CUPREX. Cl. 6.
676,852. WPA ES AND DESIGN. Cl. 12.
676,853. CECOFRAME. Cl. 12.
676,854. CLA-PLA AND DESIGN. Cl. 12.
676,855. E-Z LIFT. Cl. 12.
676,856. INFOCO. Cl. 12.
676,860. OUTER SPACE. Cl. 13.
676,864. 360 AND DESIGN. Cl. 13.
676,865. SEPTI-ROBIC. Cl. 13.
676,867. MUELLER CO. 100TH YEAR ETC. AND DESIGN. Cl. 13.
676,882. SPEKTRO-CHEK'D. Cl. 18.
676,886. PEROLYSEN. Cl. 18.
676,890. PREDNIMIDE. Cl. 18.
676,896. SALBEE. Cl. 18.
676,906. ALBRIGHT. Cl. 19.
676,914. WORLD ART. Cl. 21.
676,915. MULTI-TALK. Cl. 21.
676,919. MOTO MAC AND DESIGN. Cl. 21.
676,926. BILL LYLE. Cl. 22.
676,928. JIMMY RICHARD. Cl. 22.
676,930. SABRE. Cl. 22.
676,932. SPUNNEL. Cl. 22.
676,933. PLAYWAY TO KNOWLEDGE. Cl. 22.
676,937. TRANSVERTER. Cl. 23.
676,940. THERM-O-TRIM. Cl. 23.
676,947. DIPOT. Cl. 26.
676,954. SCANAR. Cl. 26.
676,958. EV INSTRUMENTS. Cl. 26.
676,963. SWEET SPOTTER. Cl. 26.
676,964. LAUNDRI-GRAPH. Cl. 26.
676,966. FANDAIRE F AND DESIGN. Cl. 31.
676,967. AMSCO AND DESIGN. Cl. 31.
676,972. PLANNER GROUP. Cl. 32.
676,979. TREE CANTER. Cl. 33.
676,989. VUE-THRU. Cl. 37.
676,990. HEART THROB. Cl. 37.
676,997. METALESCENT. Cl. 38.
677,002. NEW YORK MIRROR. Cl. 38.
677,008. ALIX OF MIAMI ORCHIDS OF THE SEA AND DESIGN. Cl. 39.
677,020. SCOOPERS BY COOPER. Cl. 39.
677,021. COLORS OF THE VALLEY. Cl. 39.
677,024. BELTAB. Cl. 40.
677,026. MIRAJ. Cl. 42.
677,028. NY-LOC. Cl. 42.
677,036. INYECTANO SEGURA. Cl. 44.
677,045. ANDROSIAN. Cl. 46.
677,047. BY LORRAINE BURTON AND DESIGN. Cl. 46.
677,058. CRAN-QUATS. Cl. 46.
677,060. SMORGASBIRD. Cl. 46.
677,064. SIL-AID. Cl. 46.
677,065. STANDEX AND DESIGN. Cl. 46.
677,070. CHEF STYLE. Cl. 46.
677,088. PIELS AND DESIGN. Cl. 48.
677,088. PICK-A-DILLIES. Cl. 50.
677,090. KOOL-PRESS. Cl. 50.
677,091. D & P. Cl. 50.
677,097. GOLDEN ESSENCE. Cl. 51.
677,099. DB DAVID BRADLEY. Cl. 52.
677,100. EMPTIZON. Cl. 52.
677,101. CAREFREE. Cl. 52.
677,110. DESIGN OF GOLD AND WHITE FLUID DISPENSER. Cl. 15.
677,115. TRI-ANGLES. Cl. 38.
677,116. BETTER HOMES & GARDENS KITCHEN IDEAS. Cl. 38.
677,124. LEMON ICE. Cl. 49.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

408,234. CAMEO DESIGN. Cl. 52. 8–1–44. Cameo Corporation. B. T. Babbitt, Inc., New York, N.Y. Amended to appear:



534,058. MOXEES. Cl. 39. 11–28–50. Belgrade Shoe Co., Auburn, Maine. Amended: In the statement, column 2, lines 8 through 10 are deleted, and the drawing is amended to appear:

MOXEES

675,227. VX AND DESIGN. Cl. 26. 3–10–59. Ihagee Kamerawerk Aktiengesellschaft, Dresden, Germany. Corrected: In the statement, column 1, lines 5 through 9 and column 2, lines 1 through 8, the description of goods should be deleted and *cameras* should be inserted.

700,574. PROFESSIONAL NURSING HOME. Cl. 38. 7–5–60. The Miller Publishing Company, Minneapolis, Minn. Amended to appear:

PROFESSIONAL NURSING HOME

701,041. FIGURFIT. Cl. 39. 7–12–60. Indera Mills Company, Winston-Salem, N.C. Amended to appear:

Figurfit

710,889. MIRACLE WATER. Cl. 31. 2–7–61. Water Refining Company, Inc., Middletown, Ohio. Corrected: In the statement, column 2, lines 5 and 6 should be deleted and *First use September 16, 1938 as to "Miracle" and May 2, 1960 in the form shown, on water softeners; in commerce September 16, 1938, as to "Miracle" and May 2, 1960, in the form shown.* should be inserted.

760,448. PAMS. Cl. 101. 11–19–63. Pams Advertising Agency, Dallas, Tex. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

779,862. MIRACLE WATER AND DESIGN. Cl. 31. 11–10–64. Water Refining Company, Inc., Middletown, Ohio. Corrected: In the statement, column 2, line 3, "feeders and aerators" should be deleted and *feeders, and aerators,* should be inserted, and in column 2, lines 5 and 6 should be deleted and *First use September 16, 1938, as to "Miracle" and May 2, 1960, in the form shown, on water softeners; in commerce September 16, 1938, as to "Miracle" and May 2, 1960, in the form shown.* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 6—Chemicals and Chemical Compositions

413,007. Apr. 3, 1945. John C. Stalfort & Sons, Inc., Baltimore, Md. Pub. by registrant.

SHOWEY

For Liquid Air Purifier and Deodorant.

Class 9—Explosives, Firearms, Equipments, and Projectiles

200,927. July 14, 1925. Safeway Stores, Incorporated, Oakland, Calif. Pub. by registrant.

SAFEWAY

For Matches.

Class 12—Construction Materials

195,865. Mar. 3, 1925. Pioneer Paper Company, Los Angeles, Calif. Pub. by The Flintkote Company, New York, N.Y.

Pioneer

For Composition Ready or Prepared Roofing Papers, Flashing Compound, Lap Cement, etc.

197,616. Apr. 21, 1925. The Glens Falls Portland Cement Co., Glens Falls, N.Y. Pub. by The Flintkote Company, New York, N.Y.



For Portland Cement.

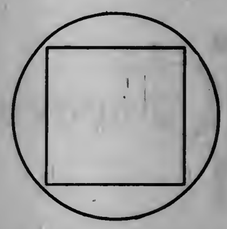
Class 15—Oils and Greases

195,232. Feb. 17, 1925. Frank Washington Dryden, d.b.a. Frank W. Dryden & Sons, Baltimore, Md. Pub. by Dryden Oil Company, Inc., Baltimore, Md.

DRYDINE

For Lubricating Automotive Oils and Greases.

200,738. July 7, 1925. Schock Independent Oil Company, Mount Joy, Pa. Pub. by The Sico Company, Mount Joy, Pa.



For Petroleum Products Used as Fuels and Lubricants.

240,108. Mar. 20, 1928. Mid-West Oil Company, Kansas City, Kans. Pub. by registrant.

BIG CHIEF

For Lubricating Oils.

Class 18—Medicines and Pharmaceutical Preparations

192,118. Nov. 25, 1924. H. Clay Glover Co. Inc., Garden City, N.Y. Pub. by registrant.

GLOVER'S

For Vermifuge, Round Worm Capsules, Tape Worm Capsules, Canker Wash, and Eye Lotion.

Class 37—Paper and Stationery

414,122. May 29, 1945. Superl Supply Co., Inc., d.b.a. Easterday Supply Co., Los Angeles, Calif. Pub. by Easterday Supply Company of California, Los Angeles, Calif.



For Toilet Seat Covers.

Class 38—Prints and Publications

365,661. Mar. 14, 1939. Societey of Former Special Agents of the Federal Bureau of Investigation, Inc., New York, N.Y. Pub. by registrant.



For Periodical Published Quarterly.

Class 39—Clothing

114,258. Dec. 5, 1916. W. H. McElwain Company, Boston, Mass. Pub. by International Shoe Company, Chicago, Ill.

GUARDSMAN

For Shoes.

193,259. Dec. 23, 1924. Chas. H. Liebman & Bro., Philadelphia, Pa. Pub. by Charles H. Liebman & Brother, Inc., Philadelphia, Pa.

CHL & Bro. Prestige Clothes

For Men's Suits and Overcoats.

195,879. Mar. 3, 1925. The Mallory Hat Company, Danbury, Conn. Pub. by John B. Stetson Company, Philadelphia, Pa.

Flex-Ease

For Hats for Men, Women, and Children.

235,842. Nov. 29, 1927. Elliott Hosiery Co. Inc., New York, N.Y. Pub. by M. Goodman & Son, Inc., New York, N.Y.

JADE

For Hosiery and Underwear Manufactured From Knitted and Textile Fabrics for Women.

413,277. Apr. 17, 1945. John B. Stetson Company, Philadelphia, Pa. Pub. by registrant.

STETSON

Diplomat

For Hats and Caps for Men, Women, and Children.

Class 43—Thread and Yarn

198,415. May 19, 1925. Bernhard Ulmann Co., Inc., New York, N.Y. Pub. by Indian Head Mills, Inc., New York, N.Y.

LADYFAIR

For Yarns for Knitting, Crocheting, and Art Needlework.

414,217. May 29, 1945. Wool Processes Limited, Bradford, England. Pub. by Emu Wools Limited, London, England.

EMU

For Yarns Wholly of Wool or of Admixtures of Wool and Artificial Silk.

Class 47—Wines

319,097. Nov. 13, 1934. Maison F. Chauvenet, S.A., now by change of name Societe Commerciale des Bourgagnes de Marque F. Chauvenet ou par Abreviation "S.C.B.M.," Nuits-Saint-Georges, France. Pub. by Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation S.C.B.M.," Nuits-Saint-Georges, France.

WHITE CAP

For Wines.

319,098. Nov. 13, 1934. Maison F. Chauvenet, S.A., now by change of name Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M.," Nuits-Saint-Georges, France. Pub. by Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M.," Nuits-Saint-Georges, France.

PINK CAP

For Wines.

Class 49—Distilled Alcoholic Liquors

316,987. Sept. 11, 1934. Garcia Sugars Corporation, New York, N.Y. Pub. by West Indies Distillers, Ltd., Charlotte Amalie, St. Thomas, Virgin Islands.

BOLERO

For Rum.

Class 52—Detergents and Soaps

197,233. Apr. 14, 1925. Pennsylvania Salt Manufacturing Company, Philadelphia, Pa. Pub. by Pennsalt Chemicals Corporation, Philadelphia, Pa.

PENSAL

For General Cleansing Preparation With Water-Softening Properties.

INDEX OF REGISTRANTS

JUNE 1, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AP Parts Corp., The, Toledo, Ohio. 790,500. Cl. 19.
Abbott Laboratories, North Chicago, Ill. 676,882, canc. Cl. 18.
Abco, Inc., McKeesport, Pa. 790,272, pub. 3–16–65. Cl. 21.
Achaia Clauss Wine Co., Ltd., Patras, Greece. 790,460, pub. 3–16–65. Cl. 47.
Acker Drill Co., Inc., Scranton, Pa. 790,366, pub. 3–16–65. Cl. 26.
Adele Food Products: *See*—
Washington, Adele.
Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 790,339, pub. 3–16–65. Cl. 26.
Aileen, Inc., New York, N.Y. 790,423, pub. 3–16–65. Cl. 39.
Air Photo Supply Corp., New York, N.Y. 790,328, pub. 3–16–65. Cl. 26.
Aladdin Industries, Inc., Chicago, Ill. 790,166, pub. 3–16–65. Cl. 2.
Albina Engine & Machine Works, Inc., Portland, Oreg. 790,287, pub. 3–16–65. Cl. 23.
Albright Boat & Marine Co., Inc., Charlotte, N.C. 676,906, canc. Cl. 19.
Alix of Miami, Inc., Miami, Fla. 677,008, canc. Cl. 39.
All American Engineering Co., Wilmington, Del. 790,268, pub. 3–16–65. Cl. 21.
Alox Corp., Niagara Falls, N.Y. 790,193, pub. 3–16–65. Cl. 6.
Amdoc, Inc., Oak Park, Ill. 790,412, pub. 3–16–65. Cl. 38.
American Chain & Cable Co., Inc., Bridgeport, Conn. 790,317, pub. 3–16–65. Cl. 23.
American Chemical Corp., Long Beach, Calif. 790,182, pub. 3–12–65. Cl. 6.
American Enka Corp.: *See*—
Brand, William, & Co.
American Furnace Co., St. Louis, Mo. 199,327, ren. 6–1–65. Cl. 34.
American Hardware Supply Co., East Butler, Pa. 790,311, pub. 3–16–65 Cl 23.
American Heritage Life Insurance Co., Jacksonville, Fla. 790,483. pub. 12–22–64. Cl. 102.
American Home Products Corp., New York, N.Y. 790,476, pub. 3–16–65. Cl. 52.
American Radiator & Standard Sanitary Corp., New York, N.Y. 790,324, pub. 3–16–65. Cl. 26.
American Service & Supply Co., Inc., Boston, Mass. 676,967, canc Cl. 31.
American Stock Exchange, New York, N.Y. 790,484–5, pub. 3–16–65. Cl. 102.
Amsterdam Brush Corp., Amsterdam, N.Y. 790,378, pub. 3–16–65. Cl. 29.
Anaconda Co., The, New York, N.Y. 790,206, pub. 3–16–65. Cl. 12.
Andros Island Co. Ltd., The, Nassau, Bahamas. 677,045, canc. Cl 46.
Angus Park Woolen Co., Inc., Hanover, Conn. 790,513–14, Cl. 42.
Applied Power Industries, Inc., West Allis, Wis. 790,481, pub. 3–16–65. Cl. 100.
Applied Systems Corp.: *See*—
Huggins Laboratories, Inc.
Arcos Corp., Philadelphia, Pa. 790,223, pub. 3–16–65. Cl 14.
Associated Testing Laboratories, Inc., Wayne, N.J. 790,309, pub. 3–16–65. Cl. 22.
Astor, David, Portland, Maine. 790,529. Cl. 107.
Babbitt, B. T., Inc.: *See*—
Cameo Corp.
Bailey, Daniel F., d.b.a. Industrial Maintenance Co., Cincinnati, Ohio. 676,854, canc. Cl 12.
Bamberger, L., & Co., Newark, N.J., to R. H. Macy & Co., Inc., New York, N.Y. 195,893, ren 6–1–65. Cl. 30
Bari-Tom Imitation Cigarette Co., Chicago, Ill. 790,194, pub. 3–16–65. Cl 8.
Beattie Jet Products, Inc.: *See*—
Beattie Products, Inc.
Beattie Products, Inc., to Beattie Jet Products, Inc., New York, N.Y. 415,815, ren. 6–1–65. Cl. 34.
Becton, Dickinson and Co., East Rutherford, N.J. 413,744, ren 6–1–65. Cl 44.
Becton, Dickinson and Co., East Rutherford, N.J. 413,839, ren. 6–1–65. Cl. 44.
Becton, Dickinson and Co., East Rutherford, N.J. 414,158, ren 6–1–65. Cl. 44.
Beebe Bros., Inc., Seattle, Wash. 790,306, pub. 3–16–65. Cl. 23.
Belgrade Shoe Co., Auburn, Maine. 534,058. Am. 7(d). Cl. 39.
Bel-Ray Co., Inc., Farmingdale, N.J. 790,232, pub. 3–16–65. Cl. 15.
Beltone Electronics Corp., Chicago, Ill. 790,269, pub. 3–16–65. Cl 21.
Berger, Jerome J., d.b.a. International Fashion Festival, Miami Beach, Fla. 790,526. Cl. 101.
Berger, Max, d.b.a. Trim Fit Watchbands, San Antonio, Tex. 790,504. Cl. 28.
Bergstrom Paper Co., Neenah, Wis. 790,403, pub. 4–14–64. Cl 37.
Bilhuber, E., Inc., to Knoll Pharmaceutical Co., Orange, N.J. 415,440–1, ren. 6–1–65. Cl. 6.
Blackwelder Iron Works, to Blackwelder Mfg. Co., Rio Vista, Calif. 416,000, ren. 6–1–65. Cl. 23.
Blackwelder Mfg. Co.: *See*—
Blackwelder Iron Works.
Bliss-craft of Hollywood, Gardena, Calif. 790,392, pub. 3–16–65. Cl. 32.
Bon-Aire Industries, Inc., Long Beach, Calif. 790,278, pub. 3–16–65. Cl. 22.
Bopp-Decker Inc., Birmingham, Mich. 790,265, pub. 3–16–65. Cl. 21.
Borden Co., The, New York, N.Y. 790,242, pub. 3–16–65. Cl. 16.
Borg-Warner Corp., Chicago, Ill. 790,159, pub. 3–16–65. (Consolidated certificate, Classes 1, 5, 12, 13, 14, 16, 19, 21, 23, 24, 26, 31, 32, 34, 35, 44.)
Borgolte, Ellen D.: *See*—
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Boston Cutting Die Co., Boston, Mass. 676,940; canc. Cl. 23.
Botany Industries, Inc., d.b.a. Renauld Co., Reno, Nev. 790,374, pub. 3–16–65. Cl. 26.
Boyd-Richardson Co., St. Louis, Mo. 197,550, ren. 6–1–65. Cl. 39.
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Brewer, E. F., Co., Butler, Wis. 790,443, pub. 3–16–65. Cl. 44.
Broaster Co., The, Rockton, Ill. 790,395, pub. 3–16–65. Cl. 34.
Browny of Honolulu, Ltd., Honolulu, Hawaii. 790,485, pub. 3–16–65. Cl. 51.
Brunswick-Balke-Collender Co., The, to Brunswick Corp., Chicago, Ill. 416,217, ren. 6–1–65. Cl. 22.
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Brunswick Corp., Chicago, Ill. 790,389, pub. 3–16–65. Cl. 32.
Buckeye Ribbon & Carbon Co., The, Cleveland, Ohio. 790,197, pub. 3–16–65. Cl. 11.
Bunlap Corp., New York, N.Y. 790,470–2, pub. 3–16–65. Cl. 52.
Burch, Alice V., administratrix of the estate of Donald J. Burch, deceased, d.b.a. Colorado Steel Sash Co., Denver, Colo. 790,198–9, pub. 3–16–65. Cl. 12.
Burch, Donald J.: *See*—
Burch, Alice V.
Burlington Industries, Inc., d.b.a. Pacific Mills Worsted Co., New York, N.Y. 790,435, pub. 3–16–65. Cl. 42.
Burnham Corp., Irvington-on-Hudson, N.Y. 790,203, pub. 3–16–65. Cl. 12.
Burton, Lorraine, Foods: *See*—
Case-Swayne Co., Inc.
Butts Mfg. Co., Burbank, Calif. 790,320, pub. 3–16–65. Cl. 24.
C & F Mfg. Products Co., Claypool, Ariz. 790,157, pub. 3–16–65. Cl. 1.
Cameo Corp. B. T. Babbitt, Inc., New York, N.Y. 408,234. Am. 7(d). Cl. 52.
Card-Lok, Lee's Summit, Mo. 790,219, pub. 3–16–65. Cl. 13.
Carrtone Laboratories, Inc., New Orleans (Metairie), La. 676,896, canc. Cl. 18.
Case-Swayne Co., Inc., Santa Ana, Calif., from Lorraine Burton Foods, Santa Monica, Calif. 677,047, canc. Cl. 46.
Ceco Steel Products Corp., Chicago, Ill. 676,853, canc. Cl. 12.
Celanese Corp. of America, New York, N.Y. 413,029, ren. 6–1–65. Cl. 21.
Certified Chemical and Equipment Co., The: *See*—
Conway, Joseph D.
Channel Master Corp., Ellenville, N.Y. 790,401, pub. 3–16–65. Cl. 36.
Chapman, George P., d.b.a. Millers Dog Food Co., South Lyon, Mich. 790,454–6, pub. 3–16–65. Cl. 46.
Chattanooga Medicine Co., The: *See*—
National Toilet Co.
Chauvenet, Maison F., S.A. now by change of name Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M." by Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M." 319,097–8, 12(c). Cl. 47.
Cheim, Harry J., to Lea Cheim, Marysville, Calif. 415,860, ren. 6–1–65. Cl. 46.
Cheim Lea: *See*—
Cheim, Harry J.
Chemical Insecticide Corp., Metuchen, N.J. 790,186–8, pub. 3–16–65. Cl. 6.
Chemtrol Industries, New York, N.Y. 677,101, canc. Cl. 52.
Chicago Specialty Mfg. Co., Skokie, Ill. 790,505. Cl. 35.
Chris-Craft Industries, Inc., Oakland, Calif. 790,160, pub. 3–16–65. Cl. 1.
Ciba Ltd., Basel, Switzerland. 790,183–4, pub. 3–16–65. Cl. 6.
Ciba, Ltd., Basel, Switzerland. 790,340, pub. 3–16–65. Cl. 26.
Ciba Ltd., Basel, Switzerland. 790,410, pub. 3–16–65. Cl. 38.
Cigarette Mfg. Co. "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. 790,498. Cl. 17.

Clairol, Inc., New York, N.Y. 790,468–9, pub. 3–16–65. Cl. 51.
Clairol, Inc., New York, N.Y. 790,519–21. Cl. 51.
Clark Equipment Co., Buchanan, Mich. 676,937, canc. Cl. 23.
Clear-Flo Stainer Co.: *See*—
Yarnell, John D.
Cleinman & Sons, Inc., Providence, R.I. 790,274, pub. 3–16–65. Cl. 22.
Cleveland Trencher Co., The, Cleveland, Ohio. 200,091, ren. 6–1–65. Cl. 23.
Clews Bros., Rushall, Walsall, England. 790,303, pub. 3–16–65. Cl. 23.
Cliffs Dow Chemical Co.: *See*—
United Fuel & Supply Co.
Clover Embroidered Trimmings, Inc., New York, N.Y. 790,431, pub. 3–16–65. Cl. 40.
Coastal Valley Canning Co., from Coastal Valley Canning Co., Ltd., Oxnard, Calif. 790,458, pub. 3–16–65. Cl. 46.
Coastal Valley Canning Co., Ltd.: *See*—
Coastal Valley Canning Co.
Coca-Cola Co., The, Atlanta, Ga. 790,457, pub. 3–16–65. Cl. 46.
Cohen, Joseph H., & Sons, Inc., New York, N.Y. 790,427, pub. 3–16–65. Cl. 39.
Cole Chemical Co., to Cole Chemical Co., St. Louis, Mo. 415,379, ren. 6–1–65. Cl. 18.
Colorado Steel Sash Co.: *See*—
Burch, Alice V.
Columbia Industries, Inc., San Antonio, Tex. 790,279, pub. 3–16–65. Cl. 22.
Compagnie Francaise de Bonneterie, Societe Anonyme, Paris, France. 790,440, pub. 3–16–65. Cl. 43.
Computing Devises of Canada, Ltd., Ontario, Ottawa, Canada. 790,349, pub. 3–16–65. Cl. 26.
Congoleum-Nairn Inc., Kearny, N.J. 790,256. Cl. 20.
Consolidated Cigar Corp., New York, N.Y. 790,245, pub. 3–16–65. Cl. 17.
Consolidated Electrodynamics Corp., Pasadena, Calif. 790,329, pub. 3–16–65. Cl. 26.
Consolidated Laboratories, Inc., Chicago Heights, Ill. 790,367, pub. 3–16–65. Cl. 26.
Contina Bureaux- und Rechenmaschinenfabrik, Mauren, Liechtenstein. 790,332, pub. 3–16–65. Cl. 26.
Continental Distilling Corp., d.b.a. J. MacArthur, Jr. & Co., Philadelphia, Pa. 790,517. Cl. 49.
Continental Motors Corp., Muskegon, Mich. 790,270, pub. 3–16–65. Cl. 21.
Conway, Joseph D., d.b.a. The Certified Chemical and Equipment Co., Cleveland, Ohio. 790,474–5, pub. 3–16–65. Cl. 52.
Cook Laboratories, Inc., Chicago, Ill., to Cook-Waite Laboratories, Inc., New York, N.Y. 201,636, ren. 6–1–65. Cl. 44.
Cook-Waite Laboratories, Inc.: *See*—
Cook Laboratories, Inc.
Cooper Bros., Trumansburg, N.Y. 677,020, canc. Cl. 39.
Corn Products Co., New York, N.Y. 790,180, pub. 3–16–65. Cl. 5.
Corning Glass Works, Corning, N.Y. 790,331, pub. 3–16–65. Cl. 26.
Cosby-Hodges Milling Co., Birmingham, Ala. 790,449–52, pub. 12–29–64. Cl. 46.
Cowan Pressroom Products, Inc., Hollywood, Calif. 790,298, pub. 3–16–65. Cl. 23.
Crestline Products, Inc., Little Falls, Minn. 790,315, pub. 3–16–65. Cl. 23.
Crestwood Wood Products, Inc., Brooklyn, N.Y. 676,930, canc. Cl. 22.
Crocker, H. S., Co., Inc., d.b.a. Crocker-Union, San Francisco, Calif. 676,997, canc. Cl. 38.
Crocker-Union: *See*—
Crocker, H. S., Inc.
Crosley Broadcasting Corp., Cincinnati, Ohio. 790,490, pub. 3–16–65. Cl. 107.
Curtis Distillery Co., Ltd., London, England. 790,461, pub. 3–16–65. Cl. 49.
Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. 790,257. Cl. 21.
Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. 790,393–4, pub. 3–16–65. Cl. 33.
Dainihon Jochugiku Co., Ltd., d.b.a. Ueyamayei's Japan Insecticide Mfg. Co., Nishi-Ku, Osaka, Japan. 790,494. Cl. 6.
Dan River Mills, Inc., Danville, Va. 790,434, pub. 3–16–65. Cl. 42.
Dan River Mills, Inc., Danville, Va. 790,437, pub. 3–16–65. Cl. 42.
Dana: *See*—
Les Parfums de Dana, Inc.
Daniel, Jack, Distillery, Lem Motlow, Prop., Inc., Lynchburg, Tenn. 790,175, pub. 3–16–65. Cl. 3.
Daniel Products Co., Jersey City, N.J. 790,233–4, pub. 3–16–65. Cl. 16.
David and David, Inc., Long Island City, N.Y. 790,429, pub. 3–16–65. Cl. 40.
Davis, G. W., Corp., New York, N.Y. 790,318–19, pub. 3–16–65. Cl. 23.
Davol Rubber Co., Providence, R.I. 790,445, pub. 3–16–65. Cl. 44.
Dayco Corp., Dayton, Ohio. 790,390, pub. 3–16–65. Cl. 32.
Dearborn Gage Co., Garden City, Mich. 790,282, pub. 3–16–65. Cl. 22.
Deba Sunglass Corp., Canoga Park, Calif. 790,364, pub. 3–16–65. Cl. 26.
Deco's Distribution Co.: *See*—
Palma, Pete.
Defibrator Aktiebolag, Stockholm, Sweden. 790,502. Cl. 23.
Dekor Flocking Corp., Middletown, N.Y. 790,290, pub. 3–16–65. Cl. 23.
Dell Products Corp., Hillside, N.J. 415,214, ren. 6–1–65. Cl. 46.
Design and Production, Inc., Alexandria, Va. 677,091, canc. Cl. 50.
Design Research, Inc., Cambridge, Mass. 676,932, canc. Cl. 22.
Diamond Chain Co., Inc., Indianapolis, Ind. 790,300, pub. 3–16–65. Cl. 23.
Diamond National Corp., New York, N.Y. 790,164, pub. 3–16–65. Multiple Class (Classes 2, 37, and 38).
Dickinson, Becton, and Co., East Rutherford, N.J. 790,338, pub. 3–16–65. Cl. 26.
Dixon Crucible Co., The, Jersey City, N.J. 790,405, pub. 3–16–65. Cl. 37.
Dresser Industries, Inc., Dallas, Tex. 676,864, canc. Cl. 13.
Dresser Industries, Inc., Dallas, Tex. 790,291, pub. 3–16–65. Cl. 23.
Dresser Industries, Inc., Dallas, Tex., from Manning, Maxwell & Moore, Inc., Stratford, Conn. 790,285, pub. 3–16–65. Cl. 23.
Dresser Industries, Inc., Dallas, Tex., from Manning, Maxwell & Moore, Inc., Stratford, Conn. 790,212, pub. 3–16–65. Cl. 13.
Drexel Enterprises, Inc., Highpoint, N.C. 790,384, pub. 3–16–65. Cl. 32.
Dryden, Frank W., & Sons: *See*—
Dryden, Frank W.
Dryden, Frank W., d.b.a. Frank W. Dryden & Sons, by Dryden Oil Co., Inc., Baltimore, Md. 195,232, 12(c) pub. 6–1–65. Cl. 15.
Dryden Oil Co., Inc.: *See*—
Dryden, Frank W.
Ductile Iron Society, Cleveland, Ohio. 790,491, pub. 3–16–65. Cl. A.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 413,806, ren. 6–1–65. Cl. 44.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 790,347, pub. 3–16–65. Cl. 26.
Durham Hosiery Mills: *See*—
Lehigh Silk Hosiery Mills, Inc.
Easterday Supply Co.: *See*—
Superi Supply Co., Inc.
Eastern Rock Products, Inc., Utica, N.Y. 790,201, pub. 3–16–65. Cl. 12.
Eaton Paper Corp., to Eaton Paper Corp., Pittsfield, Mass. 416,750, ren. 6–1–65. Cl. 37.
Economy Auto Stores, Inc., Atlanta, Ga. 676,919, canc. Cl. 21.
Electricite, Mecanique et Applications "E.M.A." Societe Anonyme, Brussels-Ixelels, Belgium. 790,266, pub. 3–16–65. Cl. 21.
Electro Hygiene, Inc., Dayton, Ohio. 790,288, pub. 3–16–65. Cl. 23.
Electronic Processes Corp. of California, San Carlos, Calif. 790,344, pub. 3–16–65. Cl. 26.
Electro-Voice, Inc., Buchanan, Mich. 676,958, canc. Cl. 26.
Elliott Hosiery Co. Inc., by M. Goodman & Son, Inc., New York, N.Y. 235,842, 12(c) pub. 6–1–65. Cl. 39.
Empire Crafts Corp., Newark, N.Y. 790,376, pub. 3–16–65. Cl. 28.
Emu Wools Ltd.: *See*—
Wool Processes Ltd.
Esso Standard Oil Co., New York, N.Y. 677,110, canc. Cl. 15.
Eubanks Engineering Co., Monrovia, Calif. 790,313, pub. 3–16–65. Cl. 23.
Eule of Florida: *See*—
Leoni, Eugene.
Euphonics Corp., Guaynabo, P.R. 790,402, pub. 3–16–65. Cl. 36.
F5 Air Conditioning Corp., Tulsa, Okla. 676,966, canc. Cl. 31.
Faber, Eberhard, Inc., Crestwood, Wilkes-Barre, Pa. 790,408, pub. 3–16–65. Cl. 37.
Fain, Irving, New York, N.Y. 790,420, pub. 3–16–65. Cl. 39.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. 790,158, pub. 3–16–65. Cl. 1.
Farmer's Exchange, Inc., Franklinton, La. 790,448, pub. 4–9–63. Cl. 46.
Fashioncraft-Excello, Brooklyn, N.Y. 790,163, pub. 3–16–65. Cl. 2.
Fast Chemical Products Corp., Yonkers, N.Y. 790,524. Cl. 52.
Feature Products, Inc., Chicago, Ill. 790,314, pub. 3–16–65. Cl. 23.
Fine Products Corp.: *See*—
Nunnally Co., The.
Finishine Laboratories, Inc., Syracuse, N.Y. 790,202, pub. 3–16–65. Cl. 12.
Finn-Jaske, Inc., Cincinnati, Ohio. 790,507. Cl. 38.
Fisher, Henry, Replacement Service: *See*—
Fisher, William H., Jr.
Fisher Radio Corp., Long Island City, N.Y. 790,321, pub. 3–16–65. Cl. 26.
Fisher, William H., Jr., d.b.a. Henry Fisher Replacement Service, Memphis, Tenn. 790,480, pub. 3–16–65. Cl. 40.
Flame-Out, Inc., Kenner, La. 790,495. Cl. 6.
Flintkote Co., The: *See*—
Glens Falls Portland Cement Co., The.
Pioneer Paper Co.
Folmer Graflex Corp., The, to Graflex, Inc., Rochester, N.Y. 416,432, ren. 6–1–65. Cl. 26.
Fritsmeier, Georg, Kommanditgesellschaft, Grossheifendorf, Munich, Germany. 790,499. Cl. 19.
Fuller, W. P., & Co.: *See*—
Hunt Foods and Industries Inc.
Garcia Sugars Corp., New York, N.Y., by West Indies Distillers, Ltd., St. Thomas, V.I. 316,937, 12(c) pub. 6–1–65. Cl. 49.

Geigy Chemical Corp., Ardsley, N.Y. 790,190, pub. 1–5–65. Cl. 6.
General Electric Co., The, Hudson Falls, N.Y. 790,259. Cl. 21.
General Foods Corp., White Plains, N.Y. 790,516. Cl. 46.
General Instrument Corp., Newark, N.J. 790,261. Cl. 21.
General Nucleonics Inc., Columbus, Ohio. 790,356, pub. 3–16–65. Cl. 26.
Geotechnical Corp., The, Garland, Tex. 790,525. Cl. 100.
Gericke & Co., Regensdorf, Zurich, Switzerland. 790,289, pub. 3–16–65. Cl. 23.
Gerweck, Leonard J., d.b.a. The Raum Co., Ramsey, N.J. 790,386, pub. 3–16–65. Cl. 32.
Gilson Screen Co., Malinta, Ohio. 790,363, pub. 3–16–65. Cl. 26.
Glanz, Ann S., Corpus Christi, Tex. 790,411, pub. 3–16–65. Cl. 38.
Glens Falls Portland Cement Co., The, Glens Falls, N.Y., by The Flintkote Co., New York, N.Y. 197,616, 12(c) pub. 6–1–65. Cl. 12.
Globe Paper Box Co. Ltd., Montreal, Quebec, Canada. 790,170, pub. 3–16–65. (Consolidated certificate, Classes 2 and 23.)
Globe Rubber Products Corp., Philadelphia, Pa. 790,249, pub. 3–16–65. Cl. 19.
Glover, H. Clay, Co., Inc., Garden City, N.Y. 192,113, 12(c) pub. 6–1–65. Cl. 18.
Golf Marks, N.V., Netherlands Antilles Corp., Curacao, Netherland Antilles. 790,280–1, pub. 3–16–65. Cl. 22.
Goodman, M., & Son, Inc.: *See*—
Elliott Hosiery Co. Inc.
Graflex, Inc.: *See*—
Folmer Graflex Corp., The.
Granger Associates, Palo Alto, Calif. 790,325, pub. 3–16–65. Cl. 26.
Great Lakes Paper Co., Chicago, Ill. 676,989, canc. Cl. 37.
Great Lakes Runway Co., d.b.a. Great Lakes Runway & Engineering Co., Chicago, Ill. 790,352, pub. 3–16–65. Cl. 26.
Great Lakes Runway & Engineering Co.: *See*—
Great Lakes Runway Co.
Groov-Pin Corp., Ridgefield, N.J. 790,214, pub. 3–16–65. Cl. 13.
Grossmann, Max, d.b.a. The Vodka Boatman Co., San Antonio, Tex. 790,446, pub. 3–16–65. Cl. 45.
Guenther & Co., Frankfurt am Main, Germany. 790,296, pub. 3–16–65. Cl. 23.
Guerdon Industries, Inc., Southfield, Mich. 790,252. Cl. 19.
H.G. Enterprises, Kansas City, Mo. 790,444, pub. 3–16–65. Cl. 44.
Hale Co., The, Tulsa, Okla. 790,218, pub. 3–16–65. Cl. 13.
Hamilton Watch Co., Lancaster, Pa. 790,503. Cl. 27.
Hammontree Bros. Lumber Co., Chattanooga, Tenn. 676,855, canc. Cl. 12.
Handy & Harmon, New York, N.Y. 790,224, pub. 3–16–65. Cl. 14.
Hanes Hosiery Mills Co., Winston-Salem, N.C. 790,511. Cl. 39.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 790,204–5, pub. 3–16–65. Cl. 12.
Harshaw Chemical Co., The, Cleveland, Ohio. 676,838, canc. Cl. 6.
Hays Filter Co., Waco, Tex. 676,865, canc. Cl. 13.
Heald Machine Co., The, Worcester, Mass. 790,293, pub. 3–16–65. Cl. 23.
Hearst Corp., The, New York, N.Y. 677,002, canc. Cl. 38.
Heath Co., Benton Harbor, Mich. 790,358, pub. 3–16–65. Cl. 26.
Heat Timer Corp., New York, N.Y. 790,359, pub. 3–16–65. Cl. 26.
Helvetia Milk Condensing Co., Inc.: *See*—
Pet Milk Co.
Hendrickson Tandem Corp., Butler, Ind. 790,247, pub. 3–16–65. Cl. 19.
Hercules Powder Co., Wilmington, Del. 790,237, pub. 3–16–65. Cl. 16.
Herculite Protective Fabrics Corp., Newark, N.J. 790,181, pub. 3–16–65. Cl. 5.
Hewitt Soap Co., Inc., The: *See*—
Waltke, William, & Co.
Highway Cruisers, Inc., Montebello, Calif. 790,254. Cl. 19.
Hirshkind, John E., d.b.a. m c brambilla, Minneapolis, Minn. 790,462, pub. 4–2–63. Cl. 51.
Hoagland Instrument Co., Red Bank, N.J. 790,345, pub. 3–16–65. Cl. 26.
Hobade Associates, Inc., New Brunswick, N.J. 677,090, canc. Cl. 50.
Hoffman-Taff, Inc., Springfield, Mo. 790,229, pub. 3–16–65. Cl. 15
Holland Food Corp., New York, N.Y., to Koninklijke Hollandia Fabrieken Van Melkprodukten en Voedingsmiddelen N.V., Vlaardingen, Netherlands. 199,514, ren. 6–1–65. Cl. 46.
Honey Togs, Inc., Gladewater, Tex. 790,417, pub. 3–16–65. Cl. 39.
Hooker Chemical Corp., Niagara Falls, N.Y. 790,156, pub. 3–16–65. Multiple Class (Classes 1 and 6).
House of Schiller, Inc., The, Morton Grove, Ill. 790,387, pub. 3–16–65. Cl. 32.
Hudson Photographic Industries, Inc., Irvington-On-Hudson, N.Y. 790,322, pub. 3–16–65. Cl. 26.
Hudson Photographic Industries, Inc., Irvington-on-Hudson, N.Y. 790,373, pub. 3–16–65. Cl. 26.
Huggins Laboratories, Inc., Sunnyvale, from Applied Systems Corp., Palo Alto, Calif. 790,326, pub. 3–16–65. Cl. 26.
Humble Oil & Refining Co.: *See*—
Standard Oil Co. (New Jersey).
Standard Oil Co. of New Jersey.
Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. 790,238–9, pub. 3–16–65. Cl. 16.
Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. 790,497. Cl. 16.
Hy-Cal Engineering, Santa Fe Springs, Calif. 790,341, pub. 3–16–65. Cl. 26.
Hyland, Clarence M., d.b.a. Hyland Laboratories, to Hyland Laboratories, Los Angeles, Calif. 415,151, ren. 6–1–65. Cl. 18.
Hyland Laboratories: *See*—
Hyland, Clarence M.
Hyman, Le Roy J., Shaker Heights, Ohio. 790,176, pub. 3–16–65. Multiple Class (Classes 3 and 18).
ITT Bell & Gossett, Inc.: *See*—
International Telephone and Telegraph Corp.
Ihagee Kamerawerk Aktiengesellschaft, Dresden, Germany. 675,227, cor. Cl. 26.
Impcomation, Inc., Tuxedo, N.Y. 790,368, pub. 3–16–65. Cl. 26.
Imperial Chemical Industries Ltd., London, England. 790,225, pub. 3–16–65. Multiple Class (Classes 1 and 16).
Imperial International Corp., New York, N.Y. 790,310, pub. 3–16–65. Cl. 23.
Indera Mills Co., Winston-Salem, N.C. 701,041. Am. 7(d). Cl. 39.
Index-Werke K.G. Hahn & Tessky, Esslingen (Neckar), Germany. 790,220, pub. 3–16–65. Multiple Class (Classes 14 and 23).
Indian Head Mills, Inc.: *See*—
Ulmann, Bernhard, Co. Inc.
Industrial Maintenance Co.: *See*—
Bailey, Daniel F.
Ingot Aid Co., Inc., New Castle, Pa. 790,208, pub. 3–16–65. Cl. 12.
Instruments, Inc., Tulsa, Okla. 790,342–3, pub. 3–16–65. Cl. 26.
International Fabric Corp., Boston, Mass. 790,433, pub. 3–16–65. Cl. 42.
International Fashion Festival: *See*—
Berger, Jerome J.
International Mfg. Co., Roxbury, Mass. 790,385, pub. 3–16–65. Cl. 32.
International Motor Cars Inc., Oakland, Calif. 790,255. Cl. 19.
International Paints and Plastics, Inc., East St. Louis, Ill. 790,236, pub. 3–16–65. Cl. 16.
International Paper Co., New York, N.Y. 790,162, pub. 3–16–65. Cl. 1.
International Shoe Co.: *See*—
McElwain, W. H., Co.
International Telephone and Telegraph Corp., New York, N.Y., from ITT Bell & Gossett, Inc., Morton Grove, Ill. 790,307, pub. 3–16–65. Cl. 23.
Interstate Bakeries Corp., Kansas City, Mo. 790,346, pub. 3–16–65. Cl. 26.
Investors Syndicate Life Insurance and Annuity Co., Minneapolis, Minn. 790,406, pub. 3–16–65. Cl. 37.
Ipsen Industries, Inc., Rockford, Ill. 790,327, pub. 1–12–65. Cl. 26.
Ivers-Lee Co., Newark, N.J. 415,571, ren. 6–1–65. Cl. 2.
Jacmar Mfg. Co., Inc., New York, N.Y. 676,933, canc. Cl. 22.
Jacobson, Irving: *See*—
Jacobson Photographic Instruments.
Jacobson, Irving, d.b.a. Jacobson Photographic Instruments, Hollywood, Calif. 790,350, pub. 3–16–65. Cl. 26.
Jamison Mfg. Co., Los Angeles, Calif. 790,277, pub. 3–16–65. Cl. 22.
Japax Scientific Corp., Palo Alto, Calif. 790,264, pub. 3–16–65. Cl. 21.
Jergens, Andrew, Co., The, Cincinnati, Ohio. 790,466, pub. 3–16–65. Cl. 51.
Jon-May Mfg. Co., San Antonio, Tex. 676,964, canc. Cl. 26.
K & K Textile Co., Inc., New York, N.Y. 677,026, canc. Cl. 42.
Kaiser Jeep Corp., Toledo, Ohio. 790,250, pub. 3–16–65. Cl. 19.
Karman, Inc., Denver, Colo. 790,426, pub. 3–16–65. Cl. 39.
Kennametal, Inc., Latrobe, Pa. 790,302, pub. 3–16–65. Cl. 23.
Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 790,486, pub. 2–23–65. Cl. 108.
Ketchum & McDougall, Inc., Roseland, N.J. 790,169. (Consolidated certificate, Classes 2 and 5.)
Knickerbocker Biologicals, Inc., New York, N.Y. 676,834, canc. Cl. 6.
Knoll Pharmaceutical Co.: *See*—
Bilhuber, R., Inc.
Wagner, Theodore B.
Knudsen Creamery Co.: *See*—
Knudsen Creamery Co. of California.
Knudsen Creamery Co. of California, d.b.a. Knudsen Creamery Co., Los Angeles, Calif. 790,447, pub. 9–19–61. Cl. 46.
Koninklijke Hollandia Fabrieken Van Melkprodukten En Voedingsmiddelen N.V.: *See*—
Holland Food Corp.
Kops Bros., Inc., New York, N.Y. 199,097, ren. 6–1–65. Cl. 39.
Kretchmar, Kenneth C., d.b.a. Tri-Rite Publishing Co., Glenview, Ill. 790,276, pub. 3–16–65. Cl. 22.
LKB-Produkter Aktiebolag, Stockholm, Sweden. 790,354, pub. 3–16–65. Cl. 26.
La Fran Co., Tarzana, Calif. 790,213, pub. 3–16–65. Cl. 18.
Lane Magazine Co., Menlo Park, Calif. 790,506. Cl. 38.
Lanolin Plus Inc.: *See*—
National Boulevard Bank of Chicago.
Lau Blower Co., The, Dayton, Ohio. 790,370, pub. 3–16–65. Cl. 26.
Lavino, H. J., and Co., Philadelphia, Pa. 790,209, pub. 3–16–65. Cl. 12.
Lee, Rhoda, Inc., New York, N.Y. 790,416, pub. 3–16–65. Cl. 39.

Lehigh Silk Hosiery Mills, Inc., New York, N.Y., to Durham Hosiery Mills, Durham, N.C. 201,200, ren. 6-1-65. Cl. 39.
Leoni, Eugene, d.b.a. Etole of Floria, Miami Beach, Fla. 790,278, pub. 3-16-65. Cl. 22.
Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. 790,523. Cl. 51.
Levin, Simon, New York, N.Y. 790,323, pub. 3-16-65. Cl. 26.
Liebman, Chas. H., & Bro., by Charles H. Liebman & Brother, Inc., Philadelphia, Pa. 195,259, 12(c) pub. 6-1-65. Cl. 39.
Liebman, Charles H., & Brother, Inc.: *See*— Liebman, Chas. H., & Bro.
Linkletter-Totten Dance Studios, Inc., d.b.a. Art Linkletter Totten-Dance Studios, Inc., Beverly Hills, Calif. 790,489, pub. 3-16-65. Cl. 107.
Lord Mfg. Co., Erie, Pa. 790,297, pub. 3-16-65. Cl. 23.
Louisiana Paper Co., Ltd., Shreveport, La. 790,506. Cl. 37.
Lyons Transportation Lines, Inc., Erie, Pa. 790,528. Cl. 105.
Lyons-Alpha Products Co., Inc., d.b.a. Welsbach, New York, N.Y. 790,271, pub. 3-16-65. Cl. 21.
Lyons-Magnus, Inc., San Francisco, Calif. 416,077, ren. 6-1-65. Cl. 46.
M c brambilla: *See*— Hipskind, John E.
MacArthur, J., Jr. & Co.: *See*— Continental Distilling Corp.
Macy, R. H., & Co., Inc.: *See*— Bamberger, L., & Co.
Maico Co., Inc., The, to Maico Electronics, Inc., Minneapolis, Minn. 412,721, ren. 6-1-65. Cl. 44.
Maico Electronics, Inc.: *See*— Maico Co., Inc., The.
Maico Products Inc., Akron, Ohio. 790,280, pub. 3-16-65. Cl. 15.
Mallory Hat Co., The, Danbury, Conn., by John B. Stetson Co., Philadelphia, Pa. 195,879, 12(c) pub. 6-1-65. Cl. 39.
Manning, Maxwell & Moore, Inc.: *See*— Dresser Industries, Inc.
Maradel Products, Inc., New York, N.Y. 790,522. Cl. 51.
Markbar Corp., Garden City, N.Y. 790,439, pub. 3-16-65. Cl. 42.
Marvin Landplane Co., Woodland, Calif. 416,114, ren. 6-1-65. Cl. 23.
Matcote Co., Inc., Houston, Tex. 790,178, pub. 6-9-64. Cl. 5.
Maurice Fabrics, Inc., High Point, N.C. 790,438, pub. 3-16-65. Cl. 42.
Maxim Import Co., Inc., Los Angeles, Calif. 676,979, canc. Cl. 38.
Maxson Electronics Corp., Great River, N.Y. 790,195, pub. 3-16-65. (Consolidated certificate, Classes 9, 21, and 26.)
May & Baker Ltd., Dagenham, Essex, England. 676,886, canc. Cl. 18.
Mayflower Life Insurance Co. of Illinois, Chicago, Ill. 790,482, pub. 5-5-64. Cl. 102.
McElwain, W. H., Co., Boston, Mass., by International Shoe Co., Chicago, Ill. 114,258, 12(c) pub. 6-1-65. Cl. 39.
McGraw-Edison Co., West Orange, N.J. 790,369, pub. 3-16-65. Cl. 26.
Mercantile Machine & Mfg. Co., Inc., New York, N.Y. 677,088, canc. Cl. 50.
Meredith Publishing Co.: *See*— Successful Farming Publishing Co.
Meredith Publishing Co., Des Moines, Iowa. 677,116, canc. Cl. 38.
Mesberg, B. G., Corp., from B. G. Mesberg National Sales, Inc., New York, N.Y. 676,972, canc. Cl. 32.
Mesberg, B G., National Sales, Inc.: *See*— Mesberg, B. G., Corp.
Mid-West Oil Co., Kansas City, Kans. 240,103, 12(c) pub. 6-1-65. Cl. 15.
Miguel Segura Tristan, Lucainena des las Torres (Almeria), Spain. 677,036, canc. Cl. 44.
Milfur, Inc., Milwaukee, Wis. 677,024, canc. Cl. 40.
Miller Publishing Co., The, Minneapolis, Minn. 700,574. Am. 7(d). Cl. 38.
Millers Dog Food Co.: *See*— Chapman, George P.
Minco Products, Inc., Minneapolis, Minn. 790,360, pub. 3-16-65. Cl. 26.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 790,304, pub. 3-16-65. Cl. 23.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 790,200, pub. 3-16-65. Cl. 12.
Monolith, Inc., Mountain View, Calif. 790,487, pub. 11-3-64. Cl. 106.
Monsanto Co., St Louis, Mo. 790,207, pub. 3-16-65. Cl. 12.
Monterey Sand Co., Monterey, Calif. 790,492. Cl. 1.
Morgan Mfg. Corp., Scottsdale, Ariz. 790,361, pub. 3-16-65. Cl. 26.
Morris, John W., Sarasota, Fla. 676,963, canc. Cl. 26.
Moviola Mfg. Co., North Hollywood, Calif. 790,351, pub. 3-16-65. Cl. 26.
Mueller Co., Decatur, Ill. 676,867, canc. Cl. 13.
Mulhens, Ferdinand: *See*— Mulhens & Kropff.
Mulhens & Kropff, New York, N.Y., to Ferdinand Mulhens, Cologne O/ Rhine, Germany. 45,617, ren. 6-1-65. Cl. 51.
Munsingwear, Inc., Minneapolis, Minn. 790,510. Cl. 39.
Nachfolger, E. Leybold's, Cologne Bayenthal, Germany. 790,357, pub. 3-16-65. Cl. 26.
National Automobile Association, Inc., Charlotte, N.C. 790,480, pub. 3-16-65. Cl. 100.
National Boulevard Bank of Chicago, from Lanolin Plus, Inc., Chicago, Ill. 677,097, canc. Cl. 51.
National Castings Co: *See*— National Malleable and Steel Castings Co.
National Coatings Corp., Atlantic City, N.J. 790,240, pub. 3-16-65. Cl. 16.
National Cordial Co., Inc., Chicago, Ill. 677,124, canc. Cl. 49.
National Distillers and Chemical Corp., New York, N.Y. 790,215, pub. 3-16-65. Cl. 13.
National Industries, Inc., Odenton, Md. 790,388, pub. 3-16-65. Cl. 32.
National Lock Co., Rockford, Ill. 790,235, pub. 3-16-65. Cl. 16.
National Malleable and Steel Castings Co., to National Castings Co., Cleveland, Ohio. 413,402, ren. 6-1-65. Cl. 13.
National Steel Corp., Pittsburgh, Pa. 790,221-2, pub. 3-16-65. Cl. 14.
National Toilet Co., Paris, to The Chattanooga Medicine Co., Chattanooga, Tenn. 45,429, ren. 6-1-65. Cl. 52.
Nationwide Sales Co.: *See*— Smith, Paul M.
Nautec Corp., New York, N.Y. 790,248, pub. 3-16-65. Cl. 19.
Nevil Enterprises, Inc., Buffalo, N.Y. 790,171, pub. 3-16-65. Cl. 2.
Newberry, J. J., Co., New York, N.Y. 790,397, pub. 10-20-64. Cl. 36.
Norcross, to Norcross, Inc., New York, N.Y. 412,512, ren. 6-1-65. Cl. 38.
Norcross, to Norcross, Inc., New York, N.Y. 412,779, ren. 6-1-65. Cl. 38.
Norcross, to Norcross, Inc., New York, N.Y. 413,390, ren. 6-1-65. Cl. 38.
Norcross, Inc.: *See*— Norcross.
Norcross, Inc., New York, N.Y. 677,115, canc. Cl. 38.
Norda Essential Oil & Chemical Co., Inc., New York, N.Y. 790,464, pub. 3-16-65. Cl. 51.
Numismatic Publications, Inc., Long Beach, Calif. 790,413, pub. 3-16-65. Cl. 38.
Nunnally Co., The, to Fine Products Corp., Atlanta, Ga. 199,591, ren. 6-1-65. Cl. 46.
Nutrition Research Laboratories, Chicago, Ill., to Whittier Laboratories, Inc., Richmond, Va. 414,523, ren. 6-1-65. Cl. 18.
Olin Mathieson Chemical Corp., New York, N.Y. 790,172. Cl. 2.
Omni Spectra, Inc., Detroit, Mich. 790,258. Cl. 21.
Onondaga Pottery Co., Syracuse, N.Y. 790,379, pub. 3-16-65. Cl. 30.
Optical Research and Development Corp., Oakland, Calif. 790,330. pub. 3-16-65. Cl. 26.
Orr, J. Herbert, Enterprises, Inc., Opelika, Ala. 790,398-9, pub. 3-16-65. Cl. 36.
Outer Space Products, Inc., Los Angeles, Calif. 676,860, canc. Cl 13.
Owatonna Tool Co., Owatonna, Minn. 790,292, pub. 3-16-65. Cl. 23.
Owens-Illinois Glass Co., Toledo, Ohio. 790,493. Cl. 2.
Ox-Bo Black Creek Ranch, Pelion, S.C. 790,161, pub. 3-16-65. Cl. 1.
PM Instrument Co., Cambridge, Mass. 790,286, pub. 3-16-65. Cl. 23.
Pabst Brewing Co.: *See*— Valentin Blatz Brewing Co.
Pacific Mills Worsted Co.: *See*— Burlington Industries, Inc.
Palma, Pete, d.b.a. Deco's Distribution Co., Venice, Calif. 790,518. Cl. 50.
Palmer, William F., Carlisle, Mass. 790,263. Cl. 21.
Pams Advertising Agency, Dallas, Tex. 760,448. cor. Cl. 101.
Pants Parlour Holding Co., Inc., Tulsa, Okla. 790,424-5, pub. 3-16-65. Cl. 39.
Penick, S. B., and Co., New York, N.Y. 676,836, canc. Cl. 6.
Penick, S. B., & Co., New York, N.Y. 790,192, pub. 3-16-65. Cl. 6.
Penn Keystone Corp., Ansonia, Conn. 790,260, pub. 3-16-65. Cl. 21.
Pennsalt Chemicals Corp.: *See*— Pennsylvania Salt Mfg. Co.
Pennsylvania Salt Mfg. Co., by Pennsalt Chemicals Corp., Philadelphia, Pa. 197,233, 12(c) pub. 6-1-65. Cl. 52.
Pennzoil Co., Oil City, Pa. 790,228, pub. 3-16-65. Cl. 15.
Permatex Co., Inc., Brooklyn, N.Y. 790,179, pub. 3-16-65. Cl. 5.
Perry Knitting Co., The, Perry, N.Y. 202,164, ren. 6-1-65. Cl. 39.
Pet Milk Co., to Helvetia Milk Condensing Co., Inc., to Pet Milk Co., St. Louis, Mo. 200,923, ren. 6-1-65. Cl. 46.
Pfanstiehl Detergent Chemicals, Inc., Waukegan, Ill. 677,100, canc. Cl. 52.
Pfeiffer Chemical Co., New York, N.Y., to Standard Laboratories, Inc., Morris Plains, N.J. 412,695, ren. 6-1-65. Cl. 18.
Pharr Yarns, Inc., McAdenville, N.C. 790,441, pub. 3-16-65. Cl. 43.
Piel Bros., Brooklyn, N.Y. 677,083, canc. Cl. 48.
Pillsbury Co., The, from Pillsbury Mills, Inc., Minneapolis, Minn. 677,070, canc. Cl. 46.
Pillsbury Mills, Inc.: *See*— Pillsbury Co., The.
Pioneer Paper Co., Los Angeles, Calif., by The Flintkote Co., New York, N.Y. 195,865, 12(c) pub. 6-1-65. Cl. 12.
Plastic Contact Lens Co., The, Chicago, Ill. 790,371, pub. 3-16-65. Cl. 26.
Plexowood, Inc., Bradford, Pa. 790,391, pub. 3-16-65. Cl. 32.
Portco Corp., Portland, Oreg. 676,856, canc. Cl. 12.
Process Chemicals Co.: *See*— Pro-Chem, Inc.
Pro-Chem, Inc., Cleveland, Ohio, from Process Chemicals Co., Los Nietos, Calif. 676,832. canc. Cl. 6.
Procter & Gamble Co., The, Cincinnati, Ohio. 413,703, ren. 6-1-65. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 790,407, pub. 3-16-65. Cl. 37.

Production Service Co., Inglewood, Calif. 790,262. Cl. 21.
Prosperi, Oreste, d.b.a. World Art Co., Fort Lauderdale, Fla. 676,914, canc. Cl. 21.
Protection Products Mfg. Co., Kalamazoo, Mich., to United States Plywood Corp., New York, N.Y. 415,103, ren. 6-1-65. Cl. 6.
Prudential Paper Products Co. Inc.: *See*— Prudential Paper Products Co.
Prudential Paper Products Co., to Prudential Paper Products Co. Inc., New York, N.Y. 416,488, ren. 6-1-65. Cl. 37.
Puppy, B. T., Records, Inc., Brooklyn, N.Y. 790,400, pub. 3-16-65. Cl. 36.
Puritan Fashions Corp., from Reliance Mfg. Co., New York, N.Y. 790,426, pub. 3-16-65. Cl. 39.
Qualitad Sales Corp., The, New York, N.Y. 790,404, pub. 3-16-65. Cl. 37.
Rapistan-Keystone, Inc., Farmington, Mich. 790,305, pub. 3-16-65. Cl. 23.
Raum Co., The: *See*— Gerweck, Leonard J.
Rawlings Sporting Goods Co., St. Louis, Mo. 790,275, pub. 3-16-65. Cl. 22.
Rayflex Exploration Co., Dallas, Tex. 790,337, pub. 3-16-65. Cl. 26.
Reliance Universal Inc., Louisville, Ky. 790,241, pub. 3-16-65. Cl. 16.
Remington Arms Co., Inc., Bridgeport, Conn. 201,528, ren. 6-1-65. Cl. 9.
Rensuld Co.: *See*— Botany Industries, Inc.
Renegade Corp., The, Nashville, Tenn. 790,422, pub. 3-16-65. Cl. 39.
Republic Steel Corp,, Cleveland, Ohio. 790,333, pub. 3-16-65. Cl. 26.
Revlon, Inc., New York, N.Y. 790,463, pub. 7-2-63. Cl. 51.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 790,168, pub. 3-16-65. Cl. 2.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 790,174, pub. 3-16-65. Cl. 2.
Rexall Drug and Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 790,283, pub. 3-16-65. Cl. 22.
Rheem Mfg. Co., New York, N.Y., from Robert Electronics, Inc., Los Angeles, Calif. 790,396, pub. 3-16-65. Cl. 36.
Riccar America Co., Anaheim, Calif. 790,316, pub. 3-16-65. Cl. 23.
Richfield Oil Corp., Los Angeles, Calif. 790,226-7, pub. 3-16-65. Cl. 45.
Ridgways Ltd., London, England. 415,918, ren. 6-1-65. Cl. 46.
Robert Electronics, Inc.: *See*— Rheem Mfg. Co.
Robertet, P., Inc., New York, N.Y. 790,191, pub. 3-16-65. Cl. 6.
Rockford Engineered Products Co., Rockford, Ill. 790,301, pub. 3-16-65. Cl. 23.
Rockwell-Standard Corp., from Rockwell-Standard Corp., Corapolis, Pa. 790,251, pub. 3-9-65. Cl. 19.
Rogin, Milton, New York, N.Y. 790,355, pub. 3-16-65. Cl. 26.
Rokeach, I., & Sons, Inc., Brooklyn, N.Y., to I. Rokeach & Sons, Inc., New York, N.Y. 203,870, ren. 6-1-65. Cl. 46.
Royal Mfg. Co., The, Bowling Green, Ohio. 676,828, canc. Cl. 2.
Royce Hosiery Mills, Inc., New York, N.Y. 790,512. Cl. 39.
Royster, F. S., Guano Co., Norfolk, Va. 45,145, ren. 6-1-65. Cl. 10.
SPC Industries, Inc., Jericho, N.Y. 790,243, pub. 3-16-65. Cl. 17.
Sadler Hosiery Mills, Inc., Pulaski, Va. 790,419, pub. 3-16-65. Cl. 39.
Safeway Stores, Inc., Los Angeles, Calif., by Safeway Stores, Inc., Oakland, Calif. 200,927, 12(c) pub. 6-1-65. Cl. 9.
St. Cloud Milling Co., St. Cloud, Minn. 677,060, canc. Cl. 46.
Salembier, Alice G.: *See*— Smith, Paul M.
Salts (Saltaire), Ltd.: *See*— Sir Titus Salt, Bart. Sons & Co., Ltd.
San Antonio Fair, Inc., San Antonio, Tex. 790,488, pub. 3-16-65. Cl. 107.
Savin Business Machines Corp., New York, N.Y. 790,189, pub. 3-16-65. Multiple Class (Classes 6 and 26).
Saxony Watch Co., New York, N.Y. 790,375, pub. 3-16-65. Cl. 27.
Scanoptic, Inc., New York, N.Y. 676,954, canc. Cl. 26.
Schock Independent Oil Co., by The Sico Co., Mount Joy, Pa. 200,738 12(c) pub. 6-1-65. Cl. 15.
Scott, Cyrus W., Mfg. Co., Wichita Falls, Tex. 790,414, pub. 3-16-65. Cl. 39.
Scotti's Drive-In Restaurants, Inc., Cheyenne, Wyo. 790,479, pub. 3-16-65. Cl. 100.
Seamless Rubber Co., The: *See*— Rexall Drug and Chemical Co.
Seamloc Carpet Co., Sanford, Maine. 677,028. canc. Cl. 42.
Sears, Roebuck and Co., Chicago, Ill. 677,099. canc. Cl. 52.
Self-Adhesive Sign Co. Ltd., Bromley, Kent, England. 790,409, pub. 3-16-65. Cl. 38.
Servonics, Inc., Alexandria, Va. 676,947. canc. Cl. 26.
Sharon Steel Corp., Sharon, Pa. 790,216, pub. 3-16-65. Cl. 13.
Showeray Co., The, New York, N.Y. 790,436, pub. 3-16-65. Cl. 42.
Shuron Optical Co., Inc., Geneva, to Textron Inc., Rochester, N.Y. 415,194, ren. 6-1-65. Cl. 26.
Sico Co., The: *See*— Schock Independent Oil Co.
Signal Oil and Gas Co., Los Angeles, Calif. 790,231, pub. 3-16-65. Cl. 15.
Simmon Omega, Inc., New York, N.Y. 790,362, pub. 3-16-65. Cl. 26.
Simpson, Mark, Mfg. Co., Inc., Long Island City, N.Y. 676,915, canc. Cl. 21.
Simpson Timber Co., Seattle, Wash. 790,496. Cl. 12.
Sinclair Refining Co., New York, N.Y. 198,608, ren. 6-1-65. Cl. 15.
Sinclair Refining Co., New York, N.Y. 198,843, ren. 6-1-65. Cl. 15.
Sinclair Refining Co., New York, N.Y. 201,184, ren. 6-1-65. Cl. 15.
Sinclair Refining Co., New York, N.Y. 414,423, ren. 6-1-65. Cl. 15.
Sir Titus Salt, Bart, Sons & Co., Ltd., to Salts (Saltaire), Ltd., Saltaire, England. 26,587, ren. 6-1-65. Cl. 42.
Sirls, A. J., Products Corp., New York, N.Y. 676,990, canc. Cl. 37.
Slifer Mfg. Co., Inc., Gowrie, Iowa. 790,294, pub. 3-16-65. Cl. 23.
Smith, Paul M., d.b.a. Nationwide Sales Co., Van Nuys, from Ellen D. Borgolte and Alice G. Salembier, d.b.a. Tattle-Tale Co., North Hollywood, Calif. 790,335, pub. 3-16-65. Cl. 26.
Snider, D. B., Inc., Mount Clemens, Mich. 790,253. Cl. 19.
Snyder, W. H., & Sons, Inc., Windsor, Pa. 790,244, pub. 3-16-65. Cl. 17.
Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M.": *See*— Chauvenet, Masion F., S.A., now by change of name Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M."
Society of Former Special Agents of the Federal Bureau of Investigation, Inc., New York, N.Y. 365,661, 12(c) pub. 6-1-65. Cl. 38.
Southwestern Engineering Co., Los Angeles, Calif. 790,284, pub. 3-16-65. Cl. 23.
Sportsman's Golf Corp., Melrose Park, Ill. 676,926, canc. Cl. 22.
Sportsman's Golf Corp., Melrose Park, Ill. 676,928, canc. Cl. 22.
Sport-Wear Hosiery Mills, Inc., Etowah, Tenn. 790,415, pub. 3-16-65. Cl. 39.
Spun-Lo Elderlon Inc., New York, N.Y. 790,432, pub. 3-16-65. Cl. 42.
Stalfort, John C., & Sons, Inc., Baltimore, Md. 413,007, 12(c) pub. 6-1-65. Cl. 6.
Standard Bakers Supplies, Inc., Philadelphia, Pa. 677,065, canc. Cl. 46.
Standard Laboratories, Inc.: *See*— Pfeiffer Chemical Co.
Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 196,782, ren. 6-1-65. Cl. 15.
Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 412,946, ren. 6-1-65 Cl. 15.
Stein, Sam, Associates, Inc., Sandusky, Ohio. 790,299, pub. 3-16-65. Cl. 23.
Stetson, John B, Co.: *See*— Mallory Hat Co., The.
Stetson, John B., Co., Philadelphia, Pa. 413,277, 12(c) pub. 6-1-65. Cl. 39.
Stevens & Thompson Paper Co., Greenwich, N.Y. 200,293, ren. 6-1-65. Cl. 2.
Strohmeyer & Arpe Co., New York, N.Y. 790,185, pub. 3-16-65. Cl. 6.
Successful Farming Publishing Co., to Meredith Publishing Co., Des Moines, Iowa. 203,616, ren. 6-1-65. Cl. 38.
Success Motivation Institute, Inc., Waco, Tex. 790,509. Cl. 38.
Superl Supply Co., Inc., d.b.a. Easterday Supply Co., by Easterday Supply Co of California, Los Angeles, Calif. 414,122, 12(c) pub. 6-1-65. Cl. 37.
Swank, Inc., Attleboro, Mass. 790,473, pub. 12-8-64. Cl. 52.
Swiss Credit Bank, Zurich, Switzerland. 790,527. Cl. 102.
Tapco Products Co., Inc., Detroit, Mich. 790,308, pub. 3-16-65. Cl. 23.
Tattle-Tale Co.: *See*— Smith, Paul M.
Taylor, Smith & Taylor Co., The, East Liverpool, Ohio. 790,381. pub. 3-16-65. Cl. 30.
Telefonaktiebolaget L. M Ericsson, Stockholm, Sweden. 790,267, pub. 3-16-65. Cl. 21.
Tele-Tour, Inc., Lexington, Mass. 790,476, pub. 3-16-65. Cl. 100.
Texas Phenothiazine Co., Fort Worth, Tex. 790,246, pub. 3-16-65. Cl. 18.
Textron Inc.: *See*— Shuron Optical Co., Inc.
Textron, Inc., to Textron, Inc., Providence, R.I. 411,071, ren. 6-1-65. Cl. 42.
Thomson Industries, Inc., Manhasset, N.Y. 790,210, pub. 3-9-65. Cl. 12.
Ticker and Treasure, Inc., Chicago, Ill. 790,167, pub. 3-16-65. Cl. 2.
Tide Water Oil Co., Bayonne, N.Y., and New York, N.Y., to Tidewater Oil Co., Los Angeles, Calif. 197,753, ren. Cl. 15.
Titmus Optical Co., Inc., Petersburg, Va. 790,372, pub. 3-16-65. Cl. 26.
Tobins Lake Studios, Inc., South Lyon, Mich. 790,353, pub. 3-16-65. Cl. 26.
Toko, Inc.: *See*— Toko Kabushiki Kaisha.
Toko Kabushiki Kaisha, d.b.a. Toko, Inc., Ota-ku, Tokyo-to, Japan. 790,365, pub. 3-16-65. Cl. 26.
Traub, Lyons, Oppenheim, Inc., to United Merchants and Manufacturers, Inc. New York, N.Y. 413,180, ren. 6-1-65. Cl. 42.
Traub, Lyons, Oppenheim, Inc., to United Merchants and Manufacturers, Inc., New York, N.Y. 413,579, ren. 6-1-65. Cl. 42.

Treibacher Chemische Werke Aktiengesellschaft, Treibach, Karnte, Austria. 790,177, pub. 3–16–65. Cl. 4.
Tri-Bros. Chemical Corp., Morton Grove, Ill. 790,477, pub. 3–16–65. Cl. 52.
Trim Fit Watchbands: *See*—
Berger, Max.
Tri-Rite Publishing Co.: *See*—
Kretchmar, Kenneth C.
Tupperware: *See*—
Rexall Drug and Chemical Co.
Ueyamayei's Japan Insecticide Mfg. Co.: *See*—
Dainihon Jochugiku Co., Ltd.
Ulmann, Bernhard, Co. Inc., by Indian Head Mills, Inc., New York, N.Y. 193,415, 12(c) pub. 6–1–65. Cl. 43.
Union Carbide Corp., New York, N.Y. 790,165, pub. 3–16–65. Cl. 2.
United Aircraft Corp., East Hartford, Conn. 790,295, pub. 3–16–65. Cl. 23.
United Fuel & Supply Co., Detroit, Mich, to Cliffs Dow Chemical Co., Marquette, Mich. 200,766, ren. 6–1–65. Cl. 1.
United Merchants and Manufacturers, Inc.: *See*—
Traub, Lyons, Oppenheim, Inc.
United States Baking Co., Inc., from Miller-Parrott Baking Co., Inc., Terre Haute, Ind. 790,453, pub. 3–16–65. Cl. 46.
U.S. Divers Co., Santa Ana, Calif. 790,334, pub. 3–16–65. Cl. 26.
United States Plywood Corp.: *See*—
Protection Products Mfg. Co.
United States Plywood Co. Inc.
United States Plywood Co. Inc., to United States Plywood Corp., New York, N.Y. 203,931, ren. 6–1–65. Cl. 12.
United States Rubber Co., New York, N.Y. 415,694, ren. 6–1–65. Cl. 42.
U.S. Vitamin Corp., New York, N.Y. 676,890, canc. Cl. 18.
Valentin Blats Brewing Co., to Pabst Brewing Co., Milwaukee, Wis. 26,749, ren. 6–1–65. Cl. 48.
Valley Lane, Inc., New York, N.Y. 677,021, canc. Cl. 39.
Virginia Smelting Co., West Norfolk, Va. 677,064, canc. Cl. 46.
Vita Craft Corp., Kansas City, Mo. 790,380, pub. 3–16–65. Cl. 30.
Vodka Boatman Co., The: *See*—
Grossmann, Max.
Vyco, Inc., Hato Rey, P.R. 790,382–3, pub. 3–16–65. Cl. 32.
Wagner, Theodore B., New York, N.Y., to Knoll Pharmaceutical Co., Orange, N.J. 200,316, ren. 6–1–65. Cl. 18.
Wagner, Theodore B., New York, N.Y., to Knoll Pharmaceutical Co., Orange, N.J. 200,978, ren. 6–1–65. Cl. 46.
Walthe, William, & Co., St. Louis, Mo., to The Hewitt Soap Co., Inc., Dayton, Ohio. 46,540, ren. 6–1–65. Cl. 52.
Ward's Natural Science Establishment, Inc., Rochester, N.Y. 790,348, pub. 3–16–65. Cl. 26.
Washington, Adele, d.b.a. Adele Food Products, New York, N.Y. 677,058, canc. Cl. 46.
Water Refining Co., Inc., Middletown, Ohio. 710,889, corr. Cl. 31.
Water Refining Co., Inc., Middletown, Ohio. 779,862, corr. Cl. 31.
Watson Mfg. Co., Inc., Jamestown, N.Y. 790,211, pub. 3–16–65. Cl. 12.
Wayne Engineering Corp., Waterloo, Iowa. 790,312, pub. 3–16–65. Cl. 23.
Wayne-George Corp., Newton, Mass. 790,336, pub. 3–16–65. Cl. 26.
Welsbach: *See*—
Lyons-Alpha Products Co., Inc.
Western Pine Assn., Portland, Oreg. 676,852, canc. Cl. 12.
West Indies Distillers Ltd.: *See*—
Garcia Sugara Corp.
Westinghouse Electric Corp., Baltimore, Md. 790,442, pub. 3–16–65. Cl. 44.
White-Stokes Co., Inc., Chicago, Ill. 200,580, ren. 6–1–65. Cl. 46.
Whittier Laboratories, Inc.: *See*—
Nutrition Research Laboratories.
Whittlesey: *See*—
Whittlesey, Henry D.
Whittlesey, Henry D., d.b.a. Whittlesey, Hayward, Calif. 790,501. Cl. 22.
William Underwood Co.: *See*—
William Underwood Co.
William Underwood Co., Boston, Mass., to William Underwood Co., Watertown, Mass. 44,765, ren. 6–1–65. Cl. 46.
Wilson & Co., Inc., Chicago, Ill. 790,467, pub. 3–16–65. Cl. 51.
Wool Processes Ltd., Bradford, England, by Emu Wools Ltd., London, England. 414,217, 12(c) pub. 6–1–65. Cl. 43.
World Art Co.: *See*—
Prosperi, Oreste.
Yakka Overalls Pty. Ltd., Broadmeadows, Victoria, Australia. 790,418, pub. 3–16–65. Cl. 39.
Yarnell, John D., d.b.a. Clear-Flo Stainer Co., El Cajon, Calif. 790,217 pub. 3–16–65. Cl. 13.
Yunker Mfg. Co., Inc., New York, N.Y. 790,421, pub. 3–16–65. Cl. 39.
Zakutinsky Milk Products: *See*—
Zakutinsky, Max.
Zakutinsky, Max, d.b.a. Zakutinsky Milk Products, Brooklyn, N.Y. 790,515. Cl. 46.
Zellerbach Paper Co., San Francisco, Calif. 790,173, pub. 3–16–65. Cl. 2.
Zymak Biochemical Corp., Bayamon, P.R. 790,196, pub. 3–16–65. Cl. 10.

U.S. GOVERNMENT PRINTING OFFICE:0—1965

TITLE 37—PATENTS, TRADEMARKS AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES
PART 3—FORMS FOR PATENT CASES

Interference Practice

The following amendments are made to take effect July 1, 1965, and to apply only to interferences declared on and after that date. In all other cases, the rules prior to amendment shall apply. The text of these rules, except in certain particulars, was published in the Federal Register of February 26, 1965 (30 F.R. 2552–2556), and all persons who so desired were invited to submit written data, views, arguments or suggestions, or to attend the hearing held on April 8, 1965. The rules are being adopted after full consideration of all the material submitted and of all the views expressed at the oral hearing. The departures from the published text are made in the light of such material and views.

The text of the amendments is as follows:

Paragraphs (a) and (b) of § 1.203 are amended to read as follows:

§ 1.203 *Preparation for interference between applications; suggestion of claims for interference.*

(a) Before the declaration of interference it must be determined by the examiner that there is common subject matter in the cases of the respective parties, patentable to each of the respective parties, subject to the determination of the question of priority. Claims in the same language, to form the counts of the interference, must be present or be presented, in each application; except that, in cases where, owing to the nature of the disclosures in the respective applications, it is not possible for all applications to properly include a claim in identical phraseology to define the common invention, an interference may be declared, with the approval of the Commissioner, using as a count representing the interfering subject matter a claim differing from the corresponding claims of one or more of the interfering applications by an immaterial limitation or variation.

(b) When the claims of two or more applications differ in phraseology, but relate to substantially the same patentable subject matter, the examiner shall, if it has been determined that an interference should be declared, suggest to the parties such claims as are necessary to cover the common invention in the same language. The parties to whom the claims are suggested will be required to make those claims (i.e., present the suggested claims in their applications by amendment) within a specified time, not less than 30 days, in order that an interference may be declared. The failure or refusal of any applicant to make any claim suggested within the time specified, shall be taken without further action as a disclaimer of the invention covered by that claim unless the time be extended.

• • • • • •

Paragraph (a) of § 1.205 is amended to read as follows:

§ 1.205 *Interference with a patent; copying claims from patent.*

(a) Before an interference will be declared with a patent, the applicant must present in his application, copies of all of the claims of the patent which also define his invention and such claims must be patentable in the application. However, an interference may be declared after copying the claims excluding an immaterial limitation or variation if such immaterial limitation or variation is not clearly supported in the application or if the applicant otherwise makes a satisfactory showing in justification thereof.

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Section 1.206 is amended to read as follows:

§ 1.206 *Interference with a patent; claims improperly copied.*

(a) Where claims are copied from a patent and the examiner is of the opinion that the applicant can make only some of the claims so copied, he shall notify the applicant to that effect, state why he is of the opinion the applicant cannot make the other claims and state further that the interference will be promptly declared. The applicant may proceed under section 1.231 if he desires to further contest his right to make the claims not included in the declaration of the interference.

(b) Where the examiner is of the opinion that none of the claims can be made, he shall reject the copied claims stating in his action why the applicant cannot make the claims and set a time limit, not less than 30 days, for reply. If, after response by the applicant, the rejection is made final, a similar time limit shall be set for appeal. Failure to respond or appeal, as the case may be, within the time fixed will, in the absence of a satisfactory showing, be deemed a disclaimer of the invention claimed.

Section 1.207 is amended to read as follows:

§ 1.207 *Preparation of interference papers and declaration of interference.*

(a) When an interference is found to exist and the applications are in condition therefor, the primary examiner shall forward the files to the Board of Patent Interferences together with a statement indicating the claims of each applicant or patentee which are to form the respective counts of the interference and also indicating whether any party is entitled to the benefit of the filing date of any prior application as to the subject matter in issue, and, if so, identifying such application.

(b) A patent interference examiner will institute and declare the interference by forwarding notices to the several parties to the proceeding. Each notice shall include the name and residence of each of the other parties and those of his attorney or agent, and of any assignee, and will identify the application of each opposing party by serial number and filing date, or in the case of a patentee by the number and date of the patent. The notices shall also specify the issue of the interference, which shall be clearly and concisely defined in only as many counts as may be necessary to define the interfering subject matter (but in the case of an interference with a patent all the claims of the patent which can be made by the applicant should constitute the counts), and shall indicate the claim or claims of the respective cases corresponding to the count or counts. If the application or patent of a party included in the interference is a division, continuation or continuation-in-part of a prior application and the examiner has determined that it is entitled to the filing date of such prior application, the notices shall so state. Except as noted in section 1.207(e), the notices shall also set a schedule of times for taking various actions as follows:

(1) For filing the preliminary statements required by section 1.215 and serving notice of such filing, not less than two months from the date of declaration.

(2) For each party who files a preliminary statement to serve a copy thereof on each opposing party who also files a preliminary statement as required by section 1.215(b), not less than 15 days after the expiration of the time for filing preliminary statements.

(3) For filing motions under section 1.231, not less than four months from declaration.

(c) The notices of interference shall be forwarded by the patent interference examiner to all the parties, in care of their attorneys or agents; a copy of the notices will also be sent the patentees in person and, if the patent in interference has been assigned, to the assignees.

(d) When the notices sent in the interest of a patent are returned to the Office undelivered, or when one of the parties resides abroad and his agent in the United States is unknown, additional notice may be given by publication in the OFFICIAL GAZETTE for such period of time as the Commissioner may direct.

(e) In a case where the showing required by section 1.204(c) is deemed insufficient (section 1.228) the notice of interference will not set the time schedule specified in section 1.207(b) but will be accompanied by an order to show cause

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by the Board of Patent Interferences as provided by section 1.228.

Section 1.209 is cancelled.

Section 1.211 is amended to read as follows:

§ 1.211 *Jurisdiction of interference.*

(a) Upon the institution and declaration of the interference, as provided in section 1.207, the Board of Patent Interferences will take jurisdiction of the same, which will then become a contested case.

(b) The primary examiner will retain jurisdiction of the case until the declaration of interference is made.

Section 1.215 is amended to read as follows:

§ 1.215 *Preliminary statement required.*

(a) Each party to the interference will be required to file a concise preliminary statement giving certain facts and dates, on or before a date fixed by the Office. The preliminary statement must be signed and sworn to by the inventor but in appropriate circumstances, as when the inventor is dead or a showing is made of inability to obtain a statement from the inventor, the preliminary statement may be made by the personal representative or assignee or by someone authorized or entitled to make the statement and having knowledge of the facts.

(b) A party who files a preliminary statement shall at the same time notify all opposing parties of that fact and by the time set for that purpose he shall serve a copy of his preliminary statement including any attached documents on every opposing party from whom he has received notification of the filing of a statement.

(c) A party who fails to serve a copy of his preliminary statement as required in (b) above will be restricted to his effective filing date. (See section 1.223 (c).)

Section 1.216 is amended to read as follows:

§ 1.216 *Contents of the preliminary statement.*

(a) The preliminary statement must state that the party made the invention set forth by each count of the interference, and whether the invention was made in the United States or abroad. When the invention was made in the United States the preliminary statement must set forth as to the invention defined by each count the following facts including a brief statement as to the specific nature of each of the respective acts alleged:

(1) The date upon which the first drawing of the invention was made; if a drawing of the invention has not been made prior to the filing date of the application, it must be so stated.

(2) The date upon which the first written description of the invention was made; if a written description of the invention has not been made prior to the filing date of the application, it must be so stated.

(3) The date upon which the invention was first disclosed to another person; if the invention was not disclosed to another person prior to the filing date of the application, it must be so stated.

(4) The date of the first act or acts susceptible of proof (other than making a drawing or written description or disclosing the invention to another person) which, if proven, would establish conception of the invention, and a brief description of such act or acts; if there have been no such acts, it must be so stated.

(5) The date of the actual reduction to practice of the invention; if the invention has not been actually reduced to practice before the filing date of the application, it must be so stated.

(6) The date after conception of the invention when active exercise of reasonable diligence toward reducing the invention to practice began.

(b) When an allegation as to the first drawing (section 1.216(a)(1)) and/or as to the first written description (section 1.216(a)(2)) is made, a copy of such drawing and/or written description must be attached to the statement.

(c) If a party intends to rely solely on a prior application, domestic or foreign, and on no other evidence, the preliminary statement may so state and need not be signed or sworn to by the inventor.

Section 1.218 is amended to read as follows:

§ 1.218 *Time for filing preliminary statement.*

The time for filing the preliminary statement is ordinarily specified in the notices of interference mailed to the parties (section 1.207). (For extension of the time set see section 1.245.)

Section 1.221 is cancelled.

Paragraphs (a) and (c) of section 1.223 are amended to read as follows:

§ 1.223 *Effect of statement.*

(a) The preliminary statement should be carefully prepared, as a party will not be allowed to amend his statement in any way except by motion under section 1.222, and any doubts as to definiteness or sufficiency of any allegation or compliance with formal requirements will be resolved against the party concerned by restriction to his record date or to the latest date of a period alleged as may be appropriate. Prior to final hearing a party will not be notified of any defect in his statement except that whenever a resulting restriction provides basis for an order to show cause (section 1.225) such order will be entered including notice of the defect. Each of the parties by whom or on whose behalf a preliminary statement is made will be strictly held in his proofs to the dates set forth therein. This includes joint applicants or patentees; a new preliminary statement will not be received in the event the application is amended or the patent is corrected to remove the names of those not inventors, nor will a preliminary statement alleging different dates be received if an application is amended or a patent is corrected to include a joint inventor, except by motion under section 1.222.

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(c) If a party to an interference fails to file a statement, testimony will not be received subsequently from him to prove that he made the invention at a date prior to his effective filing date. If a party alleges in his statement a date of first drawing or first written description but does not attach a copy of such drawing or written description as required by section 1.216(b), he will be restricted to his effective filing date as to that allegation.

Section 1.224 is amended to read as follows:

§ 1.224 *Reliance on prior application.*

A party will not be permitted to rely on any prior application to obtain the benefit of its filing date unless the prior application is specified in the notice of interference (see section 1.226) or its benefit is sought by a motion filed in accordance with section 1.231. In the latter case, complete copies of the contents of the application file the benefit of which is sought, except affidavits under sections 1.131, 1.202 and 1.204, must be served on all opposing parties with the motion, and in the case of a foreign application the necessary papers to prove a date of priority under 35 U.S.C. 119 including a translation where required (section 1.55), must be filed (if they are not already of record) and copies served on all opposing parties with the motion. In either case the proof of service required by section 1.247 must include the prior application as well as the motion.

Section 1.225 is amended to read as follows:

§ 1.225 *Failure of junior party to file statements or to overcome filing date of senior party.*

If a junior party to an interference fails to file a preliminary statement, or if his statement fails to overcome the prima facie case made by the filing date of the application of another party, judgment on the record will be entered against such junior party unless he has filed a motion under section 1.231, within the time set for such motions, for some action in the interference. If such a motion has been timely filed but does not result in action in the interference which will remove the basis for a judgment on the record, such judgment on the record will be entered unless the motion related to matters which may be reviewed at final hearing under section 1.258, and within twenty days of the decision disposing of the motion the junior party concerned requests that final hearing be set to review such matters.

Section 1.226 is amended to read as follows:

§ 1.226 *Access to applications.*

After the mailing of the notices of interference each party will be permitted to see or obtain copies of each other's applications which are set out in the notices except for copies of affidavits filed under sections 1.131, 1.202 and 1.204 which shall be and remain sealed until preliminary statements are opened under section 1.227, except as provided in section 1.228 regarding affidavits under section 1.204(c).

Section 1.227 is amended to read as follows:

§ 1.227 *Access to preliminary statements.*

(a) The preliminary statements shall be open to the inspection of the senior party, and of any junior party who himself filed a statement, after the date set for the serving of preliminary statements (section 1.207(b)(2)), but shall not be open to inspection prior to that time.

(b) A junior party who fails to file a preliminary statement shall not have access to the preliminary statement of any other party.

(c) If the interference be terminated before the preliminary statements have been opened to the inspection of the parties, the preliminary statements will remain sealed.

(d) After termination of an interference any unopened statements will be removed from the interference file and preserved by the Office, and in no case will such statements be open to the inspection of anyone (including opposing parties) without authority from the Commissioner.

Section 1.228 is amended to read as follows:

§ 1.228 *Summary judgment.*

When an interference is declared on the basis of a showing under section 1.204(c), such showing will be examined by a Board of Patent Interferences. If the Board considers that the facts set out in the showing provide sufficient basis for overcoming the effective filing date of the patentee, the interference will proceed in the normal manner as provided by these rules; otherwise an order shall be entered concurrently with the notice of interference pointing out wherein the showing is insufficient and notifying the applicant making such showing that summary judgment will be rendered against him because of such insufficiency at the expiration of a period specified in the notice, not less than thirty days, unless cause be shown why such action should not be taken. Any response made during the specified period will be considered by the Board without an oral hearing unless such hearing is requested by the applicant, but additional affidavits or exhibits will not be considered unless accompanied by a showing justifying their omission from the original showing. If the applicant files a response to the order to show cause, the patentee will be furnished with one of the copies of the showing under section 1.204(c) and will be allowed thirty days from its mailing date within which to present his views with respect thereto. He shall also be entitled to be represented at any oral hearing on the matter.

Section 1.231 is amended to read as follows:

§ 1.231 *Motions before the primary examiner.*

(a) Within the period set in the notice of interference for filing motions any party to an interference may file a motion seeking:

(1) To dissolve as to one or more counts, except that such motion based on facts sought to be established by affidavits or evidence outside of official records and printed publications will not normally be considered, and when one of the parties to the interference is a patentee, no motion to dissolve on the ground that the subject matter of the count is unpatentable to all parties or is unpatentable to the patentee will be considered, except that a motion to dissolve as to the patentee may be brought which is limited to such matters as may be considered at final hearing (section 1.258). Where a motion to dissolve is based on prior art, service on opposing parties must include copies of such prior art.

(2) To amend the issue by addition or substitution of new counts.

(3) To substitute any other application owned by him as to the existing issue, or to include any other application or patent owned by him as to any subject matter other than the existing issue but disclosed in his application or patent involved in the interference and in an opposing party's application or patent in the interference which should be made the basis of interference between himself and such other party. Copies of such other application must be served on all other parties and the motion must be accompanied by proof of such service.

(4) To shift the burden of proof, or to be accorded the benefit of an earlier application which would not change the order of the parties.

(5) To amend an involved application by adding or removing the names of one or more inventors as provided in rule 45.

(b) Each motion must contain a full statement of the grounds therefor and reasoning in support thereof. Any opposition to a motion must be filed within twenty days of the expiration of the time set for filing motions and the moving party may, if he desires, file a reply to such opposition within fifteen days of the date the opposition was filed. If a party files a timely motion to dissolve, any other party may file a motion to amend within twenty days of the expiration of the time set for filing motions. Service on opposing parties of an opposition to a motion to amend which is based on prior art must include copies of such prior art. In the case of action by the primary examiner under section 1.237, such motions may be made within twenty days from the date of the primary examiner's decision on motion wherein such action was incorporated or the date of the communication giving notice to the parties of the proposed dissolution of the interference.

(c) A motion to amend or to substitute another application must be accompanied by an amendment adding the claims in question to the application concerned if such claims are not already in that application.

(d) All proper motions will be transmitted to and considered by the primary examiner without oral argument. Requests for reconsideration will not be entertained.

(e) In the determination of a motion to dissolve an interference between an application and a patent, the prior art of record in the patent file may be referred to for the purpose of construing the issue.

(f) Upon the granting of a motion to amend and the adoption of the claims by the other parties within a time specified, or upon the granting of a motion to substitute another application, and after the expiration of the time for filing any new preliminary statements, a patent interference examiner shall redeclare the interference or shall declare such other interferences as may be necessary to include said claims. A preliminary statement as to the added claims need not be filed if a party states that he intends to rely on the original statement and such a declaration as to added claims need not be signed or sworn to by the inventor in person. A second time for filing motions will not be set and subsequent motions with respect to matters which have been once considered by the primary examiner will not be considered.

Sections 1.232 through 1.236 are cancelled.

Section 1.237 is amended to read as follows:

§ 1.237 *Dissolution at the request of examiner.*

If, during the pendency of an interference a reference or other reason be found which, in the opinion of the primary examiner, renders all or part of the counts unpatentable, the attention of the Board of Patent Interferences shall be called thereto. The interference may be suspended and referred to the primary examiner for consideration of the matter, in which case the parties will be notified of the reason to be considered. Arguments of the parties regarding the matter will be considered if filed within twenty days of the notification. The interference will be continued or dissolved in accordance with the determination by the primary examiner. If such reference or reason be found while the interference is before the primary examiner for determination of a motion, decision thereon may be incorporated in the decision on the motion, but the parties shall be entitled to reconsideration if they have not submitted arguments on the matter.

Section 1.241 is cancelled.

Section 1.243 is amended to read as follows:

§ 1.243 *Motions before the Board of Patent Interferences.*

Motions relating to matters other than those specified in section 1.231 will be determined by a patent interference examiner or the Board of Patent Interferences, as may be deemed appropriate. Such motions shall be made in writing and shall contain a full statement of the action sought and the grounds therefor, and satisfactory proof of any facts required must accompany the motion. Oral hearings will not be held except on order of a patent interference examiner or Board of Patent Interferences. Briefs or memoranda in support of such motions shall accompany the motion. Any reply to the motion, together with any brief or memorandum in support thereof, shall be filed within ten days unless some other date is set by the patent interference examiner.

Paragraph (d) of § 1.244 is amended to read as follows:

§ 1.244 *Motions; miscellaneous provisions.*

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(d) There is no appeal from decisions rendered on motions but the Commissioner may consider on petition any matter involving abuse of discretion or the exercise of his supervisory authority, or such other matters as he may deem proper to consider. Any such petition must comply with section 1.181 and, if not filed within twenty days from the decision complained of, may be dismissed as untimely. Any reply

thereto must be filed within ten days from the filing of the petition.

Section 1.246 is cancelled.

Section 1.247 is amended to read as follows:

§ 1.247 *Service of papers.*

Every paper filed in the Patent Office in interference proceedings must be served upon the other parties in the manner provided in section 1.248, except the following:

(a) preliminary statements at the time of filing but see section 1.215(b) and (c),

(b) documentary exhibits introduced at the taking of a deposition,

(c) certified transcripts of testimony under section 1.276 (but copies of the record must be served (section 1.253)),

(d) statutory disclaimers under 35 U.S.C. 253. The specification in certain sections that a designated paper must be served does not imply that other papers, not excepted above need not be served. However, the requirement for service of designated papers may be waived under particular circumstances and service may be required of other designated papers which need not ordinarily be served. Proof of such service must be made before the paper will be considered in the interference by the Office. A statement of the attorney, attached to or appearing in the original paper when filed, clearly stating the time and manner in which service was made will be accepted as prima facie proof of service.

Section 1.248 is amended to read as follows:

§ 1.248 *Service of papers; manner of service.*

Service of papers must be on the attorney or agent of the party if there be such or on the party if there is no attorney or agent, and may be made in either of the following ways:

(a) By delivering a copy of the paper to the person served;

(b) by leaving a copy at the usual place of business of the person served with someone in his employment;

(c) when the person served has no usual place of business, by leaving a copy at his residence, with a member of his family over 14 years of age and of discretion;

(d) Transmission by first class mail which may also be certified or registered. When service is by mail the date of mailing will be regarded as the date of service. Whenever it shall be satisfactorily shown to the Commissioner that none of the above modes of obtaining or serving the paper is practicable, service may be by notice published in the Official Gazette.

Paragraph (b) of § 1.251 is amended, and new paragraph (d) is added, as follows:

§ 1.251 *Assignment of times for taking testimony.*

* * * * * *

(b) The time for taking testimony will ordinarily be assigned in notices sent to the parties after motions under section 1.231 have been disposed of or, if no such motions have been filed, after the close of the motion period (section 1.231).

* * * * * *

(d) The date for final hearing will ordinarily be set in separate notices.

Paragraphs (a), (d) and (f) of section 1.253 are amended to read as follows:

§ 1.253 *Copies of the testimony.*

(a) In addition to the certified transcript of the testimony (sections 1.275 to 1.278), three true copies of the record of each party must be filed for the use of the Patent Office (a total of four copies) and one true copy of the record must be served upon each of the opposing parties.

* * * * * *

(d) The copies of the record for all parties must be filed and served on the opposing parties by the date specified in the order setting times for taking testimony or such extension as may be granted.

* * * * * *

(f) When the copies of the record are in typewritten form, they must be clearly legible on opaque unglazed, durable paper approximately 8½ by 11 inches in size (letter size) and one of the three copies must be a ribbon copy, but need not be executed by the certifying officer. (The certified transcript may be a properly executed carbon copy. See section 1.277.) The typing shall be on one side of the paper, in not smaller than pica type; and double-spaced with a margin of 1½ inches on the left-hand side of the page. The sheets shall be bound at their left edges, in such manner to lie flat when opened, in a volume or volumes of convenient size (approximately 100 pages per volume is suggested) provided with covers. Multigraphed or otherwise reproduced copies conforming to the standards specified will be accepted.

* * * * * *

Section 1.254 is amended to read as follows:

§ 1.254 *Briefs at final hearing.*

Briefs at final hearing before the Board of Patent Interferences shall be submitted in printed form, except that when not in excess of fifty legal-size double spaced typewritten pages, or the equivalent thereof, and in any other case where satisfactory reason therefor is shown, they may be submitted in typewritten form. If submitted in printed form, they shall be the same in size and the same as to page and print as is specified for printed copies of testimony. Typewritten briefs shall conform to the requirements for typewritten copies of testimony, except that legal-size paper may be used and the binding and covers specified are not required. Three copies of each brief must be filed. The times for filing briefs will ordinarily be set in the order setting times for taking testimony.

Paragraphs (a) and (b) of § 1.258 are amended to read as follows:

§ 1.258 *Matters considered in determining priority.*

(a) In determining priority of invention, the Board of Patent Interferences will consider only priority of invention on the evidence submitted. Questions of patentability of a claim generally will not be considered in the decision on priority; and neither will the patentability of a claim to an opponent be considered, unless the nonpatentability of the claim to the opponent will necessarily result in the conclusion that the party raising the question is in fact the prior inventor on the evidence before the Office, or relates to matters which have been determined to be ancillary to priority and must be considered, but a party shall not be entitled to raise such nonpatentability unless he has duly presented a motion for dissolution under section 1.231 upon such ground or shows good reason why such a motion was not presented.

(b) The matters raised on a motion relating to the burden of proof (section 1.231) may be reviewed at final hearing.

* * * * * *

Section 1.261 is amended to read as follows:

§ 1.261 *Termination of interference.*

An interference will be terminated by judgment after final hearing (sections 1.251 to 1.259), or by judgment on the record as provided by section 1.225 or section 1.252, or by summary judgment because of an insufficient showing under section 1.204(c) as provided by section 1.228, or by dissolution as provided by sections 1.231 or 1.237, or as otherwise provided.

Paragraph (c) of § 1.272 is amended to read as follows:

§ 1.272 *Manner of taking testimony.*

* * * * * *

(c) By agreement of the parties, the testimony of any witness or witnesses of any party, may be submitted in the form of an affidavit by such witness or witnesses. The parties may stipulate what a particular witness would testify to if called, or the facts in the case of any party may be stipulated. When evidence is submitted in one of these forms, four copies of such affidavit or stipulated testimony (section 1.253(a)(f)) are required.

Paragraph (b) of section 1.282 is amended to read as follows:

§ 1.282 *Official records and printed publications.*

* * * * * *

(b) In the case of prior applications, the filing date of which is claimed, compliance with the requirements of sections 1.224 and 1.231 is sufficient notice under this section.

The text of § 3.44 (Form 3.44) is revised as follows:

§ 3.44 *Interference; preliminary statement of domestic inventor.*

PRELIMINARY STATEMENT ----------

----
v.

Interference No. ----------

---------- ss:

----------, being duly sworn (or affirmed), deposes and says that he is a party to the above identified interference, that he made the invention set forth by the counts of the interference in the United States; that

(1) The first drawing of the invention was (*give specific nature of the drawing*) made on ----------, 19 --. A copy is attached.[1]

(2) The first written description of the invention was in the form of a (*give specific nature of the document*) and was made on ----------, 19 --. A copy is attached.[1]

(3) The invention was first disclosed to others on ----------, 19 --, when (*give brief description of circumstances*).[1]

(4) The date of the first act or acts susceptible of proof, other than acts of the character specified in (1), (2), and (3) which, if proven would establish conception of the invention, and a brief description of such act or acts are [e.g. the making of a nonoperating model on ----------, 19 --].

(5) The invention was actually reduced to practice on ----------, 19 -- by (*give brief description of the acts to be relied on*).

(6) Active exercise of reasonable diligence toward reducing the invention to practice began on ----------, 19 -- and comprised (*give brief description of the nature of the activity to be relied on*).[1]

[1] If there was no act corresponding to this allegation prior to the filing date of the application, it must be so stated. Note, however, date of completion of application drawing and specification, date of disclosure to person preparing the application, and diligence in preparing the application.

(Signature of inventor)

Subscribed and sworn to (or affirmed) before me this ---------- day of ----------, 19 --.

[SEAL]

(Signature of notary public or officer)

(Official character)

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:

WILLIAM W. EATON,
Deputy Assistant Secretary for Science and Technology.

April 30, 1965.

Published in 30 F.R. 6644–6649, May 14, 1965

U.S. GOVERNMENT PRINTING OFFICE: 0—1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
June 8, 1965 Volume 815 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of April 1965

Examiner affirmed	261
Examiner affirmed in part	46
Examiner reversed	95
Total	402

International Convention for the Protection of Industrial Property

Accession by Southern Rhodesia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by Southern Rhodesia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

International Convention for the Protection of Industrial Property

Accession by Zambia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by the Republic of Zambia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

Annual Index of Trademarks

The 1964 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.50.

Dedication

3,173,544.—*William E. Read, Jr.*, Phoenix, Ariz. COTTON CLEANER. Patent dated Mar. 16, 1965. Dedication filed May 5, 1965, by the inventor.

Hereby dedicates to the public the term of said patent subsequent to November 17, 1981.

Expediting Papers Relating to Appeals

In order to expedite the handling and processing of all papers relating to appeals, it is essential that all such documents include the Group Number to which the application is assigned, as well as the Appeal Number and Serial Number.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

May 8, 1965.

Adjudicated Patents

(C.A. Ill.) Briggs Patent No. 2,395,449 (310—489), for FILTER UNIT. Claims 9 to 12 *Held* valid and infringed. *Briggs* v. *M & J Diesel Locomotive Filter Corp.*, 342 F.2d 573; 144 USPQ 701.

(C.A. Mass.) Nyyssonen Patent No. 2,790,098 (310—202), for POLYPHASE SYNCHRONOUS MACHINE. Claims 1 and 10 *Held* not infringed. *Nyyssonen* v. *Bendix Corp.*, 342 F.2d 531; 144 USPQ 555.

(C.A. Mass.) Nyyssonen Patent No. 2,790,131 (321—57), for POLYPHASE TRANSFORMER SYSTEM. Claim 1 *Held* invalid. *Id.*

(C.A. Ill.) Chernivsky Patent No. 2,848,040 (297—296), for BABY SUPPORT. Claim 1 *Held* valid and infringed. *Welsh Co.* v. *Chernivsky*, 342 F.2d 586; 144 USPQ 288.

(C.A. Ill.) Briggs Patent No. 2,919,807 (210—487), for FILTER. Claims 4, 6 and 8 to 11 *Held* valid and infringed. *Briggs* v. *M & J Diesel Locomotive Filter Corp.*, 342 F.2d 573; 144 USPQ 701.

(D.C. Ill.) Loughren Patent No. 2,547,648 (478—7.5), for AUTOMATIC CONTRAST CONTROL SYSTEM FOR TELEVISION APPARATUS. Claims 1, 2 and 4 *Held* invalid and not infringed. *Hazeltine Research, Inc.* v. *Zenith Radio Corp.*, 239 F. Supp. 51; 144 USPQ 381.

Patents Available for Licensing or Sale

Des. 199,251. HANGING FLORAL CONTAINER. Jack W. Barbeau, 19108 44th W., Lynnwood, Wash.

3,151,136. PROCESS OF PREPARING FATTY ACID ESTERS OF HYDROXYALKANE SULFONIC ACIDS. Eduard Koczorowski, Hamburg 24, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,168,262. WIRE COIL HOLDER. Willie R. Germain, 5562 Jean Paul Cardinal, Montreal N. 39, Quebec, Canada.

3,176,785. AUTOMOTIVE VEHICLE ANTI-SKID DEVICE. Michael Lukawsky. 871 N. 22nd St., Philadelphia 30, Pa.

New Applications Received During April 1965

Patents	7918
Designs	504
Plant Patents	9
Reissues	18
Total	8449

Issue—June 8, 1965

Patents	1312	No. 3,187,342 to No.	3,188,653, incl.
Designs	72	No. 201,271 to No.	201,342, incl.
Plant Patents	7	No. 2,528 to No.	2,534, incl.
Reissues	6	No. 25,791 to No.	25,796, incl.
Total	1397		

3,173,189. AERIAL PROJECTILE GAME APPARATUS. Gilbert H. Pine, 2940 Rainbow Valley Blvd., Fallbrook, Calif., 92028.

3,179,846. FLAT KINESCOPE. Andrew P. Fischer, 1410 Mount Vernon Drive, Modesto, Calif.

General Electric Company is prepared to grant nonexclusive licenses under the following 45 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: General Electric Company, Patent Counsel, Construction Industries Division, 1285 Boston Ave., Bldg. 1–E, Bridgeport, Conn.

3,172,013. NO-LOAD DISCONNECT BUSWAY SWITCHING APPARATUS.

Applications for license under the following 2 patents may be addressed to: Patent Counsel, Metallurgical Products Department, General Electric Company, Box 237 GPO, Detroit, Mich., 48232.

3,115,698. CASTING METAL POWDERS.

3,157,497. METHOD OF FORMING A CEMENTED CARBIDE COMPOSITION.

Applications for license under the following 3 patents may be addressed to: Patent Counsel, Military Communications Department, General Electric Company, P.O. Box 129, Oklahoma City, Okla.

3,155,918. COUPLING GRID MEANS FOR GROUNDED GRID AMPLIFIER.

3,164,804. SIMPLIFIED TWO-STAGE ERROR-CONTROL DECODER.

3,170,146. VOLTAGE DRIVEN MAGNETIC CORE SYSTEM.

Applications for license under the following 4 patents may be addressed to: General Electric Company, Component Products Division, 1635 Broadway, Fort Wayne, Ind., Att: Patent Counsel.

2,965,800. BALLAST APPARATUS.

2,965,806. INDUCTIVE DEVICE.

3,160,784. SAFETY SYSTEMS IN APPARATUS FOR OPERATING ELECTRIC DISCHARGE DEVICES.

3,163,838. INDUCTIVE DEVICE EMPLOYING FOAMED RESIN THERMAL BARRIER.

Applications for license under the following 5 patents may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Metallurgical Division, Waterford, N.Y., 12188.

2,913,472. GRIGNARD REACTION OF CYANOALKYLSILOXANES IN THE PRESENCE OF TERTIARY AMINES.

3,020,299. ORGANOSILICON COMPOSITIONS.

3,161,613. POLYMERIC REACTION PRODUCT OF AN ORGANOSILANETETROL AND PHENYLBORONIC ACID.

3,161,689. PROCESS FOR MAKING GRIGNARD REAGENTS.

3,177,177. ORGANOPOLYSILOXANE RUBBER STABILIZED WITH TUNGSTEN TRIOXIDE.

Applications for license under the following 30 patents may be adressed to: Hotpoint Division, 5600 W. Taylor St., Chicago, Ill., 60644, Att: Patent Counsel.

2,585,503. SELECTOR SWITCH SIGNALIZING SYSTEM FOR ELECTRIC RANGES AND THE LIKE.

2,808,492. ELECTRIC HEATING UNITS AND METHODS OF MAKING THE SAME.

2,879,368. ELECTRIC COOKING APPLIANCES.

2,899,664. ELECTRIC HEATING UNITS AND METHOD OF MAKING THE SAME.

2,907,859. DOMESTIC APPLIANCE.

2,922,015. DOMESTIC COOKING APPLIANCE.

2,958,754. ELECTRIC OVENS.

3,007,265. METHOD OF MAKING SHEATHED ELECTRIC HEATING UNITS.

3,007,266. METHODS OF MAKING ELECTRIC HEATING UNITS.

3,016,444. PLUG-IN SPEED UNIT.

3,017,162. HEATING AND COOLING APPARATUS.

3,017,489. COOKING APPLIANCES.

3,021,414. PLUG-IN SURFACE UNIT.

3,024,346. OVEN HEATING UNIT SUPPORT.

3,028,472. TIMER SYSTEMS FOR COOKING APPARATUS, OR THE LIKE.

3,031,558. COMBINATION MANUAL AND AUTOMATIC TIME AND TEMPERATURE CONTROL SYSTEMS.

3,050,611. TEMPERATURE CONTROL SYSTEMS.

3,062,948. COMBINATION MANUAL AND AUTOMATIC TIME AND TEMPERATURE CONTROL SYSTEM.

3,063,284. ELECTRONIC COOKING APPARATUS.

3,063,286. PLIANT SURFACE HEATING UNIT.

3,096,407. TIMED SWITCH ACTUATION MEANS.

3,117,212. ELECTRIC HEATING SYSTEMS.

3,124,673. SURFACE COOKING UNIT FOR ELECTRIC RANGES.

3,131,684. SUPPORTING AND GASKETING MEANS FOR DOMESTIC COOKING OVENS.

3,131,697. VENTILATING SYSTEM FOR COOKING APPLIANCE.

3,131,756. COMBINED OVEN AND ROOM AIR CONDITIONER.

3,146,338. ELECTRIC OVEN.

3,150,659. HINGE CONSTRUCTION.

3,154,005. FOOD BROILING OVEN.

3,165,598. ARC-SUPPRESSING MULTIPOSITION ELECTRIC SWITCH.

Patents Available for Licensing

ACCUMULATIVE NASA PATENT LIST No. 9

In accordance with the provisions of 14 C.F.R. § 1245.200 et seq., and 42 U.S.C. 2457(g) (1958), the National Aeronautics and Space Administration is prepared to grant royalty-free licenses, of the types specified, under the following patents.

Applications for licenses should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, D.C., 20546.

Patents available for exclusive, revocable, royalty-free licensing (67)

2,898,889. MECHANICALLY-LIMITED ELECTRICALLY OPERATED HYDRAULIC VALVE SYSTEM FOR AIRCRAFT CONTROLS.

2,903,307. TWO COMPONENT BEARING.

2,926,123. TEMPERATURE REDUCING COATING FOR METALS SUBJECT TO FLAME EXPOSURE.

2,934,331. APPARATUS FOR MAKING A METAL SLURRY PRODUCT.

2,940,259. ROCKET PROPELLANT INJECTOR.

2,944,316. PROCESS OF CASTING HEAVY SLIPS.

2,945,667. FLEXIBLE SEAL FOR VALVES.

2,956,772. LIQUID-SPRAY COOLING METHOD.

2,971,837. HIGH TEMPERATURE NICKEL-BASE ALLOY.

2,974,925. EXTERNAL LIQUID-SPRAY COOLING OF TURBINE BLADES.

2,984,735. RUNWAY LIGHT.

2,991,671. WIRE GRID FORMING APPARATUS.

2,991,961. JET AIRCRAFT CONFIGURATION.

2,996,212. SELF SUPPORTING SPACE VEHICLE.

2,997,274. TURBO-MACHINE BLADE VIBRATION DAMPER.

3,001,363. SPHERICAL SOLID-PROPELLANT ROCKET MOTOR.

3,001,395. AIR FRAME DRAG BALANCE.

3,001,739. AERIAL CAPSULE EMERGENCY SEPARATION DEVICE.

3,004,735. PARTICLE DETECTION APPARATUS.

3,005,081. HIGH INTENSITY HEAT AND LIGHT UNIT.

3,005,339. WIND TUNNEL AIRSTREAM OSCILLATING APPARATUS.

3,008,229. PROCESS FOR APPLYING A PROTECTIVE COATING FOR SALT BATH BRAZING.

3,010,372. FOLDING APPARATUS.

3,011,760. TRANSPIRATION COOLED TURBINE BLADE MANUFACTURED FROM WIRES.

3,012,400. NOZZLE.

3,012,407. INSULATING STRUCTURE.

3,016,693. ELECTRO-THERMAL ROCKET.

3,016,863. HYDROFOIL.

3,022,672. DIFFERENTIAL PRESSURE CELL.

3,024,659. MAGNETICALLY CENTERED LIQUID COLUMN FLOAT.

3,028,122. LANDING ARRANGEMENT FOR AERIAL VEHICLES.

3,028,126. THREE AXIS CONTROLLER.

3,028,128. REENTRY VEHICLE LEADING EDGE.

3,038,077. INFRARED SCANNER.

3,038,175. SURVIVAL COUCH.

3,041,567. ANGULAR MEASUREMENT SYSTEM.

3,041,924. MOTION PICTURE CAMERA FOR OPTICAL PYROMETRY.

3,045,424. METHOD FOR CONTINUOUS VARIATION OF PROPELLANT FLOW AND THRUST IN PROPULSIVE DEVICES.

3,049,876. ANNULAR ROCKET MOTOR AND NOZZLE CONFIGURATION.

3,053,484. VARIABLE SWEEP WING CONFIGURATION.

3,057,597. MODIFICATION AND IMPROVEMENTS TO COOLED BLADES.

3,059,220. APPARATUS FOR COUPLING A PLURALITY OF UNGROUNDED CIRCUITS TO A GROUNDED CIRCUIT.

3,063,291. HIGH VACUUM CONDENSER TANK FOR ION ROCKET ENGINES.

3,064,928. VARIABLE SWEEP WING AIRCRAFT.

3,067,573. TELESCOPING-SPIKE SUPERSONIC INLET FOR AIRCRAFT ENGINES.

3,068,658. VENTING VAPOR APPARATUS.

3,069,123. INSTRUMENT SUPPORT WITH PRECISE LATERAL ADJUSTMENT.

3,070,330. ATTITUDE AND PROPELLANT FLOW CONTROL SYSTEM AND METHOD.

3,070,349. MULTISTAGE MULTIPLE-REENTRY TURBINE.

3,070,407. AIR BEARING.

3,072,574. GAS LUBRICANT COMPOSITIONS.

3,076,065. HIGH-SPEED LOW-LEVEL ELECTRICAL STEPPING SWITCH.

3,077,599. COLLAPSIBLE LOOP ANTENNA FOR SPACE VEHICLE.

3,079,118. VEHICLE PARACHUTE AND EQUIPMENT JETTISON SYSTEM.

3,080,711. PENSHAPE EXHAUST NOZZLE FOR SUPERSONIC ENGINE.

3,083,611. MULTI-LOBAR SCAN HORIZON SENSOR.

3,084,421. REINFORCED METALLIC COMPOSITES.

3,085,165. ULTRA-LONG MONOSTABLE MULTIVIBRATOR EMPLOYING BISTABLE SEMICONDUCTOR SWITCH TO ALLOW CHARGING OR TIMING CIRCUIT.

3,087,692. VARIABLE-SPAN AIRCRAFT.

3,088,441. VALVE ACTUATOR.

3,090,212. SANDWICH PANEL CONSTRUCTION.

3,090,580. SPACE AND ATMOSPHERIC REENTRY VEHICLE.

D187,350. AIRCRAFT.

D187,351. AIRCRAFT.

D187,352. AIRCRAFT.

D187,353. AIRCRAFT.

D193,454. AIRCRAFT.

Patents available for nonexclusive, revocable, royalty-free license (99)

3,093,000. CHECK VALVE ASSEMBLY FOR A PROBE.

3,093,346. SPACE CAPSULE.

3,098,630. ANNULAR SUPERSONIC DECELERATOR OR DROGUE.

3,100,294. TIME-DIVISION MULTIPLEXER.

3,100,990. TWO-PLANE BALANCE.

3,102,948. ELECTRIC ARC WELDING.

3,104,079. VARIABLE-GEOMETRY WINGED REENTRY VEHICLE.

3,104,082. VARIABLE SWEEP AIRCRAFT WING.

3,105,515. PRESSURE REGULATING SYSTEM.

3,106,603. HIGH VOLTAGE CABLE.

3,108,171. RADIANT HEATER HAVING FORMED FILAMENTS.

3,110,318. SLOSH SUPPRESSING DEVICE AND METHOD.

3,112,672. UMBILICAL SEPARATOR FOR ROCKETS.

3,115,630. REFLECTOR SPACE SATELLITE.

3,118,100. ELECTRIC BATTERY AND METHOD OF OPERATING THE SAME.

3,119,232. ROCKET ENGINE.

3,120,101. CHANNEL TYPE SHELL CONSTRUCTION FOR ROCKET ENGINE AND THE LIKE.

3,120,361. LANDING ARRANGEMENT FOR AEROSPACE VEHICLE.

3,120,738. IGNITION SYSTEM FOR MONOPROPELLANT COMBUSTION DEVICES.

3,121,309. SPHERICALLY SHAPED ROCKET MOTOR.

3,122,000. APPARATUS FOR TRANSFERRING CRYOGENIC LIQUIDS.

3,122,098. APPARATUS AND METHOD FOR CONTROL OF A SOLID FUELED ROCKET VEHICLE.

3,122,885. INJECTOR FOR BIPROPELLANT ROCKET ENGINES.

3,123,248. EXPULSION BLADDER EQUIPPED STORAGE TANK STRUCTURE.

3,127,157. MULTIPLE BELLEVILLE SPRING ASSEMBLY.

3,128,389. VARIABLE FREQUENCY MAGNETIC MULTIVIBRATOR.

3,128,845. DESPIN WEIGHT RELEASE.

3,130,940. HEAT SHIELD.

3,132,342. ANTENNA SYSTEM USING PARASITIC ELEMENTS AND TWO DRIVEN ELEMENTS AT 90° ANGLE FED 180° OUT OF PHASE.

3,132,476. THRUST VECTOR CONTROL APPARATUS.

3,132,479. UNIVERSAL RESTRAINER AND JOINT.

3,132,903. SLIT REGULATED GAS JOURNAL BEARING.

3,135,089. DECOMPOSITION UNIT.

3,135,090. ROCKET MOTOR SYSTEM.

3,136,123. ROCKET ENGINE INJECTOR.

3,137,082. CHARACTER INDICATING DISPLAY DEVICE.

3,138,837. METHOD OF MAKING FIBER REINFORCED METALLIC COMPOSITES.

3,139,725. STEERABLE SOLID PROPELLANT ROCKET MOTOR.

3,140,728. HIGH PRESSURE FOURWAY VALVE.

3,141,340. GRAVITY DEVICE.

3,141,769. METHOD OF PRODUCING POROUS TUNGSTEN IONIZERS FOR ION ROCKET ENGINES.

3,141,932. SWITCHING MECHANISM WITH ENERGY STORAGE MEANS.

3,143,321. FRANGIBLE TUBE ENERGY DISSIPATION.

3,144,219. MANNED SPACE STATION.

3,144,999. PROPELLANT BLADE LOADING CONTROL.

3,147,422. ELECTRONIC MOTOR CONTROL SYSTEM.

3,149,897. PRINTED CABLE CONNECTOR.

3,150,329. VARIABLE FREQUENCY MAGNETIC COUPLED MULTIVIBRATOR.

3,150,387. FOAM GENERATOR.

3,152,344. LIFE PRESERVER.

3,155,992. LIFE RAFT.

3,156,090. ION ROCKET.

3,157,529. BONDED SOLID LUBRICANT COATING.

3,158,172. HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE.

3,158,336. ASSEMBLY FOR RECOVERING A CAPSULE.

3,158,764. TWO-FLUID MAGNETHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRIC POWER CONVERSION.

3,159,967. VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL.

3,160,825. TEMPERATURE COMPENSATING MEANS FOR CURITY RESONATOR OF AMPLIFIER.

3,160,950. METHOD AND APPARATUS FOR SHOCK PROTECTION.

3,162,012. FORMED METAL RIBBON WRAP.

3,163,935. MECHANICAL COORDINATE CONVERTER.

3,164,222. NON-REUSABLE KINETIC ENERGY ABSORBER.

3,164,369. MULTISTAGE MULTIPLE-REENTRY TURBINE.

3,165,356. SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS.

3,166,834. CATALYST BED REMOVING TOOL.

3,167,426. NICKEL-BASE ALLOY.

3,168,827. AIRPLANE TAKE-OFF PERFORMANCE INDICATOR.
3,169,001. AIRCRAFT WHEEL SPRAY DRAG ALLEVIATOR.
3,169,613. ELASTIC UNIVERSAL JOINT.
3,169,725. ERECTABLE MODULAR SPACE STATION.
3,170,286. INJECTOR VALVE DEVICE.
3,170,290. LIQUID ROCKET SYSTEM.
3,170,295. PROPELLANT TANK PRESSURIZATION SYSTEM.
3,170,824. AERODYNAMIC MEASURING DEVICE.
3,170,471. INFLATABLE HONEYCOMB.
3,170,486. TWO-COMPONENT VALVE ASSEMBLY.
3,170,605. EJECTION VALVE.
3,170,657. LANDING ARRANGEMENT FOR AERIAL VEHICLE.
3,170,660. PARACHUTE GLIDER.
3,170,773. REINFORCED METALLIC COMPOSITES.
3,171,060. PLASMA ACCELERATOR.
3,171,081. IONIZATION VACUUM GAUGE.
3,172,097. BINARY TO BINARY-CODED-DECIMAL CONVERTER.
3,173,246. COLLOID PROPULSION METHOD AND APPARATUS.
3,173,251. APPARATUS FOR IGNITING SOLID PROPELLANTS.
3,174,278. CONTINUOUSLY OPERATING INDUCTION PLASMA.
3,174,279. ROCKET THRUST CHAMBER.
3,174,827. PRODUCTION OF HIGH PURITY SILICON CARBIDE.
3,175,789. LANDING PAD ASSEMBLY FOR AEROSPACE VEHICLES.
3,176,222. APPARATUS HAVING COAXIAL CAPACITOR STRUCTURE FOR MEASURING FLUID DENSITY.
3,176,499. HIGH TEMPERATURE TESTING APPARATUS.
3,176,983. THERMAL CONTROL OF SPACE VEHICLES.
3,177,983. THERMAL SWITCH.
3,178,883. ATTITUDE CONTROL FOR SPACECRAFT.
3,180,264. COUPLING FOR LINEAR SHAPED CHARGE.
3,180,587. ATTITUDE ORIENTATION OF SPIN-STABILIZED SPACE VEHICLES.
3,181,821. SPACECRAFT SOFT LANDING SYSTEM.
D196,249. SWEPT WING ASSEMBLY.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Fees and Charges

The following amendments are made to take effect thirty days after publication in the Federal Register. Notice and public procedure are deemed unnecessary as the changes relate to minor adjustment of fee items.

1. In § 1.21 amend paragraphs (a), (g), (h), (l), (n), and (q), as follows:

§ 1.21 *Patent and miscellaneous fees and charges.*

* * * * * * *

(a) For typewritten copies of records, for each page produced (double-spaced) or fraction thereof.... $1.50

* * * * * * *

(g) For translations from foreign languages into English, made only of references cited in applications or of papers filed in the Patent Office insofar as facilities may be available: Written translations, for every 100 words of the original language, or fraction thereof 5.00

(h) For registration of an attorney, agent or firm:
For admission to examination for registration to practice, fee payable upon application $15.00
On registration to practice 10.00
On application for registration of a firm 5.00

* * * * * * *

(l) For the mounting of unmounted drawings and photoprints received with patent applications, provided they are of approved permanency 2.00

* * * * * * *

(n) Search of Patent Office records for purposes not otherwise specified in this rule, per half-hour of search or fraction thereof 3.00

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(q) List of U.S. Patents:
All patents in a subclass, per sheet (containing 100 patent numbers or less) ..... .50
Minimum charge per order 1.00
Patents in a subclass, limited by date or patent number, per sheet (containing 50 patent numbers or less) ..... .50
Minimum charge per order 1.00

* * * * * * *

2. In § 1.341 amend paragraphs (c) and (d) by inserting sentences so that the amended paragraphs read as follows:

§ 1.341 *Registration of attorneys and agents.*

* * * * * * *

(c) *Requirements for registration.* No person will be admitted to practice and registered unless he shall apply to the Commissioner of Patents in writing on a prescribed form supplied by the Commissioner and furnish all requested information and material; and shall establish to the satisfaction of the Commissioner that he is of good moral character and of good repute and possessed of the legal and scientific and technical qualifications necessary to enable him to render applicants for patents valuable service, and is otherwise competent to advise and assist them in the presentation and prosecution of their applications before the Patent Office. In order that the Commissioner may determine whether a person seeking to have his name placed upon either of the registers has the qualifications specified, satisfactory proof of good moral character and repute, and of sufficient basic training in scientific and technical matters must be submitted and an examination which is held from time to time must be taken and passed. Each application for admission to the examination for registration must be accompanied by the prescribed fee (see § 1.21). The taking of an examination may be waived in the case of any person who has actively served for four years in the examining corps of the Patent Office.

(d) *Registration of firms.* Any firm, the individual members of which are each registered on the register of attorneys, may have its name entered upon the register of attorneys. Any firm, one of the individual members of which is registered on the register of agents and each of the remaining individual members are registered either on the register of attorneys or the register of agents, may have its name entered on the register of agents. If the membership of the firm is changed, application must be made for registration of the firm as changed. Every application must be acompanied by the prescribed fee for registration of a firm (see § 1.21).

* * * * * * *

(Sec. 1, 66 Stat. 793,795; 35 U.S.C. 6, 31. Interprets or applies sec. 1, 66 Stat. 796; 35 U.S.C. 41)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: May 3, 1965.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 65-4815; Filed, May 6, 1965; 8:46 a.m.]

Published in 30 F.R. 6391, May 7, 1965

Classification Order No. 372

Classification Order No. 372, dated April 28, 1965, incorporates changes in the following classes:

22, METAL FOUNDING
31, DAIRY
46, AMUSEMENT DEVICES, TOYS
62, REFRIGERATION
65, GLASS MANUFACTURING
99, FOODS AND BEVERAGES

162, PAPER MAKING AND FIBER LIBERATION
249, STATIC MOLDS—Established (Bulletin No. 466)
260, CHEMISTRY, CARBON COMPOUNDS
264, PLASTIC AND NON-METALLIC ARTICLE SHAPING OR TREATING: PROCESSES
307, ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS

RICHARD A. WAHL,
Superintendent, Patent Examining Corps.

Classification Order No. 373

The following transfer is hereby ordered to take effect on Wednesday, April 28, 1965:

From Group 420 to Group 410
Class 37, EXCAVATING
Subclasses 1 thru 142, 182 thru 195

RICHARD A. WAHL,
Superintendent, Patent Examining Corps.

Classification Order No. 374

The following transfers are hereby ordered to take effect on Saturday, May 1, 1965:

From Group 330 to Group 320
All Classes: 29, METAL WORKING — Subs. 1–65, 89.5–91.8, 148.3–179, 200–212, 400–530, 557–566, 568
53, PACKAGE MAKING
76, METAL TOOLS AND IMPLEMENTS, MAKING
79, BUTTON MAKING
93, PAPER MANUFACTURES
147, COOPERING
157, WHEELWRIGHT MACHINES
163, NEEDLE AND PIN MAKING
227, ELONGATED-MEMBER-DRIVING APPARATUS
228, METAL FUSION-BONDING APPARATUS
266, METALLURGICAL APPARATUS
300, BRUSH, BROOM AND MOP MAKING
316, ELECTRIC LAMP AND DISCHARGE DEVICES, MANUFACTURE AND REPAIR

From Group 480 to Group 410
All Classes: 3, ARTIFICIAL BODY MEMBERS
27, UNDERTAKING
32, DENTISTRY
46, AMUSEMENT DEVICES, TOYS
63, JEWELRY
124, MECHANICAL GUNS AND PROJECTORS
128, SURGERY
132, TOILET
272, AMUSEMENT AND EXERCISING DEVICES
273, AMUSEMENT DEVICES, GAMES

RICHARD A. WAHL,
Superintendent, Patent Examining Corps.

All of the above changes will be incorporated in the Manual of Classification replacement pages dated July 1965.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF MAY 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 3-62	9-15-58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	5-14-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	1-22-59
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-20-62	8- 7-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	7- 1-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	5- 2-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	4-15-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	1-19-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	5-26-58
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	1- 5-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	1-18-63	7- 6-60

Total number of pending applications (excluding Designs)	198,013
Total number of Design applications pending	5,327
Total number of applications awaiting action (excluding Designs)	143,033
Total number of Design applications awaiting action	1,913
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during June 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,442,330 to 2,444,411, inclusive

Plant Patents ..... None

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager. Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-10-63	12- 1-60
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Founding; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	7-27-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	9-29-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	9-24-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager. Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 1-63	8-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager. Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	2- 4-63	8- 7-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager. Furnaces, Liquid Heaters and Vaporisers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	3-25-63	7-18-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager. Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-27-62	11-19-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADEB, Manager. Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager. Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-13-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager. Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	5-14-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager. Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-58
DESIGNS, GROUP 480—J. A. MANIAN, Manager. Industrial Arts; Household, Personal and Fine Arts.	8- 7-64	4- 9-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

C. L. CLIFTON, SR., DOING BUSINESS AS R & M LABORATORIES OF GEORGIA *v.* PLOUGH, INC.

No. 7341. Decided March 4, 1965

[52 CCPA —; 341 F.2d 934; 144 USPQ 599]

1. TRADEMARK—CONFUSING SIMILARITY—ONLY LIKELIHOOD OF CONFUSION NEED BE SHOWN.

"This court has repeatedly held that in order to prevail an opposer is not required to show actual confusion. The requirements of the trademark statute are fully met by a showing of a likelihood of confusion."

2. SAME—SAME—"NUJOL" AND "NUMOL."

"In considering the marks 'NUMOL' and 'NUJOL,' we find substantial similarities therebetween. These similarities are apparent in appearance and especially in sound. As stated by the Board, it is necessary, for obvious reasons, to avoid confusion in the dispensing of pharmaceuticals."

APPEAL from the Patent Office. Opposition No. 41,344.

AFFIRMED.

Patrick F. Henry for appellant.

William E. Bush, Ronald D. Garber for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

C. L. Clifton, Sr., doing business as R & M Laboratories of Georgia (hereinafter referred to as "appellant"), filed application [1] to register "NUMOL" for a pharmaceutical product for the relief of coughs, colds and bronchial irritations, asserting use since June 18, 1944.

Registration has been opposed [2] by Plough, Inc. (hereinafter referred to as "appellee"), registrant of "NUJOL" for mineral oil for chemical, medicinal and pharmaceutical uses other than the treatment of constipation; [3] for mineral oils and compounds, emulsions and mixtures of mineral oils with other substances for medicinal purposes; [4] and for mineral oils, compounds, emulsions, and mixtures of mineral oils with other substances for chemical, medicinal and pharmaceutical purposes, and for battery sealing compounds.[5]

The relevant facts as found by the Board from the exhibits and testimony of record were in substance as follows:

Appellee's business is that of selling proprietary drugs directly to retailers comprising drug, variety and country stores and food supermarkets, as well as drug and grocery wholesalers and candy and tobacco jobbers. On January 25, 1954, appellee purchased the mark "NUJOL" and the rights associated therewith from Esso Standard Oil Company and has used said mark for mineral oil since February

[1] Serial No. 60,204 filed October 7, 1958.
[2] Opposition No. 41,344 filed October 12, 1961.
[3] Reg. No. 166,080 issued July 1, 1924 to a predecessor; renewed.
[4] Reg. No. 302,905 issued May 2, 1933 to a predecessor; renewed.
[5] Reg. No. 325,904 issued July 9, 1935 to a predecessor; renewed.

1954. Since acquisition of the mark, appellee's sales of mineral oil thereunder, foreign and domestic, have exceeded $4,000,000. Promotion has been through radio, newspaper and other advertising at a cost approximating $300,000.

Appellant's pharmaceuticals sold under the mark "NUMOL" are used as a rubefacient and as an inhalant. Its sales have been predominantly local approximating annually ten thousand dollars, with interstate sales being small in volume. The product is not advertised to the general public but "detailed" to physicians with listings in the "Red Book" and "Blue Book" directories since 1959.

The mark "NUMOL" did not originate with appellant. The mark and the product which appellant sells thereunder emanated through Michigan and Georgia concerns with ownership lodging in appellant by acquisition on January 1, 1958 and September 22, 1958. Appellee's prior rights are established by its registrations.

Considerable testimony-in-chief and in rebuttal was taken by the parties in support of their respective contentions relative to the issue of likelihood of confusion. This testimony for appellee, in the main, came from appellee's employees, professional investigators, a retail druggist, and an official of a drug wholesaler.

Appellant's testimony consists of that of a professional investigator, employees of a wholesale drug concern, and a number of pharmacists.

As did the Board, we have thoroughly scrutinized the testimony of investigators who entered drug stores and asked in some cases for "NUMOL" and in others for "NUJOL." We do not deem it necessary to recite it in detail. In general terms, the testimony shows that the investigators did not always get what they asked for. It is highly inconclusive in support or negation of the conflicting contentions of either party with reference to the determinative issue of likelihood of confusion as contemplated by section 2(d) of the Trademark Act, 15 U.S.C. 1052. The testimony sought to show actual confusion or the lack of actual confusion. On the whole, it established neither, nor from it can we deduce a likelihood of, or a lack of likelihood of, confusion.

[1] This court has repeatedly held that in order to prevail an opposer is not required to show actual confusion. The requirements of the trademark statute are fully met by a showing of a likelihood of confusion.

It is agreed that "NUJOL" is pronounced "new-jahl" or "new-joll" and "NUMOL" is pronounced "new-mahl." The products of the parties are sold over the counter to the general public and either may be purchased without a doctor's prescription. They are used by the same general class of purchasers and are obtainable by trademark designation alone. Each mark is a coined or arbitrary trademark and in no way suggestive or descriptive of the nature of the products dispensed thereunder. The goods of one are for external application, while those of the other are administered orally. Both being medicinal, confusion in application could produce harmful effects.

[2] In considering the marks "NUMOL" and "NUJOL," we find substantial similarities therebetween. These similarities are apparent in appearance and especially in sound. As stated by the Board, it

is necessary, for obvious reasons, to avoid confusion in the dispensing of pharmaceuticals.

We have examined the cases cited and relied on by appellant and considered appellant's argument relating to the third-party registrations, but we are not thereby persuaded of reversible error on the part of the Board.

The decision of the Trademark Trial and Appeal Board sustaining the opposition and refusing the registration sought by appellant is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

ALEXANDER CARUSI AND ROBERT F. KOLEC *v.* ROBERT LOOKER

No. 7289. Decided March 11, 1965

[52 CCPA —; 342 F.2d 112; 144 USPQ 670]

1. INTERFERENCE—EVIDENCE—DISCREPANCY BETWEEN TESTIMONY AND PRELIMINARY STATEMENTS—ABSENCE OF CONTEMPORANEOUS EVIDENCE.

"We agree in substance with the evaluation placed by the Board on the testimony of Carusi, Kolec and their corroborating witnesses that there is great discrepancy in dates and alleged documents between the testimony and the sworn preliminary statements; that nothing of a contemporaneous nature is produced for comparison to establish dates 'which are remarkable for the fact that they are just early enough to overcome those asserted by Looker as then known from his preliminary statement'; that the substance of the invention had become well known through subsequent developments and that under such circumstances oral testimony may well become untrustworthy by reason of a potential danger that witnesses may confuse subsequent with preacquired knowledge."

APPEAL from the Patent Office. Interference No. 90,011.

AFFIRMED.

William K. Rieber (*George R. Jones* of counsel) for appellants.
John A. Blair for appellee.

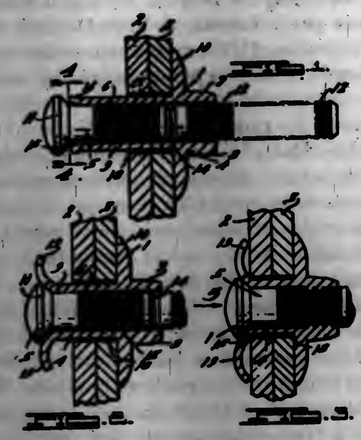
Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences awarding priority of invention to Robert Looker. Although the Board granted the Carusi motion to add Kolec as a joint inventor, the party Carusi et al. will hereinafter be referred to as Carusi.

There are two counts in issue, the first of which is generic and the second specific. We do not deem it necessary to set them out herein *in extenso*. The counts define a novel form of blind rivet or fastener which, allegedly, has solved a difficult problem in the construction of sheet metal buildings, tanks, storage bins and the like. The rivets are applied from one side of a construction project and effect considerable savings in the matter of time and the elimination of labor costs and scaffolding to support workmen beneath roof sheets and on both sides of high walls. The rivets are applied and set by a pulling tool or "gun" from one side of connected sheets.

FIGURES 1–3 of the Looker application depict the rivet fastening operation.



The essential characteristic of the rivets, as defined by the counts in issue, resides in the fact that they have a headed sleeve 9, the shank of which projects through to the blind side of the work, and a headed pin 5 which, when pulled from the operating side, splits the shank of the sleeve into a plurality of petals (FIG. 2) that curl back until their ends engage the blind side of the work (FIG. 3), thus pulling the sheets together and providing a substantial bearing area on the blind side. This result is not achieved if the sleeve is split prior to the pulling operation. The split must progress as the pin is pulled causing the head of the pin to bend each increment of the petals outwardly as it progresses toward the head of the sleeve, thus producing the outward curl as distinguished from a simple spreading action. This makes it necessary that the underside of the pin head be tapered, as required by the counts in issue.

Looker discloses two species of the rivet, both within the scope of count 1. Carusi discloses only one species (count 2) which is characterized by notches in the end of the rivet sleeve and aligned grooves formed in the wall of the sleeve on the outside. The splitting action begins at the notches and follows the grooves which control the direction of the split. This type will be designated the notch and groove type.

The other species has a plain sleeve but the underside of the pin head has cutting edges which serve to split the sleeve. This species is disclosed by Looker only and will be designated the cutting edge type.

Looker originally filed two applications on September 9, 1955. One application [1] discloses the cutting edge type and the other application [2] discloses the notch and groove type. During the pendency of the Looker applications, in response to a requirement of the Primary Examiner, the two applications were consolidated in a single application.[3] The effective filing date of Looker is, therefore, September 9, 1955. The Carusi application [4] was filed February 6, 1956.

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[1] Serial No. 533,265.
[2] Serial No. 533,266.
[3] Serial No. 755,879, filed December 8, 1958.
[4] Serial No. 563,485.

The real parties in interest are two manufacturers of headed fasteners, including various types of blind rivets. They are the Huck Manufacturing Company of Detroit, Michigan which owns the application of senior party Looker, and the Olympic Screw and Rivet Corporation of Downey, California which owns the application of junior party Carusi. These corporations will be referred to as Huck and Olympic.

Olympic refers to its product as the "Hi-clinch" rivet and Huck to its product as the "Daisy" rivet. The exhibits, designating the various rivets, introduced in evidence are physical exhibits.

The burden here rests upon Carusi, as junior party, to prove by a preponderance of the evidence his priority over Looker. Our approach to a resolution of the issues herein will proceed with an analysis and evaluation of the Board's opinion in the light of the evidence adduced of record.[5] The Board found that Looker had established with corroboration his conception of the notched and grooved form of the invention at least as early as February 18, 1955 and that such was conceded in Carusi's reply brief. The Board stated that Carusi's sole ground of attack on the Looker proofs of conception (Exhibit 217A [6]) was that the invention there disclosed could not be credited to Looker. It found that Looker's testimony, when considered with that of witnesses who witnessed the invention disclosure, proved that Looker was not only in possession of the necessary conception on or before February 18, 1955 but that he was actively engaged in perfecting and improving it.

Recourse to the record and consideration of the testimony of Looker, Matthews, Benkert and Egnot amply supports the finding of the Board as to Looker's conception. The Board noted that the question of whether Looker's conception of the cutting edge form of the invention was also as early as February 18, 1955, was immaterial since the notched and grooved form supports both of the counts in issue. Looker's evidence of activities from February 18, 1955 to and through his filing date relating to reduction to practice will become material only if Carusi is held to have overcome Looker's case established by his conception and filing date.

We deem it pertinent to here point out that both Huck and Olympic were suppliers or prospective suppliers of rivets to the Butler Manufacturing Company of Kansas City, Missouri. Butler was a large scale manufacturer of metal buildings and its patronage was eagerly sought by both parties as a purchaser for the rivets of the invention in issue. The technical and sales development activities of the parties during the year 1955 were keyed to serving the Butler requirements. The conception of the invention in both cases was linked to the Butler need for a blind or "topside" rivet capable of drawing together and securing overlapping sheets.

The Board took occasion to point out that Looker was actively promoting the perfecting and commercialization of the notch and groove type during late February and March and of the cutting edge type from April through September; that Butler was intensely interested in the project, and that knowledge of Looker's activity reached Olympic through Butler at least as early as the latter part of August 1955, with respect to the principle of clinching through curling and petalling as defined in count 1 and embodied in the cutting edge type.

[5] The Board stated that the record on final hearing included over 3,500 pages of testimony and almost 500 pages of briefs. We are acutely aware of that fact.
[6] A drawing showing a notch and groove rivet meeting both counts in issue.

Preliminary to consideration of the Carusi testimony-in-chief, the Board took cognizance of the pending motion by Carusi [7] for permission to convert his application into a joint application of Carusi and Kolec. The Board, noting the close relationship between Carusi and Kolec as co-working employees of Olympic, granted the motion to convert. Kolec thus assumes the role of a joint inventor with a concomitant change of status from that of corroborating witness for Carusi.

In assaying the Carusi case, we think it conducive to clarity to delineate the facts pertaining thereto in chronological order.

It seems clear from the record that work on a pull type splitting rivet followed development of the Butler drive pin rivet [8] at Olympic. Samuel Maness, president of Olympic, testified that in December 1954 E. H. Stau, vice president of Olympic, succeeded in getting Butler "to adopt the use" of the drive pin blind rivet. He stated that "at that time" Stau called his attention to the fact that the drive pin rivet was the type which was installed with a hammer; that there was a larger potential use "for other than drive pin rivets" at Butler in sheet-to-sheet applications where the drive pin was not satisfactory because there was nothing to back it up "when you hit it with a hammer" and that Stau stated that "if we could come up" with a pull-type rivet, there was a ready market for it inasmuch as "now * * * we have broken in with" Butler. Maness stated that he told Stau to go ahead and try to develop it and that in January 1955, "about a month later," Stau showed him a sample. Maness subsequently identified Carusi Exhibit 6 as the sample Stau showed him. Stau testified that after he had instructed Carusi and Kolec to develop a pull-type rivet, they first came up with a Butler drive pin rivet like Carusi Exhibit 15 through which they had drilled a hole to receive a pull pin and which was not satisfactory. That the pull rivet development began after the Butler drive pin development is supported by the testimony of Carusi, Kolec, and Dunham, a former employee of Olympic called as a witness by Looker. It is obvious that since the first pull type was made out of a Butler drive pin rivet, it came after the latter. While the Carusi witnesses related that this event occurred in December 1954, Looker contends that the correct date is May 1955. The date claimed by Carusi is completely unsupported by documentary evidence.

We have painstakingly reviewed the testimony of Stau, Olympic sales representative Joe Schmitz, witnesses Falk and Beckett, and numerous Looker exhibits. This evidence supports the conclusion that Olympic submitted the first sample of the Butler drive pin rivet to Butler on May 3, 1955. These samples were "turned on a lathe." Butler placed the first trial purchase order on May 11, 1955 and the first headed drive pin rivets of the Butler type were shipped by Olympic in late May 1955. The record indicates that the Butler-type drive pin was neither adopted nor used by Butler nor in existence at Olympic prior to May 1955.

Looker Exhibits 44 and 332A–B disclose that the earliest Olympic catalogue sheets showing drive pin rivets list the Olympic address as 11445 South Dolan Street which was the office address only after June 13, 1955. This sheet referred to the "prices effective 6/20/55."

Since the development of the Butler drive pin rivet preceded the

[7] The Examiner had deferred action on this motion.
[8] A blind fastener secured not by pulling a pin as in the present invention but by driving a setting pin into a sleeve to spread legs or prongs on the blind side.

development of the pull-type splitting rivets at Olmpic, the latter development would obviously transpire after May 1955.

As noted, the Exhibit 4 rivet preceded the development of Carusi Exhibits 5 and 6. Exhibit 4 was an admitted failure and does not satisfy the counts. The testimony supported by documentary exhibits discloses that on November 3, 1955 Schmitz, acting for Olympic, arranged a demonstration of the Carusi Exhibit 4 type of fastener during the construction of a building in Kansas City. According to Maness, Exhibit 4 was developed for Butler. There appears little room for doubt that the fastener installed on the roof in Kansas City on November 3rd was like Carusi Exhibit 4. Schmitz testified that it was like Looker Exhibit 65 which appears identical to Exhibit 4. Decatur Millard, pursuant to a request from Schmitz, took photographs of the building and close-ups of the fastener on November 3rd which show the flat-headed pin and unsatisfactory petalling action of Exhibit 4. Beckett, the building contractor, was present when the rivets were installed and stated that the rivets installed were identical to Carusi Exhibit 4. He produced and identified his "Labor Breakdown Report" showing that the roof was applied on November 3, 1955. Looker Exhibit 98A and B, a letter from Wilson to Schmitz dated November 7, 1955, states that it was difficult to insert the head of the pin through the holes in the sheets, stating further that:

> Perhaps the pin diameter can be decreased and also the end of the pin be rounded or tapered so that it might be presenting a lead into the holes. * * *

This is an apt reference to the flat-headed pin of Exhibit 4. If a more successful version had been developed at that time, it hardly seems likely that an admitted failure would have been submitted to Butler for a test on November 3, 1955.

The next fastener in the Olympic sequence is Exhibit 5. Looker Exhibit 323 is a letter dated November 23, 1955 from Schmitz of Butler to Falk of Olympic, discussing the results of a test. The following portion of this letter is significant:

> The big trouble that we had was that in many instances due to the *balled head* the spread of the rivet was not outward but tended to curl in, consequently, we did not get a tight clinch nor a satisfactory spread. By eliminating chamfer on the rivet shank or better yet, by inverting the chamfer we should eliminate this problem as then the rivet should be able to ride up and over the rounded section and give us the proper spread. [Emphasis added.]

Relating back to Wilson's letter, Looker Exhibit 98A and B, criticizing what appears to be Exhibit 4, we note that Exhibit 5 has the "balled" or rounded pin head suggested by Wilson after difficulty had been encountered in inserting the flat-headed Exhibit 4. In addition to the "balled head" evidently suggested by Wilson, Schmitz is suggesting a chamfer to aid the sleeve in riding up over the pin head.

It appears that a test of Exhibit 6 must have been conducted on or about December 29, 1955. Wilson, in reporting a test he, Beckett and Schmitz had conducted on that date, said:

> The latest rivet has a filleted pin-head which petals out the indented rivet sleeve very quickly for a long material engaging range.

The filleted pin head comports with the head of the pin in Exhibit 6. It is more than likely that Wilson was referring to Exhibit 6. The sequence of the tests of the three types in November and December 1955 is not only logical but also finds support of record. In its effort to secure the Butler patronage, it is not reasonable to assume that Olympic would submit defective samples like Carusi Exhibits 4 and 5 after overcoming the defects with the improved Exhibit 6 fastener.

There can be no doubt that the fastener in issue was developed to meet a need of Butler for a sheet-to-sheet topside fastener. This much is clear from the testimony of Maness, Kolec and Stau. Maness testified that he was hopeful that sales of the new fastener to Butler would improve Olympic's financial condition. Butler was pressing Olympic for a satisfactory topside fastener and was enthusiastic over the Huck fastener of the type in issue in early March 1955. It is difficult to believe, under these circumstances, that the new fastener would not have been submitted to Butler at the earliest possible moment if such a fastener existed.

Roger Hield, a Butler project engineer, had been assigned the job of finding a satisfactory topside fastener for Butler. He worked with many fastener manufacturers for about a year from late 1954 up to the end of August 1955. Schmitz, the Olympic sales representative, contacted him when he made his first call on Butler on December 3, 1954. Hield testified that he had no recollection of ever talking to any Olympic representative in 1955 regarding a petalling topside fastener. Hield was given another assignment in late August 1955 and was succeeded by Billie R. Wilson. After that date, however, he continued to work on topside fastener problems with Wilson as late as November 1955. Stau testified that he showed Billie Wilson the Olympic fastener in March 1955. Wilson, on the other hand, testified that he had occasion to consider an Olympic rivet which split when pulled from the topside *after* he took over Roger Hield's job, and he placed that as sometime in the summer of 1955. Wilson identified Carusi Exhibit 4 as the first Olympic rivet of the splitting pull type, of a whole series of such rivets, including Carusi Exhibit 11.

Lloyd Jones, another Butler man, to whom Stau claimed to have shown Carusi Exhibit 11, could recall no work on the Olympic fastener in issue in 1955. Jones produced the first purchase order to Olympic for such fasteners which was dated January 10, 1956. He also recalled the Huck rivets of the type in issue in 1955.

Stau claims to have disclosed Carusi Exhibit 11 to Wilbur Larkin. Larkin couldn't recall when he first saw an Olympic blind rivet which split when pulled but he did recall that it was *after* he had seen Huck rivets of that type.

We find no corroboration of Stau's testimony that he disclosed Exhibit 11 to Butler in March 1955. The testimony of the Butler witnesses clearly refutes Stau's testimony.

In the interest of clarification, we point out that Carusi Exhibits 4 and 5 represent fasteners which were admittedly unsatisfactory and which failed to support the counts in issue. Exhibit 6 does not have the notches called for by count 2 and hence does not support that count. Neither Exhibit 4 nor 5 conforms to the counts since neither has "an inclined annular surface on the underside" of the head portion to produce "*reversely curved locking fingers* extending radially outwardly of said tubular member for engagement at their free ends with one side of said structural member * * *." [Emphasis supplied.]

An exhaustive review of this voluminous record clearly sustains the view expressed by the Board that:

> The matter of when or whether Carusi conceived the invention in issue independently of Looker is shrouded in uncertainty, due to conflict of testimony and lack of pertinent or persuasive documentary evidence. * * *

Carusi's case depends upon purely oral testimony relating to events occurring more than six years prior to such testimony. We find no documentary support identifying the invention in issue covering phases and critical periods vital to Carusi's contents. Whatever semblance of a prima facie case which may be attributed to Carusi has been overwhelmingly rebutted by evidence adduced by Looker through records of Olympic and Butler obtained by resort to subpoena duces tecum and the testimony of Schmidt, Beckett, Millard, Falk, Dunham, Tucker and other previously herein alluded to.

We find no drawings, sketches, correspondence or any record of material bearing and substance relevant to the conception, making or testing of the rivets critical to the counts in issue. It is a circumstance of striking significance that this corporate development so important to the Olympic enterprise would be carried on without any semblance of supporting documentary evidence, such as purchase orders, invoices, work orders, drawings, correspondence and related entries on Olympic records. That it was the practice of Olympic to keep corporate records relating to its productions is evidenced by the documentation pertaining to the drive pin developments which occurred prior to any work on the fastener in issue. Of added significance is the affidavit executed by Maness in support of a motion to extend the time for filing preliminary statements. This affidavit embodied Maness' statement under oath that he possessed "a large portion of the documentary evidence" relating to the development of the "subject in issue." Such "documentary evidence," so vital to Olympic's case, was never produced.

[1] We agree in substance with the evaluation placed by the Board on the testimony of Carusi, Kolec and their corroborating witnesses that there is great discrepancy in dates and alleged documents between the testimony and the sworn preliminary statements; that nothing of a contemporaneous nature is produced for comparison to establish dates "which are remarkable for the fact that they are just early enough to overcome those asserted by Looker as then known from his preliminary statement"; that the substance of the invention had become well known through subsequent developments and that under such circumstances oral testimony may well become untrustworthy by reason of a potential danger that witnesses may confuse subsequent with pre-acquired knowledge.

Carusi relies on the case of *Taylor* v. *Beverage*, 22 CCPA 784, 73 F.2d 639, 24 USPQ 21, relating to the competency of oral testimony, wherein the court said:

> Appellees make the point that the oral testimony in behalf of appellant was given * * * more than six years after the events testified to occurred, and invoke the rule that such testimony should be weighed with extreme caution. This is a salutary rule, which has often been applied by the courts, but the rule does not require that oral testimony shall be disregarded solely because given many years after the taking place of the event to which the testimony relates.

We take no exception to the rule stated in *Taylor*, where the factual situation is readily distinguishable from the case at bar. We are not here dealing with the nature of events, as in *Taylor*, but with critical dates alleged by Carusi which have been refuted by opposing testimony or, as found by the Board, shown to be "almost certainly erroneous." The record here, in our view, supports the conclusion of the Board that:

> * * * testimony in chief for Carusi is almost certainly erroneous as to dates, and this conclusion is based not alone on the testimony of Falk, Schmidt, Wilson and others indicating that these developments did not take place when alleged, or took place from nine months to a year after the dates alleged, but primarily on documentary evidence which constitutes strong circumstantial support of this contention. This documentary evidence has not been denied or controverted in Carusi's behalf, and it shows that Olympic was actively promoting fasteners like Exhibit 4, which were said by Stau, Carusi and Kolec to have been found unsatisfactory in January 1955, at a date as late as November 1955; that fasteners like Exhibit 5 were promoted at a still later date; and that replacement of this promotion by that of Exhibit 6, which was the first successful rivet and the first Olympic rivet conforming to either count, occurred still later, *at a date a number of months after Looker's filing date.* [Emphasis Board's.] * * *

We consider apposite here the language of *MacGregor* v. *Johnston*, 21 CCPA 1216, 71 F.2d 165, 22 USPQ 42, quoted with approval by this court in *Chandler* v. *Mock*, 32 CCPA 1183, 150 F.2d 563, 66 USPQ 209. The court said:

> The memories of men are too treacherous to admit of blind reliance upon them, and of all the records which it seems that the appellant * * * might have produced in the way of documentary evidence, tending to support the alleged dates, nothing really helpful was produced. It seems to have been a case in which the effort was to see how little, rather than how much, could be proven.

Carusi contends that the testimony on behalf of Looker as to his invention of the fastener in issue should be disregarded because it is not shown that he is the sole inventor. It is asserted that one Frank Dobbe was the sole inventor or a joint inventor with Looker. Our study of the relevant portions of the record relating to this issue fails to convince us of error on the part of the Board. The Board stated (citations omitted):

> Looker was in possession of a conception of the invention on or before February 18, 1955, and proof of that fact is sufficient. However, it may be stated parenthetically that we have examined the exhibits and testimony relied upon by Carusi to prove that Dobbe was the inventor or co-inventor, and find no substance to this contention.

For the reasons stated, we find no error in the decision of the Board that "on the basis of the total record * * * Carusi has not sustained the burden of proving either that he conceived it [the invention] before February 18, 1955 or reduced it to practice before September 9, 1955." The decision of the Board awarding priority to senior party Looker is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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1,941,869. (See 1,941,065.)

2,139,222, D. Mastini, TELEPHONE SYSTEM, filed July 27, 1961, D.C., S.D.N.Y., Doc. 61/2676, *Domenico Mastini* v. *American Telephone and Telegraph Company et ano.* Judgment dismissing the complaint Dec. 14, 1964. Same, filed Aug. 15, 1961, D.C., S.D.N.Y., Doc. 61/2912, *Domenico Mastini* v. *New York Telephone Company.* Decree as above.

2,180,795, N. A. Christensen, PACKING, filed Nov. 19, 1955, Ct. Cls., Doc. 432/55, *Jo. O. Calhoun, Jr., and Esther C. Young, executors of the estate of Niels A. Christensen (deceased)* v. *The United States.* Court is in agreement with opinion of Commissioner—claim 5 of Patent 2,180,795 held valid Dec. 11, 1964.

2,398,057, N. Straussler, PROPULSION DEVICES FOR AMPHIBIOUS VEHICLES, filed May 8, 1950, Ct. Cls., Dec. 209–59, *Nicholas Straussler* v. *The United States.* Court is in agreement with opinion of Commissioner—claims 1 and 2 of Patent 2,398,057 held invalid; plaintiff's petition dismissed Dec. 11, 1964.

2,416,294, Stillman and Scott, SERIES OF NITROFURAN COMPOUNDS; Reg. No. 468,270 (FURACIN), The Norwich Pharmacal Company, Antiseptics and germicides; Reg. No. 441,715, same, Eaton Laboratories, Inc., Antibacterial preparations, filed Feb. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C74(1), *The Norwich Pharmacal Co.* v. *Blue Line Chemical Co., Inc.* Final consent judgment; patent and trademarks held valid; defendant enjoined Nov. 10, 1964.

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2,459,152, H. B. Miller, FRUIT PICKERS CRANE, filed Nov. 16, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C–410(2), *Howard B. Miller et al.* v. *McCabe-Powers Body Co.* Same, filed Apr. 5, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–396–*sc*, *FMC Corporation et al.* v. *McCabe Powers Body Co., Inc.* Judgment in favor of plaintiff; patent held valid and in-

fringed; defendant enjoined; counterclaim dismissed Mar. 15, 1965.

2,467,210, F. A. Helfrecht, FLUID SEAL; 2,626,169, L. A. Johnson et al., same; 2,854,267, Stephens and McCandless, SHAFT SEALS; Reg. No. 696,292 (SYNTECH), National Motor Bearing Company, Inc., Grease and oil retainers of the friction type used to seal the space between a shaft and an engine wall, etc.; Reg. No. 702,253 (MICRO-TORC), Federal-Mogul-Bower Bearings, Inc., Shaft seals, filed Mar. 2, 1962, D.C., E.D. Wis. (Milwaukee), Doc. 62-C-55, *Federal-Mogul-Bower Bearings, Inc.* v. *Albert Trostel Packings, Ltd. et al.* Reg. No. 702,253 included by notice of consent decree, holding trademarks valid and infringed; and Patent Nos. 2,467,210 and 2,626,169 held valid and infringed; issue remains as to Patent 2,854,267, Dec. 9, 1964.

2,482,761, C. G. Goebel, POLYMERIZATION OF UNSATURATED FATTY ACIDS; 2,796,319, F. O. Barrett et al., PROCESS OF DIMERIZING MONOUNSATURATED FATTY ACIDS; 2,796,320, same, METHOD OF MAKING POLYMERIC ACIDS; 2,955,121, L. D. Myers et al., POLYMERIZATION OF UNSATURATED FATTY ACIDS, filed Oct. 5, 1960, D.C. Del. (Wilmington), Doc. 2258, *Emery Industries, Inc.* v. *General Mills, Inc.* Transferred, Nov. 17, 1960, D.C., E.D. Ill. (Danville), Doc. 1828-D. Action dismissed (notice Dec. 1, 1964).

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2,508,890, G. B. Rowe, APPARATUS FOR FORMING GLASSWARE; 2,508,891, same, filed May 19, 1964, D.C., S.D.N.Y., Doc. 64/1544, *Emhart Manufacturing Company* v. *Continental Can Company, Inc.* Stipulation and order of discontinuance with prejudice Dec. 21, 1964.

2,508,891. (See 2,508,890.)

2,522,604, M. Coleman, ELECTRIC BELL WITH MOMENTUM ACTION GONG STRIKER, filed Dec. 1, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C-1157, *Pittsburgh Railways Co.* v. *Ples Electronics Corp.* Same, filed Jan. 11, 1965, D.C.N.J. (Newark), Doc. 25-65, *Pittsburgh Railways Co. et al.* v. *Ples Electronics Corp. et al.*

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2,534,999. (See 2,534,998.)

2,542,120, E. E. Stephan, CONTAINERS, filed Dec. 21, 1964, D.C., E.D. Wis. (Milwaukee), Doc. 64-C-354, *Longview Fibre Company* v. *St. Regis Paper Company (Inc.).*

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2,596,668, J. W. Anderson, WINDSHIELD WIPER BLADE LINKAGE ASSEMBLY, filed Mar. 26, 1953, D.C., W.D.N.Y. (Buffalo), Doc. 5677, *Anderson Co. and Productive Inventions, Inc.* v. *Trico Products Corp.* Decision and order dismissing plaintiffs' complaint Dec. 21, 1964.

2,606,169. (See 2,467,210.)

2,608,287, C. J. Zwickey, ARROW HEAD WITH RESILIENT ARMS, filed Dec. 1, 1962, D.C. Minn. (St. Paul), Doc. 2-62-280, *Clifford J. Zwickey* v. *Schwoerer Manufacturing and Archery Company.* Final consent judgment; patent held infringed; defendant enjoined Dec. 10, 1964.

2,608,472, Schwartz and Barbour, WATER PURIFYING DEVICE FOR AQUARIUMS; 2,748,975, N. G. Hovild, AQUARIUM DEVICE; 2,908,995, same, AQUARIUM AERATING DEVICE, filed Apr. 21, 1959, D.C.N.J. (Trenton), Doc. 223-59, *The Wil-Nee Corporation* v. *Luster Products Co. et al.* Stipulation and order of dismissal without prejudice Dec. 14, 1964.

2,627,261, E. F. Peterson, CORE-MAKING MACHINE, filed Dec. 4, 1964, D.C., E.D. Mich. (Detroit), Doc. 28114, *Edwin F. Peterson et al.* v. *America.*

2,629,198, Fletcher and Dickison, SPRAYER, filed Aug. 25, 1962, D.C., M.D. Ga. (Valdosta), Doc. 599, *Root-Lowell Manufacturing Co.* v. *Standard Container Co., Inc.* Complaint dismissed Dec. 30, 1964.

2,647,302, W. B. Elmer, LUMINAIRE FOR STREET LIGHTING; 2,732,482, same, STREET LIGHTING LUMINAIRE; 2,766,130, same; 2,921,181, same; 2,922,145, same, BALLAST FOR MERCURY VAPOR LAMPS; 2,970,223, same, OUTDOOR LIGHTING LUMINAIRE; Des. 183,662, same, LUMINAIRE, filed Dec. 28, 1964, D.C. Mass. (Boston), Doc. 64-922-J, *William B. Elmer* v. *Wheeler Reflector Company.*

2,651,304, W. J. Browner, THERAPEUTIC ELECTRODE; 2,842,135, same, ELECTRICAL BODY TREATING DEVICE; 3,166,697, Moss and Browner, GENERATOR FOR ELECTRONIC MUSCLE STIMULATOR, filed June 18, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1073, *Relaxacisor, Inc.* v. *Hale and Hearty, Inc. et al.* Stipulation and consent judgment; patents held valid and infringed (notice Dec. 15, 1964).

2,652,782, H. C. Pfaff, Jr., HIGHWAY LIGHTING DEVICE AND METHOD OF MAKING SAME, filed Aug. 30, 1963, D.C.N.J. (Newark), Doc. 709-63, *Pfaff and Kendall* v. *General Tapered Products, Inc. et al.* Order of dismissal Dec. 29, 1964.

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2,664,145, Creveling and Pennell, CONVERTIBLE HASSOCK AND BED COMBINATION, filed Nov. 8, 1957, D.C., S.D.N.Y., Doc. 126-301, *Castro Decorators, Inc.* v. *John Horley, Ltd. et al.* Action dismissed Dec. 1, 1964.

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2,666,547, R. H. Armacost, DRILL BUSHING FOR CAST BLOCKS; 2,738,249, J. L. Stein et al., DRILL JIG; 2,915,942, R. H. Armacost, LINER BUSHINGS FOR SLIP RENEWABLE TOOL GUIDE BUSHINGS; Reg. No. 692,767 (HEX A GRIP AND DESIGN), American Drill Bushing Co., Drill bushings; Reg. No. 692,972 (SERRAGRIP AND DESIGN), same, filed Dec. 9, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64-1710-WM, *American Drill Bushing Company* v. *Ace Drill Bushing Co. et al.* Same, filed Apr. 12, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65-573-WM, *American Drill Bushing Company* v. *West Coast Aero Tool et al.*

2,743,975. (See 2,636,473.)

2,733,482. (See 2,647,202.)

2,736,240. (See 2,666,547.)

2,738,377, G. D. Wofford, SIGNAL BIASED INVERTER FOR SYNCH SEPARATOR WHICH CANCELS NOISE ABOVE SYNCH PULSE LEVEL, filed Dec. 30, 1964, D.C., Dist. of Columbia, Doc. 3170-64, *William R. Blair, Jr.* v. *Dowd's, Inc.* Order permitting Westinghouse Electric Corporation to intervene as defendant and dismissing action as to defendant, Dowd's, Inc. Mar. 23, 1965.

2,736,120. (See 2,647,202.)

2,736,219. (See 2,482,761.)

2,736,220. (See 2,482,761.)

2,842,135. (See 2,651,304.)

2,854,267. (See 2,467,210.)

2,908,995. (See 2,636,473.)

2,921,181. (See 2,647,202.)

2,922,145. (See 2,647,202.)

2,955,121. (See 2,482,761.)

2,970,223. (See 2,647,202.)

2,915,942. (See 2,666,547.)

3,166,697. (See 2,651,304.)

Re. 21,060. (See 1,941,066.)

Re. 23,867, R. A. Garrison, POWER STEERING BOOSTER OF THE HYDRAULIC TYPE, filed Dec. 29, 1960, D.C., S.D. Calif. (Los Angeles), Doc. 1440-60-HW, *Robert A. Garrison et al.* v. *General Motors Corporation.* Stipulation for consent judgment dismissing 1st claim in amended complaint without prejudice and 2nd claim in amended complaint with prejudice Dec. 4, 1964.

Des. 188,888. (See 2,647,202.)

REISSUES

JUNE 8, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,791

COMPOSITE ARTICLE AND METHOD

Stewart A. Claypoole, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Original No. 2,829,952, dated June 9, 1959, Ser. No. 562,763, Feb. 1, 1956. Application for reissue Sept. 19, 1960, Ser. No. 57,091

21 Claims. (Cl. 220—2.1)



6. A method of joining preformed bodies having thermal expansion characteristics sufficiently compatible to permit their being fusion sealed with an intermediate sealing material which comprises forming a fused glass seal between the bodies with a [devitrifiable] *semi-stable, lead-zinc-borate* sealing glass and thereafter [devitrifying] *holding* the fused sealing glass *at a temperature not below the sealing temperature for a time sufficient to crystallize at least a part of the glass to a relatively rigid crystalline skeleton and thereby produce a material of increased viscosity and changed thermal expansion characteristics substantially corresponding to the crystalline phase.*

29. A composite article comprising at least one preformed body and a layer of sealing material integrally adherent to the surface of the body, said sealing material being composed of a sealing glass at least partially crystallized to a relatively rigid crystalline skeleton, having increased viscosity characteristics substantially corresponding to the crystalline phase, and having thermal expansion characteristics compatible with those of the preformed body and formed by in situ crystallization.

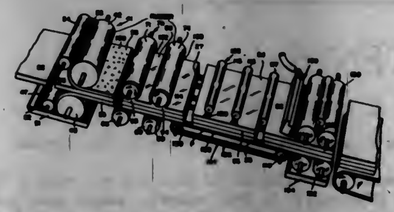
25,792

APPARATUS AND METHOD FOR GLOSSY WAX COATING

Philip D. Labombarde, 12 Lake St., Nashua, N.H.

Original No. 3,070,457, dated Dec. 25, 1962, Ser. No. 862,192, Dec. 28, 1959. Application for reissue May 15, 1963, Ser. No. 280,760

14 Claims. (Cl. 117—46)



1. A method for continuously producing a high gloss, smooth coating on flat box blanks, said method comprising the steps of supporting the upper faces of said blanks in a horizontal plane while advancing said blanks individually and successively along a path, then applying a relatively thin, hot melt wax coating composition to said blanks while said blanks are cool to thereby harden said coating without impregnation into the material of said blanks; then bringing the resulting hardened film coating into contact with a series of reversely rotating smoothing rolls, each at a temperature just above the melting temperature of said composition and reverse roll removing from, and reverse roll depositing onto, the upper portion of said film coating, a succession of light thin layers of said film to remove any crow's-foot markings therefrom without melting the lower portion of said film coating; then bringing the resulting film coating, while horizontal, progressively under a series of flame burners, each at a temperature above the melting temperature of said composition, and remelting and liquifying the upper portion of said film coating to flow into a mirror-like, level pool with a high gloss surface to remove any roll coating ridges therefrom without melting the lower portion of said film coating and then bringing the resulting high gloss film coating, while still horizontal, progressively under a continuous, low waterfall of a coolant liquid for quenching said film coating to harden said high gloss surface, without marking said surface.

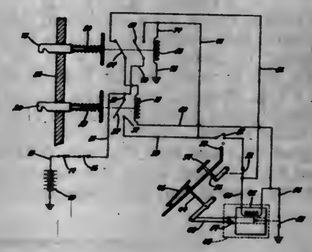
25,793

MANUAL-AUTOMATIC CRUISE CONTROL CIRCUIT

Philip W. Maurer, Dearborn, and James Wishart, Jr., St. Clair Shores, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original No. 3,100,021, dated Aug. 6, 1963, Ser. No. 180,128, Mar. 16, 1962. Application for reissue May 7, 1964, Ser. No. 375,689

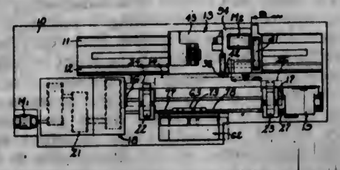
10 Claims. (Cl. 180—82.1)



5. Speed control apparatus comprising an electrical energy source; a speed maintaining device operative to maintain some predetermined speed; and an electrical circuit extending between the source and the device for controlling the operation of the device, the electrical circuit including relay means operative to close the circuit when operated, an operating condition responsive switch between the relay means and the device and so arranged when actuated as to open the electrical circuit and cause the device to be deactivated, and manually controlled switch means selectively operable to connect the source to the relay means, the relay means when operated to close the circuit being so arranged as to provide a shunt path therethrough for the power from the source and thereby be caused to remain operative when the operating

condition responsive switch is actuated to open the circuit thereby permitting the device to be reactivated when the operating condition responsive switch is actuated to close the circuit.

25,794
AUTOMATED ROLL GRINDER
Peter Hold, Milford, and Alfred T. Parrella, Newtown, Conn., assignors to Farrel-Birmingham Company, Incorporated, Ansonia, Conn., a corporation of Connecticut
Original No. 3,088,250, dated May 7, 1963, Ser. No. 145,900, Oct. 18, 1961. Application for reissue July 29, 1964, Ser. No. 398,822
30 Claims. (Cl. 51—165)



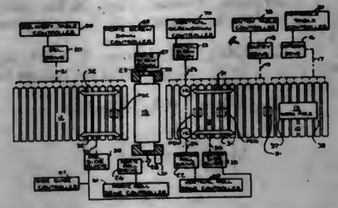
26. Roll grinding apparatus comprising means for rotatably supporting a roll, a grinding wheel operable to sweep to and fro across the face of the roll along a path substantially parallel to the axis of the roll, probe means operable to engage the roll and to scan the face of the roll along the length thereof, and to generate a signal related to the contour of the roll face, and means for driving said probe means along a path generally parallel to the axis of the roll whereby the probe means indicates the contour of the roll face along the length thereof.

25,795
ROLLING MILL CONTROL
Charles Allan Schurr, Warrensville Heights, and Frank Alan Manners, Cleveland, Ohio, by Square D Company, Detroit, Mich., a corporation of Michigan, assignee
Original No. 3,104,566, dated Sept. 24, 1963, Ser. No. 767,712, Oct. 16, 1958. Application for reissue Oct. 14, 1964, Ser. No. 419,261
4 Claims. (Cl. 72—12)

1. A control system for a rolling mill having a screwdown control and comprising: a device for determining the number of passes a slab is to be passed between the rolls to reduce the slab from an original thickness to a final thickness, said device including condition signal source means providing condition signals representing the actual conditions of a slab to be rolled and including original (T_o) and final (T_f) slab thickness, original (E_o) and final (E_f) slab width, slab metallurgy (A), final product (B) desired, and slab temperature (G), means receiving said condition signals and combining them, in accordance with the formula

$$(AK_1+BE_o)(T_o-T_f)K_2G=\text{No. of passes}$$

wherein K_1 and K_2 are dimensional constants, respectively, into a combined signal representing the total number of passes for that particular slab, a plurality of pass signal producing means, a plurality of individual signal responsive devices, each representing a different number of passes and each responsive only to its respective com-



bined signal to electrically connect its respective pass signal producing means to said condition signal source means, each signal producing means having output means providing a group of pass signals including an original thickness pass signal and a final thickness pass signal and intermediate pass signals, and circuit means adapted for successively transmitting the pass signals from the output means of a selected signal producing means to a screwdown control so that the control can be made to respond successively to those individual pass signals.

25,796
REFINING SOYBEAN OIL
Richard J. Fiala, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
Original No. 3,093,667, dated June 11, 1963, Ser. No. 166,103, Apr. 27, 1961. Application for reissue Jan. 29, 1964, Ser. No. 353,309
11 Claims. (Cl. 260—424)

1. In the processing of soybean oil wherein the crude oil is first degummed with water, *the oil* containing a small amount of at least one acid anhydride selected from the group consisting of lower alkyl aliphatic monobasic and dibasic acid anhydrides as a degumming aid, next the wet gums are separated from the oil, and then the degummed oil is washed, the improvement in the washing operation which comprises, washing the degummed oil *with water* without any intervening treatment and in a non-attenuated condition with from about 50% to 200% by weight of the alkali metal hydroxide required to neutralize the free fatty acid content of the degummed oil.

PLANT PATENTS

GRANTED JUNE 8, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,528
AVOCADO TREE
John G. Du Pais, Jr., 6000 NW. 32nd Ave., Miami, Fla.
Filed Apr. 13, 1964, Ser. No. 359,534
1 Claim. (Cl. Plt.—44)

The new and distinct variety of avocado tree, substantially as herein shown and described, characterized particularly by its moderately upright, compact growth, symmetrical with evenly distributed branches; its leaves broadly obovate; a flowering period occurring very early in the spring (February); its fruit maturing season each year from mid June to the end of July; ability to set and hold fruit under adverse weather conditions; the fruit being further characterized as oblong with a smooth green skin with scattered light yellow stomata, seed that is relatively small, and flesh that is firm, free from fibre, and of an exceptionally rich nutty flavor.

2,529
AVOCADO TREE
John G. Du Pais, Jr., 6000 NW. 32nd Ave., Miami, Fla.
Filed Apr. 13, 1964, Ser. No. 359,535
1 Claim. (Cl. Plt.—44)

The new and distinct variety of avocado tree, substantially as herein shown and described, characterized particularly by its moderately upright, compact growth, with evenly distributed branches; a flowering period occurring early in February, fruit maturing season each year from mid June to early August; and the ability to set and hold fruit under adverse weather conditions; the fruit being further characterized as broadly oval, having slightly rough, thick skin with conspicuous cream-colored stomata over all; seed that is in good proportion to the flesh and the flesh is firm, free of fiber, and of a delicate nutty flavor.

2,530
ROSE PLANT
Eugenie S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York
Filed Feb. 27, 1964, Ser. No. 347,984
1 Claim. (Cl. Plt.—11)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous, upright, and branching habit of growth, a distinctive and attractive shape of the flowers evidenced by having high center petals when first opened and then gradually flattening to full petalled flowers, a distinctive and attractive general color tonality of the flowers corresponding to Eosine Pink, very lightly overcast with Rose Doree, and long-lasting qualities of the flowers and prolonged retention of the original flower color under both outdoor and indoor growing conditions.

2,531
ROSE PLANT
William Zombory and Sophia B. Zombory, Detroit, Mich., assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York
Filed Mar. 19, 1964, Ser. No. 353,308
1 Claim. (Cl. Plt.—5)

A new and distinct variety of rose plant of the climber class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of bearing blooms on the terminal bottom breaks, with repeating blooms being borne on the side shoots of the older wood, as in the variety "New Dawn," large double flowers of good petalage, a distinctive and attractive general color tonality of the flowers corresponding to Rose Red, lightly overcast with Tyrian Rose, and a moderate tea flower fragrance.

2,532
NECTARINE TREE
Frederic W. Anderson, Merced, Calif., assignor to George Abe, Selma, Calif.
Filed Mar. 25, 1964, Ser. No. 354,810
1 Claim. (Cl. Plt.—41)

A new and distinct variety of nectarine tree, substantially as illustrated and described, characterized by large flowers, leaves with reniform glands, and early ripening freestone fruit having a bright red exterior color and yellow flesh without red around the stone; and further characterized by the regular and very productive bearing of globose to slightly oblong fruit which ripens at least two weeks before the John Rivers, about ten days before the Merrill Sunrise and the Grand River, and two to three days before the Red June, and additionally characterized by fruit which remains firm longer than said Red June.

2,533
PEACH TREE
Frederic W. Anderson, Merced, Calif., assignor to L. E. Cooke Co., San Gabriel, Calif., a corporation
Filed Mar. 26, 1964, Ser. No. 355,135
1 Claim. (Cl. Plt.—43)

A new and distinct variety of genetically dwarf peach tree, substantially as illustrated and described, characterized by short internodes and an average height of five to eight feet; by the regular and productive bearing of normal size yellow fleshed fruit having yellow skin substantially overspread with red; and, in comparison to the dwarf Golden Glory, by firmer fruit which ripens about three weeks earlier and is of clingstone instead of freestone type.

2,534
ALMOND TREE
Frederic W. Anderson, Merced, Calif., assignor to Arthur Bright, Le Grand, Calif.
Filed Apr. 13, 1964, Ser. No. 359,536
1 Claim. (Cl. Plt.—30)

A new and distinct variety of almond tree, substantially as illustrated and described, characterized—in comparison to the Nonpareil—by nuts ripening at the same time or a few days later and having a heavier, harder, and better sealed shell; by nuts which weigh approximately ten percent more but whose kernels are approximately twenty percent smaller, relatively thin and flat, and infrequently defective; and by nuts having shells of uniformly light straw color.

PATENTS

GRANTED JUNE 8, 1965

GENERAL AND MECHANICAL

3,187,342
CHIN STRAP FOR A HELMET

Jackson A. Allee, Carbondale, Pa., assignor to Leonard P. Frieder, Long Island, N.Y.

Filed Feb. 26, 1964, Ser. No. 347,536
6 Claims. (Cl. 2—3)



1. A chin strap assembly for a helmet comprising a chin-receiving member; and means for connecting the lateral portions of said chin-receiving member to the lateral portions of said helmet, including at least one break link portion in said means comprising a folded portion having stitches holding said folded portion together against unfolding, said stitches collectively having less tensile strength than the other portions of said connecting means.

3,187,343
CHILD'S GARMENT

Philip G. Sage, New York, N.Y., assignor to Perfect Knit Togs, Inc., New York, N.Y., a corporation of New York

Filed June 13, 1963, Ser. No. 287,647
8 Claims. (Cl. 2—80)

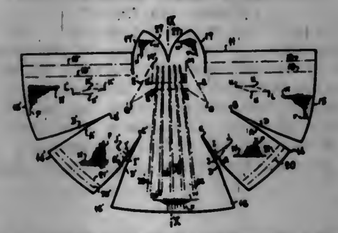


1. A garment particularly adapted to be worn upon the torso of a child, comprising, in combination:
an upper portion; and
a lower portion;
said lower portion comprising:
a plurality of panels;
at least more than one of said panels being so configured, dimensioned and arranged as to present:
a waist portion;
a plurality of hip portions;
a plurality of leg portions;
a corresponding plurality of pedis portions; and
a crotch portion disposed between said leg portions;
said panels each of them having:
an edge extending from one of said hip portions at said waist portion to the other of said hip portions, and defining the periphery of each of said leg and pedis portions, and said crotch portion;
one of said panels being disposed generally frontally of said garment, and the other of said panels being disposed generally rearwardly thereof, and said edges being particularly adapted to be structurally operatively associated with one another completely along the longitudinal dimensional extent thereof as defined by the distance between said hip portions, and along the aforesaid periphery of said hip and pedis portions, and said crotch portion; and
a fastener assembly structurally operatively associated with said panels along the edges thereof for structurally operatively associating one substantially completely with respect to the other;
enabling the lower portion of said garment to be particularly adapted to substantially completely encompass a corresponding portion of the torso of a child, and further enabling the aforesaid portion of the torso to be partially and even completely exposed, to provide access thereto, substantially irrespective of the attitude thereof.

3,187,344
UNITARY GARMENT CONSTRUCTIONS

Raphael Porcello, Knickerbocker Station, New York, N.Y.

Filed July 31, 1963, Ser. No. 298,921
3 Claims. (Cl. 2—93)



1. In a garment construction comprising a blank, said blank having a neckband panel with an inner elongated edge corresponding to the neckline of the garment, an elongated front panel extending outwardly from one end of said neckband panel, an elongated outwardly extending back panel, said back panel having an inner edge spaced opposite a segment of said neckband edge, and an elongated outwardly extending sleeve panel between said front and back panels, the outer end portions of said back and sleeve panels respectively having convergent edges therebetween defining a marginal notch in said blank at one side of the sleeve panel, and the outer end portions of said front and sleeve panels respectively having convergent edges therebetween defining a second marginal notch at the opposite side of the sleeve panel, the combination of means uniting the proximate notch edges of said front and back panels inwardly from the blank margin and to at least a partial depth of the respective notch edges, a second means uniting the respective notch edges of said sleeve panel inwardly from the blank margin and to at least a partial depth of the latter edges, and a third means uniting said inner back panel edge to said spaced edge segment of the neckband panel whereby the length of the back panel will be reduced and the back panel will be suspended from the garment neckband.

3,187,345
REVERSIBLE HAT

Thelma E. Holford, 312 W. Monroe Ave., Jonesboro, Ark.

Filed May 7, 1963, Ser. No. 278,701
3 Claims. (Cl. 2—209.1)

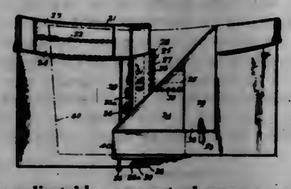


1. A reversible hat made of two identical sector shaped pieces including a pair of diverging angularly related straight edges and an arcuate edge extending between the remote ends of the straight edges, said pieces having the arcuate edges thereof secured to each other, each pair of straight edges having the edges thereof secured to each other so as to form a pair of cone-shaped flexible portions, each portion having a pointed apex end a substantially circular base with a peripheral wall the major portion of which tapers evenly from the base to the pointed apex, said portions being of equal size and alternately nestable one with the other so as to selectively expose one portion or the other portion, the cone shape of the portions enabling, after nesting the portions, the formation of a variety of self-sustaining depressions in the hat.

3,187,346
ADJUSTABLE GARMENT CLOSURE

Harry Jacobson, 420 Rich Ave., Mount Vernon, N.Y.

Filed July 10, 1961, Ser. No. 123,049
11 Claims. (Cl. 2—234)



1. In an adjustable garment closure, a covered flap having a relatively fixed portion and a relatively movable marginal portion, a covering flap adapted variably to overlap the relatively fixed portion of the covered flap and to move as a unit with the movable portion, a travelling 180° U-bend joining said portions, the movable portion being adapted to enlarge and contract in width on transverse movement of the covering flap and the movable portion bodily relatively to the fixed portion of the covered flap, a tape carrying slide operated fastener elements for the movable portion, stitching closely adjacent the elements and securing the tape to the side edge part of the movable portion, cooperating slide fastener elements on the covering flap, and a stitched stiffening bead in the covered flap substantially parallel to said stitching and arranged at said bend in the normal position of the flaps, whereby the movable portion is predisposed to move into and remain in the normal position.

3,187,347
JOINT ARRANGEMENT WITH MULTI-POSITIONAL LOCKING MEANS FOR A PROSTHETIC SURGICAL APPLIANCE

Candido Reyes Terron, 13 Nunez de Balboa St., Madrid, Spain

Filed May 11, 1962, Ser. No. 194,014
Claims priority, application Spain, June 9, 1961, 87,656
9 Claims. (Cl. 3—26)



1. A joint arrangement for a prosthetic appliance comprising, in combination:
(a) two structural members;
(b) hinge means connecting said members for rotation about a fixed first axis
(c) fixed abutment means on said structural members for preventing rotation thereof in a first direction from a predetermined relative position thereof;
(d) a locking member rotatable about a second axis on one of said structural members between three angularly spaced positions, the other one of said structural members having an abutment face, said locking member having
(1) first engaging face means abuttingly engaging said abutment face when said locking member is in a first position thereof and said structural members are in said predetermined position thereof for preventing rotation of said structural members in a second direction opposite to said first direction, and
(2) second engaging face means spaced from said first engaging face means and abuttingly engaging said abutment face when said locking member is in a second position thereof for limiting relative rotation of said structural members from said predetermined position thereof in said second direction to a predetermined angle,
(3) said first and second face means of said locking member being spaced from said abutment face when said locking member is in the third position thereof; and
(e) yieldably resilient means for selectively urging said locking member toward said three positions thereof, and for urging said locking member into abutting engagement of the respective face means thereof with said abutment face when said locking member is in said first position and in said second position thereof.

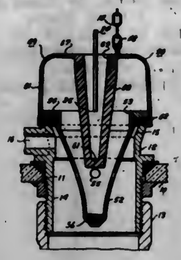
3,187,348
FLUSH TANK VALVE

Paul J. Gresham, Indian Trail Motel, Rte. 3, McAlester, Okla.

Filed Jan. 14, 1964, Ser. No. 337,688
16 Claims. (Cl. 4—57)

1. A valve for a flush tank having an outlet opening including a buoyant valve member for seating engagement

with the outlet opening, means for lifting the valve member out of engagement with the outlet opening, said valve member having an axial upwardly opening cavity, and upright guide means suspended above said valve member with its lower end portion extending into the cavity, said cavity having an upper portion of appreciably greater transverse dimension than the adjacent portion of said



guide means to permit pivotal and amplified lateral movement of said valve member when it is adjacent its seated position, said guide means and cavity having restricted clearance between their lower portions to limit lateral movement of said valve member when it is lifted relative to said guide means for maintaining said valve member in overlying relation to said outlet opening.

3,187,349
DRAIN, VENT AND SUPPLY FITTING
Robert J. Booker and Gordon E. Wagner, Milwaukee, Wis., assignors to Bradley Washfountain Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 19, 1963, Ser. No. 266,395
2 Claims. (Cl. 4—145)



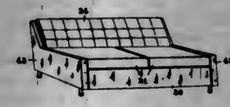
1. In a drain, vent and supply fitting, the combination comprising: a floor-like base having therethrough a drain opening, a vent opening, and a supply opening, each of said openings being separate from the others; a drain pipe connected to the base with its upper end in communication with the drain opening, said drain pipe extending below the base and angling away from the base; a vent pipe connected to the base that is in communication with the vent opening and that extends above and below the base, with the portion of the vent pipe below the base angling away from the base in a direction substantially opposite to the drain pipe; and a supply tube connected to the base that is in communication with the supply opening and extends above the base.

3,187,350
BATHTUB CONSTRUCTION
Ray L. Steven, 219 N. Patton St., Los Angeles, Calif.
Filed June 4, 1963, Ser. No. 285,273
7 Claims. (Cl. 4—177)



1. A bathtub structure comprising, a platform; a tub supported on said platform; a drive roller system secured on said platform surrounding said tub; means for turning the rollers of said drive roller system in either direction; a guide roller system extending along the rim of said tub; a flexible sheet element having a central portion and linear side and end edge portions each secured to one of said drive rollers and extending over said guide roller system.

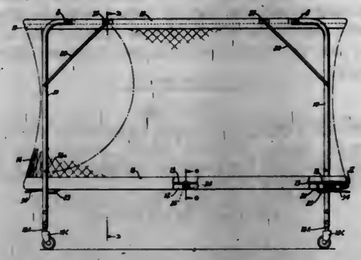
3,187,351
SOFA CONVERTIBLE INTO A BED BY UNFOLDING IN ONE DIRECTION ONLY
Albert Ducrot, 75 Blvd. Malesherbes, Paris, France
Filed Dec. 7, 1962, Ser. No. 243,031
Claims priority, application France, Dec. 9, 1961, 881,498, Patent 1,315,809
3 Claims. (Cl. 5—31)



1. In a sofa convertible into a bed by unfolding in a single direction a frame of the spring mattress which consists of four elements hingedly interconnected in series so as to constitute in the sofa position a volume of rectangular cross-sectional configuration adapted to receive the folded mattress and constituting a seat with back rest, and in the bed position a flat structure for supporting the unfolded mattress, the elements adjacent to the head of the bed being supported by two lateral sets of pivoting supporting members hingedly mounted on the sofa frame, the elements adjacent to the foot of the bed being supported by at least one pair of retractable legs, and control links interconnecting laterally said elements with one another and with their supports, an arrangement wherein the back rest is pivoted at its bottom on the end element of the spring mattress on the bed foot side.

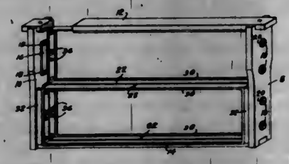
3,187,352
PLAY PEN
Robert Gottlieb, 30—20 78th St., Jackson Heights, N.Y.
Filed June 7, 1962, Ser. No. 200,721
4 Claims. (Cl. 5—99)

1. A collapsible play pen comprising, an upper closed frame and a lower frame, leg means pivotally attached to said upper frame to permit said legs to be folded to a position wherein said legs are substantially parallel to said upper frame, said lower frame including a floor attached thereto, a flexible shroud attached to said upper and lower frame to enclose the area bounded by said upper and said lower frame, diagonally disposed means connected between said legs and said upper frame to prevent pivotal movement of said legs beyond a perpendicular position relative to said upper frame when the play pen is in position for use and releasable means engaging said legs and lower frame for preventing movement of said floor



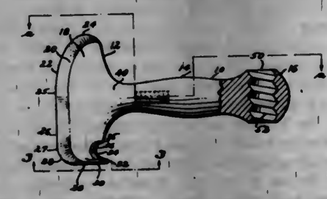
towards said upper frame when the play pen is in position for use.

3,187,353
COMB HONEY FRAME
Willis L. Ackerman, 4806 Carpinteria Ave., Carpinteria, Calif.
Filed Feb. 10, 1964, Ser. No. 343,522
1 Claim. (Cl. 6—10)



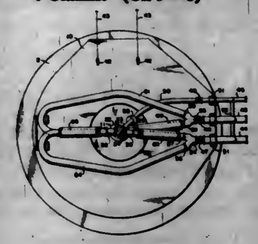
A comb honey frame comprising:
(a) an open frame;
(b) at least one pair of clamps defining a generally rectangular parallelepiped having two opposing open sides;
(c) means for securing said clamps to said frame;
(d) at least one pair of half boxes disposed in the parallelepiped formed by said clamps;
(e) a raised lip secured to said clamps along the edges defining said open sides and adapted to hold said half boxes in a fixed and aligned position relative to each other and said clamps; and
(f) foundation wax disposed between said half boxes.

3,187,354
COMBINATION HUNTING TOOL, HATCHET AND AXE
Herbert F. Friable, 6108 E. Rockglen Court, Springfield, Va.
Filed Jan. 26, 1962, Ser. No. 168,899
3 Claims. (Cl. 7—14.1)



1. A hatchet-type hunting tool comprising a body section with an outer cutting edge on one end, said edge being straight and parallel to a hatchet handle in one portion and curved in another portion, and a hatchet handle receiving means in an enlarged ball-shaped portion formed on the other end of said body section, comprising a circular threaded opening passing through said body section perpendicularly to the longitudinal axis of said body section.

3,187,355
MOORING BUOY
Hendrik Wasscnaar, Oldenzaal, and Pieter Keppenal, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 23, 1963, Ser. No. 304,037
4 Claims. (Cl. 9—8)

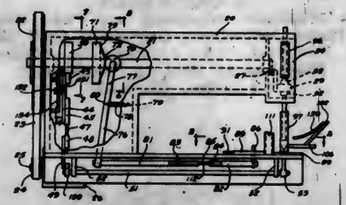


1. A buoy for mooring a floating vessel at an offshore location and communicating fluids thereto and therefrom, comprising:
(a) a float body having a central opening extending therethrough;
(b) a tubular line extending through said opening and providing means whereby conduits approaching the float body from above and below may be secured in fluid communication;
(c) connecting means secured to said line to provide for the connection of conduits thereto approaching from below the float body;
(d) swivel means secured to said line to provide for the pivotal connection of conduits thereto approaching from above the float body;
(e) a turntable mounted on said float body for rotation around said line in a plane substantially parallel to the plane in which conduits connected to the swivel means move;
(f) at least one conduit secured to said turntable, said conduit having one end thereof adapted to be secured to a pipeline communicating with a floating vessel; and,
(g) a branched connector having one end secured in communication with the other end of said conduit and two ends flexibly connected in communication with said line, said two ends being connected to opposite sides of said line in substantially aligned axial relationship through said swivel means.

3,187,356
MACHINE FOR APPLYING WASHERS TO HEADED THREADED FASTENERS
Delbert E. Rodenberg, Napoleon, Mo.
Filed Oct. 29, 1962, Ser. No. 233,855
15 Claims. (Cl. 10—155)

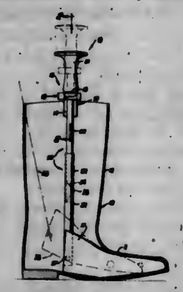
1. In a machine for applying washers to headed threaded fastening members, a vertically reciprocable plunger having a head receiving socket at the lower end thereof, means for reciprocating said plunger between a raised and a lowered position, a slide horizontally reciprocable between a projected and a retracted position, said slide having a recess in an end face thereof, means for supplying said headed members to said slide one at a time with the heads thereof upward, comprising guiding means from which said headed members are suspended by their heads, said guiding means including means directing the shank of a headed member into said recess, yielding means on said slide engaging the head of the headed member in said recess, a stop member mounted

to engage the shank of said headed member in the projected position of said slide, means yieldingly urging said stop member into engagement with said shank, said headed member having its head vertically aligned with said socket in the projected position of said slide, means for feeding



washers one at a time into a horizontally extending position with the opening therein vertically aligned with said socket, said means reciprocating in a path lower than that of said slide, and means for reciprocating said plunger, said washer feeding means and slide in timed relation.

3,187,357
TELESCOPING BOOT TREE
John R. McCabe, 350 S. San Rafael, Pasadena, Calif.
Filed Sept. 4, 1962, Ser. No. 221,284
3 Claims. (Cl. 12—114.8)



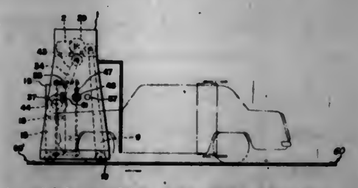
1. In a boot tree, a shoe insert and a boot strap holder having a strap hooking arm, and actuator means for said insert and holder and including coaxial upper and lower elongated members, adjustment means below the holder for locking said members in any of a series of selected telescopically interfitting positions and for blocking relative rotation of said members, connection means pivotally interconnecting the shoe insert and lower portion of the lower member so that said insert is movable up and down relative to said actuator means, said actuator means also including a handle carried at the top of said upper member for telescopic relative movement therealong between extended and collapsed positions, said handle having a bore above the level of said holder, a compression spring extending in said bore to urge the handle toward said extended position and to resist movement of the handle toward said collapsed position, and means mounting said holder on the handle against turning thereabout and blocking relative rotation of the handle about the axis of said upper member during handle movement between said positions to maintain said holder arm projecting in a generally forward direction facilitating hooking thereof into a boot strap, said members being tubular, the upper tubular member having a lengthwise elongated slot above said adjustment means, said blocking means including a lug carried by the handle and projecting into said slot and below said spring and remaining at the general level of said holder, said adjustment means including a spring urged detent carried below said slot by an inner portion of one tubular member extending telescopically within an outer portion of the other tubular member, said one member inner portion having a first side opening into which said detent is spring urged, said other member outer portion having a series of axially spaced side openings successively registrable with said first opening and sized to receive said detent in different telescopic positions of said members.

3,187,358
INSOLE LOCATING AND HOLDING MEANS
Milton H. Rooke, Boxford, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Dec. 12, 1962, Ser. No. 244,128
4 Claims. (Cl. 12—141)



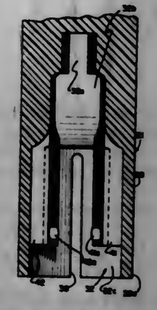
1. A last having insole locating and holding members mounted thereon, one of said members comprising a fixed pin located adjacent to one end of the last and having a surface inclined toward that end of the last being adapted to enter an aperture adjacent to one end of an insole on the last and another member comprising a yieldably mounted pin located adjacent to the other end of the last and having a surface inclined toward said other end of the last adapted to enter an aperture adjacent to the other end of the insole, said last-named pin being adapted to exert a yielding force on the insole in a direction extending lengthwise of the last away from said other pin, thereby causing said pins frictionally to engage said apertures and thus hold the insole on the bottom of the last.

3,187,359
DEVICES FOR WASHING THE BODIES OF AUTOMOTIVE VEHICLES
Shigeo Takeuchi, 2 Kibacho Minato-ku, Nagoya, Japan
Filed July 26, 1963, Ser. No. 297,847
Claims priority, application Japan, July 28, 1962, 37/32,041
4 Claims. (Cl. 15—21)



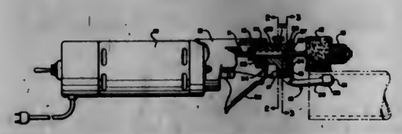
1. A vehicle washing apparatus comprising, a travelling frame for travelling in opposite directions relative to a stationary vehicle to be washed, a plurality of rotatably driven scrubbing brushes mounted on said frame and disposed for scrubbing the side surfaces and another brush for scrubbing the upper surfaces of the vehicle during travelling of said frame, drive means for automatically driving the brushes in a given respective direction of rotation during travel of said frame in one direction and in an opposite respective direction of rotation during travel of said frame in another direction opposite to said one direction, said drive means including means for driving said travelling frame in opposite directions relative to said stationary vehicle, means independently mounting each of said brushes internally of said frame for scrubbing the side surfaces of the vehicle, for each of said brushes, means comprising a pair of angularly spaced, pivoted arms, means mounted on said arms for supplying a cleaning agent and rinsing water alternatively in dependence upon the direction of travel of said frame, and the last mentioned means comprising means for delivering the cleaning agent on said vehicle surfaces ahead of the scrubbing brushes and the rinsing water rearwardly thereof during travel of said frame.

3,187,360
READILY RELEASABLE DRIVE CONNECTION FOR APPLIANCE
Albert R. Spohr, Park Ridge, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 4, 1963, Ser. No. 313,898
11 Claims. (Cl. 15—22)



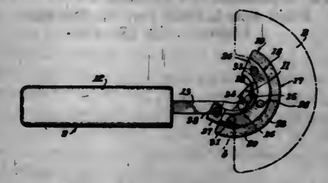
1. A toothbrush comprising a molded brush supporting portion, bristles supported near one end of said portion, means at the other end of said portion for making driving connection with a prime mover, said last mentioned means comprising a multisection longitudinally extending recess in said other end, one section of said recess being defined by opposed flat surfaces for making driving connection with a suitable driving means, another section of said recess being defined by a thin cylindrical wall portion and including a plurality of spaced longitudinally extending inwardly directed ribs adapted for snugly engaging a cylindrical surface, and inwardly directed latching protuberances on one of said ribs adjacent the ends thereof.

3,187,361
WORK PREPARATION DEVICE
Charles J. Wheeler, Mentor, Ohio, assignor to Ric-Wil, Incorporated, Barberton, Ohio, a corporation of Ohio
Filed Oct. 24, 1963, Ser. No. 319,924
14 Claims. (Cl. 15—88)



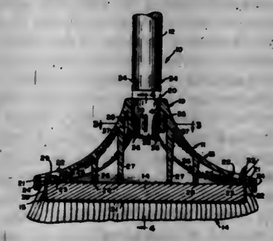
1. A work preparation device for cleaning a surface of a tubular object comprising:
(a) a motor including a housing member;
(b) a driven output shaft member connected to the motor;
(c) a brush connected to one end of the shaft member remote from the motor;
(d) a work piece positioner support journaled on one of the members for rotation about the shaft member;
(e) a workpiece positioner including a forwardly extending arm generally paralleling the shaft and having a forward end near said brush, said positioner being moveably carried by the positioner support for movement relative to the brush;
(f) a spring connected to the arm and to the positioner support and biasing the arm toward the brush;
(g) an adjustable friction drive interconnecting said shaft member and the positioner support to drive the positioner; and,
(h) brake means between the housing member and the positioner support for controlling the speed of positioner rotation relative to the housing member.

3,187,362
SWITCH-BANK CLEANING TOOL
Jim C. Garrett, Inglewood, Calif.
(9060 Salt Lake Ave., Huntington Park, Calif.)
Filed Feb. 10, 1964, Ser. No. 343,720
7 Claims. (Cl. 15—210)



7. A discardable switch-bank cleaning unit comprising:
(a) an arcuate molded nylon plastic carrier of channel cross-sectional form,
(b) a stack of arcuate cleaning sheets disposed in the channel carrier with portions of said stack exposed beyond the carrier,
(c) pins to permanently affix the stack to the carrier, and
(d) a hook formed as a molded part of the carrier and adapted for separable connection to a handle by means of which the carrier is movable in an oscillatory manner to cause the sheets of the stack to clean switch-bank parts introduced between them.

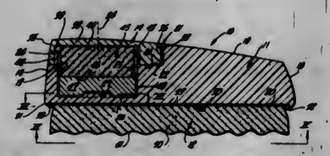
3,187,363
MOP HAVING PIVOTAL CLAMP
W R. Anwarter, Memphis, Tenn., assignor to Gem, Incorporated, Byhalia, Miss., a corporation of Mississippi
Filed May 27, 1963, Ser. No. 283,350
3 Claims. (Cl. 15—229)



1. A mop comprising a handle, an elongated hood of one-piece plastic construction contiguous to said handle and said hood having a recessed area, a mop head arranged contiguous to said hood and said mop head having a portion thereof positioned within the recessed area of said hood, an encased releasable locking arm maintaining said head connected to said hood, said hood being hollow and having a plurality of spaced apart integral ribs therein, the lower edges of said ribs being shaped arcuately and engaging a portion of the mop head, said hood having a pair of openings therein which are spaced inwardly

from the ends and sides of the hood, said locking arm having portions thereof which extend through said openings and which are spaced inwardly from the ends and sides of the hood, means for connecting the handle and hood firmly together, said last named means comprises a handle socket on said hood for receiving said handle, said handle having grooves therein, flanges in said socket having inwardly directed fingers on the lower portions thereof engaging said grooves, diametrically opposed shoulders in said socket, and said shoulders having sharp projections thereon for engaging portions of the handle, there being slots between the shoulders and flanges, and there being spaces between portions of the flanges and the adjacent portions of the hood.

3,187,364
UNITARY POLISHERS AND POLISH RECEPTACLES
Burton S. Dake, Jr., Altadena, and Paul S. Weersing, Glendale, Calif., assignors to Plastics, Inc., Pasadena, Calif., a corporation of California
Filed Apr. 1, 1963, Ser. No. 269,655
2 Claims. (Cl. 15—534)



1. A unitary polisher and polish container comprising, in combination, an elongated substantially rectangular handle having spaced apart ends, sides and upper and lower surfaces, an upwardly open recess formed in the upper surface of the handle extending from side to side of the handle and opening to one end of the handle, the recess having an end wall extending from side to side of the handle and opening to the handle one end and a base surface which extends from side to side of the handle and from the recess end wall to the handle one end, an upwardly open cylindrical cavity formed in the handle and opening to the recess base surface, the end wall of the recess being curved concentric to the axis of the cavity, a flange peripherally of the cavity extending from the recess base surface coaxially of the cavity, a polish containing receptacle disposed in the cavity, a cavity closure member engageable in the recess, means cooperating between the closure member and the peripheral flange operable upon angular motion between the closure member and the flange for releasably securing the closure member to the handle in closure relation to the cavity, the closure member having a curved end surface disposed opposite the recess end wall when the closure member is in closure relation to the cavity, the closure member having an opposite end, sides, and an upper surface which are substantially continuous with the handle one end, sides, and upper surface, respectively, when the closure member is in closure relation to the cavity, polish applicator means secured to the closure member and extending into the cavity into contact with polish in the receptacle when the closure member is secured in closure relation to the cavity, and polish buffing means secured to the handle over substantially the entire areal extent of the handle lower surface.

3,187,365
HANDLE SOAP SPONGE
Tadeusz Paul, 2532 Ross Road, Apt. 102, Silver Spring, Md.
Filed Mar. 6, 1964, Ser. No. 349,935
12 Claims. (Cl. 15—542)

3. A sponge handle assembly for supporting thereon a sponge which forms a reservoir for liquid soap, detergent or the like and which is operable to selectively discharge the liquid into the sponge, comprising:

a main handle body which is hollow at least over part of its length and forms on the inside thereof a reservoir for the liquid,

said main handle body being open at one end thereof and forming on the opposite end thereof a sponge receiving portion,

squeezable cover means closing said one end of the main handle body, said cover means being adapted

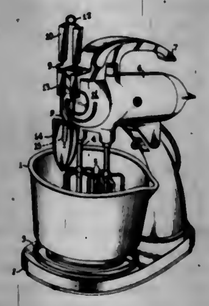


to be opened for filling said reservoir from the open end thereof,

means in said assembly for selectively discharging the liquid from said reservoir to the sponge including liquid seal means operable substantially exclusively by principles of physics to prevent the discharge of the liquid,

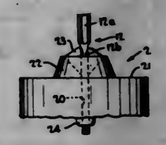
and closure means including a slidable closure member for selectively closing discharge of said liquid seal means when filling the reservoir by opening said cover means.

3,187,366
ATTACHING SPATULAS TO MIXERS
Mae Belle Esco Fant, 214 McSwain Drive, Greenville, S.C.
Filed Jan. 4, 1961, Ser. No. 80,705
6 Claims. (Cl. 15—246)



1. In a food mixer and spatula combination, a saddle attached to a handle portion of the mixer, said saddle having means to detachably support an implement, a spatula having a handle, means on said spatula handle detachably coupling the spatula to the saddle support means, said saddle support means being so located that the blade of the spatula in its assembled condition is positioned above and within the confines of the mixer bowl so that scraped material remaining on the spatula blade may drop back into the bowl.

3,187,367
FLUID DISPENSER
Warren J. Luedtke, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed July 10, 1963, Ser. No. 293,954
6 Claims. (Cl. 15—543)



1. A fluid dispensing device comprising in combination a fluid container and an applier/valve means wherein:

(1) said container has a resilient top provided with a metering channel for receiving said applier/valve means,

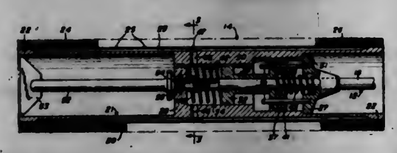
(2) said applier/valve means comprises a stem means slidably mounted in and in sealing engagement with said metering channel and has a dauber means suitably attached near one end thereof wherein said stem means comprises:

(a) a pin means, and

(b) an external fluid conduit means extending for a substantial distance longitudinally along the stem from the dauber means to said pin means, and

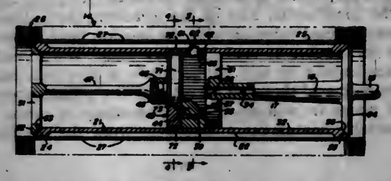
(3) said metering channel forms a fluid-tight seal when engaged with said pin means and a fluid channel when engaged with said external fluid conduit means to provide a fluid dispensing channel extending from the interior of the container to said dauber means.

3,187,368
ROLLER APPLICATORS FOR LIQUIDS
James A. Fugate, 1239 S. Sandusky, Tulsa 12, Okla.
Filed Aug. 16, 1961, Ser. No. 131,813
17 Claims. (Cl. 15—548)



16. A roller applicator comprising a tubular handle, an extension on one end of said tubular handle adapted for connection to a liquid supply container, means on the other end of said tubular handle for rotatably journalling a roller applicator sleeve, a porous roller applicator sleeve journalled on said journalling means, pump means positioned within said sleeve, said pump means having an inlet communicating with the interior of said tubular handle and an outlet discharging within said sleeve, means within said sleeve operably connected to said pump means and operable in response to rotation of said sleeve to operate said pump means to draw liquid through said tubular handle to the interior of said porous sleeve.

3,187,369
ROLLER APPLICATORS FOR LIQUIDS
James A. Fugate, 1239 S. Sandusky, Tulsa 12, Okla.
Filed Apr. 2, 1963, Ser. No. 270,864
13 Claims. (Cl. 15—548)



13. A roller applicator for fluids comprising, a liquid supply line including a substantially straight tube portion having a passage therein, a tubular member and bearing means carried by said tube portion supporting said tubular member for rotation about the axis of said tube portion, an applicator shell carried by and covering the periphery of said tubular member, rotary gear pump means positioned within said tubular member, said pump means having an inlet in communication with the passage in said tube portion and an outlet discharging through openings in said tubular member within said shell, and means interengaging the tubular member and said pump means operable in response to rotation of said tubular member to drive said pump means to draw liquid through said supply line and deliver it within said applicator shell.

3,187,370
DRAPERY HANGER
Bruce J. Bieda, 5590 N. River Road, Rosemont, Ill.
Filed Nov. 22, 1961, Ser. No. 154,221
8 Claims. (Cl. 16—87.6)



1. A hanger adapted for the support of draperies while in sliding engagement with the track of a traverse device comprising: a first substantially U-shaped portion joined at one end to one end of a second substantially U-shaped portion, each of said portions having a first drapery-engaging leg, and a second track-engaging leg curved generally outwardly from the first leg, and a slide head joining the first and second members in side-by-side and generally parallel relation, said slide head being constructed of a material having a low coefficient of sliding friction and adapted to engage the track of the traverse device.

3,187,371
HANGER ASSEMBLY
Russell M. Winnan, Miami, Fla., and Henry L. Majeske, Lodi, Ill., assignors to American Screen Products Company, Chicago, Ill., a corporation of Florida
Filed June 11, 1962, Ser. No. 201,491
3 Claims. (Cl. 16—105)

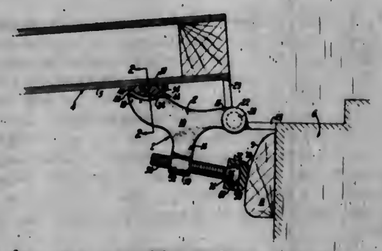
1. A hanger unit adapted for mounting sliding doors on a track comprising: a hanger plate carrying means rideable in said track and having opposite side flanges offset from the same side of the plate to provide a space between the inner side of the plate and the door when said plate is assembled in said unit, a door attaching plate

having door attaching ends and a medial arched portion forming a hanger plate receiving pocket, first means for locking the attaching plate in overlying assembled engagement with the hanger plate in said pocket, said means permitting limited movement of the hanger plate relative to the longitudinal axis of the attaching plate, threaded means formed integral with the hanger plate projecting into the pocket of said attaching plate, and threadable means carried by said hanger plate in threaded engagement with said threaded means and in a position between said plates in said pocket of said attaching plate, said threadable means being accessible from the exterior of



said unit for threading thereof about the longitudinal axis of the hanger plate to move the hanger plate axially relative to said attaching plate, said hanger plate having an axial slot therein, said attaching plate having a complementary slot therein, both said threaded means and said threadable means being in engagement in said slots, said threaded means comprising a plurality of spaced teeth extending from said hanger plate into said hanger plate slot for meshing engagement with said threadable means, and means carried by said threadable means for contact with said attaching plate for preventing longitudinal movement of said threadable means so as to cause the hanger plate to move on said threadable means.

3,187,372
DOOR STOP
John S. Parsons, West Hartford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Feb. 18, 1963, Ser. No. 259,311
4 Claims. (Cl. 16—137)



1. A door stop comprising a frame including a leg portion having a hinge pin receiving aperture at one end and a pair of arcuate guide flanges at the other end extending generally normal to the end of said leg portion, an adjustable resilient shoe having a flat face adapted to engage a door mounted to rotate on said hinge pin, means cooperable with the arcuate guide flanges of said frame for mounting the shoe for relative sliding movement therewith, a laterally extending arm projecting from said leg portion generally at a mid-point between the ends thereof, a bolt adjustably connected to the end of said arm and having a knob at one end thereof, and a resilient bumper for engaging a doorway frame mounted on said knob and having a cavity laterally dimensioned sufficiently greater than said knob to provide universal and lateral movement of the bumper relative to said knob.

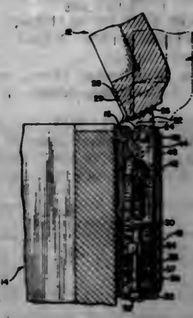
3,187,373
LOCKING HINGE
Robert E. Fisher, Berkeley, Calif., assignor to Up-Right, Inc., Berkeley, Calif., a corporation of California
Filed Nov. 13, 1963, Ser. No. 323,495
6 Claims. (Cl. 16—144)



1. A locking hinge comprising:
a first hinge member having a flat end with a cavity extending centrally into said flat end, said cavity extending towards and terminating short of one wall of said hinge member, said hinge member having an opening spaced from said flat end through said side into said cavity, said hinge member having two ears extending out and away from said flat end on the side thereof opposite to said wall, said ears being disposed one on each side of and at different distances from the center of said cavity, said ears having aligned holes therethrough on an axis lying in the plane of said flat end;
a second hinge member identical with said first hinge member;
a hinge pin extending through said ear holes of both hinge members;
a lock member having an elongated slot and a short and a long prong extending therefrom, said lock member being disposed in said hinge member cavities when said hinge members are closed with their flat ends in abutment, with the hinge pin extending through said slot, with said long prong extending into and through the opening in said first hinge members and with said short prong extending into the opening of said second hinge member;
spring means biasing said lock member in a direction to project said prongs into said openings;
said lock member having a cam surface thereon adjacent said short prong engageable with the flat end of said second hinge member upon closing of said hinge members to move said lock member against the bias of said spring means.

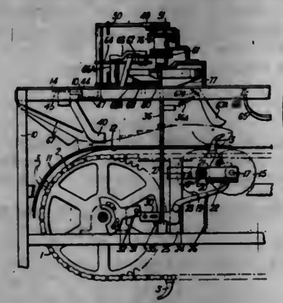
3,187,374
HINGE MECHANISM
Kermit A. Lundell, Jamestown, N.Y., assignor to Weber-Knapp Company, Jamestown, N.Y.
Filed Dec. 17, 1963, Ser. No. 331,295
6 Claims. (Cl. 16—190)

6. A cover mounting combination hinge and counterbalance and motion snubbing mechanism for hingedly mounting a cover upon an open top cabinet whereby said cover may be easily swung between horizontal and vertically standing attitudes, said mechanism including first and second brackets adapted to be fixed to said cover and said cabinet respectively, a hinge pin pivotally interconnecting said brackets, a stirrup member of U-shaped form including opposed leg portions pivotally connected at their ends to a hanger pin carried by one of said brackets and including a tapered dwell portion, a resilient friction-material sleeve having an end portion resting in said dwell portion, a compression spring bearing at one end upon said sleeve, a tie rod fixed at one end to the second of said brackets and slidably extending through said dwell portion and said spring and fixed at its other end to said spring whereby to hold the latter in constant distance relation from said second bracket, said spring being adjusted to exert forces acting through said stirrup member counterbalancing the torque effects of gravity on said cover throughout the range of its positional move-



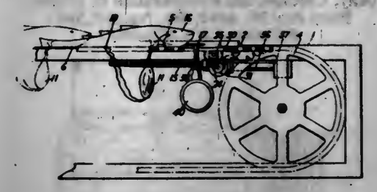
ments, the internal wall surfaces of said sleeve bearing in frictional engagement with said tie rod and thereby operating to snub movements of said stirrup member relative to said tie rod thereby damping hinging movements of said cover.

3,187,375
FISH-DRESSING MACHINES
Charles H. Williamson and Lorentz Saville, Hull, England, assignors to Fleadco Limited, London, England, a British company
Filed Jan. 15, 1963, Ser. No. 251,624
11 Claims. (Cl. 17—3)



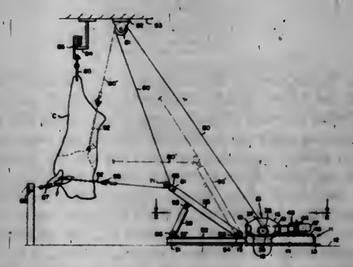
1. A fish-dressing machine comprising means to transport a fish head forwards along a path, means mounting a cutting member adjacent the path for movement between an operative position engaging a fish carried by said transporting means and an inoperative position out of engagement with such fish, means operatively connected to the transporting and mounting means to move the cutting member into operative position at a time not later than the time when the head of the fish comes opposite the cutting member, a feeler element engageable with a fish carried by said transporting means and relatively fixed with relation to the direction of movement of the transporting means but movable laterally with respect to such direction, and control mechanism operatively connected with said feeler element and said mounting means and responsive to both outward and inward movement of said mounting means, as the fish first displaces the feeler member and then permits its return, to produce movement of said cutting member to inoperative position when the fish has reached a point at which a predetermined fraction of its length has passed the position of the cutting member.

3,187,376
FISH-DRESSING MACHINES
Dennis Laws, Hull, England, assignor to Fleadco Limited, London, England, a British company
Filed June 3, 1963, Ser. No. 284,917
Claims priority, application Great Britain, June 15, 1962, 23,151/62
3 Claims. (Cl. 17—3)



1. In a fish gutting machine comprising means for conveying a fish in a direction along its length and with its belly downward, a knife for cutting open the belly cavity, a device for dislodging the guts so that they are suspended from the fish between the throat and vent, and a knife for cutting the gut at the throat and vent, said belly cutting knife, guts dislodging device and gut cutting knife being positioned in that order along the path of travel of said conveying means, the improvement comprising a pair of rollers disposed below said path of travel and forming a nip between them, said rollers being elongated with their axes of rotation extending parallel to said path of travel whereby the gut of the fish travels along the nip between the rollers, and means for rotating said rollers inwardly toward said nip whereby said gut is progressively tensioned and stretched but left attached to said fish as it travels along said nip until it encounters and is cut at the throat and vent by said gut cutting knife, while held in said tensioned condition.

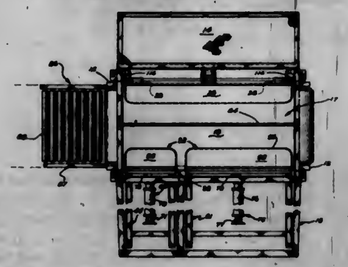
3,187,377
APPARATUS FOR STRIPPING HIDES FROM ANIMALS
John L. Hager, Buffalo, N.Y., and Clyde C. White, Omaha, Nebr., assignors to Hobam, Inc., Buffalo, N.Y., a corporation of New York
Filed Dec. 9, 1963, Ser. No. 328,988
15 Claims. (Cl. 17—21)



1. Apparatus for removing the hide from an animal carcass, comprising
(a) a rotatable winch rotatable selectively in a take-up direction and in a let-off direction, respectively
(b) a cable secured at one end to said winch, and adapted to be connected at its opposite end to the hide to pull the hide from the carcass upon the rotation of said winch in its take-up direction, and
(c) means for constantly increasing and decreasing, by relatively small increments and at a relatively high frequency, the pulling force exerted by said cable on the hide during the rotation of said winch in its take-

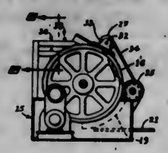
up direction, thereby to cause the hide to be subjected to intermittent tugs at the point of its separation from the carcass.

3,187,378
METHOD OF RESTRAINING ANIMALS
John E. Sauvage, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed July 20, 1962, Ser. No. 211,306
3 Claims. (Cl. 17—45)



1. An improved method for handling animals preparatory to slaughtering same, said method comprising the steps of: causing an animal to move along a path in a given direction to a restraining zone; concurrently applying while said animal is in said restraining zone a pair of separate forces, one to the head and the other to the body of the animal at one side only thereof to independently restrain those portions of the animal; rendering the animal unconscious while so restrained; and releasing said pair of forces to drop the unconscious animal on said path.

3,187,379
FORMING A GELATINOUS SOLUTION INTO RIBBON-LIKE BODIES
Howard E. Rahm, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed July 2, 1962, Ser. No. 206,687
5 Claims. (Cl. 18—1)



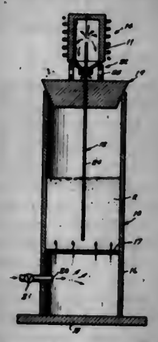
1. In apparatus for preparing a solution of gelatinous material to be dried comprising conveyor means having a cooled moving surface, means for applying a layer of gelatinous material to the surface of the conveyor means to be gelled thereon, improved means for separating the layer of gelatinous material into a plurality of ribbon-like bodies of given lengths comprising, in combination: a plurality of spaced apart discs disposed on an axis parallel to the cooled moving suface of the conveying means perpendicular to the direction of motion thereof, at such a distance from the cooled moving surface that a point on the periphery of each disc is substantially in contact with a point on the cooled moving surface, and at such a distance from the point of application of the gelatinous material to the conveyor means that the gelatinous material has gelled sufficiently for elongate ribbon-like bodies thereof to be self-supporting; at least one bar attached to each of successive discs traversing the space therebetween, each of said bars having a surface in line with the outer periphery of the successive discs to which it is attached; means for rotating the discs in unison; and means for heating said discs and bars, whereby the layer of gelatinuous material on the cooled moving surface will be separated into a plurality of self-supporting elongate ribbon-like bodies of given lengths at least partially by melting action.

3,187,380
APPARATUS FOR USE IN MAKING REINFORCED EDGE APERTURES IN HEAT SHRINKABLE MATERIAL
John W. Harrison, Winchester, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Original application Mar. 21, 1961, Ser. No. 97,307, now Patent No. 3,092,439, dated June 4, 1963. Divided and this application July 20, 1962, Ser. No. 219,093
4 Claims. (Cl. 18—1)



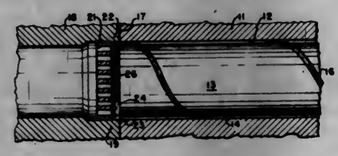
1. An apparatus for forming hole in a film of heat shrinkable material comprising: at least a pair of rotatable rollers arranged to rotate on parallel axes, one of said rollers having a rounded uninterrupted convex projection on its peripheral surface physically engaging the other of said rollers at the nip of said rollers whereby sufficient pressure is applied to the film by the rounded uninterrupted convex projection as the film passes between the nip of the rollers to form an aperture in the film with the edge portion of the film about the aperture being thinned, the other of said rollers being provided with a hole in its surface having a periphery engageable by mating with said rounded uninterrupted convex projection and through which the center portion of the material when the aperture is formed therein is received, and wherein an edge portion about the hole in the other of said rollers is concaved inwardly and complementary to the rounded uninterrupted convex projection of the one roller whereby the edge portion of the film about the formed aperture is thinned to a feathered edge.

3,187,381
APPARATUS FOR MOLDING HOLLOW ARTICLES
George C. Britten, Massapequa, N.Y., assignor to Injecticon International, Inc., Inwood, N.Y., a corporation of New York
Filed Apr. 28, 1961, Ser. No. 106,264
4 Claims. (Cl. 18—5)



1. Apparatus for molding a hollow article, which apparatus comprises a mold having an opening, means for supporting said mold with its opening facing downwardly, a receptacle having an inlet at its lower end and an outlet at its upper end, a perforated partition in said receptacle for dividing said receptacle into upper and lower sections and for supporting a mass of finely divided plastic resin particles thereon, means for introducing a gaseous medium under pressure into said inlet, means extending from within said mold to substantially the upper surface of said partition and through said outlet for conducting resin particles into said mold and for distributing the particles within said mold to deposit the same substantially uniformly on the inner walls of said mold, and means for heating said mold to cause the particles to be converted to a resinous layer constituting the walls of the hollow article.

3,187,382
EXTRUSION APPARATUS
James Lowe, Orange, Calif., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Sept. 16, 1963, Ser. No. 309,051
6 Claims. (Cl. 18—12)

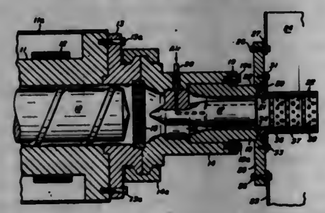


1. A screw for extruding plastic material subject to scorching during extrusion comprising:
(A) a cylindrical root,
(B) a shallow helical flute extending radially from said root,
(C) a flat circular surface terminating the discharge end of said screw
(a) said surface being normal to the axis of said screw, and
(D) a ridge projecting axially from said surface
(a) in the form of a chord across said surface appreciably distant from the center of said surface.

ERRATUM

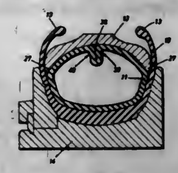
For Class 18—12 see:
Patent No. 3,187,390

3,187,383
METHOD AND APPARATUS FOR SIZING EXTRUDED PLASTIC PIPE
Lewis E. Bacchus, Merrillville, and Lawrence A. Lavery, Gary, Ind., assignors to United States Steel Corporation, a corporation of New Jersey
Filed Aug. 2, 1962, Ser. No. 214,418
6 Claims. (Cl. 18—14)



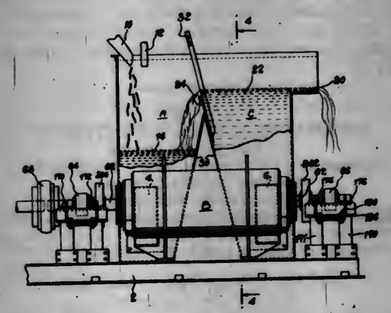
1. Apparatus for sizing extruded plastic pipe comprising a die through which said pipe is extruded, a bushing including a flange abutting the end of said die, said bushing having an axial bore of decreasing diameter from inlet to outlet, said bore at its inlet end communicating with said extruder die and having a diameter sufficiently larger than that of said die to permit expansion of the extruded pipe against the bore and to relieve the pressure in said extruder die, said bore having at least two circumferential grooves therein spaced along the axis thereof, said bushing having spaced, radial perforations therethrough and extending outwardly from each of said grooves.

3,187,384
CURING TUBES FOR VULCANIZING APPARATUS
Bernard Douglas Alm, 95 Research Road, Toronto 16, Ontario, Canada
Filed Nov. 17, 1961, Ser. No. 153,019
11 Claims. (Cl. 18—45)



1. An inflatable article of generally tubular configuration having a bounding wall of flexible expansible material, said tubular inflatable article having a pre-formed re-entrant wall portion extending substantially throughout the axial extent of same and including a pair of folded wall portions arranged in side-by-side relation and joined by an intermediate wall portion depressed in relation to said folded wall portions, first flexible substantially non-extensible means incorporated into said bounding wall in the region of said pair of folded wall portions and intermediate wall portion constraining same against stretching both axially of said tubular inflatable article and cross-sectionally thereof under inflation, but leaving same free for unfolding under inflation, and second flexible substantially non-extensible means incorporated into the remaining bounding wall of said tubular inflatable article constraining same against stretching substantially solely cross-sectionally under inflation but leaving same free for circumferential extension under inflation.

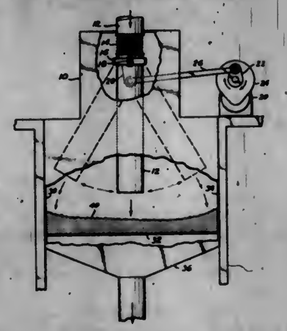
3,187,385
COMMINUTING METHOD AND APPARATUS
Dante S. Cual, Lieja 8, Mexico City 6, Mexico
Filed July 21, 1959, Ser. No. 828,534
3 Claims. (Cl. 19—8)



2. The method of detaching, preparatory to separating, the fibers and the spongy tissue of plant material such as sugar cane bagasse, which comprises forming a liquid suspension of the plant material, soaking the plant material in the suspending liquid, thereafter subjecting the suspension to the action of a plurality of blades having leading edges which are swept back with relation to radii to the blade edges comprising moving the blades edgewise through the suspended plant material to strike the plant material with the edges of the blades, and moving

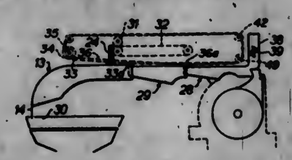
the blade edges relative to and in contact with the fibers in a direction to draw the contacting fibers lengthwise of the blades along their edges to effect a slicing draw cut.

3,187,386
FELTING APPARATUS
Dale L. Schubert, Tacoma, and Robert W. Riley, Milton, Wash.; said Riley assignor to Industrial Development Co., Inc., Tacoma, Wash., a corporation of Washington
Filed June 23, 1960, Ser. No. 38,376
2 Claims. (Cl. 19—155)



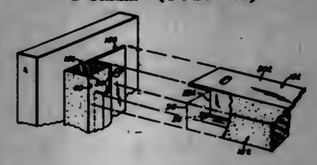
1. In felting apparatus for making mats of lignocellulose particles and including mat conveying means, deckle means adjacent the sides of the mat conveying means for confining the longitudinal sides of a mat formed on the conveying means, and felting means arranged to deposit lignocellulose particles on the conveying means between the deckle means, and wherein the apparatus is characterized by forming a mat having an intermediate portion of substantially uniform thickness and side portions of substantial width which are of different thickness than said intermediate portion: the combination therewith of edge trimming apparatus comprising laterally spaced cutter means mounted above the mat conveying means a substantial distance inwardly of the planes of the deckle means for severing the said side portions of the mat from the intermediate portion, the disintegrating means positioned laterally outward and downstream of the cutter means for disintegrating the severed side portions of the mat, and conveyor means adjacent the disintegrating means for returning the particles to the felting means.

3,187,387
APPARATUS FOR MANUFACTURING GLASS FIBRE MATS
Werner Hugo Wilhelm Schuller, Postfach 76, Wertheim (Main), Germany
Filed May 1, 1962, Ser. No. 191,625
Claims priority, application Germany, May 6, 1961, Sch 29,673
3 Claims. (Cl. 19—156.3)



1. Apparatus for manufacturing a mat of generally uniform thickness and density from staple glass fibres comprising, in combination: manufacturing means for producing individual glass fibres; guide means entraining said fibres in a main current of air extending from said fibre producing means to a fibre depositing station; said guide means including a distributing head formed as an extension of said guide means on the portion thereof nearest said fibre depositing station, said distributing head being of inverted U- or channel-shaped cross section and mounted on said guide means for reciprocable movement relative thereto, said guide means further including means for directing said main current of air into said guide means for travelling said fibres along the upper periphery of said guide means and said distributing head and means for directing streams of air into said main current of air upwardly at an angle thereto; air inlet means for introducing additional streams of air into said main air current; and a travelling receiving member at said depositing station for receiving said individual fibres issuing from said distributing head in random superposed relationship to build up a mat of uniform density and thickness.

3,187,388
ADJUSTABLE DOOR STOP
Homer J. Bagley, 1178 Philadelphia St., Indiana, Pa.
Filed Jan. 24, 1963, Ser. No. 253,603
1 Claim. (Cl. 20—69)



A substantially weathertight door stop comprising, at any interior corner located by two perpendicularly disposed sides of a door jamb, a first elongated resilient member along one of said sides and having an end in abutment with said other side, a second elongated resilient member along said other side having an end in abutment with a side of said first member, said first and second members having a rectangular cross-section having one of the surfaces thereof in engagement with its respective side, a first elongated retaining strip for securing the one surface of the first member to said one side, said strip comprising a flat section against said one side and a pocket for retaining said member to said one side, said pocket having an opening located adjacent the uppermost portion of the strip exposing an opposite surface of said first member to the end of said second member, a second elongated retaining strip for securing the one surface of the second member to said other side, said second strip comprising a flat section against said other side and a pocket for retaining said second member to said other side, said second pocket having an opening spaced a distance from said one side an amount slightly less than the distance between said opposing surfaces of said first member to cooperate with the first-mentioned opening, means adjustably positioning each of said members along the interiors of said sides by moving said strips transversely with respect to said sides, said first and second pockets each comprising a base extending perpendicularly outwardly from a side of said flat section to define an L-shaped member in cross-section, a side member parallel to said flat section, and a return parallel to said base impaling that surface of its resilient member opposite to that against said respective sides to thereby divide said member into a first portion in said pocket and a second portion out of said pocket and said opening in said first pocket being formed by removing a portion of said side member and said return and said opening in said second pocket being formed by removing a portion of said base, said side member and said return whereby the second strip complementally fits the first strip to provide the weathertight door stop along the two sides of the door jamb.

3,187,389
PANEL BOARD CLIP
David B. Anderson, St. Paul, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 8, 1961, Ser. No. 87,831
1 Claim. (Cl. 20—92)



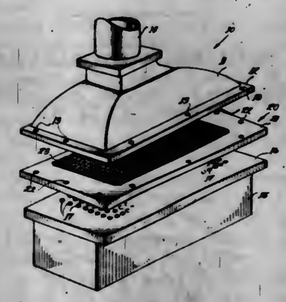
The combination of two matched pieces of panel board arranged to provide a matched joint and a fastener for mounting said pieces of panel board comprising an integral piece of cut and shaped metal, said piece of sheet metal being originally flat and having a first portion cut and bent to form two substantially co-planar legs of unequal length integrally joined along a line to form a base, the longer of said legs of the base having an opening therein bounded in part by a portion of said line, the shorter of said legs being the metal severed from said longer leg to form the opening therein, a second portion of said metal being integrally connected at said line to the base and extending therefrom at right angles, a third portion of said metal extending at right angles to said second portion to overlie said longer leg and the opening therein to provide with said longer leg and said second portion a first channel means opening in the direction of said longer leg, a fourth portion of said metal extending from said third portion to provide with said third portion a second channel means, said second, third and fourth portions lying in the matched joint formed by said pieces of panel board, one of said pieces having a groove engaged with said fastener, said groove being defined by a relatively wide side wall toward the base of the fastener and a relatively narrower side wall opposite thereto, a projecting flange on said one piece defined on one side by a wall coextensive with the back surface of the piece and on the opposite side by said wide side wall, a tongue on the other of said pieces engaged with said fastener, said tongue being fully inserted in said groove, and the longer leg of said base extending well beyond the edge of said tongue to permit fastening to a support.

3,187,390
WIDE SLIT FLOW NOZZLE
Helmut J. Frinkel, Kelkheim, near Frankfurt, and Wilhelm L. P. Reinhardt, Wesseling Bezirk Cologne, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,514
Claims priority, application Netherlands, Oct. 22, 1962, 284,573
8 Claims. (Cl. 18—12)



1. A flow nozzle from which uniform layers of a viscous material may be prepared comprising:
an elongated chamber having a slit-shaped discharge opening extending along the length of the bottom of said chamber;
an inlet for supplying a stream of viscous material to said chamber;
an adjustable flow control element mounted externally of said elongated chamber and extending along the entire length of said discharge opening below said chamber, said control element having its upper end extending into said discharge opening to divide said discharge opening into a pair of openings, one on each side of said control element, thereby causing the material discharged from said chamber to flow along said control element; and,
means mounted externally of said elongated chamber for imparting motion to said flow control element in a plane normal to the plane of said discharge opening in order to vary the flow rate of the material being discharged from said elongated chamber.

3,187,391
BLOW PLATE FOR CORE BLOWERS
Joseph P. Cummings and Lee R. Rice, Indianapolis, Ind., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Nov. 19, 1962, Ser. No. 238,416
5 Claims. (Cl. 22—10)

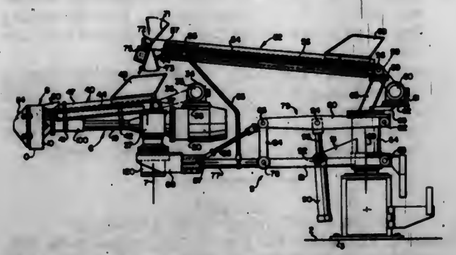


1. For use with a core blowing machine including a sand magazine, a source of pressurized air associated therewith, and a core box positioned below said magazine to receive sand therefrom, said core box having a plurality of blow openings, a core plate comprising: a grid, said grid including a plurality of spaced-apart longitudinally extending thin gage strap members, said grid further including a plurality of spaced-apart transversely extending thin gage strap members, the intersection of said longitudinal and transverse strap members presenting an area having side dimensions which are substantially equal to the width of said longitudinal and transverse strap members, and support means operatively associated with said grid and adapted to secure said grid between said magazine and said core box over said openings.

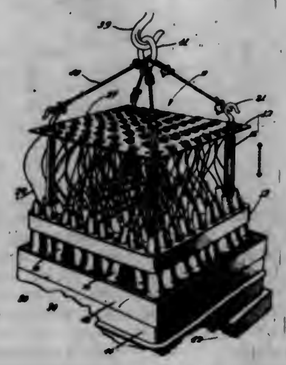
3,187,392
SAND THROWING MACHINE
Robert W. Elmes, North Olmsted, and Walter L. Thompson, Cleveland, Ohio, assignors to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 6, 1962, Ser. No. 171,380
15 Claims. (Cl. 22—36)

1. A machine comprising a pedestal, a first arm mounted on said pedestal for swinging movement in a substantially horizontal plane, a second arm pivoted to the distal end of said first arm for swinging movement in a substantially horizontal plane, a sand projector head mounted at the distal end of said second arm, means to drive said head and means to feed sand to said head to be projected downwardly into a flask or the like, a rotary torque actuator mounted at the distal end of said first arm and including an upwardly projecting splined drive shaft, bearing means mounted on the distal end of said first arm supporting said second arm for such horizontal swinging

movement, said second arm including a downwardly projecting splined shaft releasably slidably engaged with said splined drive shaft of said rotary torque actuator whereby said actuator will be effective to swing said second arm in such horizontal plane.



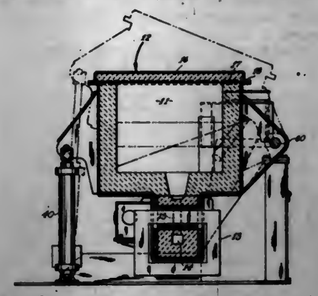
3,187,393
MOLD TREATING APPARATUS
Henry H. Harris, 6 Accolay Way, Champaign, Ill.
Filed July 12, 1963, Ser. No. 294,590
12 Claims. (Cl. 22—41)



1. A mold treating apparatus comprising a plurality of horizontally spaced tamping elements, means supporting each of said tamping elements for substantially independent free universal movement, a mold support member disposed below said tamping elements, and means for vertically relatively reciprocating said support member and said tamping elements.

3,187,394
APPARATUS FOR POURING MOLTEN METAL INTO MOLDS
Mario Tama and Wilbur E. Shearman, both of Morrisville, Pa., assignors to Ajax Magnethermic Corporation, Youngstown, Ohio, a corporation of Ohio
Filed Sept. 18, 1961, Ser. No. 138,802
10 Claims. (Cl. 22—79)

1. In a tiltable furnace comprising a main hearth adapted to contain molten metal, fill means disposed at one side thereof and discharge means disposed at another side thereof, said discharge means being provided with an inclined tube having its lower end submerged in the molten metal and its upper end disposed above the level of the molten metal, means for intermittently applying pressure to the molten metal within the hearth to cause molten metal to discharge through said tube, a sensing device to sense the level of the metal in said tube, means actuated by said level sensing device to tilt the said hearth to maintain the level of metal in said tube at a predetermined level while said intermittent pressure applying means are functionally inactive.

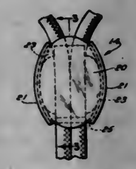


3,187,395
SNAP FASTENER FOR A LOOP OR STRAP
John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Inc., Corte Madera, Calif., a corporation of California
Filed Dec. 5, 1963, Ser. No. 328,382
4 Claims. (Cl. 24—235)



1. In a snap fastener,
(a) a transversely elongated body having a receptacle cavity,
(b) a backwall on one side of said cavity,
(c) a pair of fixed spaced hooks extending from said back wall into and through the other side of said cavity,
(d) a dished bottom opposite said fixed hooks,
(e) a ledge on said dished bottom opposite the tips of said fixed hooks defining an access slot to said cavity,
(f) a snap hook pivoted between said fixed hooks and normally projecting into said cavity substantially opposite said ledge to obstruct passage through said access slot,
(g) manipulable means extended through said back wall and being manipulable from the outside of said back wall for applying force for turning said pivoted snap hook so as to withdraw said pivoted snap hook from said obstructing position,
(h) resilient means normally to urge said pivoted snap hook into obstructing position,
(i) a fixed connecting loop on said body for connection to a strap,
(j) a detachable connecting loop insertable through said slot when said pivoted snap hook is out of obstructing position,
(k) shield means projecting from said back wall, said manipulable means being concealed in said shield means against acidental engagement laterally from either side,
(l) a button extended from said movable hook beyond said spring pivot into said shield means and over said back wall and being offset and spaced from said back wall so that when pressed toward said back wall it turns said movable hook out of said obstructing position, said shield means including projections at least partially surrounding said button, and said shield projections being spaced to afford access for manipulation of said button.

3,187,396
LARIAT SLIDE
John T. Carroll, North Providence, R.I., assignor to The Lorac Company, Inc., a corporation of Rhode Island
Filed Nov. 2, 1964, Ser. No. 408,256
1 Claim. (Cl. 24—123)



A lariat slide comprising a hollow container having top and bottom walls with side walls extending therebetween and with open ends, through which open ends a pair of strand-like parts may slidably extend, said top and bottom walls having edges with an arched section, said side walls having an arched portion connected to said arched section and extending between said edges, a friction member of sheet stock forming two legs resiliently urged apart, one leg forming a jaw for engaging a pair of side by side strands, said other leg having a part extending into the arched portion of the side walls, said jaw being resiliently urged toward one of said top and bottom walls to resiliently grip a pair of strands between the jaw and the top or bottom wall toward which it is urged and hold the strands in adjusted position.

3,187,397
BUCKLE
Eugen Fossler, Schwenningen (Neckar), Germany, assignor to Lewa Lederwarenfabrik G.m.b.H., Uhingen, Wurttemberg, Germany, a firm
Filed May 31, 1963, Ser. No. 284,699
2 Claims. (Cl. 24—188)



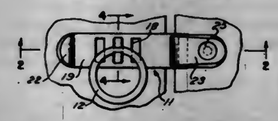
1. A buckle for wristwatch straps or the like comprising:
a pair of spaced side bars;
first and second cross bars interconnecting said side bars at the opposite ends thereof;
a pivot bar substantially parallel to said cross bars interconnecting said side bars between said cross bars;
a tongue pivotally mounted on said pivot bar in order to rest on said first cross bar and to engage openings in the strap, said second cross bar serving as an anchor for the opposite end of the strap;
guide means extending between said side bars, at least a portion of which is located in a plane beneath said second cross bar to direct the free end of the strap beneath said second cross bar and the anchored end of the strap, said guide means comprising a plate member pivotally mounted to said pivot bar; and means on the inner surfaces of said side bars for releasably holding said plate member in operative position.

3,187,398
KEY OPERATED BUCKLE CLAMP
David R. Sommer, Madison, Wis., assignor to Humane Restraint Co., Madison, Wis., a partnership
Filed May 31, 1963, Ser. No. 284,425
6 Claims. (Cl. 24—191)



3. In combination, a key-releasing buckle clamp for a restraint belt, and a key, comprising:
(a) a buckle frame having a pivot bar, a locking bar and a center bar,
(b) a locking plate having a pivot end engaged in pivotable relation with said pivot bar and a locking end with locking means adapted to engage said locking bar in locked relation,
(c) said locking plate having a cutout section in said locking end to define with said locking bar a keyhole,
(d) said key having a substantially flat body with an unlocking end,
(e) said unlocking end comprising a substantially perpendicular projection of said body and a lug which extends from approximately the middle of the outer edge of said projection beneath said body and in substantially parallel relation thereto.
(f) said lug being insertable in said keyhole from the underside of said locking plate to slip around said locking bar,
(g) the outer edge of said projection adjacent said lug being adapted to contact the underside of said locking plate when said key is thus inserted in said keyhole and said locking means is engaged with said locking bar in locked relation, whereby the rotation of said key in such direction to force said outer edge of said projection against the underside of said locking plate disengages said locking means from said locking bar.

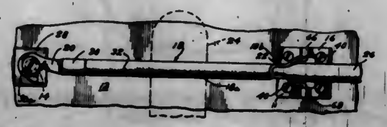
3,187,399
FASTENING DEVICE
Roy H. Anderson, Cranston, R.I., assignor to Felch-Anderson Co., a corporation of Rhode Island
Filed Sept. 3, 1963, Ser. No. 306,156
1 Claim. (Cl. 24—206)



A fastening device for a pair of flaps comprising a sheet metal plate having the sheet stock thereof bent therefrom to form a spring stud member having at least a pair of opposed spring arms rolled into cylindrical shape to form enlarged tip portions having internal shoulders, said stud member having fastening means for fastening to the one flap, a socket member having an opening defined by at least a pair of opposed edges, the enlarged tip portions having larger dimensions than the opposed edges of said opening, the opening of said socket member embracing the spring arms in close relationship, said socket member having fastening means for fastening to the other flap, and separate keeper means engaging the opposed shoulders of the rolled enlarged tip portions, said keeper means being

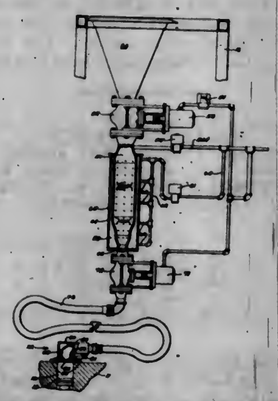
of a size to spread the enlarged tip portions and be urged by said means against the socket member to maintain the arms in spaced relationship and to prevent accidental displacement of the socket member from the stud member when in locked position.

3,187,400
RETAINING ASSEMBLIES
Theodore G. Blomberg, 7336 W. Greenleaf, Chicago 31, Ill.
Filed Jan. 18, 1962, Ser. No. 167,094
11 Claims. (Cl. 24—257)



1. A holder assembly comprising a base, a pin carried by said base, a bracket and a movable holder including a rod having a bight, said holder being carried by said base in spaced relation to said pin, and a band of elastic material, a hook end on said band, said hook end being cooperable with said pin for removably connecting one end of said band, the other end of said band being removably retained by said holder in the bight, the portion of said band extending between said pin and said holder being adapted to cooperate with said base to retain a member in a fixed position therebetween.

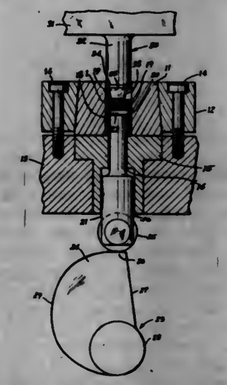
3,187,401
FEEDING SYSTEM FOR A BRICK PRESS
John M. O'Donnell, Pittsburgh, Richard O. Platt, Bethel Park, and Charles D. Gabor, Verona, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1963, Ser. No. 261,654
6 Claims. (Cl. 25—103)



1. In combination with a brick press and a source of brickmaking material for delivery to the brickmaking cavity of the press, a feeding system consisting essentially of a batch weigher, a pneumatic feeder and a discharge head, said batch weigher including:
(A) a first hopper having downwardly directed walls which terminate in a bottom discharge positioned above an endless conveyor at one segment thereof for transporting a brickmaking material,
(B) a second hopper having downwardly directed walls which terminate in a bottom discharge having a normally closed flap thereat disposed below another segment of the conveyor for receiving the material,
(C) a scale beam disposed adjacent the second hopper and operatively connected to the normally closed flap at the discharge end thereof for measuring the quantity of brickmaking material supported by the flap, whereupon when a desired quantity of material is obtained said scale beam being capable of triggering a mechanism to open the flap and release the material,
(D) means cooperating with the scale beam for simultaneously halting the flow of material into the second hopper when said desired quantity is obtained,
said pneumatic feeder including:
(A) a receiving hopper having downwardly converging walls terminating in a bottom discharge into normally closed pressure vessel, disposed below the discharge end of the second hopper for receiving the measured and exact weight of material discharged;
(B) a tubular pressure vessel consisting of an inner and outer shell which define two chambers, one being circumferentially of the other and a plurality of passages through the inner shell interconnecting the two chambers;
(C) means for charging the weighed material from the receiving hopper to the inner chamber of the pressure vessel;
(D) a source of fluid pressure interconnected with the outer chamber, whereby, when the material is charged to the inner chamber said fluid pressure is exerted along the outer walls of the inner chamber and passes through the passages thereof to agitate and pneumatically eject the material into a delivery mechanism disposed therebeneath without impedence due to frictional contact with the major portion of the shell;
(E) a delivery mechanism interconnected with the pressure vessel arranged to pneumatically transport weighed quantities of material, one at a time, from the pressure vessel to a discharge head,
said discharge head including:
(A) an apertured plate having a flat lower surface for engagement with the brick press cavity, substantially through which opens a downwardly converging slot;
(B) a downwardly opening channel attached about the periphery of the plate in which is positioned a resilient seal;
(C) a tubular member, interconnected to the plate in aligned position above said slot, the internal dimensions of said tubular member being substantially the same as those of the upper mouth of the slot;
(D) a rearwardly converging duct attached to the tubular member, said duct having a tubular rear fitting adapted for interconnection with a flexible conduit; and
(E) a flexible conduit connected at one end to said duct and at the other end to said delivery mechanism to cooperate therewith in transporting the brickmaking material to the duct and tubular member and into the brick press cavity.

3,187,402
METAL CARTRIDGE MANUFACTURE
Albert J. Duffield, Woodbridge, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 18, 1963, Ser. No. 265,783
8 Claims. (Cl. 29—1.3)

1. The method of making a metal shell product closed at its base comprising (*a*) placing into a round die one at a time substantially uniform round blanks of metal received therein in centered relationship and having a coarse grain in the range from about 0.150 mm. to about 6.5 mm., (*b*) pressing each said blank by a ram having a reduced end former centrally in the closed end of said round die receiving said blank and former and thereby compressing the center while simultaneously reverse extruding the marginal edge of said blank to form in said die a cup of said metal having a central bottom compressively cold worked in said die to a reduction of about 50 percent to produce a substantial length of cylindrical wall integral with the margin of said bottom, and then (*c*) pressing said



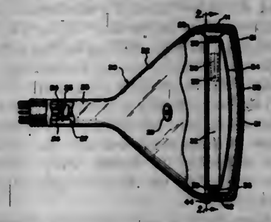
wall lengthwise in said die to subject said margin and wall to a forward extruding around said former and through a reduced die aperture, thereby providing said shell product having a worked tubular section elongated by said pressing of said wall to at least a final increased length and reduced thickness integral with said compressed bottom forming said base, said section worked for grain refinement by said extruding and said base worked for grain refinement by said reduction, substantially equal to the refinement in said section.

3,187,403
METHOD OF MAKING SEMICONDUCTOR CIRCUIT ELEMENTS
Frederick F. Ohstrup, Plymouth Meeting, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 24, 1962, Ser. No. 189,759
2 Claims. (Cl. 29—25.3)



1. A method of making a plurality of PNP transistors comprising:
(a) depositing P type boron material over the entire area of a wafer of N type silicon semiconductive material by heating in an atmosphere of boron gas,
(b) resisting with Apiezon wax the entire area of one side of said wafer to provide a collector area thereon,
(c) resisting with Apiezon wax through a screen fixture selected alternate substantially rectangular areas on the opposite side of said wafer thereby to provide emitter areas thereon and simultaneously creating unresisted alternate substantially rectangular areas between pairs of emitter areas,
(d) etching the unresisted areas of the wafer to expose the original N type silicon material thereby to provide base areas,
(e) oxidizing the exposed base areas,
(f) depositing N type phosphorus material on the exposed base areas of said wafer by heating in an atmosphere of phosphorus gas thereby providing junctions between the base and emitter areas,
(g) further heating said wafer in a high heat atmosphere to drive the N type phosphorus and P type boron by diffusion into the original N type silicon thus to form an accurately predetermined thin undiffused base area in the original N type silicon wafer, and
(h) coating the entire surface of said wafer with a sintered layer of nickel thereby to provide a solderable surface and a true ohmic connection to the base, emitter and collector areas.

3,187,404
METHOD OF MANUFACTURE OF COLOR TELEVISION PICTURE TUBE
Joseph P. Fiore, Wheeling, Ill., assignor to The Rauland Corporation, a corporation of Illinois
Original application Jan. 11, 1962, Ser. No. 165,476. Divided and this application Aug. 29, 1963, Ser. No. 305,358
6 Claims. (Cl. 29—25.15)



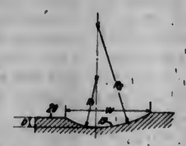
1. In the manufacture of a color television picture tube of the type comprising an envelope having substantial symmetry with respect to a predetermined axis and composed of a glass faceplate section with an end portion and a rim portion, and a funnel section sealed to said faceplate section, a mosaic phosphor screen on the inner surface of said end portion of said faceplate section, and a multi-apertured color-selection device having a rigid frame and a mask element with an aperture pattern corresponding to the distribution pattern of the component phosphors in said mosaic screen, the method of mounting said color-selection device in a precise predetermined space relation to said phosphor screen by the use of mating pairs of male and female support members adapted for spring-biased mutual engagement in predetermined respective engagement planes, which method comprises:
molding and annealing said glass faceplate section;
securing to said frame, at circumferentially spaced locations thereon and in outwardly directed orientation with respect thereto, a first support member of each mating pair, whereby said first support members are maintained in predetermined mutually spaced relation to each other;
affixing the other support member of each of said mating pairs to said rim portion of said faceplate section with its plane of engagement with the associated first support member at an accurate predetermined distance from said axis, and with said other support members positioned in a circumferential array accurately corresponding to said predetermined mutually spaced relation of said first support members;
maintaining the temperature of said faceplate section below its strain point at all times except during said molding and annealing operations;
forming said phosphor screen on said end portion of said faceplate section;
and bringing said mating pairs of support members together to securely mount said color selection device to said faceplate section in said precise predetermined space relation to said phosphor screen.

3,187,405
SCREW ASSEMBLING AND STAKING APPARATUS
Vincent A. Rayburn, Baltimore, Md., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 18, 1963, Ser. No. 273,942
4 Claims. (Cl. 29—33)



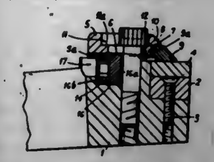
1. A screw assembling and staking apparatus, which comprises:
a carrier,
a pair of opposed holding fingers pivotally mounted on the carrier for receiving a screw therebetween and carrying the screw toward a workpiece mounted in a workstation upon movement of the carrier towards the workpiece, said workpiece having a threaded eyelet disposed within a recess thereof for subsequent insertion of the screw into the eyelet,
a screwdriver bit rotatably and axially slideable between the opposed fingers for subsequent engagement with the screw to drive the screw into the threaded eyelet,
means for spreading the fingers away from the screw,
means for retracting the fingers upwardly away from the workpiece,
means responsive to a predetermined downward movement of the fingers for simultaneously actuating the finger spreading and retracting means so that the fingers are spread to an open position and retracted as the screw is inserted into the threaded eyelet, and
a spin-staking bit rotatably positioned beneath the workpiece for subsequent engagement with the positioned screw to spin-stake the threaded end of the screw.

3,187,406
CUTTING INSERT
Frederick M. Franke, Johnstown, N.Y., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 287,891, June 14, 1963. This application Dec. 16, 1964, Ser. No. 421,149
3 Claims. (Cl. 29—95)



1. A disposable cutting insert having parallel faces and a peripheral surface along the axis thereof,
said parallel faces and peripheral surface meeting to form a plurality of cutting edges,
each of said parallel faces having a continuous, curved, chip-controlling groove therein of uniform, cross-sectional configuration,
said groove being spaced equidistant from said cutting edges to form a central island and a circumferential land on said parallel faces,
the axial depth of said land being less than the axial depth of said island and
the portion of the groove adjacent the land having a first radius, the remainding portion of the groove having a second radius greater than the first radius.

3,187,407
TOOL HOLDERS
Robert Ducet, Gennevilliers, France, assignor to Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone, Paris, France, a French body corporate
Filed Jan. 10, 1963, Ser. No. 250,594
Claims priority, application France, Jan. 11, 1962, 884,538
2 Claims. (Cl. 29—96)



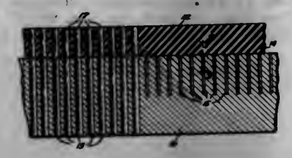
1. A tool holder comprising a support member having a bore therethrough, said bore having a base or end wall and a shoulder therein, a chip breaker and a tool bit separably mountable on said support member, a slotted jaw member, a first screw passing through said slot for clamping said jaw member to said support member to grip both the chip breaker and the tool bit, a leaf spring secured beneath said jaw member, a shouldered rear portion on said chip breaker, said shouldered portion being held to said jaw member by said leaf spring, a threaded under part on said jaw member, and a second screw engaging said threaded under part and being located in said bore in said tool support member, said second screw having two ends, one of said ends working against the base or end wall of said bore and the other of said ends of said second screw working against said shoulder in said bore, rotation of said second screw thus effecting substantially rectilinear movement in two directions of said jaw member after slackening of said first screw.

3,187,408
METAL WORKING TOOL
Curtiss W. Titterud, Rte. 2, Anoka, Minn.
Filed Sept. 16, 1963, Ser. No. 309,149
3 Claims. (Cl. 29—96)



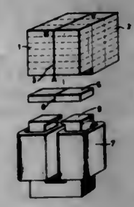
1. In a device of the class described,
(a) an elongated tool body having a cylindrical cross-sectional contour adjacent its rear end for gripping reception by the mounting head of a metal working machine,
(b) and having a planar front surface normal to the axis thereof,
(c) the front end portion of said tool body being formed to provide an axially extended slot which opens through said front surface and defines a pair of cooperating jaw elements,
(d) said slot at its forward end being enlarged to form a diametrically extended cross-sectionally arcuate mouth of more than 180° of circular arc,
(e) a bit slidably adjustably receivable in said mouth and having a cross-sectional contour conforming generally to that of said mouth,
(f) and means for imparting gripping pressure to said jaw elements.

3,187,409
METHOD OF SECURING RESILIENT MATERIAL COVERS TO A ROLL
Walter L. Glass, Claverack, N.Y.
(% Ames American Co., Box 606, Columbus, Miss.)
Filed May 7, 1963, Ser. No. 278,643
5 Claims. (Cl. 29—148.4)



1. A method of attaching a cover of resilient material on the core member of a roll comprising forming at least one recess in said core member, heating said core member to temperature sufficient to expand the gases in said recess, mounting said cover on said core member in overlying relation with said recess while said roll is heated and cooling said core member whereby at least a partial vacuum is provided in the closed chamber defined by said recess and the portion of said cover overlying said recess to vacuum lock said cover to said core member.

3,187,410
METHOD OF MANUFACTURING MAGNETIC HEADS
Simon Duinker and Jules Bos, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 6, 1960, Ser. No. 54,157
Claims priority, application Netherlands, Sept. 5, 1959, 243,050
15 Claims. (Cl. 29—155.5)



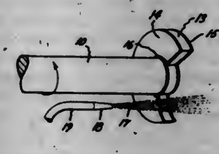
1. A method of manufacturing a plurality of poleshoes for magnetic heads comprising: machining to substantial flatness at least one surface of each of at least two solid blocks of sintered oxidic ferromagnetic material whose dimensions are a multiple of said poleshoes both laterally and vertically, arranging said surfaces parallel to and opposite each other, interposing an adhesive layer of heat-softenable and bondable material between opposing surfaces, heating said assembly to soften said adhesive layer, applying opposing forces to said blocks to deform said adhesive and continuing to apply such force until the desired gap length is obtained, discontinuing the application of such force to permit said adhesive to harden and maintain said blocks so positioned, thus forming a poleshoe unit wherein said blocks are mechanically bonded to each other at said surfaces by said adhesive layer, said adhesive layer forming the gap material of the poleshoes, and severing from said unit a plurality of poleshoes each containing at least one gap portion, said severing being done in planes substantially perpendicular to the plane of said surfaces.

3,187,411
METHOD OF MANUFACTURING POLE-PIECE UNITS FOR MAGNETIC HEADS
Simon Duinker and Jules Bos, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 28, 1961, Ser. No. 127,715
Claims priority, application Netherlands, Sept. 27, 1960, 256,305/60
4 Claims. (Cl. 29—155.5)



1. A method of manufacturing pole-piece units for magnetic heads comprising: placing an accurately processed unprofiled surface of one block of sintered oxidic ferromagnetic material against an accurately processed surface of a second block of the same material with the interposition of a first gap-forming non-magnetic material which melts and adheres to said surfaces when heated to a first temperature, pressing said surfaces against each other substantially at said first temperature until a desired gap length is reached, forming at least one aperture in the resulting assembly, each aperture extending through said assembly and the formed gap and having an axis substantially parallel to the gap, filling each aperture with a second non-magnetic material which melts and adheres to said ferromagnetic material at a second temperature lower than said first temperature, heating the assembly to said second temperature, and cutting said assembly in planes each passing lengthwise through one aperture.

3,187,412
METHOD OF MOUNTING AND ALIGNING TRANSDUCERS ON DELAY LINES
Jerome J. Tiemann, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 26, 1963, Ser. No. 275,872
4 Claims. (Cl. 29—155.5)



1. The method of mounting a transducer element in aligned relationship on the end surface of a longitudinally extending sonic delay line, which method comprises: providing a transducer element having one surface which generally complements that of said end surface; positioning said element relative to said delay line so that a portion of said one surface is in juxtaposition to said end surface and so that said one surface overlaps said end surface in at least one direction; bonding said element to said delay line in said postion; and, aligning and shaping said element by projecting a stream of particulate abrasive material substantially parallel to the longitudinal axis of said delay line and toward said element to effect erosion of the overlapping portion of said element so that only portions of said element masked by said delay line remain.

3,187,413
PROCESS OF MANUFACTURING SERVO MOTOR ROTORS
Maurice L. Vest, Robert E. Skopec, and Walter G. Liebmann, Chicago, Ill., assignors to G-M Laboratories Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 2, 1961, Ser. No. 92,913
6 Claims. (Cl. 29—155.53)



1. The process of manufacturing electric motor rotors which comprises providing a rotor of relatively hard metal having a plurality of slots therein respectively extending substantially from end to end thereof, placing relatively soft rotor bar conductive metal in said slots, coating said rotor and bar metal with a flexible material to form a sealed capsule, exerting a fluid pressure on said capsule to urge said conductive bar metal into uniform and intimate contact with said rotor, subsequently removing said coating, and thereafter machining the rotor and bar metal to the extent necessary to separate the conductive bar metal into rotor windings.

3,187,414
METHOD OF PRODUCING A PHOTOCELL ASSEMBLY
William B. Hugle and Frances B. Hugle, Union Township, Clermont County, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 5, 1959, Ser. No. 791,400
8 Claims. (Cl. 29—155.62)



1. The method of producing a photocell assembly having a plurality of photocells disposed on an axis comprising the steps of mounting a plurality of pins in a plurality of bores disposed adjacent to the perimeter of a flat glass plate-shaped base of electrically insulating material with the pins extending parallel to each other from one surface of the base and being exposed on the other surface of the base, thereafter positioning a first mask having a slot defining the axis of the photocells on the said other surface of the base, thereafter depositing alternate layers of a cation material chosen from the class consisting of cadmium, lead, indium, mercury, gallium, zinc and aluminum, and an anion material chosen from the group consisting of sulphur, selenium, tellurium, antimony, and arsenic, on the surface of the mask and exposed base, thereafter removing the first mask and heating the base and deposited layers to a temperature between 300° and 400° centigrade to produce a reaction between the anion and cation to form a semiconductive film, said temperature being below the melting point of the glass base, thereafter cooling the base and film to a temperature below 200 degrees centigrade, thereafter positioning a second mask having a plurality of pairs of apertures on the base, the apertures of each pair being on opposite sides of an axis and the axis of the second mask being positioned over the axis of the semiconductive film and each aperture of each pair confronting a portion of the semiconductive film, vapor depositing an electrically conducting layer on the second mask and exposed surface of the film to form a plurality of pairs of electrodes on the surface of the semiconductive film and electrically interconnecting the electrodes and the pins.

3,187,415
PROCESS FOR MANUFACTURING HEAT EXCHANGERS
Günter Schöll, 21 Mallergerstrasse, Esslingen, Germany
Filed Mar. 29, 1961, Ser. No. 99,197
Claims priority, application Germany, Apr. 4, 1960, Sch 27,698
5 Claims. (Cl. 29—157.3)



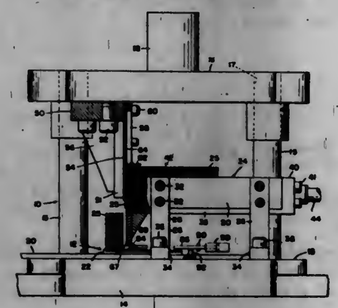
3. In a process for manufacturing a heat exchanger, the steps of placing an elongated metal tube within an elongated metal coil spring whose convolutions have a diameter substantially larger than that of the tube with the convolutions of said spring surrounding and spaced from said elongated metal tube so as to be out of electrical contact with said tube; connecting the coil spring and the tube in an electric welding circuit; deforming the convolutions of said coil spring into engagement at spaced portions of said coil spring with the exterior surface of the tube for completing the electric welding circuit through the portions of engagement between said tube and said convolutions of said coil spring to thus cause not only engagement between said coil spring and said elongated tube but also simultaneously therewith the welding of said coil spring at said portions of engagement of said coil spring to said tube.

3,187,416
METHOD FOR MANUFACTURING SPIRAL SPRINGS, PARTICULARLY FOR WATCHMAKING
Paul Tautry, Combe-Sandoz 15, and André Simon-Vermot, Rue Girardet 22, both of Le Locle, Switzerland
Filed Feb. 6, 1962, Ser. No. 171,526
Claims priority, application Switzerland, Feb. 14, 1961, 1,715/61
7 Claims. (Cl. 29—173)



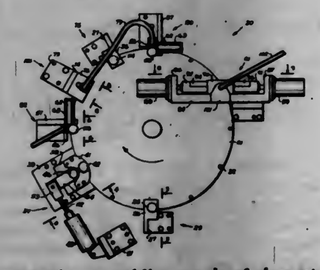
1. A method for manufacturing spiral hairsprings or mainsprings for watches comprising the steps of placing a plurality of metal strips of spring material parallel to each other on the flat face of a common metallic rigid and bendable carrier sheet with the carrier sheet being of a greater thickness than the thickness of the strips and being of a width at least equal to the sum total of the widths of said strips and of a length substantially equal to the lengths of the strips; securing said strips in parallel relation on the face of the carrier sheet; winding the carrier sheet with the adherent strips about an axis of revolution to form said strips and carrier sheet into spiral form; applying a heat treatment to the wound assembly of strips and carrier sheet to give the strips a permanently fixed shape and removing the wound carrier sheet from the wound strips to provide finished individual spiral springs having spaced convolutions with the springs having the same radial pitch.

3,187,417
APPARATUS FOR FABRICATING EXTENDED SURFACE PLATES
Arthur L. Claes, East Detroit, and David A. Singer, Harper Woods, Mich., assignors to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan
Filed Mar. 11, 1963, Ser. No. 264,298
20 Claims. (Cl. 29—202)



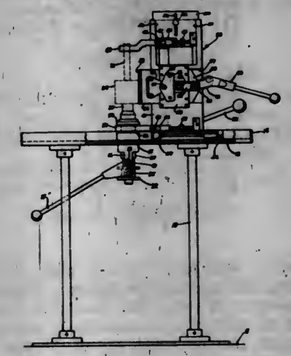
1. An apparatus for fabricating an extended surface plate having a base plate with spaced transversely extending alternate ribs and grooves therein, with fins having edge portions fitting snugly within the grooves of the base plate, said apparatus comprising: a support having a work station; a fin transfer station for one or more fins; means on said support for guiding the base plate for longitudinal movement through said work station to successively position the grooves of the base plate in the work station; a fin actuator for said transfer station engageable with one edge portion of a fin for moving the fin in a direction transverse to the direction of movement of the base plate to seat another edge portion thereof in the groove of the base plate in the work station, and means for establishing locking pressure between the edge portion of each fin inserted in a groove and the adjacent side surfaces of the groove to retain the fins in position and to insure good heat conducting relationship thereto.

3,187,418
ASSEMBLY AND STAKING APPARATUS
William C. Kent, Gahanna, Ohio, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 30, 1963, Ser. No. 276,952
11 Claims. (Cl. 29—203)



1. Apparatus for assembling a pair of elements having openings for receiving the ends of an elongated member, which comprises:
means for inserting the elongated member into an opening of one of the elements,
means for inverting the assembled elongated member and the element,
means for inserting the opposite end of the elongated member into an opening of the second of the pair of elements, whereby the pair of elements are assembled with the elongated member, and
means for supporting the inserting and inverting means in a cooperative relationship.

3,187,419
ARMATURE WEDGER
Logan W. Johnston, Minneapolis, Melvin J. Straub, Hopkins, and Thomas L. Schuette, Minneapolis, Minn., assignors, by mesne assignments, to Avnet, Inc., Chicago, Ill., a corporation of New York
Filed Dec. 26, 1961, Ser. No. 161,985
11 Claims. (Cl. 29—205)

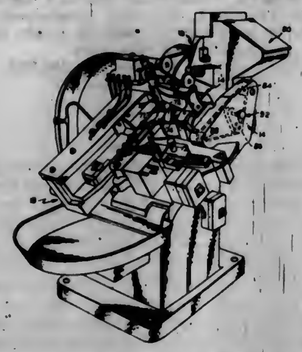


1. An armature wedger adapted to drive wedges and having a supported work table, means on said work table for gripping and holding an armature vertically with respect thereto, a wedger head having a frame supported by said work table, hook means secured to said frame for engaging said means and to hold said wedger head from withdrawing farther than a limited distance from the armature, a pair of openable and closeable jaws secured to said frame, a wedge channel behind said jaws, a wedge magazine feeding into said wedge channel, a wedge driving blade reciprocable in said channel and between said jaws, means pivoted to said frame and said wedge driving blade for reciprocating it, said means simultaneously closing said jaws when said wedge driving blade is moved in one direction and for releasing them when said wedge driving blade is moved in the other direction.

3,187,420
NONLINEAR GEARING AND APPARATUS UTILIZING NONLINEAR GEARING FOR INDEXING
Ougljesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed June 1, 1962, Ser. No. 199,363
21 Claims. (Cl. 29—208)

18. An auxiliary mechanism or attachment for a machine having screw element feeding means, said mechanism or attachment comprising a washer container, a movable device receiving screw elements from the screw element feeding means and telescopically preassembling screw elements with washers at a station, a rotary plate member associated with the washer container for feeding washers to the assembly station in the path of movement of a screw element to be received by said device, indexing means for operating said device and said rotary washer plate member in timed relation, said index means comprising an epicyclic gear train coaxial with said rotary washer plate and comprising first, second and third gear means, said first and second gear being substantially identical in outer diameter and disposed in coaxial arrangement with each other and with said washer plate, one of

said first and second gear means being fixed, said third gear means being operable to simultaneously mate with said first and second gear means to cause relative movement therebetween upon constant input movement of said third gear means, means for supplying movement to said third gear means and to said screw feeding device in timed relation, means connecting the relative movement of the relatively movable member of said first and second



gear means to said rotary washer plate, said first gear means being characterized as having a plurality of teeth thereon identical in shape and spacing to the shape and spacing of the teeth of said second gear means and a plurality of teeth thereon which are of different shape and spacing to the shape and spacing of said second gear means whereby said washer plate moves in timed relation in the path of said screw feeding device with the movement characterized as having dwell time.

3,187,421

METHOD FOR THE PRODUCTION OF METALLIC PRE-FORMS

Heinz Feldmann, Weingarten, Wurttemberg, Germany, and Guillaume Schaming, Le Perreux, France, assignors to International Cold Forging Corporation, Monaco, Monaco

Filed Sept. 8, 1961, Ser. No. 136,828
Claims priority, application Germany, Sept. 8, 1960, J 18,681, J 18,682, J 18,683
3 Claims. (Cl. 29—417)



1. A method for the production of metallic preforms for cold forging comprising, cutting off pieces from a bar stock to form cropped cutoffs, thereafter flattening the cutoffs by upsetting to form burrs extending outwardly from the flat surface and subsequently machining the burrs to remove the burrs from the upset cutoff pieces.

3,187,422

REINFORCEMENT OF METAL

Willard L. Morgan, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Original application Aug. 27, 1956, Ser. No. 606,293, now Patent No. 2,953,849, dated Sept. 27, 1960. Divided and this application Dec. 8, 1959, Ser. No. 858,255
9 Claims. (Cl. 29—419)

1. A method for producing glass reinforced metal articles comprising forming relatively short segments of metal each having a plurality of short glass fibers distributed therethrough, applying heat to said segments sufficient to establish a condition of plasticity in the metal thereof, and applying sufficient pressure to said



heated segments as a mass to work them into integrated relationship with the metal of the segments forming the matrix of a body of desired shape reinforced by said fibers.

3,187,423

METHOD OF RELEASING SOLID SOLDER FROM A JOINT

Lloyd C. Lantz, P.O. Box 391, North Sydney, Nova Scotia, Canada

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,387
9 Claims. (Cl. 29—427)

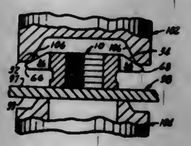
1. A method of releasing solid tin-lead solder from surfaces to which it has adhered comprising: melting said solder in contact with an alloy containing from about 45 weight percent to about 60 weight percent mercury, the balance of the alloy consisting essentially of tin and lead with usual impurities, the amount of alloy present being sufficient to form with said solder a composition which when partially and wholly solidified is readily dislodged from said surfaces; mixing said alloy with said melted solder; and mechanically dislodging the resulting composition after it has at least partially solidified.

3,187,424

METHOD OF APPLYING A FASTENER

Plummer E. Double, Detroit, and Jerry H. Steward, Bloomfield Hills, Mich., assignors to Multifastener Corporation, Redford, Mich.

Filed May 3, 1961, Ser. No. 107,509
2 Claims. (Cl. 29—432)



1. In a method of securing a threaded fastener to a panel, the panel being interposed between said fastener and a die button, said threaded fastener having a rectangular piercing face joined by a shank to oppositely directed flanges having stop surfaces substantially normal to the longitudinal axis of said fastener, said shank having grooves immediately adjacent the flanges, said grooves being interposed between the stop surfaces and the piercing face of said fastener, said die button having an aperture corersponding substantially to the shape of said piercing face and an embossing portion circumscribing said aperture, the steps performed in a single uninterrupted motion of the fastener relative to the panel of (1) piercing said fastener piercing face through said panel and into said die button aperture to form an opening in

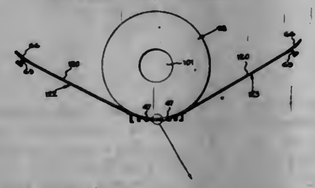
said panel, (2) swaging into said grooves a portion of said panel member adjacent said opening and confined between said die button and said flanges, and (3) deforming the stop flanges toward said piercing face and into extended surface engagement with the adjacent surface of said panel, thereby deforming the panel portions outwardly of said die button embossing portion in the direction of nut movement relative to the panel so that that portion of the panel immediately surrounding said aperture therein is embossed.

3,187,425

METHOD OF FABRICATING SELF-SUSTAINING VESSELS

James J. Black and Francis V. Roy, Cincinnati, Ohio, assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware

Original application Apr. 28, 1960, Ser. No. 25,324, now Patent No. 3,131,949, dated May 5, 1964. Divided and this application Oct. 8, 1962, Ser. No. 233,174
2 Claims. (Cl. 29—469)



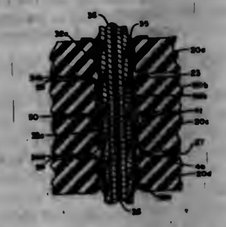
1. The method of assembling a horizontally elongated vessel having internal bulkheads, said vessel having upper and lower extruded sections and a sheet metal shell enclosing said bulkheads, said method comprising the steps of mounting said bulkheads longitudinally in alignment with one another to provide a core delineating the configuration of the vessel, providing a longitudinal extruded section having a length equal to the length of the vessel, joining two sheet metal panels to the opposite side edges of the extruded section, each sheet metal panel adapted to form a portion of the shell at opposite sides of the vessel, joining respective extruded half sections to the outer edges of said sheet metal panels and thereby providing a prefabricated shell assembly, wrapping said prefabricated shell assembly about said bulkheads to bring the extruded half sections into adjoining relationship, and joining said extruded half sections longitudinally to provide a closure for the shell.

3,187,426

METHOD OF MAKING PRINTED CIRCUIT ASSEMBLIES

Le Roy A. Probofsky, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 19, 1962, Ser. No. 180,685
7 Claims. (Cl. 29—471.9)



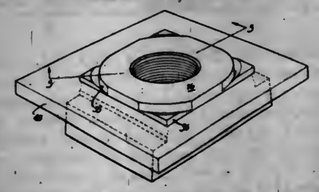
1. The method of joining by soldering a plurality of apertured electrically insulating solder repellent panels having an electrically conductive strip on at least one side thereof, which method comprises the steps of: disposing solderable material within the apertures on the walls thereof such that at one end of each aperture a circumferential portion of the insulating panel is completely exposed; superimposing the panels such that the apertures of one panel are aligned with the apertures in the next adjacent panel so as to form a series of aligned apertures; securing the panels in fixed relationship; disposing an elongated solderable member through at least one series of apertures; immersing the secured panels and the solderable member into a molten bath of solder to a depth such that the solder in the bath and the top of the secured panels are substantially at the same level for causing solder to ascend any space between the member and the solderable material on the aperture walls for forming a solder joint between the member and the material.

3,187,427

METHOD OF INSTALLING A CLINCH NUT

Plummer E. Double, Detroit, Mich., assignor to Multifastener Corporation, Redford, Mich., a corporation of Michigan

Original application June 25, 1962, Ser. No. 204,854. Divided and this application May 31, 1963, Ser. No. 284,562
2 Claims. (Cl. 29—509)



1. In a method of installing a clinch nut in a panel having a polygonal aperture, the nut having a polygonal end pilot portion projecting through the panel aperture, flanges bottomed against the panel, grooves located in the panel aperture and a pilot base portion snugly fitting into said aperture, the flanges and grooves being on opposite sides of said pilot portion and said pilot base portion being between each of said grooves and the adjacent flange, the steps of inserting said end pilot portion into said preformed aperture to an extent such that said end pilot portion projects beyond one face of the panel and said flanges abut the other face of the panel, centering said nut in said aperture by the snug fit of the pilot base portion in said aperture, laterally outwardly deforming the corners only of the nut end pilot portion to overlie the plate adjacent said aperture and to affix the nut to the panel, and displacing the so-deformed nut corners toward the nut flanges to flow a portion of each such nut corner into the corresponding nut groove only at said corners and between the nut pilot base portion and the pilot portion, said displaced nut corners and said pilot base portion effecting snug abutment between said nut and the edges of the panel aperture at each corner thereof.

3,187,428

METHOD OF TREATING ALUMINUM AND ALUMINUM ALLOYS PREPARATORY TO BRIGHT FINISHING

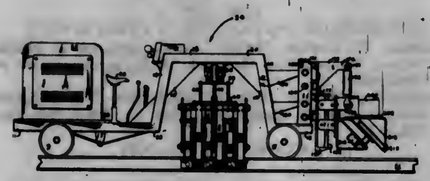
John B. English, La Grange Park, Ill., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

No Drawing. Original application Oct. 19, 1960, Ser. No. 63,503. Divided and this application Mar. 12, 1964, Ser. No. 354,451
9 Claims. (Cl. 29—527)

2. A method of forming a surface of high reflectivity on a body of a substance belonging to the group consisting of aluminum and aluminum alloys consisting essen-

tially of magnesium up to about 1.20%, copper .01–.08%, manganese .03% max., iron .01–.12%, silicon .01–.08%, balance aluminum, comprising the steps of: homogenizing a cast ingot of said metal to achieve grain size control and uniformity of structure; hot-rolling said ingot; cooling the resulting slab to about 525–575° F.; and warm-cool rolling the slab to a substantial reduction in thickness, said warm-cool rolling being completed before the metal temperature drops below about 350° F.; cold-rolling to finished gage; and anodizing.

3,187,429
MULTIPLE RAILWAY TOOL MACHINE
Robert L. Fox, 512 Hilltop Terrace, Alexandria, Va.
Filed June 28, 1960, Ser. No. 39,255
13 Claims. (Cl. 29—564)



1. A multiple tool machine for track rail, comprising a self propelled main frame provided with wheels mounted thereon for travel along a railway track, a drill and clamp assembly mounted on said main frame, a multiple series of drills operably mounted in said assembly for selective movement into and out of position to simultaneously drill holes in both sides of a track rail, clamps operably mounted in said assembly for movement into position to hold the track rail in cooperating relation with said drills and means on said main frame for selectively operating the drill and clamp assembly.

3,187,430
SHEARS
Edward M. Wallace, 55 Benedict Terrace, Longmeadow, Mass., and Wallace M. Preston, West Springfield, Mass., assignors, by mesne assignments, to Edward M. Wallace, Longmeadow, Mass.
Filed Jan. 29, 1963, Ser. No. 254,762
6 Claims. (Cl. 30—252)



1. Compound action shears comprising, a pair of blades having cooperating contacting cutting edges, a floating blade pivot pivotally interconnecting said blades at their respective rearward portions, a pair of handle levers having forwardly-projecting portions, a handle pivot pivotally extendable through aligned openings in the blades of said pair and pivotally interconnecting the handle levers of said pair thereof in a scissor-like formation independent of and forwardly of said blade pivot, the forwardly projecting portion of each handle lever of said pair thereof being located in juxtaposition to one of the blades of said pair thereof, and a pair of pintle means each interconnecting one of the blades of said pair thereof and the forwardly-projecting portion of the respective juxtaposed one of the handle levers of said pair thereof, said blade pivot constituting means for maintaining apart the opposed planar surfaces of the blades of said pair thereof at other than the contacting cutting edges thereof.

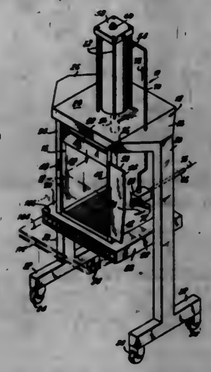
3,187,431
KNIFE WITH EXCHANGEABLE BLADE AND HANDLE FOR THE KNIFE
Irmgard Mattes, Rebenhofstrasse 129, Tuttlingen, Wuerttemberg, Germany
Filed Aug. 1, 1963, Ser. No. 299,324
11 Claims. (Cl. 30—339)



1. Knife handle for exchangeable blade, especially for surgical purpose, comprising, in combination, elongated handle means; first blade engaging means on said handle means and adapted to extend through an aperture in a blade to be exchangeably connected to the handle, said first engaging means having a first abutment surface extending transverse to the elongation of said elongated handle means; elongated operating means connected to said handle means for relative sliding movement in longitudinal direction with respect thereto; second blade engaging means on said operating means spaced in said direction from said first engaging means and adapted to extend through the apertured blade, said second blade engaging means having a second abutment surface extending transverse to said longitudinal direction and facing away from said first abutment surface; spring means operatively connected to said handle means and to said operating means and biased to move the latter in said longitudinal direction so as to move said second abutment surface away from said first abutment surface; and an operating portion on said operating means engageable by the user of the handle to move said operating means in longitudinal direction against the force ot said spring means in a direction in which said abutment surfaces approach each other so that said engaging means may be extended through the apertured blade, whereby upon subsequent release of said operating portion said blade will be held by said abutment surfaces engaging opposite longitudinally spaced aperture portions in the blade.

3,187,432
CHEESE CUTTING APPARATUS
Gaetano Cuomo, Rochester, N.Y., assignor to Pollio Dairy Products Corporation, a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,140
1 Claim. (Cl. 31—21)

A cheese cutter comprising a totally enclosed cabinet having a bottom opening and guideway means at said bottom opening, a cutting grid assembly mounted in said bottom opening, and a press mounted in said cabinet for vertical reciprocation relative to said grid assembly whereby a block of cheese mounted on said grid assembly will be forced therethrough by movement of said press toward said grid assembly, said cabinet having a top wall, a pneumatic cylinder mounted on said top wall, and a piston extending from said cylinder through said top wall, said press being mounted by said piston, said cutting grid assembly comprising a rectangular wall having a rectangular flange at each end thereof, first wire means extending transversely of said wall between first opposing portions of said wall means, and second wire means extending transversely of said first wire means across second opposing portions of said wall, and means for anchoring said first and second wire means to said flanges, said first wire means being a plurality of individual laterally



spaced wires each having a single run, said second spaced wire means being a plurality of individual laterally spaced wires each having a plurality of runs which overlie said single runs, said anchoring means for said first wire means being a threaded bolt at each end of each individual wire, said anchoring means for said second wire means being a threaded bolt at each end of each wire thereof, and a stud about which each of said latter wires passes for defining a pair of runs therein.

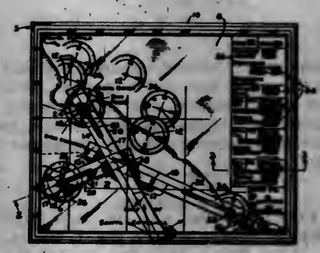
3,187,433
METHOD OF TREATING EDENTULOUS TISSUE WITH A TREATMENT COMPOSITION ON FUNCTIONALLY ALIGNED DENTURES
Clark C. Smith, 126 E. Missouri, Kansas City, Mo.
Filed Apr. 2, 1963, Ser. No. 269,978
9 Claims. (Cl. 32—1)



1. In a method of treating a patient's edentulous ridge tissue and with assurance that the occlusal surfaces of the teeth on a denture base for said edentulous ridge tissue will be in true functional relationship with respect to the occlusal surfaces of the patient's opposed teeth during the treatment, the improved steps of:

(a) fabricating a model of the patient's edentulous ridge tissue;
(b) fabricating a matrix of the patient's teeth opposed to said edentulous ridge tissue;
(c) positioning the model and said matrix in relative dispositions causing the occlusal surfaces of said denture base to functionally occlude with the occlusal surfaces of said matrix when the denture base is located on said model;
(d) placing a coating of treatment composition on the inner surface of said denture base which normally contacts the patient's edentulous ridge tissue, said tissue treatment composition being of a consistency capable of being deformed under pressure not substantially greater than the patient's diastolic blood pressure and characterized by the property of retaining such consistency for an extended period; and
(e) mounting the coated denture base on the model and bringing the occlusal surfaces of the matrix into occlusion with the occlusal surfaces of the denture base prior to placement of the coated denture base in the patient's mouth.

3,187,434
POSITION PLOTTING DEVICE
John T. Casagrande, 2606 N. Parish Place, Burbank, Calif.
Filed Mar. 14, 1960, Ser. No. 14,884
1 Claim. (Cl. 33—1)

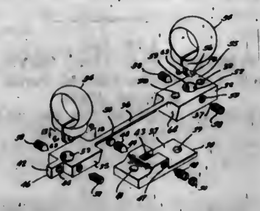


In a position plotting means, a rigid base having a flat surface, a chart mounted on said surface showing the geographical features of an area and including a plurality of points from which direction bearings may be obtained substantially simultaneously, each of said points being defined by a pivot pin receiving socket means extending into said base and each of said sockets being surrounded with a separate compass rose oriented to true North with respect to the geographical features on said chart, a lesser plurality of pivot pin elements selectively interchangeably engageable with each of said sockets, a plurality of elongated arm elements carried one each by each of said pivot pin elements, each of said arm elements having a longitudinally extending slot adjacent one end thereof through which the shank portion of the associated pivot pin element extends; said slot permitting pivotal and bodily longitudinal movement of the arm on the pivot pin element, a lubber line on each arm extending from the opposite end thereof to said slot and disposed in alignment with the longitudinal center line of the slot, and means for resisting tendency of the arm to move longitudinally along the pivot pin associated therewith; said last named means constituting spring means interposed between and reacting between each of said arms and the pins associated therewith and effective to create sufficient friction between the arm and the associated pin to secure the arm against unintentional longitudinal displacement relative to the pin.

3,187,435
TELESCOPE MOUNTS FOR RIFLES
George V. Miller, Jr., Highway 123 South, Seguin, Tex.
Filed Nov. 16, 1962, Ser. No. 238,117
6 Claims. (Cl. 33—50)

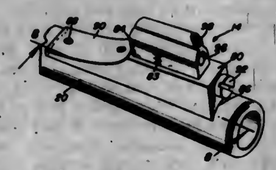
1. A telescope mounting assembly for rifles comprising a base including a front block adapted to be attached to the receiver ring of a rifle and a rear block adapted to be attached to the receiver bridge of the rifle, said front and rear blocks being formed with respective vertical bores, respective front and rear telescope clamping rings, depending studs on said clamping rings extending loosely into said vertical bores, and respective pairs of opposing adjusting screws threadedly engaged through the

sides of the blocks and being clampingly engageable on opposite sides of said studs, whereby the clamping rings may be adjusted laterally and clamped by said screws to provide windage adjustments, said clamping rings and



studs being split at vertical longitudinal planes extending through the center lines of the studs to define opposing ring and stud segments, said screws having conically shaped inner ends and the stud segments being formed with conical recesses receiving said conically shaped inner ends.

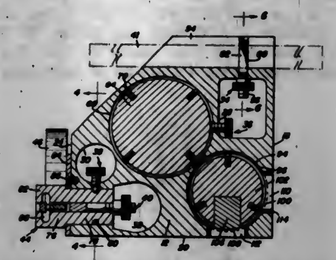
3,187,436
CONTRASTING COLOR GUN SIGHT
William F. Friedrichsmeier, Rte. 1, Wilder, Idaho
Filed June 1, 1962, Ser. No. 199,352
7 Claims. (Cl. 33—52)



7. A sighting apparatus for a firearm comprising a front sight and a rear sight mounted on said firearm, said front sight having a pair of vertically aligned longitudinal passageways extending completely therethrough, a translucent insert positioned in the forward end of the uppermost passageway, said rear sight having a longitudinal passageway extending completely therethrough and in substantial axial alignment with the lowermost passageway of the front sight, said rear sight passageway having a translucent insert positioned in the forward end thereof, said inserts appearing in vertical alignment upon a proper orientating of the firearm.

3,187,437
COMBINED MEASURING AND SCRIBING DEVICE
Hampton Ellis, Warren, Mich.
(17330 Martin Road, Roseville, Mich.)
Filed Oct. 11, 1962, Ser. No. 229,953
11 Claims. (Cl. 33—88)

11. In a combined measuring device, a non-magnetic body member having at least three reference surfaces disposed respectively in three intersecting planes, two protractors rotatably mounted by said body member about axes disposed in perpendicular spaced relation to each other, lock means mounted by said body member for holding the protractors in adjusted positions on the body member, level indicating means mounted on one of said protractors for measuring angular displacement of two of the three reference surfaces from a level position, gauging means mounted on the other of said protractors for angular displacement in a plane parallel to one of said two reference surfaces, and selectively positioned magnetic means rotatably mounted by the body member for ex-



posure through either one of said two reference surfaces to anchor the body member.

3,187,438
MICROMETER HEAD
Eberhard Esch, 2454 Packard Road, Ann Arbor, Mich.
Filed Oct. 3, 1961, Ser. No. 142,610
2 Claims. (Cl. 33—170)



1. In combination with a measuring instrument slidably surrounding a cylindrical supporting rod having a circumferential groove with an arcuate sidewall therein, an instrument head comprising, a threaded sleeve connected to said instrument at one end thereof and having an annular seat therein slidably surrounding said rod, an annular thrust washer seated within said sleeve and slidably surrounding said rod, a plurality of balls disposed within said sleeve surrounding said rod and in contact with the face of said washer not in contact with said seat, an annular ball race slidably surrounding said rod and having a lower race face sloped inwardly toward said rod and away from said balls and in contact with said balls to urge said balls against said washer and rod when said race is urged against said balls, annular spring means disposed within said sleeve and surrounding said rod to yieldingly urge said race against said balls, an annular cap nut having a recess therein threadably engaging said sleeve and slidably surrounding said rod to retain said race, balls, washer and spring means, to engage said balls radially with said groove simultaneously at a plurality of points about the circumference of said groove and along axes disposed at right angles and radial to said supporting rod when said groove is disposed within the plane of said balls, and to disengage said balls radially from said groove by contact of said arcuate sidewall therewith upon longitudinal movement of said balls with respect to said rod, said cap nut being arrangeable by rotary movement in one direction to fully compress said spring means against said race to securely retain said balls in engagement with said

groove and by rotary movement in the opposite direction to reduce compression of said spring against said race to allow said balls to be disengaged from said groove.

3,187,439
ALIGNMENT GAGE
Robert I. Leach, Clinton, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed Apr. 28, 1961, Ser. No. 106,348
7 Claims. (Cl. 33—181)



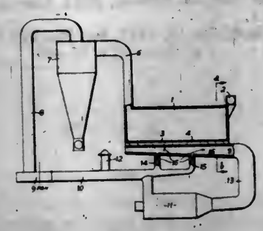
1. A gage for measuring the misalignment between an output shaft member and an input shaft member arranged to be connected by a flexible drive shaft comprised of a first shaft, a second shaft, a spring-tensioned telescoping means connecting said first and second shafts so that said first and second shafts are in axial alignment and are movable toward each other, each of said shafts having a connecting end spaced from said telescoping means, a tilt plate device pivotally connected to each connecting end and having attachment means for attaching the gage to and between an output shaft member and an input shaft member, each tilt plate device providing a flat surface at the adjacent connecting end and perpendicular to the axis of its attachment means, a dial-type degree indicator fixedly mounted on each of said shafts and having an actuating stem, means slidably and rotatably mounted on each of said shafts and constructed so that upon full circle rotation with contact with the adjacent flat surface when tilted said actuating stem is moved so that each degree indicator is operated.

3,187,440
DYNAMIC WHEEL ALIGNMENT TESTING APPARATUS
Marcellus S. Merrill, 335 Colorado Blvd., Denver, Colo., and Lowell H. Erickson, Denver, Colo.; said Erickson assignor to said Merrill
Filed Aug. 18, 1961, Ser. No. 132,426
25 Claims. (Cl. 33—203.13)



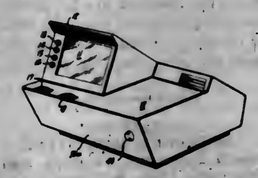
1. In a wheel alignment apparatus, at least one wheel-engaging member mounted for pivotal movement about perpendicular axes, means for pivotally moving said member about said axes, said member being journaled for rotation on a generally horizontal axis for contacting a rotatable wheel thereon, said perpendicular axes being perpendicular to said generally horizontal axis, means for rotating said wheel and wheel-engaging member, and said member being responsive to wheel contact forces imposed thereon under rotation to undergo a change in attitude until its axis is aligned with the wheel axis.

3,187,441
ELONGATED DRUM DRIER WITH DRYING GAS DISTRIBUTING DUCTS
Heinrich Kamp, Krefeld-Uerdingen, and Herbert Krichel, Krefeld, Germany, assignors to Buttner-Werke Aktiengesellschaft, Krefeld-Uerdingen, Germany
Filed Aug. 15, 1961, Ser. No. 131,664
7 Claims. (Cl. 34—57)



1. Apparatus for drying material including in combination an elongated drum having a material inlet adjacent one end and an outlet adjacent the other end thereof, first duct means extending lengthwise of said drum and in communication with the interior thereof along the length of said drum between said ends, heating means connected to said first duct means adjacent said one end for supplying high-temperature gases thereto, means connected to the outlet of said drum for exhausting said materials and gases within said drum including means for separating said materials and gases and having a waste outlet for the separated gases, said separated gases being cooler than said high temperature gases, second duct means connected to said waste outlet and to said first duct means for supplying said cooler gases to said first duct means, and means including valve means for controlling the amount of said cooler gases and the position along the length of said drum to which said cooler gases are supplied to said drum from said first duct means.

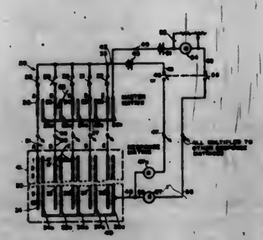
3,187,442
EDUCATIONAL DEVICE
Stacy Hertsche, 424 Waverley St., Menlo Park, Calif.
Filed June 27, 1961, Ser. No. 120,030
6 Claims. (Cl. 35—9)



1. A teaching machine comprising an optical system for visually displaying photographically recorded information to a student; means for positioning an information card including a photograph in said optical system; a plurality of electrical contacts adjacent said positioning means; a plurality of selector switch means, said selector switch means being operable by the student in response to information on the information card; electrical circuit means carried by said card and positioned thereby between said plurality of selector switch means and said electrical contacts; and means operable in response to operation of one of said selector switch means to actuate said positioning means to remove one card and replace

it with another card; the selection of said other card being in accordance with said electrical circuit means on the first presented card.

3,187,443
TEACHING AND TESTING SYSTEM FOR REINFORCED PROGRAMMED LEARNING
Alexander Schure, 274 Beach 141st St., Belle Harbor, N.Y., and Sheldon Littwin, 3821 Garvey Place, Fair Lawn, N.J.
Filed May 10, 1963, Ser. No. 279,534
7 Claims. (Cl. 35—9)

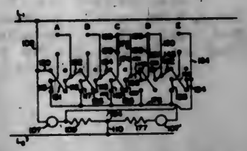


1. In a teaching system adapted for class response, a testing device comprising circuit means for indicating a response to a stimulant, a master matrix coupled to said circuit means comprising a plurality of pairs of contact elements, circuit actuating means selectively operable by a teacher for cooperating with at least one pair of said contact elements to prepare a preferred circuit for completion through said circuit means, a student response matrix remotely situated from said master matrix coupled to said circuit means and master matrix and controllable by a student to indicate his response to said stimulant, said response matrix comprising a network of response units formed of pairs of electrically conductive elements coupled to said plurality of pairs of contact elements of said master matrix, a data gathering card element indexable with the electrically conductive elements of the response matrix, and probe means selectively operable by a student for applying a response to a selected area of the card element when indexed with the response matrix and for simultaneously energizing the circuit via electrical contact with a selected response unit correlated to said selected area of the card, whereby the circuit means for indicating a response to said stimulant is completed when a student makes his response via his probe means, a desired response being indicated when the student completes the preferred circuit prepared by the teacher as compared to an undesired response when the prepared circuit is not completed.

3,187,444
SPECIMEN MOUNTING
Clarence Russell Lehmann, Fairfield, and Vincent M. Poynter, Norwood, Ohio, assignors to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 28, 1961, Ser. No. 134,113
3 Claims. (Cl. 35—10)

1. The method of preparing a specimen mount for observation which comprises the steps of admixing from about 10 to about 30 parts by weight of a powdered abrasive material having a Knoop hardness value of at least 900 with from about 80 to about 120 parts by weight of a curable resin to form a homogeneous mixture, positioning said specimen in a receptacle, adding said mixture to said receptacle to envelop said specimen, curing said resin to provide a solid matrix body containing said specimen, and grinding a surface of said solid matrix body to expose at least a portion of said specimen.

3,187,445
DEVICE FOR GRADING TEST PAPERS
Boris W. Hartleneff, Geneseo, N.Y., assignor to Electro-Networks, Inc., Caledonia, N.Y., a corporation of New York
Filed Feb. 16, 1962, Ser. No. 173,764
4 Claims. (Cl. 35—48)



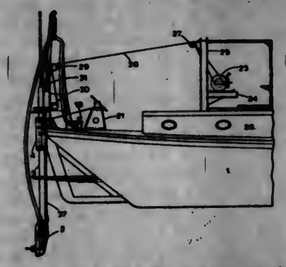
1. Apparatus for grading a test paper which has a multiple choice of answers to each of a plurality of test questions, and the answers chosen are indicated by marking selected areas on the test paper with electrically-conductive material, comprising, for each question to be graded,
(a) first and second electrical indicating devices,
(b) a plurality of spaced terminals arranged in pairs, there being one pair of spaced terminals provided for each different answer to a question, and
(c) electrical circuit means for selectively connecting said pairs of spaced terminals in circuit with said indicating devices, comprising
(d) a switch associated with each pair of terminals and movable to a first position in which it partially closes an electric circuit to one of said indicating devices, and movable to a second position in which it partially closes an electric circuit shorting out the other indicating device,
(e) a support on the base for holding said test paper so that marked areas thereof register with and bridge pairs of terminals to complete the circuits partially closed by said switches,
(f) said switches being operative to connect their associated pairs of terminals in series circuit with one another, when disposed in said first positions, thereby to close said circuit to said one indicating device only when all the last-named pairs of terminals are in contact with electrically-conductive material on said paper, thereby to detect correct answers for a respective question.

3,187,446
PROTECTOR FOR SHOE COUNTER AREA
Jane S. Boldemann, 1270 Bay Laurel Drive, Menlo Park, Calif.
Filed July 20, 1964, Ser. No. 383,835
1 Claim. (Cl. 36—76)



A shoe and protector for the counter area thereof to prevent scuffing of the counter area which occurs during the driving of an automobile, said shoe having a heel with a substantially straight forward edge and a curved configuration defining two sides and a rear edge thereof, said protector comprising an elongated body of soft flexible durable polymeric foam material having generally rounded ends and having a hole adjacent one end of a configuration corresponding to that of the shoe heel the opposite end forming a tongue, and the portion between the hole and tongue being slightly tapered toward the end of the tongue and forming a protective area, the size and proportion of the device being such that the protective area will overlie the major portion of the counter of a shoe while the hole end embraces and is anchored by the heel of the shoe and the tongue end is anchored inside the shoe by the heel of the wearer, said polymeric foam material being so highly compressible that a substantial thickness thereof can be worn between a person's heel and shoe counter without causing discomfort.

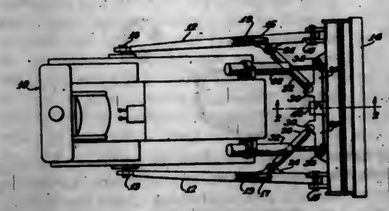
3,187,447
DREDGE WITH NOZZLE MEANS FOR MIXING AIR AND WATER BEFORE EMISSION THEREOF FROM SAID NOZZLE
William Henry Hollyoak, Sompting, England, assignor to The Proprietors of Hay's Wharf Limited, London, England, a British company
Filed Aug. 21, 1962, Ser. No. 218,269
Claims priority, application Great Britain, Sept. 1, 1961, 31,534/61
6 Claims. (Cl. 37—78)



1. Apparatus for effecting clearance of silt, mud and like materials from the bottom of waterways comprising a support structure, a rigid frame assembly, a plurality of jet nozzles fixedly mounted on said frame assembly, bearing means mounted on said support structure, a rigid substantially vertically extending support post rotatably and slidably mounted in said bearing means, said frame assembly being secured to the lower portion of said post for movement therewith, a lift means mounted on said support structure, and connected to said support post for moving it up and down in said bearing means so as to permit vertical adjustment of said frame and the associated jet nozzles relative to the support structure, rotary means mounted on the support structure and connected to said support post for rotating it in said bearing means so as to slew said frame and the associated jet nozzles horizontally, and supply means mounted on said support structure and connected to said jet nozzles for supplying both compressed air and water under pressure thereto in such a manner that the air and water are mixed before being issued from said jet nozzles.

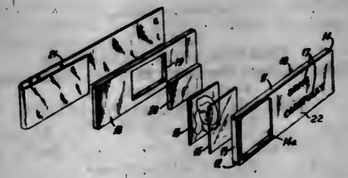
3,187,448
BULLDOZER BLADE TILTING ARRANGEMENT
Kenneth J. Kellogg, Riverside, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed June 24, 1963, Ser. No. 289,849
9 Claims. (Cl. 37—144)

1. In a bulldozer blade mounting which comprises push arms secured to the blade, tilt braces extending upwardly between the tops of the push arms and the blade, and diagonal braces extending inwardly from the inner sides of the push arms to the blade and means to adjust the length of at least one of said tilt braces to effect tilting of the blade, means to reduce stresses set up in the mounting upon such tilting including, a pair of links pivotally pinned to said blade, one diagonal brace being connected to each of said links, engaging means on said links operatively positioning said links while permitting the same to pivot relative to each other, and plate means mounted



on the back of said blade for limiting the movement of said engaging means in a substantially vertical plane while permitting movement of said engaging means in a substantially horizontal plane.

3,187,449
MAGNETIC PICTURE FRAME AND SIGN
Michele Longo, Waterbury, Conn. (50 Dalton St., Oakville, Conn.), and Nicola D'Addona, 212 Platt St., Waterbury, Conn.
Filed June 10, 1963, Ser. No. 286,594
1 Claim. (Cl. 40—10)



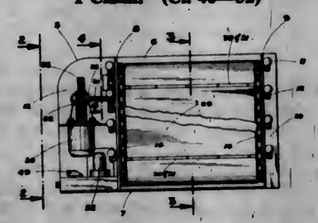
A display device comprising a frame having a flat and generally rectangular front wall and two side walls and two end walls extending along and rearwardly from the edges of said front wall, said side walls and end walls being generally perpendicular to said front wall and defining therewith a cavity shallow in relation to the length and width of said front wall, said front wall further having a picture aperture located adjacent one end thereof and a sign section extending from said picture aperture to the other end of said front wall, and an insert received in said cavity and held in place relative to said frame by frictional engagement with at least two of said side and end walls, said insert including a generally rectangular cardboard block having approximately the same length and width as said frame wall and approximately the same depth as said end and side walls, said block further having an aperture therein located in its entirety behind said sign section of said front wall and having a portion backing the entire extent of said picture aperture of said frame, a magnet located in said aperture of said cardboard block for detachably holding said display device to a paramagnetic surface, said magnet being of such a size relative to said aperture in said cardboard block as to be held in place relative thereto by frictional engagement with said block and having a thickness substantially equal to the thickness of said cardboard block, and a strip of web material secured to the rear surface of said cardboard block and covering the rear face of said aperture therein to aid in holding said magnet in place.

3,187,450
UNITARY TAG
Hans F. Stoffel, Scarsdale, N.Y., assignor to Stoffel Seals Corporation, Tuckahoe, N.Y.
Filed May 22, 1961, Ser. No. 111,793
1 Claim. (Cl. 40—21)



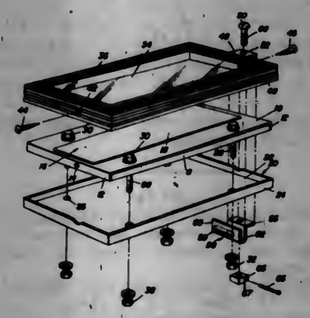
A tag having a display and socket portion and a strap, said display and socket portion comprising an enclosed rim, a relatively thin sheet embedded within the enclosure of the rim and of substantially less thickness than that of said rim, a socket portion connected to said rim, said socket portion being of less thickness than that of said rim and having its front surface substantially in the plane of such sheet material and its back surface substantially flush with the back of said rim, and a strap extending from said socket portion and having its upper surface flush with the front surface of said socket, said strap being relatively thin compared with the thickness of said socket, said socket having a recess in alignment with said strap and being of a height greater than the thickness of said strap over a major portion of its length and having an opening of reduced height, said strap having a tapered extremity and a tang of a thickness greater than that of the strap, whereby insertion of the extremity of the strap into the opening will result in engagement of the tang with the socket housing, said strap having a raised portion adjacent to its end for facilitating its insertion into the socket.

3,187,451
CHANGEABLE EXHIBITOR
John Garfield Fontaine, 2817 NE. 26th Court, Fort Lauderdale, Fla.
Filed July 1, 1963, Ser. No. 292,007
1 Claim. (Cl. 40—32)



An automatic display device that comprises a housing having a rear wall, a base plate and inwardly positioned forwardly projecting partitions, a multiplicity of parallel shafts journaled in the partitions and with one shaft constituting a drive shaft being provided with sprockets inwardly of the partitions and with the shaft extending beyond the partition and provided with a sprocket gear, a pair of endless chains disposed within the housing adjacent the inner sides of the partitions, the chains having a plurality of parallel loops, clamping bars extending between the chains upon which is clamped a plurality of rectangular panels, the bars being equidistantly spaced throughout the length of the chains, the bars at their opposite ends being bifurcated and with the bifurcations being cylindrical to form connecting links in the chains, a clamp strip fixed to each bar for clamping engagement with the upper and lower marginal edges of the panels and screw devices extending through the strips and the bars and through apertures formed in the marginal edges of the panels, all of the lower shafts with the exception of the drive shaft extending through slots formed in the partitions and spring devices connected to the extended ends of each of the non-driven shafts whereby the non-driven shafts are tensioned in a vertical direction, each of the non-driven shafts being provided with a freely rotatable cylindrical sleeve that is relatively larger than the shafts whereby to anti-frictionally support the panels as they override each of the shafts, each of the non-driven shafts being provided with rollers that are in alignment with the movement of the chains, the partitions being provided with a plurality of openings adjacent the forward flight of the chains, lamp bulbs fixed to brackets adjacent the openings and whereby to illuminate a properly positioned panel, a cover for the housing that is provided with a rectangular sight opening and with the sight opening being substantially co-extensive with the panels, an electric motor having a shaft that is vertically disposed and with the shaft having a worm fixed thereon, a worm wheel driven by the worm and with the worm wheel being fixed to a stub shaft, the stub shaft having a sprocket gear upon its inner end portion that is in alignment with the sprocket gear fixed upon the drive shaft for the chains, means for energizing the motor to drive the chains a distance equal to the height of one panel so that the panels are progressively moved into position behind the sight opening of the cover, the said motor being interrupted when a panel is in position for a predetermined number of seconds and then again energized for moving a next successive panel into position behind the sight opening, a circuit to the several lamps and means to interrupt the circuit to the lamps during the driving condition of the motor and then to again become illuminated after a panel has been shifted to a sight position, the two last named sprockets being driven by an endless sprocket chain, a lug fixed upon the chain and a switch element fixed upon the partition adjacent to the chain and whereby the lug will actuate the switch at each partial revolution of the drive shaft for moving a next adjacent panel into the line of the sight opening, for deactivating the motor and means in the circuit for again energizing the motor for moving a next adjacent panel to a position behind the sight opening.

3,187,452
LUMINOUS LICENSE PLATE AND HOLDER
Claude R. Dotson, Box 222, New Smyrna Beach, Fla.
Filed June 30, 1961, Ser. No. 121,162
7 Claims. (Cl. 40—202)



1. A vehicle tag construction comprising, in combination a holder embodying a pan having a receptacle portion, an insertable and removable panel fitted into said receptacle portion, a cover having a glass window and a retaining frame, fastening means securing end portions of the frame to end portions of the panel and threadedly engaged in the panel, and slidingly mounted releasable

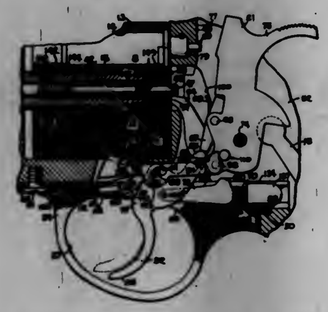
locking clip means at one end of the frame shielding and partially enclosing the adjacent fastening means to render same accessible or inaccessible as desired.

3,187,453
IDENTIFICATION CARD HOLDING MEANS FOR TRAY OR DRAWER
John Pipe, Grand Rapids, Mich., assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed May 8, 1962, Ser. No. 193,183
3 Claims. (Cl. 40—325)



1. A drawer front panel enabling the same panel to be the drawer front and a card retention means allowing frontal removal of a card retained thereby comprising: a sheet metal panel; a generally flat integral depressed portion in said panel forming an open and unobstructed cavity having an integral back wall and a front opening through which said integral back wall is accessible from the front; said portion and panel adapted to receive a card through said front opening and retain it adjacent and flat against said wall; slot means severed between said portion and panel on opposite edges of said portion enabling said card to be slid into one slot to expose an edge of said card; and at least one indentation depressed into said generally flat depressed portion, whereby a retained card can be slid partially into said one slot to expose a card edge, and the card portion over said indentation can be pushed thereinto to buckle said card and cause said edge to protrude outwardly, enabling grasping and frontal removal thereof.

3,187,454
REVOLVER CYLINDER STOP
Eugene E. Geber, 1908 Douglas St., Rockford, Ill.
Original application June 20, 1962, Ser. No. 203,948. Divided and this application Jan. 15, 1964, Ser. No. 337,891
10 Claims. (Cl. 42—67)



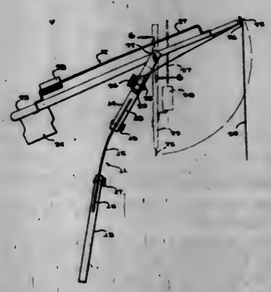
5. In a revolver, the combination of, a frame, a cylinder rotatably mounted on said frame and having a plurality of stop notches angularly spaced around its periphery, a hammer pivoted intermediate its ends on said frame with its upper end swingable forwardly toward one end of said cylinder in a firing stroke and into a released position and rearwardly away from the cylinder in a cocking stroke, an elongated latch disposed below said cylinder and having a stop thereon normally engaging one of said notches to hold said cylinder in a selected angular position in said frame, the rear end portion of said latch being disposed adjacent the lower end portion of said hammer when the latter is in said released position, said latch having an elongated slot intermediate its ends inclined forwardly and downwardly along the latch, a pin fast on said frame and projecting into the front end of said slot to pivot said latch on said frame, a member on the lower end portion of said hammer movable forwardly and upwardly as said upper end swings rearwardly, and a surface on said latch engageable with said member whereby the stop is rocked downwardly and the latch is shifted endwise and forwardly along said pin, said pin and said slot coacting to shift said latch and said stop downwardly as the stop is rocked downwardly thereby to release said cylinder.

3,187,455
RIFLED GUN BARREL WITH PERMANENT PLASTIC DEFORMATION SURROUNDING THE FILLETS
Tadeusz W. Wlodek, 297 5th Ave., Ottawa, Ontario, Canada
Filed Aug. 24, 1959, Ser. No. 835,559
3 Claims. (Cl. 42—78)



1. A gun barrel having spiral rifling grooves of constant dimensions throughout their length and with fillets at the junction of the bottoms with the side walls of the grooves, the metal areas of the barrel immediately surrounding said fillets being permanently, plastically deformed by pressure to a greater degree than the barrel metal outside said areas.

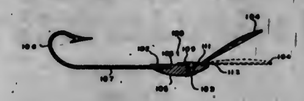
3,187,456
ICE FISHING TIP-UP
Julius H. Apitz, 525 E. Carroll, Appleton, Wis.
Filed June 6, 1962, Ser. No. 200,544
3 Claims. (Cl. 43—17)



1. A tip-up device for ice fishing comprising a support and a tip-up member pivotally carried by said support, said support including a lower support member adapted to be supported in an upright position on ice, a straight substantially vertically directed upper support member having a pivotal support for said tip-up member, at the upper end thereof, and a resilent intermediate connector extending between and connecting together said support member whereby the effects of the wind on said upper support member and said tip-up member may be imparted to an attached fishing line and lure, said connector being adjustably telescoped in at least one of said support members to vary the resiliency thereof, said tip-up member including an elongated rod

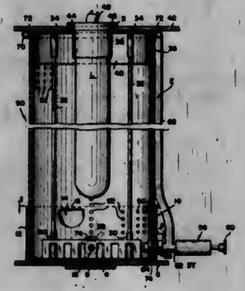
having a flag at one end, a pin projecting from the opposite end of said rod, a fishing line receiving ring on the pin, a fishing line passing through the ring and adapted to pivot the tip-up member, a sliding weight carried by the rod, and a fishing line holder mounted on said upper support member.

3,187,457
LURE
Paul E. Kariech, 6315 Tulsa St., Houston 18, Tex.
Filed Nov. 12, 1963, Ser. No. 322,995
4 Claims. (Cl. 43—42.06)



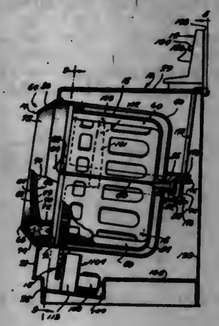
4. A fishing lure which comprises a hook, a body portion having a generally circular planar upper surface and a rounded lower surface, a deformable scoop attached to the planar surface of said body and having a concave lower face which defines an angle of about 0 to 45° with said upper surface at a line of deformation, wherein said body has a single passage through said body normal to said upper surface and located to the rear of the line of deformation of said scoop, said passage having a diameter of ¼ to ⅓ the radius of said planar upper surface.

3,187,458
INSECT EXTERMINATOR
Samuel P. Densmore, 100 W. Cold Spring Lane, Baltimore, Md.
Filed Jan. 27, 1964, Ser. No. 340,131
9 Claims. (Cl. 43—113)



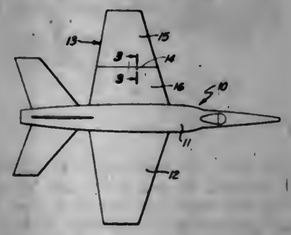
1. An insect exterminator comprising:
(a) a base member including a reservoir for receiving fluid insecticide
(b) a wick mounted in said reservoir in an upright position and normally saturated by said insecticide
(c) said wick being perforated and tubular in configuration
(d) a lamp positioned behind said perforations and within said tube, said lamp when lit enticing insects to fly into said wick so as to cause the insecticide to be picked up by said insects
(e) said base member including pump means for aiding in saturating said wick,
(f) said pump means including a vertical tube running to the top of the wick, and
(g) said vertcal tube including a ring-like perforated tube extending about the top of said wick, so that fluid insecticide can be pumped up to said tube to be dispensed around the upper margin of said wick for aiding in saturating said wick.

3,187,459
TOY WASHING MACHINE
Marvin I. Glass, Dalia E. Verbickas, and Gordon A. Barlow, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Dec. 13, 1962, Ser. No. 244,397
3 Claims. (Cl. 46—14)



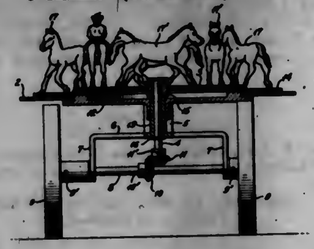
1. A toy washing machine comprising a cabinet having an opening in the front wall thereof, a drum rotatably mounted in said cabinet and having the open end thereof aligned with the front wall opening, a door mounted on said cabinet for swinging movement to and from a closed position across said front wall opening, said door comprising a frame hingedly connected at one side to said cabinet front wall, a circular transparent housing mounted in said door frame for rotation relative thereto with the peripheral portion of said housing concealed within the frame, a liquid normally disposed within the concealed peripheral portion of said transparent housing, drive means connected with said drum and operable to effect rotation of the drum at different speeds, means on said drum and on said transparent housing in position for engagement when said door is closed and operative to cause rotation of said housing in response to rotation of said drum, and liquid transfer means in said housing effective to cause the liquid in said peripheral portion to gradually rise in said housing at the slower speed of rotation of said drum and housing and reach a liquid level viewable through the transparent housing, and said transfer means being effective to cause the liquid to return to said peripheral portion and thus disappear from view at a faster speed of rotation of said housing.

3,187,460
GLIDER WITH FLEXING WING
James H. Robertson, Burbank, Calif., assignor to Gym Plastics Corp., Burbank, Calif., a corporation of California
Filed Nov. 26, 1962, Ser. No. 239,951
7 Claims. (Cl. 46—79)



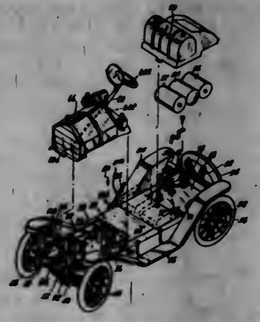
1. In a toy airplane having a pair of wings, one of said wings having means responsive to excessive lifting force exerted upon said wing during the projection of said airplane into rapid vertical flight to automatically deform the configuration of at least a portion of said wing and cause said airplane to rotate about its longitudinal axis instead of prematurely looping, said wing having means acting automatically upon the diminution of said lifting force to return said wing to its normal configuration and lifting action, to permit continued normal horizontal flight of said airplane thereafter.

3,187,461
WHEEL ACTUATED ROUNDABOUT TOY
Albert Joseph Vicini, 3003 Dunkirk, Baltimore 22, Md.
Filed Mar. 19, 1962, Ser. No. 181,501
3 Claims. (Cl. 46—205)



1. A toy of the type described comprising a frame, an axle journaled in said frame, a pair of wheels adapted to support said frame for translational movement, said wheels being mounted on said axle and rotatable therewith, a shaft aligned with said axle and extending vertically thereof, said shaft being rotatably supported by said frame, a first horizontal platform attached to the upper end of said shaft for rotation therewith, means for rotating said shaft upon rotation of said axle, a second horizontal platform concentric with said first platform, said second platform being supported by and in frictional engagement with one of said wheels whereby said second platform is rotated independently of said first platform.

3,187,462
ELECTRICALLY PROPELLED AND STEERED TOY VEHICLE
Gunars Licitis, Chicago, Ill., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Nov. 15, 1962, Ser. No. 237,954
14 Claims. (Cl. 46—230)



13. A toy vehicle comprising a chassis, front and rear wheels supporting said chassis, a mounting plate supported by said chassis, a reversible electric motor supported on said chassis, a source of electric power, an off-on switch connected to said source of power drive means for connecting said electric motor to said rear wheels, said drive means including a shaft journalled in said mounting plate, a first cam on said shaft, a slide, guide means slidably mounting said slide on said plate, said first cam engaging said slide to reciprocate said slide upon turning of said shaft first in one direction and then in the opposite direction, a pair of spaced contact members mounted on said plate and electrically connected to said on-off switch, a pair of contact pivots mounted on said plate spaced from said contact members and electrically operatively connected to said motor, a contact flipper, a pair of reversing contacts carried by said contact flipper and pivotally engaging said contact pivots, spring means extending between said slide and said contact flipper urging said contact flipper toward said slide and said reversing contacts against said contact pivots so that said contact flipper is resiliently urged to move in accordance with movement of said slide with said reversing contacts successively engaging said contact members upon turning of said shaft to reverse the polarity of said power delivered to said motor, said drive means including a clutch operatively engaged between said motor and said rear wheels, a second cam on said shaft for engaging and actuating said clutch in timed relation to movement of said first cam so that said clutch will be disengaged between periods of rotation of said first cam in said one direction and in said opposite direction whereby the vehicle will be moved by rotation of said rear wheels sequentially forwardly, stopped, rearwardly and again stopped, a third cam on said shaft, linkage means connected to said front wheels and including a cam follower engaging said third cam so that upon turning of said shaft said front wheels will be turned in conformance with the contours of said third cam, a plurality of electric lights on said chassis, a lamp switch electrically operatively connected to said electric lights and to said source of electric power, and a fourth cam on said shaft engaging said lamp switch for opening and closing said lamp switch in predetermined timed relation to operation of said vehicle.

3,187,463
TRANSPLANTER CONTAINER
John L. McCollough, 421 Arizona St., and Robert E. Ferguson, 2807 Atkinson Drive, both of Lufkin, Tex.
Filed Mar. 11, 1963, Ser. No. 264,326
7 Claims. (Cl. 47—34)

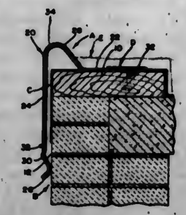


3. A transplanter pot molded from an admixture of
ground pine bark and ground cotton seed hulls, said mixture comprising an overall percentage in composition between the range of 78% to 80% of total bulk,
pulped paper stock in the percentage of between 19% to 21% of total bulk,
a non-ionic detergent in the percentage of ⅛% to ⅜% in pounds of the total bulk of the admixture,
alum in the percentage of ⅛% to ⅜% in pounds of the total bulk of the admixture, and
urea formaldehyde in the precentage of ¾% to 1¼% in pounds of the total bulk mixture.

3,187,464
FASCIA STRIP
Charles H. Sharp, Shaker Heights, Ohio, assignor to Fiberglass Reinforced Products Co., Inc., Cleveland, Ohio
Filed June 13, 1962, Ser. No. 202,267
2 Claims. (Cl. 50—66)

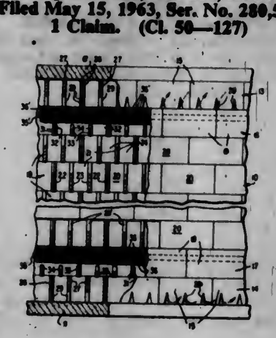
1. In combination, a wall having an upper end defined by a top and exposed side, and a fascia strip comprising a reinforced plastic body elongated to extend along said

wall, a first lip integral with said body and extending transversely over said top, a second lip integral with said body and extending downwardly over said side and an intermediate tar dam portion joining said lips, said tar dam having a generally arcuate shape extending upwardly from said second lip and above said first lip to allow springing of said lip with respect to each other when said strip is assembled onto said wall, said first and second lip forming a dihedral angle of approximately 75° in the unassembled



condition and of approximately 90° in the assembled condition on said wall whereby said first lip is urged against said top and said second lip is urged against said side of said wall, said second lip having a tongue spaced from said first lip and extending inwardly toward said side of said wall, said tongue having an inwardmost portion forming a side engaging surface coextensive with said strip and said surface abutting said side along a line spaced from said wall top so that said second lip remains spaced from said side of said wall.

3,187,465
HOLLOW BLOCK WALLS FOR BUILDINGS AND CONSTRUCTION BLOCKS FOR MAKING SUCH WALLS
Anthony Philip Giuliano, Box 106, Allenwood, N.J.
Filed May 15, 1963, Ser. No. 280,509
1 Claim. (Cl. 50—127)



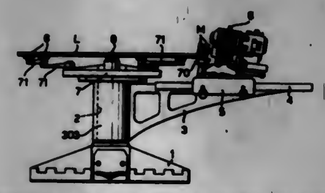
A building wall structure having self-ventilating and heat exchange capabilities comprising substantially identical lowermost and uppermost courses of blocks, each block in said lowermost and uppermost courses having side, end and intermediate walls defining plural vertical air passages through said courses and blocks, one side wall of each block provided in its lower edge with spaced downwardly opening lateral air vents communicating directly with said vertical passages, said end and intermediate walls having in their lower edges longitudinally aligned downwardly opening notches communicating with said vertical air passages and forming through said courses continuous longitudinal horizontal air passages, substantially identical next lowermost and uppermost courses of blocks immediately above and below the first-named courses and engaging the same, each block in the second-named courses having imperforate side walls and end and intermediate walls whose top edges terminate a substantial distance below the tops of the second-named courses to form continuous large rectangular channels through the second-named courses adapted to receive heat exchanger devices, said last-named end and intermediate walls having longitudinally aligned upwardly opening notches therein communicating with the vertical passages and forming through the last-named courses of blocks continuous horizontal longitudinal air passages immediately below said heat exchanger devices, and a plurality of intermediate courses of blocks between said next lowermost and uppermost courses, each block of each intermediate course having imperforate side walls and spaced end and intermediate walls forming vertical air passages through the last-named blocks and courses, the last-named end and intermediate walls having longitudinally aligned upwardly opening notches formed therein to provide in each intermediate course a continuous horizontal longitudinal air passage.

3,187,466
TENSIONING UNIT
Charles M. Zerr, Independence, Mo., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Apr. 13, 1961, Ser. No. 102,846
3 Claims. (Cl. 50—522)



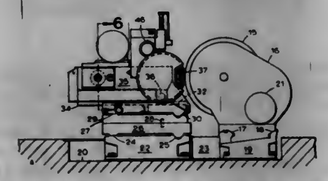
1. A tensioning unit for prestressing concrete structural elements, said unit comprising a strand including a multiplicity of high tensile strength wires, each wire being of a non-circular cross-section subject to orientation, said wires being laid together helically, the cross-sectional configuration of each non-circular wire of said strand maintaining the same orientational relationship to the cross-sectional configuration of each of the remaining wires of said strand as well as to a single plane containing the longitudinal axis of said strand throughout the length of the strand, whereby said unit when embedded under prestressing tension in a concrete casting, will lock with respect to said casting under the influence of a force tending to unscrew said unit with respect to said casting.

3,187,467
MACHINE FOR BEVELLING THE EDGES OF GLASS PLATES OR THE LIKE
Antonio Cortesi, 10 Via Lamagni, Lugo, Ravenna, Italy
Filed Apr. 9, 1963, Ser. No. 271,790
Claims priority, application Italy, Apr. 11, 1962, 7,921/62
6 Claims. (Cl. 51—34)



1. A machine for bevelling the edges of plates comprising a column, means for fixedly supporting a work plate to be bevelled on said column in a work plane, a radial arm rotatably mounted on said column, guide means on said radial arm extending lengthwise thereof, a carriage movably mounted along said guide means, means for retaining said carriage during movement in close contact with said guide means, a turret rotatably mounted on said carriage, a grinding unit including a motor and a grinding wheel mounted on said turret, means for adjusting the height and inclination of said grinding unit with respect to said work plane, a work plate abutment device projecting from said turret for engagement with the lower side and edge of a plate to be bevelled, and means for adjusting the height of said work plate abutment device with respect to said work plane.

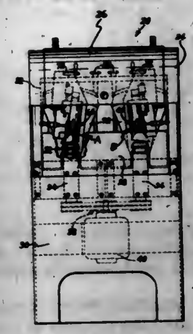
3,187,468
ROLL GRINDING MACHINE
Rolf Grzymek, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 8, 1963, Ser. No. 314,703
15 Claims. (Cl. 51—49)



1. In a grinding machine having a wheelhead pivotally attached at one end to a slide member and a grinding wheel rotatably supported on a spindle in the wheelhead and movable relative to a work supporting mechanism when the wheelhead is tilted about said one end, a compound feed mechanism comprising in combination:
(a) a cam received in the wheelhead for rotation about an axis, said cam having
(1) a peripheral surface variably spaced from the axis about which said cam is rotatable,
(b) a wedge movable on the slide member below said cam,
(c) a roller received in contact between said wedge and said cam,
(d) means reciprocally to move said wedge to tilt the wheelhead about said one end thereof, and
(e) means to rotate the cam about said axis to add a component of tilt to the wheelhead independent of movement of said wedge.

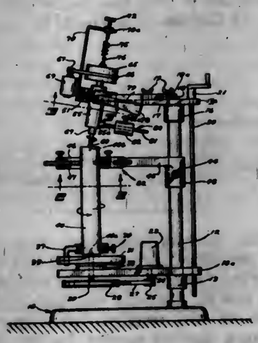
3,187,469
LENS SURFACING APPARATUS AND METHOD
Cornelius W. Slack, Southbridge, and Lloyd W. Goddu and Merrill H. Barber, Sturbridge, Mass., assignors to American Optical Company, Southbridge, Mass., a corporation of Massachusetts
Filed May 16, 1962, Ser. No. 195,071
11 Claims. (Cl. 51—58)

1. Apparatus of the character described for grinding a curved surface on a lens blank comprising a rotatable work spindle having means on one end thereof adapted to receive and support a lens blank in substantially coaxially aligned relation with said work spindle, means for rotating said work spindle to cause a lens blank supported thereon to be rotated substantially about its axis, a tool having a grinding face preformed to the curvature desired to be ground on said lens blank, tool-supporting means arranged to support and move said tool toward said lens blank into engagement with the surface thereof to be ground, said movement being along a second axis intersecting the axis of said work spindle at a point located substantially at the center of curvature of said surface to be ground on said lens blank, means for oscillating said tool-supporting means arcuately about a third axis disposed substantially normal to and intersecting the axis of said work spindle substantially at said point of intersection thereon of said second axis and depth of cut control means responsive to initial engagement of said tool with said lens blank for setting said apparatus to limit the extent of



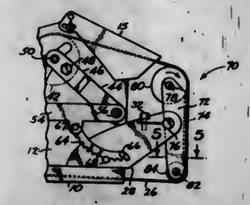
further movement of said tool toward said lens blank in accordance with a predetermined depth of cut desired on said blank.

3,187,470
CENTER HOLE LAPPING APPARATUS
Harold E. G. Arneson, % Professional Instruments Co., 6824 W. Lake St., Minneapolis 26, Minn.
Filed Nov. 28, 1962, Ser. No. 240,596
8 Claims. (Cl. 51—89)



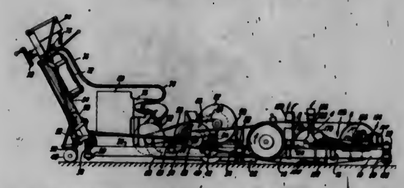
1. A spherical center hole lapping apparatus for generating a spherical zone in a work piece center hole having in combination,
a supporting structure,
a spindle,
a lap member for generating a spherical zone carried by said spindle,
means on said supporting structure arranged and constructed to yieldingly support said spindle freely swingably to position the axis of said spindle at an angle to the axis of a work piece,
means in connection with said apparatus rotating said spindle,
means carried by said supporting structure rotating said work piece,
supporting means directionally opposed to said spindle having said work piece therebetween.

3,187,471
BELT GRINDING APPARATUS
Gerald Don Harder, Tacoma, Wash., assignor to Square Wheel Co., Seattle, Wash., a corporation of Washington
Filed May 31, 1963, Ser. No. 284,586
6 Claims. (Cl. 51—141)



1. In belt grinding apparatus including an endless abrasive belt, mounting means therefor and drive means therefor, a grinding head assembly comprising:
(a) an arm,
(b) adjustable attaching means between the ends of the arm for attaching the arm to the apparatus in a predetermined position of angular adjustment,
(c) a pair of pulleys journaled one on each end of the arm and positioned to mount the belt, each pulley providing an arcuate backing for use in grinding arcuate surfaces having curvatures corresponding to the curvatures of the pulleys,
(d) and a platen on the arm located between the pulleys and underlying the belt.

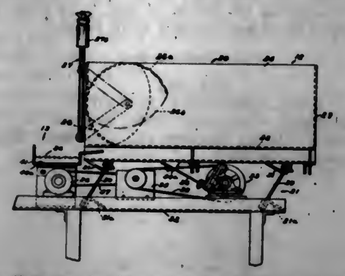
3,187,472
SANDING MACHINE
Harold W. Martin, Shelby, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed July 5, 1962, Ser. No. 207,502
8 Claims. (Cl. 51—174)



1. A sanding machine comprising a main machine frame, means for supporting and driving said frame along a forward-rearward line of travel, an endless travelling abrasive belt, and an assembly providing support for a cutting portion of said member comprising: an inner drum providing a backing support for the lower reach of said belt, a levelling frame in which said drum is rotatably mounted, a trunnion type mounting for said frame having a pivot axis arranged transversely to and intersecting the axis of said drum and in alignment with said line of travel, cam means operable on said frame to shift the same about the trunnion axis, and means responsive to the relationship of said drum axis to a true horizontal reference for operating said cam assembly to maintain trueness of cutting.

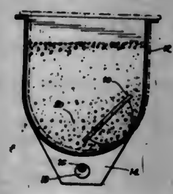
3,187,473
METHOD OF SURFACE FINISHING ARTICLES
Peter P. Rappo, Grosse Pointe, Mich. (% Prab Conveyors, Inc., 30121 Groesbeck Highway, Roseville, Mich.)
Filed Nov. 16, 1959, Ser. No. 853,393
2 Claims. (Cl. 51—313)

1. A method of surface finishing articles, which comprises: suspending articles to be finished in a bed of relatively abrasive particles having an average mass different from the average mass of said articles; subjecting said bed to vibratory conveying forces directed toward one end of the bed to establish relative motion between said articles and particles and move both articles and particles



generally toward said one end; directing said articles and particles generally upwardly in a curvilinear path at said one end of the bed and thence downwardly away from said one end completing a closed loop path; and continuing said conveying forces to recirculate said articles and particles through the bed in said closed loop path.

3,187,474
MOLD FINISHING PROCESS
Paul H. Setzler, York, Pa., assignor, by mesne assignments, to The Wheelabrator Corporation, Mishawaka, Ind., a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,482
1 Claim. (Cl. 51—313)

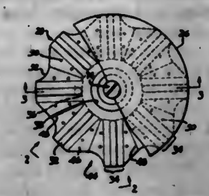


In the production of molds to be used in the manufacture of molded articles wherein said molds are formed of metal in a casting operation and are characterized by uneven molding surfaces defining patterns of repeated, relatively small portions with said portions intersecting at relatively sharp angles, and wherein the surfaces of said molds are rough or foreign substances or the like are present on the molding surfaces after the casting operation, the improvement comprising providing a bowl and vibrating means associated therewith, introducing a finishing material for said molding surfaces along with the mold into said bowl whereby said finishing material is in contact with the molding surfaces, and vibrating said bowl, said finishing material being adapted to remove said foreign substances from said surfaces and to polish said surfaces, and said vibrating continuing until said finishing material completes said removing and polishing.

3,187,475
BACKING DISC FOR ABRASIVE SHEET
Edward J. Sopcak, 3315 Pinckney Road, Howell, Mich., and Thomas L. Draper, 111 Abbey, Birmingham, Mich.
Filed Feb. 18, 1963, Ser. No. 259,109
4 Claims. (Cl. 51—356)

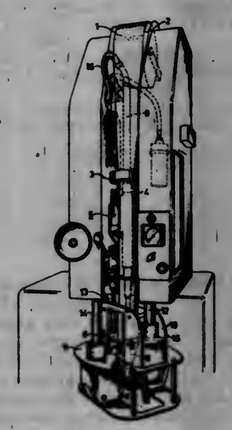
1. In a backing disc,
a plate-like body member of generally circular profile and of generally planar configuration and having opposed faces,

at least one rib raised above one of said faces,
a canted surface spaced from said rib and extending



slightly above the other face of the body,
and an air passage in said canted surface.

3,187,476
METHOD OF PRODUCING SEALED AND PARTIALLY FILLED PACKAGES OF EQUAL FILLING DEGREES
Stig Gunnar Andersson, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a company of Sweden
Filed Apr. 24, 1962, Ser. No. 192,618
3 Claims. (Cl. 53—28)



1. In the method of producing sealed packages filled to less than their volumetric capacity and containing equal amounts of a fluent filling material which comprises forming a web of flexible material into a continuous tube, moving said tube longitudinally of itself, supplying a fluent filling material into said tube, and periodically flat pressing and sealing said tube in zones extending transversely of the longitudinal axis thereof and at predetermined distances therealong to establish individual packages between successive seal zones, the improvement wherein said filling material is supplied into said tube in the form of a continuous jet and at a constant discharge rate so correlated to said periodic flat pressing operating that the volume of filling material fed into said tube above a lower already formed transverse seal zone of a package being filled in the period between successive flat pressing operations is less than the volumetric capacity of the individual packages thereby establishing partially filled packages and effecting said transverse flat pressing operations on said tube always at a level above the level of the filling material therein.

3,187,477
METHOD OF MAKING A SPECIAL PACKAGE
Robert L. Dreyfus, Arlington, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed May 31, 1960, Ser. No. 32,928
5 Claims. (Cl. 53—30)



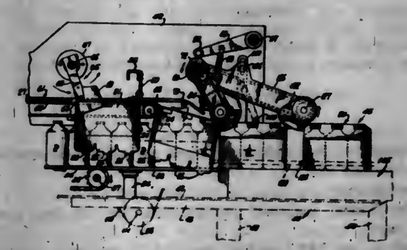
1. A method of packaging articles which comprises placing the articles within a tubing of heat shrinkable film selectively and sequentially, heat shrinking the film at the end of the tubing to reduce the diameter of the end of the tubing thereby enclosing the articles within the tubing, the enclosed articles being spaced within the tubing and then heat shrinking the tubing between each article to effect a permanent separation of the articles.

3,187,478
METHOD OF PACKAGING A PLURALITY OF ARTICLES
Wylie C. Kirkpatrick, Wayland, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed July 5, 1960, Ser. No. 40,967
7 Claims. (Cl. 53—30)



5. A method of packaging a plurality of objects which comprises placing the objects within a tube of heat shrinkable material, heat shrinking one end of the tube to reduce the size of the opening at that end to less than the maximum cross-sectional area of the smallest object and to form a unitary thickened elastic edge which is stretchable to permit the removal of individual objects and reducing the size of the opening at the opposite end to retain the articles within the tube.

3,187,479
PACKAGING MACHINE FOR CARTON WITH END IDENTIFICATION PANEL AND METHOD
Robert H. Ganz, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 29, 1962, Ser. No. 183,541
25 Claims. (Cl. 53—32)



20. A method of applying cartons having a top wall and terminal end identification panels to a plurality of containers disposed in columns comprising the steps of partially forming a carton from a carton blank, telescop-

ing the carton over the containers, firmly seating the carton top wall on the containers, and then depressing the end identification panels.

3,187,480
PACKAGING PROCESS

Joseph W. Feeney, Pikesville, Paul L. Pojawis, Baltimore, James E. Allenbough, Jr., Towson, and John W. McNair, Jr., Baltimore, Md., assignors to International Paper Company, New York, N.Y., a corporation of New York

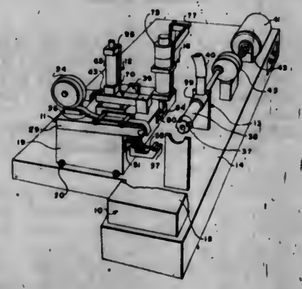
Filed Feb. 26, 1963, Ser. No. 261,053
13 Claims. (Cl. 53—29)

1. A process comprising the steps of
(a) disposing at least one barrier coated selected from the group consisting of paraffin waxes, microcrystalline waxes, waxes blended with polymers, vinyl co-polymer blended waxes, polyvinylidene chloride, aluminum foil, glassine, grease-proof paper, and polyolefins on at least one surface of a paperboard substrate;
(b) die cutting flat folding carton blanks having free edges from the barrier coated paperboard substrate;
(c) tightly compressing a stack of a plurality of the flat folding carton blanks between platens so as to have only the free edges exposed;
(d) submerging the compressed stack in a bath of free edge sealing material selected from the group consisting of water-soluble fluorochemical complexes and hydrogenated castor oils for a pre-determined dwell time;
(e) removing the compressed stack from the bath;
(f) forming cartons, wherein the barrier coated paperboard substrate surface is disposed interiorly, from the bathed flat folding carton blanks;
(g) filling the formed cartons with a product characterized by at least one of the conditions selected from the group consisting of grease-bearing, moisture-sensitivity, and gas sensitivity; and
(h) closing the filled cartons.

3,187,481
SEALING APPARATUS

Peter P. Spolsino, Revere, Mass., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed Sept. 30, 1963, Ser. No. 312,696
1 Claim. (Cl. 53—135)

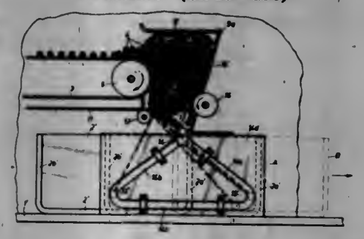


Apparatus for sealing the open end of a thermoplastic bag comprising:
(a) a base,
(b) means mounted on the base for twisting a bag neck,
(c) a product support spaced from said twisting means,
(d) a first carriage mounted on the base and reciprocal toward and away from the twisting means in a line of travel generally normal to the twisting means,
(e) tape dispensing means mounted on the side edge of said first carriage closest to said product support and having a dispenser arm extending sufficiently to contact a bag neck on the twisting means when the carriage is closest to the twisting means,
(f) clamp means to temporarily hold the bag neck against the dispenser arm,
(g) a second carriage mounted atop the first carriage and reciprocal in line of travel generally normal to the line of travel of the first reciprocal carriage,
(h) a heated severing means mounted on said second carriage and adapted to sever excess portions of the bag neck extending beyond the clamped neck portion towards the twisting means and,
(i) cutting means secured to the first carriage and adapted to sever tape extending between the tape dispenser and the bag neck when the first carriage is retracted to its position remote from the twisting means.

3,187,482
DEVICE FOR FILLING CIGARETTE FRAMES

Bernhard Schubert, Hamburg-Lokbrugge, Germany, assignor to Hauni-Werke Korber & Co. K.G., Hamburg-Bergdorf, Germany

Original application Oct. 22, 1959, Ser. No. 847,999, now Patent No. 3,024,585, dated Mar. 13, 1962. Divided and this application Jan. 12, 1962, Ser. No. 165,813
Claims priority, application Germany, Oct. 24, 1958, H 34,619
2 Claims. (Cl. 53—236)



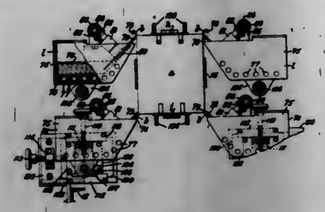
1. A device for filling cigarettes into frames, including an endless conveyor provided at one end with a pulley over which the conveyor passes and over which the cigarettes are discharged from the conveyor into a frame placed below said pulley, an upwardly extending plate horizontally spaced from said pulley to form one wall of a hopper from which the cigarettes are discharged into said frame, and a transfer member for guiding said cigarettes from said hopper into said frame in such a manner that the cigarettes enter said frame progressively from one end to the other, said transfer member comprising a tape, the front end of which is positioned below said pulley and is attached to a transverse rod adapted to move along a triangular guide groove arranged in a stationary wall positioned adjacent one side of said frame to be filled with cigarettes, the base of said guide slot extending along the bottom of said frame.

3,187,483
CARTON SEALING APPARATUS

Gerald H. Steele, Leroy, and Robert J. Hickin, Seville, Ohio, assignors to Packaging Corporation of America, Rittman, Ohio, a corporation of Delaware

Filed Dec. 1, 1960, Ser. No. 73,147
9 Claims. (Cl. 53—374)

1. In apparatus for sealing cartons of the type having a plurality of side walls carrying a plurality of relatively foldable end closure flaps which are assembled in lapped relation with their edges adjacent to certain of said side walls, at least one of said flaps having at its opposite free edges normally offstanding ears for folded engagement with adjacent side walls of the carton and forming with said side walls when offstanding therefrom crotch-like joints, a sealing-compound applying station, means for presenting cartons at said station, sealing-compound applying means at said station having applicator means disposed exteriorly of, adjacent to, and facing said certain

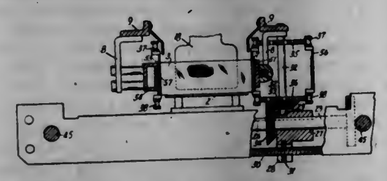


side walls and in operative proximity to said joints between said ears and their adjacent side walls and so formed as to deposit the sealing compound in bead-like strip form in areas confined to said crotch-like joints, and means for applying pressure to said lapped flaps and to said ears to thereby effect a sealing of the thus-applied sealing compound in said crotch-like joints behind said ears.

3,187,484
MACHINES FOR SEALING WRAPPERS OF POLYOLEFIN SHEET MATERIAL AROUND PACKAGES

John William Smith, Battle Creek, Mich., assignor to Battle Creek Packaging Machines, Inc., Battle Creek, Mich.

Continuation of application Ser. No. 800,815, Mar. 20, 1959. This application Sept. 26, 1963, Ser. No. 311,778
6 Claims. (Cl. 53—379)

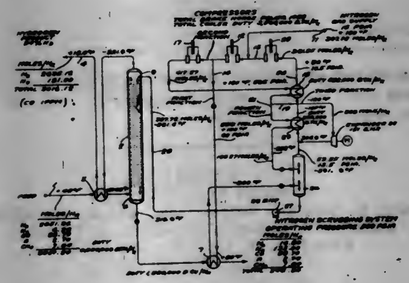


1. A wrapper sealing machine for sealing the overlapped end folds of polyolefin wrappers on packages of different sizes comprising,
a flat way adapted to receive and support the wrapped packages with their ends at the sides of the way,
laterally adjustable side walls extending along and projecting above the side of said way to retain said end folds against the packages,
horizontally straight and continuously flat heated plates on the opposed inner sides of said side walls,
horizontally straight and continuously flat cooled plates on opposed inner sides of said side wall and closely adjacent and ahead of said heated plates,
carrier means consisting of horizontal chain loops positioned with their inner reaches extending along said side walls and supported for lateral adjustment therewith,
buffer means consisting of sheets of flexible material inert to the temperature of said heated plates connected to said carrier means at regular intervals along the carrier means,
a package advancing conveyor positioned over said way and having depending flights movable over and along the mid-section of said way,
said flights projecting substantially laterally and vertically relative to said way to engage substantial areas of the back sides of said packages in laterally and vertically spaced and balanced relation in planes perpendicular to said side walls,
and means connected to drive said conveyor and said carrier means to advance said flights in equally timed relation to the sheets of said buffer means whereby the buffer means advance along the inner sides of said plates with said flights.

3,187,485
PURIFICATION OF HYDROGEN BY SCRUBBING WITH NITROGEN AT HIGH PRESSURES

Paul R. Konz, New York, N.Y., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Dec. 13, 1961, Ser. No. 159,055
7 Claims. (Cl. 55—48)



1. A process for purifying a gaseous stream consisiting essentially of hydrogen and small amounts of a substance selected from the group consisting of carbon monoxide, methane, argon and mixtures thereof comprising the steps of continuously providing a source of substantially pure nitrogen gas, compressing and liquifying said nitrogen gas, continuously feeding the pure liquid nitrogen into contact with said gaseous stream at a pressure from 500 p.s.i.a. to 1600 p.s.i.a. at a temperature in the range of −310° F. to −344° F. absorbing said substance from the stream, continuously disposing of the liquid nitrogen and absorbed substance to waste following said contact.

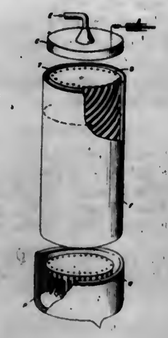
3,187,486
PROCESS AND DEVICE FOR BIDIMENSIONAL GAS CHROMATOGRAPHY FOR PREPARATIVE PURPOSES

Dino Dinelli and Marco Taramasso, San Donato Milanese, and Stefano Polezzo, Milan, Italy, assignors to Laboratori Risaldi Studi E Ricerche S.p.A., San Donato Milanese, Italy, a company of Italy

Filed Mar. 14, 1961, Ser. No. 95,706
3 Claims. (Cl. 55—67)

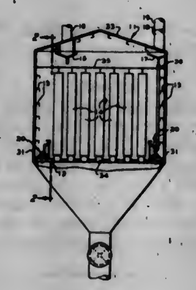
3. A process for separating a fluid mixture into its components by means of gas chromatography, comprising feeding the mixture successively into one end of each of a plurality of separate helical passageways which are filled with the stationary phase for the gas chromatographic method and which are arranged circularly about a common axis, while rotating the passageways together about said common axis, and while feeding the carrier gas for the gas chromatographic process continuously into all said passageways at said one end thereof except for the one passageway which at any instant is the

one into which the mixture is being fed, and collecting the separated components of said mixture at a plurality of closely spaced, fixed, collecting points at the other



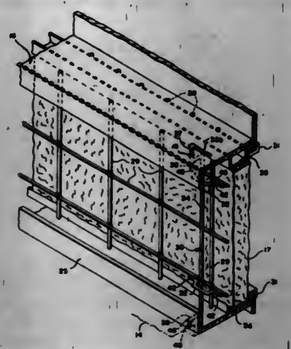
ends of said passageways, the number of collecting points being equal to the number of passageways and registering, respectively, therewith.

3,187,487
CARBON BLACK FILTER
Bruno F. Loewen, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 26, 1961, Ser. No. 161,937
3 Claims. (Cl. 55—341)



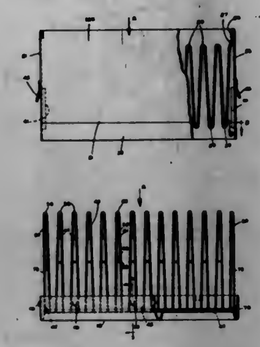
1. A bag filter system for separating carbon black from gases containing carbon black in suspension comprising, in operable combination, an enclosure having a floor, a plurality of walls and a roof, a plurality of openings in said floor, a separate filter bag having an open end fitting each opening and extending upward in said enclosure with its upper end terminating below said roof, means intermediate the top ends of the filter bags and the roof retaining said bags in an upright position, at least one of said walls having a girt member provided with a vertically downward projection from its innermost portion attached to the inner surface thereof, are upright splash plate positioned parallel to said at least one of said walls intermediate said filter bags and said vertically downward projection of said girt member for protecting said filter bags from splashing, aqueous liquid, resulting from condensation of moisture on said girt member and dripping of the aqueous liquid onto said floor.

3,187,488
FURNACE FILTER
John Edward Litvin, 7515 McLellan Drive, Walton Hills, Ohio
Filed Mar. 26, 1962, Ser. No. 182,341
3 Claims. (Cl. 55—493)



1. A filter adapted to be attached to a wall having a fluid inlet opening to effect the removal of dust and the like from fluid passing through the opening, comprising:
(a) a filter support structure including filter guide members arranged in a spaced relation to define an air passageway therethrough, said guide members also defining a filter receiving opening on one side of said passageway and a filter removal opening on the other side of said passageway;
(b) a roll of filter material supported adjacent said support structure and including an unrolled section slidably carried by said guide members so as to extend transversely across said passageway, said unrolled filter section entering said guide members through said receiving opening and being withdrawable from said guide members through said removal opening;
(c) screen means extending transversely across said passageway to maintain said unrolled section of filter material transversely across said air passageway, said screen means including a stationary screen and a movable screen in spaced relation so as to define a filter compartment extending from the filter receiving opening on one side of the air passageway to the filter removal opening on the other side of the air passageway;
(d) said movable screen being movable between first and second positions relative to and parallel to said stationary screen, said movable screen in said first position being in spaced relation to said stationary screen and sandwiching a filter section against the stationary screen sufficiently to hold the filter section against the stationary screen but not to the extent of appreciably crushing any portion of the filter section, said movable screen in its second position being further spaced from said stationary screen and releasing said filter section so that said filter material facilely slides through said compartment in said guide members; and,
(e) a pair of lever arms each having shaft portions and portions off-set from said shaft portions, said shaft portions being rotatably carried by said filter support structure, the off-set portions of the lever arms engaging the screen at spaced locations so that rotation of both lever arms moves the movable screen in a parallel manner relative to said stationary screen and rotation of one of said arms moves the movable screen angularly relative to said stationary screen.

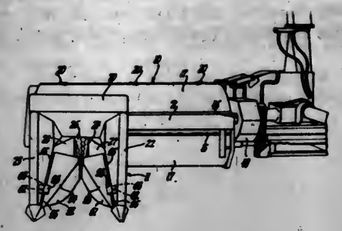
3,187,489
SPACE FILTER
Carl J. Bender and Robert C. Quick, Jr., Syracuse, N.Y., assignors to Cambridge Filter Corporation, a corporation of New York
Filed Sept. 9, 1960, Ser. No. 55,867
7 Claims. (Cl. 55—499)



1. A filter support construction and a complemental filter cartridge having flexible filter material arranged in pleats disposed transversely of flexible side walls and extending from relatively rigid end walls, comprising, a rectangular open frame having end members and connecting side members, a plurality of upstanding V sectioned wire grids extending across said frame to support the pleats of a complemental filter cartridge, and a V sectioned wire grid at opposite ends of the frame, having corner and intermediate end wires extending vertically from said frame, and means for rigidifying said end wires, a filter cartridge disposed on said wire grids, having relatively stiff end panels engaging said vertically extending end wires, pleated filter material complementally supported on said V grids, with its opposite ends secured to the outer edges of said end panels, and flexible pliant substantially rectangular side panels connecting the side edges of said end panels and having the side edges of said filter material sealingly secured to the inside surface of said pliant panel side panels, said frame having an outwardly inclined sealing portion extending oppositely from said upstanding V grids and a skirt portion exterior thereof, and said cartridge end and side members extending below the lower loops of said pleated filter material, and sealingly engaging the inclined sealing portion of said frame, and resilient blade affixed along one edge of the skirt portions of said end members and bearing against the outer surface of the cartridge end members extending below the lower loops to assist in the sealing engagement of the cartridge end members against the inclined sealing portion of the frame end members.

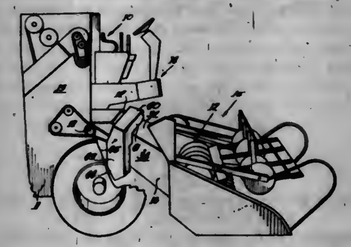
3,187,490
ROW CROP ATTACHMENT FOR FORAGER
Melville J. Mitchell, Birmingham, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed June 26, 1963, Ser. No. 290,741
8 Claims. (Cl. 56—16)

1. In a row crop harvester, the combination comprising, a pair of laterally movable structures, a pair of rolls journalled respectively on said structures for rotation about generally vertical axes, gearing including universal joints connected by axially slidable shafts coupling said



pair of rolls for opposite rotation, and a power shaft coupled to said gearing through another set of universal joints connected by axially slidable shafts.

3,187,491
DUST DISPERSAL MEANS
Elof K. Karlsson, East Moline, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed May 17, 1963, Ser. No. 281,106
2 Claims. (Cl. 56—20)

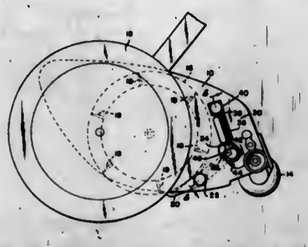


1. In a combine of the type having a main body portion housing the thrashing elements, a material receiving opening in said main body portion, a material feeder having an elongated tubular-shaped housing mounted on said main body portion about said opening, an undershot conveyor mounted in said tubular-shaped housing, the improvement therein which comprises: a transversely disposed wedge-shaped opening formed in the top portion of said tubular housing, a fan casing mounted on said tubular housing and communicating with the interior thereof through said opening and enclosing said opening, a downwardly directed exhaust port formed in said fan casing and a fan mounted in said fan casing adjacent the vertex of said wedge-shaped opening for drawing dust from the interior of said tubular housing and exhausting it through said fan casing port.

3,187,492
LAWN MOWER BEDKNIFE ADJUSTMENT
Jay H. Bergen, Warwick, R.I., assignor to The O. M. Scott and Sons, Marysville, Ohio, a corporation of Ohio
Filed Aug. 31, 1962, Ser. No. 220,630
5 Claims. (Cl. 56—249)

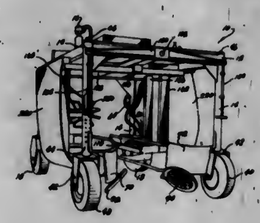
1. A lawn mower having a frame, a cutting reel rotatably mounted on said frame, a bedknife and means mounting said bedknife on said frame for movement into and away from a position for scissor cutting cooperation with said cutting reel, said mounting means comprising: a single turnbuckle adjustment linkage provided at each end of said

bedknife and connected between associated ends of said bedknife and said frame for adjustably positioning said knife with respect to said frame and said reel, each said turnbuckle adjustment linkage comprising plural intercon-



necting components including deformable elastic means frictionally cooperating between engaging other ones of said turnbuckle components for locking said turnbuckle linkage against unintended adjustments thereof.

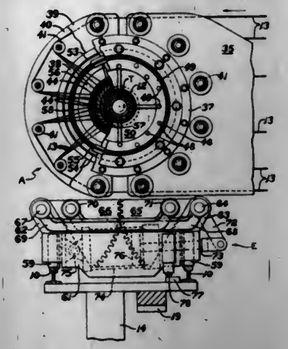
3,187,493
HARVESTER
Ernest F. Harrett, Kewadin, Mich.
Filed Nov. 30, 1962, Ser. No. 241,267
14 Claims. (Cl. 56—330)



1. The berry harvesting machine, comprising: oppositely positioned, bush straddling means to extend into contact with opposite sides of and grasp the base of a berry bush; oscillatory drive means operably associated with said bush straddling means to oscillate said bush straddling means and the bush in a high intensity oscillatory pattern; means to extend under the bush to catch the berries which fall; and oscillatory pattern disrupting means movable into contact with the berries and branches and operable simultaneously with said oscillatory drive means to disrupt the created oscillatory pattern, causing the berries to vigorously shake and fall from said bush.

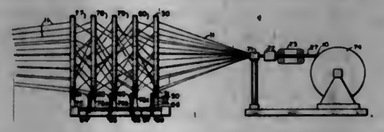
3,187,494
HOSE WINDING APPARATUS
Merle A. Fuller, Barberton, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 16, 1963, Ser. No. 295,362
12 Claims. (Cl. 57—9)

1. Apparatus for winding at least one strand of filamentary material in preselected reverse helical paths about a winding mandrel; comprising a winding mandrel; chuck means releasably engageable with each of said mandrel and movably mounted on said apparatus; means to rotate said chuck means and a mandrel engaged thereby; filamentary material letoff means; filamentary material guiding means concentrically mounted about the axis of said mandrel engaged by said chuck means, further comprising a plurality of concentric filamentary material en-



gaging portions mounted for rotatable movement relative to said axis; and means to move said chuck means relative to said guide means in reverse directions axially of the axis of rotation thereof.

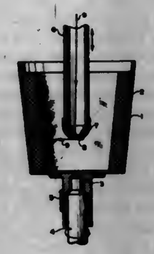
3,187,495
METHOD AND APPARATUS FOR STRANDING CABLE
Eugene A. Christian, Jr., Loudonville, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Original application Oct. 12, 1961, Ser. No. 144,713. Divided and this application Dec. 17, 1963, Ser. No. 335,706
4 Claims. (Cl. 57—34)



1. The method of making a cable having the direction of lay of its strand elements reversed periodically along its length and radially through its layers comprising the steps of arranging said elements in a plurality of concentric, radially separated layers, reciprocatingly rotating each of said separated layers in alternately opposite directions, bringing said layers together and applying a constraining element around the outermost of said layers.

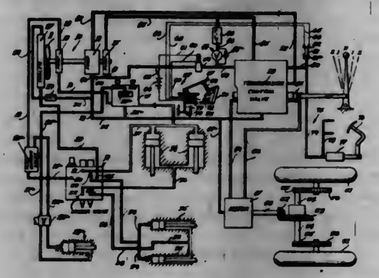
3,187,496
CENTRIFUGAL YARN COLLECTION
Conrad J. Gonsalves, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 236,094
Claims priority, application Netherlands, Nov. 24, 1961, 271,798
4 Claims. (Cl. 57—76)

1. In a centrifugally operated yarn collection means utilizing a rotatable spinning pot and an axially reciprocated spinning funnel, having a lower edge in contact with yarn during collection, the improvement comprising an insert added to the lower edge of the spinning funnel in contact with the yarn, said insert being formed



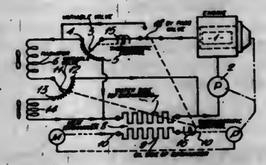
at least partly from a polymer of a fluorine-containing ethene derivative.

3,187,497
HYDROSTATIC ARRANGEMENT FOR TRACTOR LOADERS
Thorvald G. Granryd, Libertyville, Ill., assignor to The Frank G. Hough Co., a corporation of Illinois
Filed May 4, 1962, Ser. No. 192,481
18 Claims. (Cl. 60—19)



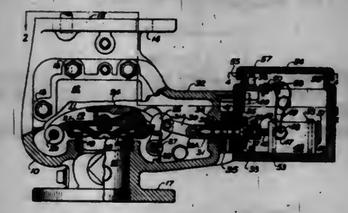
5. A hydrostatic arrangement for a tractor loader comprising a pair of pumps connectable to be driven by the engine of said tractor loader, a loader pump connectable to said loader and driven by said engine, a hydrostatic motor for driving traction means of said tractor loader, valve means selectively operable from a neutral position for non-driving of said traction means to one position for connecting said pair of pumps in parallel to fluidly drive said hydrostatic motor, said valve means further selectively operable to another position to vent one of said pair of pumps and to drive said motor with fluid from the other of said pair of pumps, unloading valve means operating responsive to the driving of said hydrostatic motor by fluid from said pair of pumps operating in parallel for preventing the stalling of said engine, relief valve means operating responsive to fluid from the other of said pair of pumps for driving said motor to prevent the stalling of said engine when said loader pump is operating said loader, said relief valve means being variable from a minimum predetermined relief pressure to a maximum relief pressure, and said unloading valve means having an unloading pressure greater than said minimum relief pressure of said relief valve means.

3,187,498
HYDRAULIC POWER TRANSMISSION SYSTEMS
Donald Firth and Roger Harvey Yorke Hancock, East Kilbride, Glasgow, Scotland, assignors to Council for Scientific and Industrial Research, London, England, a body corporate of England
Filed Mar. 1, 1963, Ser. No. 262,124
Claims priority, application Great Britain, Mar. 9, 1962, 9,288
10 Claims. (Cl. Cl. 60—19)



1. For use in an hydraulic power transmission system adapted to be driven by a water-cooled prime mover, a heat exchange system comprising an oil/water heat exchanger having its water element adapted to be connected in the water cooling circuit of the prime mover and its oil element adapted to be connected to the oil circuit of the transmission; a cooling water radiator; a two-way differential-acting valve for dividing the total flow of cooling water in varying proportions between said radiator and said heat exchanger water element and having its inlet connected to the outlet of the prime mover water jacket, one outlet connected to said radiator and the other outlet connected to the inlet of said water element; connections from the outlet of said radiator to said water element and to the inlet of said water jacket; and temperature-responsive elements in the outlet of said water jacket and in the outlet of said oil element for controlling the flow of water through said water element.

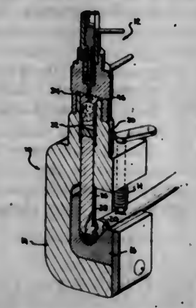
3,187,499
FAST ACTING DELUGE VALVE FOR FIRE EXTINGUISHING SYSTEMS
Wayne Edward Ault, Youngstown, Ohio, assignor, by mesne assignments, to Automatic Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio
Filed June 5, 1962, Ser. No. 200,122
3 Claims. (Cl. 60—26.1)



1. An apparatus adapted to actuate a latch restrained deluge valve comprising a first housing and a second housing, the said housings having aligned opening in the walls thereof, a double bushing connected at one end to the first housing and at another end to the second housing, said double bushing having an axial passageway therethrough, a connecting link movably positioned in said axial passageway in sealing relation with said bushing, said connecting link comprising a first connecting means at one end thereof adjacent the first housing adapted to be attached to a latch restraining a deluge valve, said connecting link having a second connecting means at its other end adjacent the second body, said second connecting means comprising an axially adjustable extension, an actuating device located in said second housing secured to the adjustable extension of said second connecting

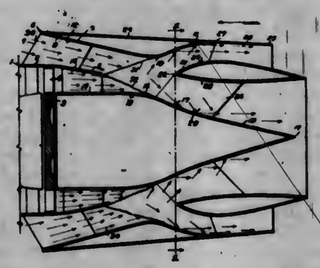
means, said actuating device comprising piston means and cylinder means in cooperative relation, said cylinder means being fixedly mounted in said second housing, said piston means having a piston rod in axial alignment with the axial passage of said double bushing, said piston means further comprising a piston annulus mounted on the piston rod engaging said cylinder means, said piston annulus together with the cylinder means defining an explosion chamber, an explosive charge positioning means located in said cylinder means, explosion initiating means located in said cylinder means, said piston means being moved away from said double bushing to move the connecting link in a direction toward said actuating device on explosion of said charge.

3,187,500
EXPLOSIVELY-ACTUATED CRIMPING TOOL
William F. Brooke, Camp Hill, Pa., and William E. Jaycox, Bel Air, Md., assignors to AMP Incorporated, Harrisburg, Pa.
Original application Jan. 12, 1959, Ser. No. 786,415. Divided and this application Mar. 18, 1963, Ser. No. 265,987
7 Claims. (Cl. 60—26.1)



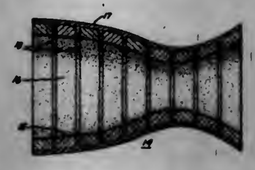
3. The method of actuating a movable member by an explosion comprising: (1) storing the explosive in a closed, removable package, (2) detonating the explosive within the package to perform useful work and retaining the combustion products within the package, and (3) removing the package from the device.

3,187,501
METHOD OF AND APPARATUS FOR AUGMENTING THRUST AND SUPPRESSING SOUND IN AIRCRAFT, ROCKETS, AND THE LIKE
Thomas E. Quick, 1616 Park Place, Wichita 3, Kans.
Filed Dec. 19, 1960, Ser. No. 76,798
12 Claims. (Cl. 60—35.6)



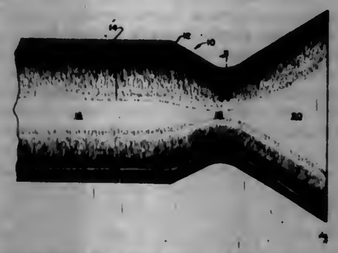
1. In combination, a nozzle for discharging a high velocity hot jet stream to effect a forward propulsion force by reaction of the jet stream, and an augmenter case for suppressing sound and for providing additional propulsion force, said augmenter case having an upstream inlet end encircling the nozzle for admitting an air stream into the jet stream via injector action issuing from said nozzle, said augmenter case having an annular wall portion converging inwardly from said inlet end to provide a restriction of substantially greater area than said nozzle to reduce the relative velocity between the jet and air streams, and said restriction being so located in the area of collision of said streams as to produce radial rebound of the particles of said streams resulting from said collision, said wall portion diverging outwardly from said restriction and providing an annular inclined reaction plane in the area of radial rebound and being so disposed as to produce deflection and redirection of the radial rebound with increased momentum, and said wall portion turning and reducing in exhaust area from said diverging portion and terminating in an exhaust end to conserve the increase in momentum while utilizing the reaction on said annular inclined plane to increase the forward propulsive force by said jet stream, the combined areas of said nozzle and the inlet in said case for admitting an air stream being greater than the exhaust area of said case.

3,187,502
ROCKET NOZZLE
Edward R. Stover, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 23, 1961, Ser. No. 84,119
4 Claims. (Cl. 60—35.6)



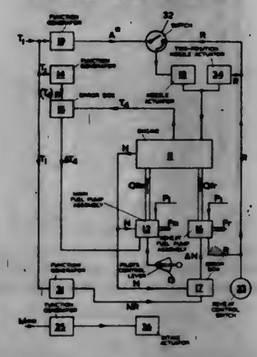
4. A rocket nozzle comprising a plurality of pyrolytic graphite rings stacked together, each of said rings bonded to its adjacent rings, and each of said rings having its plane of deposition perpendicular to the axis of said nozzle.

3,187,503
ROCKET ENGINE CONSTRUCTION
Donald K. Taylor, Dunkirk, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed May 1, 1962, Ser. No. 191,571
4 Claims. (Cl. 60—35.6)



1. A rocket engine comprising a shell, and
a liner for said shell,
said liner consisting essentially of a phenol formaldehyde resin carrier having a substantial wall thickness and defining at least the throat and nozzle areas of the engine, and fibers of boron oxide embedded in said carrier to extend between the inner and outer surfaces thereof.

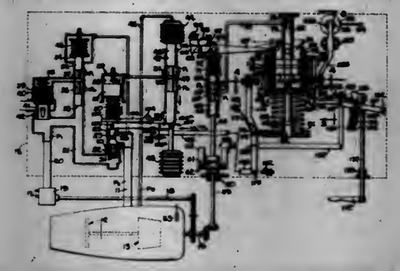
3,187,504
CONTROL SYSTEMS FOR AIRCRAFT GAS TURBINE ENGINES
Michael Vaughan Herbert, Fleet, William Gerald Eric Lewis, Farnborough, and John Brian McGarry, Church Crookham, near Aldershot, England, assignors to Power Jets (Research and Development) Limited, London, England, a British company
Filed Dec. 27, 1962, Ser. No. 247,748
Claims priority, application Great Britain, Jan. 22, 1959, 2,389/59
3 Claims. (Cl. 60—35.6)



1. A gas turbine jet propulsion engine of the single spool type comprising an air intake designed to receive an air flow at supersonic velocities, a compressor, a main combustion system, a turbine, a re-heat combustion system and a variable area jet nozzle designed for operation under supersonic flight conditions arranged sequentially in the direction of flow; fuel supplies to each of said combustion systems; an open loop control system comprising a first fuel control for varying one of said fuel supplies; a closed loop control system separate from said open loop control system and comprising a second fuel control for varying the other of said fuel supplies and governing means independent of said first fuel control and operable in response to engine rotational speed N to automatically adjust said second fuel control in a sense to maintain engine rotational speed substantially constant over at least part of the engine operating range; and a scheduling control system for said jet nozzle separate from said open and closed loop control systems and operable in response to compressor inlet temperature and independently of said first and second fuel controls and of said governing means to vary the jet nozzle area in the same sense as compressor inlet temperature over said part of the engine operating range.

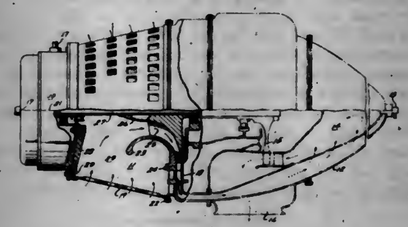
3,187,505
GAS TURBINE FUEL REGULATOR
Harland C. Plummer, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Filed Aug. 13, 1962, Ser. No. 216,484
4 Claims. (Cl. 60—39.28)

3. In a fuel regulating system for a gas turbine, the combination of, a fuel regulator, means for sensing changes in pressure at the discharge of the compressor of said turbine, mechanism for actuating said regulator to increase and decrease the flow of fuel to said turbine with increases and decreases in said pressure including a lever having a fulcrum shiftable back and forth to vary the ratio of the lever, a three dimensional cam mounted for back and forth movements in axial and angular dimensions, a speed droop type governor for sensing changes in the speed of said turbine and adjustably positioning said cam axially in accordance with such changes, means for adjustably positioning said cam angularly in accordance with changes in another operating parameter of said turbine, a follower adapted to engage the surface of said cam and mounted for movement radially toward and away from the cam axis, a permanent connection between said follower and said fulcrum for positioning the latter to correspond to the radial position of said follower, a member permanently coupled to said follower and mounted at one end of said cam for movement axially of the latter, said member being disposed in the path of the cam so as to be



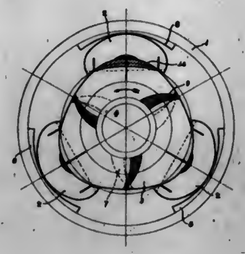
spaced from the cam during movement thereof through part of its range and then to be engaged by the cam and moved thereby in the continued axial movement of the cam during which said follower may be moved away from the cam surface whereby the positioning of said fulcrum may be controlled solely by said governor, and selectively adjustable means for changing the position at which said member is engaged by said cam including means supporting said member for yielding along said cam axis when said follower is being moved by said cam while the member is in contact with the cam.

3,187,506
AIR INDUCTION SYSTEM
John R. Switzer, Walnut Creek, Calif., assignor to General Electric Company, a corporation of New York
Filed Aug. 19, 1963, Ser. No. 303,010
6 Claims. (Cl. 60—39.31)



1. An air induction system for a gas turbine engine having a gear box at one end and a combustor at the opposite end thereof,
a centrifugal compressor mounted on the engine shaft and a frame disposed intermediate the gear box and combustor,
said compressor having an annular air inlet facing said gear box,
a conical screen connected to said frame and said gear box to transmit load therebetween,
a compressor air inlet duct secured to said frame,
a smaller diameter inlet spinner carried on the engine shaft within said air inlet duct,
whereby said conical screen is the exclusive load transmitting member between said gear box and frame to provide an unobstructed air inlet to said compressor.

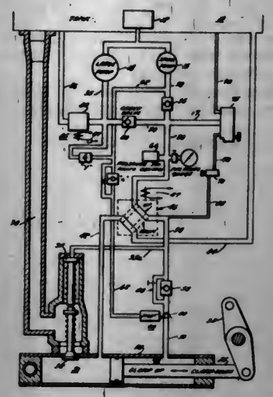
3,187,507
THERMODYNAMIC MACHINE
Jose Ignacio Martin Artajo, 23 Alberto Aguilera, Madrid, Spain
Filed Apr. 2, 1962, Ser. No. 184,009
Claims priority, application Spain, Nov. 20, 1961, 272,170
14 Claims. (Cl. 60—39.38)



1. A thermodynamic machine comprising a stator constituting an outer casing of the machine, said stator being formed with symmetrical contours and mutually parallel plane sides, a fundamentally cylindrical rotor rotatably mounted about the machine axis, said rotor having a non-circular cross-section defined at its periphery by a curvilinear polygon of multiple symmetry with respect to said axis, an annular clearance space being provided between the inner face of the stator and the outer face of the rotor, and at least two oscillating heads which rock without sliding and do not rotate with the rotor and are symmetrically arranged in said clearance space with faces of concave form directed towards the rotor, said concave form being such that during rotation of said rotor, cavities of varying volume are produced between said rotor and said heads as a result of rocking movement of the heads which are arranged to effect limited rolling movement at portions in contact with the inner face of said stator a plurality of sets of air inlet and exhaust ducts and fuel inlet ports in said rotor, each set arranged for communicating sequentially with each of said cavities formed between said heads and said rotor as the rotor turns, in each of said sets the air inlet duct being arranged to communicate with said cavities as they begin to expand before contraction, the fuel inlet port communicating with said cavities at substantially the moment of smallest volume, and the exhaust duct communicating said cavities as they begin to expand after contraction, whereby in use there is produced within said cavities compression of air and fuel for energization by ignition followed by expansion of the ignited fuel as a thermodynamic fluid.

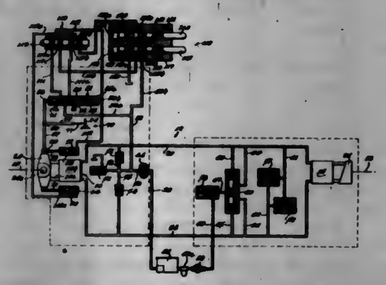
3,187,508
HYDRAULIC CLAMP SYSTEM FOR GUILLOTINE CUTTERS
Carl Thumim, Chicago, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,593
12 Claims. (Cl. 60—52)

1. A hydraulic system for the clamp of a paper cutter comprising a cylinder having a double-faced piston for effecting lowering and raising of a clamp, said cylinder having a chamber on each side of said piston, a prefill valve disposed for oil passage to and from one of said chambers, an oil tank having a passage to said prefill valve, a pair of pumps having intakes connected to said tank, and means whereby said one chamber is filled by oil from both of said pumps and by oil through said prefill valve when said clamp is descending, and means whereby said pumps provide oil to the other of said chambers to raise said clamp, and means whereby one



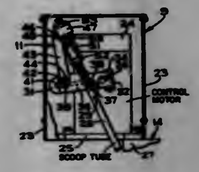
of said pumps is bypassed so as to be ineffective when said clamp has reached a predetermined upper position.

3,187,509
HYDROSTATIC TRANSMISSION
Harry C. Moon, Jr., Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Sept. 16, 1964, Ser. No. 396,939
14 Claims. (Cl. 60—53)



1. A hydrostatic transmission system, comprising,
(a) a hydraulic motor,
(b) a rotatable cylinder block axial piston variable angle swashplate pump constructed such that a fluid pressure moment acting through the pistons on the swashplate when inclined from neutral exerts forces tending to return the swashplate to neutral and proportional to the pressure on the high pressure side of the pump,
(c) conduit means connecting the pump outlet to the motor inlet,
(d) fluid operable means for varying the swashplate angle to vary pump displacement in opposition to the fluid pressure moment, and
(e) torque valve means including
(e–1) a movable valve member,
(e–2) manually controllable means for urging the valve member in a direction to supply fluid to the displacement varying means to establish a predetermined system pressure proportional to manual pressure thus applied to the valve member, and
(e–3) means responsive to pressure in the displacement varying means for urging the valve member in the opposite direction to block the supply of control fluid to the displacement varying means when the predetermined system pressure exists.

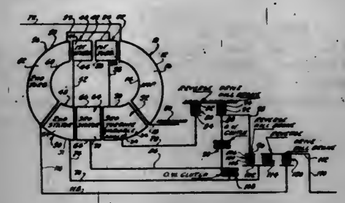
3,187,510
SPEED CONTROL MECHANISM FOR VARIABLE SPEED PUMPING UNITS
Philip R. Bunnelle, San Jose, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed May 11, 1961, Ser. No. 109,426
2 Claims. (Cl. 60—54)



1. In a variable speed fluid drive coupling including a support and a scoop tube movable relative to the support along a substantially rectilinear path between a high coupling speed position projected out from the support and a low coupling speed position retracted inwardly relative to said high coupling speed position, a mechanism for controlling the movement of said tube comprising a shaft journalled in said support and having an axis of rotation disposed transversely of and laterally spaced from said path, said path lying in a predetermined reference plane substantially parallel to the axis of said shaft, an arm secured to and projecting radially from said shaft, pivot means mounted on said arm for movement therealong toward and away from said shaft, said pivot means providing a first pivot axis substantially parallel to said shaft axis, means for moving said shaft in opposite directions about its axis between a position corresponding to the low coupling speed position with said first pivot axis substantially in said reference plane and a position corresponding to the high coupling speed position with said arm projecting crosswise of said path and with said first pivot axis lying on the opposite side of said reference plane from said shaft, and a rigid member pivotally connected to said pivot means for relative pivotal movement about said first pivot axis and pivotally connected to said tube on a second pivot axis substantially parallel to said first pivot axis and spaced from said first pivot axis lengthwise of said path in said low coupling speed position of the arm whereby said tube is moved between its high coupling speed and low coupling speed positions respectively upon movement of the arm between the arm's high and low coupling speed positions.

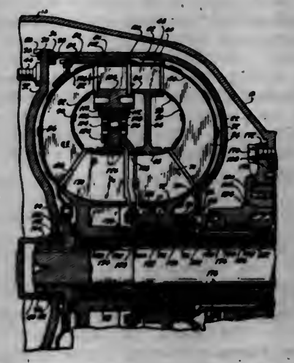
3,187,511
MULTIPLE ELEMENT HYDROKINETIC TORQUE CONVERTER MECHANISM
Martin G. Gabriel, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,469
5 Claims. (Cl. 60—54)

1. A hydrokinetic torque converter transmission mechanism adapted to deliver driving torque from a driving member to a driven member and comprising an impeller connected to said driving member, a first turbine, a first stator, a second turbine, a second stator, a third turbine and a third stator situated in toroidal fluid flow relationship in a common torus circuit, said impeller being located at a radial outflow region of said circuit, said second turbine being located at a radial inflow region of said circuit, said first stator and said first turbine being located at a radially outward region of said circuit and being adapted to accommodate axial flow, said second stator, said third stator and said third turbine being located at a radially inward region of said circuit, said turbines being connected together for rotation in unison, said first stator and said second stator being connected together for rotation in unison, a turbine shaft, first selectively engageable clutch means for connecting said turbine shaft to said driven member, a first stator shaft connected to said second stator, a second stator shaft connected to said third stator, a selectively engageable forward drive brake in-



cluding a friction member, means for selectively anchoring said friction member to a stationary portion of said mechanism, first one-way clutch means for connecting said second stator shaft to said friction member, second one-way clutch means for connecting said first stator shaft to said friction member through said first one-way clutch means, and second selectively engageable clutch means for connecting said first stator shaft to said friction member to inhibit rotation of said first stator and said second stator against rotation in either direction when said second turbine overruns said impeller and said friction member is anchored.

3,187,512
MULTIPLE ELEMENT HYDROKINETIC TORQUE CONVERTER
Martin G. Gabriel, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,410
8 Claims. (Cl. 60—54)



1. A power transmission mechanism comprising a hydrokinetic torque converter, said converter including an impeller, a stator and a turbine assembly situated in toroidal fluid flow relationship, said impeller being connected to a driving member, said turbine assembly being connected to a driven member, said stator having a first

bladed section located at a radially outward region and a second bladed section located at a radially inward region, a one-way brake between said stator sections, means for anchoring said stator including a stator shaft and an overrunning brake for transferring stator torque reaction to a relatively stationary portion of said mechanism, a second stator shaft connected to said first stator section, and means for braking selectively said second stator shaft to a relatively stationary portion of said mechanism thereby inhibiting free wheeling of said first stator section when said turbine assembly overruns said impeller.

3,187,513
METHOD OF DRIVING PILES

Charles L. Guild, East Providence, R.I., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Aug. 24, 1962, Ser. No. 219,313
2 Claims. (Cl. 61—53.5)



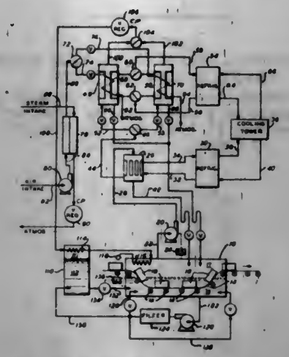
2. The method of driving a thin wall pile shell into the ground which comprises the steps of providing a cylindrical elastic mandrel with an open end, inserting said mandrel into a pile shell having an open lower end, acoustically coupling the pile shell to said mandrel, creating continuous sonic elastic vibrations in and along said mandrel and pile shell, inserting the mandrel and pile shell into the ground, whereby the assembly fluidizes the earth to permit penetration, terminating the creation of continuous sonic elastic vibrations, uncoupling the pile shell and mandrel, withdrawing the mandrel and removing it from axial alignment with said pile shell, energizing said mandrel with sonic vibrations whereby the earthen material within said mandrel is fluidized and flows out of the end of said mandrel, whereby a voided interior within the said pile shell is created.

3,187,514
IMMERSION FREEZING SYSTEM

John J. Reades, Millington, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,671
15 Claims. (Cl. 62—63)

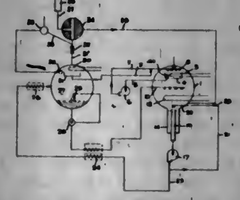
10. In a process of freezing articles by immersion in a cryogenic liquid bath, the steps of compressing vapors arising from the bath, condensing said compressed vapors, returning refrigerant so condensed to the bath, further cooling and solidifying residual uncondensed vapors, thereby separating refrigerant from uncondensed impurities, subsequently warming said solidified refrigerant and returning the same to the immersion bath, passing the cold uncondensed vapors in indirect heat exchange with vapors above a body of said liquid refrigerant to at least partially condense said last-mentioned vapors, and therefter blowing said cold noncondensible vapors over articles about to be immersed in said bath to precool said articles.



3,187,515
METHOD AND APPARATUS FOR CONTROL OF TEMPERATURE IN ABSORPTION REFRIGERATION SYSTEMS

Judson S. Swearingen, Los Angeles, Calif., assignor, by mesne assignments, to Electronic Specialty Co., Los Angeles, Calif., a corporation of California

Filed Sept. 4, 1962, Ser. No. 221,194
20 Claims. (Cl. 62—85)



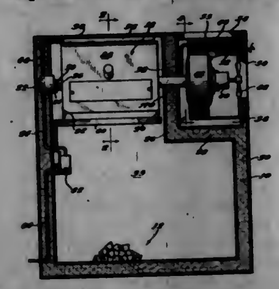
1. A process of refrigeration which comprises evaporating water in an evaporation zone, passing a fluid to be refrigerated in heat exchange with the water being evaporated, passing the generated vapor into an absorption zone in contact with a salt solution thereby absorbing said vapor in such salt solution and cooling said salt solution, introducing a stream of fixed gases into said absorption zone, in contact with said salt solution in said absorption zone and thereby increasing the temperature in said evaporation zone.

3,187,516
UNITARY ICE CUBE MAKER AND COMPRESSOR

William C. Lundstrom, Rte. 3, Park Rapids, Minn.

Filed Sept. 20, 1962, Ser. No. 225,008
8 Claims. (Cl. 62—138)

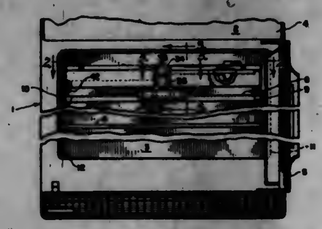
1. An ice making machine comprising an ice making unit having a first thermally conducting surface and a second thermally conducting surface disposed at an acute angle to the first surface, means for pivotally mounting the ice making unit on an axis including rotational stop means for limiting the clockwise and counterclockwise rotation of the unit, clockwise rotation being limited to positioning the first surface at an acute angle to the horizontal and counterclockwise rotation being limited to positioning the second surface at approximately the same acute angle to the horizontal, the center of gravity of the unit being between the first and second surfaces on the side of the pivotal axis remote from the intersection of the extensions of the first and second surfaces, and a refrigeration system mounted on the ice making unit and rotatable therewith including a first conduit means adjacent to the first surface and a second conduit means adjacent to the second surface, said refrigeration system having a refrigerant circulating circuit with a high pressure portion and a low pressure portion, said refrigeration system having control means responsive to the rotational position of the unit for connecting the first conduit means into the high pressure portion of the system and the second conduit means into the low pressure portion of the circulating system when the second surface of the ice-making unit is disposed at an acute angle to the horizontal and for connecting the second conduit means into the high pressure portion of the system and the first conduit means into the low pressure portion of the circulating system when the first surface is at an acute angle to the horizontal.



3,187,517
UNITARY ICE CUBE TRAY AND STORAGE BIN WITH PIVOTAL CONNECTION

Richard J. Carbary, La Grange, Ill., assignor to General Electric Company, a corporation of New York

Filed Aug. 6, 1964, Ser. No. 387,922
3 Claims. (Cl. 62—344)

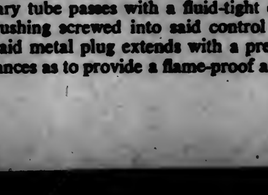


1. An ice making and storage device for installation in a freezing chamber having a door, comprising, in combination,
a base framework adapted to be supported in said chamber, said framework including a rigid structure arranged to extend centrally of said chamber from substantially the front to the rear thereof,
an upstanding pivot shaft,
means for supporting said pivot shaft for movement from a home position adjacent the front end of said rigid structure to a second position forwardly thereof,
a first superstructure framework mounted on said pivot shaft for rotation in a horizontal plane,
a second superstructure framework mounted on said pivot shaft for rotation in a horizontal plane,
said first and second superstructure frameworks being disposed respectively at upper and lower levels and each defining substantially a quadrant of a circle of which the pivot shaft is the center,
an open-topped ice storage receptacle removably carried in said second superstructure framework,
an open-topped ice-cube making receptacle disposed within said first-named superstructure framework,
means for drawing said pivot shaft and thereon-mounted first and second superstructure frameworks forwardly of said base framework,
and means for rotatably supporting said ice-cube making receptacle for rotation relative to said first-named superstructure framework inversion over said storage receptacle for discharge of ice cubes thereinto.

3,187,518
THERMAL CHESTS

Lester E. Bair, Gerson Meyer, and Lou Kramer, Baltimore, Md., assignors to Life-Like Products Inc., Baltimore, Md., a corporation of Maryland

Filed Aug. 14, 1963, Ser. No. 302,092
2 Claims. (Cl. 62—372)



1. A portable container comprising thermally insulated exterior walls, said walls being shaped to delineate on the interior a bottom section relatively narrower than the upper section, said bottom section having portions of its walls protruding inwardly relative to the portions of the upper section, said protruding portions forming a tray support, a removable tray member normally disposed wholly in the upper section and seated on said protruding portions, said tray being constructed of a material having a relatively high coefficient of heat conductivity and having a hollow interior space, said space being adapted to confine a liquid material of a relatively high coefficient of thermal exchange, said tray member comprising vertical sides forming an enclosure at the top for objects to be carried by the tray and to be retained under refrigeration independently of the container.

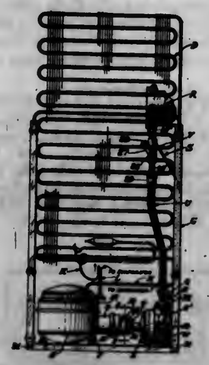
3,187,519
EXPLOSION-PROOF REFRIGERATOR AND FREEZER

Leonard I. Matlen, Cedar Grove, N.J., assignor to Kelvinore, Inc., Newark, N.J., a corporation of New Jersey

Filed Aug. 26, 1963, Ser. No. 304,348
3 Claims. (Cl. 62—467)

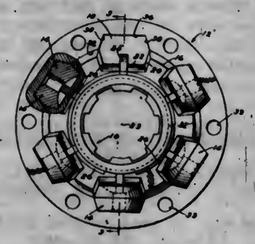
1. An explosion-proof refrigerator, the combination with a motor-compressor unit, including an electric motor and a refrigerant compressor driven thereby hermetically sealed in one casing, of a housing integral with said casing and having therein electrical motor terminals for said unit, said integral housing having a threaded opening and a cover removably secured thereto with a flame-proof joint, an explosion-proof control housing having therein electrical control apparatus for said motor-compressor unit, said control housing having a threaded opening and a cover removably secured thereto with a flame-proof joint, a sensory capillary tube, a metal plug through which said capillary tube passes with a fluid-tight connection, a reducing bushing screwed into said control housing and in which said metal plug extends with a press fit to such close tolerances as to provide a flame-proof and explosion-

proof joint, one end of the sensory tube being connected to a thermostat in said control apparatus and the other end being adapted to be positioned in a refrigerated area, an explosion-proof main switch, wires some of which electrically connect said motor terminals to said control apparatus and others of which connect said control apparatus to said switch, and explosion-proof conduits for said wires between said integral housing and said control housing and between said control housing and said switch



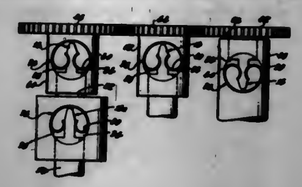
having explosion-proof connections with said control housing and with said integral housing and with said switch and including at least two sealing devices one between said integral housing and said control housing and another between said control housing and said switch, each device including a hollow body through which said wires are threaded and in which is a plastic sealing compound that seals the wires in said body and prevents passage of flame and fluid in the conduits from either side of said body to the other.

3,187,520
CONSTANT VELOCITY UNIVERSAL JOINT
Alfred Hans Rzeppa, Columbus, N.C.
Filed Apr. 24, 1963, Ser. No. 275,271
10 Claims. (Cl. 64—21)



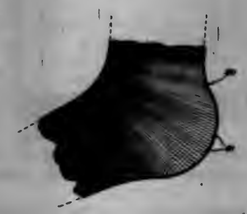
1. A universal joint comprising an outer race member, an inner race member fitted within said outer race member and angularly movable relative thereto, said outer race member having an inner surface provided with a plurality of generally axially extending grooves, said inner race member having an outer surface provided with a plurality of generally axially extending grooves, said outer race member grooves respectively registering with said inner race member grooves when said race members are coaxially aligned to provide pairs of registering grooves, a roller disposed within each pair of registering grooves to transmit torque from one race member to the other, and cam means fixed on one of said race members and movable as a unit therewith for engaging and positioning said rollers in a plane which bisects the rotational planes of said race members.

3,187,521
MECHANICAL COUPLING DEVICE
Henry Morris, Covina, and Norman L. Gallon, Pomona, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Apr. 18, 1963, Ser. No. 274,036
10 Claims. (Cl. 64—23)



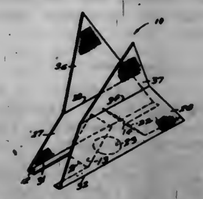
1. Shaft coupling means, comprising:
a first shaft at its coupling end reduced to define a diametrically extending protruding tongue having a nose portion tapered in longitudinal and transverse cross section and detenting channels to the rear of said nose portion;
a second shaft having an axially disposed pilot bore for receipt of said tongue in coaxial relationship and a diametrically extending retainer aperture traversing said pilot bore; and
a resilient retainer member having inturned, curved bifurcations having a scroll-like configuration and which is receivable within said retainer aperture to embrace and through said bifurcations engage said first shaft tongue received within said second shaft pilot bore, said bifurcations respectively received in and bearing upon said detenting channels thereby to couple the first and second shafts while providing for their limited relative axial movement.

3,187,522
CIRCULAR KNIT ELASTIC GARMENTS
Herbert Knohl, Seneca, S.C., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Dec. 5, 1961, Ser. No. 157,207
9 Claims. (Cl. 66—186)



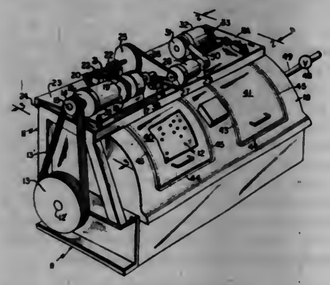
1. A knitted elastic-yarn containing stocking
comprising knitted stitches of thermoplastic yarn forming courses of said stocking in the shaped heel and instep of said stocking
elastic yarn extending in a continuous spiraloid winding inlaid in at least one of said courses
wherein the knitted stitches of thermoplastic yarn in the heel are larger than those in the instep in the same course,
the adjacent inlaid rounds of elastic yarn are further separated in the heel than in the instep and
wherein the amount of elastic yarn in a round is increased over that in a round in the adjacent ankle portion.

3,187,523
FLAME SHAPER AND LUMINOSITY CONTROL
Eugene L. Kilbourn, Marengo Township, Calhoun County, Mich., assignor to S. H. Leggitt Company, Marshall, Mich., a corporation of Michigan
Filed Oct. 7, 1963, Ser. No. 314,393
12 Claims. (Cl. 67—87)



1. A flame shaper and luminosity control for a flame, comprising:
an opposed, spaced pair of perforate side panels extending convergingly upwardly for defining an opening there between for enclosing the lower part of said flame;
a pair of perforate ears disposed atop and extending divergently upwardly from said side panels for spreading the upper part of said flame therebetween.

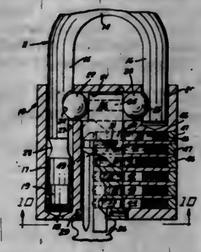
3,187,524
LAUNDRY MACHINES
Kenneth H. Wolverton, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1963, Ser. No. 305,657
6 Claims. (Cl. 68—24)



1. In a washer-extractor, a housing; a perforated drum mounted for rotation within said housing; a high speed motor mounted on said housing and drivingly connected to said drum; a low speed wash motor and an intermediate speed motor mounted on said housing; means drivingly connecting one of said wash and intermediate speed motors to the armature shaft of said high speed motor; clutch means between the armature shaft of said high speed motor and the motor that is drivingly connected to it; means drivingly connecting the armature shaft of the motor connected to the armature shaft of the high speed motor to the armature shaft of the remaining motor; and variable speed means between said low and intermediate speed motors.

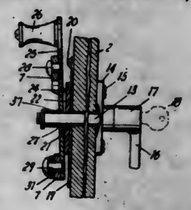
3,187,525
PADLOCK CONSTRUCTED FOR QUICK KEY CHANGE
Herbert F. Dies, 14512 Harbor Island, Detroit, Mich.
Filed June 7, 1962, Ser. No. 200,764
2 Claims. (Cl. 70—38)

1. In a lock construction, the combination comprising:
(a) a body,
(b) a shackle member operatively mounted in the top end of said body,
(c) an elongated chamber formed in the lower end of the body and being open at the outer end thereof,
(d) a key plug rotatably mounted in said chamber and being rotatable between locked, unlocked, and removal positions, and being provided with a longitudinal keyway and a transverse peripheral slot on the inner end thereof which communicates at one end with the longitudinal keyway,
(e) a plurality of longitudinally aligned, spring biased outer tumbler pins mounted in said body in spaced bores communicating with said chamber,
(f) a plurality of inner tumbler pins mounted in said key plug in spaced bores which are aligned with the bores in said body when the key plug is rotated to the locked position,
(g) a fixed retainer pin mounted in said body and having the inner end thereof extended into the peripheral slot in said key plug to prevent longitudinal movement of the key plug to normally retain the same in



the body, and to limit the normal rotative movement of the key plug between the locked position and the unlocked position by engagement with a key in the key plug keyway when the key plug is turned to the unlocked position and by engagement with the other end of the peripheral slot when the key plug is turned to the locked position,
(h) slot means in said key plug communicating with said keyway for passage therethrough of said retainer pin from said peripheral slot to permit longitudinal movement of the key plug and removal of the key plug from said chamber when said key plug is turned by a key in said keyway which has the inner end notched to permit the retainer pin to pass into the slot means, to permit replacing said inner tumbler pins to change the key combination of the lock construction, and,
(i) passageway means in said lock construction for the reception of means capable of retaining the outer tumbler pins in their respective bores in the body when the key plug has been removed.

3,187,526
LOCK MEANS FOR VERTICAL SLIDABLE DOORS
Charles C. Moler, Hartford City, Ind., assignor to Overhead Door Corporation, Hartford City, Mich.
Filed Aug. 13, 1962, Ser. No. 216,414
14 Claims. (Cl. 70—100)



9. In combination, a vertically acting door assembly, a lock means comprising a pair of bolts disposed on the

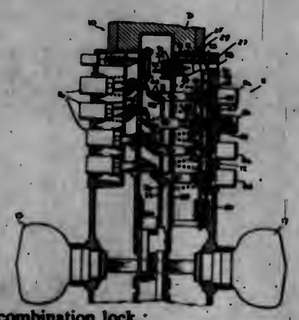
inner side of the door and slidably and tiltably supported on the door adjacent its side edges, bolt actuating means comprising a spindle disposed through and rotatably mounted on the door and projecting inwardly therefrom and having a handle on the outer side of the door provided with a key actuated connection to said spindle, a manually adjustable bolt actuated member rotatably and tiltably mounted on said spindle for rotatable and longitudinal adjustment relative thereto, said bolts being connected to said actuating member on opposite sides of said spindle, a thrust spring mounted on said spindle at the outer side of said inner actuating member, and a coupling member on said spindle, said inner actuating member being provided with means detachably engageable with said coupling member on said spindle.

3,187,527
THEFT PREVENTION DEVICES
Norman Sidney Moss, Shirley, Solihull, Philip Swingewood Jeavons, Birmingham, and David George Coleman, Sheldon, Solihull, England, assignors to Wilmot-Breeden Limited, Birmingham, England
Filed Mar. 8, 1962, Ser. No. 178,492
Claims priority, application Great Britain, Aug. 21, 1961, 30,624/61
13 Claims. (Cl. 70—252)



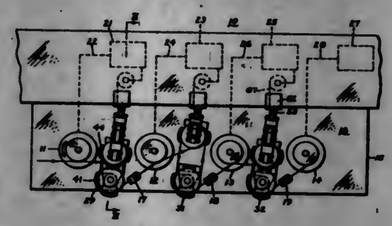
1. A theft prevention device for a motor vehicle having a key-operated switch mechanism and a directly manually-operated locking mechanism adapted when actuated to render a vital mechanical part of the vehicle inoperable, said mechanisms being interlocked so that the one cannot be operated unless the other is in the inoperative position and so that when the locking mechanism is in the locked position it automatically returns to the inoperative or unlocked position when the key is turned in the direction opposite to that required to operate the switch mechanism.

3,187,528
ANTI-TAMPER KEYLESS LOCK
Mathias M. Check, Strafford, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed July 13, 1962, Ser. No. 209,647
13 Claims. (Cl. 70—299)



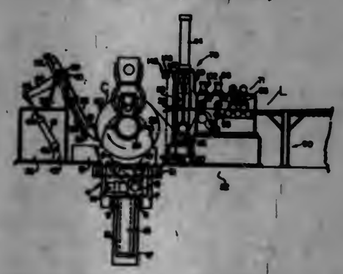
5. In a combination lock,
a series of locking parts,
a series of push buttons for moving said locking parts to locking positions as said push buttons are depressed,
means for holding said locking parts in locking position when so positioned by said push buttons,
spring means returning said push buttons from depressed position to an outward position,
detent means for locking all of said push buttons against depression,
and means for releasing said locking parts from said holding means and said push buttons from said detent means.

3,187,529
WIRE DRAWING MACHINE
Edwin J. McIlvried, Cuyahoga Falls, Ohio, assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 28, 1961, Ser. No. 134,313
3 Claims. (Cl. 72—24)



1. A wire drawing machine including in combination a plurality of independently driven blocks longitudinally spaced from each other on a work surface, a plurality of dies positioned intermediate said driven blocks, and block speed controlling means disposed intermediate each of said blocks, said controlling means comprising a fixed pair of sheaves in lateral alignment with a laterally movable carriage, said movable carriage supporting a pair of sheaves angularly disposed to each other, wire passing between said blocks having a plurality of loops passing around said fixed and movable sheaves, said carriage maintained in a state of equilibrium along a lateral line normal to a line passing through the center of said blocks by wire tensioning means opposed by fluid tensioning means, the movement of said carriage restricted to a horizontal plane and controlled by tension on the wire passing around said sheaves whereby linear positioning of said carriage will actuate block speed regulators.

3,187,530
PROCESSING UNCOILER
Neil J. Ramsey, Mentor, Ohio, assignor to Production Machinery Corporation, Mentor, Ohio, a corporation of Ohio
Filed Nov. 14, 1961, Ser. No. 152,325
13 Claims. (Cl. 72—29)

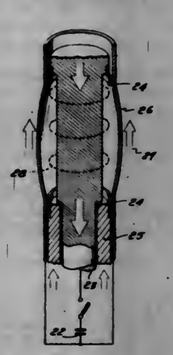


1. In a metal strip uncoiler, the combination of a support, an overhanging horizontally extending expansible mandrel adapted to support a coil of metal strip mounted on said support, means on said support to rotate said mandrel and to expand said mandrel, a pair of pinch rolls defining a pass spaced outwardly from the axis of rotation of said mandrel defining a horizontal pass, a strip flexing roll mounted for vertical movement between and horizontally spaced from said mandrel and said pair of pinch rolls from a lower working position substantially horizontally even with the axis of said mandrel to an upper pass threading position substantially above the horizontal pass defined by said pair of pinch rolls, and means operative vertically to move said strip flexing roll to maintain a constant angle of flex in such strip as such coil unwinds.

3,187,531
EXTRUSION OF METALS
John Harper Cairns, Haigh Park Road, Stourton, Leeds, England
Filed May 14, 1964, Ser. No. 367,414
Claims priority, application Great Britain, June 21, 1962, 23,888/62
2 Claims. (Cl. 72—41)

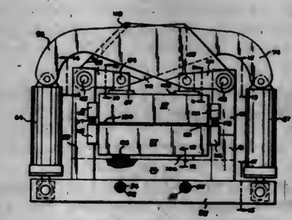
1. A method of commencing the extrusion of a billet comprising the steps of forcing said billet through a scalping die in a press separate from the extrusion press, said scalping die having a diameter smaller than the diameter of the extrusion press container to allow for a layer of lubricant in said container, scalping the leading edge of said billet, placing a layer of lubricant in said extrusion press container, inserting said billet in said extrusion press container, and commencing extrusion.

3,187,532
METAL-FORMING DEVICES USING DIRECT ELECTRODE CONTACT
Harold P. Furth, Berkeley, Calif., assignor to Advanced Kinetics, Inc., Costa Mesa, Calif., a corporation of California
Filed Dec. 26, 1961, Ser. No. 161,923
9 Claims. (Cl. 72—56)



1. In a device for forming metal by magnetic pressure;
a high energy current source,
a conductor responsively connected to said current source and shaped to provide a magnetic field of predetermined strength,
an electrically conductive metal work piece positioned within said magnetic field at a predetermined distance from said conductor,
and means for conductively connecting said conductor to said metal work piece for providing a primary circuit through said conductor and said metal work piece, the current flowing in said conductor generating said magnetic field and the current flowing in said metal work piece interacting with said magnetic field to provide magnetic pressure on said metal work piece for shaping the work piece.

3,187,533
METAL-FORMING PRESS ADAPTED FOR MAKING HOLLOW PASSAGEWAY PANELS
Boyd D. Cave, Tlalnepantla, Mexico, Mexico, and Dietrich Reimann, Barranquilla, Colombia, assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Original application Sept. 11, 1958, Ser. No. 760,318, now Patent No. 3,092,898, dated June 11, 1963. Divided and this application Aug. 3, 1962, Ser. No. 224,880
8 Claims. (Cl. 72—61)

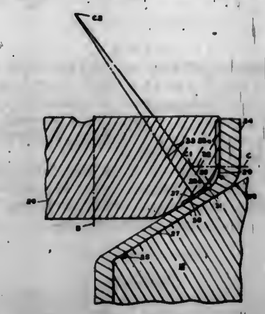


8. A metal-forming press comprising, a rigid press framework, a stationary platen mounted upon said framework, a floating movable platen disposed within said framework, resilient means normally holding the confronting surface of said platens sufficiently far apart to receive therebetween an inflatable metal article, a pair of shafts mounted upon said framework along opposite sides of said platens, a first lever having a portion intermediate its ends in contact with said floating platen, said first lever being mounted adjacent one end for pivoted movement about one of said shafts and being reinforced in the region between said one end and said intermediate portion thereby to sustain a prestressing of said first lever, a first expansible chamber motor having a movable portion attached to said first lever adjacent the other end thereof, a second lever having a portion intermediate its ends in contact with said floating platen, said second lever being mounted adjacent one end for pivoted movement about the other of said shafts and being reinforced in the region between said one end and said intermediate portion of said second lever thereby to sustain a prestressing of said second lever, a second expansible chamber motor having a movable portion attached to said second lever adjacent the other end thereof, and means for controllably supplying pressure fluid simultaneously to said motors thereby to move said platens into contact with each other, said motors being arranged to continue to apply pressure to the lever attached thereto following contact of said platens whereby said reinforced levers may be prestressed prior to inflation of said article.

3,187,534
SPINNING MACHINE TOOL RING
Serope Kalpakciogiu, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 19, 1962, Ser. No. 180,698
4 Claims. (Cl. 72—83)

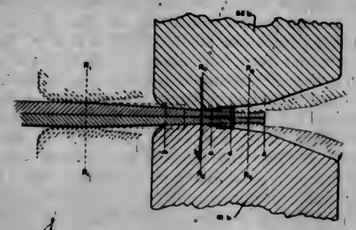
1. A tool ring for a shear spinning machine, the tool ring having a rim circular in a plane normal to the axis of rotation of the tool ring, said rim having a portion adapted to engage a workpiece blank for deformation thereof, said rim portion having two arcs in a plane containing the axis of rotation of the tool ring, said

arcs blending together in said plane, one of said arcs engaging the workpiece blank after the other of said arcs



and having a radius of curvature larger than the radius of curvature of the other of said arcs.

3,187,535
APPARATUS FOR ROLLING DISKS
Charles Storer Shumaker, Glenshaw, Pa., assignor, by mesne assignments, to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Original application May 18, 1959, Ser. No. 813,812, now Patent No. 3,090,265, dated May 21, 1963. Divided and this application Nov. 21, 1962, Ser. No. 229,776
7 Claims. (Cl. 72—84)



1. A pair of opposed cooperating rotatable rolls which form a disk from a blank of a substantially uniform thickness, said pair of rolls each having corresponding opposed relatively constant diameter portions adjacent to one end thereof for reducing said blank by a rolling operation beginning at an inner portion of the blank and working outwardly, and at least one roll of said pair having an elongated second portion extending toward the opposite end of said roll, said elongated second portion being relieved away from said blank an amount greater than the distance between the opposed reducing portions of the rolls, and engageable by a portion of the blank outwardly of the portion thereof engaged by the rolling portions of said rolls, thereby causing elongation of the unrolled portion of the blank in advance of the rolling thereof.

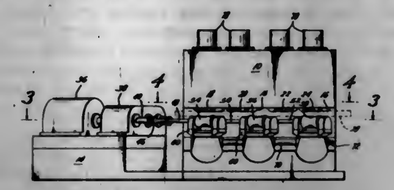
3,187,536
ROTARY STRAIGHTENER
Michael W. Zolton, Houston, Tex., assignor to Pritchett Engineering & Machine, Inc., Houston, Tex., a corporation of Texas
Filed Nov. 20, 1961, Ser. No. 153,657
15 Claims. (Cl. 72—99)

1. Apparatus for straightening cylindrical members comprising

a plurality of upper and lower rolls spaced along the line of travel of the cylindrical member through the apparatus and at an angle to said line of travel,

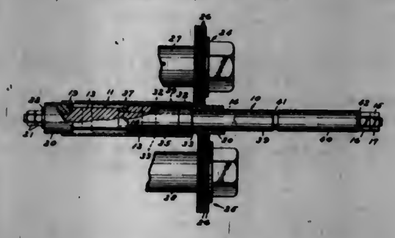
whereby said member may be passed longitudinally between and in contact with each of said upper and said lower rolls,

each of said rolls having a contour which is generally in the form of a hyperboloid of one sheet, and the



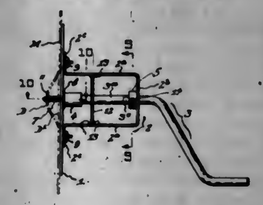
longitudinal spacing between at least some of said rolls being different from the longitudinal spacing between others of said rolls by an amount sufficient to inhibit the generation of a standing wave in the member to be straightened.

3,187,537
FLOATING ROTATING MANDREL FOR FINNING
Elmer A. Witt, Lincoln Park, Mich., assignor to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan
Filed Dec. 11, 1961, Ser. No. 158,264
9 Claims. (Cl. 72—108)



1. A floating mandrel for forming base tubing for unsupported action within the tubing, comprising a plurality of axially arranged, cylindrical mandrel sections rotatable coaxially relative to one another, including a pilot section and a cylindrical forming section of greater outer diameter than said pilot section, said forming section being disposed to the rear of said pilot section, and means rearwardly sustaining said sections and mounting the same as a unit for coaxial rotation relative to one another.

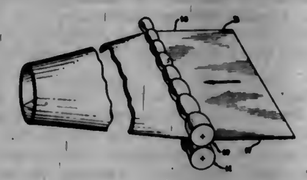
3,187,538
DEVICE FOR PULLING OUT DENTED SHEET METAL PORTIONS
Paul S. Painter, 331 Hollenbach St., Reading, Pa.
Filed Oct. 4, 1962, Ser. No. 228,412
9 Claims. (Cl. 72—114)



1. A device of the character described comprising; a rigid plate-like base member having at least one aperture

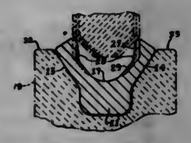
extending therethrough; a substantially U-shaped frame member having two longitudinally extending legs; means separably connecting said members; a crank having a shank portion rotatably mounted on said frame member in longitudinally fixed relation between the legs thereof; and a socket separably connected with the front end of the crank, which socket is adapted to have anchored therein the head of a metal screw in such manner that the shank portion of the latter extends through and beyond one of the apertures in said base member for engagement with a work piece.

3,187,539
ROLL FORMING OF SHEET MATERIAL
Richard H. Shultz, La Grange, and Rabi T. Schenck, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 17, 1960, Ser. No. 29,671
8 Claims. (Cl. 72—180)



1. A method of shaping a flat sheet blank into a tubular shape comprising the steps of longitudinally feeding the blank, progressively subjecting spaced areas of the blank while in a flat state to forming forces normal to the direction of feed to plastically deform the blank and effective to cause the blank to tend to assume a generally circular cross section with the axis thereof normal to the forming forces and parallel to the direction of feed, and releasing the stressed portion of the blank to permit the blank to assume a generally circular cross section.

3,187,540
PROCESS AND APPARATUS FOR MAKING ZIPPER FASTENER ELEMENTS
James MacBroom, Wolcott, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Mar. 15, 1963, Ser. No. 265,556
3 Claims. (Cl. 72—197)



1. Apparatus for forming grooves in a Y-section wire for the manufacture of zipper fastener elements, the channel of such wire having substantially parallel surfaces adjacent the entrance to the channel, which apparatus consists essentially of a forming roll having radial teeth on the opposite outer side faces of the roll adjacent its periphery, the length of such teeth being at least as great as the depth of said channel parallel surfaces, the pitch of said teeth being only a major fraction of the thickness of a fastener element to be formed and thus substantially less than half the length of said radial teeth, the relative positions of the teeth on opposite side faces of the forming roll being offset with regard to transverse alignment, and a supporting roll adapted to engage those portions of the wire opposite said channel.

3,187,541
MILL LAYOUT
Edward C. Peterson, Douglasville, and William H. Boblitz, Shillington, Pa., assignors to Birdsboro Corporation, Birdsboro, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1962, Ser. No. 236,845
9 Claims. (Cl. 72—230)

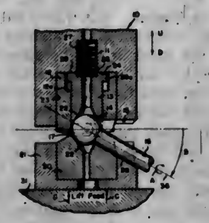
1. In a rolling mill layout, a roughing mill, a first mill table receiving the stock from the roughing mill, a first finishing mill with inlet in prolongation of the first mill table receiving the stock from the first mill table, and having a finishing mill stand laterally displaced from the inlet and receiving the stock passing through the first finishing mill, a second mill table receiving the output from the finishing mill stand of the first finishing mill, in combination with a lateral transfer device receiving the stock from the first mill table and transferring the stock laterally before the stock enters the first finishing mill, and a continuous finishing mill receiving the stock from the lateral transfer device and discharging the stock to the second mill table.

3,187,542
BENDING APPARATUS FOR PRINTING PLATES
Franz Heller, Mount Vernon, N.Y., assignor to American Type Founders Co. Inc., Elizabeth, N.J., a corporation of Delaware
Original application Nov. 12, 1959, Ser. No. 852,260, now Patent No. 3,022,728, dated Feb. 27, 1962. Divided and this application Aug. 2, 1961, Ser. No. 128,760
5 Claims. (Cl. 72—321)



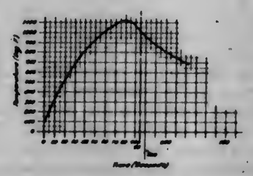
1. A plate bending jig for conforming a lithographic printing plate to a configuration suitable for the proper and accurate fitting thereof to the plate cylinder of an offset printing press, said jig comprising a base having a planar top surface for the major portion of its extent, transversely extending clamping bars at each end of said base, the width of each of said clamping bars as related to the entire width of the base being quite small whereby by far the major portion of the base is free of pressing or confining structure, means for applying pressure to said clamping bars to cause them to firmly clamp the plate against the base only adjacent the ends thereof, a fixed downwardly curved portion at one end only of the top surface of said base and a corresponding curved lower face on the narrow clamping bar at that end of the jig only, whereby a narrow arcuate bend is formed in the plate adjacent its leading edge, bending bars pivotally connected to the ends of said base independently of said clamping bars, the length of the base being less than that of the plate whereby the end edges of the plate overhang, means for pivotally supporting said bending bars from the base itself and for swinging movement about the end edges of the base surface to cause the edges of the plate to conform thereto and thus provide attaching flanges on the latter, in addition to the narrow arcuate bend in the otherwise flat medial portion of the plate.

3,187,543
METHOD AND APPARATUS FOR MANUFACTURING SPHERICAL PARTS SUCH AS BALL STUDS
Guenter W. Roehrs, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 19, 1961, Ser. No. 139,189
19 Claims. (Cl. 72—324)



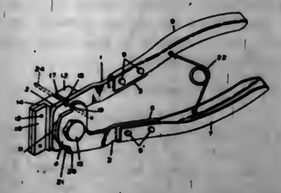
1. A method of precision machining and finishing the spherical surface of parts such as ball studs including the steps of removing excess material by shaving the spherical surface to a specified dimension and thereafter subjecting the spherical surface to a multiplicity of tool impacts causing a multiplicity of impressions for finishing and cold hardening said surface.

3,187,544
METHOD FOR EFFECTING A METAL WORKING PROCESS
Robert A. Bridwell, Lynwood, Calif., assignor to Northrop Corporation, a corporation of California
Original application Dec. 9, 1958, Ser. No. 779,243. Divided and this application July 31, 1962, Ser. No. 214,464
1 Claim. (Cl. 72—364)



The method of minimizing heat loss while fabricating parts from titanium sheet material which can only be effectively worked at elevated temperatures comprising the following steps: positioning a blank sheet of titanium in its forming position in a forming facility while each is at normal room temperatures; positioning a radiant heat source in a juxtaposed position with respect to one of the major sides of said blank sheet; said radiant heat source constituting a bank of quartz tubes adapted to transmit heat to said sheet solely by radiation maintaining said heat source in said juxtaposed position until the temperature of said blank sheet is elevated to a predetermined temperature exceeding 800° F.; removing said heat source from said juxtaposed position to a position removed from said facility immediately after the temperature of said blank sheet has been elevated to said predetermined temperature; and actuating said facility to form said blank sheet while the sheet is in said forming position and the temperature thereof is near said predetermined temperature.

3,187,545
WIRE-BENDING TOOL
William R. Brewer, Beaver Falls, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed June 21, 1963, Ser. No. 289,523
3 Claims. (Cl. 72—388)



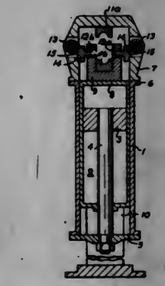
1. A wire-bending and gauging tool comprising a pair of pivoted levers, each lever comprising a handle portion and a head portion mounted in spaced relationship along the axis of a transverse pivot stud, spacing means on said stud between said levers, a gauge plate having a wire-receiving slot across the width of the top edge thereof, said gauge plate being positioned on the outer surface of the head of the first of said levers, said first lever having a wire-receiving slot positioned in alignment with the slot in said gauge plate, an extended portion on said gauge plate projecting out beyond the end of said first lever head and provided with a recessed portion on the inner face thereof adjacent its outer end and a spacer plate positioned therein, the second lever having a wire-bending surface on the upper portion of the head thereof, said wire-bending surface being positioned rearwardly out of alignment with said wire-receiving slots when the tool is in its open position, a recessed notch on the lower portion of said second lever head and a stop pin projecting from the inner face of said first lever head and adapted to butt against said notched portion of said second lever to limit the travel thereof, spring means being provided between the handle portions of said levers to hold the tool normally in its open position.

3,187,546
PULLING HEAD FOR INSTALLING FASTENERS WITH STEMS AND LOCKING THE STEM THEREIN
Walter Russell Simmons, Buena Park, Calif., assignor to Textron Industries, Inc., a corporation of Delaware
Filed Oct. 18, 1963, Ser. No. 317,280
8 Claims. (Cl. 72—391)



1. In a pulling head for setting fasteners of the type wherein a stem is pulled through a fastener head for securing the fastener and wherein said stem has grooves in its periphery to receive locking material swaged from said head inwardly
(a) an outer sleeve
(b) a pressure nose on said outer sleeve engageable with said fastener head so as to restrain radial outward expansion of said head and having an axial hole therethrough
(c) a tubular anvil in said axial hole to receive said stem therethrough
(d) a cutting edge on said tubular anvil for pressing a groove into the top of said fastener head, said cutting edge being shaped to force material displaced thereby radially inwardly
(e) pressure means to transmit pressure to said outer sleeve and to said anvil, said anvil edge in its initial position being spaced inwardly of said axial hole in said pressure nose
(f) a drawbolt slidable relatively to said sleeve
(g) means in said drawbolt for gripping said stem and pulling it when said drawbolt is pulled
(h) means to connect said drawbolt to a reciprocating element of a power tool to be pulled for setting said fastener
(i) yieldable means interposed between said outer sleeve and said pressure means, the tension of said yieldable means being predetermined to yield only after the fastener is set thereby to transmit direct pressure to said anvil for pressing a groove radially inwardly into the top of said head thereby forcing head material into said grooves of said stem in said head.

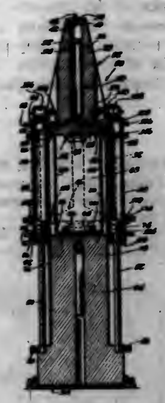
3,187,547
HYDRAULIC PRESS
Erich Ribback, Kellerstrasse 1, Grevenmacher, Luxembourg
Filed Sept. 4, 1962, Ser. No. 221,086
Claims priority, application Luxembourg, Sept. 11, 1961, 40,587
8 Claims. (Cl. 72—402)



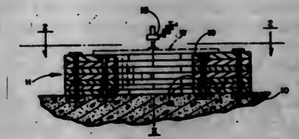
1. A hydraulic press comprising, in combination, cylinder means having opposite ends and adapted to be fixedly mounted on one of its ends; a piston reciprocable in said cylinder means; a stationary tool fixedly mounted on the other end of said cylinder means; a movable tool arranged opposite said stationary tool; and connecting means connecting said piston to said movable tool for reciprocating the latter toward and away from said stationary tool during reciprocation of said piston, said cylinder means forming the only support of said hydraulic press.

3,187,548
HIGH ENERGY MACHINE
Josef K. Murek, San Diego, Calif., assignor to Trans Energy Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1961, Ser. No. 137,877
5 Claims. (Cl. 72—437)

1. A machine comprising frame means including a bolster portion and a head portion spaced therefrom and connected thereto, means on said head portion and including a reciprocable ram member providing sealed expandable and collapsible pressure chamber means for containing gas under pressure for driving the ram member from a retracted position toward said bolster portion, piston means supported by said frame means and having an axis substantially parallel to an axis of said ram member, hydraulic cylinder means slidably disposed on said piston means and reciprocable parallel to said ram member, and means on said cylinder means for releasably engaging said ram member for returning the ram member to and retaining the ram member at said retracted position, said means for releasably engaging and retaining said ram member comprising a latch element pivotally connected to said cylinder means.



3,187,549
SEGMENTED DIE ASSEMBLY
Charles W. Guy, Northridge, Calif., assignor to North American Aviation, Inc.
Filed Oct. 3, 1961, Ser. No. 142,579
4 Claims. (Cl. 72—478)



1. A segmented female die assembly comprising a first layer of first die segments arranged to have their respective adjacent edges in substantial abutting relation to each other, a second layer of second die segments arranged on said first layer with said second segment overlapping the adjacent abutting edges formed by said first segments and means securing said first and second layers in relatively fixed relation to each other.

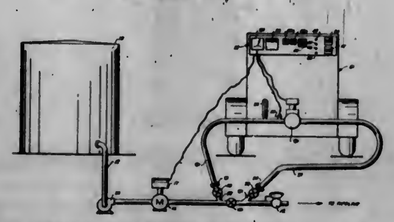
3,187,550
TORQUE MEASURING DEVICE
Neal S. Bratton, Pasadena, Calif., assignor to Richmont, Inc., Monrovia, Calif., a corporation of California
Filed Sept. 26, 1961, Ser. No. 140,942
4 Claims. (Cl. 73—1)



1. In a torque measuring device of the class described, the combination of a base, a pair of axially spaced bearings mounted on the base, a tube mounted to turn in said bearings, cooperating parts on said tube and said base for indicating turning movement of said tube, a torque transmitting element fixed to the tube at one end

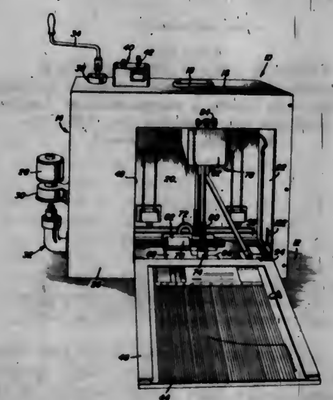
thereof and having a part projecting therefrom to receive a torque load, a non-circular torsion rod having one end fixed to said element, said torsion rod extending through the interior of the tube and projecting exteriorly thereof, a calibration bar having a longitudinal, non-circular opening slidably and non-rotatably receiving the projecting portion of said torsion rod, and means for securing said calibration bar in adjusted position relative to said base.

3,187,551
AUTOMATIC METER PROVER
Ralph W. Hill, Tulsa, Okla., assignor, by mesne assignments, to National Tank Company, Tulsa, Okla., a corporation of Nevada
Filed Aug. 17, 1961, Ser. No. 132,045
18 Claims. (Cl. 73—3)



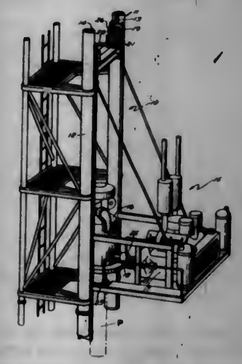
1. Apparatus for proving the accuracy of a positive displacement flow meter comprising:
a second flow meter of known metering accuracy;
means for passing through each of said meters a predetermined volume of liquid as measured by said first-mentioned flow meter;
and means for automatically and independently registering the measurements of the second flow meter at consecutive uniform intervals as indicated by said first-mentioned flow meter during passage of said volume of liquid therethrough, whereby multiple independent provings of the first-mentioned meter may be obtained without stopping the meters.

3,187,552
SLIP METER APPARATUS AND METHOD FOR MEASURING FRICTIONAL PROPERTIES OF MATERIALS
John S. Davies, 1010 Norumbega Ave., Monrovia, Calif.
Filed Mar. 1, 1963, Ser. No. 261,977
21 Claims. (Cl. 73—9)



1. A friction testing machine comprising, supporting frame means adapted to rest without skidding on a surface to be tested, an interchangeable friction surface element in contact with said surface to be tested, vertical load applying means movably mounted by said frame means, motive means for imparting movement to said load applying means, load transfer means rendered operative on the friction surface element in response to said movement of the load applying means to vary the static friction resisting displacement of the friction surface element from vertical alignment with the load applying means at a starting position, means responsive to limited displacement of the friction element when the static friction is exceeded for stopping movement of the load applying means from said starting position and means for recording linear movement of the load applying means before and during said limited displacement of the friction surface element.

3,187,553
APPARATUS FOR DETERMINING ENERGY DELIVERED TO A PILE
Charles L. Guild, 22 Woburn St., and Perley B. Kimball, 355 Pleasant St., both of East Providence, R.I.
Filed Nov. 15, 1961, Ser. No. 152,598
3 Claims. (Cl. 73—11)

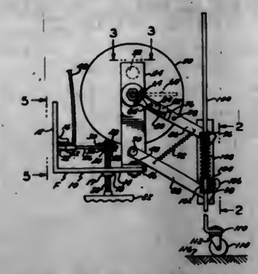


1. In a pile driver having a driving means supported in leads, an apparatus for determining the load bearing capacity of a pile comprising means for continuously recording on a common time unit scale the power delivered to the driving means, means for continuously recording the rate of penetration on a common time unit scale, and means for continuously record on a common time unit scale the number of impacts per second.

3,187,554
SHOCK ABSORBER TESTER
Burdette Carl Lackman, Westminster, Calif.
(215 S. Sullivan St., Santa Ana, Calif.)
Filed Sept. 5, 1963, Ser. No. 306,781
8 Claims. (Cl. 73—11)

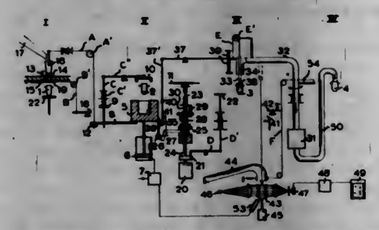
1. A device for testing shock absorbers on an automotive vehicle that has fenders supported from a sprung portion thereof and wheels that support an unsprung portion of said vehicle, including:
(a) a bracket;
(b) first means for removably affixing said bracket to one of said fenders;
(c) a roller;
(d) an upright supported by said bracket;
(e) first vertically movable means pivotally supported by said upright for rotatably maintaining said roller in contact with the surface on which said wheels rest; and

(f) rotatable visual indicating means for showing the operative condition of the shock absorber being tested which is actuated by downward movement of said



sprung portion, bracket and upright relative to said roller and said first means when one of said wheels and said roller is driven off an abrupt drop-off onto a floor surface.

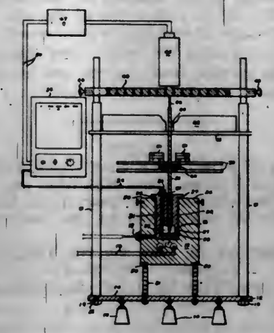
3,187,555
APPARATUS FOR DETERMINING THE SWELLING OF SOLID FUELS
Bauke S. Sieswerda and Pierre M. A. Joris, both of Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
Filed Oct. 13, 1961, Ser. No. 144,925
Claims priority, application Netherlands, Oct. 13, 1960, 256,839
13 Claims. (Cl. 73—16)



1. Apparatus for determining the swelling of coal and the like which occurs during coking, comprising: conveying means; at least one crucible attached to said conveying means; at least three stations positioned in cooperative association with said conveying means; the first station including means for filling the crucible with coal, and means for compacting and leveling the same; the second station including means for heating the coal in said crucible to form a coke button; a rotatably mounted translucent container; the third station including means for removing the coke button from said crucible and placing the same in said container, and photoelectric circuit means for measuring the swelling of said coke button during rotation of said container.

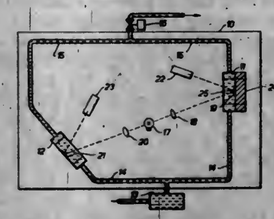
3,187,556
AUTOMATIC RECORDING VICAT TYPE APPARATUS FOR HEAT DISTORTION AND MELTING POINT DETERMINATIONS
Gerhard F. L. Ehlers, Fairborn, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 7, 1962, Ser. No. 215,471
4 Claims. (Cl. 73—17)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A Vicat heat distortion and melting point apparatus, comprising: a horizontal base; a vertically disposed support sustained by said base; a solid cylindrical heater block of high thermal conductivity mounted on said base, said block of large mass relative to a test specimen to provide therefor a uniform rate of heat and having a concentric cylindrical receiving well centrally bottomed therein; a solid cylindrical specimen holder closely received in said well and having a rectangular opening transversally through one end to define a central internal chamber within said block for a test specimen therein, said holder having a thermocouple and a vertical guide bore communicating with said chamber; a Vicat needle guided in



said bore with free vertical movement to be seated upon said specimen; a cooling disk affixed to said needle in horizontal position over said block; a weight mounted on said cooling disk; a linear displacement transducer secured to said support over said cooling disk in operative contact with said needle for activation by vertical movement thereof; and means responsive to said thermocouple and transducer for continuously plotting a curve of specimen temperature and needle movement.

3,187,557
APPARATUS FOR MEASURING THE CLOUD POINT OF HYDROCARBON OILS
Peter George Holbourne, Sunbury-on-Thames, Middlesex, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation
Filed Jan. 30, 1963, Ser. No. 255,024
Claims priority, application Great Britain, Feb. 5, 1962, 4,358/62
11 Claims. (Cl. 73—17)



1. Apparatus for sequentially measuring the cloud point or the pour point of a hydrocarbon oil, comprising a measuring cell adapted to contain a sample of the oil and having a reflecting surface, means for drying the oil before it enters the measuring cell, temperature measuring means associated with the measuring cell for measuring the temperature of the oil in the cell, means for cooling the oil in the measuring cell, a light source arranged so as to direct a beam of light through the oil in the cell on to the reflecting surface, light intensity detecting means for detecting changes in light intensity and for actuating said temperature measuring means in response to a change in light intensity, said light intensity detecting means being arranged so as to accept a beam

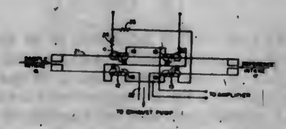
of light from the reflecting surface, whereby a pre-determined change in the intensity of the light beam causes said light intensity detecting means to actuate the said temperature measuring means, so that the temperature at which the said change occurs can be recorded, outlet valve means associated with said measuring cell, valve-actuating means for causing said outlet valve means to open, said valve-actuating means being actuated by said light intensity detecting means in response to a pre-determined change in the intensity of said light beam, in order that the oil may flow out of the said measuring cell upon actuation of said temperature measuring means, and means for closing the outlet valve means after the tested oil has escaped from the cell and another sample of oil has flowed into the measuring cell.

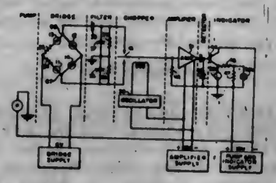
3,187,558

SOLID STATE PORTABLE GAS LEAK DETECTOR

Raymond Earl Koncen, Oxon Hill, Md., and Alexander Hafner, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 10, 1961, Ser. No. 144,274
5 Claims. (Cl. 73—27)
(Granted under Title 35, U.S. Code (1952), sec. 266)





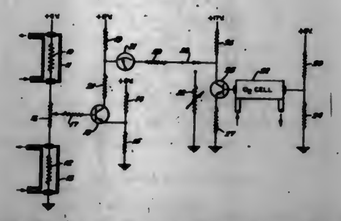
1. A solid state portable leak detector for determining the location of leaks of gases having a different thermal conductivity than that of air comprising thermal conductivity bridge means for comparing the conductivity of ambient gases with that of gases at a selected point, said bridge means including a gas passage having a reference gas inlet, a sample gas inlet and an outlet, at least a pair of thermistors connected in opposite branches of said bridge means in proximity to gas flow from a respective inlet, said thermistors being positioned along but substantially isolated from said passage such that a limited amount of the gas in said passage will diffuse about respective thermistors, said reference gas inlet and its respective thermistors and said sample gas inlet and its respective thermistors providing a continuous balance condition of said bridge means with respect to ambient gases until such time as gases having a thermal conductivity different from that of the ambient gases enter said sample gas inlet and are diffused about its respective thermistors, filter means for filtering the output of said bridge means so as to block passage of constant or slowly changing bridge voltages, oscillator means for modulating the signal from said filter means, said signal having a given bandwidth amplifier means for amplifying said signal, said amplifier means including filter means for decreasing the bandwidth of said signal, detector means for demodulating the amplified signal, and indicator means for displaying an indication of the presence of said gases having a different thermal conductivity than that of ambient gases.

3,187,559

COMBUSTION GAS ANALYZER

Marvin E. Cox, Oak Lawn, Ill., assignor to Sun Electric Corporation, Chicago, Ill., a corporation of Illinois

Filed Jan. 22, 1962, Ser. No. 167,761
5 Claims. (Cl. 73—27)



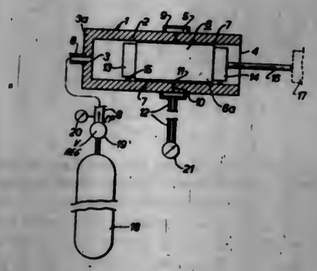
1. A combustion gas analyzer comprising a first means to produce a voltage proportional to the difference in percentages of carbon dioxide and hydrogen in a combustion gas to be analyzed, a second means to produce a voltage proportional to the percentage of oxygen in the combustion gas, and a meter connected between the first and second means continuously to indicate the difference between said voltages.

3,187,560

EXTENSOMETERS

Warren Peter Neal Bailey, Lymm, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Apr. 19, 1963, Ser. No. 274,121
Claims priority, application Great Britain, Apr. 30, 1962, 16,366/62
5 Claims. (Cl. 73—37.5)



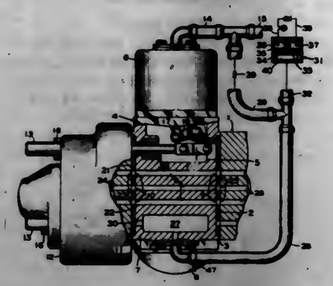
3. An extensometer comprising a sleeve member having at one end an inlet port and at the other end an outlet port, the sleeve member also having a signal port intermediate the inlet and outlet ports, a slide member disposed longitudinally within the sleeve member, the slide member having an intermediate portion between end portions of reduced size, the end portions being disposed one to each side of said signal port and located with respect to the sleeve member, and the intermediate portion defining with the sleeve member an annular restriction to flow of gas from the inlet port to the outlet port, the restriction being of uniform section over the length of the intermediate portion, a feeler rod coaxial with the slide member, the rod being secured to one of said end portions and extending beyond said outlet port for causing longitudinal movement of the slide member relative to the sleeve member consequent upon a dimensional change of a test specimen to vary the length of the restriction through which the gas flows before reaching the signal port, means for feeding pressurised gas at constant pressure to the inlet port and means for measuring the gas pressure at the signal port.

3,187,561

APPARATUS FOR CHECKING INTEGRITY OF A PNEUMATIC SEAL

Willard P. Spalding, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Feb. 27, 1962, Ser. No. 176,022
4 Claims. (Cl. 73—46)



1. Apparatus for checking the integrity of a seal provided by a sealing gasket interposed between two members having communicating passages for the supply of fluid under pressure from one member to the other, said apparatus comprising a fluid pressure supply conduit, a reservoir, a restricted passage via which fluid under pressure is supplied from said conduit to said reservoir at a selected uniform rate, a passage in one of said members connecting said reservoir to at least one face of said gasket via which fluid pressure in said reservoir may leak away at varying rates in the event the seal between said gasket and the face of said one member is faulty, the fluid pressure established in said reservoir being dependent upon the rates of leakage of fluid pressure therefrom relative to the rate of supply of fluid pressure thereto and increasing to above a predetermined pressure only when the leakage rate is relatively low compared to the supply rate of fluid pressure, pressure responsive means subject to the pressure of the fluid in said reservoir, and signal means controlled by said pressure responsive means and operated only when the pressure established in said reservoir exceeds a certain pressure indicative that the seal between said gasket and said one member is satisfactory.

3,187,562

APPARATUS FOR DETERMINING OSMOTIC PRESSURES

Francis B. Rolfson, San Pablo, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1962, Ser. No. 186,530
9 Claims. (Cl. 73—53)

1. An instrument for determining osmotic pressure comprising:

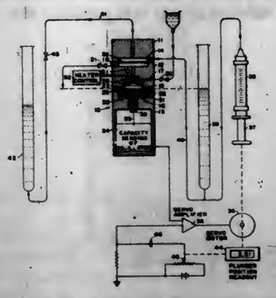
a cell member having a chamber formed therein for holding a solution sample of the material whose osmotic pressure is desired, one wall of said chamber being formed by a permeable membrane and a second wall being formed by a flexible metal diaphragm;

a second chamber formed in said cell and having one wall formed by said permeable membrane, said second chamber containing the solvent in which said material is dissolved;

a capacitance plate disposed on the outside of said first chamber adjacent said flexible metal diaphragm, said capacitance plate and said flexible metal diaphragm forming a capacitor;

an oscillator circuit, said capacitor being coupled in the plate circuit of said oscillator to control the oscillations thereof;

a servo system, said servo system being coupled to a means to adjust the pressure in said second chamber; said oscillator being coupled to said servo system to control the operation thereof in response to the deflection of said flexible diaphragm to balance the pressure on both sides of said membrane; and



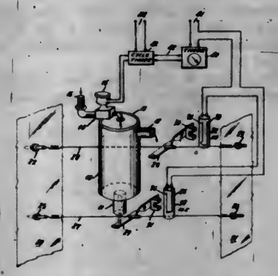
means coupled to said servo system for producing an indication proportional to the change in pressure necessary to balance the pressure on both sides of said membrane as an indication of the osmotic pressure of the material.

3,187,563

VISCOSIMETER

Philip E. Tobias, 1872 Watson Road, Abington, Pa.

Filed May 10, 1962, Ser. No. 193,766
5 Claims. (Cl. 73—56)



1. A viscosimeter comprising a cup means having a controlled leak at the bottom and a spout at an upper portion thereof, a first and second switching means having first and second contacts respectively, and an electrically operable timer mechanism; said first and second switching means being operable to operate their said contacts between engaged and disengaged positions responsive to the flow of fluid from said controlled leak and said spout respectively; said first contacts being closed responsive to flow of fluid from said controlled leak; said second contacts being opened responsive to flow of fluid from said spout; a voltage source; said voltage source, said timer mechanism, said first contacts and said second contacts being connected in series.

3,187,564

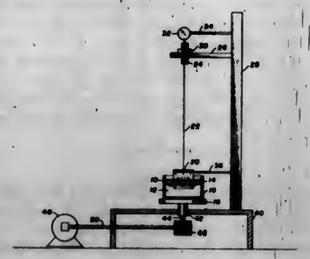
METHOD FOR MEASURING PROPERTIES OF FILMS EXISTING BETWEEN BULK LIQUIDS

Charles G. Dodd, Norman, Okla., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

Filed Nov. 30, 1959, Ser. No. 856,092
9 Claims. (Cl. 73—59)

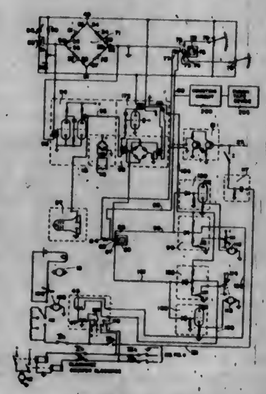
6. A method for determining whether a petroleum oil originated in a selected geological source comprising dis-

posing a sample of said oil of unknown source together with a liquid immiscible with said oil and differing in density therefrom in bulk quantities in a vessel to produce a horizontal interface between said oil and liquid, suspending a cylindrical bob in said oil and liquid at said interface, rotating the liquids in said vessel with respect to said bob at a plurality of substantially differing constant speeds, said differing speeds being applied first in order of



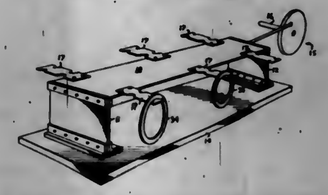
increasing magnitude until the highest of said speeds is obtained, and then in order of decreasing magnitude, measuring the rotative torque applied to said bob at various speeds, extracting an oil sample from said geological source, and comparing the torques produced at various speeds by said oil of unknown source and said liquid with the torques produced at the same speeds by said extracted oil sample and an identical liquid.

3,187,565
APPARATUS FOR MEASURING OSCILLATION AMPLITUDES, PARTICULARLY IN DYNAMIC MATERIAL-TESTING MACHINES
Heinz Kreiskorte, Darmstadt, and Hans-Dieter Weber, Bickenbach, Germany, assignors to Carl Schenck Maschinenfabrik G.m.b.H., Darmstadt, Germany, a corporation of Germany
Filed June 9, 1961, Ser. No. 116,037
Claims priority, application Germany, June 11, 1960, Sch 28,010
13 Claims. (Cl. 73—67.3)



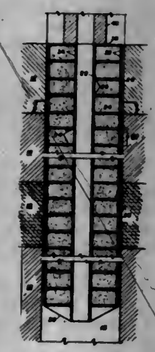
1. Apparatus for electrically measuring the amplitudes of mechanical oscillations, particularly for dynamic testing purposes, comprising a balanceable network of oscillation sensing transducers, two adjusting means for setting said network so as to balance in response to predetermined positive and negative mechanical oscillation amplitudes respectively, periodic selector switch means for alternately connecting said respective adjusting means with said sensor network to periodically balance said network in response to said respective positive and negative amplitudes, said switch means having a control circuit which comprises oscillation responsive means for periodically actuating said switch in synchronism with said mechanical oscillations, and indicator means for indicating the measuring results, said sensor network having an output circuit connected to said indicator means for supplying indicator signal voltage thereto.

3,187,566
FATIGUE TESTING MACHINE
Verner D. Coombs, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Mar. 30, 1962, Ser. No. 183,787
17 Claims. (Cl. 73—100)



1. A fatigue testing arrangement comprising: a shake table adapted to have cyclic movement imparted thereto; said table adapted to support a test specimen in a cantilever beam-type position thereon in a direction extending across at least one direction of motion of the table to develop motions in the test specimen in synchronism with movement of the table; a mass for each of said test specimens, said mass being adapted to be coupled to the test specimen at a point spaced from the free end of the specimen whereby the specimen imparts rotation to said mass about an axis of said mass as well as about an axis of said test specimen to develop a cyclic force about the cantilever axis of the specimen to develop fatigue testing stresses on the specimen.

3,187,567
FLUID FLOW INDICATING METHOD AND APPARATUS FOR WELL BORES
Leo J. O'Brien and George G. Bernard, both of Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed Nov. 16, 1961, Ser. No. 152,729
8 Claims. (Cl. 73—155)

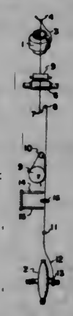


1. A method of determining the identity, location, and direction of a fluid flowing between a well bore and a subterranean formation surrounding said well bore which comprises positioning in said well bore a plurality of known quantities of a material soluble in said fluid in a manner such that the geographical location of each of said

quantities is known, each of said quantities horizontally and vertically segregated from each other and adjacent to a portion of said formation, allowing said fluid flowing between said well bore and a portion of said formation to flow through only the quantity adjacent said portion, determining the loss in weight of each of said quantities and thereafter correlating said weight losses as to each predetermined geographical location.

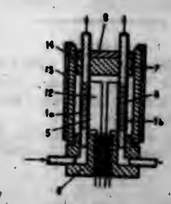
2. An apparatus adapted to be inserted in a well bore for determining the characteristics of fluid flow within a well bore, comprising a tubular member having a continuous passage extending therethrough and a plurality of spaced lateral ports communicating between said passage and the exterior of said tubular member; a plurality of fluid-impermeable barriers coaxially spaced along the outside of said tubular member and having a diameter less than that of the well bore in which said apparatus is employed, said barriers having substantially centrally-located holes slightly larger than the outer dimension of said tubular member whereby said barriers are fully slidable on said tubular member; a plurality of fluid-impermeable radial separators between adjacent barriers substantially extending from said tubular member to the peripheries of said barriers; and a shell along the peripheries of said barriers comprising a plurality of tubular members, one member of said shell extending from each of said barriers to barriers adjacent thereto, said shell, separators and barriers forming a plurality of isolated sections communicating with said passage through at least one of said ports, said shell having a plurality of lateral ports registering with said isolated sections.

3,187,568
FILAMENT FAULT DETECTOR
Victor Emanuel Gonsalves and Garrit Johannes Hilferink, Arnhem, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,370
Claims priority, application Netherlands, Mar. 15, 1960, 249,456
9 Claims. (Cl. 73—160)



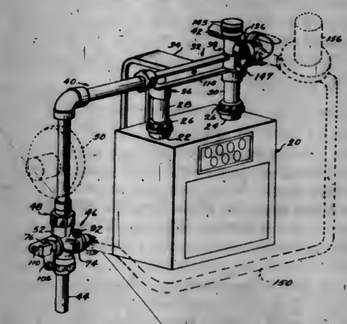
9. Apparatus for indicating irregularities in travelling textile material comprising means for conveying and guiding a textile material along a fixed path whereby an electrostatic charge is placed thereon, a scanning device supported alongside the path of moving textile material, said scanning device including an insulating member and at least two conductors coiled helically about said member whereby the electrostatic charge produced by any irregularity in the textile material may be induced therein, an electronic amplifier connected to each of said coiled conductors to receive the electrostatic charge produced by such irregularity, means for electronically differentiating the outputs of said amplifiers to produce a resulting signal and electronic means receiving said resulting signal to indicate the presence of such irregularities in the textile material.

3,187,569
MASS FLOW METER
Johannes Los, Joh. van der Waalstraat 58 hs, Amsterdam, Netherlands
Filed Oct. 22, 1962, Ser. No. 231,974
7 Claims. (Cl. 73—196)



4. A caloric mass flow meter, comprising a plurality of parallel tube members for conducting a mass flow, two blocks of the heat well conducting material, said blocks being provided at the ends of said tube members and adapted to produce equal temperature differences along the portions of said tube members extending between said blocks and temperature sensitive resistance elements attached in good thermal contact to said tube members, said tube members being provided in at least two groups of at least two tube members which extend closely together side by side and the temperature sensitive resistance elements of the tube members of each individual group being adapted to be inserted in and to form part of an electric comparison device.

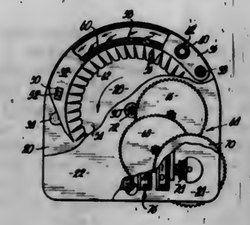
3,187,570
BY-PASS FOR FLUID METER
Frank H. Mueller, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Oct. 10, 1962, Ser. No. 229,704
17 Claims. (Cl. 73—201)



1. A by-pass type fluid meter setting comprising: a fluid line; a fluid meter detachably connected into said line; a first valve connected into said line upstream of said meter and having a body provided with a by-pass port and a removable closure for said port, said valve having at least three positions, an open position wherein flow takes place therethrough to said meter and flow to said port is blocked, an intermediate position wherein flow takes place from the upstream side of said line to both said by-pass port and said meter, and a by-pass position wherein flow takes place from the upstream side of said line to said port and flow to said meter is blocked; a second valve connected into said line downstream of said meter and having a body provided with a by-pass port and a removable closure for said port, said second valve having at least three positions, an open position wherein flow takes place therethrough from said meter and flow from said port is blocked, an intermediate position wherein flow takes place

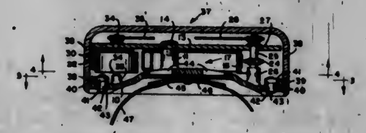
from both said meter and said port to the downstream side of said line, and a by-pass position wherein flow takes place from said port to the downstream side of said line and flow from said meter is blocked; and a by-pass line detachably connectable to and between said by-pass ports of said valves on removal of said closures.

3,187,571
FLOW MEASURING APPARATUS
Mark Borel, Prairie Village, Kans., assignor, by mesne assignments, to Jules Borel & Co., Kansas City, Mo., a corporation of Missouri
Filed Aug. 21, 1961, Ser. No. 132,615
5 Claims. (Cl. 73—230)



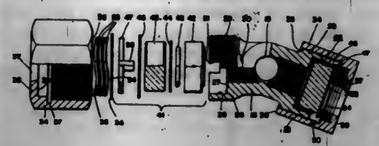
2. Flow measuring apparatus comprising a hollow body provided with an inlet bore communicating with the interior of the body; a turbine rotatably carried within said body; an arcuate manifold embracing a portion of said turbine, said manifold being in communication with the inlet bore and having a plurality of openings therein whereby fluid flowing into the manifold passes through said openings and impinges upon the turbine; indicating means operably coupled with the turbine for measuring the number of revolutions of the turbine; an outlet opening communicating with the interior of the body; and means at one end of the manifold for adjusting the spacing between the manifold and the turbine.

3,187,572
UNDERWATER GAUGE
Philip W. Harland, Sellersville, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,177
5 Claims. (Cl. 73—292)



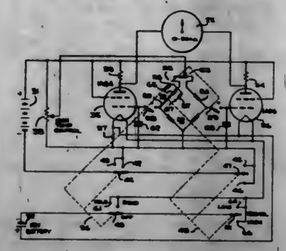
2. A depth gauge adapted to be worn on the wrist or the like, comprising in combination a base; a plate mounted on said base in spaced relation; a Bourdon tube having its ends sealed, said Bourdon tube being mounted on said plate between said plate and base; indicating mechanism; multiplying mechanism between the free end of said Bourdon tube and said indicating mechanism; a casing surrounding said plate and Bourdon tube and making a snap connection with means on said base, rotatable cam means for locking said snap connection; and means for providing ingress and egress of water to and from within said casing for acting on said Bourdon tube.

3,187,573
LIQUID LEVEL GAUGE
Allan R. Goellner, Parma Heights, Ohio, assignor, by mesne assignments, to The Clark-Reliance Corp., Cleveland, Ohio, a corporation of Ohio
Filed June 27, 1962, Ser. No. 205,718
15 Claims. (Cl. 73—329)



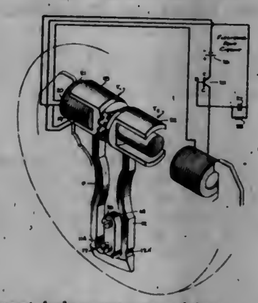
14. A dual color water gauge comprising, in combination, a vertical water column formed of welded together individual water column bodies,
said water column having a vertical bore,
first and second lateral bores extending to said vertical bore at an included angle of 160 degrees therebetween in each said body,
each of said lateral bores having an outwardly facing recessed internal planar shoulder and an enlarged bore at the outer end thereof,
said water column bodies at said lateral bores being externally threaded and provided with external right angle shoulder stops near the inner end of the threads,
port cap nuts each having female threads to engage said external threads and having a flat end surface adapted to be tightened against a respective external right angle shoulder stop,
a central viewing aperture in the outer end wall of each said port cap nut,
a gasket retainer in each said enlarged bore,
each said gasket retainer being generally cup shaped of thin metal with the bottom of the cup being centrally apertured and adjacent said internal planar shoulder,
means on each said gasket retainer centering same in said enlarged bore,
a gasket disposed adjacent each said planar shoulder and retained at the outer periphery thereof in said central aperture of the respective gasket retainer,
a mica disc disposed against each said gasket,
a Pyrex glass disc disposed against each said mica disc,
means on each said gasket retainer centering said Pyrex glass disc,
a cushion washer disposed against the outer face of each said glass disc,
a lug washer disposed to act against the outer face of each said cushion washer,
said water column bodies having a recess on the outer end face of each said enlarged bore,
lug means on each said lug washer received in said recess,
a wavy washer disposed between each said lug washer and the inner surface of the outer end wall of the respective port cap nut,
each said cap nut in engaging said stop shoulder compressing said wavy washer to compress said gasket and relatively seal said mica disc to the respective water column body,
and a light source horizontally shining through the two opposite port cap nuts and lateral bores with said light source being red and green horizontally adjacent light beams, whereby when said water column is full of water a green light is visible through said glass discs and when said water column is full of steam a red light is visible through said glass discs.

3,187,574
OPTICAL PYROMETER
Albert C. Mason, Larchmont, N.Y., and Cole Baker, Riverside, Conn., assignors to Pyrotel Corp., Mamaroneck, N.Y., a corporation of New York
Filed Jan. 3, 1963, Ser. No. 249,299
12 Claims. (Cl. 73—355)



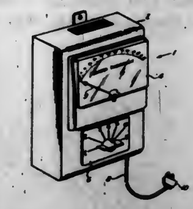
3. An infra-red radiation pyrometer comprising detector means responsive to light and heat energy impinging thereon, a viewing system for an operator utilizing the pyrometer, means for focusing light and heat energy from a heat source being tested on the viewing system and detector means, respectively, said last named means including a beam splitter for the light and heat energy, wherein said detector means includes means for deriving an indication of the temperature of the source being measured when its energy is focused on the detector means, and means for maintaining said indication substantially constant when the heat energy is no longer focused on the detector means.

3,187,575
RESONANT BOLOMETER
Arthur P. Stoller, New York, N.Y., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 7, 1963, Ser. No. 249,678
6 Claims. (Cl. 73—355)



1. A resonant bolometer comprising
(a) a tuning fork having a predetermined natural frequency and formed of a metallic composition having a relatively high temperature coefficient of the modulus of elasticity and providing a substantially linear change in frequency over a temperature range of about −30° C. to 85° C.,
(b) an oscillator incorporating said fork and including means to excite said fork into vibration and to sustain oscillations at a frequency determined by said fork to generate an alternating wave whose frequency is proportional to temperatures within said range,
(c) means to subject said fork to changes in temperature, and
(d) a frequency meter coupled to said oscillator to indicate the temperature to which said fork is subjected.

3,187,576
ELECTRONIC THERMOMETER
John T. Beeston, Jr., Des Moines, Iowa, assignor to Frontier Development, Inc., Des Moines, Iowa, a corporation of Iowa
Filed May 18, 1960, Ser. No. 29,895
14 Claims. (Cl. 73—362)

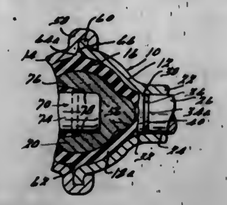


1. In an electronic thermometer the combination of measuring means for indicating temperatures in response to effective currents flowing therethrough, said measuring means having unidirectional indicating means adapted to indicate a scale of substantially differing temperatures, said measuring means having input and output terminals, a first source of direct current having a positive terminal and a negative terminal, said first source of direct current including transformer means, first capacitance means and first rectifying means coupled between said transformer means and said first capacitance means for charging said first capacitance means with a given polarity; a second source of direct current having a positive terminal and a negative terminal said second source of direct current including said transformer means, second capacitance means, and second rectifying means coupled between said transformer means and said second capacitance means for charging said second capacitance means with a polarity opposite said given polarity; voltage regulating means coupled between said first and second capacitance means for stabilizing the voltages thereacross; means coupling the positive terminal of one of said sources and the negative terminal of the other of said sources together and with the output terminal of said measuring means; first resistance means coupling the positive terminal of said one source with the input terminal of said measuring means whereby a first current is caused to flow through said measuring means in one direction; second resistance means coupling the negative terminal of said other source with the input terminal of said measuring means whereby a second current is caused to flow through said measuring means in a direction opposite to said one direction; and circuit means including a temperature-sensitive device for linearly varying the magnitude of the current caused to flow through said measuring means by one of said resistance means in accordance with the temperature being measured, whereby for a substantial range of temperatures a temperature linearly variable effective current is produced in said measuring means of a magnitude equal to the difference between the magnitudes of said first and second currents.

3,187,577
TEMPERATURE RESPONSIVE ACTUATOR
James F. Scherer, 206 Stanton Ave., Terrace Park, Ohio
Filed Aug. 20, 1962, Ser. No. 218,084
3 Claims. (Cl. 73—368.3)

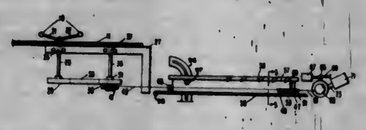
1. A temperature responsive actuator comprising a housing formed with a chamber and a hollow extension disposed in communication with said chamber, said hollow extension comprising a first section having a bore therethrough of substantially uniform cross section and a second section having a throat therethrough disposed between and in communication with said bore and said chamber, a piston slidably mounted in said bore and reciprocable therein, a resilient capsule disposed in said

chamber and containing a heat expansible material therein, said capsule including a resilient incompressible projection disposed in said second section and integrally connected to a wall portion of said capsule, said projection provided with a substantially planar face provided with a chamfer extending along the edge thereof and disposed in abutting relationship against the inner face of said piston, said capsule also including a sealing sleeve integrally connected thereto and extending inwardly and in



alignment with the axis of said piston, the peripheral surface of said sealing sleeve formed with at least one tapered surface angularly inclined relative to the axis of said sleeve, and a heat transfer pin disposed in said sealing sleeve for sealing the heat expansible material therein and having the inner end thereof disposed in heat conducting contact with said heat expansible material and the outer end portion thereof in heat conducting contact with said housing.

3,187,578
AUTOMATIC GOLF MACHINE
Philip T. Ferranti, Pima County, Ariz. (129 N. Jacobus Ave., Tucson, Ariz.)
Filed Aug. 15, 1961, Ser. No. 131,517
4 Claims. (Cl. 73—379)



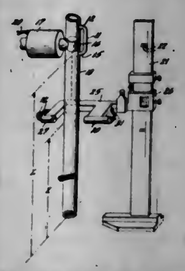
1. An automatic golf machine comprising a golf ball, an arm, said golf ball mounted at the end of said arm, a rotatable shaft, said arm being mounted on said rotatable shaft, a carriage, a trackway for said carriage, one end of a first line secured to one end of said carriage, a drum, the other end of said line secured to said drum, linkage means between said drum and said shaft for co-operation therebetween when said golf ball is driven whereby to windup said line thereby drawing said carriage in one direction, one end of a second line secured to the other end of said carriage, a reel, the other end of said second line secured to said reel, motive means to drive said reel to windup said second line thereby drawing said carriage in the other direction, a plurality of normally open electric switches, said switches being positioned in a row along said trackway, said carriage having means for momentarily closing said switches as the carriage is drawn by said first line, an electrical circuit, a scoreboard having indicia indicating lamps, each of said switches being in said electrical circuit to sequentially energize said indicia indicating electric lamps on said scoreboard whereby to indicate the progress of said carriage, means for energizing said motive means to windup the second line thereby returning the carriage to its original position.

3,187,579
PRESSURE-TO-FREQUENCY TRANSDUCER
Robert J. Ferran, Framingham, and Anthony J. Tenicini, Wilmington, Mass., assignors to Acton Laboratories, Inc., Acton, Mass., a corporation of Massachusetts
Filed June 14, 1962, Ser. No. 202,602
25 Claims. (Cl. 73—398)



3. A pressure-to-frequency transducer comprising an elongated hermetically sealed hollow mechanical element supported at its opposite ends and having a resonant frequency which is a function of its cross-sectional configuration, said hollow element adapted to alter its cross-sectional configuration as a function of changes in fluid pressure, means for applying fluid pressure to the interior of said hollow element whereby to distort its cross-sectional configuration and thereby change its resonant frequency, means for deriving an electrical signal having a frequency varying with the resonant frequency of said hollow element, and means responsive to said electrical signal for causing said hollow element to vibrate at its resonant frequency.

3,187,580
APPARATUS FOR MEASURING THE PRESSURE OF GAS
Thomas Joseph Beahn, 7981 New Riggs Road, Adelphi, Md.; William John Condell, Jr., 2516B Holman Ave., Silver Spring, Md.; and Hirsch Israel Mandelberg, 3402 Callaway Ave., Baltimore 15, Md.
Filed Feb. 25, 1963, Ser. No. 260,924
4 Claims. (Cl. 73—419)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for measuring the pressure of gas in a system, which comprises a vertically-mounted tube, a piston mounted for axial sliding movement within the tube and with some leakage being provided between the piston and the tube, means for connecting the tube with the gas system the pressure of which is to be measured in order to fill the tube with such gas, means for suspending the piston at a predetermined height within the tube and for releasing the piston so that the piston slides down the tube to compress the gas therein, the releasing of the piston causing damped oscillations of the piston superimposed on a constant downward velocity thereof, and means for measuring the intervals of time elapsing between the time that the piston is released and its reaching a plurality of predetermined points in the tube after the oscillations cease in order to calculate

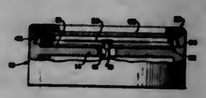
the point to which the piston would have come to rest had there been no leakage between the piston and the tube.

3,187,581
FLOAT-ACTUATED SAMPLER
Elmer H. Evans, Alpena, Mich., assignor to Huron Portland Cement Company, Detroit, Mich., a corporation of Michigan
Filed Apr. 29, 1963, Ser. No. 276,406
6 Claims. (Cl. 73—422)



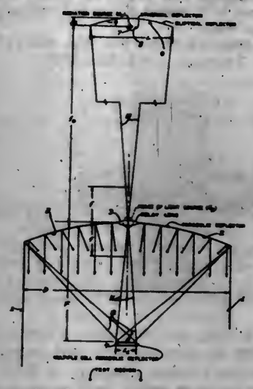
1. A sampler for flowing streams of material comprising a duct, through which material is adapted to flow, having a wall and having a sampling port in said wall, a shaft mounted for rotation extending crosswise of said duct adjacent to the bottom thereof, a trough facing upstream of said material flow for intercepting and cutting from a stream of material flowing through the duct a sample thereof, means attaching said trough to said shaft for rotation therewith, a float operatively connected to said trough to exert a buoyant force thereon, said shaft and said trough extending at an acute angle to one another, said trough extending transversely of said duct, and having its downstream end adjacent the sampling port, whereby when material is flowing through said duct and said trough is rotated about the axis of said shaft by the buoyant force exerted by said float, said trough will also extend in an inclined position depthwise of said duct, and means for diverting sampled material cut from a stream of material flowing through said duct and discharged from the downstream end of the trough, with respect to flow of material through said duct, towards said sampling port.

3,187,582
TRANSPARENT INSTRUMENT CASE CLOSURE
Charles H. Perkins and Edward N. Caldwell, both of Knoxville, Tenn., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Nov. 16, 1961, Ser. No. 152,728
8 Claims. (Cl. 73—431)



1. In an instrument housing, the combination comprising a case, means defining an opening in said case, a sealing ring having inner and outer flexible lips on opposite sides of a recessed undersurface, said sealing ring having a groove adjacent said inner flexible lip, a transparent element adapted to be forced against said inner flexible lip and flexing the same whereby the transparent element is sealingly mounted in said groove, and interengaging surfaces between said means and said outer flexible lip forming a sealed closure between said case and said ring.

3,187,583
SPACE SIMULATOR
James E. Webb, administrator of the National Aeronautics and Space Administration, with respect to an invention of Melvin N. Wilson, Jr., and Carl Thiele
Filed Nov. 9, 1961, Ser. No. 180,384
12 Claims. (Cl. 73—432)



1. A space simulator, comprising: a shell structure defining a test chamber; a source of solar simulating radiations disposed externally of said shell; a lens in a wall of said shell for transmitting said radiations as an expanding beam into said test chamber; a multiple cell reflector within said shell dimensioned to intersect the entire beam of said radiations; a main reflector at one end of said test chamber and arranged to receive radiations transmitted by said multiple cell reflector; each of the cells of said multiple cell reflector being parabolic so as to reflect that portion of the total radiation which it receives over essentially the entire surface of said main reflector, whereby each point of the main reflector receives the sum of the radiations from all the cells of said multiple cell reflector.

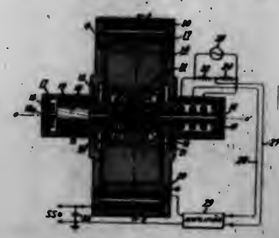
3,187,584
DENSIMETER
Ray E. Hudson, % The Bell Corporation, P.O. Box 849, Odessa, Tex.
Filed Sept. 18, 1961, Ser. No. 138,689
9 Claims. (Cl. 73—434)



1. In a densimeter having a U-tube, said U-tube having two parallel legs, the ends of the legs being open thus providing means for circulating therethrough fluid the density of which is to be determined, a mounting plate, said U-tube pivoted to said mounting plate at about the ends of the legs which are adjacent to each other, and means for determining the weight of the U-tube and contents; the improvement comprising: at least one arm cantilevered from said mounting plate, said means for determining the weight interconnecting the cantilevered arm and U-tube, a pedestal interconnecting the arm and U-tube, the pedestal exerting force therebetween, means for determining change in position of the U-tube relative to the arm, means for changing the force exerted by the

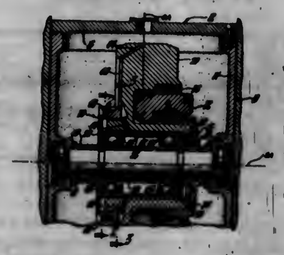
pedestal responsive to the change of position of the U-tube relative to the arm, and means for measuring the force exerted by the pedestal.

3,187,585
DISTANCE MEASURING DEVICE
Arthur Paul Adamson and Frank M. Clark, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 15, 1956, Ser. No. 585,111
7 Claims. (Cl. 73—490)



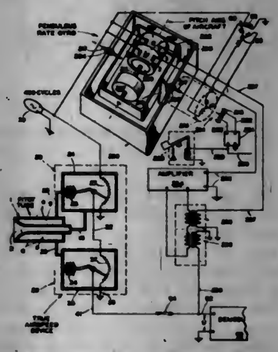
1. In an integrating accelerometer, a frame member, a housing rotatably mounted within said member, an acceleration sensitive toroidal element, a fluid buoyantly suspending said element within said housing, means for rotating said housing about an axis, means for generating a variable electrical signal current proportional to the relative displacement and direction of displacement of said element and said housing from a central position along said axis and in the direction defined by said axis, means responsive to said signal for generating a variable magnetic field in a direction along said axis to induce a circumferential circulating current within said element, and magnetic means for producing a magnetic field through said element which reacts with said circulating electrical current to produce a force to return said element to its central position.

3,187,586
GYROSCOPE OIL CONTROL SYSTEM
Raymond M. Evenson, Waukesha, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 19, 1962, Ser. No. 210,918
3 Claims. (Cl. 74—5)



1. In a gyroscope of the type including a casing, a gimbal assembly including a cylindrical float having trunnions supported by the casing for rotation about an output axis, a shaft non-rotatably mounted within said float transversely of said output axis and defining a gyroscope spin axis, bearing means mounted on said shaft, a gyroscope wheel having a rim and a hub interconnected by a wheel flange, said hub being mounted on the bearing means, motor means supported by the float for imparting high speed rotation to the wheel, an excessive quantity of lubricating oil in said bearing means, said wheel hub, flange and rim defining at least one passage extending from said bearing means to the periphery of said rim whereby centrifugal force causes the excess oil in said bearing means to flow outwardly through said passage and to be thrown from the periphery of the wheel against the internal surface of the float, said passage terminating at the periphery of the wheel in a plane perpendicular to the spin axis and passing through the center of gravity of the lubricating oil in its original location in said bearing means whereby the balance of the float about the output axis is not disturbed by the distribution of the oil on the float.

3,187,587
PENDULOUS RATE GYROSCOPE SYSTEM
Charles E. Hurlburt, River Edge, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,997
2 Claims. (Cl. 74—5.7)

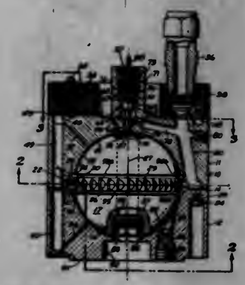


1. A pendulous rate gyroscope comprising a casing, a gimbal pivotally mounted in the casing along a bank axis of an aircraft, a pendulum affixed to the gimbal and pivotal about the bank axis, a gyroscopic rotor mounted on an axis perpendicular to the bank axis and along a pitch axis of the aircraft, a motor having a speed control winding, and a signal rate generator, said motor and rate generator having rotor elements mounted along said pitch axis, the rotor element of said motor drivingly connected to said gyroscopic rotor and the rotor element of said signal rate generator and so arranged that the gyroscopic rotor, the rotor element of the motor and the rotor element of the signal rate generator rotate at the same speed, means responsive to the speed of flight of said aircraft to apply a signal to said control winding for controlling the speed of rotation of the rotor element of said motor, means for applying a negative feedback signal from said signal rate generator to said control winding of the motor acting in opposition to the controlling signal in an arrangement such that the speed of the gyroscopic rotor is varied as a direct function of the speed of flight of the aircraft so as to cause the pendulum to hang vertical and the gimbal to be maintained thereby in a horizontal position.

3,187,588
TWO-DEGREE OF FREEDOM GAS BEARING GYRO
Bernard Parker, Teaneck, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed June 5, 1962, Ser. No. 200,121
7 Claims. (Cl. 74—5.12)

1. A free-rotor gyro, comprising a housing enclosing a substantially spherical cavity, a substantially spherical rotor rotatably disposed in said spherical cavity and defining therewith a substantially spherical gap, formed between the inner surface of the spherical cavity and the

outer surface of the rotor, drive means on the outer circumference of said rotor operative to receive a supply of gas under pressure to rotatably drive the rotor about the spin axis thereof, passage means formed in said housnig operative to supply gas under pressure from an external source to the drive means on the outer circumference of said rotor, to rotatably drive the rotor, auxiliary passage means formed in said housing operative to provide gas under pressure to the spherical gap surrounding the rotor, to hydrostatically support the rotor, means defining a central opening through said rotor, in axial alignment with the spin axis thereof, a caging support member fitted to the rotor, co-axially with the longitudinal axis of the central opening through the rotor, said caging



support member having a central opening therethrough, the housing having an opening therethrough in axial alignment with the spin axis of the rotor, a caging member fitted to said housing for sliding movement along said spin axis between two limit positions, said caging member having means formed thereon operative to fit into the opening through the caging support member, to cage the rotor when said caging member is in one of said limit positions, means normally resiliently biasing said caging member toward said one limit position, and additional passage means in said housing for supplying gas under pressure to said caging member to move said caging member to the other limit position when gas is supplied to said first mentioned passage means and auxiliary passage means.

3,187,589
CHANNEL SELECTORS FOR TELEVISION RECEIVERS
Keith Henry Marlow and James Harry Want, London, England, assignors to Ferguson Radio Corporation Limited, London, England, a British company
Filed May 1, 1961, Ser. No. 106,723
13 Claims. (Cl. 74—10.7)



2. A channel selector for television receivers comprising a frequency tuner having an angularly movable tuner member adjustable into a plurality of frequency setting positions, a spring-loaded indexing mechanism firmly locating said tuner member in any selected one of said setting positions and comprising a locating element movable into and out of engagement with said tuner member and a spring toggle coupled to said locating element and movable through a dead centre position upon movement of said locating element into and out of engagement with said tuner member, said spring-loaded indexing mechanism being under sufficient tension so that a given torque is required to angularly move said tuner member, release means operatively coupled to said indexing mechanism for at least reducing said spring-loading of said indexing mechanism on said tuner member to permit angular movement of said tuner member under the action of a torque substantially less than said given torque, a control element coupled to the release means and movable along a scale and cable drive means coupling said control element to said tuner member and arranged, upon operation of the release means, to effect angular movement of said tuner member into any selected one of its setting positions in response to movement of said control element along said scale.

3,187,590
LUBRICATING ASSEMBLY HAVING A PRESSURE VENTING SEAL
James E. Duggan, Berkley, Mich., assignor, by mesne assignments, to Watts Electric & Mfg. Co., Birmingham, Mich., a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,631
3 Claims. (Cl. 74—18)

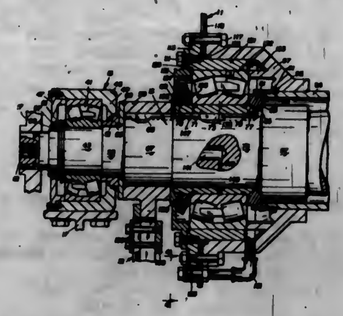


1. A pressure venting sealing assembly adapted to receive lubricant from the dome of a housing containing an upwardly and outwardly projecting stud, comprising a hollow substantially globular body formed from flexible material, provided at the bottom thereof with an annular flange adapted to envelop and to be rigidly secured to said dome, and having at the top thereof an annular flange adapted to fit tightly about and to have sealing engagement with said stud, said gobular body having a top wall provided with an integral upstanding projection containing a normally closed longitudinally extending slit adapted when opened to communicate with the atmospbere at the upper free end of said upstanding projection and adapted to communicate with the interior of said globular body, said slit being adapted to be opened by said lubricant to establish communication with the atmosphere and the interior of said globular body when an excess quantity of lubricant is supplied under pressure to said slit from said globular body, said upstanding projection being conical in configuration and containing at the lower end of said slit a recess in communication with both the interior of said globular body and said slit, and a metal valve element mounted within said recess and having passages for lubricant therethrough in communication with the interior of said globular body and normally closed by walls of said recess.

3,187,591
VIBRATING APPARATUS
Louis W. Johnson, 3440 Franklin Blvd., Eugene, Oreg.
Filed June 12, 1961, Ser. No. 116,324
5 Claims. (Cl. 74—86)

1. In a vibrating apparatus,
a body to be vibrated but restrained against rotation,
a shaft for said body, means supporting said shaft for rotation about a fixed predetermined axis,
means for rotating said shaft,
a self-aligning antifriction bearing having its outer race received by said body,
an eccentric bearing sleeve disposed between said shaft and the inner race of said bearing,

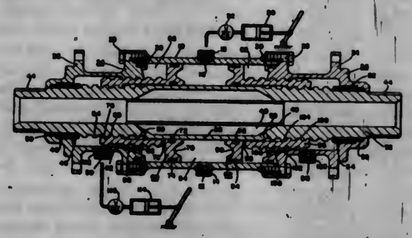
means preventing rotation of said sleeve on said shaft, and means for conducting a lubricant to the area between said sleeve and the inner race of said bearing, the outer race of said bearing having a press fit in said body so that as said sleeve is rotated, the dynamic load created by said eccentric sleeve will be distributed about said outer race,



said inner race having a slip fit on said sleeve so that relative movement circumferentially between said inner race and said sleeve can occur to distribute the dynamic load about said inner race, whereby said dynamic load is distributed circumferentially about both races,

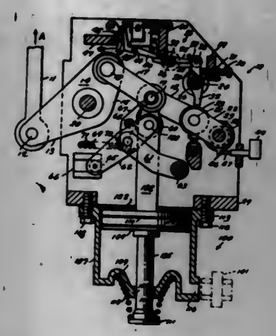
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3,187,592
ROTARY ACTUATOR
Howard M. Goyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 14, 1962, Ser. No. 179,590
2 Claims. (Cl. 74—89)



1. A fluid pressure operated rotary actuator including, a cylinder assembly comprising a cylinder sleeve having a pair of end caps attached thereto, a pair of opposed piston assemblies disposed in said cylinder assembly and dividing said cylinder assembly into a central extend chamber and a pair of retract chambers, each piston assembly having an annular piston head and an axially extending skirt, a rotary through shaft journalled in said end caps having a through bore with an enlarged chamber in the medial portion thereof, a tube press fitted in the bore of said through shaft to form an annular chamber, a plurality of ports in said through shaft communicating with said annular chamber and the retract chambers in said cylinder assembly so as to fluidly interconnect said retract chambers, and means interconnecting said piston assemblies for simultaneous movement in opposite directions comprising helical connections between said skirts and said through shaft whereby reciprocation of said pistons will impart rotation to said through shaft, the thrust loads of said piston being supported by placing the medial portion of said through shaft in tension or compression dependent upon the direction of movement of said pistons.

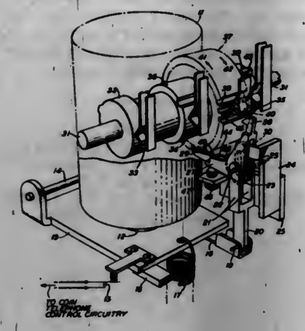
3,187,593
OPERATING MECHANISM FOR CIRCUIT BREAKERS
James R. McCloud, Los Angeles, Calif., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application Oct. 15, 1958, Ser. No. 767,383, now Patent No. 3,106,137, dated Oct. 8, 1963. Divided and this application July 14, 1961, Ser. No. 124,091
1 Claim. (Cl. 74—106)



The combination comprising an operating mechanism and an actuating mechanism operatively connected therewith; said actuating mechanism including a reciprocative operating ram; said operating mechanism including a toggle having a knee; means mechanically connecting said ram to said knee in all positions of said toggle; a first link and a second link for guiding said ram in a path defined by the longitudinal axis thereof; said first link being secured at one end to a stationary pivot and at the other end being pivotally secured to said second link at a point intermediate the ends thereof; said second link being pivotally secured at one end to said ram; a guideway in a plane normal to said longitudinal axis; said second link having the other end thereof slidably disposed within said guideway.

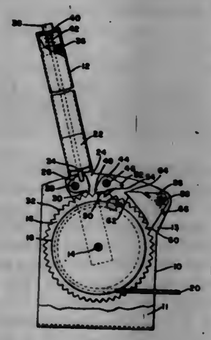
3,187,594
COIN TOTALIZER POSITIVE INDEX MECHANISM
David W. Peat, Lawrence A. Stromsmoe, and Richard K. Thompson, Jr., Indianapolis, Ind.; said Peat assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York, and said Stromsmoe and said Thompson assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 11, 1962, Ser. No. 209,134
10 Claims. (Cl. 74—126)

1. In a coin totalizer including a shaft rotationally responsive to the deposit of coins, apparatus for resetting said shaft to a pivot position thereby to read out the coin deposit information indicated by the angular position of said shaft, said apparatus comprising, in combination, a ratchet wheel mounted in driving relation to said shaft, a bifurcated pawl mounted for pivotal movement about a pivot point having said first and second ends each formed for engaging relation with said wheel, said first end being formed for driving said wheel in a preselected direction of rotation and said second end being formed for blocking said wheel from rotating in said preselected direction, said first end normally being out of contact with said wheel and said second end normally being in contact with said wheel, means for shifting the position of said pivot point from its normal position, means responsive to the shift of said pivot point beyond a preselected distance for pivotally rotating said pawl whereupon said first end is brought into engaging, driving relation with said wheel and said second end is lifted clear of contact from said wheel, said rotating means being further responsive to a shift in said pivot point back to said pre-



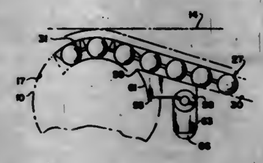
selected distance from its normal position whereupon said first end is lifted clear of said wheel and said second end is brought into engaging-arresting relation with said wheel.

3,187,595
SELF-ADJUSTING PARKING BRAKE CONTROL MECHANISM
John W. Clark, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1962, Ser. No. 232,363
13 Claims. (Cl. 74—156)



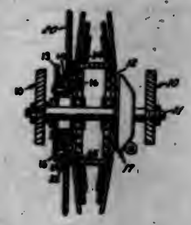
1. A vehicle parking brake control mechanism comprising, a toothed gear sector, actuating pawl means manually engageable with said gear sector to rotate said gear sector to apply a vehicle parking brake, a holding pawl having a tooth normally ratchet-engaging said gear sector and preventing said gear sector from rotating to release the vehicle parking brake, release pawl means movable with said actuating pawl means in the brake apply direction to engage and move and retain said holding pawl out of holding relation with said gear sector, means for disengaging said actuating pawl means from said gear sector, and means frictionally engaging said gear sector and providing controlled vehicle parking brake releasing rotation of said gear sector when said release pawl means is retaining said holding pawl tooth out of holding relation with said gear sector.

3,187,596
BALL CHAIN DRIVE WITH BALL EJECTION MEANS
Frank J. Doerr, 51—78 Manilla St., Elmhurst, N.Y.
Filed Aug. 2, 1961, Ser. No. 128,783
2 Claims. (Cl. 74—229)



1. In a device of the class described, a sprocket wheel, a ball chain having interconnecting links between the balls of said ball chain engaged by said sprocket wheel, said sprocket wheel having cavities for accommodating the respective balls whereby rotation of said wheel effects movement of said chain, an ejector finger disposed adjacent said sprocket wheel, said ejector finger having a forward edge juxtaposed to be engaged by any ball below a certain radial depth in its respective cavity in said sprocket wheel whereby said ball is ejected from said cavity by said finger, and wherein said finger has a sloping surface to effect a wedging action to force said ball out of the respective cavity.

3,187,597
AUXILIARY SPROCKET MOUNTING FOR MOTORCYCLE
James W. Gwinn, Rte. 1, Box 110, Pomeroy, Wash.
Filed Jan. 11, 1963, Ser. No. 250,937
1 Claim. (Cl. 74—244)



An auxiliary sprocket attachment for a motorcycle the drive wheel of which has a hub and a drive sprocket for the hub coaxially and spaced axially from the hub and non rotatably coupled to the hub, said attachment comprising:

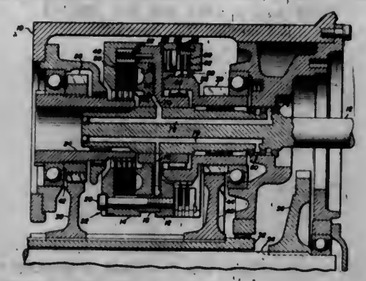
a sprocket ring having its central aperture complementary in diameter to the outside diameter of said sprocket and notched interiorly at spaced points;

a centering member affixed to said hub and having a peripheral surface coaxial with the hub and complementary in diameter to the inside diameter of said sprocket ring;

said centering member having a shoulder extending outwardly beyond the said peripheral surface; and

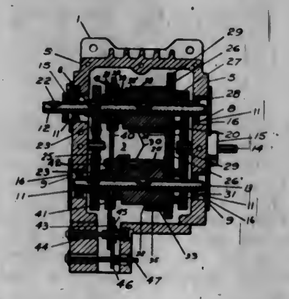
manually releasable clamp means on the member operably holding the sprocket ring against the shoulder of said member in storage position.

3,187,598
TORQUE AMPLIFICATION
Richard G. Hennessey, Oak Lawn, and Leonard Padleckas, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 16, 1963, Ser. No. 251,840
14 Claims. (Cl. 74—368)



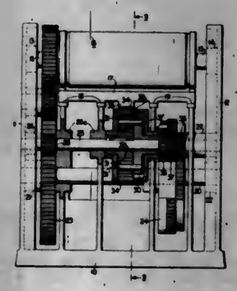
1. In a torque amplifier, the combination comprising power input means, power output means, a plurality of power transfer means having different torque ratios, first coupling means for interconnecting said input means with said output means through one of said transfer means for transferring power between said input and output means at one torque ratio, second coupling means for interconnecting said input means with said output means through another of said transfer means for transferring power between said input and output means at another torque ratio, and third coupling means for interconnecting said input and output means through said other transfer means in parallel with said second coupling means.

3,187,599
TORQUE AMPLIFIER
Robert H. Eisengrein, Skaneateles, and Francis O. Blackwell III, Seneca Falls, N.Y., assignors to Seneca Falls Machine Company, Seneca Falls, N.Y.
Filed June 5, 1963, Ser. No. 285,683
13 Claims. (Cl. 74—388)



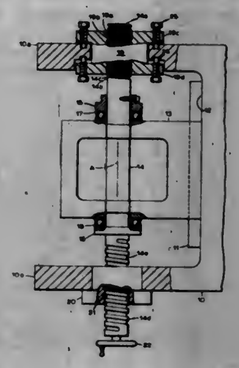
1. A torque amplifier comprising, an input power shaft, an output power shaft, a drum shaft, a drum mounted on said input shaft for rotation therewith, a drum mounted on said drum shaft for rotation therewith, input gears mounted on said input shaft and said drum shaft for rotation therewith, an idler gear rotatable on said output shaft and engaging said input gears whereby said drums are rotated in the same direction, intermeshing transmission gears rotatable on said input shaft and said drum shaft, a band associated with each of said drums for engagement therewith, each of said bands having an operative connection to the associated transmission gear, intermeshing band tightening gears rotatable on said input shaft and said drum shaft and each having an operative connection to the associated band, an output gear mounted on said output shaft for rotation therewith and operatively engaging one of said transmission gears for being rotated thereby, and a control gear engaging one of said band tightening gears for alternative tightening of said bands against the associated drum thereby to rotate said output shaft in a coordinated direction.

3,187,600
MECHANICAL MOVEMENTS
Frederick W. Seybold, 1979 Dogwood Drive, Scotch Plains, N.J.
Filed Nov. 14, 1961, Ser. No. 152,294
15 Claims. (Cl. 74—393)



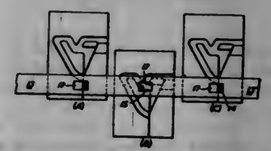
1. A mechanical movement which is designed to convert a constant input speed into a varying output speed, said mechanical movement comprising in combination:
(a) a frame having spaced supports provided with suitable bearings,
(b) a constant speed drive shaft journalled on some of said bearings and having one circular gear and one non-circular gear secured thereto, said non-circular gear comprising gear tooth segments arranged in rows,
(c) a varying speed internal gear,
(d) a second shaft journalled on others of said bearings and having two pinions secured to said shaft, one of said pinions driving said circular gear,
(e) a planet pinion carrier mounted for free rotation on said second shaft and having planet pinions meshing with said internal gear and the other of said pinions of said second shaft,
(f) a first pinion mounted concentrically relative to the axis of said second shaft and secured to said carrier,
(g) a second and larger pinion eccentrically mounted relative to the axis of said second shaft, so that the pitch circles of said first and second pinion are tangent, said second pinion being secured to said carrier,
(h) a third and still larger pinion eccentrically mounted relative to the axis of said second shaft, said eccentric mounting being diametrically opposite to that of said second pinion and so that their pitch circles are tangent, said third pinion also being secured to said carrier,
(i) whereby said three pinions may mesh in sequence with their respective gear tooth segments of a row on said non-circular gear.

3,187,601
MOTION TRANSMITTING MECHANISM
Ashley C. Glenn, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 1, 1963, Ser. No. 269,292
13 Claims. (Cl. 74—424.8)



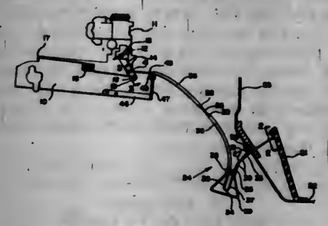
2. Motion transmitting mechanism comprising in combination
(a) a first member and a second member,
(b) two sets of complementary screw and nut members, one set comprising a friction screw member and a friction nut member engaged with the friction screw member and the other set comprising an antifriction screw member and an antifriction nut member engaged with the antifriction screw member, one of said screw and nut members from each set mounted in the first member and the other of said screw and nut members from said sets mounted in the second member,
(c) and means to effect simultaneous relative rotation between said screws and nuts.

3,187,602
PUSH BUTTON DEVICE
Richard Geoffrey Cousins, Norwood, London, England, assignor to Telephone Manufacturing Company Limited, London, England
Filed June 29, 1961, Ser. No. 120,612
Claims priority, application Great Britain, July 6, 1960, 23,559
1 Claim. (Cl. 74—483)



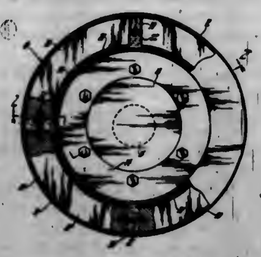
In a multiple push-button control assembly, the combination comprising a plurality of push-button operated units arranged in essentially side-by-side relation, each said unit including a support structure actuatable longitudinally of itself, spring means biasing said support structure to a starting position, a push-button for actuating said support structure from said starting position, an essentially heart-shaped trackway provided on a side face of said support structure, said trackway also including a reset track part extending from the base of the notch portion formed between the two lobes of the heart to one of the upwardly and outwardly inclined parts of said trackway, a lever pivotally mounted adjacent to and parallel with said trackway, a pin on said lever, spring means loading said lever and pin thereon into lateral engagement with said trackway, said pin being located at the lower end of said trackway when said support structure occupies its starting position and being transferred to said notch portion whenever said support structure is pushed to a locked-in position, and a reset bar movable longitudinally of itself and extending across all of said support structures of said push-button operated units in a direction transverse to the direction of movement of said support structures, said reset bar including a plurality of longitudinally spaced slots therein individual to and receiving the respective pins on said levers, each said pin being located at the same end of the slot when the appertaining support structure occupies its starting position and being relocated to the opposite end of the slot when said support structure is pushed to a locked-in position, whereby upon pushing any one of said support structures from its starting position the movement of the pin appertaining thereto along the trackway will cause said reset bar to shift longitudinally and thereby move the pin appertaining to any support structure occupying its locked-in position from said notch portion along said reset track part onto said inclined track part whereupon the biasing spring means appertaining to said support structure restores the latter to its starting position.

3,187,603
MOTION TRANSMITTING MECHANISM
Charles Haddad, Allen Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 342,596
6 Claims. (Cl. 74—501)



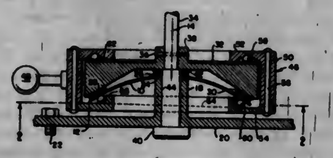
1. A motion transmitting mechanism for transmitting motion between first and second control elements comprising first flexible means affixed at one of its ends for movement with said first control element, second flexible means affixed at one of its ends for movement with said second control element, the other ends of each of said flexible means being substantially rigid in the direction of their longitudinal axes, first guide means supporting said other end of said first flexible means for movement substantially along its longitudinal axis simultaneous with movement of said first control element, second guide means supporting said other end of said second flexible means for movement substantially along its longitudinal axis simultaneous with movement of said second control element, and means comprising a U-shaped section formed from an element that is substantially incompressible in the direction of its longitudinal axis for providing a substantially rigid connection in an axial direction between said other ends of said flexible means for transmitting axial movement of one of said other ends into axial movement of the other of said other ends in substantially the same direction.

3,187,604
TORSIONAL VIBRATION DAMPER
William P. Hazel, Livonia, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 12, 1962, Ser. No. 209,379
5 Claims. (Cl. 74—574)

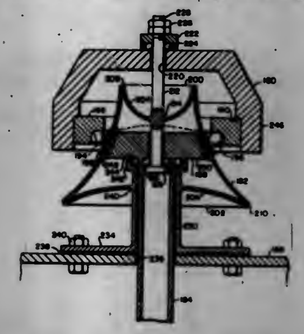


1. A vibration damper adapted to be mounted on a rotatable shaft comprising a fluid tight annular housing member connectable to said shaft and rotatable therewith;
a mass unit symmetrically disposed within said housing, said mass unit being responsive to centrifugal force generated by said rotating shaft to change its radial position uniformly and being torsionally unrestrained to permit circumferential movement thereof relative to said housing;
friction means connected to the inner surface of said mass unit and being circumjacent the inner wall of said annular housing; and
a metered quantity of liquid partially filling the space between said mass unit and said annular housing, said mass unit having a specific gravity less than that of said liquid whereby the centrifugal force generated by the rotating shaft acts on said mass unit and said liquid in unequal proportions resulting in a net positive inwardly radially directed force acting on said mass unit causing same to move said friction means into friction damping engagement with said annular housing during which time relative circumferential movement between the mass unit and liquid is permitted producing a viscous damping action therebetween.

3,187,605
STRAIN WAVE DRIVE
Bernard G. E. Stiff, Lynnfield Center, Mass., assignor of twenty-five percent to William L. Ericson, Marblehead, Mass.
Filed Mar. 26, 1962, Ser. No. 182,586
17 Claims. (Cl. 74—640)



1. In a strain wave drive: a relative rigid member having a circumferential working surface; an elastically deformable member having a working surface portion of a different diameter when undeflected from that of said circumferential working surface; said members being coaxially arranged one circumferentially spaced about the other, said circumferential working surface and said working surface portion each being formed with cooperating grooves;
a strain wave generator engaging said deformable member to deflect said working surface portion thereof into engagement with said circumferential working surface of said rigid member at a plurality of circumferentially-spaced areas interspaced by non-engaging areas, said strain wave generator being rotatable about the polar axis of revolution of said deformable member to propagate a rotating strain wave to produce relative movement between said rigid and deformable members;
at least said circumferential working surface of said rigid member, and said working surface portion of



said deformable member when in an undeflected condition, comprising annular bodies of revolution about a major axis of line segments inclined to said major axis, such that in their mutually-engaged areas, said working surface portion and said circumferential working surface lie substantially in coincidence to fully engage the cooperating grooves;
said deformable member being constructed and arranged for angular deflection by said generator of said working surface portion about a point lying on said major axis, to facilitate engagement and disengagement of said grooves.

3,187,606
FABRICATING TOOL AND TECHNIQUE
Frederick F. Obertrup, Plymouth Meeting, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 5, 1961, Ser. No. 114,956
5 Claims. (Cl. 76—107)



1. The method of making an object useful as a fabricating tool for fabricating an array of individual subminiature semi-conductor electrical circuit components comprising the steps of:
(a) providing an etchable photo-sensitized refractory body of a material that is capable of being etched at the rate of 15 increments of depth for each increment of width,
(b) exposing said photo-sensitized body to ultraviolet light in a pattern substantially identical to an original object to be duplicated,
(c) etching away the exposed portions of said photo-sensitized body at an etchant ratio of 15 to 1 thereby to avoid undesirable undercutting,
(d) casting said etched body in molding material to thereby provide a reverse image of said body in said material,

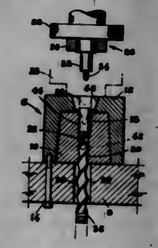
(e) removing the cast reverse image from the mold,
(f) coating the cast image with an electrically conductive material and thereafter,
(g) electroplating said coated casting with metal thereby to from a rigid replica of said negative pattern image.

3,187,607
SPINNERET PRODUCTION
Ludwig August Krummeck, Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 24, 1962, Ser. No. 212,073
1 Claim. (Cl. 76—107)



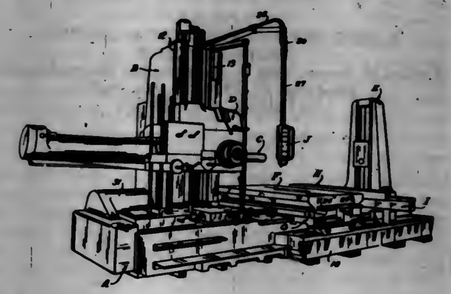
In the production of thick-wall spinnerets, the improvement comprising the steps of forming a plurality of recesses of circular transverse cross section on a stationary spinneret blank; positioning an indexable punch holder so that the axis of rotation of said holder is aligned with the center of an orifice complex to be generated in a recess; perforating the spinneret blank in the bottom of the recess in a single punch stroke to form a punch-shaped perforated segment portion of an orifice complex in the blank; and successively indexing the punch holder to new positions in the recess and further perforating the blank to complete a predetermined orifice complex in the recess, and moving the blank to relatively position said punch holder axis of rotation sequentially at the other recesses, and repeating the indexing and perforating steps at each recess.

3,187,608
METHOD FOR FORMING ARTICLES
Oran G. Dalton, Jessie L. McDaniel, and Richard K. May, Fort Worth, Tex., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,684
4 Claims. (Cl. 76—108)



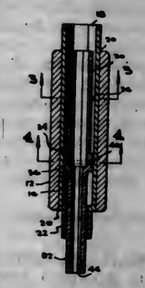
1. A method of high energy forming comprising the steps of:
heating a billet of material to a temperature sufficiently high to render same susceptible to plastic flow;
placing the heated billet in one portion of a die cavity having an adjustable substantially closed one end, for adjustably providing a desired volume within the cavity and a desired end configuration of the article to be formed, and open to entry of punch means at the other end;
by punch means driven in movement toward the substantially closed end against the billet applying to the billet a pressure sufficiently high to effect and maintain the plastic flow of the material within the cavity such that the material is moved from the one portion of the die through the die cavity and caused to abut the cavity closed end and caused to conform accurately with the die cavity to produce the desired end configuration; and
moving the substantially closed end of the die cavity for removing the formed article from the die cavity.

3,187,609
COMBINED HORIZONTAL BORING, DRILLING AND MILLING MACHINE
Hallis N. Stephens, Shaker Heights, Ohio, assignor to The New Britain Machine Company, New Britain, Conn., a corporation of Connecticut
Filed Aug. 12, 1964, Ser. No. 389,102
10 Claims. (Cl. 77—3)



1. The method of moving a first member supported on a second member by cooperating way surface means at least one of which members has spaced discrete apertures therein adapted to be connected to a source of gaseous fluid under pressure and opening only into the way surface means thereof which comprises supplying gaseous fluid under pressure to a plurality of said spaced apertures in said one member at an automatically maintained predetermined mass flow rate and applying a force to said first member to move the same relative to said second member along said way surface means of said second member.

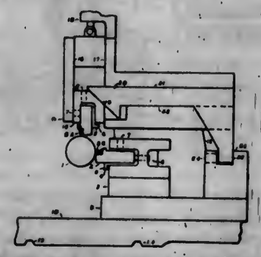
3,187,610
TELESCOPIC MULTIPLE WRENCH
Charles O. Rasmann, 1839 Warwick Ave., Lincoln Park, Mich.
Filed Oct. 15, 1963, Ser. No. 316,231
2 Claims. (Cl. 81—185)



1. A multiple socket wrench comprising an elongated housing having an axially-extending cylindrical bore extending from end-to-end therethrough, a first elongated substantially cylindrical wrench telescoped within said bore, means fixedly securing said first wrench to said housing, said first wrench having an internal polygonal configuration differing in size at its respective opposed

ends, said first wrench having a plurality of axially-spaced internal circumferential grooves formed therein, a second wrench having a substantially cylindrical external configuration slidably mounted within said first wrench, said second wrench having a pair of polygonal guide members on the external side thereof conforming in configuration to the polygonal configuration of said first wrench, said guide members being disposed in axialy-spaced relationship relative to said second wrench, said second wrench having a spring element disposed between said guide members, said spring element being selectively engageable within one of said grooves formed in said first wrench whereby said opposed ends of said second wrench may be selectively exposed beyond opposed ends of said first wrench.

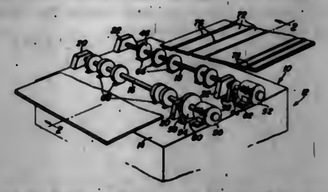
3,187,611
LATHE WITH AUTOMATIC ADJUSTING TANDEM TOOLS
Carlise M. Sweet, 1000 E. Montana St., Milwaukee, Wis.
Filed May 23, 1960, Ser. No. 30,902
2 Claims. (Cl. 82—25)



1. In a lathe having a center of rotation, a carriage, a slide mounted on a carriage, an ordinary cutting element on the slide and an auxiliary simultaneous adjusting holder; said auxiliary adjusting holder comprising a holder containing an auxiliary cutting element, said auxiliary adjusting holder being mounted on a slide attached to the carriage, said auxiliary cutting element having a space between it and the ordinary cutting element to provide space for chips, said auxiliary cutting element is held substantially the same distance from the lathe's center of rotation as the standard cutting element, said holders being oriented in an over and under relationship on the same side of the said center of rotation, means of adjusting the cutting elements in a direction the cutting elements move whereby the lower cutting element can be offset beyond the cutting element above it an amount equivalent to approximately the thickness of chip to be cut, said auxiliary cutting element being movable toward or away from the lathe's center of rotation by a mechanical means provided for that purpose, said mechanical means being connected to the slide on which the ordinary cutting element is mounted whereby when the ordinary cutting element moves toward or away from the lathe's center of rotation said auxiliary cutting element will move a similar distance towards or away from the center of rotation.

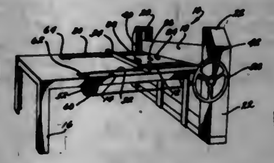
3,187,612
METHOD FOR SIMULTANEOUSLY CUTTING OVERLAPPING BOARDS FROM A SINGLE SHEET
Robert W. Hervey, 2233 Calhoun Way, Stockton, Calif.
Filed Dec. 18, 1962, Ser. No. 245,621
2 Claims. (Cl. 83—5)

1. The method of cutting a plurality of boards from a single sheet of material, which boards are suitable for paneling members and include longitudinal edge portions overlappingly engageable with each other when erected to form a section of paneling members, said method comprising the following steps: cutting a first longitudinal groove in one side of said panel, cutting a second longitudinal groove in the other side of the panel generally paralleling said first groove with the medial plane of said first groove spaced laterally from the medial plane of said second groove, the width of said second groove being greater than the width of the first groove, one longitudinal edge portion of said second groove slightly overlapping the



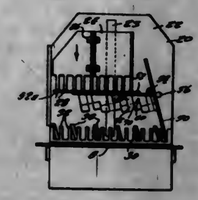
adjacent longitudinal edge portion of the first groove and being slightly deeper than the remainder of said second groove and communicating with the other groove, at least the portions of the bottoms of said grooves adjacent the communicated portions of said grooves being of complementary cross-sectional shape so as to be adapted to overlap each other in substantial full surface to surface contacting relation with each other, and the total depth of said first groove and said remainder of said second groove being equal to the thickness of said sheet material.

3,187,613
VENEER CLIPPER HAVING MEANS TO POSITION WORKPIECE RELATIVE TO THE CUTTER BLADE
Robert L. Behling, 2318 W. 4th Ave., Sault Ste. Marie, Mich.
Filed Jan. 18, 1962, Ser. No. 167,014
1 Claim. (Cl. 83—207)



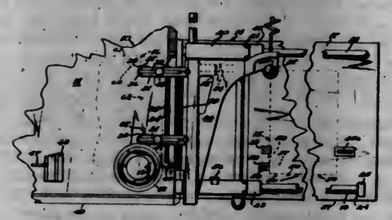
A wood veneer cutting apparatus comprising: a horizontal supporting table having a flat unobstructed bed permitting visualization of a sheet of wood veneer thereon a cutting blade at one end of said table capable of cutting supported veneer sheets; an elongated veneer guide and stop element extending across said table and lying directly on said bed; at least two spaced chain drive means on opposite sides of said table connected to the ends of said guide element at the bottom thereof to move said guide toward said cutter; chain sprocket means mounting said chain guide means, including a pair of coaxial sprockets mounted underneath said bed adjacent said cutter blade and a pair of coaxial sprockets adjacent the other end of said table and mounted underneath said bed; said table bed having two pairs of openings each pair located above a pair of said coaxial sprockets and receiving the chain drive means as they pass about said sprockets; and a control handle means mounted adjacent the side of said table generally in alignment with said cutter blade and operably connected to said sprocket means adjacent said cutter blade, whereby said veneer sheets can be uniformly moved beneath said cutter blade by said guide to obtain exactly parallel cuts to remove only undesirable areas without wastely sighting along said blade while adjusting said control handle means.

3,187,614
RHOMBOID PAPER CUTTING ATTACHMENT
Dale L. Pollard, 258 W. 22nd St., New York 11, N.Y.
Filed Nov. 28, 1962, Ser. No. 240,659
6 Claims. (Cl. 83—207)



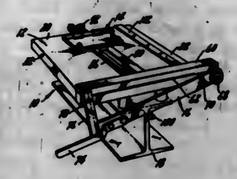
1. In combination with a sheet cutting apparatus comprising a reciprocable cutter blade and clamp attachment, a work table, a back gauge having a front face and supported on said table for movement towards and away from said blade cutter, an auxiliary side guide wall angularly adjustably mounted on said table, an auxiliary back wall slidably supported by said back gauge for lateral movement thereof upon movement of said back gauge, an offset gauge supported by said table and in contact with said walls, said offset gauge having formed therein a plurality of stepped recesses each being angularly oriented with respect to said back wall and consequently said cutter blade, first rectangular blocks received in said recesses and each block having one forward edge beveled so that when in said recesses, said forward edges form a series of planar surfaces parallel to said cutter blade.

3,187,615
WORKPIECE ALIGNMENT STRUCTURE
Dennis Daniels, Williamsville, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Apr. 5, 1963, Ser. No. 270,998
10 Claims. (Cl. 83—413)



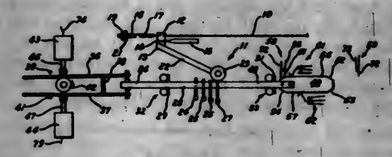
1. In a machine tool having a template-type of workpiece-holding duplicator base attached thereto in approximate alignment, the improvement comprising, in combination therewith:
(a) a vertically retractible workpiece positioner carried by the machine tool for being engaged by an edge of the workpiece;
(b) a carriage movable on said duplicator base in a direction parallel to said edge;
(c) a stylus and workpiece holder movable on said carriage in a direction normal to said edge; and
(d) adjustable screw means coactive between said holder and said carriage to limit the extent of holder movement in said direction normal to said edge for aligning the stylus with a corresponding edge of the template.

3,187,616
CUTTER
James E. Bitter, 824 Elmwood Ave., West Chicago, Ill.
Filed Dec. 5, 1962, Ser. No. 242,561
4 Claims. (Cl. 83—462)



1. A cutter for paper and the like which comprises a table, a stationary guide means mounted at one end of said table under which said paper passes, said guide means having a cutting and guiding edge, said guiding edge adapted for aligning said paper as desired, a cutting knife pivotally associated with said guide means, said cutting knife being pivotable upwardly to cooperate with said guiding and cutting edge of said guide means to cut said paper when said paper extends outwardly beyond said guiding edge, and advancing and clamping means mounted upon an elongated runner extending substantially perpendicular to said cutting knife, said advancing and clamping means including a guiding means slidably mounted on said runner, means to move said guiding means along said runner away from and toward said cutting knife, and means to secure said paper to said guide means.

3,187,617
TUNING MECHANISM FOR A STRING MUSICAL INSTRUMENT
Norval P. Ulrich, 1203 Carrie, Des Moines 9, Iowa
Filed Aug. 27, 1963, Ser. No. 304,996
9 Claims. (Cl. 84—312)

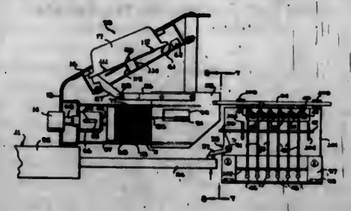


1. In a musical instrument having one or more tensioned strings disposed for audible vibration, means for progressively and selectively varying the tension of each string comprising in combination:
rocker means connected at one end to a string and operable upon being rocked to vary the tension on said string;
reciprocable means operatively connected to said rocker means and effective to rock said rocker means in response to reciprocation; and
manually controlled electric means for selectively reciprocating said reciprocable means.

3,187,618
ORGAN PRE-SET
Joseph A. Hobso, Falls Church, Va., assignor to Scope, Inc., Falls Church, Va., a corporation of New Hampshire
Filed Nov. 20, 1962, Ser. No. 238,947
15 Claims. (Cl. 84—341)

1. An organ preset mechanism comprising a plurality of manually operated instrumentation preset controls, only one of said preset controls being provided for each of said instrumentations, a plurality of manually operated tonal controls coupled to said preset controls, said preset and tonal controls being coupled to each other so

that predetermined tonal effects are normally activated by said preset controls, and means coupled to said tonal



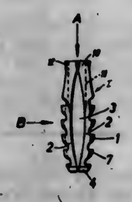
and preset controls for at will deactivating selected tonal effects normally associated with a selected preset control.

3,187,619
SHARP KEY CAP
Clifford W. Andersen, De Kalb, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed May 2, 1963, Ser. No. 277,508
4 Claims. (Cl. 84—437)



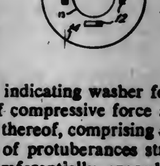
1. In a piano key arrangement, the combination comprising: a sharp note key lever of rigid material having a flat top surface and longitudinally spaced bores opening from said top surface; and a key cap including an inverted tub-like body having a roof plate and wall plates spacing said roof plate above said top surface, said body further having spaced-apart, straight walled post elements depending from said roof plate fittingly to enter said bores for attaching said cap to said key lever.

3,187,620
EXPANSION ANCHOR WITH ROTATION-PREVENTING TEETH
Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Filed June 4, 1962, Ser. No. 199,880
1 Claim. (Cl. 85—83)



An expansion anchor, particularly for securing objects to comparatively soft and brittle apertured supports of rock and the like, said anchor comprising an elongated body consising of tough elastic corrosion- and creep-resistant synthetic plastic material, said body having a tubular section at a first end thereof and also having a transverse slit extending from a second end toward but short of said first end so as to form two deformable elongated tongues, said tongues being of constant thickness and each thereof having an outwardly arched median portion; and a plurality of rotation-preventing teeth provided externally and distributed in the longitudinal direction of each of said tongues, each of said teeth comprising an arcuate surface portion extending in a circumferential direction from one marginal edge of the tongue to substantially the midpoint of said tongue and terminating in a substantially radial face portion disposed in a plane substantially parallel with the longitudinal axis of said elongated body, the junction of said arcuate surface and said radial face defining a sharp edge portion, said teeth including a second surface portion extending from the radially inner edge of said radial face to the other marginal edge of said tongue, said second surface portion being radially inward of said first mentioned surface portion so that by insertion of a screw or the like into said elongated body said tongues thereof will be forced outwardly with said teeth penetrating into the material of an apertured support in which said body is received, thereby preventing turning of said elongated body relative to said support, said tubular section having an axial bore extending at least to said slit to facilitate insertion of a screw or the like between said tongues.

3,187,621
FASTENER ASSEMBLY AND PRE-LOAD INDICATING WASHER THEREFOR
Rodney Francis Turner, Winster, near Matlock, England, assignor of one-half to Cooper & Turner Limited, Sheffield, England, a company of Great Britain and Northern Ireland
Filed Dec. 14, 1962, Ser. No. 244,814
2 Claims. (Cl. 85—62)

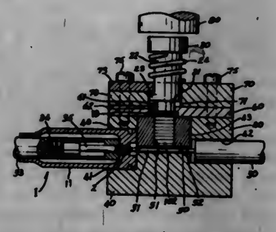


1. A pre-load indicating washer for visually indicating the magnitude of compressive force applied by a fastener to opposed faces thereof, comprising an annular body portion, a plurality of protuberances struck from said body portion at circumferentially spaced intervals and integrally formed with the material of said body portion, said protuberances being spaced from the inner and outer peripheries of said annular body, said protuberances being oblong in outline and defined by axially extending sides, said axially extending sides being substantially tangential to circles concentric with the peripheries of said washer, each of said protuberances having a concave basal surface lying within the axial confines of said annular body portion and being substantially complementary to the convex surfaces which extend out of the plane of said body portion, the number and size of said protuberances being dimensioned with respect to the compressive force applied by said fastener so that said raised portions will plastically deform into the body portion of said washer when the compressive force applied to said washer by said fastener reaches a predetermined magnitude.

3,187,622
APPARATUS FOR ASSEMBLY OF A PRIMER COMPONENT WITH A CENTERFIRE CARTRIDGE CASE
Louis F. Charlo, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 19, 1963, Ser. No. 274,153
3 Claims. (Cl. 86—12)

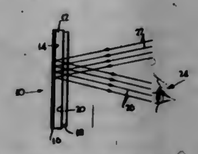
1. Apparatus for assembly of a primer component with a centerfire cartridge case having a longitudinal primer

pocket and flash hole in the case head, said component being an anvil of cruciform shape characterized by a reduced end extension, an anvil projection at the opposite end and an enlargement intermediate said anvil ends, said apparatus comprising a die holder having receptacle means for receiving said case stationed in alignment for pressing in said anvil longitudinally, mandrel means associated with said holder for delivering cases one at a time to said receptacle means, a stamping die having a bore transversely extending in said holder and configured in correspondence with said anvil shape for forming a first anvil transfer passage, a second anvil transfer passage disposed in said holder in said align-



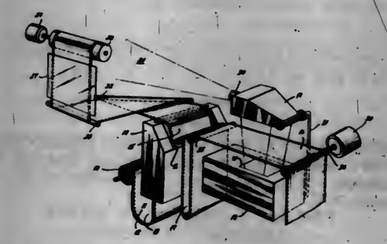
ment transversely to said first passage, said passages being in communication with each other, and channel means in said holder for guiding sheet stock transversely to said die bore, punch means mounted reciprocable with respect to said die bore and acting with said die for stamping said anvil shape from said stock into said first passage and for advancing said shape through said first passage into said second passage in said alignment, and a second punch means operable with said holder for transferring said anvil shape through said second passage and pocket and for seating said anvil in said case by staking said extension into said flash hole by indentation of said case longitudinally.

3,187,623
METHOD OF MODEL PHOTOELASTICITY ANALYSIS
Felix Zandman, Villanova, Pa., assignor, by mesne assignments, to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Application Dec. 22, 1960, Ser. No. 72,838, which is a continuation of application Ser. No. 650,250, Apr. 2, 1957, now Patent No. 3,034,395. Divided and this application Nov. 17, 1961, Ser. No. 153,158
Claims priority, application France, Nov. 26, 1956, 726,402
1 Claim. (Cl. 88—14)



The method of stress-strain analysis of a plurality of plane workpieces defined by given outlines and subjected to given plane loads, which method comprises the steps of substantially coextensively laminating a uniform thickness photoelastic sheet material with a uniform thickness circularly polarizing sheet material in its isotropic condition over one surface and with a reflective coating over the other surface of the photoelastic material, to form a blank for field use and constituting unitary combination photoelastic model means and photoelastic polariscope means having an area greater than that of the workpieces, thereafter cutting a plurality of models having the thickness of the blank from the blank according to the given outlines, loading the models according to the respective plane loads, and directing light through the polarizing material and the photoelastic material to the reflective coating and back out of the photoelastic material through the polarizing material, whereby visible patterns of birefringence relatable to the stress-strain reactions of the given workpieces to the given loads may be produced in the field in ordinary light with minimum auxiliary apparatus.

3,187,624
RECORD SYSTEM INCLUDING RECORD STORAGE MEANS AND NEGATIVE FILM PROJECTING APPARATUS FOR RAPID UTILIZATION OF INTELLIGENCE
Raymond H. Laziuski, Glenside, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed July 11, 1961, Ser. No. 123,233
2 Claims. (Cl. 88—24)

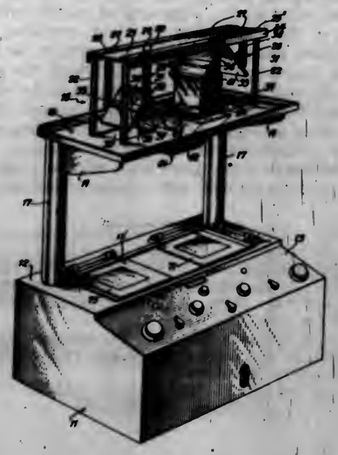


1. In a recording and projecting system of the type wherein a strip of transparent film, coated with opaque material and laminated with paper, is guided past a recording device for forming a record on the paper by transferring said opaque material from limited areas of said film to said paper, the improvement which comprises means for separating said film and paper and for guiding the separated film from adjacent said recording device over a predetermined path; a projector adjacent said path and on one side thereof for directing a cone of light through the negative record formed on said film by said transferring of opaque material; a screen opposite said projector and on the other side of said path for viewing said negative record; and means for guiding the separated paper over another path, remote from said cone of light, to a region for storage of the record formed on the paper.

3,187,625
OPTICAL EQUIPMENT WITH PRISM ASSEMBLY FOR PROJECTING A COMPOSITE IMAGE FROM TWO SEPARATE TRANSPARENCIES
Thomas B. Howell, 1815 Palmer Ave., Larchmont, N.Y., and Milton Regin, 924 Woodmere Drive, North Woodmere, N.Y.
Filed Oct. 31, 1961, Ser. No. 149,675
11 Claims. (Cl. 88—24)

1. A composite optical image projection equipment comprising a base having a top wall with a pair of spaced openings, means in said base to project light through said openings, means to mount a transparency on said top wall over each of the openings therein respectively, a projection head over said base, said projection head comprising a pair of mirrors inclined toward each other, each mirror being in the path of the light projected through the associated transparency, a second inclined mirror facing one

of said pair of mirrors, a prism assembly in the path of the light reflected from the other mirror of said pair and



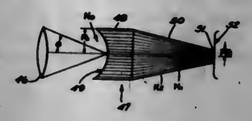
from said second mirror through which the reflected light passes to provide a composite optical image.

3,187,626
AUTOMATIC AUDIO STRIP FILM PROJECTOR
Marvin I. Mindell, Great Neck, and Karl Rudzitis, West Babylon, N.Y., assignors to Viewlex, Inc., Holbrook, N.Y.
Filed Apr. 4, 1962, Ser. No. 185,066
2 Claims. (Cl. 88—28)



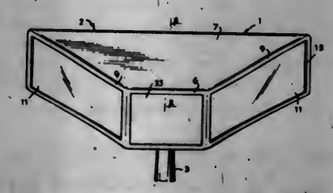
1. Portable audio visual strip film means comprising
a case, a screen pivotally mounted in said case, means to hold said screen in viewing position,
film strip projection means mounted in said case, and adapted to project images onto said screen when said screen is in viewing position,
film strip advancing means connected to said projecting means, a deck member slidably mounted in said case under said screen,
audio means comprising a magnetic tape player means mounted in said deck member,
means to actuate and synchronize movement of said film strip with said magnetic tape, said last means comprising
a magnetic tape having two tracks, one of said tracks having audio content and the other of said tracks having synchronizing pulses,
a first magnetic pickup responsive to said first track to pick up said audio content,
a second magnetic pickup responsive to said second track to pick up said synchronizing pulses and motor means related to said second pickup and responsive thereto to actuate movement of said film strip.

3,187,627
MICROSCOPE AND RECORDING OPTICAL SYSTEMS UTILIZING TAPERED LIGHT CONDUCTING FIBER BUNDLES
Narinder S. Kapany, Belmont, Calif., assignor, by mesne assignments, to American Optical Company, a voluntary association of Massachusetts
Filed Oct. 3, 1960, Ser. No. 59,939
9 Claims. (Cl. 88—39)



7. A fiber optical image transmitter of the type described comprising a very large number of thin coated optical fibers secured together in similar side-by-side relation so as to form a fiber optical bundle having an entrance surface for receiving an optical image at one end thereof and an emergent surface at the opposite end thereof, the optical fibers forming said bundle each being of a frusto-conical shape intermediate its opposite ends so that when said fibers are bunched together they will provide at one end surface of said bundle an appreciably larger cross sectional area than at the other end thereof, the smaller end surface of said bundle being a substantially flat surface so as to receive a flat object surface in juxtaposed relation thereto, and the other end surface of said bundle being of a predetermined concave curvature so as to coincide substantially with the known curvature of field of a lens to be optically aligned therewith and focused thereon, each of said thin coated optical fibers being formed by a core of light transmissant dielectric material of a predetermined refractive index, a first relatively thin coating surrounding said core and formed of a dielectric material of a relatively lower refractive index, and a second relatively thinner coating surrounding said first coating and formed of a metallic material, the smaller end of each of said coated fibers being of a cross sectional size no greater than approximately the wavelength of the light to be transmitted thereby, whereby an image having improved resolution will be transmitted by said bundle.

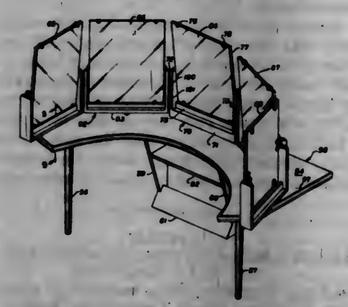
3,187,628
THREE MIRROR VEHICLE SAFETY DEVICE FOR LATERAL AND REAR VIEWING
Julius D. Canas, 148—20 Liberty Ave., Jamaica, N.Y.; Albert Bryant, Hollis, N.Y. (148—20 Liberty Ave., Jamaica, N.Y.); and Carmen Lichau, 295 Albany Ave., Brooklyn, N.Y.
Filed Nov. 1, 1961, Ser. No. 149,420
2 Claims. (Cl. 88—86)



1. In a motor vehicle having a front fender disposed at a side of the vehicle forwardly of the driver, a mirror reflector safety device for reflecting simultaneously to the driver the presence of vehicles approaching forwardly from his rear as well as vehicles approaching laterally from opposite sides of his vehicle comprising a bracket

mounted at its base end upon the surface of the fender proximate the front end thereof having an upright stem, an elongated housing disposed in a horizontal plane transversely of the fender and of the upper end of the stem having a bottom wall providing a central aperture through which the upper end of the stem extends with a surrounding clearance into the interior of the housing, means entirely within the interior of the housing mounting the housing to the upper end of the stem for limited swivel adjustment of the position of the housing about its longitudinal and lateral axes, the housing further having parallel front and rear walls centered relative to one another wherein the front wall is substantially longer than the rear wall and the rear wall faces rearwardly of the vehicle, a pair of mirrors each defining an end wall of the housing declining rearwardly from a corresponding end of the front wall to a corresponding end of the rear wall so that vehicles approaching laterally from opposite ends of the device and sides of the vehicle are reflected by the mirrors to the driver, and the rear wall of the housing being faced with a mirror whereby vehicles approaching forwardly from the rear of the device are also reflected to the driver.

3,187,629
MIRROR ARRAY
Bertha E. Rowell, 902 W. Santa Barbara Ave., Los Angeles, Calif.
Filed Aug. 7, 1961, Ser. No. 130,459
1 Claim. (Cl. 88—98)



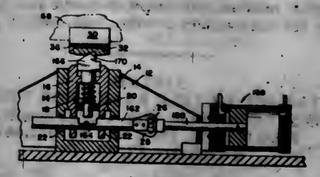
A mirror array comprising in combination, at least three mirrors;
each mirror mounted in an upwardly opening U-shaped frame having a bottom rail and two side legs extending upwardly substantially half the height of the supported mirror;
pivot means at the upper end of each of said legs swingably mounting said mirror on said frame;
said side legs having inscribed on the inside surfaces thereof indications representative of particular angles of tilt of a mirror supported thereby;
means hinging said frames in a juxtaposition array for relative angular adjustment of the mirrors about vertical axes;
said bottom rail having a bottom face, a longitudinal channel defined by side walls opening on said bottom face, a glide-pad of felt-like material filling said channel and secured therein, said side walls providing lateral support for said pad to prevent dislodgment,
said glide pads thereby adapted to support said mirror on surface means providing a smooth flat horizontal surface upon which said felt-like material may slide for angular adjustment of said array.

3,187,630
MISSILE HOLDER
Chandley W. Lambert, P.O. Box 56, Lake Dallas, Tex.
Filed Nov. 2, 1964, Ser. No. 408,115
1 Claim. (Cl. 89—1)



In a missile holder, the combination of, a cylindrical pressure ring; spaced firing chambers arranged in a circle around the center of said pressure ring; spaced missile tubes secured into said pressure ring coaxially to said firing chambers and connecting to said firing chambers; means for securing said pressure ring into the receiver of a missile gun; a projecting positioning lug secured to said pressure ring and fitting into a slot in a gun receiver and holding said firing chambers in line with firing pins in a gun; a forward ring secured to said missile tubes; and a cylindrical guard secured to said forward ring, said guard surrounding and protecting the heads of missiles in said tubes, a circular shoulder on said pressure ring fitting against a recoil ring within the receiver of a missile gun; a threaded holding pin rotatably secured in the center of said pressure ring with the threaded end of said pin extending rearwardly; collars secured to said pin, said collars drawing said missile holder into a gun receiver when said pin is rotated in one direction and loosening said holder when said pin is rotated in the opposite direction; and a projecting end of said pin fitting a manually operated wrench.

3,187,631
MISSILE LAUNCHER DETENT
Roy Cromwell and John T. Bratton, St. Louis, Mo., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 28, 1963, Ser. No. 284,303
3 Claims. (Cl. 89—1.7)

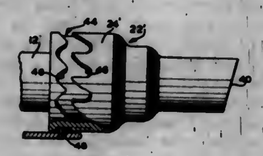


2. In a missile launcher of the type having a launching rail along which a rocket propelled missile is slideably supported while being launched, the improvements, in combination, comprising:
(a) a missile restraining device having a frame rigidly affixed to the launcher,
(b) a detent engaging lug affixed to the missile and having oppositely projecting ears with a notch in the same sides of each,
(c) a floating member carried by the frame,
(d) a pair of resiliently urged detents carried by the floating member,
(e) a pair of camming members, one affixed to each side of the floating member,
(f) said camming members having portions engageable with the same sides of the ears,
(g) the detents adapted to engage in the notches in the ears,
(h) and a blocking pin for each detent, slideably carried by the floating member, having a first position

in which the detents may be moved out of the notches and a second position blocking their movement out of the notches, and

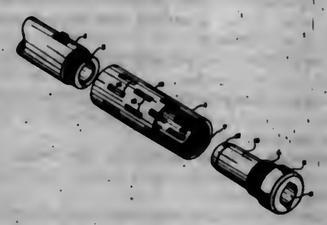
(i) manual apparatus for moving the detents out of the notches operable when said blocking pin is in said first position.

3,187,632
PROJECTILE DISPERSION DEVICE FOR FIREARMS
Earle M. Harvey, Agawam, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 21, 1957, Ser. No. 679,804
1 Claim. (Cl. 89—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)



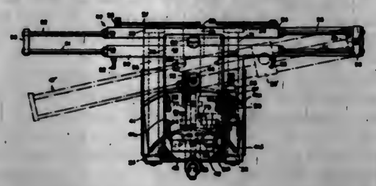
In an automatic firearm having a barrel for the discharge of a cartridge with a projectile and a member longitudinally movable relative to the barrel through the forces produced by the discharge of a cartridge in the barrel, the combination comprising a muzzle piece rotatably mounted to the front end of the barrel and provided with a longitudinal hole disposed therethrough concentric to the barrel for the passage of the projectile, a front face on said muzzle piece disposed at a predetermined angle relative to the longitudinal axis of said hole to produce an uneven pressure against the base of the projectile during exit from said hole to deflect the course of the projectile a predetermined degree, an angular groove around said muzzle piece, a lug connected to the member and received by said groove, and a plurality of cooperating cam surfaces provided on opposite sides of said groove and disposed for alternate engagement by said lug during relative movement between the barrel and member for sequentially rotating said muzzle piece.

3,187,633
CONTRA-JET MUZZLE BRAKE FOR FIREARMS
David S. Tanabe, 7920 49th Ave. S., Seattle, Wash.
Filed Nov. 12, 1963, Ser. No. 322,661
5 Claims. (Cl. 89—14)



1. A muzzle brake for firearms, comprising a barrel element having therein a plurality of gas ejection slots arranged in pairs, each of which slots, at each location throughout its length, is inclined relative to a radius of the barrel at such location, and the slots of each pair being inclined oppositely relative to each other as to be convergent toward the exterior of said barrel element.

3,187,634
ROUTER SHAPER
Rudolph F. Onsrud, Niles, and Olai Olsen, Park Ridge, Ill., assignors to Onsrud Machine Works, Inc., Niles, Ill., a corporation of Illinois
Filed Apr. 17, 1963, Ser. No. 273,682
8 Claims. (Cl. 90—11)



1. For a router shaper having a power operated angularly displaceable motor carriage with a motor having a rotative cutter element positionable for engagement with a workpiece perpendicular to the tangent line of the surface of said workpiece at the point of contact of the cutter element therewith, a control means for controlling the angular displacement of said power operated motor carriage comprising:

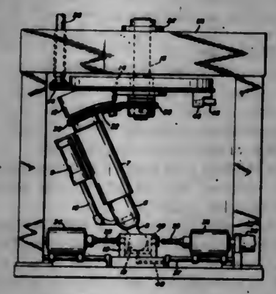
(a) a servo-valve mounted on said carriage communicatively connected to a source of fluid under pressure and operatively connected to said power operated carriage,

(b) a sensing shoe supported by said carriage and positioned engageably with said workpiece for actuation thereby according to variations in the surface contour thereof, and

(c) means operatively connecting said sensing shoe with said servo-valve for actuating said servo-valve responsive to the movement of said shoe

whereby said servo-valve is actuated responsive to a change in the slope of the surface of said workpiece for energizing said power operated carriage in a direction to move said carriage arcuately until the axis of rotation of said cutter element is perpendicular to the tangent line of the surface of said workpiece at said point of contact.

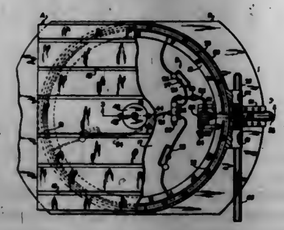
3,187,635
APPARATUS FOR CUTTING LEMNISCATE RACES ON BALL BEARINGS
Adrian Koos, Mogadore, Ohio, assignor, by mesne assignments, to Magna Driver Corporation, Buffalo, N.Y., a corporation of New York
Filed Jan. 22, 1962, Ser. No. 167,809
2 Claims. (Cl. 90—20)



1. Apparatus for simultaneously cutting a plurality of Bernoullian lemniscate races for ball bearings in the knob of the male member of a universal joint with a plurality of mills each having a rounded end, which apparatus includes a spherically indented nest for supporting the knob therein, a plurality of mills about said nest to be moved radially in a plane toward the center of the knob, and

means for describing a cone by a planetary movement of the axis of the knob about a perpendicular to said plane with the apex of the cone at said center.

3,187,636
ROTARY WORKTABLE
Hallis N. Stephan, Shaker Heights, Ohio, assignor to The New Britain Machine Company, New Britain, Conn., a corporation of Connecticut
Filed Nov. 21, 1963, Ser. No. 326,322
8 Claims. (Cl. 90—58)

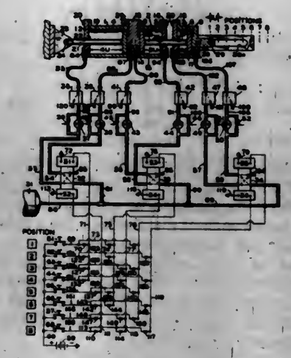


1. In a device of the character described a first member and a second member having cooperating way surfaces on their adjacent sides one of which is an annular way surface, means preventing relative movement between said members transversely of the center of said annular way surface while permitting relative rotation between said members about said center, one of said members having a plurality of discrete apertures in the side thereof adjacent to the other of said members, said apertures being angularly positioned with respect to said center and spaced from one another, said apertures being closed except for the openings thereof facing said other of said members and being located inwardly of the outer periphery of said annular way surfaces, discrete conduit means communicating with said apertures, and means for supplying gaseous fluid to each of said conduit means at predetermined constant mass flow rates.

5. In a device of the character described a first member and a second member having cooperating way surfaces on their adjacent sides one of which is an annular way surface, means applying pressure between said way surfaces and preventing relative movement between said members transversely of the center of said annular way surface while permitting relative rotation between said members about said center, one of said members having an aperture in the side thereof adjacent to the other of said members, said aperture being closed except for the opening thereof facing said other of said members, said opening being essentially coextensive with the inner periphery of said annular way surface, conduit means communicating with said aperture and adapted to be connected to a source of fluid under pressure, and valve means in said conduit means for controlling the application of fluid under pressure to said aperture.

3,187,637
MULTI-POSITION CYLINDER APPARATUS AND CONTROL THEREFOR
John R. Edmund, Berkeley, Calif., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed June 5, 1962, Ser. No. 200,167
6 Claims. (Cl. 91—167)

1. A multi-position cylinder apparatus comprising in combination a plurality of cylinders arranged in a configuration including a first and second cylinder connected together in tandem and a third cylinder positionably connected in line with said second cylinder, each of said cylinders having a piston and piston stem slidably positioned in a bore therein and forming a chamber on opposite sides thereof in said bore with the ends of the respective cylinders, a source of fluid under pressure, directional delivery means connected to each of said chambers on opposite sides of each piston in each of the respective cylinders and operable responsively to supply of fluid pressure thereto to effect supply of fluid under pressure selectively to one of said chambers on one side of each of said pistons and operably responsive to release of fluid under pressure therefrom to effect release of fluid under pressure selectively from one of said chambers on one side of each of said pistons, a plurality of solenoid-operated pilot valve means for controlling the supply of fluid under pressure from said source to a selective sequence of said delivery means to effect supply of fluid under pressure to a selective sequence of said chambers whereby said cylinders are variably positioned, and a plurality of circuit means each selectively energizing different solenoid-operated pilot valve means in variable sequences to effect supply of fluid under pressure to said delivery means selectively.

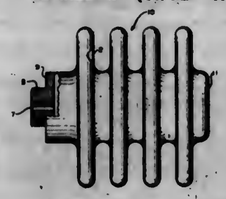


3,187,638
PORTABLE AIR SAW
Boyce Talbutt, 805 16th St., Boulder, Colo.
Filed July 2, 1963, Ser. No. 292,311
4 Claims. (Cl. 91—290)



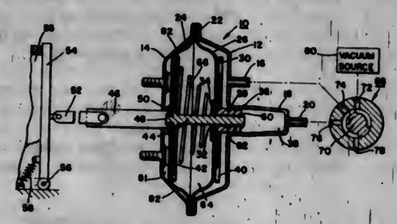
1. A valve assembly for directing the flow of a driving fluid comprising a valve body operatively associated with a cylinder and piston assembly, said valve body having channels located therein for alternatively directing the flow of the driving fluid to opposite ends of said cylinder and piston assembly, a valve member slidable between terminal positions within a slideway formed in said valve body, said valve member being provided with a pair of ears having openings therein, pistons reciprocable between terminal positions within cylinders formed within said valve body, said pistons each having a radial extension, each said extension being disposed in a respective one of said openings in said pair of ears of said valve member for sliding said valve member between fixed terminal positions.

3,187,639
RESILIENT VOLUME-ENCLOSING MEMBER
Frederick G. Kelly, Bloomfield, and Morris Holowachuk, Wayne Township, Passaic County, N.J., assignors to Servometer Corporation, Clifton, N.J., a corporation of New Jersey
Filed Mar. 4, 1963, Ser. No. 262,725
12 Claims. (Cl. 92—47)



1. A volume-enclosing member to withstand deforming forces having a wall, of thickness of the order of one to several thousandths of an inch, comprising inner and outer layers each of metal which has a substantial unit elastic limit but is prone in such layers to transverse faults, and an intervening layer of metal which has a lower unit elastic limit but is relatively substantially less prone to transverse faults, said inner and intervening layers and said intervening and outer layers being intimately adherent to each other.

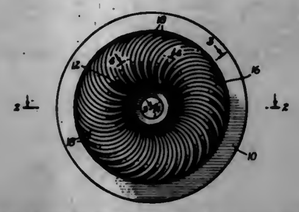
3,187,640
MULTI-STROKE ACTUATOR
Kenneth W. Young and James H. Flatt, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 24, 1962, Ser. No. 189,907
9 Claims. (Cl. 92—48)



1. A vacuum actuator comprising, casing means, first and second diaphragms secured to said casing means and movable relative thereto, a first chamber defined by said first diaphragm and said casing means, a second chamber defined by said first and second diaphragms, a guide member shiftable with said first diaphragm slidably supported by said casing means, a shaft member secured to said second diaphragm and passing through an opening formed in said guide member, said guide member and shaft member having a predetermined clearance providing passage means for said second chamber that is connected to an area exterior of said first chamber, and means projecting from said shaft member and engageable with said guide member whereby said guide member and shaft member are shifted together when said first diaphragm is shifted in one direction.

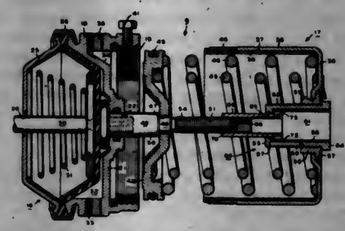
3,187,641
DIAPHRAGM
Hoel L. Bowditch, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass.
Filed May 23, 1962, Ser. No. 196,956
5 Claims. (Cl. 92—94)

1. A diaphragm comprising an outer flange part and an inner part to be deflected relative to said outer part, said diaphragm including an arc-shaped flexible element joining said inner and outer parts; said flexible element being formed with a groove-like corrugation extending transversely between said parts and providing an offset between said inner part and the plane of said outer flange part when the diaphragm is in its relaxed state; means



for relieving hoop stresses in said flexible element when said inner part is deflected towards the plane of said outer flange; and means holding said inner part at least adjacent the plane of said outer flange in a position to minimize the spring reaction force applied by said flexible element to said inner part.

3,187,642
FRICTION DEVICE OPERATING MECHANISM
Oliver B. Cruse, Florissant, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Oct. 12, 1962, Ser. No. 230,180
15 Claims. (Cl. 92—128)

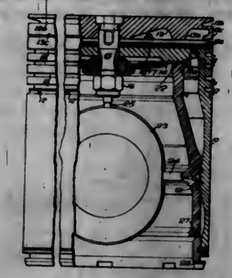


1. A friction device operating mechanism comprising a pair of releasably secured housings, resilient means movably mounted in one of said housings and having a working end extending exteriorly thereof, said resilient means normally exerting a force on said one housing in a direction to effect separation thereof from the other of said housings, extendable means connected with said resilient means, and disabling means connected in lost motion relation between said one housing and extendable means, said disabling means being movable in response to an applied force into engagement with said extendable means to contain the force of said resilient means and prevent actuation of the working end thereof, and said extendable means being extendable to at least partially dissipate the force of said resilient means upon release of said releasable housings.

3,187,643
PISTONS FOR INTERNAL COMBUSTION ENGINES
Joseph A. Pope, Bramhall, England, assignor to Mirrlees National Limited, a company of Great Britain, Northern Ireland and Isle of Man
Filed Sept. 24, 1963, Ser. No. 311,156
21 Claims. (Cl. 92—176)

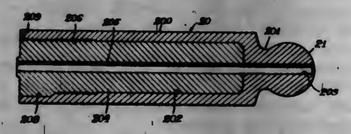
1. A piston for an internal combustion engine having a crown and skirt, characterized in that the piston comprises an assembly of inner and outer crown members being integers separate from but connected to the piston skirt by complementary clamping surfaces so constructed

and arranged as to provide a mechanical joint which simultaneously provides a gas seal and reduces the transmission to the skirt of stresses due to bending or dimensional changes in the crown assembly and further characterized in that the outer crown member is formed on its



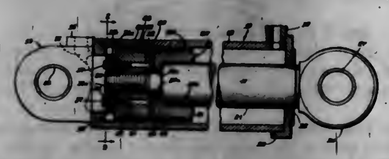
under face with a defined annular pressure-transmitting zone set inwards from the peripheral edge and by inner and outer piston skirts, the former carrying a gudgeon pin and having an end thrust-receiving rim complementarily axially in line with such annular zone.

3,187,644
HYDRAULIC PUMP OR MOTOR DEVICE PISTONS
Charles J. Ricketts, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Aug. 19, 1963, Ser. No. 302,964
20 Claims. (Cl. 92—248)



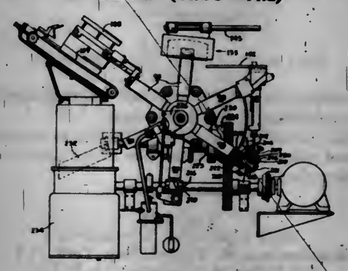
1. A piston for a pump or a motor comprising: a piston body having a hollow interior, at least one generally circumferentially extending groove in the interior of said piston body and having a rounded bottom portion, said rounded bottom portion being formed on a radius at least one-third of the height of said groove, said piston body having rounded portions adjacent the mouth of said groove, and a filler body in said piston body interior and having a portion received in said groove to prevent axial displacement of said filler body relative to said piston.

3,187,645
RECIPROCATING HYDRAULIC MOTOR
R. Duane Cope, Deerfield, Ill., assignor to The Frank G. Hough Co., a corporation of Illinois
Filed Oct. 2, 1961, Ser. No. 142,167
4 Claims. (Cl. 92—258)



1. A piston assembly for a reciprocating hydraulic motor comprising, a piston rod having a threaded portion, a piston head threaded over said threaded portion of said piston rod, said piston head having an annular recess formed therein and concentrically positioned about the threaded end portion of said piston rod, an elastically deformable ring positioned in said recess about said threaded end portion of said piston rod, a compression ring positioned about the outward side of said deformable ring and in said recess, and means carried on one of said piston head and said piston rod and engaging said compression ring to deform said deformable ring into tight engagement with said threaded end portion of said piston rod whereby said deformable ring is in sealing and frictional engagement with said threaded portion.

3,187,646
PACKAGING MACHINE FOR ERECTING AND SEALING PLASTIC COATED PAPERBOARD CONTAINERS
Charles Z. Monroe, Detroit, and Harry B. Egleston, Livonia, Mich., assignors to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 779,229, Dec. 9, 1958, now Patent No. 3,002,328, dated Oct. 3, 1961.
This application Oct. 2, 1961, Ser. No. 142,299
Claims priority, application Canada Dec. 4, 1959
10 Claims. (Cl. 93—44.1)

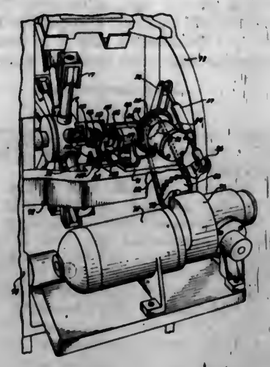


1. In a machine for erecting and sealing the closure elements of containers having thermoplastic material on the surfaces thereof, each said container having an end closure including a pair of opposed outer closure flaps and a pair of opposed infoldable triangular panels, the combination comprising a mandrel, means for presenting the container in open-ended tubular form in alignment wtih said mandrel, movable abutment means for telescoping said tubular form container over said mandrel, a pair of opposed steeple plates connected to said movable abutment means, said steeple plates being disposed for engagement wtih said opposed closure flaps to fold the same inward as an incident to telescoping said container over said mandrel, a bridge fixed adjacent said mandrel for registration therewith, a pair of wings mounted on said bridge for oscillation relative to said mandrel and disposed for engagement with the opposed triangular infoldable panels of said container in cooperation with the action of said steeple plates, and power means on said bridge connected to said wings and adapted to rock them into engagement with said triangular panels also as an incident to telescoping said container on said mandrel.

3,187,647
ROTATING CARTON TUCKER APPARATUS
Eric A. Braun, Farmington, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 25, 1962, Ser. No. 232,942
12 Claims. (Cl. 93—44.1)

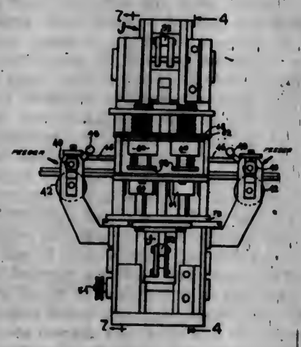
1. A tucking apparatus for a high-speed carton fabricating machine and adapted to operate on the end closure panels of each carton produced in said machine, said apparatus comprising:
(a) a tucker shoe to operate on a first closure panel,
(b) a tucker means moving with respect to the tucker shoe in a timed relationship acting on a second closure panel,

(c) a camming means working in conjunction with the tucker means and tucker shoe bringing said two closure panels together,
(d) a spring loaded detent housed in the tucker means,



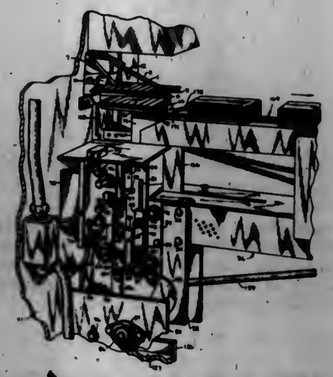
(e) a detent flange as part of said tucker means having means to receive said detent, and
(f) said detent and detent flange acting to maintain the timed relationship between the tucker means and the tucker shoe.

3,187,648
BOX FORMING MACHINE
Konstantinos M. Tserpes, New York, N.Y.
(48 Valley St., Rochester 12, N.Y.)
Filed Mar. 24, 1961, Ser. No. 98,229
17 Claims. (Cl. 93—47)



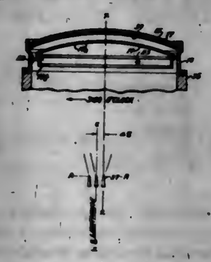
1. A box-forming machine comprising:
(a) means defining a work station;
(b) means for locating a sheet of material at said work station;
(c) forming members movable to said work station to clamp said sheet material thereon over an area on said sheet corresponding to a center panel of the box to be formed;
(d) movable means movable at least to the plane of said work station to cut and score said sheet material to define a box blank thereon with additional panels extending outward from said panel; and
(e) fold members operable to receive said forming members through the plane of said work station to fold additional panels substantially perpendicular to said center panel.

3,187,649
VERTICALLY YIELDING RECEIVING TABLE AND CONTROL MEANS FOR SAME
Charles H. McAlpine, Coloma Township, Berrien County, and Kenneth G. McGowan, Lawrence Township, Van Buren County, Mich., assignors to Winkel Machine Company, Inc., Watervliet, Mich., a corporation of Michigan
Filed Mar. 7, 1963, Ser. No. 263,495
15 Claims. (Cl. 93—93)



1. A platform holding and positioning device, adapted for moving the platform vertically with a change in the load of material thereon and for operating subsequent handling means in response to the vertical position of said platform, comprising the combination:
power means;
a frame structure;
an upstanding slide base on said frame structure;
a slide substantially vertically reciprocable on said slide base and means associated with said slide for supporting said platform;
means energizable by said power means for moving said platform downwardly as said material is placed thereon;
control means actuable in synchronism with said power means and trigger means actuable by said control means at a preselected position of said platform for energizing said subsequent handling means.

3,187,650
COMPENSATION FOR VERTICAL COMPONENT OF EARTH'S MAGNETIC FIELD BY COLOR TRIAD DISPLACEMENT
John L. Hudson, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 30, 1955, Ser. No. 556,649
1 Claim. (Cl. 95—1)



The method of compensating for misregister due to the beam-deflecting effect of the vertical component of the earth's magnetic field upon the beam-electrons in a cathode-ray tube of the kind having (i) a horizontal axis and (ii) a plane-of-deflection, and containing a mask having a multiplicity of apertures therein through which said beam-electrons pass in their transit to preselected elemental areas on the target surface of a nearby screen of the mosaic variety, said method comprising photographically laying-down a mosaic pattern of elemental screen-areas upon said target surface with the aid of light rays projected through said mask from a source located in said plane-of-deflection at a point offset from a color-center in said plane a distance (ΔS) defined by the formula:

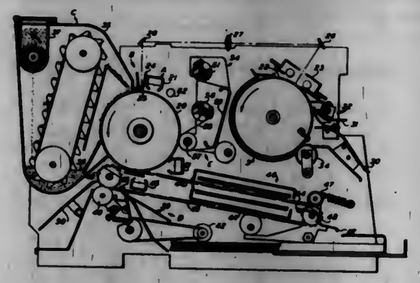
$$\Delta S = \Delta E \frac{P}{q}$$

where:

ΔE is the misregister, in terms of mils, between the beam-electrons and the elemental screen-areas near the center of an uncorrected tube of similar form and dimensions, due to the beam-deflecting effect of the vertical component of the earth's magnetic field,
P is the distance between said plane-of-deflection and said apertured mask and
q is the distance between said mask and screen as measured along said horizontal axis,

and thereafter mounting said mask and screen within said tube with said mask centered on said horizontal axis and said screen offset from said axis a distance (ΔE) dictated by the foregoing formula.

3,187,651
XEROGRAPHIC REPRODUCING APPARATUS
Roger H. Eichorn, Webster, and William G. Lewis, Rochester, N.Y., assignors to Xerox Corporation, a corporation of New York
Filed Dec. 23, 1960, Ser. No. 77,954
7 Claims. (Cl. 95—1.7)



1. A xerographic reproducting apparatus including in combination
a frame,
a xerographic drum journaled for rotation in said frame,
charging means positioned to place an electrostatic charge on said xerographic drum,
a copy drum journaled for rotation in said frame,
a sheet gripper means carried by said copy drum, said sheet gripper means being adapted to cooperate with said copy drum to engage the leading edge of a copy to be reproduced,
a projection mechanism positioned adjacent said copy drum to project a radiation image of a copy as it is carried by said copy drum onto said xerographic drum to form an electrostatic latent image thereon,
an interposer means positioned adjacent said copy drum for movement into a first position to effect operation of said sheet gripper means and to a second position in which it is in an inoperative relation to said sheet gripper means,
developer means positioned adjacent said xerographic drum to develop the electrostatic latent image formed on said xerographic drum,
paper feed means for seriatim feeding of sheet support material to said xerographic drum,
transfer means positioned adjacent said xerographic drum to effect transfer of the developed image on said xerographic drum to a sheet of support material,
drive means connected to said xerographic drum, said copy drum, and said paper feed means to effect synchronized movement of said xerographic drum, said copy drum and said paper feed means, said xerographic drum being rotated at least one revolution to first effect a reproducing cycle and then rotated at least a second revolution to effect a timing out cycle, and,
control means connected to said interposer means, and to said paper feed means to effect the operation of said paper feed means only during said reproducing cycle of said xerographic drum and to move said interposer means.

3,187,652
METHOD AND APPARATUS FOR MEASURING LIGHT
Wolcott S. Kinnard, 4665 N. 56th St., Milwaukee, Wis.
Filed Jan. 4, 1960, Ser. No. 114
4 Claims. (Cl. 95—10)

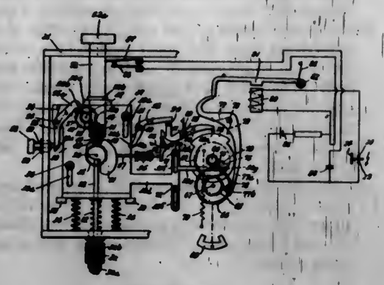


2. A meter of the character described comprising the combination with a photo-conductive cell and a neon glow lamp shunted by a resistor, the said cell and glow lamp having a series connection and means for supplying current thereto, of a variable density screen having a mounting upon which it is movable across said cell in a manner to vary the amount of light reaching said cell from a given source to which the cell is exposed through said screen, the screen comprising opaque areas having minute transparent openings of progressively varying area, the said transparent openings being spanned by means for diffusing light passing through said openings toward said cell.

3,187,653
APPARATUS FOR REGULATING THE EXPOSURE TIME IN PHOTOGRAPHIC CAMERAS
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed July 30, 1962, Ser. No. 213,399
Claims priority, application Germany, July 31, 1961, G 32,835
6 Claims. (Cl. 95—53)

1. A device for operating the shutter of a photographic camera having a shutter release member, means for controlling said shuttter for B-exposures, and an electric switch operated when said shutter is open, said device comprising: first means connected to operate said shutter release member; a resiliently operated driving mechanism connected to said first means to operate the same; cocking means for said driving mechanism; a release member to permit said driving mechanism to operate said first means; a locking mechanism to hold said first means in operative position; time control means comprising a cam and means to move said cam at a controlled speed;

a lever holding said time control mechanism against operation; a battery and capacitor circuit; a second switch connected in series with said circuit and operated by said cocking means to permit said capacitor to be charged from said battery when said driving mechanism is cocked; electromagnetic means connected to said first-named



switch to be connected thereby to said capacitor to be energized for operating said last named lever to release said time control mechanism; and an actuating device controlled by said time control mechanism and cooperating with said cam to release said locking mechanism after a predetermined time.

3,187,654
PHOTOGRAPHIC INTRA-LENS SHUTTER
Franz W. R. Starp, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Feb. 7, 1962, Ser. No. 171,705
Claims priority, application Germany, Feb. 8, 1961, G 31,549
6 Claims. (Cl. 95—63)



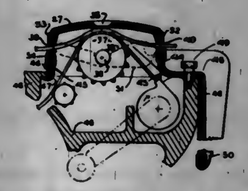
1. A photographic intra-lens shutter construction comprising a plurality of shutter blades, a shutter blade ring operatively connected to each of said shutter blades for effecting adjustment thereof to provide a variable diaphragm aperture, a shutter ring drive means, a setting mechanism operatively associated with said shuttter ring drive means, and a transmission means interconnecting said shutter ring drive means with said shutter blade ring for obtaining a variable angular travel of said shutter blade driving ring in response to the movement of said setting mechanism, said transmission means including a pivotally positioned rocker arm, a driving pawl connecting said rocker arm to said shutter ring drive means, a connecting rod interconnecting said rocker arm to said shutter ring, said connecting rod having one end connected about a fixed pivot to said shutter ring, and a pin and slot connection connecting its other end to said rocker arm whereby the distance between the pivot of said rocker arm and the pivot of said connecting rod connected thereto is rendered variable in response to the movement of said setting mechanism, said slot of said pin-and-slot connection extending substantially radially to the axis of said rocker arm.

3,187,655
RETARDING DEVICE FOR PHOTOGRAPHIC SHUTTER
Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 24, 1963, Ser. No. 253,669
Claims priority, application Germany, Apr. 14, 1960, A 39,397
9 Claims. (Cl. 95—63)



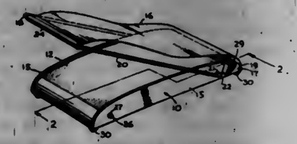
1. A retarding device for a photographic shutter having operating means for opening and closing it and a moving element connected to it characterized in that the exposure time provided by said shutter is a function of the speed of movement of said moving element, said retarding device comprising a retarding lever including driven and retarded ends, pivot means rotatably mounting said retarding lever with its driven end interposed in the path of said moving element for engaging said moving element to retard it and said shutter, a retarding mass, bearing means rotatably mounting said retarding mass in the path of said retarded end of said retarding lever, closed contour means coupling said retarding lever and mass together to cause the retarding effect of said mass to be transmitted through said lever to said shutter during its operation, resilient means, and mounting means causing said resilient means to react between said lever and said mass during the low transmission ratio phase of operation of said retarding device and to be free from reacting between said lever and said mass at higher transmission ratios to maintain said closed contour means in engaged contact during said low transmission ratio phase of operation whereby any play in it is eliminated.

3,187,656
PRINTING ADAPTER FOR FILM-LOADING DEVICES
James W. Lucas, 1480 N. Doheny Drive, Los Angeles 69, Calif.
Filed May 29, 1962, Ser. No. 203,677
4 Claims. (Cl. 95—75)



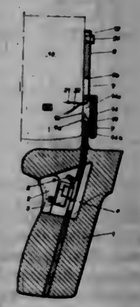
1. The combination comprising: a generally conventional film-loading device including a light tight casing having interiorly thereof a large and a small chamber with an intercommunicating neck therebetween, detachable side cover means forming one side of said casing, an access aperture through the walls of said casing opening into said small chamber and attachment means for mounting a small lid thereover, means for supporting a casette having therein a film winding spool interiorly of said small chamber and crank means enterable through said side cover and being adapted to rotate said spool; and a film printing adapter having a basal portion adapted to interfit within said access aperture opening into said small chamber and being engageable with said lid attachment means adjacent thereto, a throat section extended outwardly from said basal portion and having semi-circular axially aligned grooves disposed inwardly from the outwardly extended edges of two opposite sides thereof, sprocket means being journalled rotatably in said grooves, and movable, cover means adjacent said throat section, said cover having a central aperture therein adapted to admit light therethrough above said sprocket, and a pair of film-receiving slots disposed in spaced sides of said throat section parallel to the rotational axis of said sprocket.

3,187,657
PHOTO-COPYING DEVICES
Sterling M. Smith, 3340 Andrita St., Los Angeles 65, Calif.
Filed June 18, 1962, Ser. No. 203,156
5 Claims. (Cl. 95—77)



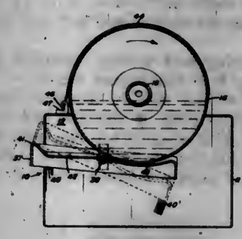
1. A photo-copying device comprising a base having a pair of light-tight chambers at opposite ends thereof, a spindle positioned in a first of said chambers for permitting a rolled sheet of photo-sensitive paper to be unrolled as it is withdrawn from the chamber, a second spindle positioned in the second light-tight chamber and a crank handle affixed thereto for rolling up said sheet of photo-sensitive paper, a resilient pad affixed to the upper side of the base between the light-tight chambers, a flexible transparent sheet attached to the base, means for holding the sheet under tension in a first position of the device to establish a pressure between the sheet and the pad in order to maintain substantially uniform contact between copy materials placed between the transparent sheet and the pad, and a light-tight curtain affixed to the base and disposed to cover the transparent sheet when the photo-sensitive paper is not to be exposed.

3,187,658
HANDLE ASSEMBLY FOR CAMERAS
André Victor Léon Clément Debrie, 111 Rue Saint-Maur, Paris, France
Filed Feb. 8, 1962, Ser. No. 171,957
Claims priority, application France, Feb. 20, 1961, 853,270
9 Claims. (Cl. 95—86)



1. In a camera, in combination, a camera housing having an exterior surface portion; a handle; an extension fixed to and extending from said handle, said extension having a pair of exterior faces directed away from each other and one or the other of which is adapted to be placed in engagement with said surface portion of said housing at the option of the operator; and fastening means engaging said extension and said housing for releasably fastening said extension to said housing with a selected one of said faces of said extension engaging said surface portion of said housing, so that said handle may be connected to said housing in either one of a pair of different positions.

3,187,659
DRUM PROCESSING DEVICE
Charles O. Edens and Albert H. Schick, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 8, 1964, Ser. No. 366,692
6 Claims. (Cl. 95—89)

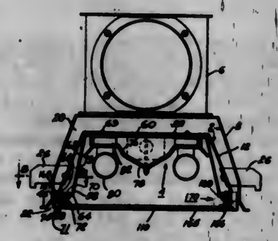


1. A device for applying processing liquids to a surface to be processed of a photographic material comprising:
(a) liquid supply means adapted to provide selected processing liquids, one at a time, for processing such surface of such photographic material;
(b) a drum having a liquid carrying peripheral surface which is partially immersed in said supply means;
(c) means for rotating said drum about a fixed axis to move said peripheral surface through said supply means so that liquid from said supply is received on said peripheral surface; and
(d) means for supporting, during rotation of said drum, said material in a stationary position relative to said fixed axis with said material surface disposed against the received liquid on said peripheral surface so that substantially all of said material surface is simultaneously in contact with such liquid;
whereby the selected processing liquids provided by said supply means are transported by said peripheral surface and applied to said material surface.

3,187,660
THREE-SHELL CONSTRUCTION FOR COMBINATION VENTILATING AND ILLUMINATING UNITS
Herman M. Lazerson, Chicago, Ill., assignor to Solar Light Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 12, 1961, Ser. No. 144,698
3 Claims. (Cl. 98—40)

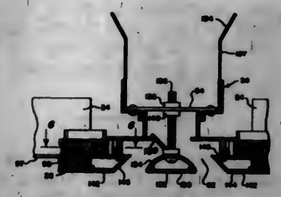
1. A three-shell combination ventilating and illuminating fixture comprising a self-contained two-shell ventilating troffer adapted to receive a single third shell illuminating unit therein in nesting relation therewith, said fixture comprising:
a trough-shaped first shell having open ends;
a trough-shaped second shell having open ends and disposed in nesting relation within said first shell to define air passages therebetween,
each of said first and second shells having a substantially rectangular top wall,
a pair of inclined trapezoidal wall portions extending downwardly and outwardly from a first pair of re-

spective opposite side edges of each of said rectangular top walls,
and a pair of vertical wall portions each extending downwardly from the lower extremity of each of a respective said inclined trapezoidal wall portions of each of said first and second shells and terminating in a plane common with the surface of a ceiling to form an air outlet between said first and second shells;
a pair of generally vertically disposed sheet-like yoke-shaped spacing members defining end walls of said air passages between said first and second shells, each said spacing members located adjacent a second pair of respective opposite side edges of each of said rectangular top walls of said nesting first and said second shells and constituting end plates of said ventilating troffer to close the open ends of said first and second shells and to seal off the air passage defined between the ends of said first and second nested shells;
means connecting said spacing members to each of said nesting first and second shells;
comprising Z-shaped spacing members between said vertical wall portions of said first and second shells to provide an air channel between said vertical wall portions of said first and second shells communicating with said air passage between said first and second shells,



each said Z-shaped spacing member having a first flange abuting a respective said vertical wall portion of said first shell,
a second flange abutting a respective said vertical wall portion of said second shell,
and a web extending between said first and second flanges;
duct means on said first shell for receiving an air supply such that air introduced therethrough into the air passage and communicating air channel between the nested first and second shells is directed outwardly and downwardly to exit from the troffer to constitute said first and said second shells a ventilation troffer;
a third shell disposed in said second shell of said troffer in nesting relation therein;
third shell mounting means on said ventilation troffer for supporting said third shell in said nesting relation within said ventilation troffer;
said third shell having a substantially rectangular top wall, and having substantially rectangular side wall portions each inclined to extend downwardly and outwardly from opposed edges of said last-mentioned top wall;
a pair of end walls each located at a respective opposite end of said top wall of said third shell of said fixture,
each said end wall having a peripheral configuration conforming substantially to the cross-sectional configuration of said third shell,
means on said third shell for accommodating a lighting element to constitute said third shell an illuminating unit.

3,187,661
CEILING CONSTRUCTION
Paul D. Dall, 9324 Mesa Vista, La Mesa, Calif.
Filed Mar. 19, 1962, Ser. No. 180,448
5 Claims. (Cl. 98—40)



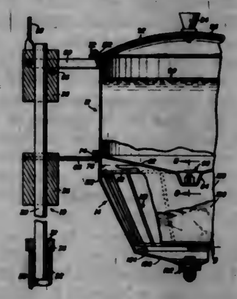
1. A combination comprising:
(A) A ceiling construction including;
(1) a plurality of parallelly arranged and horizontally extending runners spaced from one another, each of said runners including;
(a) a pair of elongated and parallelly arranged primary sections, said primary sections being spaced horizontally from one another by spacing means to provide a vertically extending air passage therebetween;
(b) a pair of elongated and parallelly arranged adapter sections, each one of the latter pair having means for removably attaching the same to one of the primary sections, said adapter sections being spaced horizontally from one another to provide a vertically extending air passage therebetween, said adapter sections each having a flat lower surface;
(2) tile units between the runners and supported by the runners, said tile units each having a lower surface which is coplanar with the flat lower surfaces of the adapter sections;
(B) and means for supporting said runners and tile units.

3,187,662
AIR CONDITIONER ENCLOSURE WITH REMOVABLE PANEL
Joseph W. Kreutiner, North Tarrytown, N.Y., assignor to Bucnaed-Stacy Corporation, New York, N.Y., a corporation of Ohio
Filed May 15, 1962, Ser. No. 194,906
1 Claim. (Cl. 98—38)



In an air conditioning system, a mixing chamber adapted to be mounted adjacent a wall of a room or zone to be conditioned; flexible connectors respectively extending from said mixing chamber through the floor of the room or zone to separate sources of hot and cold air; an air distributor header on the top of said mixing chamber and supporting a cover plate having outlet means leading from said header to the room or zone being conditioned; baseboard means fixed to said floor and arranged at the front of and below said mixing chamber; a vertical removable panel having its bottom edge arranged to cooperate with said baseboard means and its top edge to cooperate with said cover plate; and magnetic means near the top of said panel for holding said panel in place in front of said mixing chamber with said cover plate and baseboard means a side and top for an enclosure means.

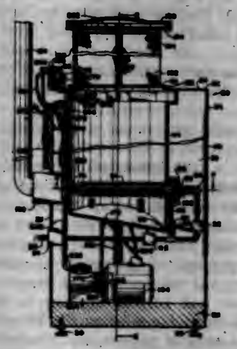
3,187,663
COFFEE BREWER
Clarence M. McLean, Jr., 1312 San Antonio St., Tyler, Tex., and Alvis D. Warren, Tyler, Tex. (4434 Hodge Cove, Memphis, Tenn.)
Filed May 16, 1963, Ser. No. 280,967
11 Claims. (Cl. 99—305)



1. A coffee brewing apparatus comprising a base, a standard supported at its lower end from said base, lower elongated arm means, first mounting means mounting one end of said lower arm means on said standard with said lower arm means projecting generally horizontally outwardly from one side of said standard and spaced above said base, an open top brew pot supported from the free end of said lower arm means and including an outlet in its lower end through which brewed coffee is adapted to be passed into a suitable open top container disposed below said outlet, elongated upper arm means, second mounting means pivotally mounting one end of said upper arm means to a portion of said standard disposed above said lower arm means for rotation about a horizontal axis extending transversely of said standard and swinging movement of the free end of said arm means through a plane between a first lowered and operative horizontally disposed position with the outer end of said upper arm means disposed above said brew pot and a second raised inoperative position with the outer end of said upper arm means swung upwardly from said first operative position, a hot water tank supported from the free end of said upper arm means and including an outlet in its lower portion, the upper and lower portions of said brew pot and hot water tank, respectively, being formed so as to enable the lower end portion of said hot water tank to be seatingly and sealingly engaged with the open upper end of said brew pot when said upper arm means is swung to said first horizontally disposed operative position.

3,187,664
AUTOMATIC DEEP-FAT PRESSURE COOKER
Jack W. Jennings, 5403 E. Kellogg, Wichita, Kans.
Filed Sept. 17, 1962, Ser. No. 223,935
9 Claims. (Cl. 99—329)

1. An automatic deep fat pressure cooker comprising, in combination, a housing having a portion defining an instrument panel, said housing having an opening in the top, a hollow pot positioned in said housing and having the upper edge portion thereof positioned at said opening in said housing, said pot having a generally cylindrical center portion and an inclined lower portion tapering to a drain outlet at the lowermost portion of the interior of said pot, a plurality of electrical heating elements positioned in said lower portion of said pot and having end portions thereof sealingly projecting through said pot, each of said heating elements being electrically connected to a thermostat and to a source of electric power, a heat sensing member electrically connected to said thermostat and positioned within said pot to sense the temperature therein to operate said thermostat, two elongated gas heating pipes having intermediate portions thereof positioned in said lower portion of said pot adjacent said electric heating elements and having the end portions thereof sealingly projecting through said pot, each of said pipes having a plurality of baffles therein extending transversely across said intermediate portions thereof, a primary fuel gas conduit connectible in one end portion to a supply of combustible fuel gas under pressure, two nozzles connected to said gas conduit, each of said nozzles being positioned adjacent and in spaced relation to said inlet ends of said heating pipes, a thermostat operated valve in said gas conduit upstream from said nozzles and operable to open and close said conduit to the passage of gas in response to the temperature in said pot, a pilot light gas conduit connected to said primary gas conduit upstream of said valve therein, a pilot light nozzle connected to said pilot light conduit and positioned at said inlet ends of said heating pipes between said first-named nozzles and said heating pipes, said pilot



light nozzle operable when lit to ignite gas from said first-named nozzles, a thermocouple, said inlet end of one of said heating pipes having said thermocouple mounted thereon adjacent said pilot light nozzle, a safety valve in said primary gas conduit upstream of said pilot light conduit, said safety valve being operatively connected to said thermocouple and operable to close said primary conduit when said thermocouple is cooled as a result of extinguishing the flames of said first-named nozzles and said pilot light nozzle at said inlet ends of said heating pipes, a flue header connected in one end portion to the outer surface of the rear portion of said pot and positioned in fluid communication to the exhaust end portion of both of said heater pipes to receive exhaust gases therefrom, two gear boxes mounted on the outer surface of said lower portion of said pot and positioned at substantially diametrically opposite portions thereof, each of said gear boxes having gears mounted therein and an input shaft connected to said gears and projecting from said gear boxes, two guide tubes each having the lower end portion thereof fixedly connected to said bottom of said housing and each having the upper end portion thereof connected to the bottom of said gear boxes, a reversible electric motor, two drive belts connected to said motor and operatively connected to said input shafts of said gears in said gear boxes to drive same, a cover for said pot, three elongated bars each mounted in one end portion on the inner surface of said cover and received by

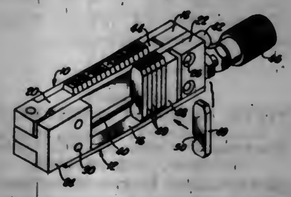
said pot when said cover is in the closed position, said bars being positioned approximately 90° apart and located in the rear half of said cover with the center one thereof being located adjacent said back of said housing, the other end portion of each of said bars being bent radially inwardly toward the center of said pot, a basket for food and the like positioned on said other end portions of said bars, an annular sealing ring mounted on said upper edge portion of said pot and positioned thereon to sealingly engage said cover when in the lowermost position, two rods, each of said rods being mounted in one end portion on said cover at substantially diametrically opposite portions thereof, the other end portions of each of said rods having a continuous helical groove therein, said other end portions of said rods passing through said gear boxes into said guide tubes with said gears in said gear boxes operatively connected to said rods so that operation of said motor causes movement of said gears to raise and lower said rods and said cover, two collars, each of said rods having one of said collars adjustably mounted thereon and positioned between said gear boxes and said cover, two micro-switches electrically connected to said motor to stop same, one of said switches being mounted on said upper edge of said pot with the switch operator thereof positioned to be engaged by one of said collars when said cover is at its uppermost position to open said switch and stop said motor, the other of said switches being mounted on one of said gear boxes and having the switch operator thereof positioned to be engaged by the other of said collars when said cover is at the lowermost position to open said switch and stop said motor, an air compressor, an air conduit connected in the end portions to the air outlet of said compressor and to said upper portions of said pot to pressurize said pot when said cover is closed and said compressor is operating, a valve in said air conduit operable to open and close said conduit to the passage of air, a vent connected in one end portion to said upper portion of said rear portion of said pot and in fluid communication with the interior of said pot, said vent having two outlet openings at the other end portion thereof, a magnetic relief valve operatively connected to one of said outlet openings of said vent, an exhaust pipe connected in one end portion to said magnetic relief valve with the other end portion opening to the atmosphere with gases from said pot being discharged through said vent and said exhaust pipe to the atmosphere when said relief valve is open, a T-shaped coupling having three openings with one of said openings being operatively connected to the other of said openings at said other end portion of said vent, a safety valve operatively connected to another opening of said coupling and operable to open at approximately 20 pounds per square inch pressure to pass gases from said pot therethrough, a pipe connected in the end portions to said last-named safety valve and to an intermediate portion of said exhaust pipe, another safety valve connected to the other opening of said coupling and operable to open at approximately 30 pounds per square inch pressure to pass gases from said pot therethrough, another pipe connected in the end portions to said last-named safety valve and to an intermediate portion of said last-named pipe, a pressure operated switch mounted on said pot and having a pressure sensing portion positioned in said pot, said pressure operated switch having two separate sets of electrical contacts therein movable by said pressure sensing portion in response to the pressure in said pot from a closed position at substantially atmospheric pressure to an open position at approximately 18 pounds per square inch pressure, an electrical inlet socket connectible to a source of electric power, a timer switch mounted on said instrument panel and electrically connected to said inlet socket to receive electricity therefrom, said timer switch having two fixed electric contacts and a clock operated movable contact electrically engageable with said fixed contacts to provide electricity thereto, one of said fixed contacts of said timer switch being electrically connected in series to said other of said micro switches, said electric motor and said inlet socket to complete an electrical circuit and provide current to said motor to cause lowering of said cover when said other of said micro switches is closed, a second electric circuit in parallel to said last-named circuit connecting said one of said fixed contacts of said timer switch in series with said compressor and one of said sets of electric contacts in said pressure operated switch and said inlet socket to cause operation of said compressor until pressure in said pot reaches approximately 18 pounds per square inch to open said pressure operated switch, the other of said fixed contacts of said timer switch being electrically connected in series to said magnetic relief valve and to said inlet socket to complete a third electrical circuit and open said magnetic relief valve and exhaust gases from said pot to reduce pressure therein, a fourth electric circuit in parallel to said third electrical circuit connecting in series said other of said fixed contacts of said timer switch, said one of said micro switches, the other set of contacts in said pressure operated switch, said electric motor and said inlet socket to operate said motor to raise said cover when said one of said micro switches and said other set of contacts in said pressure operated switch are closed, said pressure cooker being constructed and adapted to receive a cooking liquid in said pot with such being heated by said electric heating elements and said heating pipes in said pot, foot or the like received in said basket being lowered into said cooking liquid as said cover is lowered by said motor when said movable contact and said one of said fixed contacts of said timer switch are in electrical contact and while said other of said micro switches is closed, said compressor being operated to pressurize said pot to approximately 18 pounds per square inch with the pressure in said pot opening said contacts in said pressure operated switch to stop said compressor, said movable contact of said timer switch being moved after a preset time interval into electrical contact with said other of said fixed contacts to open said magnetic relief valve and exhaust gases from said pot through said vent and said exhaust pipe to the atmosphere, said contacts in said pressure operated switch being closed when pressure in said pot returns to substantially atmospheric pressure to permit passage of electric current from said other of said fixed contacts through said one of said micro switches and said pressure operated switch to said electric motor to operate same to raise said cover and said basket carried by said cover until said one of said micro switches is opened.

3,187,665

HINGED MULTIPLE LINE TYPE HOLDER

Lewis A. Kingsley, 850 Cahuenga Blvd., Hollywood 38, Calif.

Filed Nov. 1, 1963, Ser. No. 320,808
1 Claim. (Cl. 101—28)



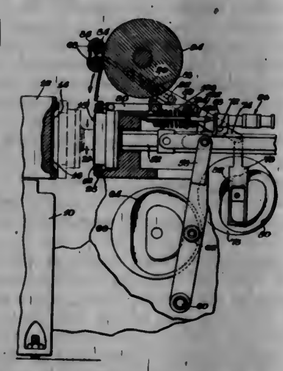
In a type holding means the combination of a pair of type holding devices, each having a floor, a rear wall and opposed end walls forming a type receiving space open at the top and front, a longitudinal ridge extending along the rear wall, individual type each having a groove formed therein to receive a portion of said ridge, said ridge being spaced above the floor of said type receiving space, said type each having an end face abutting said floor when its groove embraces said ridge, and means for clamping said type against one of said end walls; corresponding end walls at one end of each device, hinged together about an axis substantially parallel to said rear walls whereby said devices may be pivoted toward and from a position wherein the rear wall of one covers the open front of the other to thus cooperate with the clamping means, the floor, and ridge and groove means to securely position the individual type in said other type holder, and interengaging pin and socket means at the other ends of said devices.

3,187,666

SPECIAL PURPOSE PRESS FOR MARKING RELATIVELY INCLINED SURFACES

Walter E. Pedroli, Lexington, Mass., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine

Filed Oct. 3, 1963, Ser. No. 313,611
3 Claims. (Cl. 101—44)



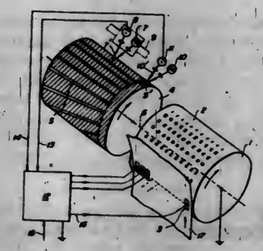
1. An automatic machine for printing on one surface of pulp paper plates of the type having a central base portion with an inclined rim portion therearound comprising a plate printing station including means connected to present plates seriatim and hold them during the printing operation with the surfaces to be printed exposed, a type face inking station including cylindrical roller means connected to traverse a type face and come to rest against a re-inking member, a printing head mounted for to-and-fro shifting motion along a predetermined path terminating at one end of the plate printing station and at the other end at the type face inking station, the printing head including a first type face for printing on the base of plates, a second type face for printing on the inclined rims of plates, means mounting the first type face in fixed relation on the printing head, means mounting the second type face for limited to-and-fro shifting motion relative to the printing head along a predetermined path terminating at one end in a printing position wherein the second type face is angled to the first type face to correspond with the inclination of plate rims and at the other end in an inking position wherein the second type face is aligned with the first type face to correspond with the traverse of the inking roller means, drive means connected to shift the printing head to-and-fro along its predetermined path in timed coordination with the presentation of plates at the printing station and to traverse the inking roller means across the type face in timed coordination with the shifting of the printing head to the inking station, the drive means being connected to shift the second type face along its predetermined path between the printing position and the inking position in timed coordination with the shifting of the printing head, the drive means being arranged to insure that the second type face is in its printing position prior to the arrival of the printing head at the printing station whereby both type faces come into registry simultaneously with plate surfaces to be printed.

3,187,667

HIGH SPEED APPARATUS FOR LINE-PRINTING

Toku Hojo and Hirofumi Takeya, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed June 18, 1963, Ser. No. 288,715
Claims priority, application Japan, June 20, 1962, 37/25,112
6 Claims. (Cl. 101—93)



1. A line printing apparatus for printing the information signal output of an electronic computer or the like, comprising:

a plurality of relatively stationary selective printing heads;

a rotary type-carrying member;

synchronizing means for producing a plurality of synchronizing pulses all having the same pulse interval t including a rotary element having means for varying by the same amount the pulse interval t for all the synchronizing pulses, and connecting means operatively connecting said rotary element with said rotary type carrying member;

means for feeding a recording sheet between said printing heads and said rotary type carrying member at a travelling speed v;

means for driving said rotary type-carrying member at a linear speed V such that

$$C=\frac{V}{v}=\text{constant}$$

and selective control circuit means operatively connected with said printing heads and including means for selectively operating said printing heads in response to said information signal output and said synchronizing pulse to effect on said sheet a line-printing in a variable pitch line.

3,187,668

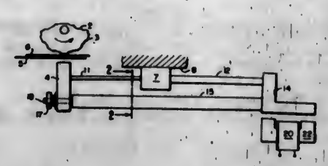
HAMMER SUSPENSION FOR HIGH SPEED PRINTER

Lynn W. Marsh, Jr., Marblehead, Mass., assignor to ANelex Corporation, Boston, Mass., a corporation of New Hampshire

Filed June 27, 1963, Ser. No. 291,012
4 Claims. (Cl. 101—93)

1. In a high speed printer, a print wheel and a hammer block constructed and arranged for impacting said print wheel, a flexible suspension for said hammer block comprising a stationary base member, a freely movable actuating block, a first flexible beam cantilevered at one end thereof in said base member, extending in one direction therefrom, and affixed at an opposite end thereof in said hammer block, a second flexible beam substantially co-

axial with said first beam and cantilevered at one end thereof in said base member, said second beam extending in an opposite direction than said first beam from said base member, and affixed at an opposite end thereof in said actuating block, and a third flexible beam affixed at opposite ends thereof in said hammer block and said actuating block, said first and second beams extending

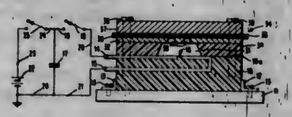


generally parallel to said third beam to form a deflectable suspension flexibly supporting said hammer block and said actuating block on said base member, means for releasably moving said actuating block in a direction transverse to the parallel extent of said beams, for effecting oscillatory displacement of said hammer block into engagement with said print wheel upon movement and subsequent release of said actuating block.

3,187,669
HIGH SPEED SPARK DISCHARGE PRINT DEVICE

Bernard J. Greenblott, Needham, Mass., and Robert J. Hart, Johnson City, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 24, 1962, Ser. No. 246,721
4 Claims. (Cl. 101—114)



1. A spark discharge impact printing device comprising in combination

(a) a spark generator including electrode means mounted on a reflector member,

(b) said electrode means being mounted on said reflector member such that a spark gap is formed by said electrodes adjacent a surface of said reflector member,

(c) means for producing a high energy spark discharge across said electrode means pressure wave reflector member,

(d) focusing means positionable adjacent said surface of said reflector member, said focusing means having a focusing passageway positionable at one end against said reflector surface so as to define a finite volume of a compressible gas in the region proximate said spark gap,

(e) a stencil member having shock wave and plasma shaping apertures therein operable for producing a data pattern of shock waves and plasma from shock waves and plasma produced in said gas volume in said focusing passageway,

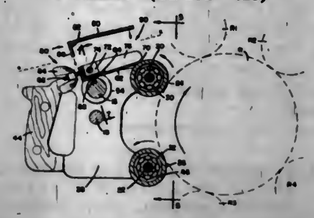
(f) means for locating said stencil member with said shaping apertures adjacent the second opening of said focusing passageway,

(g) and platen means for supporting pressure sensitive record material adjacent the anterior surface of said stencil member in impact receiving position over said shaping apertures in said stencil member.

3,187,670
PORTABLE INK-REMOVAL DEVICE FOR INK ROLLS

Edward J. Jennings, 1024 31st Ave., Bellwood, Ill., and Robert J. Tagué, 4908 E. Lake Shore Drive, Wonder Lake 3, Ill.

Filed June 10, 1963, Ser. No. 286,721
3 Claims. (Cl. 101—425)

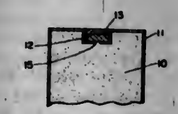


1. A portable manually applicable reversible self-contained ink-removal device for cleaning ink from a printing press roll or the like and comprising a framework including a pair of spaced apart parallel side plates providing handles for the device, an ink transfer roller and a stabilizing roller having their opposite ends rotatably supported upon the side plates and extending thereacross in spaced parallel relationship, said device being manually and selectively positionable against one side of a rotating ink roll with either the transfer roller overlying or underlying the stabilizing roll, and with both rollers in driven contact with the rotating press roll to be cleaned under the influence of manual pressure, a scraper blade carried by the framework and having a free edge in permanently positioned substantially tangential yielding scraping contact with the transfer roller, and an ink trough having an open ink-receiving mouth in the vicinity of said transfer roller for receiving the ink scrapings from said free edge of the scraper blade, said scraper blade constituting one side wall of the ink trough, said ink trough including a removable plate opposite to and spaced from the scraper blade and constituting the opposite side wall of the ink trough, said scraper blade underlying the removable plate and being adapted to receive and support ink scrapings on one side thereof when the device is positioned with the transfer roller overlying the stabilizing roller, said removable plate underlying the scraper blade when the device is positioned with the transfer roller underlying the scraper blade and being adapted to receive and support ink scrapings which flow by gravity from the scraper blade.

3,187,671
PRIMER FOR CONSUMABLE ROUND

Joseph Quinlan, Philadelphia, Pa., John J. Scanlon, Levittown, N.J., and Earl F. Van Artsdalen, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

Filed Aug. 1, 1962, Ser. No. 214,152
4 Claims. (Cl. 102—43)
(Granted under Title 35, U.S. Code (1952), sec. 266)



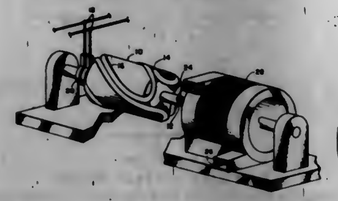
1. In a round having a consumable cartridge case the combination of a propellant, a primer in the rear of said propellant, said primer comprising a body of primer mix contiguous said propellant in a topping charge defined by a body of explosive material fixed on the rear of said primer mix body, said topping charge being more sensitive to ignition by impact than is said primer mix whereby upon impact by a firing pin or the like said topping charge fires said primer mix and said primer mix in turn fires said propellant, and said topping charge including the following ingredients in percentage by weight:

Potassium chlorate	44
Antimony sulfide	49
Red phosphorus	5.5
Gum arabic or gum tragacanth	1.0
Magnesium carbonate	0.5

3,187,672
ELECTROMAGNETIC PUMP

Richard S. Baker, Northridge, Calif., assignor to North American Aviation, Inc.

Filed Jan. 25, 1963, Ser. No. 253,903
6 Claims. (Cl. 103—1)



1. An electromagnetic pump for pumping electrically conductive liquids comprising:

(a) a helical rotor means having at least first and second pole surfaces,

(b) a flux return path means adjacent to said rotor means,

(c) a pump region juxtaposed between said rotor means and said flux return means,

(d) at least one helical guide vane in said pump region defining a helical channel skewed circumferentially in a direction opposite to said helical rotor,

(e) each of said pole surfaces skewed circumferentially to intersect said skewed helical channel at an angle of substantially 90 degrees,

(f) at least one inlet and one outlet port in said pump region, and

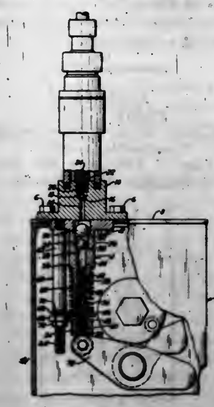
(g) means associated with said rotor means providing a field source of magnetic flux across said pump region so that rotation of said rotor means induces eddy currents which flow in paths in a conductive liquid in said pump region that conform with the helical geometry of said rotor means and interact with the magnetic flux field to impart resultant pumping forces F_R that are substantially parallel with said helical channel.

3,187,673
PUMP APPARATUS

William E. Kramer, Pittsburgh, Pa., and Joe M. Hindman, Kenedy, Tex.; assignors to Warren Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed July 5, 1963, Ser. No. 293,064
1 Claim. (Cl. 103—38)

A pump comprising a cylinder provided with an oil passage extending axially therethrough, a piston provided with an oil passage extending axially therethrough slidably and partially disposed within said first oil passage, a collar securely attached to said piston, a spring circumferentially disposed about said cylinder and said piston normally urging said piston out of said cylinder, a rod fixedly disposed adjacent said cylinder and said piston, and adjustable nut on said rod in the path of movement of said collar limiting outward movement of said piston from said cylinder, shims on said rod on one side of said adjustable nut for adjusting the position of said adjustable nut and a lock nut on said rod on the other

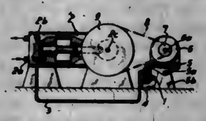


side of said adjustable nut for holding said adjustable nut in place.

3,187,674
DEVICE FOR REGULATING CONTACT PRESSURE BETWEEN DRIVING AND DRIVEN ELEMENTS OF TRANSMISSION

Paul Hammelmann, 17 Zum Sundern, Oelde, Westphalia, Germany

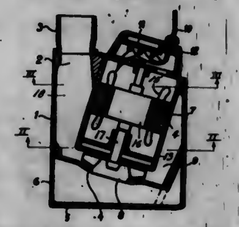
Filed Jan. 9, 1963, Ser. No. 250,253
Claims priority, application Germany, Jan. 16, 1962, H 44,638
19 Claims. (Cl. 103—57)



6. A pressure generating apparatus, comprising a fluid pressure generating machine having fluid-admitting intake means, outlet means through which compressed fluid is discharged therefrom, and fluid compressing means including a rotary shaft for drawing fluid through said intake means and for expelling pressure fluid through said outlet means in response to rotation of said shaft, said machine being arranged to operate at different loads and to expel fluid at pressures which change in response to changes in load upon said machine; a prime mover including a motor having a rotary output shaft; a transmission for transmitting rotation of said output shaft to said first mentioned shaft, said transmission comprising a driven element operatively connected with said first mentioned shaft whereby it offers varying resistance to transfer of motion thereto when the pressure of fluid which is being evacuated through said outlet means varies, and a driving element operatively connected with said output shaft and in motion transmitting engagement with said driven element; a support for said driving element and for said motor, said support being movable with respect to said driven element in directions to change the contact pressure between said elements; a fixed support; a regulating device operating between said supports and connected with said outlet means for moving said first mentioned support in a direction to increase the contact pressure between said elements in response to increasing pressure of fluid which is evacuated through said outlet means; and resilient pressing means operatively connected to said first mentioned support for biasing said first mentioned support in said direction to increase the contact pressure

between said elements, said resilient pressing means providing a decreasing bias as said regulating device moves said first mentioned support to increase the contact pressure, so that said contact pressure has a minimum value when said load is at a minimum.

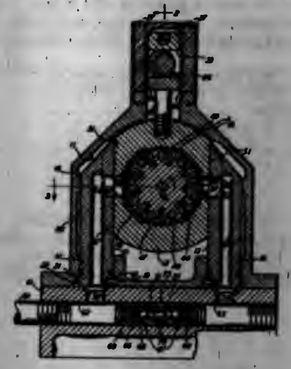
3,187,675
PUMP UNIT
Ernst Göran Vejde, 5 Furusundsgatan, Stockholm, Sweden
Filed July 17, 1963, Ser. No. 295,737
5 Claims. (Cl. 103—87)



1. A pump unit comprising a substantially cylindrical pump casing having an inlet at one end and an outlet at an opposite end, an electric motor with a substantially cylindrical motor casing having a first end and a second end and a rotatable shaft driven by said motor projecting from said motor casing through said first end thereof, an impeller attached to said projecting shaft, said motor with said motor casing being disposed within said pump casing with said first end of said motor casing and said impeller attached to said shaft projecting through said first end facing the inlet end of said pump casing, said pump casing and the motor casing defining therebetween a fluid passage which leads from said inlet to said outlet, said motor casing being disposed within said pump casing with the axis of symmetry of the motor casing extending at an acute angle relative to the axis of symmetry of said pump casing and with said first end of said motor casing lying substantially centrally within said pump casing and said second end of said motor casing lying eccentrically within said pump casing such that at said first end of said motor casing said fluid passage has an annular cross-section with a substantially uniform breadth and at said second end of said motor casing said fluid passage has a cross-section of varying breadth, said outlet of said pump casing being located at the latter cross-section of said passage.

3,187,676
REVERSIBLE VARIABLE VOLUME PUMP
Philip Hartmann, Racine, Wis., assignor to Hartmann Manufacturing Co., Racine, Wis., a corporation of Wisconsin
Filed Oct. 17, 1962, Ser. No. 231,064
8 Claims. (Cl. 103—120)

1. A reversible variable volume pump comprising a housing and having a chamber therein, a port ring movably disposed in said chamber and spaced from said housing, a guide member fixedly mounted in said housing on each of the opposite sides of said port ring and extending across said port ring in the direction of movement of the latter, said port ring and said guide members having mated arcuate surfaces in sliding engagement for guiding the movement of said port ring, said port ring having a bore therein and two fluid passageways therein respectively extending through said opposite sides and into fluid-flow communication with said bore and through said arcuate surfaces, a rotor rotatably mounted in said housing on a fixed axis and disposed inside said port ring for moving fluid therein, and each said arcuate surface of said guide members having a fluid passageway extending therein in separate fluid-flow communication with said passageways of said port ring for conducting fluid into



and out of said port ring bore as determined by the position of said port ring.

3,187,677
ROTARY PISTON PUMP
Wilhelm Stieber, 20 Spitalstrasse, Weingarten, Wurttemberg, Germany
Filed Nov. 5, 1962, Ser. No. 235,220
11 Claims. (Cl. 103—120)

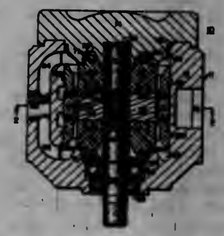


1. A rotary piston pump comprising:
an annular rotor element having circumferentially equally spaced radial slots,
a vane device radially slidably placed in each of said slots,
an outer elastic annular element coaxially surrounding said rotor and confining a space around said rotor which space is divided by said vane devices into suction and pressure chambers,
an inner elastic annular element coaxially placed inside said rotor and confining a space adjacent to the inside of said rotor which space is divided by said vane devices into suction and pressure chambers,
means placed radially outside of said outer elastic annular element for elastically deforming said outer elastic element to change the curvature thereof and the configuration of said suction and pressure chambers,
an inlet means connected to each of said suction chambers, and
an outlet means connected to each of said pressure chambers.

3,187,678
POWER TRANSMISSION
Raymond B. Pettibone, Detroit, Mich., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed May 19, 1959, Ser. No. 814,293
9 Claims. (Cl. 103—136)

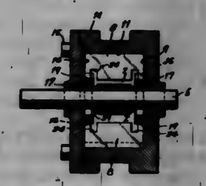
1. A fluid energy translating device comprising: a housing having an external connection outlet port; a cylindrical

bore in said housing; a cartridge positioned as a unit in said bore, said cartridge comprising a cam ring, a vane carrying rotor rotatable in said ring and forming a fluid delivery zone, a pair of fluid pressure responsive plates each having inner and outer axial surfaces, said plates arranged, one on each side of said rotor and ring, said plates having their inner surfaces in fluid sealing engagement with the rotor, and holding means maintaining said ring, rotor and pressure plates together as an assembled unit, said means permitting simultaneous pressure responsive loading of said plates with said ring and rotor; a pair of low pressure chambers and a pair of high pressure chambers, one of each located on the outer ends of the bore; means forming a pair of hub areas on the outer surfaces



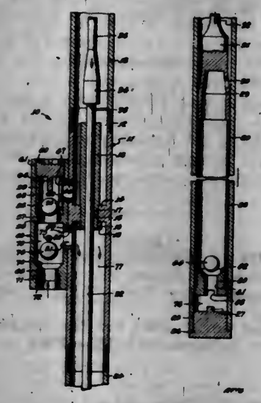
which telescope in said low pressure chambers in response to the fluid outlet pressure in said high pressure chambers acting against the remaining areas on said outer surface; means connecting the fluid delivery zone to each high pressure chamber comprising a fluid outlet port extending completely through each pressure plate which respectively open at opposite ends thereof to the fluid displacement zone and the high pressure chambers immediately adjacent the outer surface of said plates; and means including said pressure plate outlet ports and both of said high pressure chambers for conducting fluid displacement from said fluid delivery zone to the external connection outlet port comprising passage means connecting both of said high pressure chambers to said external connection outlet port.

3,187,679
ROTARY MACHINE
Frank Scognamillo, 118 Walnut St., Ridgewood, N.J.
Filed June 10, 1963, Ser. No. 286,860
4 Claims. (Cl. 103—136)



1. A rotary machine comprising
a casing having a cylindrical body portion and end walls cooperatively forming a cylindrical pump chamber,
a shaft journaled eccentrically in said cylindrical pump chamber,
a rotor carried by said shaft in eccentric relation to said cylindrical pump chamber,
the cylindrical body portion of the casing having inlet and outlet ports at opposite sides of said rotor,
said rotor having radial slots therein,
blades slidingly confined in said slots and having the ends of the same flush with the opposite ends of the rotor,
said rotor having concentric annular recesses in the ends of the same about the shaft intercepted by said slots and whereby the inner edges of the blades at opposite ends are exposed in said annular recesses and
blade controlling rings loosely seated in said annular recesses in the ends of the rotor,
said rings having an internal diameter greater than and clear of said shaft and an external diameter sufficient in engagement with the blades to hold them radially outward in cooperative relation with the cylindrical wall of the casing,
the end walls of said casing each being smooth and flat in a single plane, with said rings, the rotor and the ends of said blades in flush, free sliding engagement therewith and sealing said pump chamber against said radial slots and annular recesses in the rotor,
said radially sliding blades resting at their inner edges on said rings and having radial notches in said inner edges set inward from the ends of the blades and extending from the slots in the rotor to said rings and to said annular recesses in the ends of the rotor and thereby communicating the rotor slots in back of the sliding blades with said annular recesses and the rings operating therein and whereby fluid in the inner ends of the radial slots in back of the blades is free to circulate through said notches in the blades and the annular end recesses to opposite sides of the shaft, thereby preventing back pressure on the blades and leaving them free to be positioned by said rings.

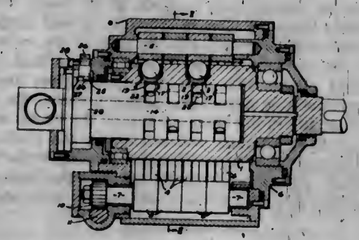
3,187,680
DEEP WELL PUMP FOR VISCOUS OIL
Wayne N. Sutliff, 2931 Pierce Road, Bakersfield, Calif.
Filed June 25, 1963, Ser. No. 290,507
4 Claims. (Cl. 103—155)



1. In a deep well pump, the combination of: a tubular body, a downward extension of which provides a pump barrel; a transverse wall provided at an intermediate level in said body; plug means closing the lower end of said barrel; a plunger vertically slidable in said barrel to produce a vacuum between said plug means and said plunger on the upstroke of the latter, said vacuum substantially assisting the downstroke of said plunger which follows; a plunger stem extending upward from said plunger; stem sleeve means provided in said wall for slidably receiving said stem; means connecting to the upper end of said stem for reciprocating said plunger in said barrel, the space in said barrel above said plunger comprising a pump chamber; valve means for admitting well fluid into said pump chamber during a downstroke of said plunger and directing said fluid from said pump

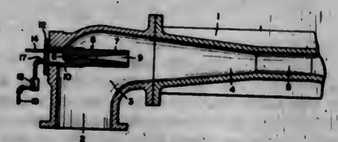
chamber into the upper portion of said tubular body located above said wall during the following upstroke of said plunger, said plunger being hollow, and communicating at its upper end with said pump chamber; and check valve means closing the lower end of said plunger to downward fluid flow therefrom but admitting fluid upwardly into said plunger from beneath the latter.

3,187,681
HYDRAULIC BALL PUMPS AND MOTORS
Donald Firth and Roger Harvey Yorke Hancock, East Kilbride, Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a British corporation
Filed Jan. 12, 1962, Ser. No. 165,904
Claims priority, application Great Britain, Jan. 27, 1961, 3,210/61
4 Claims. (Cl. 103—161)



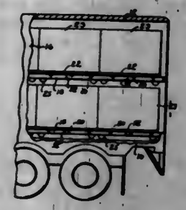
1. An hydraulic radial machine comprising a casing; a rotary cylinder block journalled in the casing; a plurality of substantially radial cylinder bores in the cylinder block, each bore having a cylindrical wall containing an annular groove having axially-spaced side walls; a ring cam surrounding the cylinder block with radial clearance therefrom; a ball piston located in each cylinder and bearing on the ring cam; a pintle located in an axial bore in the cylinder block and controlling the port events of each cylinder; and a liner with a hard, low-friction, internal surface in each cylinder bore in the block, said liner having a cylindrical external surface which is an interference fit in the cylinder bore and an external flange disposed in said groove between the side walls thereof and with an interference fit against the bottom thereof.

3,187,682
HIGH VACUUM STEAM EJECTOR
Harold A. Bradshaw, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 1, 1963, Ser. No. 320,908
3 Claims. (Cl. 103—278)



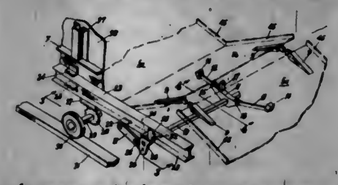
1. A steam ejector nozzle comprising:
(a) a body enclosing a steam discharge passage having an inlet orifice and an enlarged chamber located around the inlet orifice;
(b) a surface surrounding said inlet orifice and extending forwardly of it and transverse to its axis;
(c) a steam inlet conduit extending into said chamber and arranged to discharge steam and any water in the steam against said surface at a point located forwardly of and radially outward from said inlet orifice;
(d) and means for draining water from said chamber before it can enter said inlet orifice.

3,187,683
CARGO HANDLING APPARATUS
Robert C. Schroeder, 5 Raymond Court, Dearborn, Mich., and David D. Wood, 9000 Warren Road, Plymouth, Mich.
Filed Aug. 20, 1962, Ser. No. 217,867
11 Claims. (Cl. 104—135)



1. In a cargo storage area having an elongated cargo space defined in part by two side structures: the improvement comprising guideways extending longitudinally within the cargo space along the side structures; a series of cargo carriers adapted to be slidably supported in end-to-end relation on said guideways for longitudinal movement therealong; each carrier having a retractable latch, and at least one of the side walls having a cooperating keeper; each latch being provided with an operator which extends longitudinally of the carrier; each operator having opposite end portions which normally project beyond the front and rear limits of the carrier so that a longitudinal actuating force on either end portion is effective to operate the latch; the opposite end portions of each operator being laterally offset on opposite sides of a longitudinal line taken through the carrier so that adjacent end portions of the operators on different carriers are prevented from striking one another.

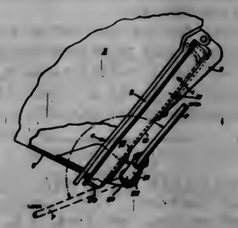
3,187,684
RAPID DISCHARGE HOPPER CAR
Robert C. Ortner, Cincinnati, Ohio, assignor to Ortner Freight Car Company, a corporation of Kentucky
Filed Mar. 6, 1961, Ser. No. 93,529
4 Claims. (Cl. 105—248)



1. In a hopper car having a body the bottom of which comprises a discharge opening closed by a series of hopper doors arranged in opposing pairs hingedly secured to door supporting members extending between the opposite sides of said discharge opening, the hopper doors in each such opposing pair being movable in opposite directions from a fully opening position in which the said hopper doors hang downwardly to a closed position in which the said hopper doors swing upwardly away from each other so as to close the portion of the discharge opening covered thereby, door actuating means operative to move the pairs of doors from the open to the closed position, to lock the pairs of doors in the closed position and, upon unlocking movement, to release the pairs of doors so that they will drop to the fully open position, said actuating means comprising a series of locking units mounted between the opposing doors

in each such pair of hopper doors, said locking units each comprising a rock shaft extending lengthwise between the opposing doors, a bell crank fixedly mounted on the rock shaft with its opposite ends extending toward the opposing hopper doors, rigid links pivoted to the ends of said bell crank, the opposite ends of said links being pivotally connected to the opposing doors, said bell crank being movable by said rock shaft from a fully closed position in which said links bias the opposing doors to their closed position, to an open position in which said links release said opposing doors for opening movement, stop means positioned to contact an arm of said bell crank to establish the fully closed position of the bell crank, in which position the bell crank and links lie in beyond dead center relation and the opposing doors are locked closed, and rock shaft actuating means operatively connected to each of said rock shafts, said rock shaft actuating means being movable in opposite directions and including linkage means operative when said rock shaft actuating means is moved in one direction to rotate said rock shaft so as to move the bell cranks from their open to their fully closed beyond dead center position and, when said rock shaft actuating means is moved in the opposite direction, to rotate the rock shafts in their opposite direction sufficiently to return said bell cranks and links from their beyond dead center position, whereupon the rock shafts are free to rotate under the influence of the bell cranks and links as the opposing pairs of doors are released for opening movement.

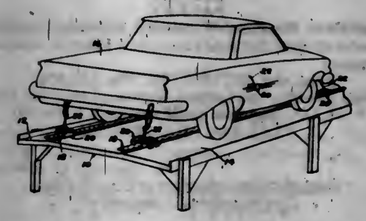
3,187,685
HOPPER DOOR LOCKING MECHANISM
Walter L. Flocke, Toledo, Ohio, assignor to Unitcast Corporation, Toledo, Ohio, a corporation of Ohio
Filed May 4, 1960, Ser. No. 26,747
6 Claims. (Cl. 105—253)



1. In a hopper door locking mechanism having a hopper-mounted keeper, a door-mounted latch engageable with the keeper for locking a hinged hopper door in closed position, and a shaft rotatably mounted on said door for operating said latch, the combination of an operating head fixed to said shaft and having an actuating bar-receiving socket oblique to the rotative axis thereof, said socket in a release position of said latch having its axis in a plane substantially parallel to an outer face of said door and being swingable inwardly from said plane toward said keeper in locking said mechanism, and means operative on unlocking of said mechanism for preventing said socket from swinging outwardly substantially beyond said plane.

3,187,686
CARGO HOLDDOWN APPARATUS
Frank B. De Podesta, Farmington, Mich., assignor to Paragon Bridge & Steel Company, Novi, Mich., a corporation of Michigan
Filed May 8, 1961, Ser. No. 108,503
12 Claims. (Cl. 105—368)

11. In combination, a cargo carrier having a deck for supporting cargo, anchoring means secured to said deck of the cargo carrier comprising a rail having a portion of generally T-shaped cross section defined by a web extending transversely from said deck and a flange extending transversely to said web spaced from said deck, said flange having a longitudinally extending row of holes therein spaced transversely from said web, a holddown mechanism comprising a pair of side plates connected in spaced apart relation and having their lower ends turned inwardly and extending towards each other adjacent the web side of said flange for slidably interengaging the holddown mechanism with said rail for longitudinal movement therealong, said holddown mechanism being free to shift on said rail to a limited extent in an unlocked condition thereof in a direction perpendicular to said flange, said holddown mechanism having locking means including a stud carried thereby adapted to be inserted in any selected one of said flange holes by said shifting movement and means pivotally mounted on said holddown mechanism pivotal into engagement with said rail flange for imparting said shifting movement to the holddown mechanism in a direction to draw said inwardly turned ends of said side plates up tightly against said web side of said flange, and a windlass mechanism supported between said side plates adjacent the side of said flange opposite said web side thereof for applying tension to a flexible element adapted for interconnecting said holddown member to cargo positioned on the deck.



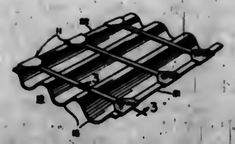
3,187,687
SUPPORTING DEVICES FOR SERVING TRAYS
Albert E. Mahner, P.O. Box 153, Blue Island, Ill.
Filed Jan. 3, 1964, Ser. No. 335,614
7 Claims. (Cl. 108—9)



1. A device for leveling a serving tray on a user's lap, comprising a pair of parallel side rods, a frontal cross-bar with end portions slidable along the side rods, a cross-rod connecting the side rods at the rear, a pair of side pieces companion to the side rods and with upper edges engaging the under side of the tray for supporting the same, the side pieces being pivoted at their rear ends to the cross-rod, and the frontal cross-bar being urged to maintain engagement with the lower edges of the side pieces and movable forth and back for the angular adjustment of the side pieces to level the tray.

3,187,688
PALLET
Herbert A. Krellick, Webster Groves, Mo., assignor to Woodker Corporation, a corporation of Illinois
Filed Dec. 30, 1963, Ser. No. 334,478
6 Claims. (Cl. 108—55)

1. A pallet comprising a corrugated base element and separately-structured, form-retaining means spanning the



base element transversely of the corrugations and embracing the opposite lateral perimeters of the base element to retain the same in normal planar disposition.

3,187,689
PALLET
Ruthart Hess, Hamburg-Wandsbek, Germany, assignor to Kunststoffwerk Erbach G.m.b.H., Erbach, Odenwald, Germany
Filed Oct. 19, 1962, Ser. No. 234,574
Claims priority, application Germany, Oct. 20, 1961, P 19,335, Reg. No. (utility model) 1,856,981
13 Claims. (Cl. 108—58)



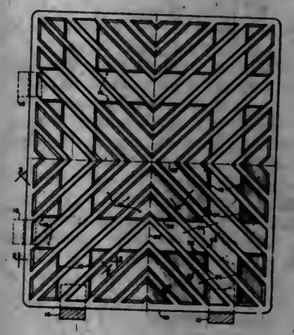
1. A pallet, comprising in combination, a platform, a plurality of intersecting reinforcing channel members arranged under said platform in a plane parallel to said platform and being secured to the undersurface of said platform, at least two substantially parallel channel members are arranged immediately underneath said plurality of reinforcing channels in a plane substantially parallel thereto, said channel members and said plurality of reinforcing channels being substantially co-extensive with said platform, a base member extending transversely and parallel to said platform underneath said two channel members, said base member extending obliquely upwardly toward said platform between the edges of the latter and said channel members and being operatively connected to said platform at substantially the edges thereof, each one of said two channel members having at least one outwardly facing opening for the insertion of lifting means.

3,187,690
FOUR-WAY PALLETS
Theodore J. Denbeau, 423 Hyde Park Blvd., Niagara Falls, N.Y.
Filed Dec. 26, 1962, Ser. No. 246,086
13 Claims. (Cl. 108—58)



1. A four way pallet for supporting articles in such manner that they may be readily transported by conventional fork-lift trucks having a fork comprising a pair of projecting parallel members which comprises spacing means consisting of four spacing blocks; base means directly attached to one face of each of said blocks; and substantially identical load-supporting means directly attached to the opposite faces of each of said blocks; said blocks being arranged in spaced parallel pairs whereby to define with their outer faces the central portions of the four sides of a rectangle and being of such size and so spaced as to permit entry of the fork of a fork-lift truck between each pair of parallel blocks and said base means being open at the center of said pallet.

3,187,691
MOLDED PALLET
Ammon M. Leitzel, Portland, Oreg., assignor to Pacific Pulp Molding Co., Portland, Oreg., a corporation of Washington
Filed May 20, 1963, Ser. No. 281,711
6 Claims. (Cl. 108—58)



1. A pallet for supporting a load of material thereon, comprising:
a molded pallet member of wood pulp having a pair of substantially parallel channels formed integral with said pallet member on one side thereof;
said pallet member having a plurality of stiffening ribs formed integral therewith to extend diagonally across said pallet member; and
said ribs having flat top and bottom portions on the opposite sides of said pallet member which are substantially coplanar to enable the load to be distributed on said top portions, and to enable the pallet member to rest on said bottom portions.

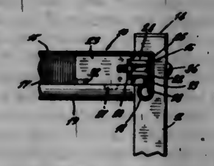
3,187,692
FOLDABLE WALL SHELVES
Leo Rose, East Rockaway, N.Y., assignor to Maurice Duchin Creations, Inc., New York, N.Y., a corporation of New York
Filed Mar. 25, 1963, Ser. No. 267,612
1 Claim. (Cl. 108—134)



In a foldable wall shelf, the combination of a vertical back member adapted to be mounted on a wall, a pair of transversely spaced and horizontally coaxial bearings secured to the front face of said back member intermediate the top and bottom of the back member, a shelf member comprising a panel having a back edge and a marginal wire rod frame supporting said panel, said frame having a pair of horizontally coaxial free end portions parallel to but spaced from the back edge of said panel, said free end portions of the frame having transversely spaced opposing ends and being rotatably journalled in the respective bearings whereby to hingedly connect the shelf member to the back member and permit swinging

of the shelf member in a vertical plane between a horizontal operative position and a vertical inoperative position wherein the shelf member is folded flat against the top portion of the back member, a pair of vertically spaced and vertically coaxial bearings secured to the front face of the bottom portion of said back member in coplanar relation with said horizontally coaxial bearings and transversely midway between the latter, a wire rod brace having a straight lower portion rotatably journalled in said vertically coaxial bearings and a curved upper portion, said brace being swingable in a horizontal plane from an operative position wherein it projects forwardly from said back member to an inoperative position wherein it is folded substantially flat against one side of the bottom portion of the back member, said panel of the shelf member resting on said curved upper portion of said brace when the shelf member and brace are in their operative positions, and a seat provided at the underside of said shelf member panel for removable reception of the curved upper portion of said brace.

3,187,693
ARTICLE OF FURNITURE
Earl F. Hamilton and Edwin K. Moore, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed May 16, 1963, Ser. No. 280,909
4 Claims. (Cl. 108—153)



1. In an article of furniture, a leg mounting for a shelf or the like, comprising
(a) a shelf having at least one pair of edges disposed at an angle to each other and forming a shelf corner at their juncture,
(b) a pair of skirts extending along said pair of edges and normal to the plane of the shelf,
(c) an inwardly rolled bead along the edge of each skirt remote from the shelf,
(d) said skirts and shelf having offsets formed therein at said corner forming a mounting seat for said leg,
(e) a bracket having a pair of angularly disposed arms abutting the inner faces of said skirts,
(f) a pair of fingers on said arms interposed between the skirts and beads along said pair of shelf edges for retaining said bracket in said corner, and
(g) fastening means extending through aligned openings in said bracket and leg for mounting said leg on said shelf.

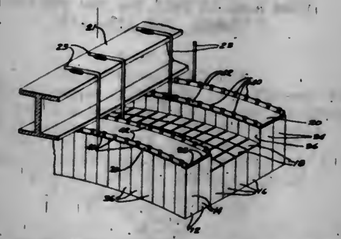
3,187,694
METAL CASED REFRACTORY WITH PROTECTED SUSPENDING MEANS
James A. Crookston, Neil E. Boyer, and Charles M. Hodges, Mexico, Mo., assignors to A. P. Green Fire Brick Company, Mexico, Mo., a corporation of Missouri
Filed Oct. 3, 1963, Ser. No. 313,483
7 Claims. (Cl. 110—99)

1. A refractory product comprising a compressed refractory mix, a hanger having an anchor portion embedded in the refractory mix and a hanger portion lying substantially flush with the end of the refractory product within the refractory mix, and means interposed between the hanger portion and the refractory mix separating the hanger portion from the refractory mix, said means being distended into the refractory mix adjacent to the hanger



portion, the hanger portion being freely bendable outwardly away from the end of the refractory.

3,187,695
REFRACTORY ROOF
Nicholas Napora, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1963, Ser. No. 326,940
4 Claims. (Cl. 110—99)

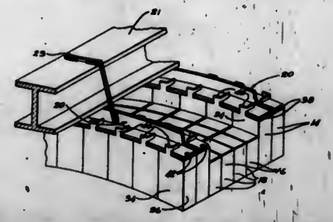


1. In a basic furnace roof construction, a series of spaced, brick suspending and hold-down channels extending over the furnace and having opposite ends terminating at skewbacks disposed on sides of the furnace, each channel having a pair of flanges extending upwardly in a substantially identical direction, a series of adjacent alternately arranged rib and valley courses of metal encased basic brick, each brick having generally opposed end, face and side surfaces, the brick in the rib courses being in contiguous relation with the undersurface of the channel at one end surface thereof, said relation holding the brick in lateral alignment with their corresponding channels, the undersurface of the channels being of sufficient area to cover completely the end surfaces of a pair of brick in adjacent rib courses, the brick in each individual course across the span of the arch being in contiguous relation at the face surfaces thereof, the brick in adjacent courses being in contiguous relation at the side surfaces thereof, each brick in the rib course only having a hanger tab integral with the casing projecting unidirectionally upwardly from the side surface of the brick that is contiguous with the brick in the valley course, a portion of each hanger tab being bent over the upper extremity of a flange and secured thereto, so that each brick in the rib course is suspended from and supported by said hold down channels, and brick in adjacent rib courses support one another.

3,187,696
REFRACTORY ROOF
Neil T. Crichton, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, a corporation of Pennsylvania
Filed Jan. 3, 1964, Ser. No. 335,555
7 Claims. (Cl. 110—99)

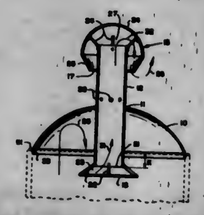
6. A basic refractory brick comprising a body of basic refractory, the brick having generally opposed end, face

and side surfaces, a metallic plate on a face surface of the brick comolded therewith, an L-shaped hanger tab integral with the plate projecting upwardly from the



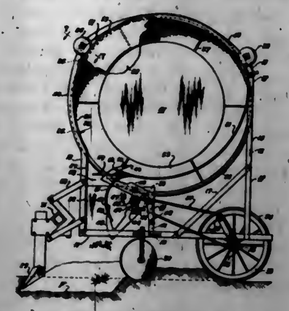
face surface of the brick, the hanger tab being characterized by having a portion of the L-shape bent normal to the remainder and to the horizontal.

3,187,697
INCINERATOR SPARK ELIMINATOR
Charles Rumpel, 32151 Old Yale Road, Clearbrook, British Columbia, Canada
Filed Aug. 13, 1962, Ser. No. 216,598
5 Claims. (Cl. 110—119)



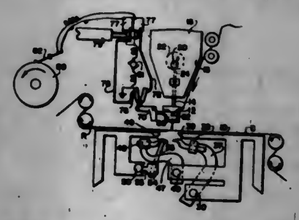
1. A spark eliminator for an incinerator comprising: a main body member adapted to enclose the top of the incinerator so as to effect substantially air-tight engagement with the periphery thereof, said body member being of substantially curved cross-section with the concave surface adapted to face into the incinerator; a stack centrally disposed inside the body member so as to project above the body member and a substantial distance below the body member, said stack being open at lower and upper ends thereof respectively to form an entrance and an outlet; a baffle member in the form of a flat plate spaced immediately below the lower end of the stack and extending across the entrance thereof and shaped so as to require the products of combustion to travel in a generally horizontal direction immediately prior to entering the stack, a plurality of spaced supports suspending said baffle member below the lower end of the stack, said plate being of area larger than the stack whereby the products of combustion are forced to pass between said supports before entering the stack; and a hood member disposed on the upper end of the stack spaced from and extending over the outlet thereof and shaped to direct the products of combustion from the stack in a generally downward direction, said hood member being of inverted, cup-shaped form and being attached to the upper end of the stack by a plurality of support members having spaces therebetween, said spaces permitting the products of combustion emerging from the stack to pass downwardly between the outside of the stack and the inside of the hood past the periphery thereof and thence into the atmosphere; whereby the products of combustion produced in the lower part of the incinerator are forced to change direction through substantially 180 degrees several times in order to reach the atmosphere, thus tending to remove solid particles from the gases and to effect more complete combustion.

3,187,698
GRASS SPRIG SETTER
Arch E. Murray, Rte. 1, Grapeland, Tex.
Filed Nov. 23, 1962, Ser. No. 239,528
11 Claims. (Cl. 111—2)



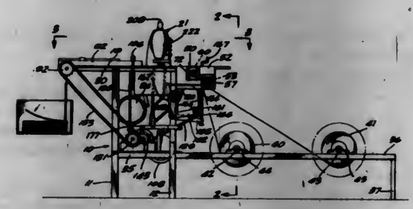
8. A grass sprig setter including a frame, a pair of opposed dish-shaped spaced drums having open ends facing and communicating with each other, the drums being mounted on the frame for rotation in upright planes extending in the general direction of travel of the sprig setter, support means disposed between the lower portions of said drums and closing at least a portion of the space therebetween, the support means having a discharge opening and coacting with said drums to define a single unitary hopper-like enclosure for confining and maintaining grass sprigs in a loose mass between said lower portions of said drums, means on the interior peripheral portions of said drums for engaging the sprigs to impart upright tumbling motion to the mass of sprigs upon rotation of said drums, pick-up means movable in an upright plane through the discharge opening and at least the lower portion of said tumbling mass of sprigs for pulling a sprig therefrom downwardly through said opening and depositing the pulled sprig on the ground, and means for imparting rotation to said drums and for driving the pick-up means, said pick-up means including an angular element mounted for movement in an uprightly-elongated substantially elliptical path and having a downwardly directed hook at its outer end portion which passes upwardly and rearwardly through the rear portion of said discharge opening and then forwardly and downwardly through the front portion of said opening.

3,187,699
MACHINE FOR PRODUCING CUT AND UNCUT PILE FABRICS
Clifford Aldine Bryant, Charles D. Elliott, Robert F. Hackney, Lewis C. La Duke, and Otis C. Payne, all of Dalton, Ga., assignors to Cabin Crafts, Inc., Dalton, Ga., a corporation of Georgia
Filed Oct. 18, 1957, Ser. No. 690,995
20 Claims. (Cl. 112—79)



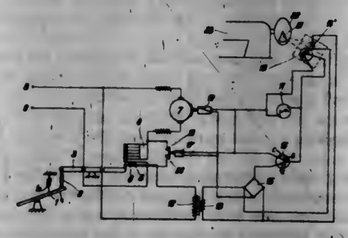
4. A tufting machine comprising a table, a bank of yarn-carrying needles side by side above the table, means to reciprocate the needles to penetrate cloth passing over the table to form loops, a plurality of loop-catching means beneath the table for each needle adapted to catch loops made by the needles, means associated with one loop-catching means operative to cut selected loops to form cut pile, means to cause the yarn to be directly caught and to be retained either on one looping means or on the other, independently of the action of the other, so as to form cut pile or loop pile, and means operable while the machine continues running to selectively cause formation of cut or uncut pile in selected places.

3,187,700
SEWING MACHINE HAVING AUTOMATIC INTERRUPTER
Robert E. Davy, 6495 Pennsylvania St., La Mesa, Calif.
Filed Nov. 16, 1964, Ser. No. 411,390
7 Claims. (Cl. 112—203)



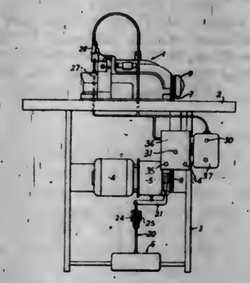
1. In a sewing machine having a reciprocating needle, automatic means for intermittently and cyclically interrupting sewing operation of the needle, means for automatically and continuously feeding material to be stitched to the sewing machine, means driving said sewing machine and said feeding means in fixed time relation to each other, means for indexing said feeding means relative to the sewing machine, said last means comprising a rotary member for feeding the material, an endless drive member for said rotary member, an adjustable idler wheel cooperating with said endless member, and manual means for adjusting the position of said idler wheel whereby to adjust said drive member and said rotary member and thereby to adjust the position of the material being fed relatively as respects the lines of stitching.

3,187,701
ELECTRIC DRIVING DEVICE FOR SEWING MACHINES OR THE LIKE
Alfred Heidt, Schwetzingen, and Albert Bellon, Mannheim-Neckarau, Germany, assignors to Firma Frankl & Kirchner, Fabrik für Elektromotoren und elektrische Apparate, Schwetzingen, Baden, Germany
Filed Aug. 17, 1962, Ser. No. 217,670
Claims priority, application Germany, Aug. 23, 1961, F 34,753
3 Claims. (Cl. 112—219)



1. In a sewing machine having an electric motor, a rotatable shaft and brake means operatively related to said shaft, control means for operating said brake means to stop said motor in a predetermined position, said control means comprising an electromagnetic coil mounted around said shaft for controlling said brake means, a line power supply circuit and a motor power circit, a transformer, an adjustable starter including a plurality of regulating resistances adapted to be short circuited step-by-step operable in sequence one after the other to connect said supply circuit to said motor power circuit and including a pair of contacts in the circuit of said transformer adapted to connect said transformer to said power supply circuit, a control pedal operative alternately to short circuit said resistances and to connect said contacts, a relay connected parallel to said coil and having a pair of contacts in a circuit across said starter, a rectifier bridge circuit connected to said transformer adapted to supply direct current to said coil and to said relay, a transistor having an emitter connected to said bridge circuit and a collector connected to said coil, a light source supplied with current by said transformer, a centrifugal switch mounted for movement with said shaft and connected intermediate said coil and the base of said transistor, a reflector such as a mirror provided on a movable part of said machine, and a photo transistor operatively disposed in relation to said reflector and to said light source and connected to said coil and to said transistor base and shunted across said centrifugal switch.

3,187,702
SEWING MACHINES
Ernest W. Freeman, Leicester, and Thomas Harris, Birstall, England, assignors to N. Corah (St. Margaret) Limited, Leicester, England, a British company
Filed May 1, 1963, Ser. No. 277,199
Claims priority, application Great Britain, Oct. 2, 1962, 37,232/62; Nov. 22, 1962, 44,129/62
5 Claims. (Cl. 112—219)



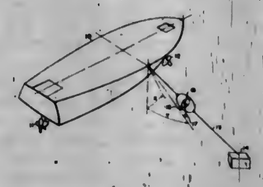
1. In a sewing machine provided with a work feeding and stitching mechanism which acts at a stitching zone of the machine and is driven from a motor through a driving transmission including a clutch which is coupled through a linkage to a foot-operated means dictating the starting and stopping of the said mechanism, control equipment comprising an electro-magnetic device incorporated directly in said linkage so as to form part of the latter, a photo-electric detector device arranged at said stitching zone to detect the presence of work in said stitching zone, an electrical circuit incorporating said detector device and said electro-magnetic device, and an adjustable time delay device connected into said electrical circuit, whereby, when the detector device detects the absence of work in the stitching zone, the electro-magnetic device is operated through the electrical circuit and under the action of the time delay device so that the clutch is disengaged and the work feeding and stitching mechanism is arrested independent of the position of the foot-operated means.

3,187,703
MOCCASIN TYPE SEAM AND METHODS OF INSERTING THE SAME
Harry B. Fake, South Weymouth, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Aug. 6, 1962, Ser. No. 215,060
10 Claims. (Cl. 112—402)



1. A two-thread lockstitch moccasin type seam having threads entering and emerging from the same side of a work piece and extending between the main body of the work piece and each of a number of shallow bridges running parallel to the length of the seam, the bridges being formed with flat cuts extending clear of one work piece surface and terminating in aligned slits at the same work piece surface and the threads of the seam passing beneath the bridges in side-by-side relation with exposed portions of the same thread running from each slit, in combination with enlargements along the line of the seam formed by interengaging portions of the threads beneath the bridges.

3,187,704
SHIP CONTROL SYSTEM
Howard L. Shatto, Jr., Palos Verdes, and James Ronald Dozier, Whittier, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 14, 1961, Ser. No. 95,601
11 Claims. (Cl. 114—144)



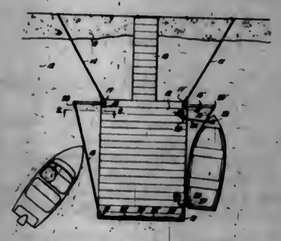
1. A marine vessel positioning system comprising: at least two propulsion means located on said vessel at separate positions spaced from the center of rotation of said vessel, first control means coupled to each of said separate propulsion units for directing the thrust effect of said propulsion units in a horizontal plane, second control means coupled to each of said separate propulsion units to vary the thrust effect of said propulsion units; locating means disposed on the vessel for determining its actual location and heading relative to its desired location and heading; a third control means coupled to said locating means to determine the difference between the actual location and heading of the vessel and the desired location and heading, said third control means generating control signals related to said difference; actuating means coupled to said third control means to actuate said first and second control means for positioning said first and second control means in response to the control signals.

3,187,705
DYNAMIC ANCHOR
Robert B. Costello, Santa Barbara, and Burton E. Persell, Goleta, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,290
7 Claims. (Cl. 114—206)



2. A free-fall high velocity depth anchor assembly for a ship comprising:
a droppable housing;
a connecting cable received in said housing and secured at one end thereto and at the other end to said ship, said cable being unreeved from said housing by said securement to said ship as said housing descends on dropping thereof;
an anchoring means attached to said housing and adapted to penetrate the sea bottom due to the free-fall velocity of said assembly when said housing reaches said sea bottom;
and an impositive connection between said anchoring means and said housing securing said anchoring means to said housing during the descent thereof and allowing said anchoring means to continue its descent upon abrupt deceleration of said housing means.

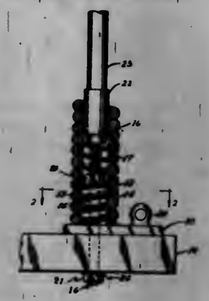
3,187,706
BOAT FENDING, MOORING AND DOCKING APPARATUS
John A. Ross, 9400 Mercier, Kansas City, Mo.
Filed Nov. 9, 1961, Ser. No. 151,322
4 Claims. (Cl. 114—230)



1. Apparatus for docking and mooring boats in water relative to the side of a dock structure, the improvement which comprises, in combination, an elongate boom pivotally mounted adjacent one end thereof on the side edge of said dock structure and normally extending out at a substantial angle to the dock structure over the water, stop means on said dock structure on one side of said boom limiting pivotal movement of the free end thereof toward said dock in one direction past a boom position at a substantially normal orientation to said dock, cable means connected to the free end of the boom extending along the dock side edge and connecting to the side edge of the dock structure on the side of the boom having said stop means and at a relatively shallow angle to and at a point spaced substantially along said dock from said boom connection, and resilient means in said cable intermediate the length thereof between the boom and dock

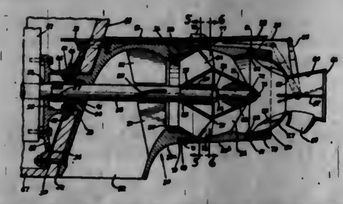
connections, said resilient means of such extendability as to permit pivoting of said boom in a substantial arc around its pivot away from said stop should said boat exert force thereagainst.

3,187,707
MOORING WHIP ANCHORING MEANS
Frank A. Carbone, 900 NE. 50th Court, Pompano Beach, Fla.
Filed May 27, 1963, Ser. No. 283,235
1 Claim. (Cl. 114—230)



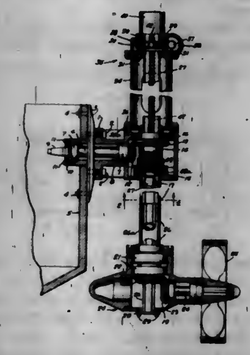
In a device for mounting mooring whips or the like;
an apertured metal base;
an externally grooved passaged lug secured on said base;
a coil metal spring mounted on said lug and engaging the grooves thereof;
a bolt extending through said lug and through said base and adapted to be secured to a stationary dock;
a metal sleeve mounted in the upper end of said spring, said sleeve being adapted to receive and hold the butt of an anchoring whip or the like, said base having an upwardly extending projecting integral eye thereon, the upper end portion of said bolt being threaded;
and a nut threaded on said bolt and engaging the upper end portion of said lug, said nut providing for adjustably positioning said bolt relative to said spring to selectively vary the depth of the whip-receiving space within the upper part of said spring.

3,187,708
PROPULSION DEVICE
Anthony Fox, Minneapolis, Minn., assignor to Propulsion Research, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed June 7, 1961, Ser. No. 115,463
6 Claims. (Cl. 115—12)



1. A water jet propulsion unit comprising a housing, an impeller rotatably mounted in said housing, a socket portion in said housing to the rear of said impeller, a discharge nozzle pivotally mounted on a vertical axis in said socket, a discharge port in the rear of said discharge nozzle, a reverse port near said discharge port, and a deflection damper pivotally mounted on a horizontal axis within said discharge nozzle port area whereby water being discharged through said discharge nozzle may be deflected through said discharge and reverse ports selectively and proportionately at will, said deflection damper including a plate notched at its sides and a split yoke journalled in said discharge nozzle and having bifurcated ends engaging the notches in said deflection damper plate.

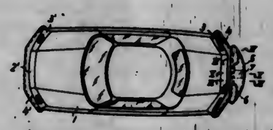
3,187,709
ADJUSTABLE HEIGHT PROPELLER AND DRIVE ASSEMBLY
Theodoric B. Edwards, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 15, 1963, Ser. No. 265,565
2 Claims. (Cl. 115—41)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In combination with a water vehicle having a motive power source and a transom; a driving member connected at one end to said motive source and passing horizontally through said transom; a housing means, means for securing said housing means to said transom, the other end of said driving member extending into said housing means; an upper bevel pinion and upper bevel gear, said bevel pinion secured to the last said end of said driving member, a driving sleeve, said driving sleeve secured to said upper bevel gear, a driving shaft, said driving shaft slideably and vertically mounted in said driving sleeve, first keying means between said driving sleeve and said driving shaft for maintaining the driving shaft and driving sleeve in fixed rotational movement and in slideably vertical movement; a propeller assembly including a driving transmission means, a propeller housing means and a propeller, said driving transmission means including a lower bevel pinion and lower bevel gear, said driving shaft being connected to said lower bevel pinion, a propeller shaft connected at one end of said lower bevel gear and at the other end to said propeller, said propeller shaft being horizontally disposed; steering means for said propeller assembly including steering gear means, steering power means for delivering steering power to said steering gear means, a hollow steering bar having a lower and an upper end, said lower end being secured to said propeller housing, said upper end extended within said lower bevel pinion, said driving shaft and said driving sleeve, a steering sleeve surrounding the upper end of said steering bar at its lower end and connected to said steering gear means at its upper end, second keying said steering bar and steering sleeve for locking said propeller assembly from rotation in response to power from said motive power source and for rotation in response to power from said steering power means, said steering power means secured to said frame, said steering gear means operatively connected to said steering power means and bearing means for supporting said steering gear means

within said frame; a propeller assembly raising means including a propeller assembly raising power means secured to the top of said frame, flange means rigidly secured to the interior of said hollow steering bar, and elongated raising means connected to said raising power means at its upper end and cooperatively connected to said flange at its lower end whereby said hollow steering bar is raised and lowered in response to power from said raising power means; said elongated raising means extending into said hollow steering bar and said drive shaft extending into said frame when said propeller assembly is raised.

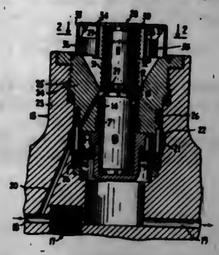
3,187,710
PASSENGER CAR BODY
Karl Wilfert, Stuttgart-Degerloch, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Mar. 15, 1963, Ser. No. 265,474
Claims priority, application Germany, Mar. 20, 1962, D 38,407
2 Claims. (Cl. 116—28)



1. A passenger car having a lower body which as seen in plan view comprises an end wall, said end wall having a central part extending rectilinearly and transversely to the longitudinal axis of the car, said end wall further comprising lateral parts, said lateral parts extending in straight lines and forming with the respective ends of said central part obtuse angular structures, and a bumper adjacent said end wall and having contours extending substantially parallel to the contours of said central and lateral parts, said bumper including further angular structures of an angularity corresponding to that of said first-named angular structures, said bumper including a transverse central portion, and a shock absorber spaced from and supported by said transverse central portion for movement relative thereto in consequence of collision of said shock absorber with an external object, said shock absorber extending about said further angular structures of said bumper, said shock absorber comprising an arcuate portion extending continuously from end to end of said shock absorber, the curvature of said arcuate portion extending in directions transversely of said car, a pressure-operated signal means interposed between said arcuate portion of said shock absorber and said transverse central portion of said bumper, said signal means being adapted to give a signal upon the occurrence of said movement of said shock absorber in consequence of said collision.

3,187,711
MAGNETIC PRESSURE INDICATOR
Joseph F. Campoloug, Westbury, N.Y., assignor to Fall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Dec. 19, 1963, Ser. No. 331,869
8 Claims. (Cl. 116—70)

1. A pressure indicating device comprising a housing, first magnetic means movably mounted in the housing towards and away from a first position, annular spring disc bias means urging the first magnetic means in one direction and normally retaining the first magnetic means in the first position, fluid duct means communicating with a source of fluid under pressure and with one end of the first magnetic means to urge it in the opposite direction, second magnetic means movable towards and away from the first magnetic means and normally retained towards the first magnetic means by magnetic attraction when the first magnetic means is in the first position, and bias means urging the second magnetic means away from the first



magnetic means selected to overcome the force of magnetic attraction when the first magnetic means is more than a predetermined distance away from the second magnetic means.

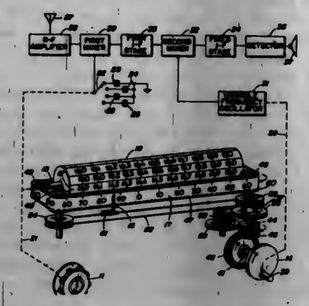
3,187,712
LIFESAVING DEVICE
Glenn F. Pritchard and Bernice A. Pritchard, both of 12627 155th St. SE., Renton, Wash.
Filed Sept. 30, 1963, Ser. No. 312,549
2 Claims. (Cl. 116—124)



1. A life saving device of the character described, comprising a cartridge having lighter-than-air gas therein, the upper end of said cartridge terminating in a neck having external threads thereon, a frangible closure on top of said neck, a cap having internal threads that are screwed down over the said neck of the said cartridge after said cartridge has been filled with the said gas and the closure put in place, the said cap having a centrally located vertical hollow needle guide the opening of the guide extending through the cap, a hollow needle slidably mounted in said hollow needle guide, said needle having its lower end sharpened in order that the said hollow needle will pierce the said closure, a horizontal trigger support arm extending outward from the said hollow needle guide with which it is integral, a balloon secured to the upper end of the said hollow needle and trigger means secured to said trigger support and needle for moving the needle to pierce the closure and allow the gas to pass through the needle and inflate the balloon.

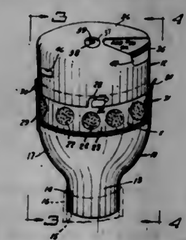
3,187,713
LINEAR DIAL FOR RADIO TRANSMITTER OR RECEIVER WITH MOVING POINTER AND SCALE
Charles A. Fenwick, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Feb. 6, 1964, Ser. No. 343,007
8 Claims. (Cl. 116—124.3)

1. An indicator comprising a container, a window formed in the container, a drum rotatably supported and with a plurality of scales printed thereon such that a particular scale is visible through the window, a movable tape having fine indicia visible through the window adjacent said drum, a movable pointer mounted within the container and visible in the window adjacent one scale of said drum and said fine indicia, said pointer supported to move in a direction opposite to said tape and the pointer



and the fine indicia calibrated such that the pointer moves between adjacent segments of the scale on the drum, as the fine indicia of said tape passes from a minimum to a maximum reading relative to the pointer.

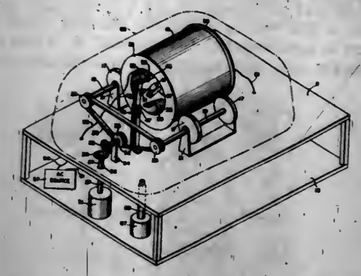
3,187,714
ILLUMINATED OIL FILLER CAP WITH INDICATOR
David P. Flanigan, 2484 10th St., Wyandotte, Mich.
Filed Mar. 16, 1964, Ser. No. 352,260
12 Claims. (Cl. 116—133)



8. An oil filler cap for enclosing the open end of an engine filler pipe, comprising: a mounting portion for mounting the oil filler cap on the oil filler pipe; a housing hingedly mounted on said mounting portion; a filter detachably mounted in the lower end of said housing; and, an information indicator operatively mounted on said housing.

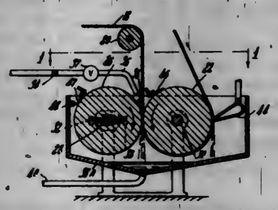
3,187,715
MECHANISM FOR EVAPORATION DEPOSITION
Charles L. Wellard, Wayne, Pa., assignor to American Components, Inc., Conshohocken, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1963, Ser. No. 318,449
7 Claims. (Cl. 118—49)

1. A thin film deposition device arrangement comprising in combination: a rotatable chamber to hold substrate-elements which are to have thin films deposited thereon, said rotatable chamber having its inside wall formed in such a manner as to cause said substrate-elements to tumble as said chamber rotates; friction drive means supporting said rotatable chamber and adapted to cause said chamber to rotate; variable positioning means adapted to hold heating means in any one of a plurality of positions so that at one extreme of said positions said heating means can be in close proximity to all of said substrate-elements and at the other extreme of said positions said heating means is relatively far from all of said substrate-elements; heating means held and positioned by said variable positioning means within said rotatable chamber; said heating means adapted to hold an evaporant and provide heat



thereto to cause the evaporation thereof; and air evacuation means covering said deposition device to create a vacuum surrounding said deposition device.

3,187,716
COATING MACHINERY
Philip A. Peterson, Worcester, and Nicolas M. Reitzel, Boylston, Mass., assignors to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 19, 1962, Ser. No. 224,652
3 Claims. (Cl. 118—63)

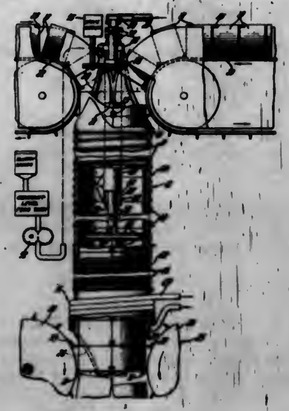


1. A coating applicator assembly which comprises, in combination, rolls for supporting a traveling web including a backing roll through which the web is fed in a downward direction and about which the web is wrapped through a substantial angle and drawn off in an upward direction, a coating roll supported in parallel relation to and closely adjacent said backing roll at the side thereof providing a downward incoming nip to receive said web, and adapted to maintain a pool of coating material between the web and the coating roll, means for supporting said rolls in an adjusted spaced relation to one another suitable for applying said coating material to the web passing therebetween, means for supplying an excess of coating material into said pool, a doctoring device acting against a portion of said coated web wrapped around said backing roll and spaced from said incoming nip upon an upwardly moving portion of said backing roll for removing excess coating material and for smoothing the coating material on said web, and means to draw off said excess of coating material.

3,187,717
METHOD OF COATING ALUMINUM
Howard W. Pearsall, Highland Park, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 12, 1957, Ser. No. 665,282, now Patent No. 3,022,193, dated Feb. 20, 1962. Divided and this application June 27, 1961, Ser. No. 119,899
4 Claims. (Cl. 118—64)

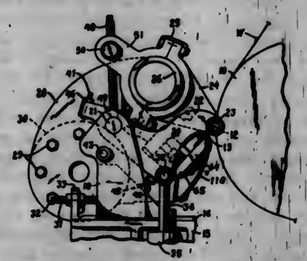
1. An apparatus for providing a thin coating of a bearing metal on interior bearing surfaces of aluminum bearing members, said apparatus comprising a chamber having

inlet and outlet openings, means associated with said chamber for conveying aluminum bearing members into said inlet of said chamber, means supporting and regulating continuous movement of the bearings through said chamber, a first heating means for warming said bearing members to approximately 300° F.–400° F. in said chamber adjacent said inlet opening to said chamber, means



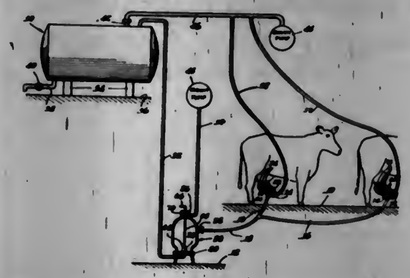
for spraying a coating mixture solely onto said interior bearing surface of said warmed bearings as said bearings are moved continuously through said chamber, a second heating means adjacent said first heating means for heating said coating mixture and fusing the same on said bearing members, and cooling means adjacent said second heating means to effect cooling and solidification of the coating mixture after fusion.

3,187,718
FLEXIBLE DOCTOR BLADE COATING APPARATUS
James T. Coghill, Rochester, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed May 28, 1962, Ser. No. 198,079
5 Claims. (Cl. 118—126)



1. In apparatus for coating one side of a moving web including a backing surface adapted to support the other side of the web and a flexible blade having a front edge adapted to engage the web against the surface, the combination of supporting means for said blade including a carriage, means for mounting said carriage for generally horizontal movement with respect to said roll, a bracket mounted on said carriage for generally vertically pivotal movement with respect to said carriage, a supporting arm, means forming a pivotal connection between one end of said arm and said bracket on an axis substantially coinciding with said front edge, a main supporting member secured to the other end of said arm parallel to and substantially coextensive with said blade, a plurality of spaced mounting units on said supporting member between said supporting member and the roll, a support bar secured to said units and being coextensive with said supporting member, hinge means on each of said units, a hinge bar coextensive with said blade secured to and movable with said hinge means to and from a working position wherein said hinge bar engages said support bar along substantially the entire length thereof to clamp said blade in position, a plurality of individual adjuster assemblies mounted side-by-side along the length of said hinge bar for varying locally the pressure exerted by said blade toward said surface, adjustment means for selectively adjusting said carriage in a horizontal direction with respect to said roll and said bracket with respect to said carriage to vary the relative positions of said front edge and said roll, and means for effecting controlled pivoted movement of said arm with respect to said bracket to vary the angular relation of said arm and said bracket to effect a corresponding change in the angle of impingement between said roll and said blade.

3,187,719
VACUUM TYPE MILK TRANSFER SYSTEM
Hartl R. Jones, Chicago, Ill., assignor to Mojonnier Bros. Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 4, 1963, Ser. No. 313,952
7 Claims. (Cl. 119—14.08)



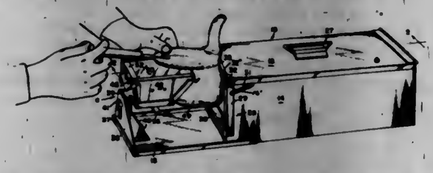
1. In a milk transfer system, the combination comprising; a first closed vessel of comparatively large internal volume for storing a substantial quantity of milk, said vessel having means for making a connection to a first source of vacuum and means providing a milk inlet; a second closed vessel of comparatively smaller volume including means for making a connection to a second relatively lower level source of vacuum, means for making a connection to a milk supply line, and means providing a milk outlet; and conduit means connecting said milk inlet and said milk outlet in fluid circuit whereby to permit the difference in said vacuums to transfer milk from said second vessel to said first vessel.

3,187,720
ELECTRIC BARRIER TYPE STOCK FEEDER ACCESS CONTROL
Daniel B. Stoltzfus, Kinzers, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Oct. 25, 1963, Ser. No. 318,990
7 Claims. (Cl. 119—63)



1. A livestock feeder comprising, in combination, a support frame, an elongated trough carried on said frame and shiftable in its entirety longitudinally relative thereto, means for vibrating said trough longitudinally whereby feed deposited in one end of the trough is conveyed toward the opposite end thereof, said trough having a bottom wall and a pair of upright spaced longitudinal side walls over which stock animals may have access to feed in the trough, and means to control access of the livestock to the trough, said access control means comprising a pair of rockshafts carried on said frame and extending generally parallel to said trough, one of said rockshafts being in a vertical plane adjacent one of said trough side walls and the other rockshaft being in a vertical plane adjacent the other trough side wall, each rockshaft having a plurality of relatively spaced radially extending arms, a pair of electric shock wires, one along each side of said trough, one of said shock wires being carried on the arms of said one rockshaft and the other wire on the arms of the other rockshaft, and means for pivoting said rockshafts to swing said arms and move said wires from first locations blocking access to said trough to second remote locations permitting free access, whereby stock animals may be kept away from said trough while feed is being conveyed therein and allowed to feed from the trough when the conveyance is completed.

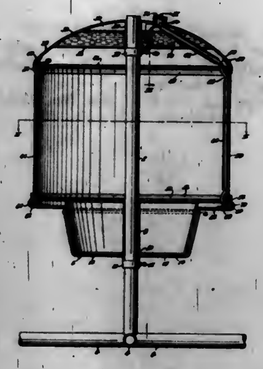
3,187,721
ILLUMINATED TABLE TYPE RABBIT IMMOBILIZER
Leona R. Cappel, 310 N. High St., West Chester, Pa.
Filed May 14, 1963, Ser. No. 280,255
3 Claims. (Cl. 119—103)



2. A rabbit immobilizer comprising a housing, the housing being open at one end to provide a space through which the head of the rabbit may project, the top of the housing body being open to permit the rabbit to be deposited bodily into the housing, a neck securing bar slidably mounted in the front of the housing and adapted to gravitate into engagement with the neck of the rabbit while the head is projected through the front opening of the housing, making the ears available for hypodermic injections, a lid hinged to one end of the housing and yieldably engageable, into a locking position, with the opposite end of the housing to hold the rabbit immobile, and an illuminating housing including a translucent top on which the ear of the rabbit is placed for detecting ear veins to facilitate hypodermic injections.

3,187,722
COMBINATION INSECTICIDE APPLICATOR AND FEEDER
Merwin W. Gilmore, Jerald W. Bishop, and Robert B. McVay, Clay Center, Kans., assignors to Gilmore-Tatge Manufacturing Co., Inc., Clay Center, Kans., a corporation of Kansas
Filed Oct. 12, 1962, Ser. No. 230,225
14 Claims. (Cl. 119—157)

10. A combination insecticide applicator and feeder comprising:
(a) A vertically extending, rigidly supported standard,
(b) an upwardly opening feed bin supported by said standard adjacent the lower end thereof,
(c) an applicator ring of moisture permeable material disposed in a horizontal plane adjacent the top of said bing with all points thereof being spaced outwardly from said bin,
(d) a tubular sleeve of pliable material affixed at its lower edge of said applicator ring and at its upper



edge to said standard, whereby said applicator ring is suspended concentrically with said bin for free lateral movement, and
(e) means operable to maintain said applicator ring saturated with liquid insecticide.

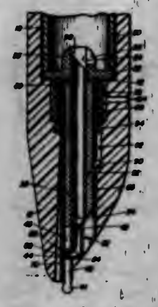
3,187,723
PENCIL BOX
Shokichi Kihara, 492 Mizuzi-machi, Asakusa Taito-ku, Tokyo, Japan
Filed Nov. 22, 1963, Ser. No. 325,579
Claims priority, application Japan, Nov. 29, 1962, 37/53,392
1 Claim. (Cl. 120—23)



A pencil box for the reception of sharpened pencils and the like, the sharpened tip points of which will be automatically protected against damage resulting from the same coming into contact with the interior walls of said pencil box comprising elongated side walls, a bottom wall closing one end of said side walls, said box being open at its top, a transverse rigid partition fixed to the box and spaced from the bottom wall, said partition having at least one circular opening therein of a size slightly larger than a pencil to be used therewith, a resilient pencil holding member supported by said partition, said member having at least one circular opening therein concentric with the opening in said partition and being of a size slightly smaller than the pencil to be used therewith so as to grip and frictionally hold the same, the material of said member being so selected and the size and shape of the openings in said member and partition being so constructed and arranged that a pencil thrust through the concentric openings is frictionally engaged by said member adjacent its opening and so that said member material adjacent its

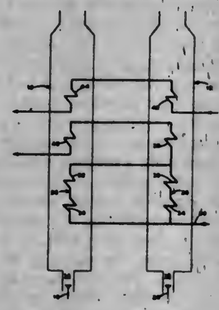
opening will be moved by said pencil in the direction in which the pencil has been thrust to retract the pencil when the same is released to space the same above the lowest position to which it has been thrust into the box.

3,187,724
WRITING INSTRUMENT
Nathan Alter Zepell, Fort Madison, Iowa, assignor to W. A. Sheaffer Pen Company, Fort Madison, Iowa, a corporation of Delaware
Filed Jan. 13, 1961, Ser. No. 82,535
7 Claims. (Cl. 120—48)



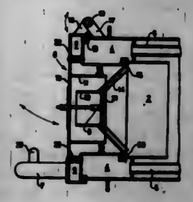
6. A writing unit assembly for a fountain pen of the type having a barrel and a fluid reservoir section adapted to contain a supply of writing fluid within said barrel, comprising a writing element extending forwardly of said reservoir section and terminating in a pair of resilient nibs defining a fluid path therebetween, said writing element including an aperture communicating with the rearward end of said fluid path, a feed member communicating with said reservoir section, said feed member being mounted within said writing element and having a transverse portion providing an outlet disposed within said aperture, and resilient means substantially enveloping said nibs and normally engaging said transverse portion for sealing said outlet and being disengaged from said portion to permit fluid movement through said outlet when said nibs are displaced.

3,187,725
STEAM GENERATOR
Erich Stange, Hamburg-Poppenbuttel, and Heinrich Dorfmann, Ratingen, Germany, assignors to Durrwerke Aktiengesellschaft, Ratingen, Germany, a corporation of Germany
Filed Sept. 10, 1963, Ser. No. 307,913
Claims priority, application Germany, Sept. 10, 1962, D 39,817
5 Claims. (Cl. 122—4)



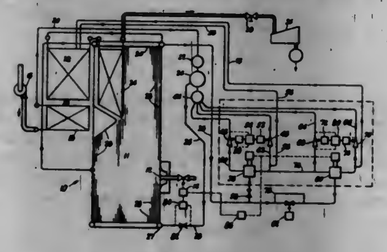
1. The method of superheating steam in a steam generator having a relatively low steam temperature tubular superheater and a relatively high steam temperature tubular superheater disposed respectively in divided and separate parallel gas flow paths, which comprises passing steam through the low steam temperature superheater while passing a first stream of combustion gases generated by the firing of a fuel having corrosive constituents in indirect heat transfer relation with the steam flowing through the low steam temperature superheater, superheating the steam passing through the low steam temperature superheater to the extent that the corresponding tube metal temperature does not exceed that at which the corrosive constituents of said first stream of combustion gases attack the metal of said low steam temperature superheater, passing the steam discharging from the low steam temperature superheater to and through the high temperature superheater while passing a second stream of combustion gases generated by the firing of a fuel substantially free of corrosive constituents in indirect heat transfer relation with the steam flowing through the high steam temperature superheater, said first and second streams of combustion gases being completely separate from and independent of each other while passing over their corresponding superheaters, and additionally superheating the steam passing through the high steam temperature superheater to the extent that the corresponding tube metal temperature exceeds that at which corrosion attack of the metal of the high steam temperature superheater would occur if the fuel used to generate the second stream of combustion gases were of a corrosive character.

3,187,726
DEVICE FOR A WATER BOILER PROVIDED WITH AN OVERPRESSURE FURNACE
Josephus Franciscus Maria van der Meulen, Marconistraat 6, Eindhoven, Netherlands
Filed July 9, 1963, Ser. No. 293,641
Claims priority, application Netherlands, July 10, 1962, 280,720
7 Claims. (Cl. 122—149)



1. A water boiler comprising an overpressure furnace including an oil burner, and a centrifugal blower for the supply of air for said burner, said boiler further including a flue chest and a combustion gas chamber located at opposite ends of the boiler, flue tubes between said flue chest and the combustion gas chamber for the flow of combustion gases from the former to the latter, a substantially straight duct connected to said blower for the supply of air thereto, the duct having a length which is in the order of the distance traversed by the sucked air in about one second, said duct having a substantially constant cross-section and extending proximate the flue chest, combustion gas chamber, and flue tubes, a blast box within the furnace, the pressure side of the blower opening at right angles into said blast box, said blast box including opposite, front and rear walls and at least two intermediate partitions, said box being adjacent and partially enclosing the combustion gas chamber, said front and rear walls defining a disc-shaped front portion upon which the blower is mounted and a cylindrical portion which is centrally connected to the front portion, said cylindrical portion having a depth substantially corresponding with the depth of the combustion gas chamber, said intermediate partitions being concentrically disposed within said cylindrical portion, said oil burner bing centrally arranged in said blast box, said partitions being alternately connected with the front and rear walls of the blast box and being spaced from one another to define a zig-zag path for the air supplied by the blower before the air reaches the centrally arranged burner, said blower being a radial compressor.

3,187,727
STEAM GENERATOR
Thomas Ravese, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,216
5 Claims. (Cl. 122—406)

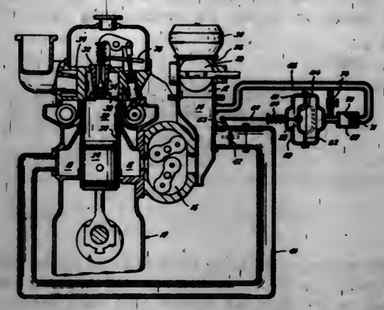


1. In a once-through steam generator having a through flow system, a furnace, fuel burning means associated with said furnace, said through flow system comprising tubes lining the walls of said furnace, an inlet and outlet for said tubes, a feedpump associated with said through flow system for supplying fluid to said inlet, other heat exchange apparatus, the outlet of said tubes being connected to the other heat exchange apparatus, a circulating system comprising an inlet communicating with the outlet of said tubes, an outlet communicating with the inlet of said tubes, a circulating pump associated with said circulating system for maintaining flow through the circulating system, said circulating pump being of such a capacity that it is capable of maintaining flow through the circulating system only until the steam generator reaches a predetermined percentage of its full load capacity, a combined check and control valve downstream of said circulating pump, activating means for said combined valve including first means for causing closure of the combined valve when the fluid tends to flow from the outlet to the inlet of the circulating system, said activating means including second means for positively closing said combined valve, thereby preventing flow therethrough in either direction, when a predetermined minimum pressure differential exists upstream and downstream of said combined valve, this predetermined minimum pressure differential being slightly greater than that at which the first means would cause closure of the combined valve, so as to prevent the combined valve from fluttering or chattering.

3,187,728
METHOD OF AND APPARATUS FOR CONVERTING A DIESEL ENGINE TO OPERATE ON NATURAL GAS
James F. Friddell, Houston, Tex., assignor to Stewart & Stevenson Services, Inc., Houston, Tex., a corporation of Texas
Filed Mar. 18, 1964, Ser. No. 352,738
7 Claims. (Cl. 123—1)

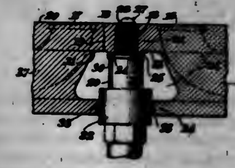
1. The method of converting a multicylinder two cycle, blower scavenged diesel engine to operate on natural gas comprising,

replacing each diesel injector with a spark plug, connecting the spark plugs to an ignition system, placing a carburetor on the diesel air inlet,



lowering the compression ratio of the diesel engine, and recirculating part of the blower output to the blower input when the engine load decreases.

3,187,729
RECONSTRUCTED INTERNAL COMBUSTION ENGINE CYLINDER HEADS AND METHOD OF MAKING SAME
Edward Morrison, New Rochelle, N.Y., assignor to Ralph Stark, Inc., Long Island City, N.Y., a corporation of New York
Filed Dec. 3, 1963, Ser. No. 327,633
13 Claims. (Cl. 123—32)

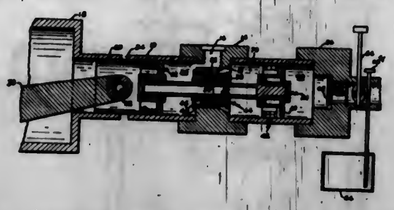


1. In a reconstructed internal combustion engine cylinder head having a water jacket and being adapted for operative threaded engagement with a threaded fuel injector unit having an intermediate annular shoulder, said head having an inner wall adjacent and defining a side of said jacket, a plug of hard compact material extending through said inner wall and having a boss in facing relation to said water jacket, a threaded apertured portion extending through said plug and proportioned for operative threaded engagement with said fuel injector unit, said boss having an annular seat proportioned and positioned for operative engagement with said annular shoulder of said injector unit when said unit is in operative threaded engagement with said apertured portion of said plug, said plug being welded to the body of said inner wall.

3,187,730
TWO CYCLE INTERNAL COMBUSTION ENGINE
Stanley B. White, 615 Monterey Ave., Dayton, Ohio
Filed Aug. 29, 1962, Ser. No. 220,951
5 Claims. (Cl. 123—71)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In a two stroke cycle internal combustion engine, a piston cylinder, a piston rod, a power piston and a compression-piston-one-way-valve unit having one way fuel inlet means incorporated therein, mounted on the distal ends of said piston rod forming a tandem piston system capable of reciprocating movement within said cylinder, a sliding one way valve, openable by contact with said piston and valve unit, mounted on said piston rod between said tandem pistons, a fuel inlet valve, said inlet valve,

said sliding valve and said tandem piston system defining three chambers in said piston cylinder, a combustion chamber, an intermediate chamber and an intake chamber, said chambers being each capable of compression and expansion during the reciprocating cycle of said



piston system, said sliding valve and said intake valve being opened on the down stroke of said tandem piston and closed on the upstroke thereof, said compression piston valve being closed on the down stroke and open on the upstroke of said tandem piston system.

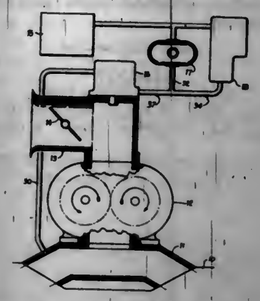
3,187,731
OSCILLATORY VALVES AND FLUID-SEAL MEANS THEREFOR
Alfred M. Caddell, 1318 W. Hunting Park Ave., Philadelphia, Pa.
Filed Oct. 3, 1962, Ser. No. 228,152
6 Claims. (Cl. 123—91)



1. The combination in an internal combustion engine of a head having an aperture, a combustion chamber and an oscillatory ported valve, said valve having end faces and a rounded surface therebetween, removable sides of said head, a pair of semi-circular sleeves partially surrounding said valve and being removably secured in said head, said valve having shaft ends anti-frictionally mounted in said head and an integrally formed solid cylindrical portion having a port extending therethrough, said valve being concentrically spaced from said sleeves, pressurized sealing means positioned in said head and extending through the sleeves for contacting said rounded surface, a plurality of constructions housing blocks mounted in said sides, pressurized means in said constructions for urging the blocks inwardly against the end surfaces of said valves, operable means in said engine for causing periodic registration of the port of said valve between said combustion chamber and said aperture.

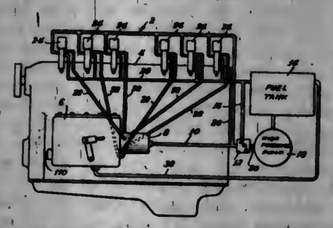
3,187,732
FUEL METERING APPARATUS
Peter A. Orner, 23971 Fairmount Blvd., Beechwood, Ohio
Filed Aug. 14, 1963, Ser. No. 302,196
6 Claims. (Cl. 123—119)

1. A fuel metering apparatus for a supercharged internal combustion engine which has an inlet manifold and a supercharger connected thereto including in combination an inlet housing in communication with said supercharger, wall means defining an air inlet passage into said inlet housing, a butterfly valve in said air inlet passage for regulating the flow of air thereinto, a fuel metering valve mounted on said inlet housing with the discharge end thereof communicating with the inlet housing to introduce fuel directly thereinto in a direction normal to the introduction of air, said fuel metering valve having a control chamber, conduit means leading from the inlet manifold to said control chamber whereby the opening of said fuel metering valve is depending on the pressure in the inlet manifold, a source of fuel, a positive displacement pump driven by the engine, conduit means connect-



ing said source of fuel to said pump and said pump to the inlet end of said fuel metering valve, a variable pressure bypass valve, and conduit means connecting said bypass valve in parallel with said pump whereby the pressure drop across the inlet to the outlet of said fuel metering valve will be a function of the engine speed.

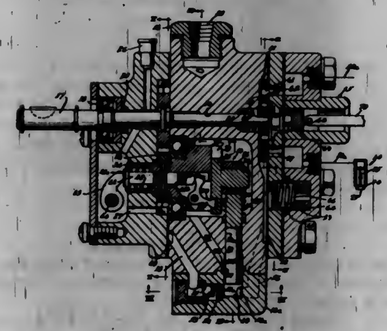
3,187,733
FUEL INJECTION SYSTEM FOR INTERNAL COMBUSTION ENGINES
Richard P. Heintz, Kalamazoo, Mich., assignor, by mesne assignments, to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 23, 1963, Ser. No. 303,993
1 Claim. (Cl. 123—139)



In a fuel injection system for an engine, the combination comprising a plurality of injectors, each injector having an accumulator portion and a nozzle portion communicating with the accumulator portion, a nozzle valve in the nozzle portion, a source of fuel under high pressure communicating with the accumulator portion of each injector for storage of fuel therein and with the nozzle portion of each injector, control pressure means having a plurality of control lines each interconnecting a source of hydraulic fluid under pressure and a different one of said nozzle valves, each nozzle valve having a first position for injection of the fuel from the nozzle portion and a second position preventing injection of fuel from the nozzle portion in accordance with the rise and fall of fluid pressure in the respective control line, rotary actuated valve means comprising passage means in communication with a low pressure source, and a body having separate means of communication with the control lines and with the source of hydraulic fluid under pressure, an actuator sleeve about the body relatively rotatable with respect to the body, conduit means within the body corresponding to the number of injectors, each conduit means being in communication with the pressurized hydraulic fluid and a

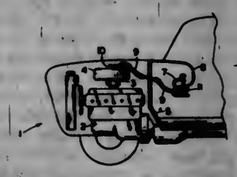
separate control line and in selective communication with the passage means in accordance with the position of the body with respect to the sleeve whereby the relative rotation of the body with respect to the sleeve is operative to vary the pressure in a respective control line for initiating and terminating injection of fuel from a respective nozzle portion, said body having a fluid accumulator communicating between the source of fluid and each of the conduit means, and fluid restriction means being between said fluid accumulator and the passage means to inhibit depletion of fluid from the accumulator to the low pressure source.

3,187,734
FUEL INJECTION SYSTEM FOR ENGINES
James E. Yingst, Euclid, and Harold R. Scibbe, Chardon, Ohio, assignors to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 22, 1961, Ser. No. 139,911
7 Claims. (Cl. 123—179)



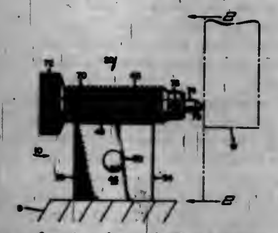
2. A fuel supply system for a fuel injection engine comprising,
fuel injectors having a predetermined release pressure,
a distributor connected to said injectors for cyclically delivering fuel to individual injectors,
a metering pump means metering the quantitiy of fuel and connected to deliver fuel to said distributor at a pressure greater than said injector release pressure,
and a fuel enrichment means connected directly to the distributor and having a delivery pressure in excess of said predetermined release pressure for delivering fuel to the distributor directly during enrichment periods.

3,187,735
INTERNAL COMBUSTION ENGINE STARTING DEVICE AND METHOD
William S. Fiedler, 5149 Loreth Terrace, Madison, Wis., Stuart O. Fiedler, deceased, late of Madison, Wis., by William S. Fiedler, administrator, Madison, Wis., John W. Frost, 512 E. Parkway Blvd., Appleton, Wis., and John M. Diehl, 5729 Elder Place, Madison, Wis.
Continuation of application Ser. No. 130,234, Aug. 7, 1961. This application Nov. 6, 1963, Ser. No. 332,322
10 Claims. (Cl. 123—187.5)



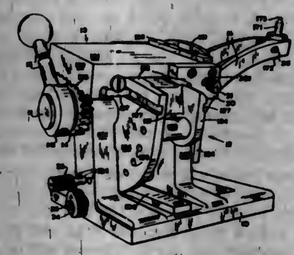
1. A device to facilitate starting an internal combustion engine comprising means to receive a receptacle containing pressurized combustible fluid, an outlet valve and an outlet duct extending from said valve upon said receptacle being forced thereagainst by an operator's hand and to open said valve in response to said force and to provide a duct communicating with said outlet duct in sealed relation thereto, conduit means leading from said duct to a passage through which a reactant enters said engine, and means in said duct to prevent reverse flow therethrough.

3,187,736
DRESSING MECHANISM FOR ABRASIVE WHEELS
Edward S. Adamczyk, 47 Mazzeia St., Indian Orchard, Springfield, Mass.
Filed Nov. 17, 1961, Ser. No. 153,119
1 Claim. (Cl. 125—11)



In a means for dressing grinding wheels, a magnetized dressing tool carrier support and a dressing tool carrier disposed thereon, said dressing tool carrier comprising a shank carrying a continuous radially outwardly extending helical rib, said shank having a turning knob at one end thereof and carrying a diamond point at the opposite end thereof, said support being provided with a transversely-extending recess the walls of which are plane throughout for the nesting of said tool carrier relative thereto, with said continuous helical rib being the only contact of said carrier with the walls of the recess and being subject to the magnetic force of said support with said tool carrier being movable laterally relative to said support upon manual rotation of the turning knob of said tool carrier.

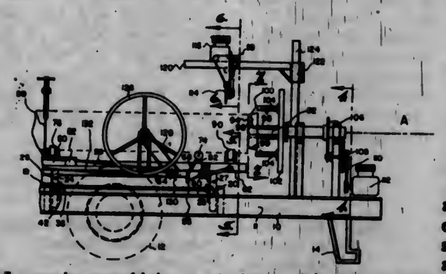
3,187,737
MACHINISTS' TOOL
Isidore Oscar, 202 Melchett Road, Factory Centre, Kings Norton, Birmingham 30, England
Filed July 20, 1962, Ser. No. 211,258
Claims priority, application Great Britain, Aug. 4, 1961, 28,324/61
5 Claims. (Cl. 125—11)



1. A machinists' tool for grinding wheel dressing, work setting, work checking and the like which comprises, in combination,
a base,
upstanding support members carried by and fixed to said base,
a horizontal shaft rotatably supported by said members,

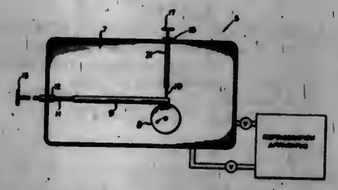
a sine bar device fixed to said shaft for rotation therewith,
said device bearing a pair of spaced setting elements disposed in a horizontal plane in position to mate with guage blocks for fine angular setting of said device,
said device also having upstanding side members disposed in parallel vertical planes,
the outer faces of said side members being provided with channels disposed in a common horizontal plane above said shaft and parallel with the plane containing said setting elements,
a table having a substantially horizontal upper surface disposed above said sine bar device,
said table having side members located outwardly of said vertical planes and depending downwardly to a plane below the plane of said channels, inwardly toed splines adjustably fixed to said side members in positions to mate with and to slide in said channels,
said channels and splines constituting, simultaneously and together,
(a) means providing simple beam support for said table on said sine bar device and (b) guiding means permitting transverse linear movements of said table relatively to said sine bar device and constraining said table against all other movements,
and means for firmly attaching a dressing tool carrier to said table at a selected location thereof.

3,187,738
PORTABLE PIPE MACHINING TOOL
Robert D. Christopher, 3125 N. 20th Ave., Phoenix, Ariz.
Filed Nov. 23, 1962, Ser. No. 239,537
9 Claims. (Cl. 125—13)



1. In a pipe machining tool the combination of: a main frame; a pipe chuck means rotatably mounted thereon; a carriage frame vertically movably mounted on said main frame; a plurality of pipe loading rollers disposed in spaced relation to each other on said carriage frame and having horizontal axes disposed at right angles to that of said pipe chuck means; a carriage movable longitudinally on said carriage frame toward and away from said pipe chuck means; first pipe supporting rollers on said carriage and having axes disposed substantially at right angles to those of said pipe loading rollers; means mounting said pipe loading rollers for vertical movement on said carriage frame whereby pipe disposed on said pipe loading rollers may be supported above said pipe supporting rollers and lowered into position thereon; one of said pipe loading rollers being disposed at an end of said carriage frame opposite from an end thereof which is nearest said pipe chuck means whereby pipe may be loaded onto one end of said carriage frame by placing one end of a piece of pipe on said one pipe loading roller and then progressively moving said pipe longitudinally of its axis and progressively onto the remaining ones of said pipe loading rollers; second pipe supporting rollers on said carriage frame and disposed near said pipe chuck means, said second pipe supporting rollers disposed slightly below said first pipe supporting rollers; and a pipe machining means movable adjacent to said chuck means for performing peripheral machining of pipe engaged with said chuck means.

3,187,739
METHOD AND APPARATUS FOR SHAPING CRYSTALS
Eugene R. Du Frense, Chicago, Ill., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,837
9 Claims. (Cl. 125—23)



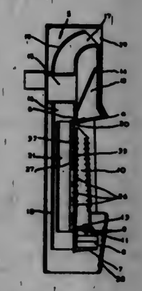
6. A method of shaping a crystal having a diamond crystalline lattice structure comprising cooling a crystal having a diamond crystalline lattice structure to a temperature of at least about —75° C., and applying an external force to the crystal along a predetermined line so as to cause cleavage of the crystal along a predetermined plane.

3,187,740
RADIANT TUBE HEATERS
Robert L. Jones and Howard H. Nichols, Pittsburgh, Pa., assignors to Hazen Engineering Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1963, Ser. No. 272,086
3 Claims. (Cl. 126—91)



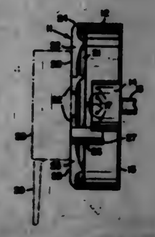
1. In a radiant tube heater a tube-like housing closed at one end and connected to a vent outlet at the other end, an air tube disposed in said housing extending substantially the full length of the housing and spaced a substantial distance from the wall of said housing and from the closed end thereof to form a combustion area, a pre-mix cone disposed within said air tube and a mixing tube forming an extension of said pre-mix cone extended to the closed end of the air tube, a fuel pipe disposed in said air tube and extending into the pre-mix cone, a spud mounted on the end of the fuel pipe having a restricted end opening and having a flange disposed therearound to constitute a valve that controls the air flow through the pre-mix cone into the mixing tube, the location of the flange within the tapered wall of said cone determining the ratio of air and fuel supplied to the combustion area, baffle bars mounted to extend radially outward from the end of the air tube, said bars being square in cross section with a pair of V-shaped edges thereof pointing oppositely in the axial direction of the mixing tube and being disposed in the path of the fuel and air pre-mix as it passes from the end of the mixing tube around the outside of the closed end of the air tube in the space between the outer housing and air tube to cause laminar flow of the pre-mix along a substantial distance of the closed outside surface of the air tube from the end thereof, said air tube having burner holes throughout a constricted portion of said tube, some of said burner holes adjacent the closed end of the air tube being in alignment with said baffle members to be shielded thereby and eliminate turbulence and flame instability from the flow of the pre-mix from the mixing tube into the combustion area.

3,187,741
INCANDESCENT GAS FIRES
Arthur Frederick Outley, Wilton Lodge, Wergs Road, Tettenhall, Wolverhampton, England
Filed Nov. 19, 1962, Ser. No. 238,353
3 Claims. (Cl. 126—92)



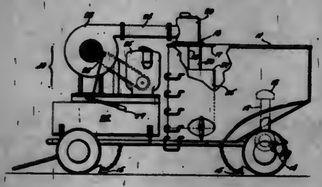
1. An incandescent gas fire having a casing including a frame portion, a gas burner tube mounted on the frame portion and having a row of jets, closed-back hollow radiants mounted side-by-side above the row of jets, there being openings in the bases of the radiants into the hollow interior of the radiants in register with the jets, an air inlet through the lower part of the casing, an air outlet through the upper part of the casing, a duct within the casing behind the radiant leading from the air inlet to the air outlet, an apertured plate behind the radiants forming a part of the front wall of the duct and a vertically corrugated partition against the apertured plate and dividing the plate laterally from the remainder of the duct.

3,187,742
COMBINATION GAS BURNER GRID AND FLAME SHIELD
Walter J. Powers, 486 Genesee St., Rochester, N.Y.
Filed Dec. 14, 1962, Ser. No. 244,613
12 Claims. (Cl. 126—214)



1. In a gas stove the combination with a gas burner of the type which directs a curtain of flame radially outwardly, of
(a) an annular member surrounding said burner,
(b) a grid mounted on said member and having a plurality of angularly spaced, radially projecting rigid ribs, said ribs being positioned above said burner and having coplanar upper surfaces for supporting a pan over said burner, and
(c) a flame shield for preventing undesirable heating of the handle of said pan, said shield partially surrounding said burner and extending downwardly from at least one of said ribs between said annular member and burner and having an inner face radially spaced from and confronting a portion of said burner, and which projects downwardly below said curtain of flame and deflects the part of said curtain of flame which impinges thereon, thereby to block the radially outward flow of that portion of said curtain of flame from said burner portion.

3,187,743
SNOW MELTING APPARATUS AND METHOD
Alex L. Primas, Jeffersonville, Pa., assignor to Thermal Research & Engineering Corporation, Conshohocken, Pa., a corporation of Delaware
Filed July 31, 1962, Ser. No. 213,668
1 Claim. (Cl. 126—343.5)

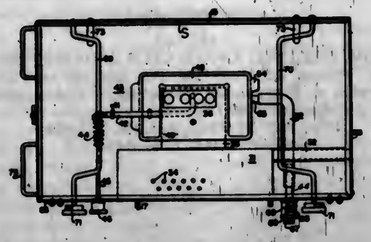


Snow melting apparatus comprising in combination a support plate, a burner supported on said plate having a nozzle extending downwardly therebelow, a downwardly extending tube disposed approximately 90° relative to said plate and secured to said plate and extending downwardly for a distance below said nozzle, an end plate secured on the lower end of said tube at a distance therefrom to leave an annular lateral space between it and the end of said tube for the outflow of combustion gases, a housing surrounding said tube and spaced radially outwardly therefrom, said housing being open at the lower end which is disposed below the lower end of said tube, said housing having an upper side opening in the side thereof at a distance above the lower end of said tube, a tank forming a snow receptacle around said burner housing unit, covered drain pipe means in said tank providing drainage and maintaining the water level therein at a predetermined height, said support plate overlying the upper side opening in said housing whereby said combustion gases from said burner are directed outwardly from the lower sides of said tube and upwardly through the water in said housing to heat the same and to cause it to splash against the support plate and deflect laterally outwardly through the upper side opening into a body of snow piled alongside the housing in said tank to effect melting thereof.

3,187,744
INCUBATOR
John W. Dorsak, Lyndhurst, and Thomas F. Van Denburg, Chagrin Falls, Ohio, assignors, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York
Filed Jan. 31, 1961, Ser. No. 86,181
11 Claims. (Cl. 128—1)

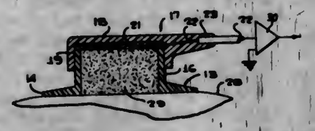
8. In combination: an incubator casing, a tray for holding an infant in a substantially horizontal position supported within the incubator casing and spaced from the walls thereof to define a peripheral trough between the tray and the casing, a compact humidifying and air-flow unit disposed below the tray and including a housing having an opening to receive recirculating air from said casing, air-impelling means supported within the housing, a substantially horizontally disposed air chamber secured to the housing to receive therefrom the discharge of the air-impelling means, a heating coil extending from the housing longitudinally of the air chamber, coil energizing means carried by the housing, a U-shaped water reservoir

supported on said air chamber and having its legs horizontally encompassing the exposed lateral sides of said air chamber and being provided with an outlet, said air chamber having a first opening in one of its lateral sides communicating with the interior of said water reservoir and a second opening in an upper face adapted to discharge against the underside of said tray whereby said tray serves



as a baffle to provide a diffused air flow, a damper plate pivotally mounted within the air chamber between said one lateral side and said upper face to proportion said air discharge between such first and second opening whereby the air directed through such first opening acquires moisture from the water reservoir, and means to vary the pivotal position of the damper plate and to provide a desired relative humidity in the incubator.

3,187,745
ELECTRODES
Jerome N. Beum, Alexandria, and Benjamin Herman Dennison, Jr., Arlington, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Aug. 1, 1961, Ser. No. 128,416
2 Claims. (Cl. 128—2.06)



1. In a system for deriving signals in response to voltages generated by the muscles of a human or animal subject without deriving significant noise even when the subject is moving, an electrode unit having a cup composed entirely of electrically insulating material, said cup including a substantially planar rim adapted to be secured to the skin of said subject, said rim defining the mouth of said cup, an amplifier electrically connected to be responsive to the signal picked up by said electrode unit, the improvement in said unit comprising: a single electrode mounted within said cup and completely removed from its mouth, an electrolyte completely filling the volume of said cup so that the only signal path between the skin of the subject and said electrode is through said electrolyte and the resistance of said path remains substantially constant despite movement of said subject.

3,187,746
MOUTH EXERCISER
Warren E. Gerber, 64 Old Orchard Road, Skokie, Ill.
Filed May 4, 1962, Ser. No. 192,376
6 Claims. (Cl. 128—136)

1. An orthodontic mouth exerciser for juveniles comprising a thin convex-concave plastic shield adapted to fit the mouth vestibule of the patient with the lips closed and to bear against the front teeth, a thin plastic strip extending rearwardly from the concave surface of the shield and adapted to pass between the front teeth of the patient and extend upwardly toward the roof of the

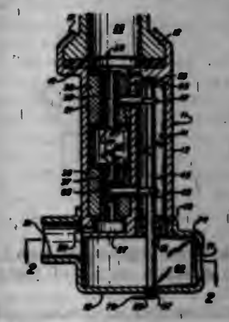


mouth cavity, and a sugarless slow dissolving confection pellet on the rear free end of the strip.

3,187,747
SURGICAL ABSORBENT PAD HAVING ION EXCHANGE PROPERTIES
Alfred A. Burgeni, Sheet Hills, and John C. Simkevich, Monmouth Beach, N.J., assignors, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 5, 1962, Ser. No. 177,197
13 Claims. (Cl. 128—156)

1. As a new article of manufacture, a fibrous absorbent dressing for absorbing and acidifying body fluids to lower the pH of such fluids and adjacent body surfaces which it contacts, said dressing comprising a body of multi-component fibers, one of said components being a polymer having textile fiber forming properties, another of said components being an acidfying polymer having cation exchange properties, said polymers being in alloy form in said multi-component fibers.

3,187,748
INHALATION-ACTUATED AEROSOL DEVICE
Ralph L. Mitchell, Galena, and Clarence L. Paulus, Columbus, Ohio, assignors, by mesne assignments, to Merck and Company, Inc., Rahway, N.J., a corporation of New Jersey
Filed Apr. 29, 1963, Ser. No. 276,267
4 Claims. (Cl. 128—173)



1. In an aerosol container and spray device, a pneumatic metering valve for dispensing small measured amounts of the contents of the aerosol container comprising:

(a) a container including a propellant in the contents of said container;

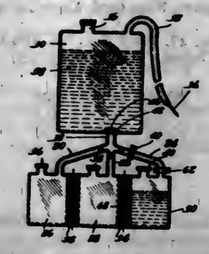
(b) a valve body attached over an opening in said container;
(c) a cap attached to said valve body, said cap having a mouthpiece and an opening opposite said mouthpiece;
(d) a vane, and its supporting shaft, disposed in said cap, said vane being positioned to block the passage between said opening and said mouthpiece, and said shaft being rotatably mounted on said valve body;
(e) a metering chamber in said valve body;
(f) a first passage communicating between said metering chamber and said container, said first passage being normally open;
(g) a second passage communicating between said mouthpiece and said metering chamber, said second passage being normally closed;
(h) closure means activated by movement of said vane and shaft to alternately close said first and second passages whereby human inhalation at said mouthpiece causes said vane to move in one direction closing said first passage and thereafter opening said second passage and whereby on movement of said vane in the opposite direction said second passage is closed and thereafter said first passage is opened.

3,187,749
HYPODERMIC CARTRIDGE
Stanley J. Sarnoff, 3 Pooks Hill Road, Bethesda 14, Md.
Filed Jan. 4, 1962, Ser. No. 164,325
3 Claims. (Cl. 128—218)



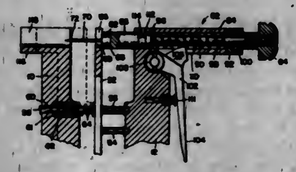
1. A cartridge for use with a hypodermic syringe comprising:
a storage tube,
a piston within one end of said tube, a fixed resilient stopper having opposing faces and a bore communicating with said opposing faces of the stopper, said bore being cylindrical substantially throughout the length of the stopper and said stopper being within the other end of the tube,
a fluid medicament in the tube between the piston and stopper,
a bead larger in diameter than any portion of said bore closing off said bore and embedded in the resilient stopper, and
a hollow needle smaller in external diameter than the diameter of the bead and larger in diameter than the diameter of the cylindrical portion of the bore and snugly slidably engaged by the walls of said bore, means cooperating between the needle and the tube for guiding the needle for rectilinear movement axially of the bore, one end of the needle contacting to the bead and the other end extending exteriorly of the stopper, said needle, upon movement thereof into the interior of the stopper and tube, displacing the bead from the bore whereby passage of fluid through the needle is unrestricted.

3,187,750
MULTIPLE BAG BLOOD STORAGE UNIT
Francis J. Tenczar, Jr., Chicago, Ill., assignor, by direct and mesne assignments, to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Continuation of application Ser. No. 686,412, Sept. 26, 1957. This application Jan. 15, 1963, Ser. No. 251,688
13 Claims. (Cl. 128—272)



1. A blood storage unit comprising: a hermetically sealed plastic container; a sealable entrance to said container for introducing blood therein; a plurality of additional plastic containers, each being hermetically sealed; conduit means including a main branch conduit hermetically sealed to said first-mentioned container and communicating with the interior thereof, said conduit means further including a plurality of secondary branch conduits individually hermetically sealed between said main branch conduit and said additional containers providing flowwise communication between said first-mentioned container and said additional containers; and selectively openable means connected to each of said branch conduits, initially closing said conduits and individually selectively opening one or more of said conduits permitting blood to flow from said first-mentioned container to a selected additional container in continuation of the hermetic seal of said containers.

3,187,751
EAR LOBE PIERCING DEVICE
Simon Coren, 150 Pleasant St., Attleboro, and David R. Stentiford, Norton, Mass.; said Stentiford assignor to said Coren
Filed Aug. 21, 1961, Ser. No. 132,708
1 Claim. (Cl. 128—330)



Apparatus for driving an ear piercing stud through an ear lobe comprising: first and second jaws pivotally mounted for parallel relative movement; spring means for urging said jaws apart; a pressure plate attached to and spaced from said first jaw in parallel relation thereto, said pressure plate movable with said first jaw toward said second jaw; means for limiting pressure plate movement toward said second jaw; a cylinder normally mounted on the free end of said first jaw; a piston slidably carried within said cylinder having means on the end thereof to releasably retain an ear piercing stud; spring means for biasing said piston toward said second jaw; cocking means for compressing said spring means; trigger means for releasing said spring means to drive said piston toward said second jaw; and said pressure plate and said second jaw provided at their free ends with downwardly extending slots in axial alignment with said cylinder and ear piercing stud

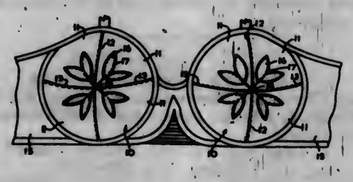
retaining means whereby said apparatus can be withdrawn from an ear lobe after the piston driving and cocking operations.

3,187,752
NON-ABSORBABLE SILICONE COATED SUTURES AND METHOD OF MAKING
Arthur Glick, Danbury, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Apr. 27, 1962, Ser. No. 190,604
26 Claims. (Cl. 128—335.5)



23. A surgical suture comprising a plurality of individual filaments in coordinate configuration, the filaments being bonded together to hold the filaments in a unitary strand, and hence non-brooming, having a coating on each filament of a non-toxic, physiologically inert, polymeric silicone, said silicone being present in an amount at least sufficient to impart non-capillarity and not more than 20% of the weight of the uncoated filaments, and the suture is inert towards living tissue.

3,187,753
BRASSIERES
Michael Angelo Hershon, 590 George St., Sydney, New South Wales, Australia
Filed Mar. 7, 1961, Ser. No. 94,019
Claims priority, application Australia, Mar. 7, 1960, 58,161/60
13 Claims. (Cl. 128—463)



1. A bust cup for a brassiere constructed from a plurality of sectors of fabric which are cut and shaped and joined together to form a cup of a desired shape and size, none of said sectors having an area greater than three times that of any other sector, there being provided in at least one sector a piece of reinforcing textile fabric material bonded to the material of the sector by any known bonding process, the piece of reinforcing material covering at least one tenth but not more than two thirds of the total area of the sector to which it is bonded and being shaped so that in use it conforms to the desired shape of the sector without producing wrinkles or creases, each piece of reinforcing material being located in its entirety within the area of the sector to which it is bonded and being separate from any other piece of reinforcing material to permit free flexing about joints between the sectors.

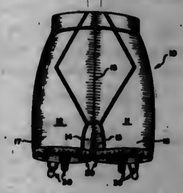
3,187,754
BRASSIERE AND FABRIC THEREFOR
Gilbert M. King, Providence, R.I., assignor to Seekonk Lace Company, a corporation of Rhode Island
Filed Feb. 26, 1962, Ser. No. 175,637
6 Claims. (Cl. 128—464)

1. A brassiere comprising a piece of fabric having a cup molded therein, said fabric being a single unitary piece of base material formed from intermeshed threads with a reinforcing portion superimposed thereon along only the



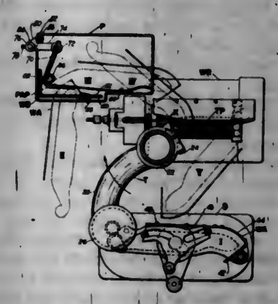
lower portion of the cup provided by a concentration of said intermeshed threads.

3,187,755
HOSE SUPPORTER
Benjamin Murdock, New York, N.Y., assignor to Fortuna Foundations, Inc., New York, N.Y., a corporation of New York
Filed Aug. 15, 1962, Ser. No. 217,125
1 Claim. (Cl. 128—535)



In combination with a foundation garment, a wire hose supporter comprising:
(a) a button receiving loop portion at the lower end thereof;
(b) a transverse bar portion formed by the crossing of said wire in the medial portion of said supporter;
(c) an upper transverse bar formed by said wires being reversely bent, said upper transverse bar defining,
(d) a pair of overlapping separable pressure responsive jaw members formed at the terminal ends of said wire;
(e) a tape member having an upper end secured to said transverse bar, and
(f) a button at the lower end thereof adapted to coact with said looped portion.

3,187,756
PASTER FOR MACHINE MADE CIGARS
Sterling T. Gustavson, Rosedale, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 1, 1961, Ser. No. 128,580
4 Claims. (Cl. 131—35)



1. A machine for manufacturing a smokeable article, said article having a tobacco core and an envelope for enclosing said core, means in said machine for applying

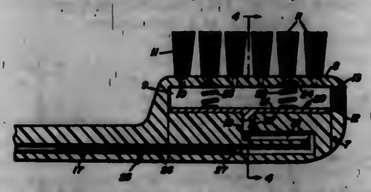
paste to said envelope, roller means in said machine for applying said pasted envelope to said core, a tension plate in said machine for removing excess paste from said envelope and an envelope transfer for transferring said envelope to said roller means, said transfer having a generally planar, envelope supporting surface and having a wiping element thereon projecting beyond the plane of said supporting surface for coacting with said tension plate in said machine for thereafter removing paste from said tension plate.

3,187,757
PLURAL DISPENSING UNITS AND TOILET KIT WITH CENTRAL COMPARTMENTED STORAGE MEMBER
Robert H. Jones, Jr., and Richard B. Jones, both % J. & J. Casting, Inc., R.R. 1, Box 267, Hibbing, Minn.
Filed Dec. 17, 1962, Ser. No. 245,213
2 Claims. (Cl. 132—79)



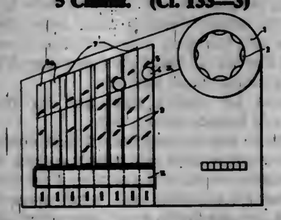
2. A toilet kit assembly comprising a housing having a curved side wall open at one end and having a removable cover therefor, a plurality of removable dispensing units positioned in said housing in closely abutting relation therewith, each dispensing unit having the general form in horizontal cross section of a sector of an annulus with an outer arcuate side wall corresponding to the inner surface of the curved side wall of the housing, a planar inner wall and angularly spaced planar side walls, the side walls of adjoining units abutting together and the inner walls of the units forming a polygonal central storage space, and a removable compartmented storage member conformably received in said polygonal central storage space, said removable storage member having a plurality of longitudinally extending compartments to receive a plurality of toilet articles therein.

3,187,758
TOOTHBRUSH WITH REFILLABLE DENTIFRICE DISPENSER
Raul J. Ekblad, Lincoln Park, Mich.
(1627 Lafayette St., Lafayette, Mich.)
Filed Jan. 2, 1962, Ser. No. 163,656
5 Claims. (Cl. 132—84)



1. A toothbrush comprising an elongated handle, a head on one end of said handle, said head having an enlarged dentifrice chamber therein and further having dentifrice discharge ports therein communicating with the chamber, tufts of bristles on the head around the ports, and pneumatically actuated means for ejecting the dentifrice from the chamber through the ports, said handle having an air passage therein including a cylindrical end portion communicating with the chamber, the cross-sectional area of the air passage and the end portion being substantially less than that of the chamber, said means including a plunger slidable in the passage from forcing air therefrom into the end portion, and a follower slidable in the chamber behind the dentifrice and operable by air from the passage for ejecting said dentifrice, said follower comprising a reciprocable plate in the chamber, and a piston on said plate slidably engaged in said cylindrical end portion of the air passage, the air forced into the end portion by the plunger causing an outward movement of the piston and an ejecting movement of the plate, said means further including return springs in the chamber operatively engaged with the plate on the dentifrice-engaging side thereof.

3,187,759
DEVICE FOR SORTING COINS
Hans Anders Ranäng, Lund, Sweden, assignor to AB Rastello, Lund, Sweden, a joint-stock company of Sweden
Filed Aug. 24, 1964, Ser. No. 391,478
Claims priority, application Sweden, Sept. 14, 1961, 9,132/61
5 Claims. (Cl. 133—3)

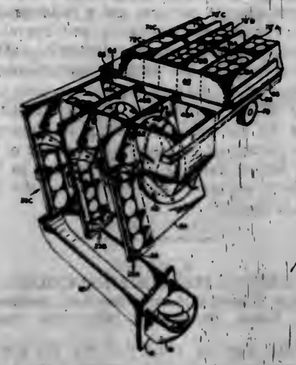


1. In a device for effecting a double sort of coins according to their size, the combination comprising a first coin sorting means including a downwardly sloping rail on which the coins are arranged to roll down in sequence, a plurality of coin deflectors arranged in longitudinal spaced relation along and above said rail and at progressively decreasing distances therefrom according to the respective coin values to be sorted, a tubular formed coin collector at each coin deflector position for receiving the coins deflected from said rail by the appertaining deflector, said coins dropping through said coin collectors by gravity, and a second coin sorting means located at the lower discharge end of each said coin collector, each said second coin sorting means being comprised of a channel having a floor along which all the coins slide, there being an elongated gap in the floor having a width less than the diameter of the coin received by the channel, and the distance between one edge of the channel and the far edge of the gap being at least equal to the diameter of the proper coin value for which said channel is designed whereby coins of said proper value will be passed along said channel to the discharge point thereon whereas other "foreign" coins having a diameter less than the distance between said channel edge and the far edge of said gap will tilt downwardly and pass through said gap to another coin receiving means.

3,187,760
COIN DISPENSING MEANS
Luther G. Simjian, Greenwich, Conn., assignor to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware
Filed Oct. 31, 1962, Ser. No. 234,369
13 Claims. (Cl. 133—4)

4. A coin dispensing system comprising:
hopper means for storing a plurality of coins in random interrelationship;

counting tube and control means for receiving a first predetermined number of coins, for storing the first predetermined number of coins, and for dispensing a second predetermined number of coins from the stored number of coins;

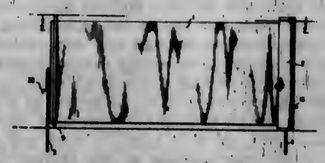


feed means, coupled to said counting tube and control means, for serially feeding coins from said hopper means to said counting tube and control means, and actuated thereby to bring the coins stored therein to the first predetermined number;

supply means for storing coins and for transferring coins to said hopper means; and

second control means, coupled to said counting tube and control means and said supply means, for counting dispensations of said counting tube and control means and for actuating said supply means to transfer coins on reaching a predetermined count and multiples thereof.

3,187,761
PORTABLE WIND SCREEN
James De Maio, Antlers Trailer Park, Pleasantville, N.J.
Filed Feb. 5, 1963, Ser. No. 256,364
6 Claims. (Cl. 135—5)



1. A portable wind screen comprising

a hollow elongate storage container;

linearly movable stakes slidably mounted inside said container and extendable through the bottom thereof, said stakes in their extended position serving as supports to anchor said container in a vertical position;

means guiding said stakes for movement from within said container to an extended position partially outside said container;

a first longitudinal slot in a wall of said container;

means extending through said first slot and engaging said stakes for moving said stakes to their extended position;

a rotatable screen support member mounted inside said container;

a second longitudinal slot in a wall of said container;

a flexible, wind resistant screen extending through said second slot and having one end attached to said rotatable support member whereby said screen may be wound on said rotatable support member for storage in said container;

a fixed screen support member attached to the end of said screen remote from said rotatable support member;

a linearly movable stake mounted on said fixed support member, said stake in its extended position serving as a support to anchor said remote end of said screen at a distance from said container; and

means attached to said stake for moving it to its extended position.

3,187,762
ELECTRO-FLUID APPARATUS
Richard E. Norwood, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 10, 1962, Ser. No. 243,337
7 Claims. (Cl. 137—81.5)



1. Fluid control apparatus comprising:

a power nozzle for issuing a fluid power stream;

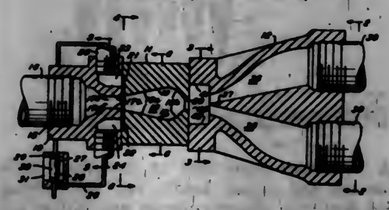
a pair of outlet channels for receiving said power stream;

a fixed wall angularly disposed between said power nozzle and one of said channels to create a reduced pressure region adjacent said power nozzle to effect a diversion of said power stream into said one channel;

a flexible member opposite said fixed wall forming a wall between said power nozzle and said other channel and adapted to conform to the periphery of said power stream as it flows into said one channel in response to a decreased pressure at said periphery adjacent said member; and

means adjacent said flexible member for moving said member away from said stream periphery into alignment with said other channel to attract and transfer said power stream from said one channel to said other channel.

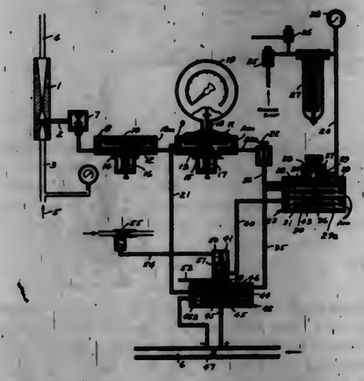
3,187,763
CONTROL APPARATUS
Robert B. Adams, Abington, Pa., assignor to Moore Products Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 17, 1962, Ser. No. 245,169
6 Claims. (Cl. 137—81.5)



1. Fluid flow control apparatus comprising a device having a fluid interaction chamber with opposite side walls each with diverging and converging portions, said converging portions extending to opposite sides of a discharge

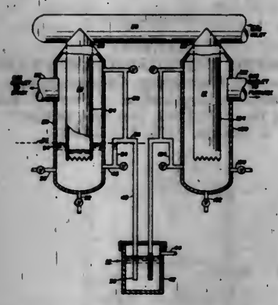
opening at their downstream termini, a nozzle in fixed relation to and communicating with said chamber between said walls, a supply of fluid connected to said nozzle for the delivery of a fluid jet from said nozzle into said chamber, control ports communicating with said chamber at each of said walls and contiguous to said nozzle for determining the positioning of the jet from said nozzle, fluid discharge passageways for receiving the fluid from said said discharge opening, and means providing a barrier to the effects of downstream conditions, said means being downstream of said discharge opening.

3,187,764
CHLORINATING APPARATUS
Karl-Heinz Arenhold, Karlsruhe-Durlach, Germany, assignor to Chlorator G.m.b.H., Grotzingen, Karlsruhe, Germany, a corporation of Germany
Filed July 18, 1962, Ser. No. 210,787
Claims priority, application Germany, July 25, 1961, C 24,697
9 Claims. (Cl. 137—114)



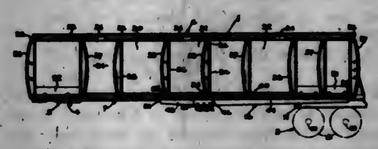
1. In an apparatus for admixing gaseous chlorine to a fluid flow in which apparatus the chlorine to be admixed is sucked on by a main injector included in the fluid flow to be treated from a supply of chlorine under pressure through a diaphragm-operated, flow-controlling vacuum reduction valve and a setting valve for regulating the flow of chlorine fed to the vacuum reduction valve for control by the same, conduit means connecting said main injector to one side of said setting valve, the other side of the setting valve being connected to one side of the diaphragm of the vacuum reduction valve, the other side of said diaphragm being connected to the atmosphere, and in which apparatus the volume of chlorine admitted by the vacuum reduction valve to the fluid flow is further controlled by means associated with said vacuum reduction valve and responsive to a pressure reduction valve including a measuring diaphragm responsive to a pressure drop across a constriction in a fluid flow which is proportional to the flow of fluid to be treated and controlling said vacuum reduction valve in accordance with a change in the volume of the fluid flow to be treated, said pressure reduction valve also including a comparing diaphragm coupled in parallel with said measuring diaphragm for comparing the response of the measuring diaphragm to the pressure drop across said constriction with the control action of said vacuum reduction valve as actually effected by the measuring diaphragm, and a diaphragm-controlled vacuum-regulating means included in the conduit means connecting said main injector to said setting valve, one side of the diaphragm of said regulating means being exposed to the vacuum and the other side to the atmosphere, one side of said comparing diaphragm of the pressure reduction valve being connected to the side of the diaphragm of the vacuum-regulating means exposed to the vacuum and the other side of said comparing diaphragm being connected to said one side of the diaphragm of the vacuum reduction valve connected to the other side of the setting valve and exposed to the vacuum generated by the suction of said main injector.

3,187,765
LIQUID VALVE ARRANGEMENT
David S. Frank, Chicago, Frederick B. Callanen, Barrington, and Victor A. Walter, Northbrook, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed May 28, 1962, Ser. No. 198,188
3 Claims. (Cl. 137—253)



1. Valve means for controlling the flow of low pressure, high temperature gases comprising a closed, vertically extending vessel, a gas-outlet communicating with the upper end thereof, a gas-inlet conduit extending vertically within said vessel from a lower end positioned below a selected datum level to a point above said datum level and thence outward through a wall of said vessel in sealed relation therewith, a valve-controlled liquid-inlet communicating with said vessel, a valve-controlled drain communicating with the bottom of said vessel, a liquid container having an overflow positioned below said datum level, an inverted siphon communicating with said vessel at a point below said datum level, extending upwardly to said datum level and then extending downward into said liquid container to a terminus positioned below the level of said overflow, and siphon breaking means comprising a conduit communicating with said inverted siphon at said datum level and with said vessel at a point above said datum level.

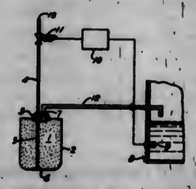
3,187,766
VALVING SYSTEM FOR A VESSEL HAVING A PLURALITY OF COMPARTMENTS
James J. Black, Cincinnati, Ohio, assignor, by mesne assignments, to Pullman Incorporated, a corporation of Delaware
Filed Apr. 21, 1961, Ser. No. 104,641
10 Claims. (Cl. 137—267)



1. A valving system for a generally horizontal vessel having a plurality of compartments disposed longitudinally thereof and adapted to confine bulk liquids, said valving system comprising, a single drain passageway extending longitudinally along the lower portion of said vessel, said

passageway being generally channel-shaped in cross section and having upper edges secured to the lower portion of the vessel, a valve box communicating with said passageway, said compartments each having a drain opening communicating individually with said passageway and with the valve box, respective normally closed discharge valves mounted in said valve box, said valve box including an internal separator isolating said valves from one another, the internal separator of the valve box preventing communication between the individual compartments and valves, each of said valves having an individual discharge means adapted to deliver liquid externally of the valve chamber, and a respective manually operated valve control element connected to each of said valves for operating the same, whereby said valves may be opened to drain said compartments individually.

3,187,767
DETERGENT DISPENSING APPARATUS
George E. Sherrard, Cambridge, Ohio, assignor to Calgon Corporation, a corporation of Pennsylvania
Filed Dec. 13, 1962, Ser. No. 244,339
2 Claims. (Cl. 137—268)



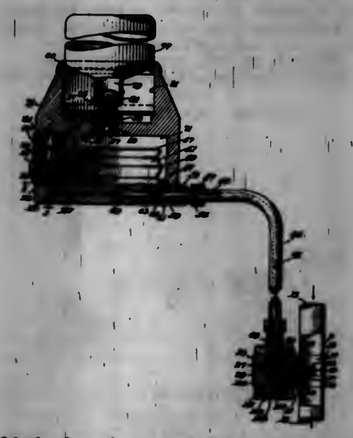
1. A package of dry detergent suitable for dispensing detergent of substantially constant composition in the dissolved form directly into a dishwasher in response to a conductivity control, comprising a closed cylindrical container, detergent therein consisting essentially of about 20% to about 80% sodium tripolyphosphate and about 80% to about 20% chlorinated trisodium orthophosphate, a fixture in the top of said container including outlet means and inlet means comprising a tubular water distributor adapted to be connected to an external water source and extending downwardly to a point near the bottom of said container, said distributor having at least two orifices for causing the ejection of water in different directions approximately parallel to the base of said container.

3,187,768
FLOW CONTROL
Robert W. Waterfill, Montclair, N.J., assignor to Buensod-Stacey Corporation, New York, N.Y., a corporation of Ohio
Filed Aug. 11, 1960, Ser. No. 49,080
6 Claims. (Cl. 137—514)



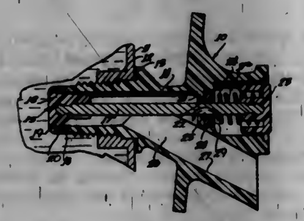
1. In a flow control device, a duct; a rotatable pivot shaft within said duct; a uni-planar damper mounted within said duct, and adapted to oscillate between closed and open positions; means for mounting said damper within said duct in fixed relation to, and rotatable with said pivot shaft; means for rotating said pivot shaft while also moving it along a path in a manner to expose a separate differential area of said damper to fluid flowing through said duct for each position of said damper, whereby the slamming of said damper is prevented when upstream pressure of the fluid increases.

3,187,769
MIXING APPARATUS
James McDowell and Frank C. Schrack, Chicago, Ill., assignors to The Diversey Corporation, Chicago, Ill., a corporation of Illinois
Filed May 19, 1961, Ser. No. 111,347
5 Claims. (Cl. 137—564.5)



1. Mechanism for automatically mixing controlled amounts of a first fluid with a second fluid comprising supply means through which the second fluid is adapted to flow toward a utilization region, a reservoir, means to feed the first fluid into the reservoir and to preclude any reverse flow thereof, means to control and modify the reservoir volume instantaneously available to the first fluid, a probe means included in the flow path of the second fluid for diverting minute portions of the said second fluid, said probe means having a pair of tubular fluid passages therein with an opening to one passage being faced toward the direction of flow of the second fluid and with an opening into the other passage faced from the direction of flow of the said second fluid and shielded from the flow path by the probe, tubular means having two independent fluid-directing passages therethrough, means to establish a communicating relationship between the tubular passage of the probe means facing the flow path of the second fluid and a first end of one of the fluid-directing passages, means to establish a communicating realtionship between the second end of the said one of the fluid-directing passages and the reservoir volume control means to supply the diverted second fluid into the said reservoir volume control means, thereby to reduce the volume of the first fluid within the reservoir at a rate substantially proportional to the instantaneous velocity and pressure condition of the second fluid, means to establish a connection between one end of the other one of the independent fluid-directing passages and the reservoir for supplying thereto from the reservoir a volume of the first fluid which is proportional to the reservoir volume change, means to establish a communicating relationship between the second end of the second fluid-directing passage within the tubular means and the tubular passage within the probe facing away from the direction of flow of the second fluid for feeding the controlled volume of the first fluid outwardly from the said tubular means for mixing with the second fluid in a region of reduced pressure relative to the pressure developed in the first passage within the probe, and means to preclude flow of the second fluid through the second passage within the tubular member toward the reservoir.

3,187,770
SELF-DRAINING FAUCET FOR A PORTABLE LIQUID CONTAINER
William H. Plamann, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Oct. 18, 1962, Ser. No. 231,381
1 Claim. (Cl. 137—589)



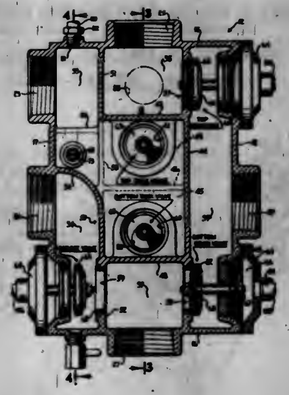
A faucet and valve assembly for a portable liquid container, comprising a horizontally-extending faucet having an internal passage for the flow of liquid from the inner end portion to the outer end portion thereof, said outer portion providing a discharge outlet extending downwardly from the lower side of said internal passage, a valve stem extending through said internal passage from said outer to said inner faucet portion, valve means mounted on the inner end of said valve stem for opening said passage to the outflow of liquid when said valve stem is moved inwardly, said faucet outer portion providing a vertically-extending wall having an opening therein, the outer portion of said valve stem being slidably received in said opening and projecting therethrough to the exterior of said faucet, gasket sealing means slidably received on the projecting end of said valve stem and bearing against the outside of said faucet wall, spring means biasing said valve to closed position with the projecting end of said valve stem fully extended, said spring means also urging said gasket sealing means against the outside surface of said wall, said valve stem having a recess in one side thereof of greater axial extent than said wall and gasket means, said recess being adjacent said wall and gasket means when said valve is in closed position and providing an air passage from the outside to the inside of said faucet, said recess being wholly within said passage when said valve is open, and said gasket means cooperating with said valve stem and said wall to provide a liquid-tight seal while liquid is being discharged through said internal passage until said valve is closed.

3,187,771
CONTROL VALVE MECHANISM
John Rudelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 13, 1961, Ser. No. 159,011
2 Claims. (Cl. 137—599.1)

1. In a control valve for water treating systems of the type having a treatment tank with top and bottom flow ports therein:

(A) a housing having
  (1) opposite upright front and back walls,
  (2) an upright wall closing one end of the housing and having
    (a) an inlet port in an upper portion thereof, and
    (b) a service port below the inlet port,
  (3) an upright wall closing the opposite end of the housing and having
    (a) a drain port therein,
  (4) top and bottom walls respectively having
    (a) a top port to connect with the top flow port of a treatment tank, and
    (b) a bottom port to connect with the bottom flow port of a treatment tank;

(B) partition members in the housing cooperating with the walls thereof to define
  (1) an inlet chamber having one portion thereof inwardly adjacent to and communicated with the inlet port, and having a main portion thereof centrally of and on the back wall of the housing, and defined in part by a first upright one of said partition members that is in spaced opposing relation to both the front and back walls of the housing,



  (2) a service chamber inwardly adjacent to and communicated with the service port, and extending downwardly therefrom to the bottom of the housing,
  (3) top and bottom tank chambers spaced from the ends of the housing and located respectively above and below the main portion of the inlet chamber, but having portions directly ahead of the latter and separated therefrom by said first upright partition member, said bottom tank chamber having a portion directly adjacent to the service chamber, and
  (4) a drain chamber at said opposite end of the housing having portions directly adjacent to said top and bottom tank chambers and defined in part by a second upright one of said partition members that is common to the main portion of the inlet chamber and both of said tank chambers;

(C) means on said partition members defining a number of ports each of which provides an annular valve seat that faces an external wall of the housing,
  (1) a first one of said ports being in said first upright partition member and communicating the main portion of the inlet chamber with the top tank chamber,
  (2) a second one of said ports also being in said first upright partition member but communi-

cating the main portion of the inlet chamber with the bottom tank chamber,

(3) a third one of said ports being in said second upright partition member and communicating the top tank chamber with the drain chamber,

(4) a fourth one of said ports communicating the bottom tank chamber with the service chamber, and being in a partition member common to said chambers, and

(5) a fifth one of said ports, also in said second upright partition member, communicating the bottom tank chamber with the drain chamber;

(D) separate valve members in the housing cooperatively associated with each of said ports and movable toward and from port closing engagement with the seat provided thereby; and

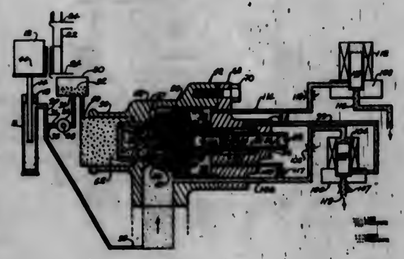
(E) valve actuating means mounted on external walls of the housing and operatively connected with each of said valve members.

3,187,772

FLUID CONTROL DEVICE

Wallace A. Hanson, Jr., Valley Hill Road, Rte. 1, Riverdale, Clayton County, Ga.

Filed Mar. 15, 1963, Ser. No. 265,388
19 Claims. (Cl. 137—599.2)



1. In a control valve for controlling the flow in a fluid pressure system such as a control system for controlling the descent and leveling of an elevator in a hydraulic system in which there is a jack cylinder and elevator piston operated by fluid delivered under pressure from a fluid reservoir,

(a) a valve housing having a chamber therein with an outlet leading to the reservoir and an inlet to said valve from the pressure line,

(b) first control means in said valve having a throttled orifice closing said pressure inlet from said outlet to control the flow of fluid effective from said jack cylinder,

(c) a second control member in said valve operable independently of said first control member and closing a smaller orifice leading from said pressure inlet to said outlet,

(d) first control means actuatable to cause an imbalance on said second control means thereby to cause a reduced and throttled flow through said orifice normally closed by said second control means to establish a leveling speed.

(e) second control means actuatable to cause an imbalance on said first control means to establish a main flow,

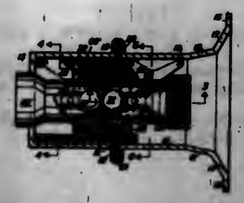
(f) and said first and second control means being operable to cause said first and second member to return to closed position to bring said system to rest.

3,187,773

QUICK DISCONNECT COUPLING

Benjamin A. Braunberger, St. Louis, Mo. (713 5th St. SW., Minot, N. Dak.)

Filed Nov. 6, 1962, Ser. No. 235,766
11 Claims. (Cl. 137—614.04)



1. In a quick disconnect coupling adapted to axially displace a pair of identical opposed mating pressure nipples having self-sealing internal valve means operable to permit fluid flow therethrough when said nipples are in abutting contacting relation to each other, the combination of:

an outer static coupling member,

said coupling member having an internal longitudinal passageway in communication with a flared end,

a hollow body slidably positionable within said coupling member adapted to slidably mount therein the said pressure nipples,

and pivotal dog means on said body,

said dog means including a plurality of circumferentially arranged lever arms,

said lever arms each including a relatively short nipple engaging portion and an elongated driving portion engageable with the flared end of said coupling member adapted to impart accelerated forces to said nipples and permit fluid flow therethrough when said body is slidably positioned within said coupling member from the flared end thereof.

3,187,774

VALVE ASSEMBLY

Lawrence E. Leigh, 8462 Marty, Overland Park, Kans., and Druxel T. Carlson, Kansas City, Mo.; said Carlson assignor to said Leigh

Filed Feb. 4, 1963, Ser. No. 255,914
7 Claims. (Cl. 137—614.11)



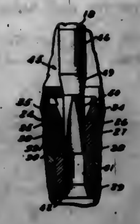
1. A valve assembly comprising a body having a cavity formed therein; a substantially U-shaped, flexible, fluid-carrying tube disposed within said cavity; a block shiftably carried within said cavity, said block having an opening therethrough; a cam within said opening; and a shaft coupled with said cam whereby the latter may be moved into engagement with said block and thereby shift said block to a position of simultaneous compressing engagement with the legs of said tube.

3,187,775

FLOW BEAN

Verdie E. Pinnell, Brea, Calif., assignor to Shaffer Tool Works, Brea, Calif., a corporation of California

Filed Aug. 21, 1961, Ser. No. 132,668
11 Claims. (Cl. 137—625.3)



11. In a flow bean tip: a control portion, said control portion having a plurality of longitudinally extending grooves spaced annularly apart from each other, said grooves being equal length and increasing in effective size lengthwise from one end thereof, one of said grooves having a somewhat greater pressure area than the other grooves.

3,187,776

FLOW CONTROL PIPELINE FITTING

Arthur H. Snell, Jr., Houston, Tex., assignor to Keystone Valve Corporation, Houston, Tex.

Filed Feb. 27, 1963, Ser. No. 261,331
5 Claims. (Cl. 138—94.3)



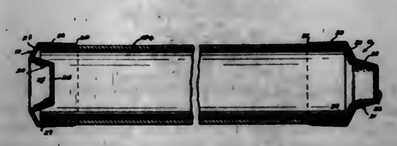
1. A line blind for a pipeline including: a one-piece body for installation in the pipeline, the body being provided with a fluid passageway for the fluids in the pipeline, the passageway having a section of increased inside diameter to provide two opposing faces, and a lateral opening intersecting the passageway at the section of increased diameter; a separately removable flow plate engaging one of the faces; and an expandable assembly, separately removable through the lateral opening as an assembly, engaging the other face and holding the flow plate in engagement with the first-mentioned face, and provided with an opening through which the fluids in the pipeline may flow which is at least as large as the passageway in the body, said expandable assembly comprising two telescoping members, the first member engageable with the flow plate for holding it against one of the faces and the second member engageable with the other face, means cooperating with the body directly for holding both of the members against rotation relative to the body, a nut held against axial movement relative to the second member but rotatable relative thereto, said nut threaded on the first member and provided with gear teeth on its exterior surface, a worm gear removably mounted in the lateral opening and engaging the gear teeth on the nut and means exterior of the body for driving the worm gear.

3,187,777

PIPE SECTION END COVER CONNECTING DEVICE AND METHOD

Joe C. Ashlock, Kirkwood, Mo., assignor to Standard Pipeprotection Inc., St. Louis County, Mo., a corporation of Delaware

Filed May 7, 1962, Ser. No. 192,899
8 Claims. (Cl. 138—96)



1. An end cover for pipe sections comprising a hollow internal cylindrical portion having a smooth inner surface, a closure portion joined to said cylindrical portion and closing one end thereof, and an annular internal rib at the one end of the cylindrical portion at the junction of said cylindrical portion and said closure portion.

3,187,778

DUCT INSULATION

John F. Peyton, Inglewood, and Robert B. Trelease, Los Angeles, Calif., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan

Filed Aug. 20, 1959, Ser. No. 834,968
2 Claims. (Cl. 138—143)



1. Duct insulation, comprising: a pair of complementary, generally semi-circular sections, each including a generally semi-circular pad of heat insulating batting, a cover of metallic foil sheet material sealingly enveloping said pad, said sheet being configured to define a generally semi-circular inner wall, a similarly configured outer wall of larger diameter and a pair of radially extending webs that interconnect the ends of said walls, and a generally semi-circular stiff shell of synthetic plastic impregnated textile material bonded to the external surface of said outer wall; a generally circumferentially extending closure flap extending from one side of each section to overlap the opposite side of the other section, said closure flap being defined by said metallic foil sheet material and being covered by said shell; means for removably securing said sections in encircling relationship upon said duct; and means for sealing the joints between adjoining elements of said sections, including elongated cylindrically shaped resilient sealing members interposed between the abutting webs of said sections and extending longitudinally thereof, said abutting webs being formed to sealingly engage said resilient member to thereby seal the joints between said sections.

3,187,779
VARIABLE HEIGHT PILE CUTTING APPARATUS IN AXMINSTER LOOMS
Harry J. Smiley and Maurice W. Worth, Glasgow, Va., assignors to James Lees and Sons Company, Bridgeport, Pa., a corporation of Delaware
Filed Dec. 20, 1962, Ser. No. 246,275
17 Claims. (Cl. 139—7)



1. In an Axminster pile fabric loom having a dipping spool motion and a pair of knives for shearing pile tuft legs, the subcombination which comprises cyclically controlled mechanism for varying the extent of spool motion dip in accordance with a pattern, means including a cam for controlling said mechanism, and means for cyclically presenting short and long tuft legs to said knives in accordance with and in timed relation to the means for varying the dip of the spool motion.

3,187,780
WEIGHT FOR A JACQUARD HEDDLE
Bernhard Koch, Zurich, Switzerland, assignor to Grob & Co. Aktiengesellschaft, Horgen, Switzerland
Filed July 5, 1962, Ser. No. 207,597
Claims priority, application Switzerland, Aug. 3, 1961, 9,123/61
1 Claim. (Cl. 139—90)



A weight adapted to be detachably connected to the loop on the lower end of a jacquard heddle, comprising an elongated rod having a flattened head portion at one end thereof, said flattened head portion being slotted inwardly from the end thereof to provide a pair of yielding shank portions, the inner walls of said longitudinally extending slot being cut away inwardly from the end of said head a distance substantially equal to one half the length of said longitudinally extending slot to form opposed jaw members arranged in spaced apart relation and to provide a space for accommodating the loop on said heddle, and a transversely extending pin projection on one of said jaw members adapted to extend transversely of said cut-away portion through said loop and engage the opposite wall of said other jaw member to detachably connect said weight with said heddle, said space being formed to accommodate a pointed instrument to permit said jaws to be yieldingly separated when said loop is inserted and removed from said projection.

3,187,781
YARN GUIDING AND TENSIONING ATTACHMENT FOR AUTOMATIC LOOM SHUTTLES HAVING BOBBINS
William A. Roberts, Paterson, and Jasper P. Watkins, Clifton, N.J., assignors of twenty-five percent to Dorothy R. Woodell, Clifton, N.J., and twenty-five percent to John E. Dvorovy and Anna Dvorovy, jointly, Lodi, N.J.
Filed June 28, 1963, Ser. No. 291,380
4 Claims. (Cl. 139—213)



1. A yarn guiding and tensioning attachment for shuttles having bobbins comprising a thin molded plastic carrier plate having a flat face provided with a plurality of longitudinally spaced recesses near each longitudinal edge thereof, said carrier plate having diagonal openings formed therethrough near corresponding ends of the recesses and opening into the bottoms of the recesses, gripping projections in said recesses and spaced from said openings, wide individually formed mono-filament nylon resilient loops which are substantially U-shaped and having terminal end portions engageable through said diagonal openings near opposite sides of said plate, said terminal end portions bent within said recesses to lie bodily therein longitudinally thereof and between and gripped by said gripping projections, hardenable plastic material substantially filling said recesses and covering and enclosing the terminal end portions therein, a pressure-sensitive adhesive covering said flat face of the carrier plate, and a masking strip covering said adhesive and readily removable therefrom.

3,187,782
TERRY CLOTH AND METHOD OF MAKING SAME
Richard S. Gattoni, Wyckoff, N.J., assignor to Wellington Sears Company Incorporated, New York, N.Y., a corporation of Massachusetts
Filed Feb. 4, 1963, Ser. No. 256,500
2 Claims. (Cl. 139—396)



1. As an article of manufacture, terry cloth having pile loops cut to provide cut warp ends over its surface, said cloth having a design printed within the surface of cut pile loops whereby the design is determined by a pattern of printing upon a surface of uniform height as distinguished from a design determined primarily by a pattern in relief.

3,187,783
AXMINSTER FABRIC
Harry J. Smiley and Maurice W. Worth, Glasgow, Va., assignors to James Lees and Sons Company, Bridgeport, Pa., a corporation of Delaware
Filed Mar. 3, 1965, Ser. No. 436,959
3 Claims. (Cl. 139—401)

1. A cut pile Axminster fabric having a first weftwise double pile row comprising upstanding pairs of pile legs with the legs of each pair being cut and formed from the warp yarns of said first row, the lengths of cut yarn of all of said legs in said first pile row being substantially equal, and a second weftwise double pile row comprising upstanding pairs of pile legs with the legs of each pair being cut



and formed from the warp yarns of said second row, the lengths of cut yarn of all of said legs in said second pile row being substantially equal but being cut longer than the cut legs in said first row, the yarn in said first row and the yarn in said second row being of substantially the same character.

3,187,784
AUTOMATIC HIGH-SPEED ARMATURE WINDING AND COIL LEAD-INSERTING MACHINE
Washington J. Caldwell, Toledo, Ohio, assignor to Eltra Corporation, a corporation of Ohio
Filed Aug. 4, 1960, Ser. No. 47,471
18 Claims. (Cl. 140—71)



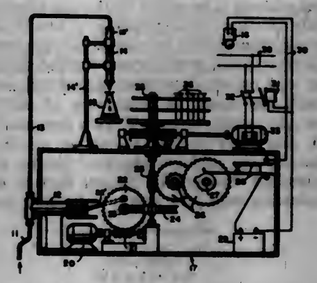
1. In an armature winding and connecting machine, the combination of a holding means for an unwound armature assembly consisting of a shaft, a slotted armature core and a slotted commutator, said holding means holding means holding the armature assembly in a predetermined initial position for predetermined periods during a winding cycle, rotating means cooperating with the holding means to rotate the armature assembly in an end-over-end fashion, at least a pair of means one cooperating with each opposite side of the slotted commutator to sever a pair of continuous strands of wire and insert the free ends of the continuous strands of wire in commutator slots on each side of the commutator, guide means for positioning the continuous strands of wire from extraneous sources in adjacent slots in the armature core during the rotative period of the armature by the rotating means, control means cooperating with the rotating means to stop the armature at the predetermined initial position after a predetermined number of revolutions to form an armature coil, said control means also initiating a new severing and inserting step for the pair of means cooperating with the commutator to sever the already-wound coils and insert the trailing ends of the coils in commutator slots and means cooperating with the pair of means cooperating with the commutator to maintain a grip on the free ends of the commutator strands after the already-wound coil has been severed from the continuous strands.

3,187,785
METHOD AND APPARATUS FOR MANUFACTURE OF ELECTRODES
Alton L. Crosby, Austin, and Marion S. De Lucia, Stanley J. Gartner, and Harold D. Losey, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 2, 1959, Ser. No. 850,407
4 Claims. (Cl. 140—71.5)



1. In a method of winding grids consisting of a helix of fine lateral wire of a given length wound about a frame, the steps of securing one end of a continuous lateral wire to the frame while arrested, slowly rotating the frame to wind the first portion of the helix of lateral wire thereon, increasing the speed of rotation of the frame to the winding speed and winding the major portion of the helix at said speed, dampening the vibration induced in the lateral wire by said winding operation, slowing the speed of rotation of the frame for the last several turns of the helix, and securing the lateral wire to the frame while arrested at the termination of the helix.

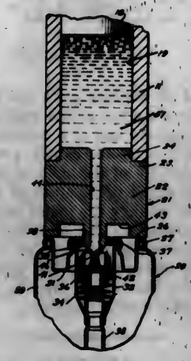
3,187,786
APPARATUS FOR CHROMATOGRAPHIC ANALYSIS
Jiri Hrdina, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed Mar. 3, 1964, Ser. No. 349,055
Claims priority, application Czechoslovakia, Sept. 3, 1960, 5,390/60
4 Claims. (Cl. 141—94)



1. In an apparatus for chromatographic analysis of a mobile phase and for collection of resulting fractions of eluate, the improvement which comprises in combination:
a substantially vertically disposed column including a tube and a separation substance;
a precision pump delivering a mobile phase to an upper part of said column;
a piston in said pump and a first driving means reciprocating the piston;
an exchangeable collection vessel adapted to receive a fraction of eluate issuing from a lower part of said column;
signaling means indicating a desired replacement of said collecting vessel by another collecting vessel to receive a further fraction of eluate;
electromechanical means operating the signaling means

in synchronous relation to a predetermined succession of strokes of the pump piston;
and second driving means for said electromechanical means operatively connecting said electromechanical means with said first driving means.

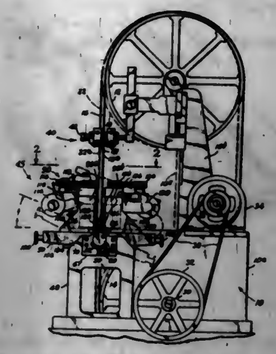
3,187,787
TINTING DEVICE ADAPTER
Robert J. Kerr, 563 Eton Drive, North Barrington, Ill.
Filed May 17, 1962, Ser. No. 195,447
1 Claim. (Cl. 141—348)



An adapter for injecting metered quantities of tinting material into a container containing an aerosol paint composition under pressure and having an upper peripheral rim and a centrally disposed depressible valve element, said adapter comprising a cylindrical body portion having a relieved annular portion arranged to fit snugly within a tubular dispensing means, said body portion also having an outwardly extending annular portion on the surface opposite said relieved annular portion proportioned to be seated on the rim of said container, said body portion also including a frusto-conical protuberance circumscribed by said outwardly extending annular portion, said protuberance extending beyond the plane of said outwardly extending annular portion a distance such that upon the occurrence of said seating on said rim said protuberance will have depressed said valve element, said body portion having an axially extending bore therein, and said protuberance having at least one bore extending through the conical surface thereof and communicating with said axially extending bore.

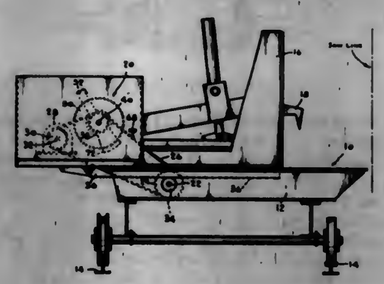
3,187,788
BAND SAW
Arthur Marion Ferrari, P.O. Box 315, Corning, Calif.
Filed Dec. 1, 1961, Ser. No. 156,458
12 Claims. (Cl. 143—5)

1. In a band saw machine including a work bed, a band saw blade, and vertically spaced upper and lower wheels training the band saw blade with a reach of the saw blade extending between the wheels and past said work bed, means for guiding work traveling into said reach of the saw blade comprising an adjustable frame; first and second work-contacting guide structures mounted on said adjustable frame in position to engage opposite sides, respectively, of work fed into the band saw blade; at least one of said guide structures defining substantially a nonyieldable vertical support plane; a feed bed extending between said first and second work-contacting guide structures for supporting the base of work fed into the band saw blade; and means mounting said adjustable frame adjacent said work bed including pivot means accommodating swinging of the adjustable frame and guide structures whereby the support plane defined by said one guide structure, progressing in an upward direction, inclines inwardly toward the axis of the said upper wheel; said means mounting said adjustable frame further including vertical adjustment means accommodating adjustment in the elevation



of said adjustable frame relative to said work bed whereby said feed bed between said work-contacting guide structures may be placed at least at substantially the elevation of said work bed with said support plane in an inclined as well as a vertical position.

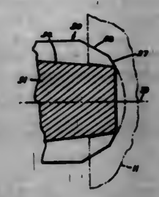
3,187,789
SAWMILL CARRIAGE
Francis W. Cloeruman, Newald, Wis., assignor to The Filer and Stowell Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 30, 1963, Ser. No. 298,652
15 Claims. (Cl. 143—118)



1. A mechanism operable to move the knees of a sawmill carriage comprising,
motor means,
motion transfer means cooperating with said motor means to move the knees in accordance with the degree of motion of said motion transfer means,
first and second stop means movable in respect to each other in order to assume a plurality of spaced relationships,
means cooperating with said motion transfer means and moving between said two stop means to limit the degree of motion of said motion transfer means in accordance with the spaced relationship of said two stop means,
a flexible connector having one of its ends connected to impart motion to one of said stop means in response to flexure of said connector,

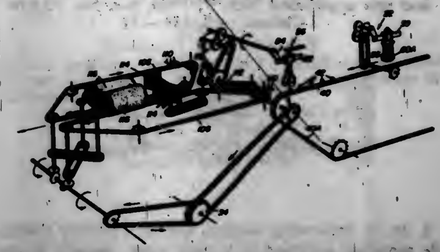
and movable means to flex said connector within a predetermined range of flexure to thereby cause movement of said one stop means in accordance with the degree of flexure of said connector.

3,187,790
SCREW AND SCREW DRIVER COUPLING
George S. Wing, Palos Verdes Estates, Calif., assignor to Hi-Shear Rivet Tool Company, Torrance, Calif., a corporation of California
Filed May 18, 1959, Ser. No. 814,006
2 Claims. (Cl. 145—50)



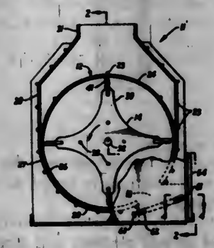
1. A coupling for joining two elements with their central axes aligned so that turning one element around its central axis will turn the other element, said coupling comprising a recess on an end of one element and mating convex surfaces on the other of said elements adapted to enter into and engage with said recess, said recess comprising a plurality of projections, each projection being bounded by a pair of projection sidewalls which lie in planes that are substantially parallel to said central axis, each pair of adjacent projections being separated by an intervening flute, the sidewall of each adjacent projection forming a sidewall of each flute, the sidewalls of each flute thereby being substantially parallel, an outer wall partially bounding each flute, each outer wall lying at approximately 30° to the central axis; an outer bottom segment which is a fragment of a cone partially bounding each flute, each outer bottom segment lying at approximately 60° to the central axis, each outer bottom segment and its respective outer wall meeting at an intersection; the said intersection lying farther from the central axis than the portion of the adjacent projections nearest the central axis, said outer wall diverging outwardly from the said intersection and the longitudinal axis, an inner bottom segment which is a fragment of a sphere in the form of a surface of revolution developed around the central axis and concave, the outer bottom segment being substantially tangent to the inner bottom segment where they meet, the inner bottom segments lying closer to the central axis than the outer bottom segments, said convex surfaces comprising a plurality of radially extending blades, each of said blades having a pair of sidewalls which are substantially parallel to each other and to the central axis, and which are spaced apart by substantially the same distance that the sidewalls of the flutes are spaced apart, each blade also having an outer wall and an end wall which bear the same angular relation to the central axis as the respective outer wall and bottom surface of the flutes, the outer walls and end walls of the convex surfaces being substantially and respectively congruent to and adapted to make full surface contact with portions of the outer walls and bottom surfaces of the recess, whereby the blades are adapted to enter into the flutes with the respective sidewalls in engagement for effecting a torque driving connection between the two elements and with the elements held in alignment by the engagement of the outer walls and bottom surfaces of the recess with the outer walls and end walls of the convex surfaces.

3,187,791
PEELING AND CORING MACHINE
August Dumser, 16 Edmondson Ridge Road, Baltimore 28, Md.
Filed Nov. 2, 1962, Ser. No. 234,941
4 Claims. (Cl. 146—43)



1. A peeling and coring machine, comprising, a first and a second serially arranged pair of conveyor means, a plurality of equally spaced upwardly extending tubular core removers positioned on said first conveyor means upon which fruit is loaded by impalement at a loading station, means including a blossom cutter for said fruit in the line of travel of said first conveyor means after said loading station for accurately and securely positioning each article of fruit on its respective core remover and for blossoming thereof, means in the line of travel of said first conveyor means after said blossom cutter for scalding said fruit, means in the line of travel of said first conveyor means after said scalding means for slitting and coring said scalded fruit, and a transfer zone consisting of the depending end of said first conveyor means and the starting end of said second conveyor means, with said second conveyor means having a plurality of spaced elements for impaling the fruit at said depending end to transfer said fruit from the core removers of said first conveyor means to said second conveyor means.

3,187,792
FEED MILL HAVING FOREIGN MATERIAL TRAP CHAMBER
Eugene D. Thompson, Rte. 7, Box 612, Modesto, Calif.
Filed July 22, 1963, Ser. No. 296,747
5 Claims. (Cl. 146—70.1)



1. A pulverizer comprising a cylindrical drum carried on a substantially horizontal axis and having an opening in the curved surface of said drum at one side of the bottom portion thereof, a rotor mounted to revolve in said drum for comminuting material therein, walls defining a chamber communicating with said opening in said drum and adapted for receiving material thrown in a substantially horizontal tangential path through said opening by said rotor, said chamber being formed to contain a bed of comminuted material positioned in said tangential path to trap and cushion the impact of relatively heavy objects thrown through said opening and into said chamber by said rotor, and a door communicating from said chamber to the outside of the pulverizer, said door being located in said tangential path.

3,187,793
AMPHIBIOUS UNDERWATER STORAGE SYSTEM
Harold G. Quase, Kensington, Md., assignor to Underwater Storage, Inc., a corporation of Maryland
Original application Jan. 12, 1959, Ser. No. 786,434, now Patent No. 3,114,384, dated Dec. 17, 1963. Divided and this application Nov. 7, 1960, Ser. No. 72,830
2 Claims. (Cl. 150—.5)



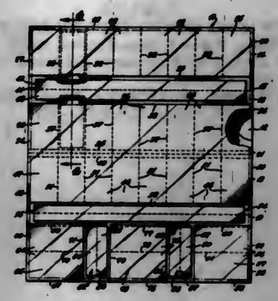
1. In an underwater storage system a flexibly collapsible container mounted on a rigid, open, metallic framework as a cradle, said container and framework being buoyant in water when the continer is filled with a fluid of a specific gravity substantially less than water, vertically extending H beams having their lower ends embedded in the underwater storage site, said H beams being spaced to engage opposed sides of said cradle to guide and support said cradle to fixed storage position under water, said H beams having their channels disposed to enclose and support a corner of said rectangular cradle for vertical movement, each corner of said cradle having an extension of a side slidingly engaging a channel of an H beam for sliding support and guide for said cradle in vertical movement.

3,187,794
CLOSURE FOR CYLINDRICAL CONTAINER MEMBER
Ellis D. Vissing, % E. D. Vissing Co., P.O. Box 437, Idaho Falls, Idaho
Filed June 12, 1961, Ser. No. 116,459
4 Claims. (Cl. 150—.5)



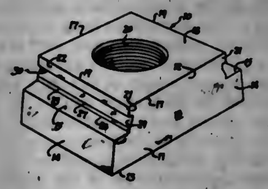
1. A closure comprising:
a tubular cylindrical container member of sufficient rigidity and wall thickness to retain its shape without additional support;
a thin-walled tubular membrane extending outwardly from one end of said member and formed integrally therewith;
an overlapping sleeve of sufficient rigidity and wall thickness to retain its shape without additional support formed integrally with the outer end of said membrane and surrounding but being separated from the membrane from said outer end thereof to the said one end of said member, said sleeve having an interior diameter sufficiently large to receive and telescope over said one end of said member and being both rotatable and longitudinally movable relative to said member so as to enable said membrane to assume a twisted closed position;
and cooperating means on said sleeve and member adapted to selectively prevent motion of said sleeve relative to said member.

3,187,795
CARD HOLDER
Marshall E. Stephenson, 1500 N. Howland, Porterville, Calif.
Filed Aug. 27, 1963, Ser. No. 304,776
2 Claims. (Cl. 150—39)



1. A card holder comprising a sheet of flexible material having a plurality of fold lines extending parallel to one edge of said sheet, said fold lines dividing said sheet into four sections of equal size, said sections being foldable into a package substantially equal in size to one of said sections, each of said sections being provided with a plurality of pockets adapted to hold cards therein, the pockets of the first and second sections opening toward the fold line between said first and second sections, retainer means secured to said sheet along said fold line between said pockets and having portions extending toward said pockets to maintain cards therein, the pockets of the third section being formed with the openings thereof directed toward the fold line between said third section and the remaining section, retainer means secured to said sheet adjacent said last mentioned fold line having a portion extending toward the adjacent pockets to maintain cards therein, said pockets on the remaining section formed with the openings thereof directed in a direction perpendicular to said last mentioned pockets, and retaining means secured to said sheet for maintaining cards in said last mentioned pockets.

3,187,796
MULTI-PURPOSE PIERCE AND CLINCH NUT
Plummer E. Double, Detroit, Mich., assignor to Multifastener Corporation, Redford, Mich., a corporation of Michigan
Filed June 25, 1962, Ser. No. 204,854
2 Claims. (Cl. 151—41.73)



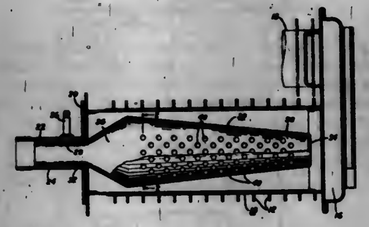
2. In a nut capable of being utilized either as a pierce nut capable of piercing its own aperture in a metal plate or as a clinch nut installed in a pre-pierced aperture in a metal plate comprising a rectangular pilot portion concentrically surrounding an axial thread and having an end face circumscribed by four linear piercing edges, a rectangular nut body portion integral with said pilot portion and having two of its opposing sides co-planar with the two corresponding piercing edges and having its other two sides non-planar and each provided with a flange projecting laterally beyond the corresponding piercing edge to define stop surfaces spaced from the pilot end face through a pilot height dimension which is greater than the thickness of the plate in which the nut is to be installed, undercut grooves in the opposing non-planar sides of said body portion intermediate said stop surfaces and said pilot portion, said grooves each terminating short of the piercing edges of the pilot portion to define an overhanging piercing shoulder between the corresponding pilot end face piercing edge and the stop surface, said shoulders each having a planar end surface parallel to the axis of said aperture, a pair of planar pilot ledge surfaces each parallel to the axis of the aperture and each substantially co-planar with the adjacent overhanging shoulders and each such ledge surface projecting from the adjacent flange stop surface toward the corresponding one of said overhanging shoulders, each such ledge surface being longitudinally co-extensive with the adjacent stop surface and the corresponding overhanging shoulder, an inclined substantially planar surface contiguous along one edge with said ledge surface and defining therewith an obtuse inclined angle, said surface being inclined toward the axis of said aperture to terminate beneath the adjacent overhanging shoulder, said undercut grooves thus being defined by the under surface of each of said shoulders and the adjacent one of said inclined surfaces, each of such grooves opening laterally toward the adjacent flange and being separated from the stop surface thereof by said ledge surface, said pilot ledge surfaces being spaced from one another to snugly fit into a rectangular aperture accommodating passage of said pilot portion therethrough prior to any deformation of the nut and having a height dimension of at least 0.010 inch, and the planar end surfaces of said shoulders each having a corresponding height dimension of at least one-third (⅓) of the pilot height dimension.

3,187,797
PNEUMATIC TIRES
Henry Raymond Fletcher, Birmingham, and William Neil Wells, Lichfield, England, assignors to Dunlop Rubber Company Limited, London County, England, a British company
Filed Nov. 27, 1963, Ser. No. 326,571
Claims priority, application Great Britain, May 25, 1963, 20,978/63
15 Claims. (Cl. 152—154)



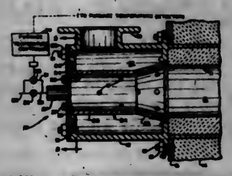
1. A pneumatic tire having a pair of sidewalls and provided with a water-deflecting annulus comprising at least two side-by-side layers of steel cord fabric, the cords in each layer lying in side-by-side relationship and extending in a radially outward direction of the annulus at a bias angle to a circumferential line of the annulus, the bias angle of the cords in one layer being of opposite sense, with respect to said circumferential line, to the angle of the cords in the other layer, the annulus also comprising a stiffening at one periphery and being locatable in a stowed position wherein it is disposed in contact with or in close relationship with respect to the tire sidewall when the tire is in the unloaded condition, the stiffened periphery and a portion of the annulus extending radially away from said periphery being movable axially outwardly from the stowed position to a water deflecting position of the annulus during rotation of the loaded tire or during passage of the rotating loaded tire through standing water on the ground.

3,187,798
RADIANT GAS BURNER
Laszlo Z. Pokorny, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,974
5 Claims. (Cl. 158—7)



1. A radiant gas burner for use with a pressurized gaseous combustible mixture including, a nipple connected to a source of combustible mixture and through which said mixture flows, an elongate refractory shell having an open end connected to said nipple and an imperforate end remote therefrom, said refractory shell having interconnected zones of increasing and decreasing cross-sectional area from its connection with the nipple to its imperforate end and a plurality of openings therethrough in the zone of decreasing cross-sectional area extending to its imperforate end, and ignition means disposed in said nipple for initially igniting the combustible mixture flowing through said nipple into said refractory shell whereby the mixture will burn internally of the shell throughout the length thereof so as to heat the shell to incandescence.

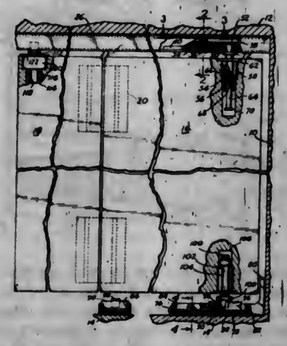
3,187,799
SELF-STABILIZING COMBUSTION APPARATUS AND METHOD
John D. Nesbitt, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Apr. 11, 1961, Ser. No. 102,316
4 Claims. (Cl. 158—109)



1. Self-stabilizing burner apparatus comprising, in combination: wall means forming a substantially cylindrical, combustion chamber having an inlet end and an exit end; a fuel pipe for introducing a stream of fuel substantially axially into said combustion chamber; air inlet means entering said chamber adjacent said inlet end and tangent to the inside of said chamber for introducing 4–10% of a total amount of air supplied to said chamber in a spinning stream circumposing said fuel stream, the axis of said air inlet means being directed parallel to a plane which is disposed perpendicularly to the axis of said chamber; an aperture in said inlet end of said wall means suitable for igniting the air and fuel at the interface of said axially flowing fuel stream and said spinning air stream to form a stable spinning pilot flame circumposing said

gas stream adjacent said inlet end; and means for supplying the balance of said total air radially to said chamber downstream of said spinning pilot flame.

3,187,800
FOLDING DOOR MOUNTING STRUCTURE
Charles A. Kirby, Tacoma, Wash., assignor to Allied Building Components, Inc., Tacoma, Wash., a corporation of Washington
Filed Mar. 22, 1963, Ser. No. 267,186
2 Claims. (Cl. 160—206)



2. For use with a folding door structure having axially aligned upper and lower pivot pins projecting from the upper and lower ends of an inner section of the folding door; pivot pin mounting means comprising:

(a) socket means for the upper pivot pin adapted to be secured to the head piece defining the door opening and arranged to receive the upper pivot pin freely therein,

(b) a pivot block having a socket in its upper face for seating the lower pivot pin therein,

(c) an elongated pivot block housing adapted to be secured to the floor defining the door opening and to extend substantially parallel to the plane of the door opening,

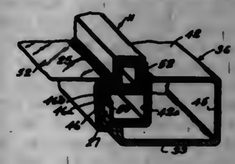
(d) the housing having a longitudinal recess in its upper surface arranged to receive the pivot block freely therein for adjustable movement longitudinally thereof and to confine the pivot block against lateral movement relative thereto,

(e) a plurality of longitudinally spaced teeth on the upper surface of the recess in the pivot block housing facing the pivot block,

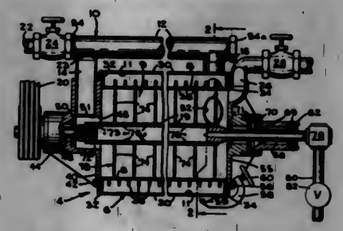
(f) and at least one tooth on the surface of the pivot block facing the housing teeth for engagement therewith for securing the block to the housing in longitudinally adjusted position wherein the pivot block socket is aligned vertically with the socket means for the upper pivot pin.

3,187,801
METHOD AND APPARATUS FOR FRAMING PLASTIC MATERIAL
Wilmer Selling, Miami, Fla., assignor to American Screen Products Company, Chicago, Ill., a corporation of Florida
Filed Feb. 6, 1962, Ser. No. 171,499
3 Claims. (Cl. 160—392)

1. A structure for anchoring film-like sheet materials having a low coefficient of friction in a frame comprising a frame element having a first resilient wall spaced from a second wall, said walls providing an open space therebetween for receiving an edge portion of said sheet material, a rib on said resilient wall extending into said open space and providing a locking shoulder, and a non-compressible, substantially rectangular spline in said open space having a first side wall adjacent said second wall of the frame element and a second side wall located, adjacent to and extending parallel to said resilient wall of the frame element, said second wall carrying a substantially rectangular rib providing a locking shoulder wall extending outwardly perpendicular to said second wall of said spline and adjacent said resilient wall, said spline rib having a second wall adjoining said locking shoulder wall and extending parallel to said second wall of said spline and resilient wall of the frame element and a third bottom wall adjoining said second wall of the spline rib and extending perpendicular to said second wall of the spline, said spline and spline rib combined being slightly thicker in cross section than said open space, and said edge portion of said sheet material being disposed in aid open space to extend first between said resilient wall of the frame element and the second walls of said spline and spline rib, then substantially parallel to said bottom wall of said spline rib and thereafter between the second wall of said frame element and said first side wall of said spline, said wall rib shoulder and said spline rib shoulder engaging and locking said edge portion of said sheet material therebetween, and said second wall of said spline rib and said first wall of said spline also engaging and holding said sheet material in said open space respectively against said resilient wall and said second wall of the frame member to cooperate with said wall and spline rib shoulders to maintain said edge portion of said sheet material in said open space.



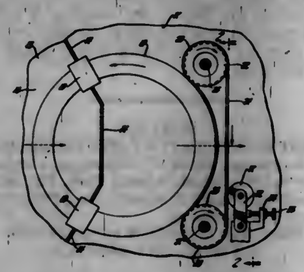
3,187,802
RECIRCULATING HEAT TRANSFER APPARATUS
Frank D. Hickey, San Jose, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed Jan. 23, 1961, Ser. No. 84,405
4 Claims. (Cl. 165—2)



1. A method of heating viscous material comprising the steps of violently agitating and de-aerating the material and forming it into a vortex, moving the vortex along a heated surface with the material in heat-transfer contact with the surface, moving the material out of contact with said surface and breaking up the vortex to permit the particles of material to become reoriented relative to the surrounding particles, and deaerating the material and reforming the vortex and moving it along said heated surface in contact therewith.

2. In a heat exchange apparatus for treating viscous material, a vessel having a material outlet and a sidewall providing a heat transfer surface defining a cylindrical processing chamber for heating or cooling the material therein, a recirculation conduit disposed exteriorly of said vessel and leading at its inlet end out of the processing chamber adjacent one end at the periphery of the chamber and leading at its discharge end coaxially into the processing chamber at the opposite end thereof, means providing a material inlet leading into said recirculation conduit, impeller means comprising a plurality of axially spaced discs mounted in the chamber in coaxial relation thereto for rotation to impel material from within said conduit at its discharge end and against the side wall of the chamber to create a low pressure area in said conduit adjacent the discharge end to draw material through the material inlet in said conduit and through said conduit from adjacent said one end of the processing chamber for the return of the material into the processing chamber at said opposite end to recirculate the material, and drive means connected to said impeller to operate the same.

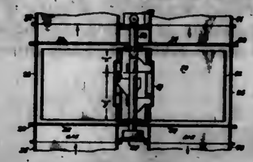
3,187,803
ROTARY REGENERATOR HAVING BELT DRIVE
James R. Mondt, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,286
4 Claims. (Cl. 165—6)



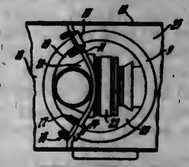
1. In a rotary regenerator having a housing divided by a diaphragm defining separate flow paths for fluids at different pressures, an annular regenerator matrix rotatably mounted within the housing and extending into the flow paths, and sealing means on the diaphragm sealably engaging the matrix, providing clearance for movement of the matrix between the flow paths, and isolating the flow paths, the improvement comprising; friction driving means for the matrix engageable at the periphery thereof and including a driving pulley, an idler pulley, and a tensioned belt passing over the pulleys and disposed in frictional driving contact with the circumferential outer surface of the matrix throughout a substantial arc on the lower pressure side of the diaphragm, any difference in pressure between the fluids acting over the cross section of the matrix within the sealing means tending to bias the matrix toward the driving means and thereby increase the load on the friction driving means, the resultant biasing force acting substantially midway between said pulleys to balance the rotating matrix thereon and establish its rotational axis.

3,187,804
DISTORTION CONTROL FOR HIGH TEMPERATURE HEAT EXCHANGERS
Richard Stockman, Friendship, N.Y., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed June 21, 1963, Ser. No. 289,568
4 Claims. (Cl. 165—7)

1. Rotary regenerative heat exchange apparatus having a rotor including a central rotor post, inner and outer rotor shells concentrically spaced from the rotor post, radial members extending between inner and outer rotor shells to provide a series of sectorial compartments therebetween a mass of heat absorbent material carried in the compartments of the rotor, a cylindrical housing surrounding the rotor including end plates at opposite ends thereof having apertures that direct the flow of a heating fluid and a fluid to be heated through the compartments of the rotor, bearing means rotatably supporting the rotor post for rotation about its central axis, support means extending outward from the rotor post into spaced relation with the inner rotor shell, linkage means pivotally linking the inner rotor shell and said support means, and radial guide vanes extending radially between the inner rotor shell and the rotor post adapted to preclude relative rotational movement between the rotor post and the surrounding rotor shells.



3,187,805
REGENERATOR SEAL MOUNT
William C. Babalak, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 4, 1962, Ser. No. 228,458
5 Claims. (Cl. 165—9)

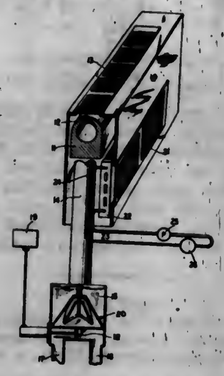


1. A rotary regenerator comprising, in combination, a stationary structure including a housing and a diaphragm dividing the interior of the housing into first and second chambers, an annular matrix having an axis of rotation supported in the housing for rotation about said axis and passing through the diaphragm, a main seal shiftably mounted in the diaphragm providing an opening for passage of the matrix through the diaphragm and sealing against the matrix where it passes through the diaphragm, means on the matrix and seal cooperating to align the seal with the matrix, and mounting means connecting the seal to said stationary structure so as to fix the seal circumferentially of the matrix and allow it to float radially of the matrix, the connecting means including leaf springs extending generally in the direction of said axis, the springs being thin in the direction radial to the matrix and wide in the direction circumferential of the matrix, each spring being coupled to said stationary structure and to the seal, respectively, at points spaced a sufficient distance apart that the spring is flexible radially of the matrix, the width of the spring circumferentially of the matrix causing it to be rigid circumferentially of the matrix.

3,187,806
AIR CONDITIONING
Joseph W. Kreuttner, North Tarrytown, N.Y., and David Rickelton, Charlotte, N.C., assignors to Bucnord-Stacey Corporation, New York, N.Y., a corporation of Ohio
Filed May 3, 1962, Ser. No. 192,223
2 Claims. (Cl. 165—22)

1. In a dual duct air conditioning system having warm and cold air supply ducts from a central conditioning sta-

tion, the combination including an air distributing device in a zone, said device having primary air inlet means communicating with said ducts, recirculated air inlet means and air outlet means, heat exchanger means in the path of air passing through said recirculated air inlet means, means for supplying heat exchange medium at substantially constant volume to said heat exchanger means at a predetermined temperature selected in accordance with required heating or cooling, air induction nozzle means in said device connected to said primary air inlet



means for inducing flow of recirculated air through said device and over said heat exchanger means when primary air flows therethrough, damper means controlling the proportion of warm and cold air delivered to said primary air inlet means, constant volume regulator means operatively associated with said inlet means for receiving the proportioned warm and cold air and maintaining constant volume flow thereof to said distributing device, and means responsive to zone condition for operating said damper means.

3,187,807
HEAT EXCHANGER
Johannes H. Ammon, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 3, 1961, Ser. No. 107,562
5 Claims. (Cl. 165—74)



1. A heat exchanger comprising wall means forming a vertically elongated pressure vessel of circular cross section, a vertically arranged tubular shaped baffle extending downwardly from the upper end of said vessel to a horizontal plane spaced above and adjacent to the lower end of said vessel, said baffle spaced inwardly from the wall means of said pressure vessel dividing the interior of said vessel into a annular shaped outer chamber and a centrally disposed inner chamber in communication with said outer chamber at the lower end of said vessel, a plurality of heat exchange tubes disposed within said pressure vessel for parallel flow of a fluid to be heated therethrough, each of said tubes having a first downcomer portion positioned in said inner chamber and a second riser portion positioned in said outer chamber, the second portion of said tubes substantially filling said outer chamber and forming a number of vertically extending circumferentially spaced tube banks, each of said tube banks comprising a plurality of uniformly horizontally spaced vertically extending tube platens each arranged in a single chordally disposed vertical plane, each of said tubes within said platens comprising a plurality of horizontally extending vertically spaced tube sections joined by reverse bends and arranged for counter-flow heat transfer, means for supplying fluid to be heated to the upper ends of the first downcomer portions of said tubes, means for collecting the fluid to be heated after its passage through the riser portions of said tubes, heating fluid inlet means located in the upper part of said outer chamber, and heating fluid outlet means located in the lower end of said pressure vessel whereby the heating fluid transfers heat to the fluid to be heated as it flows downwardly through the outer chamber passing over the second riser portions of said tubes within which the fluid to be heated flows.

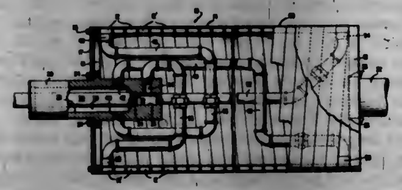
3,187,808
HIGH TEMPERATURE RECUPERATOR
Heinz A. Kuhse and Jobst W. Seehausen, Pittsburgh, and Theodor von Gebhardi, Allison Park, Pa., assignors to The American Schack Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed May 23, 1962, Ser. No. 197,154
4 Claims. (Cl. 165—83)



1. A high temperature recuperator including a vertical shell forming a heat exchange chamber and having inlet and outlet ports for one heat exchange fluid, an upper tube sheet at one end of the shell and a lower tube sheet at the other end of the shell, the upper tube sheet having a concave configuration and having a peripheral portion attached to the shell, the upper tube sheet having a central opening aligned with a similar opening in the lower tube sheet, a conduit extending through the heat exchange chamber, the upper end of the conduit being secured to the upper tube sheet around the central opening, the lower end of the conduit extending through the central opening of the lower tube sheet and being unattached thereto, heat

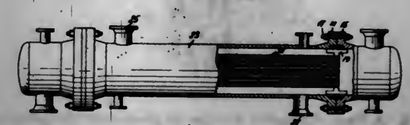
exchange tubes extending through the chamber and having end portions mounted in the tube sheets, first end wall means attached to the end of the shell and spaced from the upper tube sheet and forming with said tube sheet an inlet header compartment which communicates with the tubes, second end wall means attached to the other end of the shell and spaced from the lower tube sheet and forming with said tube sheet an outlet header compartment which communicates with the tubes, means mounting the upper end of each heat exchange tube in the first tube sheet and including an annular member having an inner surface forming a bore and an outer surface, the member having a tube-receiving annular notch between the inner and outer surfaces, the member being mounted on the upper side of the first tube sheet and having a telescopic portion extending downwardly through a tube-receiving opening in the tube sheet, the annular notch opening downwardly and communicating with the heat exchange chamber, the upper end portion of the notch being flared outwardly, one tube extending into the notch of each annular member and having an outwardly flared upper end portion seated in the corresponding portion of the annular notch, and thermal expansion means for mounting the lower end of each tube in the lower tube sheet whereby the tube sheets, tubes, and conduit expand independently in response to varying temperature zones within the shell, and whereby the primary support of the tubes shifts from the upper tube sheet in a higher temperature zone to the lower tube sheet in a lower temperature zone as the overall recuperator operating temperature increases.

3,187,809
HEAT-EXCHANGE ROLL AND METHOD OF MAKING
Paul G. Spears, Richmond, Va., assignor to The Inta-Roto Machine Company, Inc., Richmond, Va., a corporation of Virginia
Filed Jan. 11, 1963, Ser. No. 250,921
3 Claims. (Cl. 165—90)



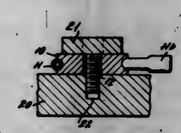
1. A heat-exchange roll for treating webs of sheet material substantially uniformly across the width thereof, comprising a cylindrical roll body constituted by helically coiled tube means of rectangular cross section and providing at least a pair of helical passages therethrough, means on the ends of said roll body for rotatively supporting said body, the flat adjacent sides of the coils of said tube means being in heat exchange engagement substantially throughout their area, flush welds joining the outer peripheral edges of said coils and filling any crevices therebetween, the outer peripheral surfaces of said coils and said welds being finished to be true and function as the working surface of the roll, said passages being inclined in the same direction, means defining an inlet fluid passageway at one end of each helical passage and restricting fluid flow only into the respective passage with the inlet of the two passages being located in the roll body at relative opposite ends thereof, and means defining an outlet at the end of each helical passage opposite the respective inlet, whereby fluid is fed through one of the helical passages in one rotational direction and through the other of the helical passages in an opposite rotational direction to offset frictional drag on the roll body during rotation of the roll.

3,187,810
FLOATING-HEAD HEAT EXCHANGERS
Richard R. Hein, Charleston, and Charles A. Fenno, Scott Depot, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed June 10, 1963, Ser. No. 286,694
2 Claims. (Cl. 165—158)



1. In a floating-head heat exchanger having a flanged shell and a flanged head cover for said shell providing therewith an annular recess at the juncture of the shell and cover, a tube bundle in said shell, a floating tube sheet slidably supporting one end of said tube bundle and having an annular surface facing said recess, a fluid tight sealing means disposed in said annular recess comprising a pair of sealing ring members, spring means between said sealing ring members resiliently biasing the same apart and into engagement with the end walls of said annular recess, said sealing ring members each being in sealing engagement with the annular surface of said tube sheet and the bottom of said recess and providing a seal between the same and the shell and said spring means permitting said sealing rings to react resiliently in response to longitudinal movement of said floating tube sheet.

3,187,811
FLUID COOLED WASHER
Paul F. Waivers, Florence, N.J., assignor to United Aero Products, Division of Aero Chatillon Corporation, Burlington, N.J., a corporation of New York
Filed Feb. 14, 1963, Ser. No. 258,458
1 Claim. (Cl. 165—168)



A heat exchange washer; said heat exchange washer comprising a disk-shaped metallic washer body having parallel end surfaces connected by an outer peripheral surface and a U-shaped hollow conduit member; said outer peripheral surface defining a continuous mounting recess having a concave cross-section; said U-shaped hollow conduit member being nested within said concave cross-section of said outer peripheral surface and lying in a plane parallel to the plane of said end surface of said washer; said U-shaped conduit having end sections extending tangently from said peripheral surface and being connectable to a heat exchange fluid source; said U-shaped conduit member constituted of a thermally conductive material for effecting heat transfer between a fluid fed therethrough and the thermally conductive material of said washer body; said washer body having a longitudinal opening extending therethrough for receiving fastening means for securing said washer to a member in heat exchange relation.

3,187,812
HEAT DISSIPATOR FOR ELECTRONIC CIRCUITRY
Edward F. Staver, Brightwaters, N.Y., assignor to The Staver Company Incorporated, Bay Shore, N.Y., a corporation of New York
Filed Feb. 11, 1963, Ser. No. 257,481
6 Claims. (Cl. 165—185)



5. A heat dissipator for use in electronic circuitry, said dissipator comprising a stamped sheet metal unit having a base and rectangular wings bent upward from opposite sides of the base, said base having holes for passage of the terminals of a semiconductor, said wings being nearly perpendicular to the base but divergent at a small angle on each side, said base being rectangular and having a length which is an integral multiple of its width, and said wings being slotted transversely of the longitudinal axis of the base to provide a number of rectangular wings disposed edge-to-edge in a common plane along each edge of the base, each wing having a width substantially equal to the width of the base, and the number of wings at each side corresponding to the number of times the base is longer than wide.

3,187,813
APPARATUS FOR DEPOSITING CEMENT OR THE LIKE IN A WELL
Haskell M. Greene, Jr., 671 Galen, La Habra, Calif.
Filed Dec. 12, 1961, Ser. No. 158,693
8 Claims. (Cl. 166—55.1)



1. A tool assembly to be lowered into a well on a flexible line, comprising a container having a mass of cementitious material therein, means for opening a lower portion of said container while in the well and thereby allowing said cementitious material to flow downwardly from the container and into the well by gravity, said assembly being constructed to essentially avoid the application to the cementitious material of additional displacing forces other than gravity during said downward flow so that the cementitious material after leaving the container may seek its own level in the well by gravity, a gas producing charge connected to said container to be lowered therewith into the well on the same run as said container and the cementitious material, and means for actuating said gas producing charge while in the well with said container at a location to produce a large quantity of gases in the well above said gravity deposited cementitious material after a predetermined delay period of at least about 8 seconds following the opening of said container and after a large portion of said cementitious material has fallen by gravity out of said container, said charge being positioned to apply the force of said gases downwardly against the upper surface of said gravity deposited cementitious material to force the latter tightly against the well bore wall and initiate setting of said material.

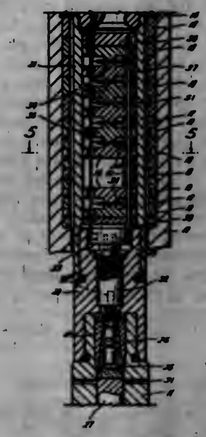
3,187,814
ELECTRICAL OIL WELL HEATER APPARATUS
Patrick B. McCarthy, deceased, late of Newport Beach, Calif., by Margaret Lee McCarthy, 1156 Rutland Road, Newport Beach, Calif., legal representative
Filed Aug. 1, 1963, Ser. No. 299,436
2 Claims. (Cl. 166—60)



1. In subsurface well heating apparatus: an inner, imperforate tubular member through which well production is adapted to be conducted; an outer tubular member surrounding said inner member; upper and lower plates mounted eccentrically on said inner member at the upper and lower portions, respectively, of said outer member and secured to said inner and outer members to mount said outer member in spaced and eccentric relation to said inner member to form a heating chamber therewith substantially wider at one side of said inner member than at the diametrically opposite side thereof; heating means disposed lengthwise within said chamber at said wider portion thereof; said upper and lower plates being perforate, whereby well production can enter the chamber through a perforation in said lower plate, flow upwardly through said chamber and along said heating means, and discharge from said chamber through a perforation in said upper plate.

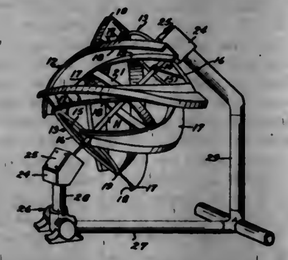
3,187,815
SELECTIVELY ACTUATED WELL TOOL
Warren G. Ownby, Houston, Tex., assignor to Camco Incorporated, Houston, Tex., a corporation of Texas
Original application Mar. 24, 1960, Ser. No. 17,385, now Patent No. 3,105,548, dated Oct. 1, 1963. Divided and this application May 31, 1963, Ser. No. 284,671
8 Claims. (Cl. 166—63)

4. As a subcombination unit of a well running tool having a tubular housing containing means to supply current to one element of a pin and socket type connection at one end of the housing, said subcombination unit including a detachable housing skirt extension having means at one end for rotatable attachment with the housing and also having therein an internal pocket at said end, an explosive charge containing shell fitted to said pocket and provided with one element of a pin and socket type connection, said one element projecting coaxially of the rotational axis of the attachment means aforesaid and affording a current conductor to the explosive charge of current for firing the charge, and a plunger member slidably mounted within the skirt extension to receive and



transmit force from a fired explosive charge contained in the shell.

3,187,816
FLUID POWER SCREW
Herman G. A. Winter, 812 Bennett Ave., American Falls, Idaho
Filed Dec. 28, 1962, Ser. No. 247,989
15 Claims. (Cl. 170—8)



1. A fluid power screw having a support, said support comprising a base and a frame, said frame having two legs rigidly secured to said base, one of said legs being of a length substantially shorter than that of the other of said legs, bearings mounted in the outer extremities of said legs, a shaft extending between said legs and rotatably mounted in said bearings, said shaft having a plurality of helical vanes secured thereto at a fixed distance therefrom to permit a motive fluid, in which said vanes and said shaft are immersed, to act directly on those vanes first presented to the fluid flow and also to act on other vanes after passing between said first vanes and said shaft, all vanes so acted upon causing rotation of the shaft.

3,187,817
POWER PLANT, E.G. FOR GROUND EFFECT AIRCRAFT
Rowan Herbert Colley, Sunny Hill, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Oct. 3, 1963, Ser. No. 313,617
Claims priority, application Great Britain, Oct. 15, 1962, 39,013
7 Claims. (Cl. 170—135.2)

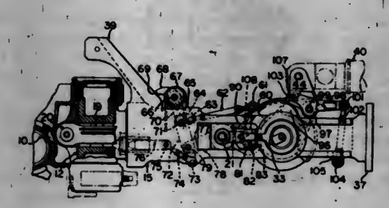
1. A ground effect aircraft comprising at least one variable pitch propeller effecting propulsion of the ground

effect aircraft, at least one lift fan providing an air cushion for the ground effect aircraft, at least one engine operatively connected to and supplying power for said propeller and lift fan respectively, power control means operative in response to change in rotational speed of said engine for tending to maintain the speed of the



engine at a predetermined value, and power reduction means for reducing the pitch of the propeller whenever the speed of the engine falls to a predetermined extent below the said predetermined value, whereby the power supply to the lift fan may be maintained substantially constant.

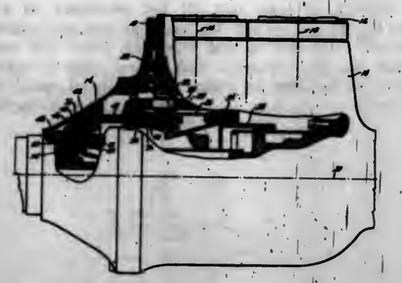
3,187,818
BLADE FOLDING MECHANISM
Lawrence D. Barrett, Glen Mills, Norman E. Merrell, Perkiomenville, Victor S. Moslinskis, Springfield, and Paul Ruttkay, Rutledge, Pa., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,765
17 Claims. (Cl. 170—160.12)



1. In a rotary wing aircraft having a lead-lag pivot, rotor blade means movable about said lead-lag pivot, means to control lead-lag movements of said rotor blade means about said lead-lag pivot, the improvement comprising a mechanism for folding and unfolding said rotor blade means about said lead-lag pivot, said mechanism including means to move said rotor blade means about said lead-lag pivot from its unfolded position to its folded position and means to inactivate said lead-lag control means during movement of said rotor blade means to its folded position whereby undesired lead-lag movements of said rotor blade means are eliminated during the folding of said rotor blade means and its folded position is accurately predetermined.

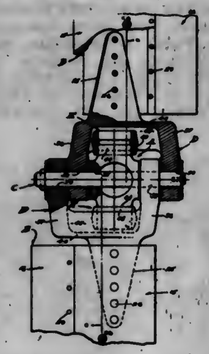
3,187,819
COMBINED PITCH LOCK AND FEATHER LATCH
Philip E. Barnes, North Granby, and John D. Sullivan, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,490
18 Claims. (Cl. 170—160.24)

13. Pitch control means for propeller including a combined feather latch and pitch lock mechanism having engaged and disengaged positions, power actuated means moving said mechanism, including the feather latch, to,



and holding said mechanism in, a disengaged position independent of propeller pitch and a stop defining said disengaged position.

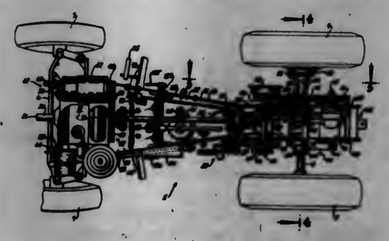
3,187,820
PROPELLER FAN
Ralph P. Maloof, Los Angeles, Calif.
(5261 Whitsett Ave., North Hollywood, Calif.)
Filed Feb. 28, 1961, Ser. No. 92,227
1 Claim. (Cl. 170—160.55)



A structure of the character described and comprising a pair of diametrically opposite aerodynamic blades projecting on spaced parallel gravitational axes transverse to the axis of a supporting rotating shaft and including, a drive pin on an axis disposed normally through and intersecting the axis of the shaft, a yoke carrying each blade and each yoke pivotally mounted on said drive pin, said gravitational axes thereof intersecting said drive pin at right angles and disposed axially along the axes of said drive pin at diametrically opposite points displaced radially from the axis of the supporting rotating shaft and means limiting pivotal movement of each yoke relative to the other and comprising diametrically opposite lugs projecting radially from the shaft and each engageable with a wall on a yoke.

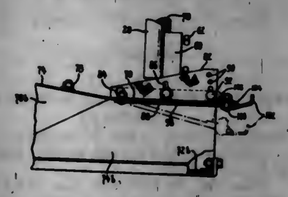
3,187,821
TRACTOR AND POWER DRIVEN IMPLEMENT MOUNTED THEREON
Igor Kamlukin, Milwaukee, Wis., assignor to Simplicity Manufacturing Company, a corporation of Wisconsin
Filed Aug. 8, 1960, Ser. No. 48,239
7 Claims. (Cl. 172—103)

3. In a tractor: a chassis including front and rear axles, wheels at the opposite ends of the axles, and a frame structure extending longitudinally between and connecting said axles, said frame structure comprising a single elongated frame member providing the front portion of the frame structure; transmission means at the rear of the tractor, said transmission means including a housing supported on the rear axle and having said frame member secured thereto so that the housing provides a rear portion of said frame structure, and having a transverse input shaft located near the rear axle, and a gear train in the housing to drivingly connect the input shaft with the rear axle; a drive shaft mounted on the rear portion of the frame structure for rotation about a transverse axis spaced forwardly from the transmission input shaft; an internal combustion engine providing the power source for the tractor and having a crankshaft; means mounting the engine on the front of said frame member above the front axle, with the crank shaft of the engine extending longitudinally of the tractor; means including an elongated longitudinally extending power shaft at all times drivingly connecting the crankshaft with said transverse drive shaft; power takeoff means on said drive shaft from which an implement attached to the tractor can be power driven;



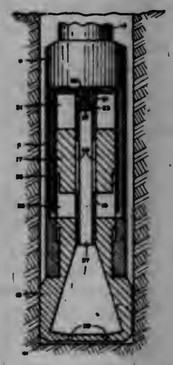
means for drivingly connecting the transmission input shaft with said transverse drive shaft; manually actuatable means on the tractor controlling the operativeness of said last named driving connection; an implement drive shaft mounted on the rear of the frame structure for rotation on a transverse axis fixed with respect to the frame structure and behind the rear axle, to provide for transmission of torque to an input shaft of an implement that may be attached to the rear of the tractor; an implement attaching bracket carried by the rear of the frame structure for locking movement about the axis of said implement drive shaft and to which an implement behind the tractor can be secured so as to be supported by the tractor for bodily up and down motion relative to the tractor; and means on the tractor to drivingly connect said implement drive shaft with the transverse drive shaft independently of the transmission means, including a single manually actuatable mechanism for effecting disconnection of said implement drive shaft from the transverse drive shaft.

3,187,822
EARTH WORKING TOOL AND IMPLEMENT GUIDE
Peter J. Clifford and Robert J. Notman, Fresno, Calif., assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed Apr. 8, 1964, Ser. No. 358,302
4 Claims. (Cl. 172—701)



3. An earth working tool comprising a plurality of guide members each having a pair of upwardly diverging side walls and a pair of first panels converging from the forward edge of the side walls to a point to define the front end of the guide, a bed shaping panel pivotally mounted between the upper forward edges of the opposed, converging side walls of adjacent pairs of said guides and extending rearwardly from said forward edge, means for selectively securing said bed shaping panel in either a substantially horizontal position in parallel relationship with the upper edges of said opposed side walls to bridge the space between said upper edges, or inclined positions with respect to said upper edges, and extension plates mounted on said bed shaping plate movable to extend laterally from the side edges of said panel to bridge the space between said panel and said opposed side walls when said panel is in said inclined positions.

3,187,823
PERCUSSIVE DRILLING TOOL WITH EXHAUST CHAMBER
James M. Cleary, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1963, Ser. No. 257,466
8 Claims. (Cl. 173—69)



1. In gaseous-fluid operated percussive earth borehole drilling units wherein a drilling means is periodically impacted against an earth formation by a hammer which is reciprocated within said percussive unit and at time spaced intervals a power chamber containing said gaseous fluid at relatively high pressure opens to an exhaust chamber, the improvement comprising an exhaust chamber having an inlet adapted to receive gaseous fluid from said power chamber and an outlet consisting of nozzle means, said exhaust chamber having a volume at least 1.5 times as great as the volume of said power chamber and having a minimum cross-sectional area of flow between said inlet and said outlet at least 1.5 times as great as the minimum cross-sectional area of flow of said nozzle means.

3,187,824
SAFETY CORE-SAMPLING APPARATUS
Daniel Gauban, Paris, France, assignor to Electricite de France (Service National), Paris, France, a French national service
Filed Feb. 10, 1961, Ser. No. 88,361
Claims priority, application France, Feb. 15, 1960, 818,459; Jan. 25, 1961, 850,683
8 Claims. (Cl. 175—78)

1. In a core-sampling apparatus for sampling cores in bore holes and the like, comprising an elongated casing whose longitudinal axis conforms substantially to the axis of a bore hole, a core-boring assembly contained within said casing comprising a shaft transversely disposed with respect to the longitudinal axis of the casing, an elongated pinion coaxial with said shaft, unidirectional driving means, means releasably coupling said elongated pinion to said driving means, means normally holding said coupling means in an operative condition, a worm gear spaced from and parallel to the shaft, transmission means ensuring permanent connection of the worm gear with the driving means and a rotatably mounted tubular core-sampling tool coaxial with and concentrically surrounding said worm gear and having a tool pinion coaxially associated therewith, said tool pinion having external teeth which mesh with said elongated pinion and having a threaded



central opening in meshing engagement with the worm gear to ensure inward movement of the tool pinion under the action of the worm gear, the gear ratio of the transmission means, worm gear, elongated pinion and tool pinion being such as will make the tool pinion rotate at a higher speed than the worm gear upon operation of the coupling means whereby said tool pinion is shifted outwardly over the worm gear, and means whereby the tool pinion when it has reached its outermost position releases the coupling means.

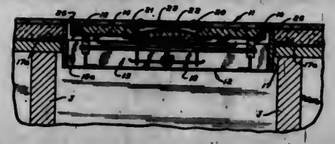
3,187,825
CUTTER BIT FOR ROOF DRILL
Arnold B. Bower, Jr., St. Clair Shores, Mich., assignor to General Electric Company, a corporation of New York
Filed Aug. 6, 1963, Ser. No. 300,216
1 Claim. (Cl. 175—327)



A removable cutter bit for a roof drill comprising a cutter head and a shank, said shank having a first portion adjacent the cutter head of polygonal cross section and a substantially flat tang of reduced cross section extending vertically and diagonally from said square portion, said first portion of the shank and said tang each having radial apertures therethrough adapted to receive a locking pin

for coupling said cutter bit through one of said apertures to a roof drill.

3,187,826
FLUSH FLOOR SCALE
Thomas N. Traff, Rte. 5, Wayzata, Minn.
Filed Jan. 20, 1964, Ser. No. 339,033
4 Claims. (Cl. 177—142)



1. A weighing scale for use in home bathrooms and the like adapted for mounting directly in the floor including:

(a) a base member having a bottom and upstanding sides to provide an open top housing and being receivable into a recess provided in the floor;

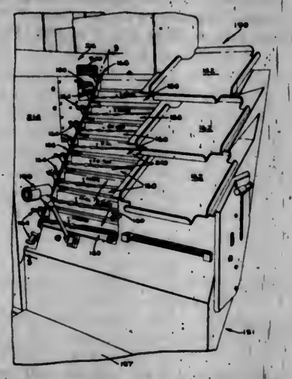
(b) laterally extending support flanges arranged on said base member to abut with and rest on the floor surrounding the recess and provide the sole support means for said base;

(c) a scale table receivable into the open top portion of said base member and being vertically movable therein;

(d) a scale mechanism positioned on said base and interposed between said table and said bottom supporting said table and being actuated by a weight placed on said table;

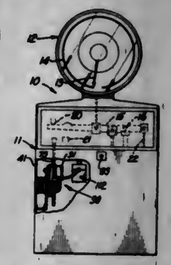
(e) a flexible seal extending between the outer periphery of said table and the inner periphery of said open top base to seal said members to form a water tight housing for said scale mechanism but permitting oscillation of said table.

3,187,827
MACHINE FOR HANDLING EGGS
Harold J. Mumma, Riverside, Calif., assignor to FMC Corporation, a corporation of Delaware
Original application Dec. 28, 1953, Ser. No. 400,466, now Patent No. 2,895,274, dated July 21, 1959. Divided and this application July 15, 1959, Ser. No. 827,256
2 Claims. (Cl. 177—145)



1. In a machine for handling fragile articles, first and second conveyors for supporting the articles in single file and advancing them in timed relation with each other, a bridge member, an article weighing platform movable vertically alongside one edge of said bridge member, said platform and said bridge member being interposed between said conveyors and said bridge member comprising a generally horizontally extending plate portion and a downwardly extending article-receiving ramp facing said weighing platform, means for transferring articles from said weighing platform to and across said bridge member and onto said second conveyor, means for moving said transfer means in timed relation with said conveyors, an article propelling arm carried by said article transfer means, and means for guiding said transfer means for moving said arm upwardly and into engagement with an under portion of an article disposed on said weighing platform, said guiding means thereafter causing said transfer arm to move across the plate portion of said bridge member in substantial parallel relation thereto.

3,187,828
AUTOMATIC LOCKING DEVICE FOR WEIGHING SCALE
Earl C. Ward, 20437 Harvard Way, and Erich L. Wolf, 4071 Overland St., both of Riverside, Calif.
Filed Mar. 25, 1963, Ser. No. 267,495
10 Claims. (Cl. 177—157)



1. An automatic locking device for use with a weighing scale having a beam lever fulcrumed near one end thereof for vertical swinging movement, said beam lever being operatively connected to the indicating mechanism of the scale, comprising:

an electric motor having a rotary driving member affixed to the drive shaft thereof;

a linearly movable locking member having a driving connection with said rotary driving member, whereby said locking member is moved successively from a first position in engagement with said beam lever adjacent the end opposite the fulcrum to a second position disengaged from said beam lever, and then back to said first position;

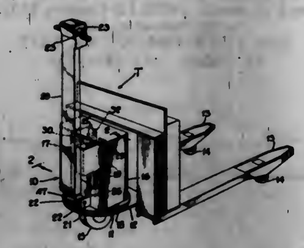
said locking member being smoothly accelerated and moved at a deliberate speed by said driving member, whereby said locking member is smoothly and gently retracted from said beam lever, thereby transferring the load on the scale to the beam lever without shock, and said locking member then re-engaging said beam lever smoothly and gently to lock the same again;

switch means operable to energize said motor and cause the same to drive said locking member through its operating cycle; and

means operable to shut off said motor when said locking member has returned to said first position.

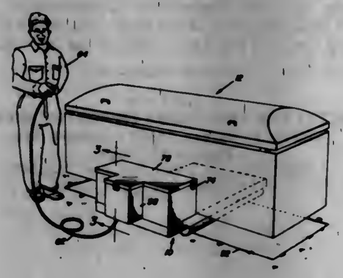
3,187,829
BRAKE AND HANDLE CONTROL FOR INDUSTRIAL TRUCK
Bronislaus I. Ulanski, Flossmoor, Ill., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Jan. 29, 1963, Ser. No. 254,686
4 Claims. (Cl. 180—19)

1. In a truck of the class described, a steering and traction unit mounted for steering rotation and having a traction motor, a steering handle pivoted for vertical swinging movement on said unit and adapted to rotate said unit for steering the truck, a brake disc rotating with the shaft of the traction motor, brake rod means juxtaposed to the traction motor, a brake member for said disc supported by one end of said brake rod means, guide means con-



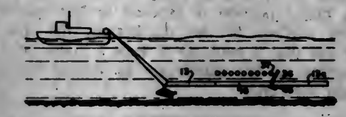
nected to said motor and encircling said brake rod means to mount said brake rod means and its brake member for sliding movement while holding said brake member in axially aligned relation to the brake disc, and means actuated by the swinging movement of said steering handle for sliding said brake rod to effect movement of the brake member into and out of frictional relation to the disc.

3,187,830
MOTORIZED DOLLY
Henry A. Hilton, 1806 N. 2nd St., St. Joseph, Mo.
Filed Oct. 11, 1962, Ser. No. 229,891
3 Claims. (Cl. 180—20)



1. A burial vault transporting device consisting of a vault supporting platform having a first end and a second end, said platform having a vertically extending housing fixed to the first end thereof, said housing extending along said first end of the platform, a flat load receiving member on that portion of the platform between the housing and the second end of the platform, said housing projecting a substantial distance above the load receiving member, rotatably mounted support means depending from said platform for engagement with the earth, and motor means located within said housing, said motor means being operatively connected to the support means for effecting the rotation thereof, said support means consisting of a pair of spaced parallel elongated rollers extending approximately the full width of the load receiving member from the housing to the second end of the platform so as to position the housing laterally of one end of the rollers and of the path of travel of the rollers.

3,187,831
SEISMIC SURVEYING SYSTEM FOR WATER-COVERED AREAS
Noyes D. Smith, Jr., Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,728
21 Claims. (Cl. 181—.5)



1. In seismic prospecting for geological structures disposed beneath a body of water, a method of creating explosive energy over an area of predetermined configuration, said method comprising the steps of disposing in said water at a predetermined depth and position an isolated volume of an explosive gas, discharging substantially simultaneously from said isolated gas volume a plurality of small volumes of said explosive gas at spaced intervals from each other and into the surrounding water to create a sound source area of predetermined geometrical configuration formed by a plurality of gas bubbles, igniting said bubbles of said discharged gas over the extent of said area of bubbles to generate an explosive wave front radiating from said bubbles.

ERRATUM

For Class 181—31 see:
Patent No. 3,188,374

3,187,832
LOUDSPEAKER ASSEMBLY
Ezra Rushforth Broadley, Bradford, England, assignor to Wharfedale Wireless Works Limited, Bradford, England, a British company
Filed Dec. 28, 1962, Ser. No. 248,154
Claims priority, application Great Britain, Dec. 29, 1961, 46,738/61
6 Claims. (Cl. 181—31)



1. A loudspeaker assembly comprising a cabinet, having a wall with a main aperture therein, and a loudspeaker mounted within the cabinet and covering said main aperture, the loudspeaker comprising a vibratable diaphragm having a rear surface exposed to the interior of the cabinet, and a front surface, means rigidly supporting the diaphragm peripherally thereof, and drive means at the center of the diaphragm for vibrating the same, the diaphragm being such that it is transmissive, through its thickness from its rear surface to its front surface, of sound of a frequency at which the cabinet has an internal resonance, wherein the loudspeaker is provided with a disc of substantialily rigid but porous material,

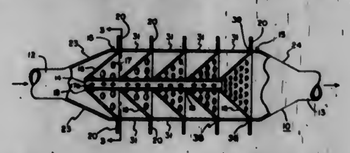
of a density in the range 1–10 pounds per cubic foot, which is absorptive of sound at the said frequency, the disc having a front surface which is exposed by the said main aperture and a rear surface of which a minor portion is secured in contact with the front surface of the diaphragm, whereby the disc and the diaphrgam are constrained to vibrate in unison, and of which the remaining major portion is exposed to but spaced from the front surface of the diaphragm, the disc being of such size that it conceals at least a major part of the front surface of the diaphragm as viewed through the said main aperture.

3,187,833
TRANSDUCER MOUNTING
Dean W. Flygstad, Roseville, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,331
5 Claims. (Cl. 181—31)



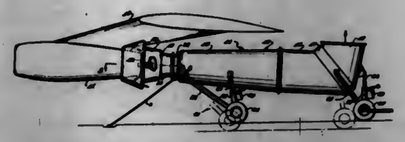
1. Mounting means for positioning and suspending a transducer of rectangular parallelepiped shape in a housing therefor comprising, a sheath member dimensioned to substantially enclose and hold a transducer of substantially rectangular parallelepiped shape, said sheath member having a hollow protuberance at each corner thereof, said hollow protuberances being dimensioned to engage corresponding surfaces in a housing for said transducer.

3,187,834
MUFFLER HAVING SPACED FRUSTO-CONICAL BAFFLE PLATES WITH PERFORATED CENTER TUBE AND ATTACHED COOLING FINS
James Roy Bryson, Fallston, and Robert R. Cassilly, Bel Air, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 29, 1963, Ser. No. 269,217
5 Claims. (Cl. 181—44)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A muffler of the type described comprising:
a hollow body having at least one wall and opposed ends, inlet and outlet gas conduits attached to said opposite ends of said body,
a plurality of spaced baffle plates having aligned openings thereon attached at an edge of each thereof to the interior surface of said wall and extending therefrom,
an unobstructed perforated tube extending through said openings and
a plurality of cooling fins attached at an edge of each thereof to the outside surface of said wall and extending therefrom, the attached edges of said fins positioned opposite to the line of attachment of said interior baffles to provide a continuous heat conduction path from the interior to the exterior of said muffler to provide uniform cooling of said muffler.

3,187,835
JET ENGINE NOISE SUPPRESSOR
Cloyd D. Smith, 14928 La Cumbre Drive, Pacific Palisades, Calif.
Filed Feb. 8, 1960, Ser. No. 7,272
18 Claims. (Cl. 181—51)



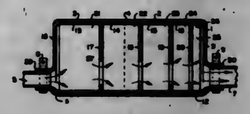
1. In a suppressor for exhaust noise of a jet engine, the combination of: an augmentor tube means having an inlet end adapted to receive the exhaust gas stream from a jet engine and an injection flow of secondary ambient air around said stream, a tubular shell having an anterior end coupled to and extending axially beyond the opposite end of said augmentor tube means, wall means within and extending generally longitudinally of said tubular shell and joined at one end to said shell, so as to form two gas passages extending longitudinally of the shell, one on each side of said wall means, with one of said gas passages in communication with said augmentor tube means, and the other leading to the aft end of the shell, said wall means having a multiplicity of unobstructed, high velocity gas-jet orifices formed therein adapted to pass gas received into one of said passages from said augmentor tube to the other of said passages, said perforations being of progressively decreasing size in the direction of gas flow along said wall means, and said shell having a gas outlet at the aft end thereof.

3,187,836
MUFFLERS FOR INBOARD MOTOR BOATS
Marvin L. Parker, 16554 Marlowe Ave., Detroit 35, Mich.
Filed Mar. 27, 1963, Ser. No. 268,349
17 Claims. (Cl. 181—52)



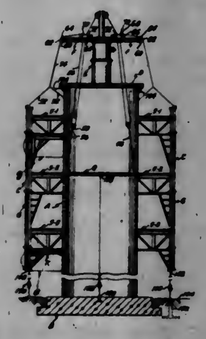
1. A muffler for an inboard motor boat of the type having an exhaust pipe extending through the transom above the water line comprising a hollow casing having a side wall and opposite ends, an end wall extending across one end, said end wall having a transverse slot therethrough, said side wall being curved and having centers of curvature substantially in the middle of the casing, but spaced apart transversely of the casing, said casing and said end wall being formed of an elastic and sound absorbing material, ribs extending longitudinally along the side wall in the casing, and means for securing the opposite end of the casing to the transom over the exhaust pipe.

3,187,837
FREE FLOW ACOUSTIC SILENCER CONSTRUCTED OF RESILIENT MATERIAL
Charles G. Beeching, Victoria, British Columbia, Canada (2754 W. 4th Ave., Vancouver 8, British Columbia, Canada)
Filed Aug. 28, 1963, Ser. No. 305,234
9 Claims. (Cl. 181—58)



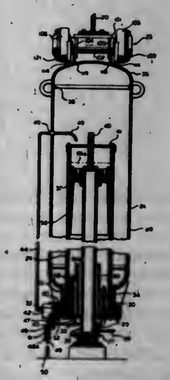
1. A silencing device for attachment to the exhaust pipe of an internal combustion engine comprising:
an outer resilient shell of substantially uniform cross section having a side wall and end walls, one end wall ported and adapted for connection to the exhaust pipe aforesaid, the other end wall ported and adapted for the connection of a tail pipe for egress of exhaust gases, the shell fabricated in two parts to facilitate assembly, said two parts having open ends adapted to be joined after assembly,
transverse partitions within the shell to define chambers of unequal size the largest said chamber being that adjacent the end wall ported for the exhaust pipe as aforesaid, an opening in each said partition, each said opening having an area not less than the greater of the internal diameters of the said exhaust and tail pipes, the said openings aligned with one another and with the end wall ports,
ylindrical spacers, of resilient material similar to that of the outer resilient shell, for insertion within the outer resilient shell, the outside diameters of said spacers equal to the inside diameter of the outer shell, the axial length of the spacers such as to define the distance between said transverse partitions,
the outer resilient shell and the resilient spacers aforesaid comprising a composite shell of total thickness not less than three sixteenths of an inch.

3,187,838
SCAFFOLDING STRUCTURE
Robert E. Stewart, Jr., 8458 Periwinkle Drive, Buena Park, Calif., and Orlean B. Rapier, 8357 Golden, Paramount, Calif.
Filed Oct. 2, 1963, Ser. No. 313,223
10 Claims. (Cl. 182—144)



1. A platform supporting scaffold adapted to substantially encircle a structure of greater height than width and be moved vertically relative thereto, including:
(a) a plurality of generally rectangular rigid sections, each of which comprises two parallel, laterally spaced columns, and reinforcing means extending therebetween;
(b) a plurality of horizontal plates extending outwardly from said columns and being of sufficient size that said plates on said columns which are most adjacent to one another have plate portions that overlap one another, with said overlapping plate portions having a plurality of spaced openings formed therein, at least a part of which openings are alignable with one another; and
(c) a plurality of elongate rigid members that removably engage said openings which are aligned with one another for holding said sections together;
(d) second means for holding said sections in said multi-sided frame at substantially fixed radial distances relative to said structure;
(e) third means for defining at least one horizontal platform;
(f) fourth means for removably supporting said third means from said sections; and
(g) fifth means for concurrently raising and lowering said sections when defining said multi-sided frame relative to said structure to permit performance of work on the exterior surface thereof by personnel supported on said third means.

3,187,839
PUMP ACTUATORS COUNTERBALANCE ASSEMBLIES
George A. Prather, Coffeyville, Kans., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed May 27, 1960, Ser. No. 32,407
13 Claims. (Cl. 184—1)



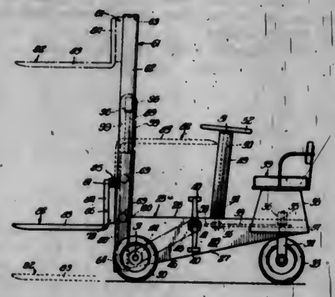
1. The method of lubricating and sealing a pressurized cylinder and piston counterbalance assembly in which a sealing, first pool of lubricant is maintained between the pressurized cylinder space and the side of the piston opposed thereto, and in which a portion of the piston may move into a second pool of lubricant at a lower portion of the cylinder for lubrication of the opposed piston and cylinder walls, including the steps of utilizing the normal pumping action of the piston to move lubricant along said opposed walls from said second pool to said first pool, and removing lubricant from said second pool and delivering same to said first pool independently of said pumping action when the level of lubricant in said second pool increases beyond a predetermined level.

3,187,840
LUBRICATOR
John Williamson, St. Louis, Mo., assignor to Drake Engineering, Inc., Southfield, Mich., a corporation of Delaware
Filed Mar. 4, 1964, Ser. No. 349,282
14 Claims. (Cl. 184—1)



9. A self-contained lubricator for bearings comprising: a reservoir, a lubricant supply cartridge, a normally open valve for controlling the flow of lubricant between said reservoir and cartridge, means for pressing said reservoir against said bearing, and means responsive to said last-named means for closing said valve and for concurrently forcing lubricant from the reservoir into the bearing.

3,187,841
FORK LIFT VEHICLE
Robin Renshaw, West Chicago, Ill., assignor to Modern Hydraulics, Inc., West Chicago, Ill., a corporation of Illinois
Filed June 20, 1962, Ser. No. 203,772
11 Claims. (Cl. 187—9)



1. A relatively lightweight fork lift vehicle comprising, in combination, a frame structure mounted on wheels and characterized by a seat and means for steering the vehicle, a lifting fork mounted on the front end of the frame structure for movement in a generally vertical direction relative thereto, and foot-operated pedals operable from said seat and adapted to be selectively connected mechanically to certain of said wheels through chain and sprocket means for propelling the vehicle and to said lifting fork through chain and sprocket means for raising and lowering said lifting fork.

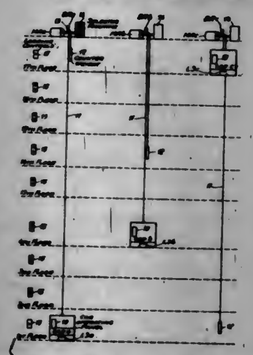
3,187,842
TRIPLE LIFT UPRIGHT ASSEMBLY
George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Aug. 13, 1962, Ser. No. 216,643
5 Claims. (Cl. 187—9)

1. In a lift truck of the class described,
a primary upright, a secondary upright mounted for movement to an extended position relatively to the primary upright, a tertiary upright in turn mounted for extension relatively to the secondary upright, and a load lifting carriage movable on the tertiary upright,
latch means engageable alternately to lock the secondary to the tertiary upright and to lock the secondary upright to the primary upright,
means controlling said latch means to hold the secondary upright locked to the tertiary upright while leaving the secondary upright free for movement to extended position relatively to the primary upright,
a lift ram for lifting the load carriage,



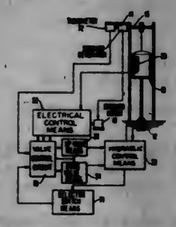
said secondary upright acting through the latch means for holding the tertiary upright retracted while the lift ram effects free lift of the carriage relatively to the tertiary upright,
means through which the ram acts to extend the tertiary upright and therefore the secondary upright after the free carriage lift,
and means actuating said latch means to transfer the locking of the secondary upright from the tertiary to the primary upright when the secondary upright reaches extended position, so as to hold the secondary upright in extended position while enabling the tertiary upright to extend further.

3,187,843
ELEVATOR CAR OPERATION TO SERVE SPECIAL STATUS CALLS
John E. Magee, Greensburgh, N.Y. (191 Forest Blvd., Ardsley, N.Y.)
Filed May 12, 1961, Ser. No. 109,558
16 Claims. (Cl. 187—29)



3. In an elevator control system having means for dispatching a plurality of cars from a terminal floor and means for registering demands for service at other floors and in the direction of said terminal floor, the combination therewith of means for detecting floors at which said demands for service are by-passed by said cars, and means operated by said detecting means when at least a plurality of so by-passed floors have been detected by said detecting means and controlling said dispatching means for successively dispatching said cars to the by-passed floor of said plurality of so by-passed floors farthest from said terminal which has been so by-passed and which has not received service from a previously dispatched car and for reversing the so dispatched car at said last-mentioned floor in both the presence and absence of registered demands for service at other floors more remote from said terminal floor than said by-passed floor.

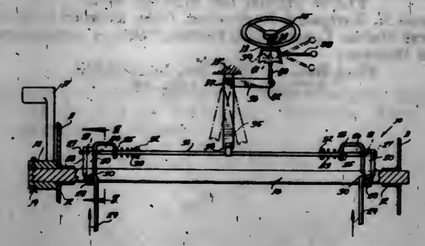
3,187,844
HYDRAULIC ELEVATOR CONTROL
James Frank MacNair, Bronx, and Peter J. Scully, Brentwood, N.Y., assignors to Hydraulic Elevator & Machine Company, Inc., Brooklyn, N.Y., a corporation of New York
Filed Sept. 6, 1961, Ser. No. 136,276
11 Claims. (Cl. 187—29)



1. A hydraulic elevator speed control system for use in combination with a hydraulic elevator system containing an elevator car, a hydraulic ram adapted to move said car up and down, and hydraulic valve means coupled to said hydraulic ram to control the operation thereof, said hydraulic valve means containing a movable member adapted to regulate the flow of hydraulic fluid therethrough, said speed control system comprising tachometer means coupled to said elevator to measure the speed of movement thereof, said tachometer means being adapted to produce an output signal proportional to the speed of said elevator car, threshold circuit means coupled to said tachometer means, said threshold circuit means having an "off" state and an "on" state and being adapted to switch from its "off" state to its "on" state whenever the output signal of said tachometer exceeds a predetermined value and being adapted to switch from its "on" state to its "off" state whenever the output signal of said tachometer drops below said predetermined value and valve control means coupled between said threshold circuit means and said movable member of said hydraulic valve means, said valve control means being adapted to move said movable member in response to the "on" state of said threshold circuit means in such direction as to reduce the flow of hydraulic fluid through said hydraulic valve means by a predetermined amount, thereby reducing the speed of said elevator car down to a speed corresponding to said predetermined value of said tachometer output signal.

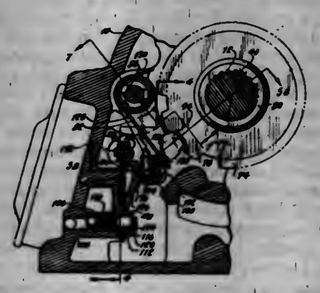
3,187,845
BRAKE CONTROL MECHANISM FOR BRAKE STEERING
Walter M. Ashley, Jr., Glen Ellyn, Ill., and Robert A. Johnson, Lexington, Ky., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 4, 1963, Ser. No. 256,037
6 Claims. (Cl. 188—16)

6. A brake control mechanism for a vehicle including a plurality of brake drums and brake actuating means for each drum comprising, a support, a shaft rotatably carried on said support, means for rotating said shaft, a plurality of levers rotatably positioned on said shaft to rotate with respect thereto, means connecting said levers to said actuating means whereby said actuating means may be moved to brake said drums, a plurality of arms



fixedly carried on said shaft adapted to be connected one to each of said levers for locking said levers to said shaft for rotation therewith whereby said actuating means are actuated, and rod means selectively movable laterally for disconnecting one of said levers from one of said fixed arms to render the same inoperative during rotation of said shaft.

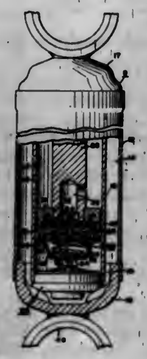
3,187,846
PIVOTED PAWL PARKING BRAKE MECHANISM
John W. Powell, Garden City, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 21, 1963, Ser. No. 282,014
7 Claims. (Cl. 188—69)



1. In a parking brake mechanism for braking a driven member of a power transmission mechanism, a parking gear carried by said driven member, a parking pawl rotatably mounted upon a stationary portion of said mechanism, said pawl having an extended end with a tooth formed thereon, said tooth being engageable with cooperating teeth of said parking gear and movable about an axis parallel to the axis of said parking gear, a cam plate pivotally mounted on a stationary portion of said mechanism for rotation about an axis that is transverse to the axis of said parking gear, a reaction shoulder carried by said stationary portion and situated adjacent said cam plate to accommodate reaction forces applied to said cam plate, said cam plate including a raised cam portion engageable with said extended end of said pawl and rising from the plane of rotation of said cam plate toward said parking gear, a personally operable linkage element connected to said cam plate at a location that is radially outward from said raised cam portion with respect to said transverse axis whereby rotary motion of said cam plate produces a force on said extended end of said pawl in a direction parallel to said transverse axis, said pawl tooth

being forced into engagement with said parking gear upon engagement of said extended end with said raised cam portion.

3,187,847
SHOCK ABSORBER WITH DAMPENING FLUID FLOW THROUGH PISTON ROD
Wayne A. Karigaard, Englewood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,214
4 Claims. (Cl. 188—88)



1. In a direct double acting hydraulic shock absorber the combination of means forming a chamber, a piston including a passage therethrough and adapted to be reciprocated within said chamber for dividing said chamber into two variable capacity compartments, a piston rod having one end thereof connected to said piston, said piston rod having a concentric bore therein and a side opening therein communicating said concentric bore with one of said compartments, said concentric bore being in serial communication with said piston passage for hydraulically communicating said two compartments, said piston having an imperforate end wall surrounding said piston rod for directing all fluid flow across said piston through said serially communicated piston passageway concentric bore and side opening, a valve assembly carried by said piston including a valve plate having concentric valve seat faces on opposite sides thereof, a valve element concentrically aligned with each of said concentric valve seat faces, means for maintaining said valve elements normally closed against said valve seating faces, said last means being responsive to opposite movement of said piston within said chamber to affect a predetermined movement of said valve elements to control hydraulic flow through said serially communicated piston passage, piston rod bore and side opening between said variable capacity compartments.

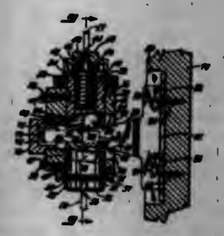
3,187,848
WHEEL CYLINDER SEAL ASSEMBLY
Ronald L. Shellhause, Vandalia, and Carl A. Bieriein, Kettering, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,503
8 Claims. (Cl. 188—152)

3. Mechanism for increasing radiant heat dissipation and providing micro-mechanical locking boot retaining means in a wheel brake assembly having a brake drum and a backing plate with brake shoe means movably mounted thereon and providing a radiant heat source when actuated into braking engagement with said drum, said mechanism comprising a wheel cylinder assembly adapted to be secured to said backing plate in heat transmitting relation and having a cylinder and piston and link pin means for actuating said brake shoe means and wheel cylinder boot means received internally of said cylinder in sealing and micro-mechanical locking relation therewith and in sealing relation with said link pin means whereby the entire outer surface of said cylinder is in



heat radiating relation to said shoe means to effectively receive radiant heat therefrom for primary heat transmittal to said backing plate and secondary heat transmitted to said boot means to increase said micro-mechanical locking relation and to protect said boot means from receiving radiant heat from said shoe means by shielding a part of said boot means therefrom.

3,187,849
WHEEL BRAKE OPERATING ASSEMBLY
William T. Deibel, Cleveland, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 12, 1963, Ser. No. 308,537
11 Claims. (Cl. 188—152)



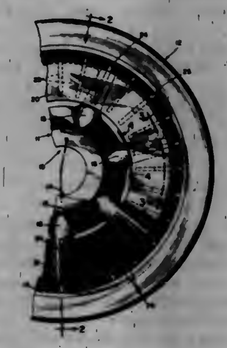
1. In a rotatable drum brake assembly having a movable drum engaging member, an actuating member having one extremity coupled for movement with the drum engaging member and having its other extremity curvilinearly tapered transverse to its axis, an operating member reciprocably movable perpendicular to the axis of the actuating member and having an axially tapered free extremity disposed in spaced relation from said tapered other extremity of the actuating member to form a roller guide space having an axis converging towards the axis of the operating member at its free extremity, a roller member freely disposed in the roller guide space and engaging the tapered extremities of the actuating and operating members respectively, the roller engaging surfaces of said actuating and operating members being curved to provide diametrically opposed points of engagement with the roller member at any point along the roller guide space, whereby a line joining points of contact on the respective tapered extremities of the actuating and operating members passes through the central axis of the roller member, said roller member adapted to coact to convert axial movement of the operating member into drum engaging movement of the drum engaging member through the actuating member.

3,187,850
ANNULAR MOTOR ACTUATED DRUM BRAKE MECHANISM
Robert C. Russell, Asheville, N.C., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 12, 1963, Ser. No. 308,538
14 Claims. (Cl. 188—152)



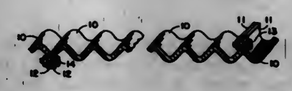
1. In a wedge operated rotatable drum brake assembly having a drum, a plurality of movable drum engaging members disposed in end-to-end spaced circumferential relation within the drum for movement toward and away from the drum, actuating members disposed between adjacent extremities of the drum engaging members and each having one extremity coupled for movement with an adjacent drum engaging member and having its other extremity tapered transverse to its axis, operating members reciprocably movable perpendicular to the axes of said actuating members and each having an axially tapered free extremity operably disposed for wedging coaction with said tapered other extremities of said actuating members to convert movement of the operating member perpendicular to the axes of the actuating members into drum engaging movement of the drum engaging members, a motor including a housing fixed relative to the wheel axis and including an annular power actuated member encircling the drum axis and supported for axial reciprocation adjacent the operating members, and means coupling the operating members to the power actuated member for reciprocation therewith.

3,187,851
RAILWAY WHEEL AND BRAKE DISC
Albert G. Dean, Narberth, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1963, Ser. No. 263,256
6 Claims. (Cl. 188—218)



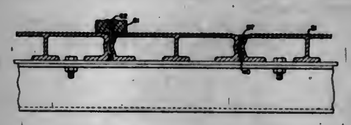
1. A railway spoke wheel and brake disc comprising: a unitary, one-piece element comprising a hub; a rim concentric to said hub; a plurality of spokes extending between said hub and said rim and supporting said rim on said hub; at least one brake disc concentric to said hub and said rim and spaced radially therefrom; and a plurality of cooling fins extending between and interconnecting said brake disc and said rim for supporting said brake disc and strengthening said rim.

3,187,852
TRANSPORTABLE SHELTER
Edward C. Carman and Henry Ritter, Nashville, Tenn., assignors to Avco Corporation, Nashville, Tenn., a corporation of Delaware
Filed Oct. 31, 1962, Ser. No. 234,466
2 Claims. (Cl. 189—2)



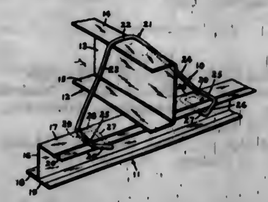
1. A transportable shelter comprised of a plurality of elongated construction panels of identical size and configuration, each of said construction panels being comprised of flexible sheet material and being curved along the length thereof, each of said panels having two integral flanges extending substantially the entire length thereof, one of said flanges projecting at right angles from one lengthwise edge thereof, and the other projecting at right angles from the other lengthwise edge thereof, said flanges projecting in opposite directions whereby said panels may be stacked in a minimum volume package during transportation thereof, said flanges serving to reinforce said panel, said plurality of panels being positioned side by side and lengthwise, the flanges of adjacent panels projecting in the same direction and being butted and secured together, the widthwise edges of adjacent panels being joined whereby a self-supporting arched shelter is provided, said flanges providing arched truss members for said shelter.

3,187,853
FLOOR CONSTRUCTION AND METHOD OF MAKING THE SAME
Kurt F. Glaser and William J. Crabbs, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 6, 1960, Ser. No. 41,134
2 Claims. (Cl. 189—34)



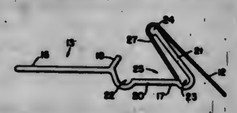
1. In combination, a plurality of elongated floor elements secured together in side by side coplanar relation, each floor element having top surface means and bottom surface means interconnected together by opposed side surface means, one of said side surface means having an integral outwardly directed spacing flange extending between the opposed ends thereof and having a free end extending laterally and engaging the other side surface means of an adjacent floor element to space adjacent side surfaces of adjacent floor elements, a load arresting member disposed on a portion of said top surface means, and a fastening member disposed in said arresting member and extending into said space between two of said floor elements, said fastening member rupturing said spacing flange on one of said two floor elements.

3,187,854
SUSPENDED CEILING CLIP
Martin L. Lydard, Baltimore, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed Feb. 24, 1959, Ser. No. 795,097
5 Claims. (Cl. 189—35)



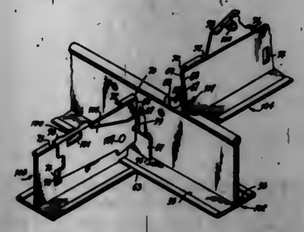
1. A ceiling construction, comprising an elongated runner, an elongated ceiling member, and a wire clip for attaching said runner to said member, said runner and said member extending transversely with respect to each other and said runner having an elongated flange arranged to have the upper surface thereof in surface contact with the under surface of said ceiling member in the region of crossing of said ceiling member and said runner, and said flange having a downwardly extending elongated projection intermediate the elongated sides thereo; said wire clip comprising a body portion bent to fit over said ceiling member and a loop extending generally transversely to said body portion at each end thereof, each of said loops being formed from a series of successive legs formed by a series of bends in said wire, a first one of said legs being in line contact with the upper surface of said flange and a last one of said legs being in line contact with the under surface of said flange, said first leg and said last leg being parallel to each other and extending generally transversely across said flange in the same region whereby said first leg and said last leg of each of said loops tightly grip the respective surfaces of said flange, the length of said last leg being substantially equal to the spacing between an elongated side of said flange and said projection whereby contact between the free end of said last leg of each loop and said projection prevents accidental dislodgment of said clip.

3,187,855
EDGING CONSTRUCTIONS
Ernst J. De Ridder, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Apr. 20, 1961, Ser. No. 104,288
19 Claims. (Cl. 189—36)



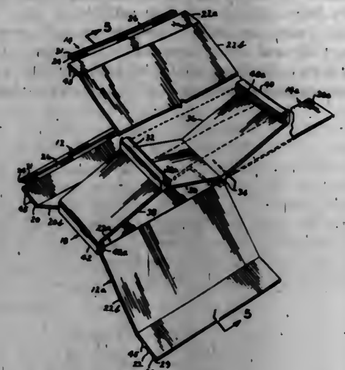
1. In combination, an edging having a body portion, a first inner flange connected to said body portion and having a first section extending away from said body portion and a second section looped adjacent said first section and extending toward said body portion, said flange sections defining a first bight portion therebetween, said second section having a bead at the free end thereof, said first section having a channel disposed adjacent said bead, a second inner flange connected to said body portion and extending adjacent said second flange section to define a second bight portion therewith, and a member having a portion thereof received in said second bight portion of said edging and having a reversely turned edge received in said first bight portion of said edging, said reversely turned edge having a portion thereof received in said channel of said first flange.

3,187,856
ACOUSTICAL CEILING SUSPENSION FASTENING SYSTEM
Martin L. Lydard, Ellicott City, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation Maryland
Filed May 1, 1961, Ser. No. 106,794
8 Claims. (Cl. 189—36)



1. In a suspended ceiling grid structure having a main runner and transverse cross-T positioned parallel to each other at opposite sides of the main runner, said main runner having an axially extending upstanding web and a pair of axially extending flanges projecting horizontally from the main runner web, said main runner web having a plurality of axially spaced apertures located at an intermediate height in said main runner web, the improvement comprising: said cross-T's each having an axially extending upstanding web and a pair of axially extending flanges projecting horizontally from the cross-T web but terminating axially inwardly of the forward end of the cross-T web by a distance substantially equal to the width of a main runner flange, a first shoulder forming the forward end of each cross-T web at the end of the latter facing said main runner and located so as to be in contact with the adjacent main runner web above the top of one of said main runner apertures when the forward edge of the corresponding cross-T flange is aligned with and in contact with the outside edge of the adjacent main runner flange, said cross-T webs each having a closed sided aperture located inwardly of each forward end thereof, and a pair of hook latching elements each attached to a respective cross-T web adjacent the forward end thereof, said attachment of said hook latching elements of said cross-T webs permitting pivoting of said hook latching elements in a substantially vertical plane between an unlatched position and a latched position, each hook latching element comprising a flat body portion disposed so as to be in slidable contact with one cross-T web surface, a locking lug projecting laterally from said body portion and arranged to enter the adjacent cross-T web aperture when said hook latching element is pivoted to said latched position thereof, a forwardly extending nose adapted to enter said one main runner aperture when said cross-T is aligned with said one main runner aperture and having an upwardly extending second shoulder arranged to contact the opposite surface of said main runner web above the top of said one main runner aperture when said hook latching element is pivoted to said latched position thereof, a pair of legs projecting laterally in opposite directions from said body portion and each having a foot surface arranged to contact the upper surface of the adjacent main runner flange and a flange extension projecting laterally from said body portion and arranged to contact the opposite cross-T web surface when said hook latching element is pivoted to said latched position thereof thereby to prevent accidental disengagement of said lug from said cross-T web aperture.

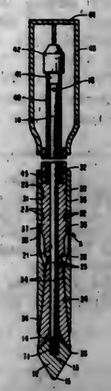
3,187,857
GRILLE OR SCREEN
Lemuel G. Brown, P.O. Box 8777, Britton, Okla.
Filed July 23, 1962, Ser. No. 211,797
2 Claims. (Cl. 189—82)



1. A substantially Z-shaped clip comprising:
a rectangular central portion having first and second parallel edges;
a first rectangular arm projecting from said first edge and forming an obtuse angle with said central portion, said first arm being of substantially the same size and shape as said central portion;
a second rectangular arm projecting from said second edge on a side of said central portion opposite the side from which said first arm projects, said second arm forming an obtuse angle with said central portion, and said second rectangular arm being of substantially the same size and shape as said central portion;
a first C-shaped projection formed on the line of intersection between said central portion and the first arm on the side of said intersection opposite said obtuse angle, the C-shaped portion opening generally toward, and diverging from the surface of, said central portion;
a second C-shaped projection formed on the line of intersection between said central portion and the second arm on the side thereof opposite said obtuse angle formed between the second arm and said central portion, said C-shaped projection opening generally toward, and diverging from the surface of, said central portion;
a C-shaped projection formed on the free end of said first arm and opening toward said second C-shaped projection to form therewith a pair of parallel C-shaped projections; and
a C-shaped projection formed on the free end of said second arm and opening toward said first C-shaped projection to form therewith a pair of parallel Z-shaped projections.

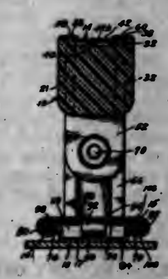
3,187,858
ANCHORING DEVICE
Nicholas H. Des Champs, Richmond, Va., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed Dec. 11, 1962, Ser. No. 243,881
7 Claims. (Cl. 189—92)

1. An anchoring device comprising,
(a) a shaft having means at its upper end to permit attachment thereto of an object to be anchored,
(b) a tubular member slideably mounted on said shaft,
(c) a plurality of flukes connected to and depending from said tubular member,
(d) a collar slideably mounted on said tubular member,



(e) a plurality of reinforcing struts each of which is connected at its lower end to one of said flukes and at its upper end to said collar, the interconnection between said collar and said tubular member formed by said struts and said flukes effecting downward movement of said tubular member relative to said collar upon application of a force to the top of said tubular member,
(f) cam means mounted on the lower portion of said shaft for effecting expansion of said flukes outwardly when said tubular member is caused to move downwardly relative to said cam means, and
(g) cooperating locking means provided on said tubular member and said collar respectively to prevent retraction of said flukes upon expansion of said flukes to a predetermined position, said locking means being placed in an operative position by the relative movement between said collar and said tubular member and being actuated when in said operative position.

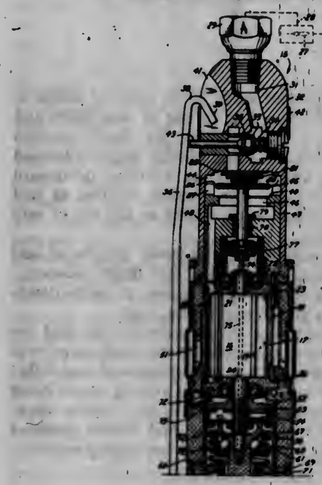
3,187,859
HANDLE FOR CONTAINERS
Joseph A. Mazlarka, 7706 N. Oketo, Niles, Ill.
Filed Jan. 17, 1962, Ser. No. 166,873
8 Claims. (Cl. 190—58)



1. A handle assembly for a container such as a suitcase and the like comprising a grip unit including a resilient grip holding device, a grip removably clamped by said holding device, and latch device engaging means for detachably connecting the grip unit to a grip latching unit; a grip latching unit including means for permanently securing the grip latching device to a container, a depressible latch device for reengagement with said latch device en-

gaging means to detachably connect said grip unit to said container, a cover carried by said grip unit for masking said latch device when said latch device is in engagement with said latch device engaging means, said cover being sufficiently flexible for flexing thereof to depress said latch device to thereby permit detachment of said grip unit from said grip latching unit, whereby flexing of said cover and depressing said grip latching device permits detachment of said grip unit from said grip latching unit without requiring removal of said masking cover from said grip unit or removal of said grip latching unit from said container.

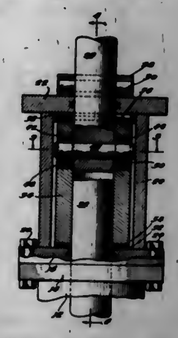
3,187,860
PORTABLE NUT RUNNER HAVING AUTOMATIC SPEED CHANGE AND AUTOMATIC SHUT-OFF
Roger C. Simmons, New Hartford, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 24, 1963, Ser. No. 253,538
19 Claims. (Cl. 192—.092)



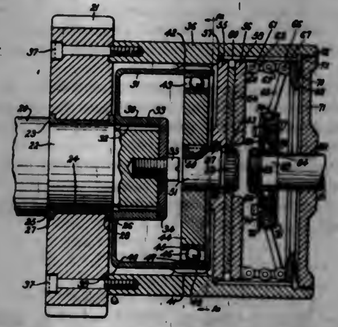
1. A nut running tool having automatic torque change over and automatic power shut off, comprising a work spindle, a reduction gearing first stage, a motor, a heavy torque cam release main clutch drivingly coupling the motor to the first stage, a reduction gearing second stage, the first stage carrying a driving spindle drivingly connected to the second stage, a low torque cam release clutch normally drivingly coupling the driving spindle with the work spindle adapted to fully disengage upon realizing a predetermined torque overload, a normally fully disengaged shift clutch adapted upon engagement to drivingly couple the second stage with the work spindle, means responsive to release of the low torque cam release clutch to engage the shift clutch, and means responsive to release of the main clutch to shut off operating power to the motor.

3,187,861
SELF-LOCKING ROTARY OPERATOR
Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois
Filed July 9, 1963, Ser. No. 293,727
2 Claims. (Cl. 192—8)

1. A self-locking rotary operator for a rotatable valve stem, comprising: a valve operator housing having first serrated locking means thereon; a rotatable operator shaft in said housing axially aligned with said valve stem; a valve stem sleeve keyed to said valve stem for rotation therewith and limited movement longitudinally thereof, said sleeve having a pair of circular openings therein providing a pair of arcuate camming surfaces and having second serrated locking means on one end thereof adapted to mate with said first serrated locking means to lock said valve stem against rotation relative to said housing; a spring washer normally urging the second serrated locking means of said sleeve into locking engagement with said first serrated locking means of said housing; a cylindrical pin extending transversely of the operator shaft for rotation therewith and passing into said openings in said sleeve; a pair of rollers rotatably carried on said cylindrical pin within said openings, said sleeve being cammed longitudinally of the valve stem by the interaction of said rollers and said arcuate camming surfaces as said operator shaft is rotated whereby said second locking means is moved out of locking engagement with said first locking means, said rollers and said arcuate camming surfaces providing a lost motion connection between said operator shaft and said valve stem sleeve for imparting rotational movement to said valve stem.



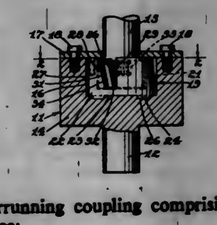
3,187,862
CLUTCH MECHANISM WITH FLEXSPLINE
C Walton Musser, Palos Verdes Estates, Calif., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Oct. 22, 1962, Ser. No. 231,983
4 Claims. (Cl. 192—30)



1. In clutch mechanism, input means, output means, a harmonic drive speed increaser operatively connected between the input means and the output means and comprising a circular spline having a plurality of circumferentially distributed teeth, a flexspline in telescoping relation to the circular spline and having a plurality of circumferentially distributed teeth of the same tooth form

on the side toward the circular spline, the number of teeth on the circular spline and on the flexspline being different, the teeth on the flexspline being in contact with the teeth on the circular spline at a plurality of circumferentially spaced points with intermediate points at which the respective teeth are out of mesh and out of contact, the difference in the number of teeth on the circular spline and on the flexspline being the same as or a multiple of the number of spaced points at which the respective teeth are in contact, and a wave generator acting on the opposite side of the flexspline from the circular spline and deflecting its teeth into contact with those of the circular spline, one of the circular spline, flexspline and wave generator being connected to the input means, another of them being connected to the output means and the third of them being capable of turning freely at a substantially greater speed than the input means or optionally of being connected to the output means, and clutch means operatively connected between the said third element and the output means, and adapted to be disconnected to allow the third element to turn freely.

3,187,863
ONE-WAY CLUTCH
Paul F. Gionnetti, Elmira, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed Feb. 11, 1963, Ser. No. 257,571
11 Claims. (Cl. 192—45)



1. An overrunning coupling comprising:
an inner race;
an outer race situated in concentric relationship to the inner race, said races having smooth cylindrical race surfaces;
a clutch roller of a predetermined diameter engageable with the races for establishing a one-way connection between the races;
means pivotally supporting the roller for allowing roller movements between positions parallel and non-parallel with the axis of the races; and,
resiliently yieldable means engaging the roller and adapted to urge the roller to one of its positions, said roller being adapted to become wedged between the races when in a non-parallel position and when one of said races is rotating relative to the other of said races thereby establishing the one-way connection, said roller being further adapted to be urged by the races to its parallel position when said other race is rotating relative to said one race thereby establishing the overrunning connection.

3,187,864
ONE-WAY OVERRUNNING CLUTCH
Kenneth J. Tonkin, Glenview, Ill., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 2, 1962, Ser. No. 234,983
1 Claim. (Cl. 192—46)

In a one-way overrunning clutch,
the combination comprising a first rotatable member having an internal ratchet wheel thereon with a plurality of ratchet teeth,
a second rotatable member coaxial with said first rotatable member and having a hub received within said internal ratchet wheel,
said internal ratchet wheel being spaced radially from said hub,
a plurality of posts extending radially from said hub toward said internal ratchet wheel but spaced inwardly therefrom,
a plurality of pawls mounted on said posts and engageable with said ratchet teeth on said internal ratchet wheel to form driving connections between said first and second rotatable members,



each of said pawls being in the form of a flat blade having one end portion rockably mounted on the corresponding post and the other end portion engageable with said ratchet wheel,
each of said posts extending substantially in a radial direction and perpendicular to the axis of said second rotatable member,
each of said pawls being substantially perpendicular to the corresponding post and being in a substantially tangential relation to said hub,
and a flat leaf spring mounted on each of said posts between said hub and the corresponding pawl and biasing said pawl outwardly toward said internal ratchet wheel.

3,187,865
PREDETERMINED TORQUE RELEASE TOOL WITH NON-RATCHETING FEATURE
John A. Blachowski, Park Ridge, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 246,391
8 Claims. (Cl. 192—56)



8. In a tool attachment of the class described for driving and tightening rotary fastener elements, in combination: a generally cylindrical casing, a spindle co-axially mounted in said casing for rotation and for axial shifting movement therein, means associated with the front end of said spindle for detachably engaging a tool; a main torque clutch in the rear end of said casing comprising, a power-receiving clutch member, a driven clutch member, said clutch members being rotatably supported in the casing axially of the spindle and said driven clutch member being supported in front of said power-receiving clutch member for axial reciprocating movement relative to the latter, spring means within said casing for urging said driven clutch member into driving engagement with said power-receiving clutch member and permitting separation of said clutch members by said camming means when a predetermined torque value is exceeded; and secondary clutch means for drivingly interconnecting said driven clutch member with said spindle upon rearward shifting movement of the spindle comprising, first engaging means on the front side of said driven clutch member, a collar-like clutch member mounted on said spindle in front of said driven clutch member for reciprocal movement axially of the spindle, which collar-like clutch mem-

ber has second engaging means on the rear face thereof for interengaging said first engaging means, coupling means interconnecting said spindle in drive relationship with said collar-like clutch member, and ring-like means encircling said spindle and carried by the latter, said ring-like means being engageable with said collar-like clutch member and permitting relative sliding movement between the latter and the spindle whereby said collar-like clutch member moves forwardly with the driven clutch member after said predetermined torque value has been exceeded, and said ring-like means being adapted to engage the collar-like clutch member for preventing rearward axial movement of the same with said driven clutch member when the latter is returned to driving engagement with said power-receiving clutch member after said predetermined torque value has been exceeded.

3,187,866
TRANSVERSELY ENGAGED, INTERIOR AND EXTERIOR SHAFT COUPLING
Arnoldus Beeman, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,252
Claims priority, application Netherlands, Dec. 13, 1961, 272,984
5 Claims. (Cl. 192—72)



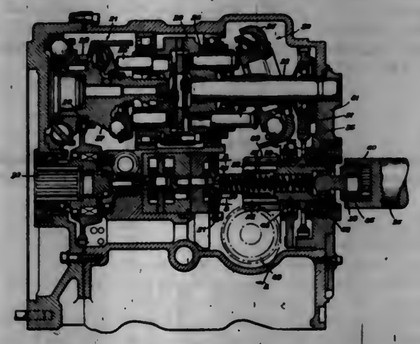
1. A coupling assembly for connecting a first shaft to a coaxial second shaft, said assembly comprising a drive ring secured to said first shaft for rotation therewith, means defining an annular groove in one face of said drive ring, a driven ring releasably connected to said second shaft for rotation therewith adjacent the annular groove in said drive ring, a clutch element pivotally supported by said driven ring and projecting into the annular groove of said drive ring, means rotatable with said driven ring for normally urging said clutch element into skewed position relative to said annular groove to effectuate locking engagement between the drive and driven rings, and means defining an enlargement of said annular groove to provide lost motion between the same and the clutch element prior to engagement for expediting coupling.

3,187,867
MECHANICAL ASSIST DEVICE
William H. Slak, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed June 5, 1961, Ser. No. 115,020
19 Claims. (Cl. 192—89)



4. An assist device adapted to impart an urging force to an element comprising in combination, a first member, a second member movable relative to said first member and adapted to be operatively connected to the element, resilient means adapted to be connected to said first and second members, said first and second members having engaging means thereon, and coupling means adapted to be positioned by said engaging means of said first member to maintain said resilient means in a preloaded condition, said coupling means further being adapted to be cammed out of engagement with said first member and into engagement with said engaging means of said second member upon relative movement between said members to couple said resilient means to said second member whereby said resilient means urges continued relative movement between said members.

3,187,868
POWER TRANSMISSION MECHANISM
Charles J. Gantzer, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed May 31, 1961, Ser. No. 113,699
13 Claims. (Cl. 192—101)

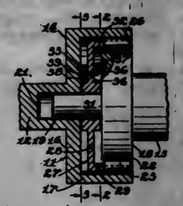


1. A power transmission mechanism comprising: a driving member; a driven member; a coupler; means mounting said coupler for rotation about an axis and movement along said axis between driving and released positions; first releasable means for connecting said coupler and driving member and connected for rotating said coupler in one direction responsive to operation of said driving member; second releasable means for connecting said coupler and driven member and connected for driving said driven member responsive to rotation of said coupler; said first and second releasable means being associated with each other for disengagement of said driven member prior to disengagement of said driving member and for engagement of said driving member prior to engagement of said driven member; means urging said coupler toward said driving position; a worm gear for moving said coupler from said driving position to said released position, said worm gear including a worm movable with said coupler around and along said axis, and a worm wheel; and means for stopping rotation of said worm wheel to effect movement of said worm and coupler from said driving position to said released position.

3,187,869
CENTRIFUGALLY RELEASED ONE-WAY CLUTCH
Glenn S. Spencer, Horseheads, N.Y., assignor to The Bendix Corporation, Elmira Heights, N.Y., a corporation of Delaware
Filed Apr. 6, 1961, Ser. No. 101,185
3 Claims. (Cl. 192—104)

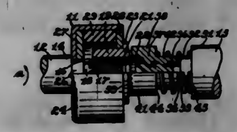
1. A one-way clutch for connecting a driving shaft and a coaxially aligned driven shaft comprising: an outer clutch member adapted to be connected to one of said shafts and an inner clutch member adapted to be connected to the other of said shafts, said clutch members being concentrically mounted; means which connect said clutch members in driving relation to each other including a plurality of roller receiving recesses formed on the

inner clutch member facing the outer clutch member each of said recesses having a cam surface between which and the inner periphery of the outer clutch member a roller of a predetermined diameter is adapted to be wedged when driving relation is established between said clutch members; a plurality of rollers, one of which is positioned in each of said recesses; a roller cage journalled on a shaft extension intermediate said driving and driven shafts having annular portions concentrically interposed between said clutch members including a plurality of slots, one of which is positioned in substantially radial alignment with each of said recesses to embrace portions



of the rollers in said recesses; a lever, including a straight extremity and an offset extremity, journalled intermediate said extremities in the roller cage and having said extremities in parallel axial alignment with said shafts, said offset extremity being pivotally supported in the inner clutch member providing a driving connection between the cage and the inner clutch member; and, weight means fixedly secured to the lever straight extremity adapted to be actuated by centrifugal force for rotating said lever whereby the roller cage is rotatably displaced a limited amount relative to the inner clutch member and urges the rollers out of their wedging position to thereby disestablish the driving relation between said clutch members.

3,187,870
OVERRUNNING CLUTCH WITH ECCENTRICALLY MOUNTED THREADED DRIVEN MEANS
John J. Sebastini, Elmira, N.Y., assignor to The Bendix Corporation, Elmira Heights, N.Y., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,227
7 Claims. (Cl. 192—104)



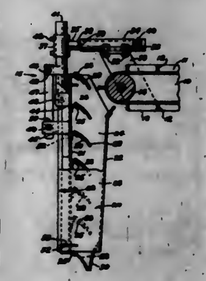
1. A clutch comprising, in combination:
a driving shaft of a prime mover, said shaft having a free extremity;
a driven shaft in axial alignment with the free extremity of the driving shaft, said driven shaft having helical splines thereon;
a driving clutch member non-rotatably supported on the free extremity of the driving shaft;
a driven clutch member threaded on said driven shaft adapted for movement toward and away from engagement with the driving clutch member, said driven clutch member being eccentrically formed relative to its own axis whereby said driven clutch member is caused to be threaded away from engagement with the driving clutch member responsive to rotation of the driven shaft at and above a predetermined speed;
means formed on each of said clutch members for effecting an overrunning torque transmitting connection; and,
means for yieldably biasing the driven clutch toward and into engagement with said driving clutch member when said driven shaft rotates below the predetermind speed.

3,187,871
CENTRIFUGAL CLUTCH
Henry T. M. Rice, San Gabriel, Calif., assignor to Ohlsen & Rice, Inc., Los Angeles, Calif., a corporation of California
Filed May 26, 1961, Ser. No. 113,015
14 Claims. (Cl. 192—105)



1. In a clutch: a driving member; a driven member having an internal surface; opposed clutch shoes having outer clutch surfaces conforming to the curvature of said internal surface and movable outwardly by centrifugal force into engagement with said driven member surface; said driving member having surfaces for each shoe converging toward each other in an outward transverse direction and engageable with companion converging surfaces on said shoe; said driving member converging surfaces engaging companion surfaces on said shoes to drivably engage the outer surfaces of said shoes with said driven member internal surface; and spring means secured to said shoes and passing through said driving member in the plane of engagement of said driving member with said shoes normal to the axis of said driving member for resisting centrifugal force acting on said shoes and for shifting said shoes inwardly to engage said converging shoe surfaces with companion driving member surfaces and center said shoes on said driving member out of engagement with said driven member.

3,187,872
TOMATO HARVESTER
Frederick L. Hill, Rio Vista, and Lauren W. Gates, Solano County, Calif., assignors to the Regents of The University of California, Berkeley, Calif.
Filed Feb. 18, 1963, Ser. No. 259,115
7 Claims. (Cl. 193—7)



1. A fruit depositing device, including in combination a box-like device having an inboard generally vertical wall, an outboard generally vertical wall facing said inboard wall, and generally vertical side walls, connecting said inboard and outboard walls; and
a series of fruit-delaying means secured to said outboard wall only and comprising

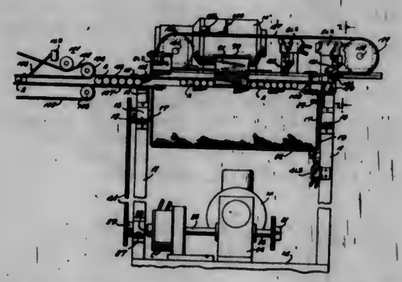
a series of resiliently anchored flexible strips extending out toward said inboard wall and downwardly and terminating in a free edge closer to the inboard wall than the diameter of the fruit, with slits extending from said free edge toward said outboard wall so that the fruit slides down said inboard wall, its velocity being reduced by engagement with said series of fruit-delaying means.

3,187,873
DEVICE FOR DELIVERING DISCRETE PIECES OF MATERIAL TO A TREATMENT STATION
Manfred Wolff, Grunbach, Kreis Waiblingen, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a German company
Filed July 19, 1963, Ser. No. 296,325
Claims priority, application Germany, Nov. 15, 1962, W 33,328
3 Claims. (Cl. 198—29)



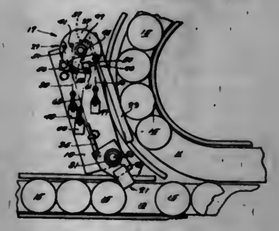
1. A device for delivering discrete pieces of material to a treatment station, said device comprising a continuously moving supply conveyor, an intermediate conveyor, and a continuously moving feed conveyor leading to the treatment station, said supply conveyor transporting the pieces of material to said intermediate conveyor and said intermediate conveyor transporting the pieces of material to the feed conveyor, and step-by-step drive means for driving the intermediate conveyor step by step at a predetermined rate of movement in reference to the rate of movement of said supply conveyor, engagement of pieces of material with the intermediate conveyor while the same is standing still forcing pieces displaced in reference to an aligned arrangement of the pieces on the supply conveyor into aligned positions along said conveyor prior to a step of movement of the intermediate conveyor.

3,187,874
ARTICLE CONVEYING AND DISTRIBUTING SYSTEM
William C. Roedel, Bloomsburg, and Donald E. Flinchbaugh, York, Pa., assignors to Consolidated Cigar Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 6, 1963, Ser. No. 263,296
14 Claims. (Cl. 198—30)



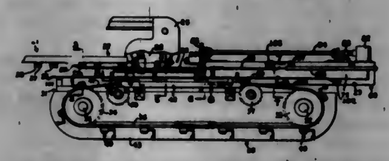
1. An article handling apparatus comprising an endless conveyor including successive longitudinal groups of a predetermined number of substantially equal increments and successive indicia longitudinally-spaced by said predetermined number of increments, a plurality of longitudinally-spaced intermittently actuatable article delivering means disposed alonog said conveyor, the spacing between successive delivery means being a multiple of said increments different from the number of increments in said group and said delivery means registering with different increments in said respective groups, a first sensing means actuated by said indicia, selectively actuatable means advancing said conveyor from the trailing toward the leading end thereof, and means responsive to said sensing means deactivating said advancing means and concurrently actuating said plurality of article delivery means.

3,187,875
CONVEYOR CONTROL SYSTEM
John F. Krupka, Wilmette, Ill., assignor to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 6, 1962, Ser. No. 221,746
4 Claims. (Cl. 198—32)



1. A conveyor traffic control device for regulating the movement of articles at the junction of a main conveyor and a feed conveyor so as to always give preference to articles on the main conveyor, which device comprises a frame located near the junction, a gate member and a control member pivotally mounted on said frame, said gate and control members being adapted to extend transversely over the feed and main conveyors, respectively, in positions to engage articles being carried therealong, means biasing said members to said transverse positions, latching means for locking said gate member in said transverse position, freely movable camming means attached to said control member so that said control member remains always pivotable and connected to said latching means, said camming means being operable to lock said latching means in response to pivotal movement of said control member caused by its engagement by articles passing along the main conveyor, whereby passage of articles on the feed conveyor is blocked by said gate member.

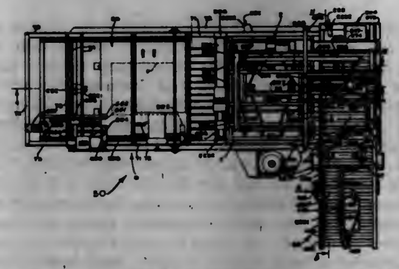
3,187,876
CAN TURNING DEVICE
Justin Simpson, Elmhurst, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 19, 1963, Ser. No. 266,286
18 Claims. (Cl. 198—33)



1. A container turning device for turning containers moving in a plane, said container turning device comprising a movable carrier, a container holder carried by said carrier for movement therewith, said container holder including a container attracting member for effecting a temporary connection with a wall of a container, means mounting said container attracting member for rotation

about an axis disposed normal to the plane of container movement whereby containers remain in a common plane during the turning thereof, and means for controlling the turning of a container held by said container attracting member.

3,187,877
APPARATUS FOR HANDLING CASES
Earle J. McGrath, Chula Vista, and Clarence H. Stevenson III, Glendale, Calif.; said McGrath assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application May 14, 1956, Ser. No. 584,730, now Patent No. 3,050,199, dated Aug. 21, 1962. Divided and this application Dec. 28, 1961, Ser. No. 162,748
4 Claims. (Cl. 198—34)



1. In an article handling machine, a conveyor having a plurality of spaced rollers defining a conveying surface, means defining a reference point along said conveyor toward which articles are advanced, a drive member keyed to each roller, and a driving member arranged to be selectively engaged in driving relation with the drive members of said rollers, the selective engagement of said driving member with said drive members being effective to vary the distance between said reference point and the last driven drive member of said conveyor and the force with which an article is propelled toward said reference point.

3,187,878
ARTICLE HANDLING APPARATUS
Walter G. Harrison, Westchester, Leo A. Gary, Chicago, and Allan C. Audet, Arlington Heights, Ill., assignors, by mesne assignments, to Prospect Manufacturing Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 10, 1962, Ser. No. 186,523
5 Claims. (Cl. 198—37)



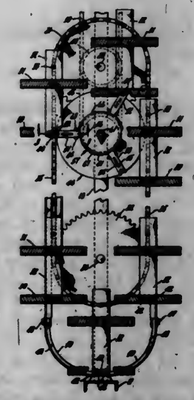
1. An article accumulator having a loading end and a discharge end, said accumulator including longitudinally extending frame means, a plurality of roller assemblies disposed within said frame means with their respective axes parallel, said assemblies being longitudinally spaced apart and comprising an idler portion and a driven portion, a plurality of sets of belts fitted over said assemblies, the belts in any one of said sets being wrapped around an idler portion in one assembly and a driven portion in an immediately adjacent assembly, separate drive means for each of said assemblies adapted to rotate said belt sets, and means operatively connected to said drive means for detecting the presence of articles on said belts, said detecting means being adapted to stop their associated drive means when said articles are detected, and wherein said assemblies each comprise a single shaft, said drive means being operatively associated with the shaft of each assembly, driven portions on each shaft for carrying individual belts in one belt set and idlers interposed between said driven portions in alternating fashion for carrying an adjacent belt set whereby operation of the drive means for a given assembly will move the belt set carried by said driven portion without moving the adjacent belt set carried by said idlers.

3,187,879
SPREADER
William F. Mengel, % F. F. Mengel Company, Wisconsin Rapids, Wis.
Filed Mar. 13, 1963, Ser. No. 264,814
15 Claims. (Cl. 198—117)



1. Apparatus for distributing concrete and the like comprising, in combination, an elongated conveyor, a frame including two relatively spaced, generally parallel, elongated support members, an elongated boom extending generally transversely of each of said support members, each of said booms having one end connected to said conveyor and its other end pivotally supported from said frame, means for selectively pivoting each of said booms about its respective pivot connection to move said conveyor relative to said frame, dolly means engaged with and movable longitudinally of each of said support members, and means connecting said dolly means to said booms for movement of said dolly means along said support members in response to pivotal boom movement and for relative movement between said boom and dolly means so that said booms are supported from said support members throughout pivotal movement of said booms.

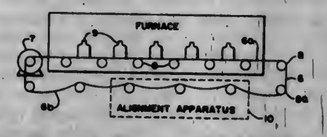
3,187,880
CONVEYOR WITH STABILIZING MEANS
George Gordon Frater and Lee F. Sickler, Watertown, Wis., assignors to G. B. Lewis Company, Watertown, Wis., a corporation of Wisconsin
Filed June 4, 1962, Ser. No. 199,736
8 Claims. (Cl. 198—158)



1. A shelf conveyor which includes, in combination, a pair of upper sprocket wheels, a pair of lower sprockets, a motive force to rotatably drive a sprocket wheel, end ess sprocket chains connecting the sprockets, a plurality of shelves between the chains, pivotal means connecting the

shelves to the opposed sprocket chains, a roller extending below the shelf, a rotatable stabilizing disc positioned below an upper sprocket wheel, means between the disc and wheel to transmit a rotational force, a stationary cam adjacent the central portion of the stabilizing disc, said cam having a low surface and a gradually increasing high surface, a plurality of radially movable arms on the disc synchronized to engage the shelf, said arms riding the surfaces of the stationary cam to move in and out as the disc rotates to gradually engage and disengage the shelf, a spring urging said arms towards the low surface of the cam, and an arcuate track adjacent the lower sprockets to engage the roller on the shelf so that the movement of a shelf on the lower sprocket is stabilized.

3,187,881
METHOD AND APPARATUS FOR ALIGNING ENDLESS BELTS
Willard Clark, Parker, Ind., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana
Filed July 23, 1962, Ser. No. 211,655
16 Claims. (Cl. 198—202)



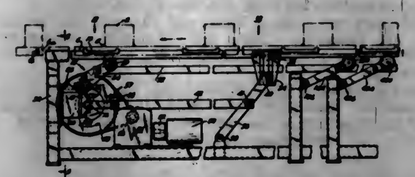
3. In conveying apparatus, an endless belt having a taut portion and a relatively slack portion, means for supporting spaced transverse segments of the slack portion of the belt in a manner such that each segment is positioned above the slack portion of the belt while retaining relatively slack portions in said belt, and means for changing the direction of travel of said segments to return the belt to a desired path of travel.

3,187,882
COAL CONVEYOR
Owen Alfred Smith, 1319 Emerson Ave. S., Minneapolis, Minn.
Filed July 3, 1961, Ser. No. 121,678
12 Claims. (Cl. 198—214)



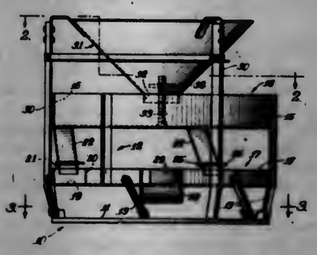
1. A conveyor comprising an elongated tubular enclosure having a slot in its upper surface through which product may flow, an elongated screw conveyor within said tubular enclosure and including an axial shaft and a spiral flight encircling said shaft, said screw conveyor comprising a plurality of sections, at least two of said sections being joined by a flexible joint, said flexible joint comprising a pin means, said pin means operatively engaging each of said shafts, said pin being free to rotate in an arc with respect to the axis of the shaft of either of the two adjoining conveyor sections joined by said pin, the ends of the spiral flights of each section terminating in a plane disposed substantially radially of the axis of the shaft, the ends of the adjoining sections of the flight terminating in coplanar abutting surfaces, said coplanar surfaces on adjacent ends of said flights lying wholly within the contour of the latter and lug means secured adjacent to the end of one flight and projecting beyond the end of and overlapping the end of the adjoining flight so as to transmit substantially all of the torque through the spiral flights.

3,187,883
ARTICLE TRANSFER MECHANISM
Emil Umbricht, Northville, Mich., assignor to Ajem Laboratories, Inc., Livonia, Mich.
Continuation of application Ser. No. 263,383, Mar. 4, 1963. This application May 26, 1964, Ser. No. 371,175
9 Claims. (Cl. 198—219)



1. Article transfer apparatus adapted to engage at least one article by vertical motion at one station, to move the article substantially horizontally along a path to the next succeeding station and disengage the article by vertical motion at that succeeding station, which comprises a machine frame, a transfer member, first cam-and-follower means rotatably mounted on said machine frame both to support and to impart the vertical component of motion to said transfer member, a crank rotatably mounted on said machine frame having two rollers mounted on the free end being radially spaced one from the other, a second cam fixed to said transfer member and defining a vertical slot in which said inner crank roller rides as said crank rotates whereby only horizontal motion is transmitted from said crank to said transfer member, which vertical slot is broadened along its central portion to accommodate a predetermined portion of said horizontal motion such that said inner crank roller upon riding first up one side and subsequently down the other side of said broadened central portion imparts a modified horizontal component of motion from said crank to said transfer member which combined with the vertical components results in a predetermined transfer path, said second cam further defining an outer guide surface along which said outer crank roller rides such that said inner crank roller is positively held against alternative sides of said broadened portion, and a drive mechanism for rotatably driving said first cam means and said crank continuously throughout at least one transfer cycle.

3,187,884
FEEDING APPARATUS
Robert M. Carrier, Jr., Louisville, Ky., assignor to Carrier Manufacturing Co., a corporation of Kentucky
Filed Jan. 26, 1962, Ser. No. 169,051
6 Claims. (Cl. 198—220)



1. A feeding device comprising: a first arcuately shaped vibratory feeder, a second arcuately shaped vibratory feeder, a passage providing communication between the first feeder and the second feeder, a gate controlling said passage, means providing a discharge from the second feeder, a frame carrying said feeders and said gate and

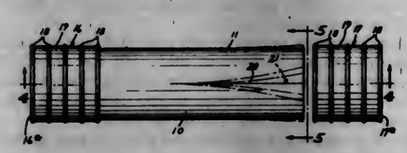
passage, and means for vibrating said frame to move material in the first feeder through said communication means into the second feeder for movement therein to said discharge.

3,187,885
GETTER
Norbert Ernst Fritz Hansen and Horst Flunkert, Aachen, Germany, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 20, 1962, Ser. No. 239,024
Claims priority, application Germany, Nov. 21, 1961, N 20,851
15 Claims. (Cl. 206—.4)



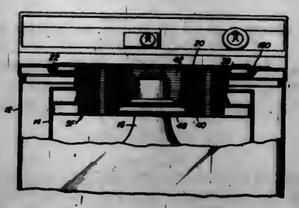
12. A getter assembly for an electric discharge device comprising a porous pliable container, a porous getter disposed within said container under slight compression, said getter being composed of a plurality of separate contacting granules, each of said granules being constituted of a porous agglomeration of grains of an active metal and a refractory metal, said grains having a specific surface area larger than 1 $m.^2/g.$

3,187,886
CUSHIONING CARRIER FOR PNEUMATIC TUBE SYSTEMS
Robert L. Hosey, 6518 Walker St., Minneapolis, Minn.
Filed Jan. 29, 1964, Ser. No. 340,873
2 Claims. (Cl. 206—1)



1. A protective enclosure for fragile articles and adapted for reception within a carrier for pneumatic tube transporting systems, said enclosure comprising:
(a) an elongated generally cylindrical tubular body formed from molded rubber-like foam material to provide relatively smooth, skin-like inner and outer surfaces,
(b) a pair of end caps telescopically received over opposite end portions of said body, said caps being molded from non porous rubber-like material, and one thereof being affixed to the forward end of said body and the other thereof being removable from the rear end of said body,
(c) and article cushioning means within said body and adjacent the forward end thereof,
(d) each of said caps being formed adjacent their extreme outer ends to define annular recesses for snug reception of the adjacent opposite end of said body, and in which said rear cap is provided with cushion means which form an axially inward extension of the recess formed thereby,
(e) the side wall of the body being slit from its rear end portion to a point approximately centrally thereof, said slit forming a V-shaped gusset permitting the insertion and removal of articles therein, and
(f) said tubular body being flexible and resilient.

3,187,887
PACKING FOR WASHING MACHINES
Max E. Charles and Jack G. Hamer, Fontana, Calif., assignors, by mesne assignments, to Iden Manufacturing Co., Inc., Chicago, Ill.
Filed Nov. 14, 1962, Ser. No. 237,459
14 Claims. (Cl. 206—46)



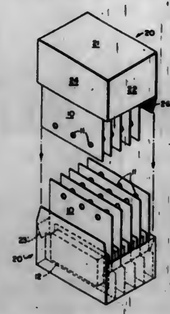
4. In combination with a washing machine, said washing machine comprising an outer cabinet, an inner tub, an agitator within said inner tub, said inner tub and said agitator being movable relative to said outer cabinet, said outer cabinet and said inner tub having a load opening leading to said agitator within said inner tub, and a cover on said cabinet for said load opening; a readily insertable and removable single unit packing for securing said agitator and said inner tub to said outer cabinet to prevent relative movement therebetween while the washing machine is being moved, said packing comprising a horizontally extending packing core having its outer wall fitted snugly within the walls of said load opening of said inner tub and said outer cabinet, said packing having a vertical opening therewithin, the wall of said opening being fitted snugly about an upper end portion of said agitator and biasing said agitator downwardly against said inner tub and washing machine, the upper surface of said core being covered by said cover of said washing machine when in closed position.

3,187,888
PIPETTE ASSEMBLY AND PACKAGE THEREFOR
Melvin P. Corwin, West Caldwell, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Apr. 14, 1960, Ser. No. 22,213
4 Claims. (Cl. 206—56)



1. A package for a reservoir containing a quantity of liquid adapted to perform a biological testing function and serving to prevent loss of liquid therefrom by vapor permeation which comprises a liquid reservoir in the form of a first container formed with an opening fitted with a closure and having a first quantity of liquid therein the volume of which being insufficient to fill said first container so that a vapor emanating from said first liquid fills the remainder of said first container, at least a portion of said first container being permeable to the vapor emanating from said first liquid, and a second container formed of a material substantially impervious to liquid and vapor enclosing said first container and having a second quantity of liquid therein the volume of which being insufficient to fill said second container so that a vapor emanating from said second liquid fills the remainder of said second container to provide a vapor barrier around said first container for substantially equalizing the vapor pressure within and without said first container so that during long storage the vapor from said first liquid will not permeate outwardly through said first container.

3,187,889
PACKAGE FOR ARTICLE OF MERCHANDISE
Robert L. Sinclair, Dedham, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,496
6 Claims. (Cl. 206—65)



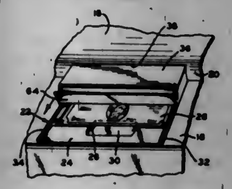
1. A package for cards, comprising a pair of mating cartons each having an internal flange, and in each carton, a series of cards having shouldered edges engaged with said flanges and retained thereby, the cards of one carton being interleaved alternately and substantially coextensively with the cards of the other carton in the closed package, said flange of each carton being deflectable whereby one carton is adapted to receive both series of cards with the flange thereof engaging the shouldered edges of one series to prevent removal thereof while leaving the other series free and the other carton is adapted to close the package by being placed over the cards in juxtaposition with said one carton to cause the flange thereof to engage the shouldered edges of the other series of cards.

3,187,890
PROJECTOR SLIDE TRAY
Robert Keith Brown, Chicago, Ill., assignor, by mesne assignments, to Sawyers, Inc., Portland, Oreg., a corporation of Oregon
Original application July 3, 1959, Ser. No. 824,877, now Patent No. 3,120,150, dated Feb. 4, 1964. Divided and this application Oct. 22, 1962, Ser. No. 236,756
6 Claims. (Cl. 206—73)



1. A slide tray comprising, a bottom wall, a pair of end walls, a side wall having a centrally arranged, longitudinally extending slot formed therein, a plurality of longitudinally spaced internal partition members projecting integrally from said bottom and side walls, a cover hingedly mounted on the upper corners of said end walls away from said side wall for movement between open and closed positions, and a plurality of longitudinally spaced ribs depending from said cover at the hinged edge thereof each being in alignment with one of said partition members and projecting between the corners of slides stored between said partitions, the ribs being arranged relative to the pivot axis of the cover so that the ribs remain in projecting relation between the corners of slides during movement of the cover between its opened and closed positions, whereby all four corners of mounted slides stored in the tray are positively separated from each other by said partition members and said ribs associated therewith when the cover is in either its open or closed position or any position therebetween, said cover being pivotable to its open position when the tray is positioned in an open-top slide-tray-receiving groove of a projector to permit editing of the slides stored therein.

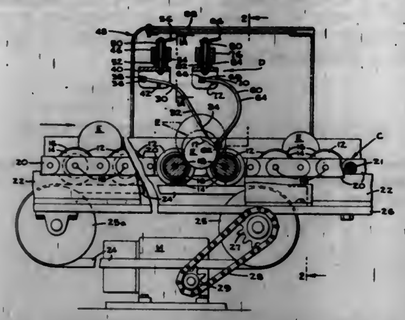
3,187,891
DOCUMENT HANDLING APPARATUS
Kenneth J. Chichester, Stamford, Conn., William F. Clarke, Larchmont, N.Y., and Alvord C. Palmer, Danbury, Conn., assignors to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed Apr. 9, 1963, Ser. No. 271,739
10 Claims. (Cl. 209—73)



1. A document handling apparatus comprising:
an enclosure;
storage means disposed within said enclosure;
said enclosure including a stationary platform, normally exposed, for acceptance of a document; and a hood, movable from a normally retracted position at which said platform is exposed to an extended position at which said hood covers said platform and a document disposed on said platform is enclosed between said platform and said hood and thereby disposed also within said enclosure;
a path between said platform and said storage means;
transfer means disposed in said path and in abutting relation with said platform for seizing, when actuated, a document on said platform and transferring it from said platform to said storage means;
latching means for latching said hood in said extended position;
examining means disposed for examining a document disposed on said platform and for providing a signal on establishing the existence of a predetermined characteristic of the document;
and control means coupled to said examining means, said transfer means and said latching means for actuating said examining means when said hood is latched in said extended position and in response to the existence of said signal actuating said transfer means for transferring the document from said platform to said storage means and subsequently unlatching said hood from said extended position.

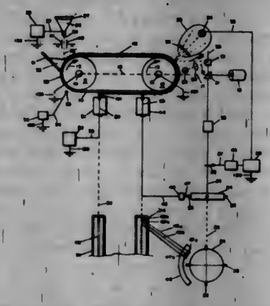
3,187,892
CRACKED EGG SHELL DETECTOR
Robert A. Whitmore and Harold J. Mumma, Riverside, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 14, 1963, Ser. No. 280,352
4 Claims. (Cl. 209—81)

1. The method of inspecting an agg for the detection of cracks in the shell of the egg, comprising the steps of making electrical contacts with the egg shell along narrow, circumferentially spaced generally parallel zones that extend along a major portion of the longitudinal extent of the egg shell, establishing a large difference in potential across the narrow contact zones, rotating the egg around its longitudinal axis while maintaining the electrical contact along said zones, sensing the current being conducted by the egg shell between the contact zones, and providing a reject signal when the current flowing through the egg



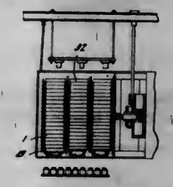
shell between the narrow contact zones is substantially greater than the current that flows between the contact zones upon inspection of an egg having an uncracked shell.

3,187,893
EXAMINING-SORTING SYSTEMS
Daniel Silverman, 5969 S. Birmingham, Tulsa, Okla.
Filed Apr. 2, 1962, Ser. No. 184,282
17 Claims. (Cl. 209—111.7)



1. An examining-sorting system for granular materials comprising in combination
(1) a moving surface, comprising a surface of rotation for which the intersection of said surface with a diametral plane is a portion of a circle, concave outward from the axis of rotation,
(2) means for removably and temporarily holding to said surface in a two-dimensional array a multiplicity of grains of material,
(3) said two-dimensional array of grains comprising substantially a pattern of columns and rows, said columns being oriented substantially in the direction of motion of said surface and said rows being oriented substantially perpendicular to the direction of motion of said surface,
(4) Inspection means for examining sequentially each grain in a row and sequentially each row over said surface for at least one physico-chemical property,
(5) said inspection means adapted to scan along a line coincident sequentially with each of said rows of grains,
(6) grain rejection means comprising electrophysical means for displacing at least one grain of said material from said surface,
(7) said rejection means constrained to operate along a rejection line coincident sequentially with each of said rows of grains,
(8) said inspection means and said rejection means synchronized with each other and with the movement of said surface,
(9) control means responsive to said inspecting means,
(10) said rejection means responsive to said control means,
(11) and means for removing all said grains from said surface,
whereby, when said inspection means finds a grain of anomalous property said control means will control said rejection means to remove said anomalous grain.

3,187,894
SIFTERS AND CLASSIFIERS FOR MATERIALS
Felipe Salete Garces, Mexico City, Mexico, assignor to Refaccionaria de Molinos, S.A., Mexico City, Mexico
Filed May 19, 1961, Ser. No. 111,297
2 Claims. (Cl. 209—319)



1. A sifter or classifier of ground material comprising a frame, a plurality of sifting sections in the frame with each section having a plurality of individual sieves provided in a vertical pile, at least two articulated arms for each sieve, each articulated arm having one of its ends hinged to the frame and the other end provided with a bolt that projects into a continuous groove at the side face of the sieve, an elevating mechanism mounted on the bottom of the pile of sieves including a screw spindle and levers with the spindle connected to one end of each lever and having the other end of each lever bearing against the bottom of the sieve pile by a pivotal connection, each sieve pile being supported on a plate adjacent and above the elevating mechanism, means to rotate said spindle so that said elevating mechanism will press the sieves firmly in place by the screw spindle operating its levers, and each of said articulated arms having one intermediate bolt that acts as a stop to fix the position of the sieves.

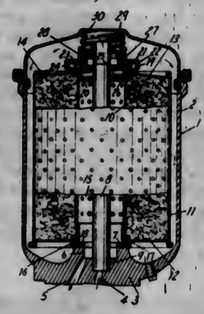
3,187,895
FUEL-WATER SEPARATOR
David B. Pall, Roslyn Estates, and Herbert L. Forman and Richard J. Alden, Plainview, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Jan. 23, 1963, Ser. No. 253,317
9 Claims. (Cl. 210—114)

1. A fuel-water separator comprising, in combination, a housing, inlet and outlet passages therein, a coalescer element comprising a paper sheet consisting essentially of a blend of alpha cellulose fibers, glass fibers and redwood fibers and having a thickness within the range from about 0.04 to about 0.1 inch, disposed in the housing in a manner to receive fluid entering the housing through the inlet passage, a separator element comprising a paper sheet impregnated with a silicone resin and an epoxy resin and having a thickness within the range from about 0.01 to about 0.035 inch, disposed in the housing in a manner to receive fluid emerging from the coalescer element and to deliver fluid passing therethrough to the outlet passage and at a position spaced from the coalescer

element, a sump beneath the coalescer and separator elements, the space between the separator and the coalescer elements opening into the sump, and a drain valve in the sump for removing liquid collected therein.

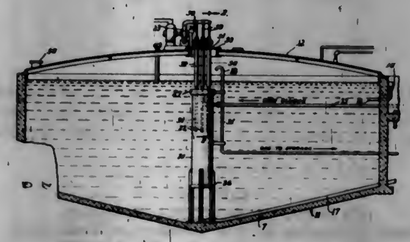


3,187,896
OIL FILTER
James W. Wilkinson, Hastings, Mich., assignor to Hastings Manufacturing Company, Hastings, Mich., a corporation of Michigan
Filed Mar. 18, 1959, Ser. No. 800,271
2 Claims. (Cl. 210—130)



1. In a filter for a pressure circulated medium, the combination of a casing including a bottom having an inlet opening and a discharge opening therein and having an upwardly facing cartridge seat surrounding said openings, an inlet tube mounted on said casing bottom in communication with said inlet opening thereof and discharging at the outer end of said casing, a filter cartridge containing a compressed fibrous filtering medium supportedly seated on said bottom and removably associated with said inlet tube and comprising end walls and inner and outer foraminate walls, there being a discharge passage between said inner cartridge wall and said inlet tube, a valve casing disposed at and fixedly connected to said inner cartridge wall at its lower end, a valve seat member disposed within said valve casing and having inlet openings therein, a tubular discharge member for said valve casing disposed through said valve seat and seated upon said cartridge seat on said bottom to discharge into said discharging opening of said casing bottom, a valve disposed within said valve casing in coacting relation to said valve seat thereof, and a coil spring supportedly disposed within said valve casing in coacting relation to said valve and tensioned to hold the valve on its seat under predetermined pressure required for passing of the circulated medium through the filtering material within the cartridge.

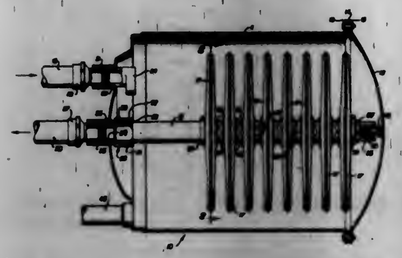
3,187,897
DIGESTER WITH GAS LIFTS POSITIONED BY GAS-LOCK TUBES
James Donald Walker, Aurora, Ill., assignor, by mesne assignments, to Walker Process Equipment, Inc., Wilmington, Del., a corporation of Delaware
Filed Dec. 19, 1960, Ser. No. 76,813
5 Claims. (Cl. 210—197)



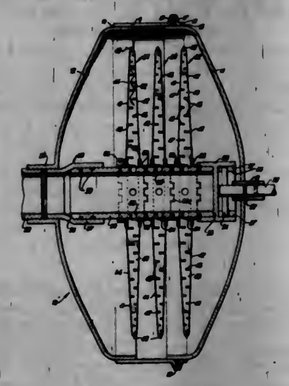
1. A digester including a substantially gas-tight tank having a roof, overflow means for retaining liquor in the tank to a predetermined level, an opening in the roof, plurality of a means to close said opening including gas-lock tubes sealed to the roof around said opening and each tube extending down into the tank to a substantial distance below said level to retain gas in the tank in the space above the liquor when said tube is open, screw means associated with each gas-lock tube adjacent the roof for adjusting the angularity of the tube in any direction, and a gas supply pipe extending down through each tube to a point below the tube, gas liberating means carried by each pipe substantially below the tube, means normally sealing each pipe to its surrounding tube but, said pipe with its gas liberating means, being removable upwardly through the tube and the opening, said pipe being rigidly positioned in the upper part of said gas-lock tube and having means closely positioned with respect to the gas-lock tube at a point substantially lower therein than the point of its rigid positioning, and with its gas liberating means being of substantially rigid nature throughout its length from the point of its rigid positioning down to adjacent the point of gas liberation, whereby the gas liberating means are accurately positioned with respect to each other, the plurality of gas liberating means being located in proximity to one another to cooperate in producing a single gas lift column.

3,187,898
AUTOMATIC SPIN FILTER
William O. Baker, West Covina, Calif., assignor to Swimquip, Inc., El Monte, Calif., a corporation of California
Filed Dec. 26, 1962, Ser. No. 246,993
2 Claims. (Cl. 210—331)

1. In a filter structure: a filter tank; a filter element comprising an internal core through which filtered liquid flows; a collection tube having a longitudinal axis and mounting the filter element in fixed position on the tube for receiving the filtered liquid therefrom; means mounting said collection tube for rotation of said collection tube with said filter element about the axis of the collection tube; and propeller blade means fixed within the collection tube for imparting rotation to the tube by flow of liquid through the collection tube; said filter element having a core covered by a septum, said core having arms extending away from the axis and having lengths which are angled away from a radial direction for supplementing the torque of said collection tube blade means.

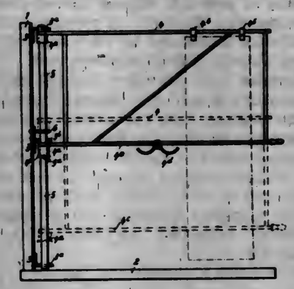


3,187,899
FILTER STRUCTURE AND ELEMENT THEREFOR
Paul D. Prizler, Temple City, Calif., assignor to Swimquip, Inc., El Monte, Calif., a corporation of California
Filed May 16, 1961, Ser. No. 110,390
7 Claims. (Cl. 210—487)



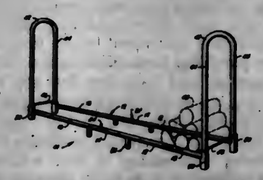
1. A moldable unitary filter element core having a plurality of arms arrayed in planes that are angularly spaced about a common axis, each of the arms having a base end, and sides defining sides of the element core, the base ends of the arms being spaced from the said axis to fit a collection tube or the like, two sets of webs extending between, and transverse to, adjacent ones of said arms, each of said sets comprising a plurality of webs spaced apart from each other at successively greater distance from the collection tube, one of the sets of webs joining the arms along corresponding first sides of said arms, and the second set of webs joining the arms along the other corresponding sides of said arms, the webs of each set being staggered relative to webs of the opposite set, and each web extending only partially in a direction from said to side of the core to define an interior sinuous flow path over the inner edges of the webs for filtered liquid in a general radial direction toward the base ends of said arms.

3,187,900
APPARATUS FOR SELECTIVELY DISPLAYING CARPETS
Willy Schneider, Vorst, Post Schwenke, Westphalia, Germany
Filed June 14, 1962, Ser. No. 202,511
Claims priority, application Germany, June 15, 1961, Sch 29,853
6 Claims. (Cl. 211—47)



1. A device for exhibiting rugs and carpets comprising in combination:
(a) a pair of superimposed brackets each extending substantially horizontally and each defining a plurality of holes, one of each of said plurality of holes in the upper of said pair of brackets and one of each of said plurality of holes in the lower of said pair of brackets being arranged in registry;
(b) common means for supporting said pair of brackets in fixed spaced relation;
(c) a plurality of vertical supporting rods each projecting through one of said plurality of holes defined by the upper of said pair of brackets and each projecting through one of said plurality of holes defined by the lower of said pair of brackets;
(d) a plurality of pairs of superimposed bearings, each of said plurality of pairs of bearings being slidably mounted on one of said plurality of supporting rods;
(e) means for fixedly securing the lower of each of said plurality of pairs of bearings to a point on one of said plurality of supporting rods; and
(f) a plurality of substantially flat frame structures each having one side juxtaposed to one of said plurality of supporting rods and each being supported by one pair of said plurality of pairs of bearings.

3,187,901
FIREWOOD RACK
Willie G. Wilson, Box 1673, Oklahoma City 1, Okla.
Filed Jan. 14, 1963, Ser. No. 251,429
1 Claim. (Cl. 211—60)



A rack for storing firewood and the like comprising:
a pair of spaced parallel elongated base members which are separable at a median point, each base member having a cornerpost vertically secured to either end;
each of said cornerposts having an upwardly directed opening in the upper end thereof;
coupling means precluding separation of said base members, said coupling means including

a first channel shaped member longitudinally positioned within each tubular member at said median point, said first channel shaped member having two spaced particularly configured legs,

a second channel shaped member longitudinally positioned within said tubular member at said median point, said second channel shaped member having legs configured complementary to those of said first channel shaped member and cooperating therewith to preclude relative longitudinal movement between said first and second channel shaped members, and

a threaded bolt extending through each tubular member and said first channel shaped members into contact with the second channel shaped members so that the first and second channel shaped members may be urged apart to provide a friction coupling between the first and second portions of each tubular member; each of said base members having a pair of spaced downwardly extending supporting legs secured thereto;

a pair of inverted U-shaped end members, each having a pair of spaced parallel downwardly depending legs adapted to extend into the openings of the cornerposts at adjacent ends of the base members; and,

a pair of cross bars, each being horizontally secured to the lower portions of the legs of each U-shaped member for limiting the extension of said legs into the openings of said cornerposts.

3,187,902

MULTIPLE TOOL HOLDERS

John F. Nelson, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Dec. 16, 1963, Ser. No. 330,938
3 Claims. (Cl. 211—60)



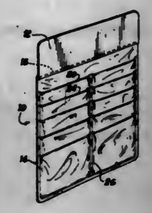
1. A one-piece bracket made of plastic material adapted to be mounted on a complementary upright apertured supporting plate, comprising an elongated body having a plurality of pairs of article supporting members projecting horizontally therefrom each being U-shaped in cross section and having an upstanding knob at their free extremities, the article supporting members in each pair cooperating with each other to restrain articles from lateral and downward movement when mounted therebetween, means providing horizontal support for each article supporting member and including first and second brace means, said first brace means adapted to rest against said apertured supporting plate, said second brace means carried by said first brace means and extending normal thereto in underlying relationship to said article supporting members to uphold and provide support thereto, and means for securing said bracket to said supporting plate including a plurality of spaced lug portions projecting from said elongated body in a direction generally opposite to said article supporting members for reception within a plurality of apertures of said apertured supporting plate, each pair of said article supporting members positioned in cooperating relationship with at least one of said lug portions so as to be individually supported thereby.

3,187,903

RACK CONSTRUCTION

Charles R. Olix, 8440 Forrest Ave., Munster, Ind.

Filed Aug. 20, 1963, Ser. No. 303,359
5 Claims. (Cl. 211—87)



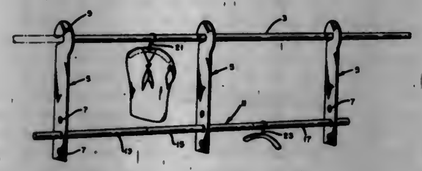
1. A holder construction comprising an assembly including a plurality of pockets, said pockets being formed by means of a single, folded, flexible sheet of translucent, heat sealable plastic material, said pockets being arranged in overlapping relationship in said assembly with each pocket being closed along its bottom by means of a fold in said sheet and being heat sealed at its sides, and including adhesive portions formed on the face of said assembly opposite said pockets, and a removable protective strip for covering said adhesive portions.

3,187,904

CHILDREN'S CLOSET KIT

Richard A. Kiechle, Mill Valley, Calif., assignor to Tubes & Cores, Inc., a corporation of California

Filed July 9, 1963, Ser. No. 293,598
1 Claim. (Cl. 211—118)



A hanger for closets and the like made entirely of cardboard comprising a plurality of long, narrow, spaced, flat members, each of said flat members being formed into an integral hook at one end, said hook being adapted to be hooked over a conventional dowel of a closet, said members having a plurality of holes at the opposite end, and a bar element placed through the holes in the flat elements, said bar element being made of a plurality of cardboard tubes of uniform size, at least one of which has a reduced end portion to couple it to an adjacent tube, said bar element forming a secondary hanger of reduced height parallel to a dowel.

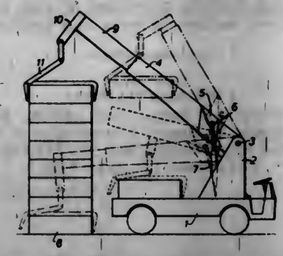
3,187,905

JIBS

Peter Franziskus Mockopf, Heinrich Boden, and Heinrich Valentin Meugden, all of 21 Hermannstrasse, Neuwied (Rhine), Germany

Filed Jan. 11, 1963, Ser. No. 250,837
4 Claims. (Cl. 212—55)

1. A jib comprising a hollow main arm of substantially rectangular cross-section, an extension arm telescopically arranged within the main arm, two ram cylinders disposed side by side in the main arm, two rams extending in opposite directions from said cylinders and connected one to the main arm and the other to the extension arm for extending and retracting the extension arm,



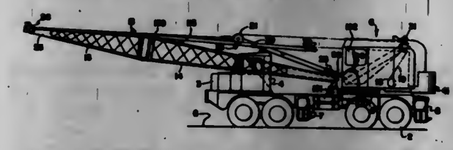
and a carriage carrying said cylinders, which carriage is axially movable in the main arm.

3,187,906

CRANE WITH PNEUMATICALLY EXTENSIBLE GANTRY MAST

Robert J. Bushong, Vermilion, George C. Noll, North Ridgeville, and Virgil F. Kramer, Elyria, Ohio, assignors, by mesne assignments, to Kochring Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 25, 1963, Ser. No. 253,948
7 Claims. (Cl. 212—59)



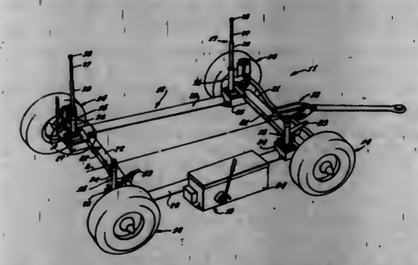
1. In combination, a frame, a boom pivoted to said frame for vertical swinging movement about a horizontal axis, a fluid pressure retractible and extensible gantry mast pivotally connected to said boom, hoisting means connected to the peak of said mast for vertically swinging said mast and thus said boom, and a source of air under pressure connected to said mast to extend said mast and whereby said hoisting means is adapted for retracting said mast thereby renewing said source of air under pressure.

3,187,907

TRANSPORTING AND ELEVATING TRAILER

Stanley A. Yost, Inglewood, and Anthony Toth, Gardena, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed Apr. 11, 1962, Ser. No. 186,779
3 Claims. (Cl. 214—1)



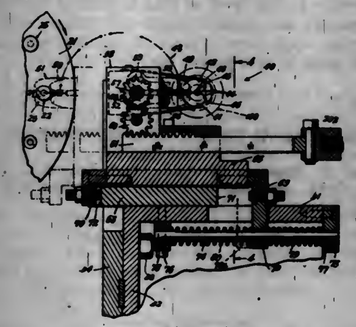
1. In a transportation trailer, the combination comprising: a plurality of elongated components each having a longitudinal axis; said elongated components having an assembled relation in which they define a frame assembly of rectangular configuration having fore and aft ends and in which the axes of said components are located in a common plane; block means mounted at the corners of said frame assembly for bi-directional linear movement in a lateral direction with respect to said frame assembly; load supporting members mounted in each of said block means; one of said load supporting members having a fixed relation in the block means in which it is mounted; the remainder of said load supporting members having a movable relation in the block means in which they are respectively mounted; the remainder of said load supporting members including locking means having locked and unlocked positions securing them in fixed relation in said respective block means and allowing pivotal movement therein in planes normal to said common plane in fore and aft directions with respect to said frame assembly; and means adapted to impart said linear movement to said block means.

3,187,908

WORKPIECE HEAD WORKING MACHINE

Frederick H. Merwin, Milford, Conn., assignor to The Milford Rivet & Machine Co., Milford, Conn., a corporation of Connecticut

Filed Aug. 2, 1962, Ser. No. 214,253
7 Claims. (Cl. 214—1)



1. A transferring mechanism for a work piece comprising jaw means adapted to grasp and release a workpiece, support means for supporting the jaw means for pivotal movement upon actuation, sliding means mounted for sliding movement on which the support means is secured for enabling linear movement of the support means and the jaw means upon actuation, a single actuator having a determined movement, and means connecting the actuator to the support means and to the sliding means for actuating either the support means or the sliding means and means causing for any portion of the determined movement of the actuator either a pivotal movement of the jaw means by the support means or a linear movement of the jaw means by the sliding means depending on which movement has a lesser resistance to movement.

3,187,909

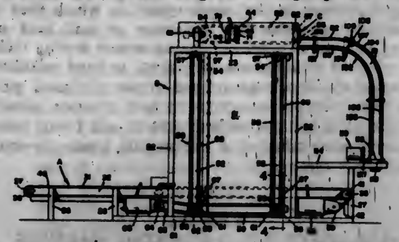
CAN DEPALLETIZING MACHINE

Earl E. Jeremiah, Los Altos, Calif., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware

Filed June 28, 1962, Ser. No. 206,090
1 Claim. (Cl. 214—8.5)

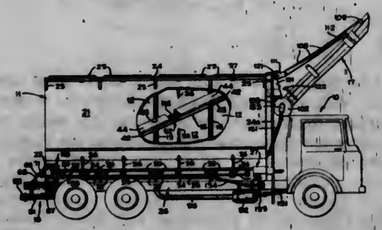
In a can depalletizing machine, an elevator to raise vertically a pallet of cans having their axes vertical, comprising a plurality of vertical trackways on opposite sides of said machine, said trackways being formed with grooves extending vertically the height of said elevator, a plurality of plates, at least two rollers connected to each said plate and sliding in said grooves in one of said

trackways, horizontal members on each side of said machine fixed to the inner ends of at least two said plates, said horizontal members being positioned to engage under the opposite outer edges of said pallet, first means for raising said plates in increments equal to the height of one can, a pusher bar, second means for moving said pusher bar horizontally across the topmost layer of cans on said elevator, a cascade guide having top and bottom



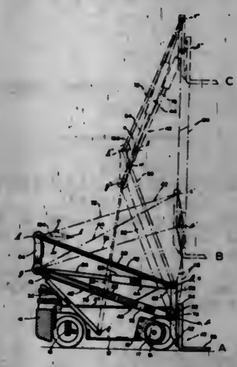
layers spaced apart the height of a can and curving from a horizontal stretch adjacent the top of said elevator downwardly to below said elevator, and electrical control means to de-energize said first means and energize said second means when a layer of cans has been raised by said elevator to the level of said horizontal stretch and to de-energize said second means and energize said first means when each topmost layer of cans has been pushed into said guide by said pusher bar.

3,187,910
BULK TANK TRUCK AND DISCHARGE MEANS THEREFOR
Raymond E. Decker, Riverside, and Ernest C. Ward, Lodi, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,535
2 Claims. (Cl. 214—83.36)



1. In a tank truck for the delivery of loose bulk material, a tank having a plurality of separate compartments therein, a gate at the bottom of each of said compartments, means for separately operating each of said gates, a first conduit section extending from the front to the rear of the tank beneath each of said gates, an enclosed upwardly inclined second conduit section extending from the front to the rear and from the top to the bottom of the tank, a first curved corner housing at the bottom of the tank for joining one end of said first and second conduit sections, an enclosed third conduit section extending vertically from the top to the bottom of said tank adjacent the other ends of said first and second conduit sections, a second curved corner housing joining said second and third conduit sections, an endless conveyor within said conduits, removable curved sections in each of said corner housings, each curved section being movable from a position in which it spans a discharge opening in the associated corner housing with its inner surface forming a wall of the housing to a position spaced outwardly from the opening to permit discharge of material therethrough, the curved section at said first corner housing forming a support surface for material being forced into said upwardly inclined conduit section by said endless conveyor, and means for effecting movement of each of said removable curved sections between said positions.

3,187,911
LIFT MECHANISM
John C. Christenson, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed June 27, 1962, Ser. No. 205,605
21 Claims. (Cl. 214—140)

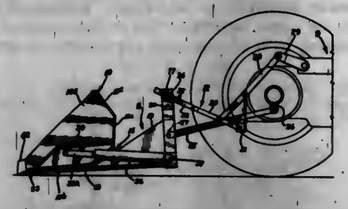


1. In combination with a lift truck, first parallelogram linkage means pivotally supported from the front end of the truck and extending longitudinally rearwardly, second parallelogram linkage means pivotally supported from the rear end of said first linkage means and extending forwardly, load engaging means pivotally supported from the front end of said second linkage means, a first cylinder-piston means connected between diagonally related corners of said second linkage means operable to swing said second linkage means about its connection to said first linkage means, a second cylinder-piston means pivotally supported from the truck and connected adjacent the rear end of said first linkage means and operable to pivot said first linkage means about its truck support whereby to raise and lower conjointly said first and second linkage means, a source of pressure fluid and control valve means operatively connected to said first and second linkage means and responsive to variations in the angle therebetween for connecting and disconnecting said second cylinder-piston means during operation thereof to and from said piston source of pressure fluid while connecting the first cylinder-piston means to said source to coordinate operation of said first and second cylinder-piston means in order to elevate said load engaging means along a predetermined path.

3,187,912
SCOOP ASSEMBLY
Elmer R. McKnight, Markesan, Wis., assignor to Markesan Products Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 7, 1963, Ser. No. 249,888
4 Claims. (Cl. 214—140)

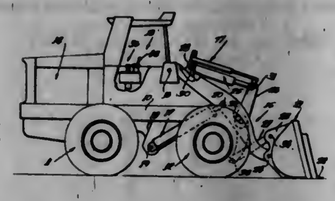
1. A scoop assembly adapted to be detachably mounted in rearward extension from a tractor comprising, a frame, a bucket having a scraper edge near which said bucket is pivoted to said frame, first bar means pivotally connected to said frame and adapted to be pivotally secured to a tractor rear axle assembly, second bar means pivotally connected to said first bar means and adapted to be secured pivotally to a tractor hydraulic power means, third bar means pivotally secured to said frame and adapted

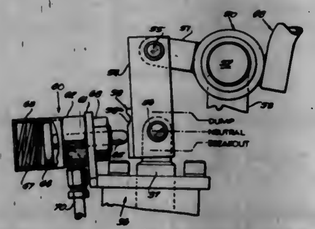
to be pivotally secured to the rear axle assembly of a tractor and a bucket control mechanism that can be lengthened and shortened and interconnected between



said frame and said bucket; said first and third bar means crossing each other when said scoop assembly is secured to a tractor, said first bar means being secured to a lower point on said frame than said third bar means.

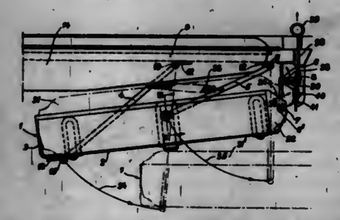
3,187,913
IMPLEMENT POSITION CONTROL MECHANISM
Don S. Strader, Mount Prospect, and Robert G. Luft, Wildwood, Ill., assignors to The Frank G. Hough Co., a corporation of Illinois
Filed Apr. 30, 1963, Ser. No. 276,913
4 Claims. (Cl. 214—140)





1. For use with a tractor having an implement movably carried thereby and a hydraulic system including a cylinder connected with said implement for moving same, valve means in said system connected with said cylinder and movable between a neutral position and first and second operating positions in which hydraulic fluid is directed to and from said cylinder for moving said implement respectively in first and second directions, spring means associated with said valve means for biasing same toward said neutral position, manually operable means connected with said valve means for moving same between said positions, said manually operable means including a detent notch movable in accordance with movement of said valve means, indexing means associated with said valve means and including pawl means engageable with said detent notch upon movement of said valve means to said first operating position for holding said valve means in said first operating position, said indexing means further including pneumatic means for disengaging said pawl means from said detent notch, and actuating means associated with said pneumatic means and responsive to movement of said implement in said first direction for actuating said pneumatic means when said implement reaches a predetermined point in the course of its movement in said first direction.

3,187,914
COLLAPSIBLE SUPPORTS FOR SPARE WHEEL OF VEHICLES
Lucien Péraz, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Nov. 15, 1962, Ser. No. 237,814
Claims priority, application France, Dec. 13, 1961, 881,860, Patent 1,315,870
6 Claims. (Cl. 214—451)



1. A spare wheel support for automobile vehicles comprising a casing, means pivotally mounting the casing under a chassis for movement between a first storage position and a second loading and unloading position beyond the chassis and below the storage position, means for locking the casing in each of said first and second positions and means for unlocking the casing while in the first position whereby gravity acts to move the casing to the second position, said means for pivotally mounting the casing comprising two pairs of parallel arms, one pair being longer than the other pair whereby the casing is inclined to the horizontal in the first position and is parallel to the horizontal in the second position.

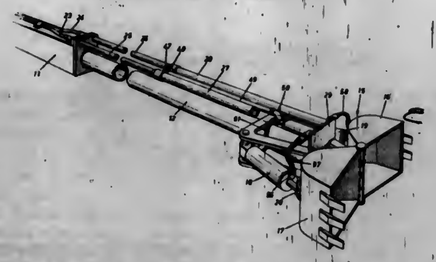
3,187,915
SELF-LOADING MEANS FOR EXCAVATORS, SCRAPERS, SCOOPS AND THE LIKE
Robert V. Spalding, Salt Lake City, Utah (26 Lafayette St., Cornwall on the Hudson, N.Y.)
Filed Dec. 7, 1961, Ser. No. 157,801
9 Claims. (Cl. 214—518)



1. Self-loading means for a material removing machine having a frame including a removed-material receiving end and a removed-material discharge end, and two longitudinal structural side frame members facing one another and defining an elongate space between them, said self-loading means being for material removed by said machine, and said self-loading means having removed-material conveying and discharge means including a substantially smooth surfaced pulley rotatably supported by said members and extending axially transversely across said space, sprocket wheels within said space and rotatably supported by said members and disposed closely adjacent thereto, endless sprocket chains trained over said sprocket wheels and extending longitudinally of said space and having chain por-

tions adjacent said pulley, flight drag means to urge removed material through said space and to scrape removed material from said pulley, comprising a flight member carried by said chains and having a lip portion extending across said space and movable with movement of said chains over portions of the periphery of said pulley.

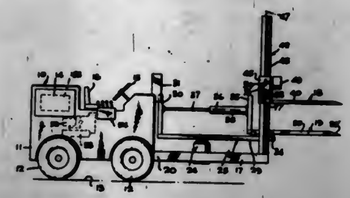
3,187,916
MUCKING MACHINES AND EXCAVATORS OF THE TELESCOPIC BOOM-TYPE
Paul C. O'Leary, Salt Lake City, Utah, assignor to Shaft Machines Limited, Toronto, Ontario, Canada, a company of Canada
Filed June 6, 1962, Ser. No. 200,494
3 Claims. (Cl. 214—657)



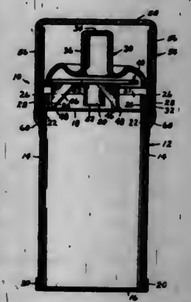
1. In a mucking machine of the telescopic boom-type having a first boom section and a telescopic boom section slidably carried for retraction into and extension from the first boom section, a bucket carried by the free end of the telescopic section, fluid actuated, double acting piston means for moving said bucket into material collecting, carrying and discharging positions, the improvement which comprises a pair of telescopic fluid feed tube assemblies secured to and carried by said telescopic boom and first boom sections, each tube assembly comprising an inner tube having a central opening and rigidly connected at one end to said first section and an outer tube rigidly connected at one end to the free end of the telescopic section such that the free end of said inner tube is slidably mounted in telescopic relation within said outer tube defining an annular space therebetween, a double acting piston formed on the free end of each of said inner tubes adapted for slidable travel within said outer tubes, conduit means for communicating one of said inner tube central openings with one side of said bucket actuating piston means and with one side of said inner tube piston means and conduit means for communicating the other inner tube central opening to the other side of said bucket actuating piston means and the other side of said inner tube piston means.

3,187,917
INDUSTRIAL TRUCK WITH LOAD SUPPORTING MEMBERS FOR HANDLING A PLURALITY OF STACKED ARTICLES
Wendell S. Miller, 1341 Comstock Ave., Los Angeles, Calif.
Filed Jan. 15, 1962, Ser. No. 166,135
10 Claims. (Cl. 214—730)

6. A truck for lifting work pieces arranged in a stack, said truck comprising a wheeled vehicle frame, two upper and lower load supporting structures both carried movably by said frame and projecting generally horizontally to positions for supporting respectively two different upper and lower work pieces in said stack, means for shifting said lower load supporting structure generally horizontally relative to said upper load supporting structure, with said lower work piece supported on said lower structure and said upper workpiece supported independently on said upper structure, and between an active position in which said lower structure and work piece are generally beneath said upper structure and a retracted position in which said lower structure is withdrawn horizontally from beneath the upper structure, and power operated means for actuating both of said load supporting structures upwardly and downwardly relative to said frame and one relative to the other, said last mentioned means including means operable to move said upper load supporting structure, with said upper work piece supported thereon, generally vertically when said lower load supporting structure is in said active position and also when it is in said retracted position.



3,187,918
CONTAINER AND DISPENSER FOR BABY FORMULA
William R. Moore, 100 SW. Ranchwood Court, Oklahoma City, Okla.
Filed Jan. 28, 1963, Ser. No. 254,389
9 Claims. (Cl. 215—11)



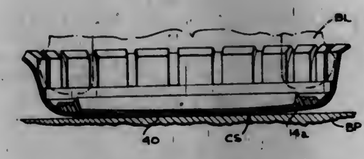
1. A container and dispensing device especially adapted for storing and dispensing baby formula under aseptic conditions comprising:
a sealed container having a wall;
flexible nipple means sealed around a portion of the wall and defining an enclosed space with the wall, said nipple means having an aperture therein for permitting the interior of the nipple to be placed in communication with the exterior thereof, said aperture being of a size to render said nipple substantially impermeable to milk under atmospheric pressure;
opening means at least partially positioned in said space and including:
means for piercing at least two spaced openings in the wall of said sealed container by force applied to the opening means through the flexible nipple means; and
means for removing said piercing means from said openings and automatically retaining said piercing means out of said opening during and after the time that a discontinuously acting force is applied to said opening means through said nipple means whereby, after piercing of the wall of said sealed container, the aperture in said nipple means is placed in communication with the interior of said sealed container, and the contents thereof can flow freely into said nipple means under gravity.

3,187,919
CROWN CAPS
John Clark Inglis, Toronto, Ontario, Canada, assignor, by mesne assignments, to Autocrown Corporation Limited, Toronto, Ontario, Canada, an Ontario corporation
Filed June 20, 1962, Ser. No. 203,869
8 Claims. (Cl. 215—39)



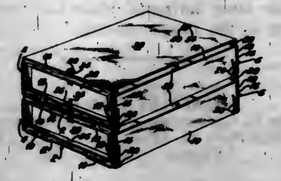
1. A crown cap adapted to seal an orifice of a container by embracing an external rib around the orifice, the cap having a disc-like portion, a skirt surrounding said portion and extending from the periphery thereof, and a lateral finger tab extending outwardly from a minor sectoral portion of the lower edge of the skirt, the skirt having at least two series of corrugations of which each corrugation is directed downwardly of the skirt, the corrugations defining external crests and troughs, and at least two uncorrugated portions each located between adjacent series of corrugations and each defining an external trough between said adjacent series, the peripheral width of each uncorrugated portion being greater than the peripheral distance between the crests of two adjacent corrugations in the same series, the uncorrugated portions lying in the residual sectoral portion of the skirt not constituted by said minor sectoral portion, the skirt being corrugated around its periphery save at the uncorrugated portions and being of sufficient length around its entire periphery that all the troughs including the troughs of the uncorrugated portions can be crimped under said external rib when the cap is applied to the container.

3,187,920
RESILIENT LINER AND CAP FOR CLOSING CONTAINERS
Henry J. Dora, Western Springs, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 23, 1962, Ser. No. 211,510
5 Claims. (Cl. 215—40)



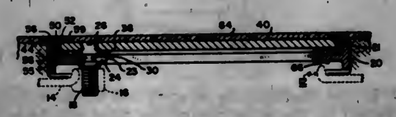
1. A resilient liner and cap structure for closing a container, comprising a cap having a peripheral skirt and a central wall portion, and a liner of elastic material in said cap, said liner having at least two concentric ribs for engaging an upper surface of the lip of the container to be elastically compressed thereagainst, the radia ly inward rib being deeper than the radially outward rib whereby the inner rib is first engaged with the upper surface of the container lip and is flattened and compressed thereagainst before the outer rib encounters the container lip.

3,187,921
LINED WIREBOUND CONTAINER
Philip O. Buch, Rockaway, N.J., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,248
2 Claims. (Cl. 217—3)



2. A wirebound container comprising four sections having adjoining cleats at the lateral edges of the container, with slats stapled thereto on only the rear, bottom and front sections, with the bottom section having two slats which are located near the rear and front corners of the container to leave a space between said slats across the central portion of said bottom section, and with the cleats on the bottom section having vertical notches at the center of their inner faces, with the several sections foldably secured together by binding wires stapled thereto and with the ends of each of said binding wires secured together at one corner of the container, and a unitary liner of foldable sheet material fitted into said container to cover the inner face of the bottom section, with the end portions of said liner being folded up perpendicularly to lie against the inner faces of the cleats at the ends of said container and close said ends, said end portions having secured thereto wire fasteners which project upwardly from their upper edges whereby when said container has a similar container stacked upon it, said wire fasteners may be inserted through the notches in the bottom cleats of the upper container and bent outwardly against the upper faces of said bottom cleats to lock the two containers against relative movement, and a container lid formed of a unitary, generally rectangular piece of sheet material of such dimensions as to cover the top of said container, said lid having an opening near each end, at the center of the end, whereby said wire fasteners may be inserted therethrough and bent down against the upper surface of the lid to secure it on the container.

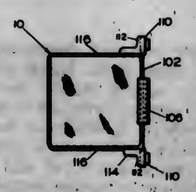
3,187,922
FLUSH PANS
Thomas E. Hoskins, Moon Township, Allegheny County, and Frederick J. O'Reilly, Bethel Park, Pa., assignors, by mesne assignments, to Raceways, Inc., New Brunswick, N.J., a corporation of Delaware
Filed May 18, 1962, Ser. No. 195,788
4 Claims. (Cl. 220—3.4)



1. In a closure for access openings into underfloor wiring systems including an adjusting ring having a horizontal web and a vertical flange, an adjusting screw, a cover plate, and a floor covering, the improvement comprising: a flush pan having two sections, an outer section, L-shaped in cross-section, one leg of the outer section resting on the horizontal web of the adjusting ring and the other leg of the section abutting the vertical

flange of the adjusting ring, and an inner section encompassing the periphery of the cover plate, U-shaped in cross-section, one leg thereof resting on the horizontal leg of the outer section and supporting the cover plate, one side of the base of the inner section abutting the vertical leg of the L-shaped outer section and the other side contacting the edge of the cover plate, the two sections terminating in the same horizontal plane and the same horizontal plane as the flood covering.

3,187,923
MAGNETIC TRAY
Gaylor H. Christensen, Rte. 3, Audubon, Iowa
Filed Nov. 22, 1961, Ser. No. 154,159
2 Claims. (Cl. 220—18)



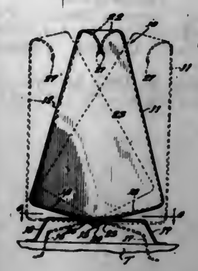
1. A tray having a bottom wall with a generally horizontal article supporting upper surface, said tray having an annular side wall extending upwardly from and attached to said bottom wall, a magnet means attached to the outer side of said side wall and having an outer gripping surface, and an extension member attached to said tray and extending downwardly therefrom and having an outer abutment surface facing generally away from said tray and disposed vertically spaced from said outer gripping surface of said magnet whereby when said gripping surface and said abutment surface are engaging a vertical surface of an object then said article supporting tray surface will be generally horizontally disposed, said outer gripping surface of said magnet facing in the same direction as the abutment surface of said extension member, said extension member having a flexible upper end portion attached to said annular side wall for describing swinging movements about said side wall whereby said extension member may be positioned substantially within said tray at times.

3,187,924
CONTAINERS
William Marcus, 2528 Mayfield Road, Cleveland 6, Ohio
Filed July 9, 1964, Ser. No. 381,400
13 Claims. (Cl. 220—18)



1. In combination with an apertured board, a container supported on the board comprising front and back walls, side walls, and a bottom wall, a first plurality of spaced projections extending rearwardly from said back wall and inserted in spaced apertures of the board, each of said first plurality of projections including offset terminal end portions, and a second plurality of spaced projections extending rearwardly from said back wall and inserted into other apertures of the board, said second plurality of projections being spaced below said first plurality of projections.

3,187,925
SELF-CLOSING CONTAINER
William H. Chaffee, Hinsdale, Ill., assignor to Model Builders, Inc., a corporation of Illinois
Filed Oct. 31, 1962, Ser. No. 234,328
3 Claims. (Cl. 220—35)



1. A self-closing container, comprising: a pair of enclosures cooperatively forming a container, each of said enclosures having a bottom wall and upstanding side walls defining a side opening; pivot means connecting the enclosures about a common axis for pivotal movement to selectively dispose the enclosure in a first position with said openings in confronting relationship and said side walls in overlapping telescoping relationship whereby the enclosures effectively define a closed receptacle, and in a second position where the openings are disposed away from each other to provide free access to the interior of the receptacle; a handle structure on said enclosure arranged for manipulation of the enclosures, said handle structure having coplanar, spaced portions for supporting the container in an upright position on a horizontal surface; coil spring means coaxial of said pivot means for biasing said enclosure to said first position; and flange means on each enclosure inturned downwardly to define a normally closed entrance slot at the upper end of the container, said slot being opened by the insertion of material into the receptacle and being closed by the action of the biasing means when the material passes to within the receptacle.

3,187,926
NON-TAMPERABLE CONTAINER
Sidney J. Zimmet, 2312 Hill Lane, Redondo Beach, Calif.
Filed Nov. 29, 1961, Ser. No. 157,043
5 Claims. (Cl. 220—41)



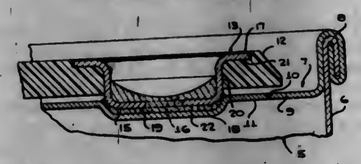
1. A container comprising: a box having upstanding sidewalls each defining a longitudinally extending groove on the inner surface thereof near the upper edge, each of said grooves defining at least one opening therein; a lid formed of relatively rigid material and having longitudinally extending side walls, said lid being formed to slidingly engage said grooves; latch means carried on said side walls of said lid and having a latch finger for engaging said openings, said latch means including a resilient means for normally urging said latch finger toward said opening.

3,187,927
PULL TAB TEAR STRIP WITH CIRCULAR SCORE LINE IN SEAM
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 28, 1963, Ser. No. 254,092
11 Claims. (Cl. 220—54)



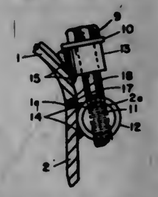
1. In a container, a container body and a container end seamed to said container body, said container end having a weakening line extending peripherally along said seam whereby a portion of said container end forming a part of said seam may be removed to release the remainder of said container end, said container end including a tear strip connected to said container end portion to facilitate the removal of said container end portion, said tear strip extending entirely across said seam.

3,187,928
PLASTIC PULL HANDLE PIVOTALLY SECURED TO SCORED METAL CAN END
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 8, 1962, Ser. No. 228,900
11 Claims. (Cl. 220—54)



1. A pivot-type fastening member adapted to be soldered to a base member, said fastening member comprising a tubular shaft portion, and an end wall at one end of said tubular shaft adapted to be soldered to a base member, said end wall having a solder passage therethrough to facilitate the soldering of said fastening member to a base member.

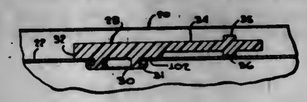
3,187,929
UNITARY QUICK-OPENING CLOSURE DEVICE
Robert W. Shaw, Jr., Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 6, 1962, Ser. No. 242,769
7 Claims. (Cl. 220—46)



1. A unitary quick-opening closure device adapted to be mounted in closing relation to an opening in an enclosure for fluids, which device comprises:

(a) a cylindrical mounting hub adapted to be joined at one end to such enclosure around an opening therein, and the other end of which hub has a beveled edge adapted to provide a cover seat;
(b) a dished cover of concavo-convex contour having a beveled edge complementary to and adapted to mate with the seat provided by said beveled edge of the hub;
(c) cooperative mounting means affixed to said hub and cover and operative to support the cover on the hub for controlled movement of the cover relative to the hub to and from a closing position wherein said complementary beveled edges of the cover and hub are in mating relationship with each other; and
(d) quick-releasable fastening means operable to secure said cover in its said closing position and to exert sealing pressure on the joint between said complementary beveled edges;
(e) the mating surfaces afforded by said complementary beveled edges of the hub and cover coinciding with a frustum of a cone having its apex on the center line of the closure device, and the one of said mating surfaces which faces generally outwardly away from said center line having formed therein an annular groove for receiving a sealing gasket, the side walls of which groove extend generally perpendicular to said mating surface and are spaced apart a distance slightly greater than the depth of the groove, and the inner one of which side walls has a concave contour so as more effectively to retain a sealing gasket in the groove.

3,187,930
PLASTIC PULL TAB TO METAL TEAR STRIP ASSEMBLY WITH A CURLED CONNECTION
John Hanchett, Oak Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Feb. 10, 1961, Ser. No. 88,473, now Patent No. 3,151,766, dated Oct. 6, 1964. Divided and this application June 19, 1963, Ser. No. 289,013
4 Claims. (Cl. 220—54)



1. A tear strip assembly comprising a metal tear strip having a starting end, and a plastic pull tab, said tear strip starting end having an opening therethrough, and said pull tab having a plug portion extending through said tear strip opening and being outwardly folded at the lower end thereof and then reversely inwardly folded towards said tear strip to form first and second folds respectively, said second fold engaging said tear strip and together with said plug portion sealing said tear strip opening.

3,187,931
PLASTIC PULL TAB ADHESIVELY SECURED TO METAL STRIP
John Hanchett, Oak Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Feb. 10, 1961, Ser. No. 88,473. Divided and this application June 19, 1963, Ser. No. 289,014
3 Claims. (Cl. 220—54)

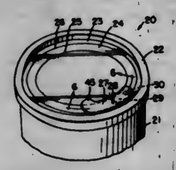
1. In a container, a tear strip assembly for facilitating the opening of a container without the use of any additional device, said tear strip assembly being formed in a panel of said container and comprising a tear strip forming an integral part of said container panel, said

tear strip being primarily defined by two spaced score lines in said panel and including a starting end, a pull member overlying said tear strip starting end for facilitating the manual tearing of said tear strip from said container panel to effect the opening of said container, a permanent adhesive bond joining the tear strip starting end to the pull member, said two score lines being joined by a starting score line portion at least partially defining said tear strip starting end, said starting score line portion being of a greater depth than said two score lines and presenting a line of least resistance to rupture to



facilitate the starting of the tearing of said tear strip from said container panel, said pull member having an attaching portion and a grip portion with at least said attaching portion being rigid, and said pull member attaching portion protectively overlying said starting end portion and being adapted to rest on said container panel outwardly of said tear strip to resist accidental rupture of said container panel along said starting score line portion by an accidental inward displacement of said tear strip starting end.

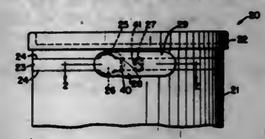
3,187,932
CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE
William E. Cheeley, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 4, 1961, Ser. No. 142,960
10 Claims. (Cl. 220—54)



1. In combination, a container having a wall, said wall having a tear portion and having slot means therein defining a free end of said tear portion, said tear portion having an opening passing transversely therethrough, and a sealing member disposed on one side of said wall and having portions thereof disposed in said slot means and said opening to respectively seal said free end of said tear portion to said wall solely by the characteristics of said sealing member and to interconnect said sealing member to said tear portion.

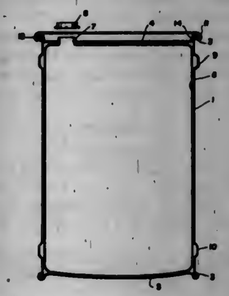
3,187,933
CONTAINER AND METHOD OF MAKING THE SAME OR THE LIKE
William E. Cheeley, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 4, 1961, Ser. No. 142,961
13 Claims. (Cl. 220—54)

1. In combination, a container having a wall, said wall having a tear portion and having slot means therein defining a free end of said tear portion, and homogeneous one-piece sealing means disposed in and completely filling said slot means to seal said free end of said tear portion to said wall solely by the characteristics of said sealing means and to interconnect said sealing means to said free



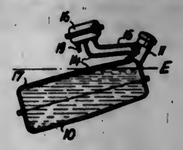
end of said tear portion, said sealing means when grasped and pulled relative to said wall opening said slot means and pulling said tear portion from said wall.

3,187,934
SHIPPING CONTAINER
James Douglas Huber, Pittsburgh, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 12, 1963, Ser. No. 287,242
2 Claims. (Cl. 220—63)



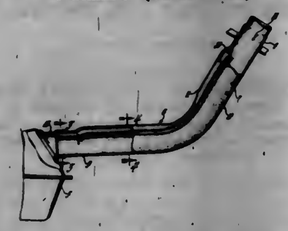
1. A closed sheet metal shipping container comprising a cylindrical shell having an outwardly turned chime at one end, a head fitting inside the chime and attached thereto, an inserted liner of flexible plastic material, and an annular outwardly projecting hollow corrugation in the shell spaced from the chime, the space between the top of the chime and the center of the corrugation being about one-sixth of the diameter of the container, so that when the container is dropped onto an unyielding surface diagonally on its chime, the corrugation is impacted by the chime.

3,187,935
VENTING DEVICE FOR FUEL TANKS
Eugen Lesse, Stuttgart, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Oct. 9, 1962, Ser. No. 229,400
Claims priority, application Germany, Oct. 12, 1961, D 37,222
2 Claims. (Cl. 220—86)



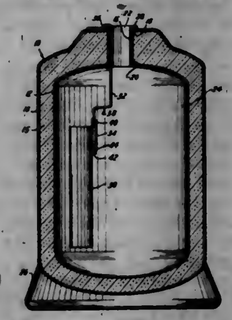
1. A device for venting a fuel tank of a motor vehicle, said fuel tank having a filler pipe at one end thereof, said device comprising a pair of vent pipes, a collecting container disposed at a level above said filler pipe and approximately above the central part of said fuel tank, one of said pipes opening into and leading from the opposite end of said fuel tank alongside the upper wall thereof into said filler pipe and through a wall of said filler pipe to the interior of said container, the other of said vent pipes leading from the interior of said filler pipe to the said interior of said container.

3,187,936
INTEGRAL FUEL FILLER PIPE AND VENT TUBE
Kenneth D. Downing, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,761
4 Claims. (Cl. 220—86)



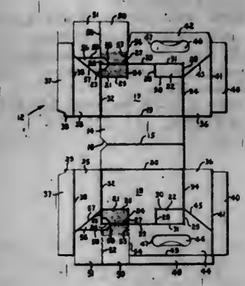
1. An automobile fuel filler pipe and vent tube arrangement constructed of a resilient thermoplastic material and comprising a first conduit having an upper portion for receiving a fuel hose nozzle and a lower portion for communicating with a fuel tank, a second conduit formed integrally with and extending externally of said first conduit and defining openings at the upper and lower ends thereof, said upper end communicating with said first conduit at a point spaced from the end of said upper portion, said lower end communicating directly with said fuel tank.

3,187,937
LOW TEMPERATURE STORAGE APPARATUS
Remo J. Berta, Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 12, 1962, Ser. No. 187,041
3 Claims. (Cl. 220—94)



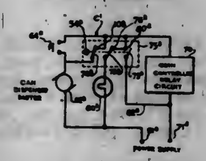
1. A canister assembly, so constructed and arranged to be suspended from the top rim of a centrally-located top access passage to the storage area of a thermally insulated storage container, which comprises: a handle and a cylindrical canister rotatably hinged to a lower portion of said handle such that said canister may be laterally offset within the container interior, said handle comprising a hooked-shaped upper portion for engaging the top rim portion of such container, a laterally-extending intermediate portion located above said canister and a vertical straight portion below the offset having a hooked-shaped lower end; and means connected to the outer surface of said canister for rotatably connecting said handle to said canister which comprises a thin-walled cylindrical tube having its axis parallel to the axis of the canister and slidably receiving and enclosing a portion of the vertical portion of said handle and having a slot in the lower end thereof for receiving the hooked-end of said handle to secure the handle against rotation relative to the cylindrical tube.

3,187,938
FULL DEPTH PARTITION BOTTLE CARRIER
George S. Holmes, Middlesex, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 24, 1963, Ser. No. 275,259
12 Claims. (Cl. 220—113)



1. A pre-formed collapsible carrier having a bottom panel, a pair of opposed side panels, and a pair of opposed end panels, the improvement comprising: a first strap pivotally connected to one of said side panels, a first flap pivoted to said strap and forming a first partition therewith; a second flap connected to said first flap, a second strap pivotally connected to said one of said side panels and forming a second partition with said second flap.

3,187,939
COIN OPERATED CONVERTIBLE GAS PUMP AND DEVICE FOR VENDING PACKAGED GASOLINE
Frank J. Hayes, 2060 Coleman St., Brooklyn 23, N.Y.
Filed Feb. 19, 1962, Ser. No. 174,034
2 Claims. (Cl. 221—4)



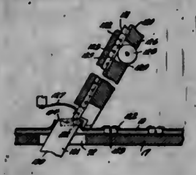
2. In a gasoline-filled can dispensing apparatus convertible from coin control to manual operation, a device for dispensing gasoline in cans, a motor actuating said device to dispense said gasoline-filled cans, a coin controlled relay circuit, a power supply connected in series with said motor and relay circuit, a switch having two poles and two fixed contacts, a first shorting circuit connected in series with a first pole and one fixed contact of the switch across the relay circuit, a push-button switch connected in series with the motor and power supply, a second shorting circuit connected across said push-button switch in series with a second pole and a second contact of the switch, the first pole being open with respect to the one contact when the second pole is closed with respect to the second contact, the first pole being closed with the one conact when the second pole is open with respect to the second contact, and a key operated lock operatively connected to the poles

to move the same simultaneously between first and second positions, whereby the motor is energized by the power supply to actuate the device for dispensing gasoline-filled cans independently of the relay circuit under manual control of the push-button switch while the second shorting switch is open, in one position of the poles; and whereby the motor is energized by the power supply to actuate said device for dispensing gasoline-filled cans under control of the relay circuit while the first shorting circuit is open, and the second shorting circuit is closed to deactivate the push-button switch, in the second position of the poles, and means for releasably receiving the disposed cans.

3,187,940
APPARATUS FOR LOADING AND UNLOADING CONVEYOR BELTS

Richard A. Harris, High Point, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 4, 1964, Ser. No. 364,841
10 Claims. (Cl. 221—74)



8. In apparatus for loading and unloading components having leads extending from their opposite sides from a conveyor belt having apertures for receiving the component bodies and flexible tabs extending into the apertures for retaining the components on the belt,

a breech comprising a hollow member of a size sufficient to receive a component body, said member having spaced upper end surfaces for engaging the tabs, and cradling surfaces for supporting the component by its leads below and between the upper end surfaces,

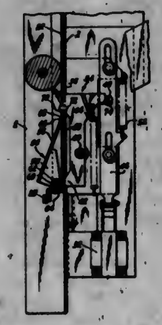
means for advancing the belt to move the apertures into alignment with the breech, and

means for reciprocating the breech through the apertures to engage the leads and flex and hold open the tabs.

3,187,941
VENDING MACHINES

Paul F. Burton and Paul F. Fleagle, both of Charlestown, W. Va., assignors to Dixie-Narco, Inc., Charlestown, W. Va., a corporation of West Virginia

Filed Jan. 27, 1964, Ser. No. 340,281
5 Claims. (Cl. 221—125)

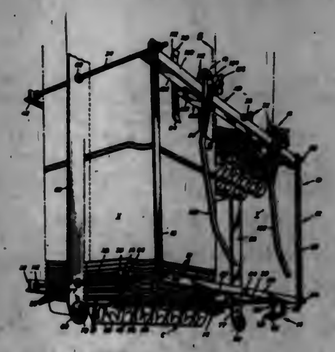


1. In a vending machine having a plurality of article delivery stations, a movable gate member at each delivery station, and a slidable lock plate movable with any one of said gate members to block movement of all other gate members, the improvement comprising: a slot in said lock plate; a pivoted latch having a nose portion extending into said slot and spaced from the ends thereof; a selectively retractable blocking member engaging said latch and normally preventing withdrawal of said nose portion from said slot; a dog member pivoted to said lock plate and having a tongue portion projecting into said slot adjacent said nose portion to thereby prevent sliding movement of said lock plate; said dog being pivotally movable to swing said tongue out of said slot and spring means biasing said dog to swing said tongue into said slot.

3,187,942
DISPENSING CHUTE FOR NESTED ARTICLES

Russell E. Matteson, Morris, Ill., assignor to Diamond International Corporation, a corporation of Delaware

Filed Nov. 30, 1961, Ser. No. 156,062
8 Claims. (Cl. 221—304)

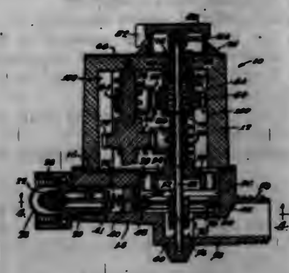


1. A device for holding a plurality of nested, tray-like articles in a vertical stack and permitting them to be removed at the lower end of the stack one-by-one, said device comprising vertical chute means defining a vertical path of travel through which the articles may gravitate, abutment means on the lower end of said vertical chute means for retaining the articles thereabove, lateral-pressure means for engaging said articles and impeding the gravitational descent thereof in said vertical path of travel, and a brake assembly on an intermediate portion of said chute means, said brake assembly including a pressure applying portion normally urged into said vertical path of travel of said articles and for engaging and retaining a portion of the vertical stack of tray-like articles thereabove and segregating and permitting a portion of said stack of articles therebelow to freely gravitate onto said abutment means to be removed from said chute means one-by-one, said brake assembly including an oscillatable, depending lever element connected to said pressure-applying portion for moving the same normal to said path of travel, said pressure-applying portion comprising at least one vertically disposed brake shoe mounted on a support element projecting laterally from said chute means, a mounting element on said chute means through which said support element extends, spring means interposed between said one brake shoe and said mounting element, a terminal abutment element on said support element, said lever being supported on said support element for oscillating movement between said terminal abutment element and said mounting element whereby said spring means can be overcome to permit said brake shoe to be moved horizontally out of said vertical path of travel of said articles.

3,187,943
LIQUID METERING VALVE UNIT

Arnold F. Wolf, 5511 Warren Ave., Morton Grove, Ill.

Filed Apr. 11, 1963, Ser. No. 272,467
3 Claims. (Cl. 222—20)



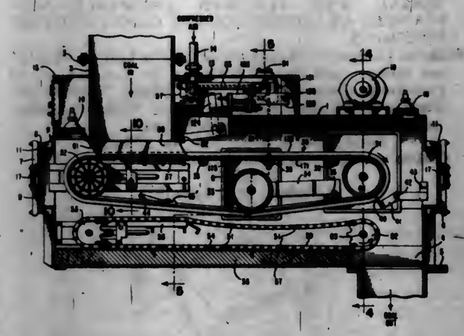
1. A liquid metering valve unit having means for passing liquid from an inlet passage through a turbine chamber to an outlet passage with said inlet passage adapted to be closed by a valve and said turbine chamber having a turbine wheel adapted to drive a speed reducing gear train for operating a dial plate, the improvement comprising, a stem for said valve extending into said turbine chamber, a circular element mounted on an axially movable spindle in said chamber and adapted to have its circular periphery engaged with one end of said stem for holding said valve open against the pressure of said liquid, means for biasing said stem and valve into closed position, said element having a rotation preventing slot formed partially across a portion of its periphery and extending parallel to said spindle for enabling said valve to be biased into said closed position when said slot is aligned with said stem, recessed camming faces adjoining and connected with said slot partially across that portion of the periphery of said element adjacent said slot and said first mentioned periphery portion and rising to said circular periphery, other means for biasing said rotatable element in one direction along the axis of said spindle to place said camming faces in a different plane from said stem, and means releasably interconnected with said dial plate by the bias of said other means and adapted to enable the manual movement of said rotatable element along said spindle axis while being released from said dial plate to place said camming faces in the same plane as said stem whereafter said spindle and element are adapted to be rotated for engaging one of said camming faces with said stem thereby to cam said valve into its open position and enable the passage of liquid through said inlet passage and turbine chamber to said outlet.

3,187,944
GRAVIMETRIC FEEDER AND METHOD OF FILLING VOIDS THEREIN OR IN OTHER PRESSURE VESSELS

Arthur J. Stock, 745 Hanna Bldg., Lakewood, Ohio

Filed Oct. 9, 1962, Ser. No. 229,785
27 Claims. (Cl. 222—25)

1. A gravimetric feeder comprising a housing having an inlet in the top at one end and an outlet in the bottom at the other end, a head pulley located adjacent and above the outlet, a tail pulley located adjacent and below the inlet, an endless belt extending around said pulleys, means defining a weigh span along the upper course of said belt, a weighing roller engaging the upper course of said belt within the limits of said weigh span, a leveling device for determining the height of material on said belt, a weighing mechanism coupled to said weighing roller, means to control the position of the leveling device responsive to the balance condition of said weighing mechanism, drive means, coupling means for operatively connecting said drive means with one end of said head pulley, said coupling means being detachable by relative axial movement, bearing means including a bearing cap mounted in an aperture defined in said housing, said aperture being of a larger diameter than that of said head pulley, and said



bearing means supporting the other end of said head pulley, tail pulley take-up means for moving said tail pulley toward and away from said head pulley, driving means for actuating said take-up means, said driving means adapted to be driven by forces applied to it from outside said housing.

3,187,945
MOTORIZED RESET MECHANISM FOR REGISTERS

George W. Wright, Yoder, and Elmer A. Robbins, Melvin C. Hankel, and Burdette W. Foos, Fort Wayne, Ind., assignors to Tokheim Corporation, Fort Wayne, Ind., a corporation of Indiana

Filed Mar. 12, 1963, Ser. No. 264,511
24 Claims. (Cl. 222—35)



3. In a power operated registering apparatus, the combination of a frame,

(a) a resettable register rigidly mounted on said frame and including

(1) a number of numeral bearing indicators having a zero indicating position,

(2) means operable to advance the indicators,

(3) means operable to reset said indicators to zero indicating position,

(4) a rotary main shaft connected to drive said resetting means,

(b) a power resetting unit rigidly mounted on said frame, independently of said register, said unit including

(1) an electric motor and a rotary power shaft connected to be driven by said motor, and

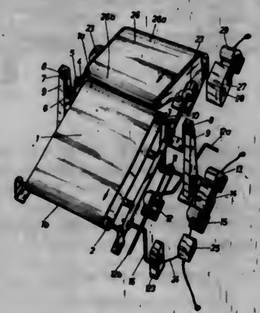
(c) flexible shafting connecting said power shaft to rotate said main shaft, said shafting serving to prevent strains applied to either said register or said unit from being transmitted to the other.

3,187,946

APPARATUS FOR DOSING A LOOSE SOLID MATERIAL AND FURTHER POURABLE SUBSTANCES AT CONTINUOUSLY CONSTANT PROPORTIONS

Wilhelm Lödige, 9c Elsener Strasse; Fritz Lödige, 9b Elsener Strasse; and Josef Lücke, 13 Im Lohfeld, all of Paterborn, Germany; and Georg Ohse, Neuenbeken, Germany; said Ohse assignor to said Wilhelm Lödige, said Fritz Lödige, and said Josef Lücke

Filed June 25, 1964, Ser. No. 377,802
Claims priority, application Germany, June 29, 1963, L 45,237
8 Claims. (Cl. 222—57)



1. An apparatus for dosing a loose solid material and at least one further pourable material at continuously constant proportions, comprising, in combination, a beam balance on the beam of which an endless conveyor belt running over two rollers is provided, at least one further dosing means for the further pourable materials to be dosed, said dosing means being arranged outside the weighing system of said beam balance, a drive means common to said endless conveyor belt and said further dosing means comprising a motor and an infinitely variable transmission gear, means for feeding said loose solid material onto said endless conveyor belt, a drive means for said feeding means comprising a motor and an infinitely variable transmission gear, a rotatable transmission means for transmitting the kinetic energy between said endless conveyor belt on said beam balance and said further dosing means arranged outside the weighing system of said beam balance, said rotatable transmission means being arranged with its axis of rotation parallel and close to the axis of rotation of said beam balance, a drive means for adjusting one of said infinitely variable transmission gears, and an electric control means for registering the deflections of the beam of said beam balance from its zero position, thereby controlling the action of said drive means for adjusting said infinitely variable transmission gear.

3,187,947

CHEMICAL PROPORTIONER

Charles A. Ellis, Portola Valley, Calif., assignor to Skasol Incorporated, San Francisco, Calif., a corporation of California

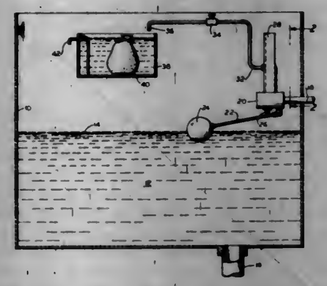
Filed Apr. 12, 1963, Ser. No. 272,774
6 Claims. (Cl. 222—57)

1. In a liquid handling system having a body of liquid with a variable liquid level, a liquid inlet conduit for delivering replacement liquid to said body of liquid, and a liquid level responsve valve in said inlet conduit for increasing the volume of liquid delivered from said inlet conduit responsive to reduction in the liquid level of said body of liquid, the improved means for maintaining a predetermined concentration of a chemical treating agent in said body of liquid which comprises:

(A) pressure discharge means connected to said inlet conduit for increasing the pressure of liquid delivered from said inlet conduit responsive to increases in the volume of said liquid, said pressure discharge means having

(1) a chamber communicating with said inlet conduit and

(2) permanently open outlet means for liquid



flow from said chamber to said body of liquid with the area of said outlet means through which liquid flows increasing as the liquid pressure in said chamber increases,

(B) reservoir means containing a concentrated chemical treating agent and communicating with said body of liquid to deliver incremental amounts of said treating agent to said body of liquid responsive to the delivery of incremental amounts of liquid to said reservoir means, and

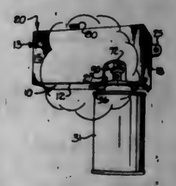
(C) conduit means connecting said reservoir means to said chamber for delivering increasing amounts of liquid to said reservoir means from said chamber responsive to increasing pressure in said chamber.

3,187,948

TIMED FLUID DISPENSING DEVICE

William G. Hunt, 322 McRae St., Laurinburg, N.C.

Filed Mar. 18, 1963, Ser. No. 265,724
13 Claims. (Cl. 222—70)



1. In a dispensing device for periodically dispensing fluid from a container having an actuatable valve at its top for releasing fluid therefrom and a collar forming an enlargement extending at least partially about an upper portion thereof below the valve;

(a) a housing having top, bottom, front, and back walls and a pair of end walls forming an enclosure,

(b) the bottom wall of said housing having a transversely extending, elongate slot opening onto the forwardly disposed edge of the bottom wall,

(c) the front wall of said housing having a dispensing outlet extending into the lower edge thereof and communicatively adjoining the elongate slot in the bottom wall of said housing,

(d) the upper portion of said container being receivable within said housing and extending through said slot in the bottom wall to dispose said valve within said housing in alinement with said dispensing outlet in the front wall,

(e) the enlargement on said container formed by said collar being disposed above said slot and within said housing in overlying slidable engagement with portions of the bottom wall of said housing bounding the opposite sides of said slot to retain said container in an operative position depending from said housing, and

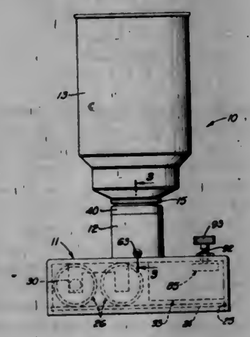
(f) valve actuator means carried by said housing for successively actuating said valve in a timed sequence when said container is disposed in operative position depending from said housing.

3,187,949

SPRAY DISPENSER FOR PRESSURIZED LIQUID HAVING TIMER CONTROL

John J. Mangel, 4501 Ramona Drive, Riverside, Calif.

Filed Apr. 3, 1964, Ser. No. 357,108
11 Claims. (Cl. 222—70)



1. A dispenser for automatically discharging a metered spray of pressurized liquid from a container at predetermined intervals of time, comprising:

a supporting body holding said container, said supporting body having a chamber provided therein;

a tube conveying liquid from the interior of said container to said chamber;

a spray nozzle connected to said chamber;

a solenoid mounted on said supporting body and having an armature movable between a first position and a second position;

said solenoid armature being operable to shut off the discharge of liquid through said nozzle when at said first position;

said solenoid armature being operable when at said second position to cause said liquid to be discharged through said nozzle;

a source of electricity; and

a resistance-capacitance circuit connected to said source and to said solenoid, said circuit including at least one capacitor that is slowly charged with electricity from said source over a predetermined interval of time and then discharges a momentary pulse of current that energizes said solenoid and causes said armature to be shifted momentarily from said first position to said second position, thereby discharging a metered quantity of liquid through said nozzle.

3,187,950

TOY WATER PISTOL

Arthur A. Lange, Summit, N.J. (% Park Plastics Co., 940 Park Ave., Linden, N.J.)

Filed Apr. 10, 1962, Ser. No. 186,410
9 Claims. (Cl. 222—79)



1. A toy water pistol comprising:

(a) a pair of opposed parts having each a peripheral surface, said peripheral surfaces being shaped so as to form a pistol having a barrel portion and a grip portion, and adhesively secured to one another,

(b) a transverse rib formed at the end of the barrel forming portion of one part and having an arc-shaped peripheral edge extending into a transverse arc-shaped slot in the barrel forming portion of the other part for closing the barrel end of said pistol, and

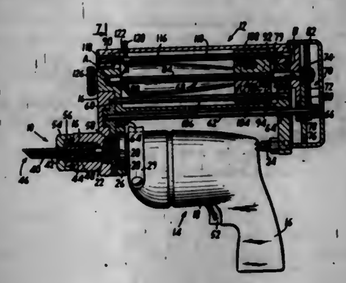
(c) said rib having a small opening through which water may be ejected from said barrel.

3,187,951

CAULKING GUN

Kenneth V. Hardman, Upper Montclair, and Alfred J. Anderson, Livingston, N.J., assignors to H. V. Hardman Co., Inc., a corporation of New Jersey

Filed Oct. 4, 1963, Ser. No. 313,960
4 Claims. (Cl. 222—102)



1. A device for dispensing reactive contents from two collapsible tubes with exteriorly threaded discharge necks at one end thereof and mixing the contents together comprising:

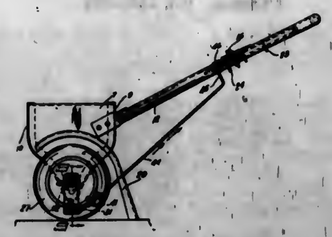
(a) a mixing means with threaded ports for each of the threaded necks of the tubes;

(b) closely spaced rollers which are movable over the the collapsible tubes to flatten the tubes and force their contents into the mixing means when the tubes are positioned with their necks inserted into the threaded ports;

(c) a feed screw drive coupled to the rollers for driving the rollers; and

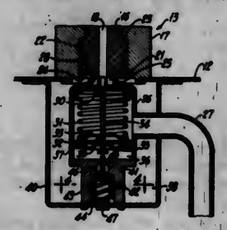
(d) a prime mover connected to the screw drive and the mixing means to simultaneously drive the mixing means and the rollers.

3,187,952
SPREADER WITH MEANS FOR REGULATING DISCHARGE
Vincent Santarelli, 27551 Gail, Warren, Mich.
Filed Oct. 23, 1963, Ser. No. 318,448
15 Claims. (Cl. 222—129)



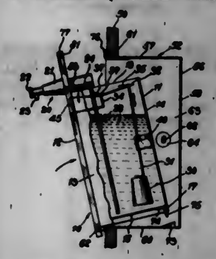
1. A spreader of the class described, comprising: a hopper having an arcuately shaped bottom and having a plurality of spaced apart openings in its bottom; traction wheels mounted on said hopper; a handle projecting outwardly from said hopper for moving the same over a surface; an agitator in said hopper, and upon rotation of said traction wheel, agitating the material in said hopper; an arcuately shaped shutter plate rockably mounted on said hopper for rocking movement between a covering position and an uncovering position with respect to the openings in said hopper bottom; means for pressing said shutter plate into engagement with said hopper bottom and retaining the same in such engagement while it is moving between the covering and uncovering positions; a bar operatively connected to said shutter plate; means engagable with said bar for moving said shutter plate from the covering to the uncovering position; means for regulating the rocking movement of the shutter plate and the amount of exposure of said openings; spring means for returning said bar and shutter plate into the covering position upon release of the regulating means; and, supporting legs on opposite ends of said hopper for supporting the same in an upright position upon moving of said hopper into said position.

3,187,953
AEROSOL DISPENSER WITH VALVE CLEANOUT MECHANISM
Carl S. Ferguson, Fort Lauderdale, Fla., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
Filed Aug. 29, 1962, Ser. No. 220,304
15 Claims. (Cl. 222—149)



9. In an aerosol dispenser, a valve assembly comprising a valve body disposed within the dispenser and having a discharge opening, a spring pressed valve member for closing the opening, a dip tube connected with said valve body, and a valve stem with an axial passageway terminating at the outer end at a nozzle and at the inner end opening within the valve body when the valve stem is depressed sufficient to engage the inner end with the valve closing member and move the same to open position within the valve body, means forming a relatively small auxiliary chamber having a connection with the valve body, valve means connecting said auxiliary chamber with the head space in the dispenser which is opened by movement of the valve stem when the valve stem is depressed and closed when the valve stem is released, and means forming a connection between the axial passageway in the valve stem and said auxiliary chamber which is closed when the valve stem is depressed and open when the valve stem is retracted so as to automatically discharge a small amount of the propellant through said axial passageway after each spraying operation.

3,187,954
SOAP DISPENSERS
Samuel Hammer, New York, N.Y., and Burton L. Feinson, 275 Whitman Drive, New York, N.Y.; said Hammer assignor to said Feinson
Filed Nov. 3, 1961, Ser. No. 149,921
5 Claims. (Cl. 222—153)

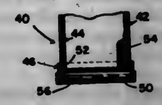


1. In combination, a soap dispenser comprising a substantially flat wall mounting plate, a soap dispenser valve on said plate having a manipulable member for soap dispensing operations located on the forward side of said plate and a discharge spout also on the forward side of said plate, a soap container on the rear side of said plate smaller than said plate so as to be entirely screened by said plate, and a feed connection between said container and the inlet to said valve, said soap dispenser being adapted to be installed with said container extending into an opening in a wall and with said plate abutting the face of said wall and covering said opening, a support fixture in the form of a case adapted to enclose the soap container in wall installed position of said soap dispenser, means for fixedly anchoring said support fixture inside said wall opening to the frame structure supporting the wall, said support fixture having side walls with holes, said anchoring means including screws adapted to pass through said holes respectively for securing said support structure to the frame structure, said side walls in the regions of said holes being outwardly bulged to hold said screws slanting rearwardly and outwardly with respect to said support fixture, and means for releasably securing said soap dispenser to said support fixture permitting said soap dispenser to be removed from said opening while said support fixture remains anchored inside said opening.

3,187,955
PACKAGING AND DISPENSING STRUCTURE
Donald G. Owens, 16865 E. Eight Mile Road, East Detroit, Mich.
Filed June 10, 1963, Ser. No. 286,836
2 Claims. (Cl. 222—183)

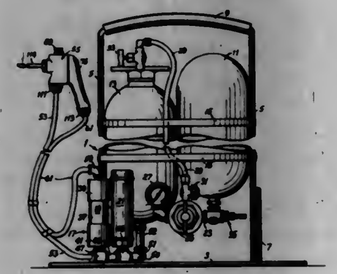
1. A storage and dispensing package for baby food and the like comprising a deformable plastic generally cylindrical outer container closed at one end and open at the other, exterior threads about the one end of the outer container, a generally cylindrical deformable plastic liner positioned within said outer container and a dispensing cap comprising an internally threaded cylindrical

portion, a central, interior, transverse partition across the cylindrical portion and a dispensing spout having an opening therethrough extending through the partition and depending from the outer periphery of the partition at



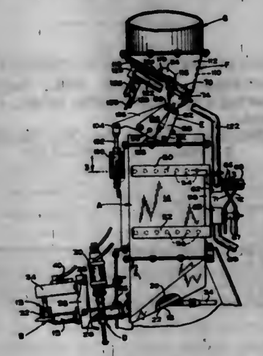
one side of the cap adjacent the cylindrical portion of the cap and extending within the container alongside of the plastic liner positioned therein with the cap threaded onto the one end of the container and removable plastic sealing means secured over the other side of the cap.

3,187,956
LIQUID DISPENSING APPARATUS
Joseph Carl Dawson, P.O. Box 5868, Ferguson 35, Mo.
Filed Mar. 9, 1962, Ser. No. 178,731
3 Claims. (Cl. 222—185)



1. Apparatus for dispensing measured dosages of a liquid, such as liquid fumigant, comprising a pressure tank for containing pressurized gas, a liquid tank for containing the liquid to be dispensed, a support, said tanks being mounted on said support, a delivery line connecting said pressure tank to said liquid tank, a cylinder mounted on said support, said cylinder having an inlet at one end and an outlet at the other end, a line connected between said liquid tank and said cylinder inlet for supplying liquid under pressure to the latter, said cylinder having a valve seat at its outlet end, a movable valve member in the cylinder, resilient means in the cylinder biasing said movable valve member toward the inlet end of the cylinder, said movable valve member being adapted to move toward the outlet end of the cylinder in response to a pressure drop in the cylinder on the outlet side of the movable valve member and force liquid through the cylinder outlet, said movable valve member, upon moving to the outlet end of the cylinder, being engageable with said valve seat to cut off flow from the outlet end of the cylinder, an inwardly projecting nipple at the outlet end of said cylinder through which liquid flows, said valve seat being on the inner end of said nipple, said resilient means comprising a spring surrounding said nipple and extending between the movable valve member and the outlet end of the cylinder, a delivery hose having a connection to the cylinder outlet, a manually operable delivery valve at the outer end of the delivery hose, a by-pass for the movable valve member providing for communication from the supply hose to the cylinder outlet on the outlet side of the movable valve member, said by-pass being adapted to effect a pressure drop on the outlet side of said movable valve member upon operation of said manually operable valve whereupon the movable valve member moves toward the outlet end of the cylinder to force a measured dosage of liquid out through the cylinder outlet and delivery hose, and adapted to provide for equalization of pressure on both sides of the movable valve member after the latter has moved into engagement with said valve seat and said manually operable valve is released, whereupon said resilient means moves the movable valve member to the inlet end of the cylinder.

3,187,957
FILLING POWDERED OR GRANULAR MATERIAL INTO CONTAINERS
Boyd W. Rose, Riverside, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed Mar. 31, 1961, Ser. No. 99,785
10 Claims. (Cl. 222—189)

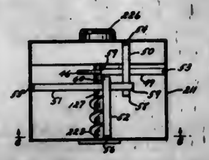


1. A machine for filling powdered or granular material into containers comprising a fluidizing pressure chamber, a material supply valve for introducing said material into said chamber, a material discharge spout connected to said chamber, a material discharge valve for controlling the flow of material through said spout, a gas supply and venting manifold in communication with said chamber, means for supplying fluidizing gas to said chamber to facilitate the discharge of material from said chamber, power operated pressure valve for supplying gas under pressure through said manifold to said chamber, a power-operated venting valve for venting said chamber through said manifold, a source of power for operating said power-operated valves, and differential control means operatively connected to said pressure valve means and said venting valve means and said power source and adapted to distribute power from said source for closing said pressure valve means and opening said venting valve means to effect the venting of said manifold and chamber when the material supply valve is open, and for closing said venting valve means and opening said pressure valve means to pressurize said manifold and chamber when the material supply valve is closed so as to expedite discharge of material from the chamber through said spout when said discharge valve is open.

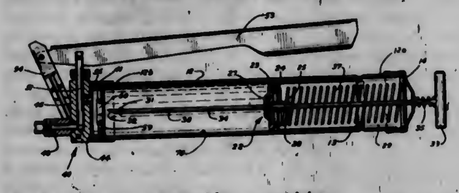
3,187,958
ANTI-BRIDGING DEVICE FOR ICE CUBE VENDING MACHINES
Richard H. Swart, Syracuse, N.Y., assignor to Louis D. Srybnik, New York, N.Y.
Filed Oct. 14, 1963, Ser. No. 315,874
1 Claim. (Cl. 222—227)

Anti-bridging means for preventing the agglomeration of oppositely disposed walls surrounding said lower porpensing means at a lower portion thereof, and a plurality of oppositely disposed walls surrounding said lower portion, comprising: a plurality of elongated flexible members, each having first and second ends, one of said ends

of each of said members being connected to one of said plurality of walls, a first of said plurality of members having a free end means contacting said free end for introducing a periodic movement thereto, a second of said plurality of members having a free end contacting a portion of said first member, to receive transmitted motion therefrom.



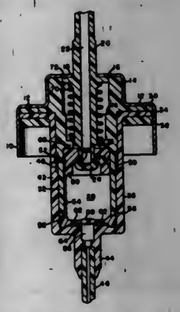
3,187,959
MANUAL GREASE GUN STRUCTURE
Earl P. Morehouse, Bristol, S. Dak., assignor to K-P Manufacturing Co., Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 4, 1963, Ser. No. 306,493
2 Claims. (Cl. 222—256)



1. A grease gun assembly, comprising:
(a) a grease gun having an elongated housing with an outer end wall and a substantially flat inner end wall;
(b) said inner end wall having a discharge passage therethrough;
(c) valve means connected with said discharge passage;
(d) a grease cartridge disposed within said elongated housing between said housing end walls and having a discharge end adjacent said inner end wall;
(e) an elongated reciprocably movable rod of greater length than said housing which extends through said grease cartridge;
(f) a spring-biased movable piston which is adapted to move axially along the interior of said grease cartridge and which has a central opening through which said elongated rod passes;
(g) the outer end of said elongated reciprocable rod having a handle, and the inner end thereof having rupture means to pierce said discharge end of said grease cartridge; and
(h) spacer means in said housing between said discharge end of the grease cartridge and said housing inner end wall for defining a discharge chamber therebetween, and the axial length of said spacer being great enough to permit said rupture means of said elongated rod to pierce said discharge end of the grease cartridge without interference from said inner end wall.

3,187,960
NON-METALLIC PUMP DISPENSER
William G. Gorman, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
Filed May 8, 1964, Ser. No. 365,952
12 Claims. (Cl. 222—321)

1. A pump type of dispenser adapted to be mounted on the mouth of a container to pump out quantities of the contents of the container, said dispenser comprising means to attach the dispenser to the mouth of the container, a tank having a generally closed chamber extending into the container, the tank having an entrance orifice into the chamber therein, the entrance orifice leading from the container into the chamber, a resilient valve member normally closing said orifice but being capable of disengagement therefrom upon the provision of a negative pressure in the chamber,
a slidable valve stem extending from outside the dispenser into the tank chamber, said valve stem being generally hollow forming a passage substantially from end to end thereof, an entrance port in a wall of the stem leading into the passage at the inner end thereof which is located generally within the chamber in the tank, means normally maintaining said stem in an outward inoperative position, said means yielding to allow said stem to be moved inwardly with relation to said chamber,
a piston, said piston engaging the walls of the tank



chamber and sealing the same, said piston having a central aperture therein surrounding the valve stem and being positioned to normally close the entrance orifice thereof in the outward, inoperative position of said valve stem, said valve stem being movable relative to said piston to cause said entrance orifice thereof to become free of said piston to provide communication from the chamber within the tank to the passage in the valve stem,
and means on the valve stem engaging the piston and causing the same to move inwardly with relation to said chamber exerting pressure on the contents thereof to force the latter through the entrance port into the passage in the valve stem while at the same time exerting pressure on the first-named valve, maintaining the same in closed condition,
engagement means between the valve stem and the piston to cause the piston to move in the opposite direction, the resilient means that returns the stem also thus moving the piston and creating a negative pressure in the chamber causing the first-named valve to open, recharging the chamber.

3,187,961
UNIT PREMEASURE DISPENSER FOR CONTAINERS
George Arlington Moore, New York, N.Y. (910 Lake Shore Drive, Chicago, Ill.)
Filed Dec. 11, 1961, Ser. No. 158,280
4 Claims. (Cl. 222—346)

1. In a carton for flowable material, a two-ply wall, the inner ply of said wall being provided with a hole having two pairs of opposed edges, the outer ply of said wall having a panel overlying said hole and connected to the remainder of said outer ply along a hinge line, said panel

may be pivoted about said hinge line, said plies being permanently secured together except in the region of said panel whereby said panel is free to be pivoted away from said inner ply, said panel having a hole in registry with the hole in said inner ply, and a dispenser receptacle formed completely independently of said carton secured to said panel and extending into said carton through said registered holes, said receptacle comprising a pair of opposed spaced-apart sides extending between one of said pairs of edges and adjacent to the other pair in slidable contact therewith, inner and outer walls arranged at an angle to each other joining said sides, each of said sides being shaped substantially like the sector of a circle and having



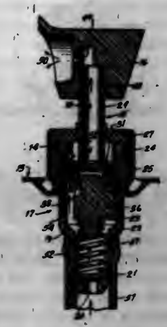
a relatively long arcuate free edge and a shorter arcuate edge concentric with said long edge, an arcuate wall joining the shorter edges of said sides, said receptacle being pivotable outwardly by swinging said panel outwardly about said hinge line, said hinge line passing through the centers of curvature of said relatively long arcuate edges of said receptacle sides and said arcuate wall, and said receptacle sides and the hole in said inner ply being so relatively sized that said long arcuate edges remain in contact with one of said one pair of hole edges and said arcuate wall remains in contact with the other of said one pair of hole edges throughout the pivoted movement of said panel and receptacle.

3,187,962
VALVE AND MOUNTING AND SEALING MEANS THEREFOR
Philip Meshberg, 15 Stoneleigh Road, Fairfield, Conn.
Filed Nov. 9, 1962, Ser. No. 236,492
6 Claims. (Cl. 222—394)



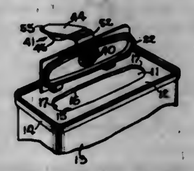
5. An aerosol valve adapted to be secured to a container to extend over a mouth thereof to dispense aerosol material therefrom, said valve having a measuring chamber therein comprising a plastic valve housing having an apertured inner wall, a plastic valve stem mounted on the housing and controlling discharge of material from said chamber in measured amounts and having a portion slidably mounted in said aperture in said inner wall, and means for urging said valve stem to a normal non-dispensing position, said stem and apertured wall having cooperating rib means including a plurality of spaced ribs engaging and guiding said stem in nondispensing position and providing inlet ports for passage of the material from the container to said housing, said stem when moved to dispensing position having a portion closing said aperture and said inlet ports.

3,187,963
AEROSOL VALVE WITH MEANS TO LOCK SAME IN THE OPEN POSITION
John J. Anderson, Kenosha, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Mar. 27, 1963, Ser. No. 268,260
11 Claims. (Cl. 222—394)



9. A dispensing assembly of the class described comprising a tubular body, a discharge control member movable axially relatively to said body and formed with a bore open to atmosphere and adapted to communicate with the interior of said body, means closing said bore when said member is in a first position and unclosing said bore when said member is in a second position relatively to said body, spring means normally urging said member towards said first position, means effective upon movement of said member towards said second position to render said spring means ineffective, and means effective upon further movement of said member in the same direction to render said spring means effective.

3,187,964
SHEET METAL CONTAINER WITH PLASTIC CLOSURE PLUG
John A. Foster, Rockford, Ill., assignor to J. L. Clark Manufacturing Co., Rockford, Ill., a corporation of Illinois
Filed Aug. 28, 1964, Ser. No. 393,488
3 Claims. (Cl. 222—480)



2. The combination of, a sheet metal container having a top with an elongated opening therein defined by a rigid internal peripheral wall having elongated approximately parallel sides and substantially shorter ends merging therewith, said sides bulging outwardly to space the intermediate portions thereof apart a distance somewhat greater than the lengths of said ends, and a plug type cover for closing said opening composed of resiliently yieldable plastic material larger than said opening having a skirt integral with and depending from said cover and having a continuous outwardly projecting peripheral bead telescoped in said opening and larger than said wall by a small and substantially uniform difference sufficient to insure outward buckling of the bead and compression against said wall around the entire periphery thereof as an incident to peripheral compression of the bead as said skirt is pressed into said opening.

3,187,965
SPOUT FOR MILK CONTAINER
David L. Bourget, 1614 Main St., Brockton, Mass.
Filed May 12, 1964, Ser. No. 366,738
1 Claim. (Cl. 222—518)



A dispensing spout for a liquid container comprising a body member of molded synthetic resin having an inner surface with a discharge orifice to be exposed to the interior of the container and an outer surface to be outside of the container, said body member having a discharge duct therethrough from said orifice and a bore aligned with said orifice, said duct being arranged to open out at said outer surface at a point offset from said bore, a plunger slidably fitted in said bore and extending through said orifice, a finger button on the outer end of said plunger, a washer on the inner portion of said plunger, said washer having on one face thereof a peripheral flexible lip arranged to bear on said inner surface surrounding said discharge orifice whereby to close said discharge duct, and two dog-leg spring elements integral with said finger button pressing against said body member and biasing said plunger outward to press the lip of said washer against said inner surface to close said duct.

3,187,966
FLEXIBLE CONTAINER WITH SNIP-OFF-AND RESEAL FEATURES
Mindaugas Julius Klygis, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 9, 1963, Ser. No. 293,769
7 Claims. (Cl. 222—541)



1. A flexible plastic container comprising a hollow body having an integral upper, central and lower portion, said lower portion tapering downwardly from said central portion and terminating in a narrow heat sealed edge, said central portion being circumferentially recessed, said upper portion including an upwardly tapering circumferential shoulder terminating in an elongated neck, and a closure integrally joined to said neck, said closure having a gripping portion and a plug portion, said gripping portion including a hollow body defined by a top wall, a peripheral body wall, and an annular bottom wall, said annular wall being generally normal to the container body axis and spaced from the plug portion, a circumferential wall joining the annular wall to the plug portion, the plug portion including a hollow body, said closure being adapted to be severed from said neck to form a separable closure whereby said plug portion is cooperable with said neck to reclose an opening formed therein when the closure is severed from the neck, said opening being defined by a severed lip of said neck and said circumferential wall defining a circumferential sealing seat opening radially outwardly of the container body and being adapted to contact said lip and provide sealing contact therewith.

3,187,967
GUN SLING
Cyril E. Semple, Girard, Ohio, assignor of one-half to George L. Semple, Youngstown, Ohio
Filed Feb. 25, 1963, Ser. No. 260,543
3 Claims. (Cl. 224—1)



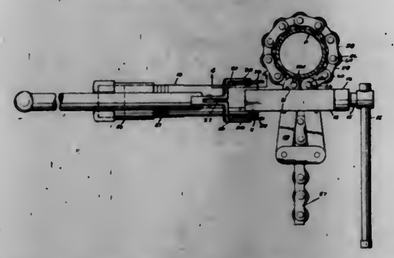
1. A sling for a gun having front and rear stocks and comprising an elongated flexible member having attachment means at each end, a pair of gun supports, one of said gun supports comprising a resilient distortable U-shaped member having an apertured sideward extension thereon by which it is secured to said attachment means on one end of said flexible members, the arms of said U-shaped member curving toward and away from one another to form a relatively narrower entranceway into said U-shaped member, said U-shaped member being resiliently engageable on said rear stock of said gun and the other of said supports comprising a resilient distortable semi-circular member, one end of which is flanged inwardly and downwardly and the other end of which has an apertured sideward extension positioned outwardly thereof and secured to said attachment means on the other end of said flexible member, said other support being resiliently engageable on said front stock of said gun, the semi-circular member being relatively wide and thin in cross section with said sideward extension at right angles thereto.

3,187,968
TAPE DISPENSER
Edward A. Favre, 183 Weston St., Waltham, Mass.
Filed Oct. 11, 1963, Ser. No. 315,501
7 Claims. (Cl. 225—56)



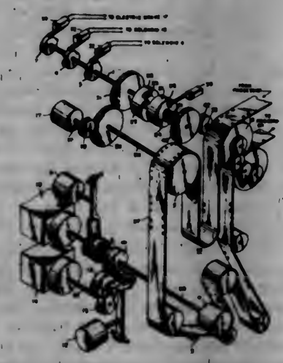
1. A tape dispenser having, in combination, a tape-receiving container provided along an edge with an opening through which the tape may be withdrawn, one side of the opening having a cutter and the outer side serving as a stop, a resilient cylindrical roller mounted within the opening between the cutter and the stop and extending outward beyond the said container edge, the tape extending outward through the space between the stop and the roller in order to enable the automatic dispensing of the tape as the container is moved over a surface with the roller pressing the said outward extending tape against the said surface and a pair of inwardly extending pads disposed in the opening between the roller and the cutter to retain the outwardly extending tape in position for automatic dispensing.

3,187,969
CHAIN TYPE PIPE BREAKER
Anton J. Janik, Elyria, Ohio, assignor to The Ridge Tool Company, Elyria, Ohio, a corporation of Ohio
Filed Aug. 18, 1961, Ser. No. 132,380
6 Claims. (Cl. 225—103)



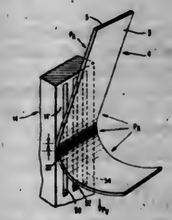
1. An apparatus for fracturing frangible pipe by subjecting said pipe to sudden simultaneous pressures about its periphery in a sharply defined line which comprises support means disposed around the pipe and supporting sharp wedge-shaped edges for engagement with the pipe on a substantially circumferential line, means connected to said pipe surrounding means to impart and maintain an initial steady compression force to force said wedge-shaped edges against the pipe, impact means carried by said compression means and movable with respect to and engageable with said support means and arranged to supply a sudden impact thereto.

3,187,970
CYCLE TIMING MECHANISM
Walter Rayve, deceased, late of East Meadow, N.Y., by Mary C. Rayve, administratrix, East Meadow, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed May 20, 1963, Ser. No. 281,848
3 Claims. (Cl. 226—43)



1. In an apparatus for automatically scanning processed film, a cycle timing mechanism comprising: a scanning slit; a strip of processed film; roller means for pulling said film over said scanning slit; sprocket means engaged by said film and rotated by the movement thereof; a cam shaft having first, second and third cams thereon, said cams having raised portions which occur at different points along their circumferences so that none of the raised portions overlap; gear means connecting said sprocket means to said cam shaft; first, second and third switch means positioned adjacent said first, second and third cams respectively to be actuated thereby when the raised portion of said cam is adjacent to said switch means; drive means connected to said roller means and controlled by said switch means for rotating said roller means at one of two different speeds depending upon whether said first or second switch means is actuated; and means responsive to said third switch means and connected to said sprocket means for stopping the movement of said film.

3,187,971
TAPE CLAMP
Norman A. Miller, Philadelphia, Pa., and Carmine V. Di Camillo, Merchantville, N.J., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,492
2 Claims. (Cl. 226—95)



1. In a vacuum-type tape handling apparatus wherein a tape having a top and a bottom surface is moved by a capstan from a supply reel to a takeup reel via a pair of vacuum tape boxes, one of said boxes being mounted intermediate said capstan and said reels respectively, said tape forming a loop within said boxes and making contact at at least one area on each side wall of said boxes and being acted upon by air at relatively high pressure at its top surface and by air at low pressure at its bottom surface, an improvement in such an apparatus for controlling the position of said tape within said tape boxes comprising a plurality of channels in at least one selected side wall of each of said tape boxes, said channels being arranged in a direction along the length of said side wall, said channels permitting the introduction of a small amount of air at relatively high pressure into the portion of said tape box with air at low pressure along said bottom surface of said tape to create a low pressure area along the bottom surface of said tape at the contact area with said side wall and permit said tape to be slideably held at the contact area due to the pressure differential between the low pressure air on the bottom surface of the tape and the high pressure air on the top surface of said tape.

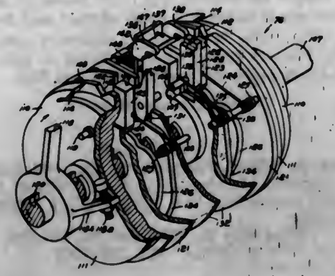
3,187,972
APPARATUS FOR AUTOMATICALLY INSERTING ELECTRICAL COMPONENTS
William E. Sheaa, North Andover, Mass., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 27, 1963, Ser. No. 261,457
9 Claims. (Cl. 227—90)

1. In an apparatus for bending leads extending from a component and for mounting said leads in a pair of spaced apertures formed in a circuit module,

a rotatably mounted unit having slidably mounted facilities for supporting inner sections of said leads and said component at a position spaced from said circuit module,

a pair of benders slidably mounted on said supporting

facilities for movement radial to said unit to bend the leads radially outward from said facilities,
means for sliding said benders to bend the leads extending from said component,
means rendered effective upon completion of movement



of said benders for rotating said unit to move said bent leads into alignment with said spaced apertures in said circuit module, and
means rendered effective upon completion of the rotation of said unit for sliding said facilities to insert leads into said apertures.

3,187,973
FUSION APPARATUS
Robert Glenn Hascome, Manhattan Beach, and Henry Trigger, Monterey Park, Calif., assignors to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware
Filed Nov. 30, 1960, Ser. No. 72,774
2 Claims. (Cl. 228—42)



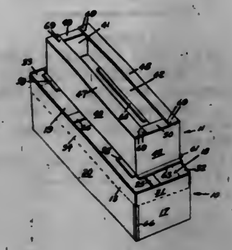
1. Apparatus for fusing a metallic foil to a surface of a body of semiconductor material comprising, in combination: a shallow receptacle of heat conductive material partially filled with a refractory material, said shallow receptacle having a top opening; heating means disposed within the refractory material in said shallow receptacle, said heating means being adapted for the even distribution of heat throughout said refractory material; gas conduit means disposed within the refractory material in said shallow receptacle in proximity to said heating means, said gas conduit means having an inlet extending through a gas-tight seal in a wall of said shallow receptacle and terminating without said receptacle, said gas conduit means having an outlet in communication with the space above the refractory material within said shallow receptacle near one end thereof; gas exhaust conduit means having an inlet in communication with the space above the refractory material within said shallow receptacle near the other end thereof and an outlet extending through a gas-tight seal in a wall of said receptacle and terminating without said receptacle; a heat conductive plate disposed atop the refractory material in spaced relationship from the walls of said shallow receptacle; heat resistant cover means detachably mounted to the top opening of said shallow receptacle in a gas-tight seal; and magnetic means for urging a metallic foil with a constant predetermined pressure against the surface of a body of semiconductor material disposed on said heat conductive plate.

3,187,974
DRUM FOR CONTAINING LIQUIDS
John Rodish, Cincinnati, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Dec. 26, 1961, Ser. No. 161,811
1 Claim. (Cl. 229—5.7)



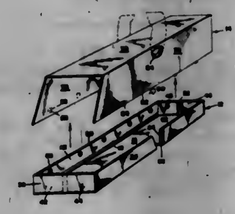
A drum for containing liquids comprising a cylindrical container having an annular open-ended side wall formed of multi-ply fiber-board, an inner liner of thin gauge aluminum and an outer coating of thermosetting acrylic emulsion, the edge portions of the liner being reverted and overlapped and secured by pressure sensitive adhesive and a heat seal, the upper and lower end portions of the container wall having continuous chimes thereabout, the upper chime being inwardly and downwardly rolled to form a bead and inwardly and upwardly crimped to produce an internal cover supporting seat, the lower edge of the upper chime being pressed inwardly and crimped to anchor the same in flush relation to the outer surface of the wall of the drum, a bottom member closing the open bottom of said container and including an inwardly and downwardly extending flange terminating in a channel member, the lower portion of the lower chime having an inwardly extending wall terminating in an upwardly and outwardly extending annular channel member the upper leg of which extends between the bottom member and the inwardly and downwardly extending flange thereof, said last mentioned inwardly extending wall having annular convolutions therein, a sealing compound interposed between the bottom member and the lower portion of the inner liner, an additional sealing compound between the inner face of the inner liner and the bead of the upper chime, a top cover member for closing the open top of the container and having a downwardly opening channel overlying the upper portion of the bead of the upper chime, the downwardly extending side wall of the last mentioned channel having an annular convolution thereabout, a disc of flexible rubber overlying the top of the container below the top cover and overlying the bead of the upper chime and extending downwardly about the side wall of the container, a compressible annular gasket in the downwardly extending channel of the top cover, said gasket having circumferentially extending annular ridges on its upper side and a series of circumferentially extending annular grooves on its under side, said gasket seating on said bead of said upper chime and overlying said disc, a depending peripheral flange on the top cover overlying said upper chime, and a lock ring including an upper horizontal flange overlying the top of said downwardly extending groove of said top, a vertical portion surrounding said depending peripheral flange on said top cover, and a second horizontal flange extending inwardly into the exterior of the inwardly crimped portion of the upper chime.

3,187,975
PACKING CASE
Otha A. Rose, Louisville, Ky., assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Nov. 6, 1963, Ser. No. 321,861
7 Claims. (Cl. 229—14)



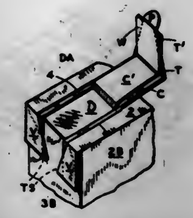
1. A container of the character described comprising outer tube having side and end walls, inwardly extending bottom side and end flaps, and inwardly extending top side and end flaps; and an inner tube having side and end walls, inwardly extending bottom side flaps affixed to the bottom side flaps of the outer tube, outwardly extending spacer flaps formed integrally with the lower edges of the side and end walls thereof and having their outer edges in contact with the inner faces of the walls of the outer tube, and inwardly directed top side and end flaps; said top flaps of said outer tube overlying and fastened to the top flaps of the inner tube.

3,187,976
CONVERTIBLE CONTAINER
Glenn E. Struble, Hamilton, Ohio, assignor to Diamond International Corporation, a corporation of Delaware
Filed May 7, 1963, Ser. No. 278,662
8 Claims. (Cl. 229—16)



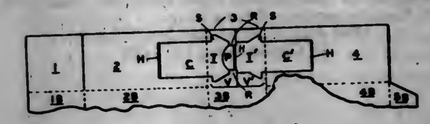
1. A one-piece blank for forming a tubular container convertible into a shallow tray comprising an integral, planar element including a tray-forming section, and a top-forming section hingedly and detachably connected to one side of said tray-forming section, said tray-forming section comprising a rectangular bottom wall panel bordered by hingedly connected, opposed pairs of side and end wall panels hingedly connected to attaching flaps, auxiliary side wall panels hingedly connected to said pair of side wall panels on fold lines parallel to the hinged connections thereof with said bottom panel, said top-forming section being hingedly connected to one edge of one of said auxiliary panels on a fold line parallel to the hinge connection thereof with said bottom panel.

3,187,977
DISPENSING CONTAINERS HAVING DOUBLE LAYERED TUCK-TAB AND OPPOSING MARGINAL TUCK-SLOTS
Paul J. Graybill, Sunset Hill Drive, Pine Orchard, Conn.
Filed Apr. 18, 1963, Ser. No. 273,924
4 Claims. (Cl. 229—17)



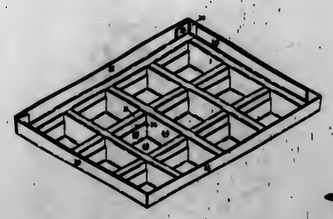
1. A dispensing container formed of foldable stock having opening, dispensing, closing and securing means inherent in two adjacent multiple walls thereof, at least one of said walls having at least three layers of said stock, said means consisting of a dispensing aperture, a hingedly joined cover thereto, a double layered tuck-tab hingedly joined to the free end of said cover, said tuck-tab having lateral friction wings articulated thereto, said container also having at least one essentially vertical tuck-slot so positioned externally on the side wall thereof adjacent to said aperture to frictionally engage in a tongue and groove relationship said laterally protruding friction wings when said container is in a closed condition, said tuck-tab may also have articulated thereto an adhesive free pull-tab.

3,187,978
DISPENSING CONTAINER WITH TUCKLOCK-TAB
Paul J. Graybill, Sunset Hill Drive, Pine Orchard, Conn.
Filed Apr. 24, 1963, Ser. No. 275,367
5 Claims. (Cl. 229—17)



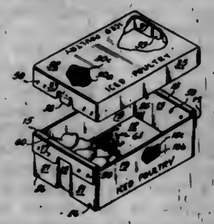
1. A dispensing container formed of foldable stock, having opening, dispensing, reclosing and locking means inherent in two adjacent multiple walls thereof, at least one of said walls having three layers of said stock, said means consisting of a dispensing aperture in one of said multiple walls, a cover thereof hingedly joined to said wall, the displacement of which cover forms said aperture, a tucklock-tab of two layers of said stock hingedly joined to the free end of said cover and at least one protrusion-tab directly articulated to one lateral edge of at least one layer of the stock of said tucklock-tab, the displacement of which protrusion-tab forms a notch-like configuration in at least the outside layer of the three layered wall, said container also having at least one retention-tab directly articulated to the outer layer of said triple wall so dimensioned and positioned as to extend over the lateral edge of the inner layer of said tucklock-tab thus forming a lateral essentially vertical tuck-slot and affording a tongue and groove relationship with the edge of said tucklock-tab when said container is in a closed condition, said tucklock-tab may have a pull-tab articulated to the free end thereof.

3,187,979
TRAY
George V. Skowronski, Neenah, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 17, 1963, Ser. No. 252,090
4 Claims. (Cl. 229—28)



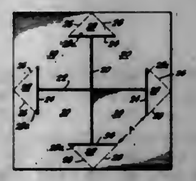
1. A multi-compartment, nestable tray comprising an upper planar panel connecting a plurality of separate tapered cup-like receptacle portions extending downwardly from said upper panel, said upper planar panel spacing each of said receptacle portions from the other receptacle portions, each of said receptacle portions comprising a bottom panel and a pair of opposed end panels hingedly connected to said upper panel and to said bottom panel, said end panels being inclined downwardly and inwardly toward each other; a pair of opposed side flaps hingedly connected to the remaining edges of said bottom panel, said side flaps being inclined downwardly and inwardly toward each other; a pair of opposed side panels transverse to said end panels and hingedly depending from said upper panel, said side panels being inclined downwardly and inwardly toward each other; said side panels and side flaps being adhered together intermediate the bottom panel and the upper panel.

3,187,980
CONTAINER
Richard E. Ons, Summit, N.J., Carroll P. Dahlil, Statesville, N.C., and Hugh B. Johnson, Georgetown, S.C., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed July 29, 1963, Ser. No. 298,269
16 Claims. (Cl. 229—34)



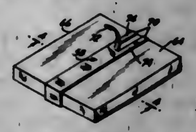
1. A comestible article container comprising a body of corrugated paperboard having its flutes disposed predominantly longitudinally of the body and having characteristics of printability and resistance to water, grease, and cold, the body including a rectangular bottom panel, end panels each hingedly connected at one end to one end of the bottom panel along a fold-line and disposed perpendicularly to the bottom panel, ledge panels each hingedly connected at one end to the other end of an end panel along a foldline and disposed perpendicularly to the end panel, end flaps each having a length shorter than an end panel length and hingedly connected at one end to the other end of a ledge panel along a foldline and disposed perpendicularly to the ledge panel, side panels each hingedly connected at one side to one side of the bottom panel along a foldline and disposed perpendicularly to the bottom panel, end supporting panels each having a length shorter than one-half of an end panel width and hingedly connected at one end to one end of a side panel along a foldline and disposed perpendicularly to the side panel and outwardly of an end panel, and end supporting flaps each having a length shorter than one-half of an end panel width hingedly connected at one end to the other end of an end supporting panel along a foldline and disposed parallelly to the end supporting panel and inwardly thereof.

3,187,981
SEPARATOR CELL FOR FRAGILE ARTICLES AND PACKAGE INCORPORATING THE SAME
Melville T. Farquhar, Bon Air, and Clinton Warren Calhoun, Jr., Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 11, 1962, Ser. No. 209,009
8 Claims. (Cl. 229—42)



1. A blank for an erectable separator cell comprising, a square sheet of substantially rigid foldable material, said sheet having a pair of primary slits crossing at right angles centrally thereof and each terminating at points uniformly inwardly of the marginal edges of said sheet, said sheet having a short slit parallel to each sheet marginal edge intersecting the ends of each primary slit and extending a uniform distance on each side thereof, and score lines on said sheet converging from each end of each said short slit and extending to the center of each sheet marginal edge to thereby dispose adjacent score lines of adjacent short slits on a common straight line, whereby said sheet may be folded along the score lines of each common straight line to erect four wall panels and define a central polygonal opening.

3,187,982
METHOD FOR FORMING COATED UNIAXIALLY ORIENTED FILMS AND THE PRODUCT FORMED THEREBY
William F. Underwood, Oak Park, Ill., and George R. Cotten, Stamford, Conn., assignors to Union Carbide Corporation, a corporation of New York
Filed July 21, 1960, Ser. No. 44,294
22 Claims. (Cl. 229—51)



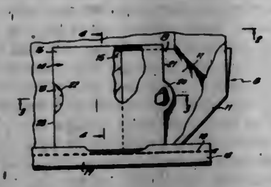
1. A tear tape for producing a uniform tear in a thermoplastic packaging film comprising a backing film of highly uniaxially oriented crystalline polyolefin film stretched at least 700% in the longitudinal direction, and a thermoplastic coating bonded to a surface of said backing film and heat sealed to said thermoplastic packaging film at a temperaure less than the melting point of said backing film, said tear tape being characterized in that when a tear is initiated within boundaries of said backing film and in the direction of orientation it will uniformly tear along a substantially straight line parallel to the direction of orientation.

3,187,983
CELLOPHANE WRAPPER TEARER
Jose N. Mendoza, P.O. Box 2797, Sampaloc, Manila, Philippines
Filed Apr. 12, 1963, Ser. No. 272,732
2 Claims. (Cl. 229—51)



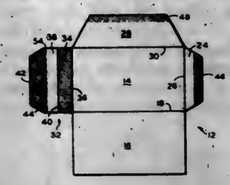
1. A tearing device adapted for use between a cardboard package and a severable wrapper comprising: a symbolically-shaped slitter member having serrated and burred cutting edges, said cutting edges being slightly elevated and horizontally directed with respect to the cardboard package, and means for attaching said slitter member, said means consisting of a narrow strip paper base having on one side a moisture catalyzed adhesive bonding adaptable to adhere on the package surface and folded over so that the same side is attached to a small portion of the bottom of the slitter member.

3,187,984
VALVE BAG
Clinton R. Hollis and Robert O. Baxter, Camden, Ark., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed Nov. 30, 1962, Ser. No. 241,231
1 Claim. (Cl. 229—62.5)



A bag having side walls, portions of said walls being folded inwardly to form a valve, a dual sleeve positioned on said valve and projecting inwardly into said bag, said sleeve consisting of an inner part and an outer part, said inner part of said sleeve being formed of a thermoplastic material having blocking characteristics and said outer part of said sleeve being formed of paper, said inner part and said outer part of said sleeve being secured together along their side edges by zones of glue, means to secure said sleeve to said valve including tabs formed at the outer marginal edge of said outer part of said sleeve, said sleeve being secured to the inner marginal edge of said valve by zones of glue on said tabs and means to expose portions of said inner part of said sleeve including elliptical cuts at the inner marginal edge of said outer part of said sleeve.

3,187,985
ENVELOPE
Luther G. Simjian, Greenwich, Conn., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed Oct. 9, 1963, Ser. No. 314,944
3 Claims. (Cl. 229—68)



1. The combination of an envelope and a document for use in conjunction with a depository apparatus which is provided with means for receiving and for opening an envelope and for freeing a document contained therein, wherein:
said document is a rectangle having a given long dimension;
said envelope includes a pair of rectangular panels providing a front and a back panel, said panels being joined to each other along three sides thereof to provide an enclosure;
the joint along one of said sides including a fluted fold having a central fold reaching into said enclosure and two outer folds directed away from said enclosure;
one of said outer folds being at least partially closed and the unobstructed long dimension from said closed outer fold through said enclosure to the opposite side of said envelope being less than said given long dimension of said document;
the other of said outer folds being open and the unobstructed long dimension from said open outer fold through said enclosure to said opposite side of said envelope being greater than said given long dimension of said document;
said document being disposed in said enclosure with a portion of said document disposed within said open outer fold and the opposite document edge disposed substantially in the joint defining said opposite side of said envelope;
and a flap joined to the fourth side of one of said panels for overlying, when folded, the fourth side of said other panel whereby to close said enclosure.

3,187,986
ENVELOPE
Luther G. Simjian, Greenwich, Conn., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed Oct. 9, 1963, Ser. No. 314,945
4 Claims. (Cl. 229—68)

1. An envelope comprising:
a first and a second substantially symmetrically quadrilateral outer panel;
each of three of said laterals of said first outer panel having a juncture with a corresponding lateral of said second outer panel, said outer panels thereby forming an enclosure;
one of said outer panels having a flap attached to said fourth lateral thereof for overlying said other of said outer panels for providing a juncture between said fourth laterals and thereby closing said enclosure;
a quadrilateral baffle panel disposed within said enclo-

sure and substantially coextensive with the interior of said enclosure;

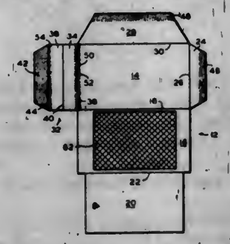
said fourth lateral of said second outer panel having a juncture with the adjacent lateral of said baffle panel;

said baffle panel dividing said enclosure into a first and a second chamber;

said first chamber being formed by said baffle panel and said first outer panel and having an aperture at said fourth lateral of said first outer panel, and adapted to receive documents therethrough;

said second chamber being formed by said second baffle panel and said second outer panel and being inaccessible at all of said laterals of said outer panels;

one of said junctures between said first and said second



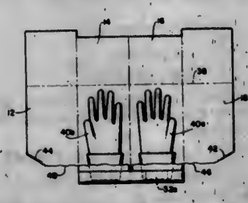
outer panels including a plait having a first externally directed fold adjacent said first outer panel, a second externally directed fold adjacent said second outer panel, and therebetween an internally directed fold;

said first and said second externally directed folds being partially sealed along the direction of the major axis of said folds to impart rigidity to said folds;

one of said laterals of said baffle panel being freely disposed within the open portion of said first externally directed fold;

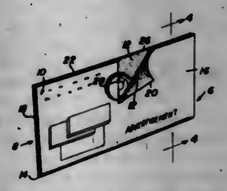
whereby when an opening means is thrust through said internally directed fold, the opening means is guided by said baffle panel into said second chamber.

3,187,987
SURGICAL GLOVE WRAP
Arthur J. Langdon, East Hampton, Conn., assignor to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware
Filed Feb. 25, 1964, Ser. No. 347,267
5 Claims. (Cl. 229—87)



1. A disposable wrap for retaining surgical gloves during and after sterilization comprising, a unitary sheet formed with two substantially equal central sections foldably joined to each other along a central fold line and two outer sections foldably joined to said central sections along the edges of said central sections remote from said central fold, said outer sections being folded over against said central sections to dispose free outer edges closely adjacent said central fold; a flap portion along the lower extremities of the two central sections folded over along a first transverse fold line and sealed to the lower outer surface of said two folded over outer sections; tear line perforations extending transversely across said outer sections adjacent the free edges of said flaps; a second transverse fold line extending across said wrap at right angles to said section fold lines a distance somewhat greater than a glove-length from said flat-sealed end, the free end of the wrap adjacent said second transverse fold line being folded thereover against the upper outer surface of said outer sections, said wrap being folded along said central fold line thereby disposing the outer surfaces of said outer sections against each other.

3,187,988
REFUND COIN CARRIER AND MAILER
William T. Geller, 493 Foch Blvd., Mineola, N.Y.
Filed June 19, 1963, Ser. No. 289,062
2 Claims. (Cl. 229—92.9)

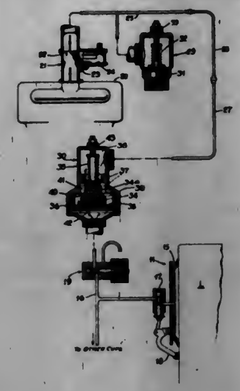


1. A refund coin carrier and mailer comprising: an easy-to-use card adapted for enclosed mailing in a conventional stamped, sealed envelope addressed to the recipient of a refund coin, said card having foldable overlapping panel portions whose opposed overlapping surfaces are fastened together in a manner to define and provide a tamperproof coin holding and transmitting insert for said envelope, said panel portions permitting the coin to be sandwiched and retentively held therebetween while being transmitted intact through the mails and also preventing the coin from shifting from its given position and thus rendering said insert substantially pilferproof, said card being made from a rectangular cardboard blank having a median foldline dividing said blank into said panel portions each rectangular in plan, said overlapping surfaces constituting the interior surface and being wholly coated with pressure-sensitive adhesive which effectively sticks the panel portions together and seals the coin in its given position therebetween but is such in character that it does not adhere directly to the coin and hence does not hinder and hamper the recipient in dislodging and freeing the coin for ready pocket use, the exterior surfaces of the panel portions being calendered and smooth, the median portion of at least one panel portion being provided with a line of perforations extending at right angles from the free lengthwise edge and defining and providing an accessible easy-to-tear area with which the inserted coin is aligned for ready unhampered removal, and the median portion of the other panel portion being likewise constructed, the respective perforated lines being opposite and aligned with each other.

3,187,989
VACUUM SYSTEM
William J. Barto, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Nov. 19, 1962, Ser. No. 238,451
9 Claims. (Cl. 230—1)

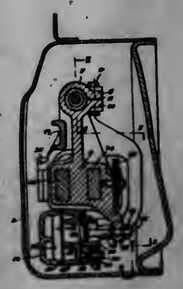
1. The method of supplying air at sub-atmospheric pressure to a vacuum device by means of an internal combustion engine operable at a particular sub-atmospheric pressure comprising,

connecting the vacuum device with the air intake of said internal combustion engine whereby the large volume of air drawn through said air intake may be utilized to create vacuum for said vacuum device, operating the engine whereby a large volume of air is drawn through the air intake of the engine, and



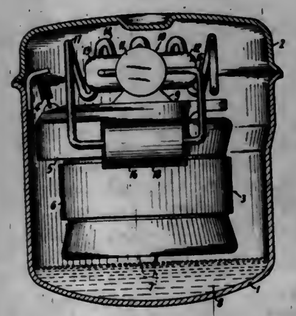
automatically maintaining the air pressure between the vacuum device and the air intake of said engine substantially at said particular sub-atmospheric air pressure to prevent stalling of the engine.

3,187,990
ELECTROMAGNETICALLY MAINTAINED OSCILLATING MOVEMENT COMPRESSOR
André Chausson, Asnieres, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, France, a company of France
Filed Dec. 15, 1960, Ser. No. 76,067
Claims priority, application France, Dec. 16, 1959, 813,207, Patent 1,252,149
3 Claims. (Cl. 230—55)



1. An electromagnetically oscillating compressor of the hermetically sealed type enclosed in a closed container comprising a resiliently suspended rigid support of substantially U shape delimited by two lateral branches and a transverse portion integral therewith, a magnetic circuit including two magnetic elements provided with windings and respectively inserted in said two branches of the support to provide opposite poles in said branches, a pair of aligned bearings provided at the free ends of said two branches, a rigid tube rotatively mounted in said bearings, a torsion bar concentrically disposed inside said rigid tube and having one end secured to a corresponding end of said tube and the other end secured to said support so that said bar is twisted when said tube is rotated with respect to said support, a rigid swinging member adjustably secured to said tube and extending between the branches of said supports, said rigid member enclosing magnetic elements located in close proximity to said poles and carrying a compressing device reciprocably mounted in a compressor body provided in said transverse portion of the support.

3,187,991
HERMETICALLY-ENCLOSED REFRIGERATING MACHINES
Knud Roelsgaard, Nordborg, Denmark, assignor to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Nov. 27, 1961, Ser. No. 173,848
Claims priority, application Germany, Nov. 26, 1960, D 34,829
6 Claims. (Cl. 230—58)

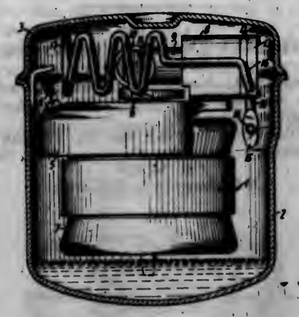


1. In a hermetically-enclosed motor compressor comprising a compressor unit disposed within a hermetically-sealed capsule, said compressor unit including a cylinder for receiving a piston and driving means for reciprocating said piston in said cylinder for compressing a gaseous fluid therein, the combination with said cylinder of a pressure silencer internally of said capsule spaced from said cylinder as well as from the other components of said compressor unit and having no direct heat-conducting relationship with said cylinder and with said other components, and a pressure conduit extending outwardly from said cylinder to a point remote from said cylinder and from said other components and providing communication between said cylinder and said pressure silencer, said pressure silencer being disposed at said point and means insulating said silencer to preclude heat transfer from said silencer to the interior of said capsule.

3,187,992
HERMETICALLY-ENCLOSED REFRIGERATING MACHINE
Knud Roelsgaard, Nordborg, Denmark, assignor to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Nov. 27, 1961, Ser. No. 176,464
Claims priority, application Germany, Nov. 26, 1960, D 34,828
14 Claims. (Cl. 230—58)

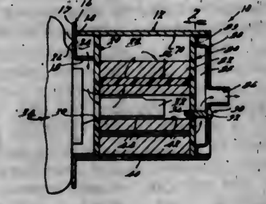
1. In a refrigerator unit, the combination of a hermetically sealed chamber having a wall with an outer heat-radiating surface, a motor-compressor unit in said chamber, means resiliently supporting said motor-compressor unit to provide a cushioned support permitting movement of said motor-compresor unit in said chamber, oil in said chamber for lubricating and cooling said motor-compressor unit, an inlet for refrigerant into said chamber, a pressure line for compressed refrigerant extending

fom said compressor through said chamber wall to the exterior of said chamber, said line comprising a length of flexible tubing inside said chamber permitting movement of said motor-compressor unit on its cushioned support by flexing of said tubing, and a heat insulating means covering on said tubing to inhibit the transfer of heat



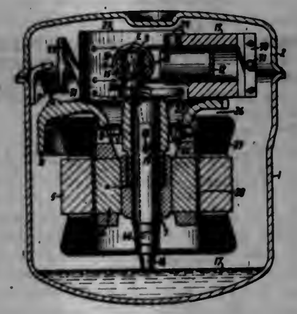
from the hot compressed refrigerant in said pressure line to the refrigerant and oil in said chamber, said insulating means being flexible to permit the flexing of said tubing and being resistant to deterioration by said refrigerant and oil and the effects of vibration.

3,187,993
COMPRESSOR
Keith H. Rhodes, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed June 13, 1962, Ser. No. 202,314
1 Claim. (Cl. 230—152)



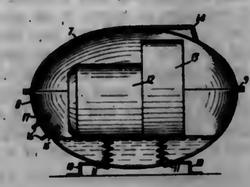
An air compressor comprising
a cylindrical housing,
a pair of end caps at opposite ends of said housing having radially extending portions complementary to said housing and axially inwardly extending portions, respectively,
an inlet disc abutting the axially inwardly extending portion of the end cap at one end of said housing, said inlet disc and said end cap in conjunction with said housing defining a relatively large generally annular inlet chamber, said inlet disc having
an inlet aperture therein,
an outlet disc abutting the axially inwardly extending portion of the end cap at the other end of said housing, said outlet disc and the end cap at the other end of said housing in conjunction with said housing defining a relatively large generally cylindrical discharge chamber, substantially the entire area of said outlet disc being exposed to compressed air in said discharge chamber, said outlet disc having
an outlet aperture communicating with said discharge chamber
a generally cylindrical rotor between said inlet and outlet discs having
a central bore therein for the acceptance of a drive shaft and rotatable about an axis extending generally parallel to the central axis of said housing in radially spaced relation thereto, said rotor having
a plurality of generally axially extending slots extending relatively deeply into said rotor in spaced relation to and beyond the bore therein, and
a plurality of slidable nylon vanes in the slots in said rotor, said vanes slidably engaging the inner peripheral surface of said housing and said inlet and outlet discs to define a variable volume chamber to effect compression of the air therein upon rotation of said rotor relative to said housing, the bias of the compressed air in said discharge chamber on said outlet disc biasing said outlet disc against said rotor and said vanes which in turn are biased against said inlet disc thereby to effect a self energizing seal between said outlet disc, rotor, vanes and inlet disc.

3,187,994
HERMETICALLY SEALED MOTOR COMPRESSORS PARTICULARLY SUITABLE FOR SMALL REFRIGERATING MACHINES
Knud Vagn Valbjørn, Nordborg, Denmark, assignor to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Sept. 4, 1962, Ser. No. 221,148
8 Claims. (Cl. 230—206)



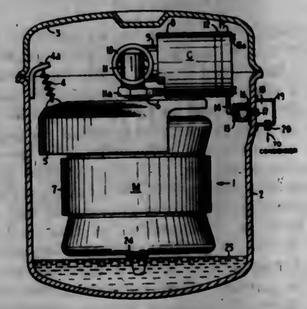
1. In a hermetically-sealed motor-compressor unit particularly adapted for small refrigerators, the combination of a sealed chamber having a lower end portion providing an oil pan, an electric motor mounted in said chamber with its axis vertical, said motor comprising a stator and a rotor with a vertical shaft having at its upper end an eccentric crank portion, a compressor mounted in said chamber above said motor and comprising a horizontal cylinder and a piston reciprocable in said cylinder and operably connected with said eccentric crank portion for reciprocation thereby, said connection including a bearing, a hot gas pressure line extending from said compressor to the exterior of said chamber, said shaft having an oil channel therein extending from the lower end of said shaft to said bearing, an oil pump at the lower end of said shaft for pumping oil from said pan to said bearing and vertical oil-collecting plate means disposed around but spaced from said bearing and together with said cylinder substantially surrounding said bearing so as to prevent oil being thrown onto said hot gas pressure line from said crank portion and bearing and to collect oil thrown off by centrifugal force from said crank portion and bearing and direct said collected oil over the motor to cool the motor.

3,187,995
CAPSULE FOR REFRIGERATING MACHINES
Kjeld Kjeldsen, Nordborg, Denmark, assignor to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Aug. 27, 1962, Ser. No. 219,608
5 Claims. (Cl. 230—232)



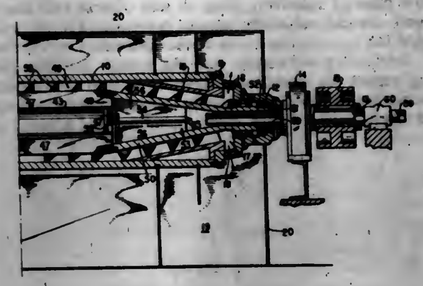
1. A hermetic refrigeration unit comprising, a refrigeration compressor, a capsule completely enclosing said compressor for reducing noise transmitted from said compressor to its surroundings, said capsule having a double curvature wall configuration effective for said capsule to have a natural resonant frequency different than audio frequencies and harmonic frequencies transmitted from said compressor, said capsule having an ellipsoid configuration, and elastic means mounting said compressor internally of said capsule, whereby noise transmission from said compressor is reduced.

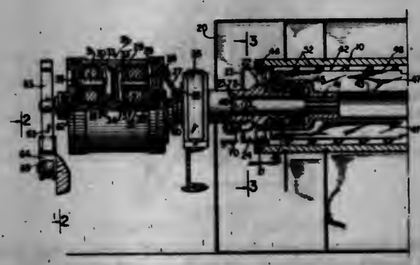
3,187,996
HERMETICALLY ENCLOSED REFRIGERATING MACHINE
Knud Roelsgaard, Nordborg, Denmark, assignor to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed July 13, 1962, Ser. No. 209,630
Claims priority, application Germany, July 15, 1961, D 36,573
7 Claims. (Cl. 230—232)



1. In a sealed refrigerating unit comprising a hermetically sealed chamber having a wall, a compressing unit comprising a motor and a compressor driven by said motor and having a discharge passage adapted for connection with a condenser outside said chamber, and means resiliently mounting said compressing unit in said chamber to provide a cushioned support permitting movement of said compressing unit in said chamber, the improvement comprising a flexible expandable passage means mounted on the inner surface of the wall of said chamber near the discharge passage of said compressor, conduit means connecting said passage means with said discharge passage and a passage extending through the wall of said chamber and leading from said passage means to said condenser.

3,187,997
HORIZONTAL TYPE CENTRIFUGAL SEPARATOR
Frederic P. Gooch, North Miami Beach, Fla., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,605
1 Claim. (Cl. 233—7)



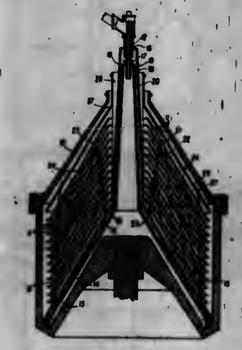


In a horizontal type centrifugal separator, a drum mounted for rotation about a substantially horizontal axis; a separator-conveyor assembly within said drum including means forming with said drum a solids chamber and a liquid pond, said separator-conveyor assembly including a shaft with radial vane means extending axially throughout a major portion of said drum, and having one longitudinal edge integral with said shaft; a strip spirally wound about the other longitudinal edge of said radial vanes forming flights of a screw conveyor; means for rotating said drum and separator-conveyor assembly at different speeds; means for feeding slurry continuously to, and axially of, said drum at one end thereof; means for imparting a speed of rotary motion to said slurry substantially equal to that within the pond prior to said slurry reaching said pond, said means comprising a hollow elongated conical member intermediate said radial vane means and said means for feeding slurry, said conical member having radial vanes extending throughout a major portion of its length and also from its longitudinal axis to the inner surface of said conical member; a liquid collecting chamber at the end of said drum opposite that to which slurry is fed; a skimmer tube having a nozzle within said liquid collecting chamber; a housing surrounding said drum; and means located exteriorly of said housing for adjusting the position of said skimmer tube nozzle while said drum and separator-conveyor are rotating.

3,187,998
CENTRIFUGAL EXTRACTOR
George H. Madany, 1110 9th Ave. NW., Minot, N. Dak., assignor of one-fourth to Vernon D. Jarvis, Decatur, Ill.
Filed Mar. 31, 1964, Ser. No. 356,321
6 Claims. (Cl. 233—15)

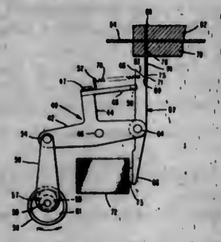
1. In centrifugal countercurrent contact apparatus for effecting intimate contact between and separation of liquids

which are at least partially immiscible, the combination including, a rotary bowl having a central axis and an interior working space, a plurality of spaced apart annular discs within the working space and extending outwardly from said central axis of said bowl and rotatable therewith, a plurality of aligned openings in said discs forming at least two channels within the working space including a first channel relatively close to said central axis and a second channel relatively remote from said central axis, means for introducing heavy liquid into said first channel for distribution outwardly into the spaces between said discs, means for introducing light liquid into said second channel for distribution inwardly into the spaces between said discs, each of said discs including perforations in



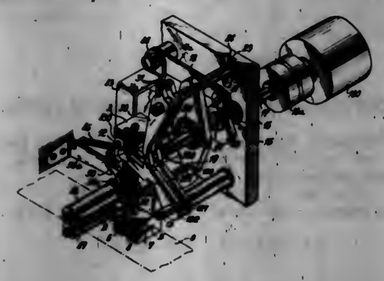
spaced annular zones therein located between the inner and outer edges thereof and between said first and second channels, a plurality of rings extending between adjacent discs and each positioned inward of a perforated zone in said disc below the ring and outward of a perforated zone in said disc above the ring, said rings causing the light and heavy liquids to flow through said perforations in opposite directions to cause thorough mixing of the liquids, the light and heavy liquids separating while passing from one perforated zone to another to provide a plurality of mixing and separating sections along said discs between the inner and outer edges thereof, means for receiving the separated light liquid from the inner edges of said discs, and means for receiving the separated heavy liquid from the outer edges of said discs.

3,187,999
CARD PUNCHING DEVICE
Raymond Eugene Seymour, Ambler, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 2, 1963, Ser. No. 313,370
14 Claims. (Cl. 234—119)



1. In a record perforating device, a punching assembly comprising: a bail member; drive means connected to said bail member for moving said bail member in an arcuate path; a crossbar coupled to said bail member: an arm having an upper portion adapted to engage a punch bar and a lower portion adapted to act as an armature; a pivot pin for connecting said arm to said bail member to permit said arm to move about said pivot pin; biasing means connected to said cross bar and said arm to hold said arm against said crossbar, said biasing means causing said arm to move in an arcuate path as said bail member is driven; a punch bar; electromagnetic means disposed adjacent to the lower portion of said arm; adapted to be selectively actuated to cause said arm to overcome the effects of said biasing means and be separated from said crossbar and move in a vertical direction to engage said punch bar, moving said punch bar to a position to permit perforation of a record.

3,188,000
TAPE TRANSPORTING DEVICE
Wilhelm Hergert, Wilhelmshaven, Germany, assignor to Olympia Werke A.G., Wilhelmshaven, Germany
Filed Nov. 27, 1962, Ser. No. 240,370
Claims priority, application Germany, Nov. 28, 1961, O 8,397
15 Claims. (Cl. 234—128)



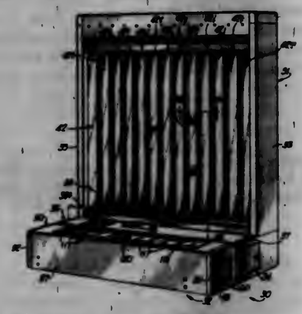
1. A transporting device for transporting a tape to a perforator comprising, in combination, guide means for guiding a tape along a path; perforator means movable between a perforating position located in said path and holding the tape, and an inoperative position releasing the tape; a transporting lever mounted for angular reciprocation and having a transporting arm moving during reciprocation along said path in a forward direction and in a return direction; a drive shaft having eccentric means for reciprocating said perforator means and said transporting lever in synchronism so that said perforator means is in said inoperative position when said transporting arm moves in said forward direction and is in said perforating position when said transporting arm moves in said return direction; a pair of cooperating rollers mounted on said transporting arm for rotation about parallel axes transverse to said path and forming a bight located in said path for receiving said tape; and blocking means for blocking rotation of at least one of said rollers in one direction of rotation so that rotation of said one roller due to frictional engagement between said one roller and the tape is blocked during forward movement of said transporting arm whereby the tape is frictionally coupled with said one roller and is transported in said forward direction while said perforator means is in said inoperative position, and whereby frictional engagement between the tape and said rollers effects rolling of said rollers on the tape during movement of said transporting arm in said return direction while the tape is held by said perforator means in said perforating position.

3,188,001
DIE CONSTRUCTION
Nathaniel B. Wales, Jr., Sharon, Conn., assignor to Business Research and Engineering Corporation, Ardmore, Pa., a corporation of Delaware
Filed Oct. 30, 1963, Ser. No. 320,008
3 Claims. (Cl. 234—131)



1. A punch die comprising: a primary die plate having die apertures arrayed in rows and columns; a secondary die plate having die apertures substantially congruent to those of said primary plate; a grid of support members; means to secure together said primary plate, said secondary plate and said grid in that order; a plurality of elongated punch locating cam plates corresponding to the columns of said aperture array; a key member protruding transversely from the elongated axis of, at each end of, and integral with each of said cam plates; apertures in said primary die plate to receive and locate said key members; and comb means to retain and align said cam plates relative to said primary die plate.

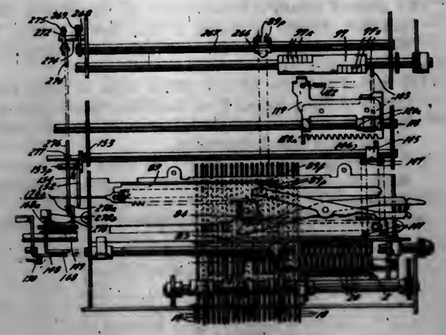
3,188,002
WRITE-IN FOR VOTING MACHINES
Robert B. McCaskill and Ira G. Laws, Tulsa, Okla., assignors to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 19, 1962, Ser. No. 188,672
61 Claims. (Cl. 235—54)



1. In a voting machine of the type employing a plurality of selectors movable to different positions indicating the voter's choices, means movable past said selectors for scanning said selectors after the voter has made his selections, means operated by said movable means to record the voter's choices, a write-in ballot and means for driving said write-in ballot simultaneously with said movable scanning means.

3,188,003
OVERCAPACITY CONTROL IN A DECIMAL SYSTEM
Herman Gang, Morris Plains, N.J., assignor to Monroe International Corporation, a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 222,140
13 Claims. (Cl. 235—60)

1. In a calculating machine having registering mechanism including an ordinal series of differential actuators; an ordinal series of differentially settable digital value selection means for controlling operation of said actuators; drive means for said actuators; and means for initiating operation of said drive means: means for entering a value including whole number digits and decimal digits into said selection means; means operable only in the



entry of whole number digits to disable said drive initiating means upon entry into said selection means of more than a given number of whole number digits; and means operable only in the entry of decimal digits to disable said drive initiating means upon entry into said selection means of more than a given number of decimal digits.

3,188,004
TRIANGULAR SLIDE RULE
Charles O. Harris, East Lansing, Mich., assignor, by mesne assignments, to L. L. Ridgway Enterprises, Inc., a corporation of Texas
Filed Sept. 19, 1962, Ser. No. 224,611
6 Claims. (Cl. 235—70)



1. A slide rule comprising, base means presenting four separate base scale faces in three intersecting planes and slide means slidably mounted by the base means for bridging two of said base scale faces and presenting three separate slide scale faces simultaneously movable in said three intersecting planes respectively, said slide means having guides engageable with said base means between said two base scale faces coplanar with one of the slide scale faces.

3,188,005
POWER RESET MECHANISM FOR REGISTERS
George W. Wright, Yoder, and Elmer A. Robbins and Melvin C. Hankel, Fort Wayne, Ind., assignors to Tokheim Corporation, Fort Wayne, Ind., a corporation of Indiana
Filed July 30, 1962, Ser. No. 213,499
45 Claims. (Cl. 235—144)

1. A power resetting mechanism for a resettable register having a number of movable, different order indicators, means including a first shaft and first clutch means for moving said indicators from zero indicating positions to register the rotation of said shaft and means including a second shaft and second clutch means for moving said indicators to their zero indicating positions and clutch shifting means movable between a first position in which

said first and second clutch means are effective and ineffective respectively and a second position in which said first and second clutch means are ineffective and effective respectively, said resetting mechanism comprising

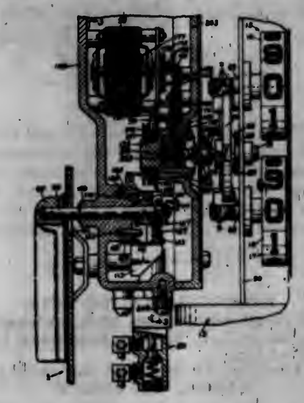
(a) a power shaft, an electric motor connected to actuate said power shaft,

(b) control means movable from an initial to a first position, means including a first switch which is closed in response to said movement for energizing said motor,

(c) means operable by said power shaft to move said clutch shifting means from said first to said second position, to pause and thereafter to return said shifting means to said first position,

(d) resetting means connected to drive said second shaft to move said indicators to zero indicating position,

(e) means for connecting said power shaft to drive



said resetting means after the beginning of said pause and for disconnecting said power shaft and resetting means prior to the end of said pause,

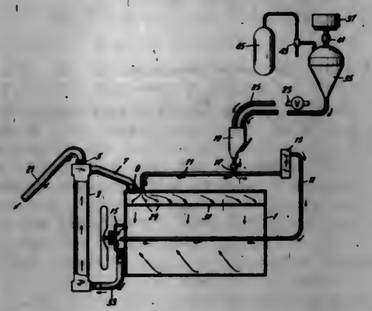
(f) means including a second switch actuated from closed to open position by said power shaft for deenergizing said motor after said shifting means is returned to said first position, to cause said power shaft to stop,

(g) an additional switch for controlling a pump motor to energize and deenergize the same, said additional switch being actuated to pump-motor-energizing condition by said power shaft after said shifting means is returned to said first position and before said power shaft stops,

(h) and means operable in response to movement of said control means from its first position to its initial position for opening said first switch and closing said second switch to condition the resetting mechanism for a new cycle.

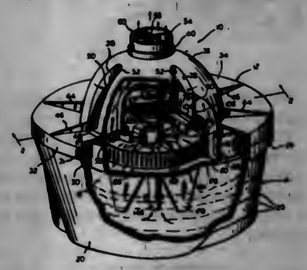
3,188,006
APPARATUS FOR CLEANING AND FILLING ENGINE COOLING SYSTEMS
Henry J. Falk, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 9, 1963, Ser. No. 314,959
2 Claims. (Cl. 237—8)

1. An apparatus for use in flushing old coolant and introducing new coolant into an engine cooling system in combination with an engine cooling system which includes an engine block, a heater, a heater-supply hose connected between the engine block and heater, a radiator, a radiator-filler neck, an upper radiator hose connected between the radiator and engine block, a closed thermostat valve at the connection between the upper radiator hose and engine block and a lower radiator hose connected between the radiator and engine block, said apparatus comprising a T-connection having its opposed outlets connected in line with the heater-supply hose of the automobile cooling system at a position between the engine block and heater; a housing means in liquid-tight engagement with the inlet to said T-connection and including a water passage and a coolant passage, said passages being separated at their inlet ends and being in communication with the inlet of said T-connection; first valve means in said housing means for starting and discontinuing the flow of water through



said water passage into said heater-supply hose by way of said T-connection to thereby displace and remove the old coolant from the engine cooling system by way of said lower radiator hose, radiator and radiator-filler neck, and normally closed second valve means in said housing means adjustable to be actuated when old coolant has been removed from the engine cooling system and when the flow of water into the engine cooling system has been discontinued to thereby provide a flow of coolant through said coolant passage into said heater-supply hose by way of said T-connection; means to supply water under pressure to said water passage and means to supply coolant under pressure to said coolant passage.

3,188,007
HUMIDIFIER
Paul Myklebust, Baraboo, Wis., assignor to Hankscraft Company, Reedsburg, Wis., a corporation of Wisconsin
Filed Apr. 16, 1962, Ser. No. 187,695
8 Claims. (Cl. 239—315)



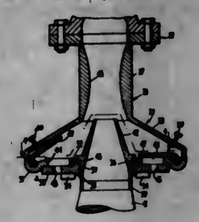
1. A portable humidifier comprising, in combination, a water reservoir; a cover therefor; an air outlet nozzle on said cover; humidifying apparatus mounted on said cover and including a motor, a motor housing defining with said cover a flow path therebetween communicating with said outlet nozzle, a water pump driven by said motor, a rotatable disc driven by said motor, said pump being arranged to supply water from said reservoir to said disc for spraying the water from the outer periphery of the disc when rotated and thereby humidifying air in the humidifier, and means for moving the humidified air through said flow path to said outlet nozzle; and a regulator tube mounted adjacent said outlet nozzle to extend into said flow path adjustably for external manual manipulation to vary the area of said flow path and thereby regulate the amount of humidified air discharged from the nozzle.

3,188,008
VARIABLE SPRAY CONTROL FOR AN AEROSOL DISPENSER
Edward H. Green, % Newman-Green Inc., 57 Interstate Road, Addison, Ill.
Filed Jan. 30, 1962, Ser. No. 169,841
14 Claims. (Cl. 239—337)



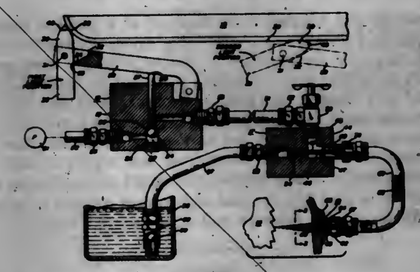
1. An aerosol dispenser generally cylindrical valve comprising, a valve member having an upwardly opening socket comprising an annular wall having an upper rim surface at the upper end of said wall, means resiliently urging said valve member upwardly to urge the rim surface into sealing engagement with the underside of an annular apertured sealing gasket, a spray head having a depending hollow tubular stem extending downwardly through said sealing gasket and into said socket, said spray head being rotatable relative to said valve member, an orifice opening formed through the wall of said tubular stem for communicating with interior portions of said socket, and means provided in interior portions of said socket wall proximate said upper rim surface for varying the size of said orifice opening upon rotation of said spray head relative to said valve member whereby to control the coarseness and fineness of the spray of pressurized product dispensed through the valve when opened by depressing the spray head.

3,188,009
VARIABLE SPRAY NOZZLE
John A. Miscovich, Flat, Alaska, assignor, by direct and mesne assignments, to John W. Stang Corporation, Bell, Calif., a corporation of California
Filed Apr. 26, 1962, Ser. No. 190,413
13 Claims. (Cl. 239—407)



1. A nozzle of the character described comprising a discharge barrel, a supply pipe for water under pressure and liquid foam mixture, means connected to said pipe introducing water under pressure and liquid foam mixture thereto, means defining a chamber in communication with and interposed between said barrel and supply pipe being at a distance many times its length from the outlet end of the barrel, a venturi in said chamber in coaxial communication with the flow path through said supply pipe and barrel, a forwardly converging section in said chamber disposed to direct flow coaxially through said venturi in the direction of said outlet end, means defining air supply ports to said chamber whereby air sucked through said ports into said chamber by venturi action is mixed with the discharge through the venturi in proportion to the volume and velocity thereof, and means operatively associated with the ports movable to close same or to open the ports for admission of air to the chamber.

3,188,010
LUBRICATOR HAVING VALVE, CONDUIT AND ATOMIZER JUNCTURE MEANS
Lee F. James, 915 W. 60th St., Hialeah, Fla.
Filed May 8, 1963, Ser. No. 278,840
5 Claims. (Cl. 239—412)

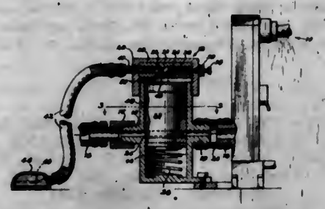


1. A lubricator for connection to a source of compressed air and a source of lubricant, said lubricator adapted to spray a lubricant on an area to be lubricated and comprising in combination, valve juncture means, conduit juncture means, and atomizer juncture means, said valve juncture means having an air valve and connection means for connecting said air valve to said source of compressed air, said air valve having valve ball means and valve seat means, said valve ball means freely movable away from said valve seat means by force of gravity to open said air valve and held against said valve seat means in opposition to the force of gravity by said compressed air to close said air valve, actuator means for positively moving said valve ball means away from said valve seat means in opposition to said compressed air to open said air valve, said conduit juncture means having an outer conduit wall and a tube mounted therein, said tube having an inside wall defining a lubricant conduit and having an outside wall defining with said outer conduit wall an air conduit, said lubricant conduit having connection means for connecting same to said lubricant source, said air conduit having connection means for connecting same to said air valve, said atomizer juncture means having lubricant orifice means connected to said lubricant conduit and having air orifice means connected to said air conduit, said lubricant orifice means and said air orifice means being located closely adjacent to each other to define an atomizer to spray lubricant on said area to be lubricated.

3,188,011
SPRINKLER INTERRUPTER DEVICE
Benjamin Terzullo, 163 Westchester Blvd., Tonawanda 17, N.Y.
Filed Feb. 10, 1964, Ser. No. 343,845
4 Claims. (Cl. 239—578)

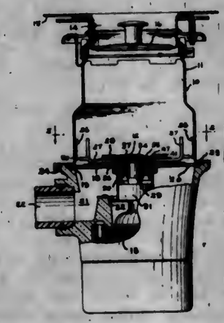
1. A water sprinkler control system comprising in combination, a sprinkler, a water supply conduit under pressure, a valve device receiving water from said supply

conduit and normally passing said water directly to the sprinkler, said valve device including a housing and a piston movable therein, said piston having a water passageway transversely therethrough in alignment with the valve inlet and outlet portions when in one position of said piston, a compression spring biasing said piston towards said position, and a valve control mechanism including a control conduit in open communication with a control pressure inlet port leading to the interior of said housing behind said piston and at its other end terminating in a



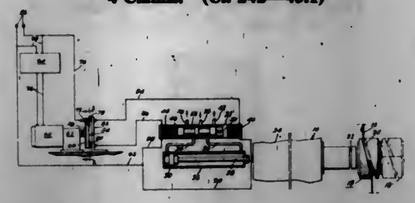
pressure pad adapted to be disposed at a position remote from said sprinkler, a check valve device disposed in said housing inlet port for control thereof, whereby when pressure is applied to said control pad fluid is displaced into said port thereby unseating said check valve and passing into the interior of said housing behind said piston thereby displacing the latter against said spring means and thereby cutting off the flow of water from said supply conduit to said sprinkler, and a bleeder port intercommunicating the interior of said housing and said control conduit to permit refilling of said pressure pad at a metered rate.

3,188,012
IMPELLER DESIGNS FOR FOOD WASTE DISPOSER
William M. Shive and Francis J. Clements, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Feb. 4, 1963, Ser. No. 255,782
8 Claims. (Cl. 241—188)



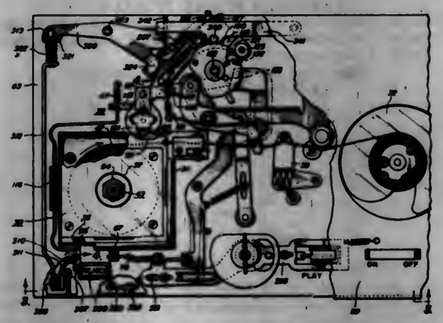
1. In a food waste disposer having a stationary hopper enclosing a comminuting chamber, a rotatable comminuting assembly including a circular flywheel and a waste impeller means mounted on the top surface of said flywheel, the flywheel having a vertical axis of rotation and forming a bottom wall of said comminuting chamber, a drainage chamber disposed beneath said flywheel for receiving water and comminuted waste material from said hopper and a series of vertical drainage openings arranged just outside the periphery of the flywheel; the invention comprising a waste impeller means in the form of a pair of oppositely disposed swinging impellers, each impeller being of thin metal flat sheet stock and having a pivoted end that turns about a substantially vertical axis and a distal end with a low silhouette that is adapted to extend beyond the periphery of the flywheel and overlie only a portion of the drainage openings as the flywheel turns, and a generally vertical cutting portion, the entire vertical cutting portion being stepped back toward the pivoted end from the distal end for cutting soft foods.

3,188,013
BUILDER CONTROL MECHANISM
Cory P. Geen, Philadelphia, Pa., assignor to Industrial Devices, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1963, Ser. No. 323,636
4 Claims. (Cl. 242—43.1)



1. A control mechanism for a fiber winder builder for the winding of taper ended fiber packages comprising a double-acting hydraulic cylinder connected with the builder operable for reciprocation thereof, valve means actuatable for alternately connecting each end of said cylinder with a source of hydraulic fluid under a constant pressure so that fluid will be directed to either end of the cylinder while being exhausted from the other end, solenoid means for actuating said valve, a rotary switch for periodically passing a current from a current source into said solenoid means for actuating said valve so as to alternately direct fluid to the ends of the cylinder, a motor for driving said rotary switch, and means for automatically gradually increasing the speed of said motor throughout the winding operation, thereby increasing the frequency of actuation of said valve and effecting a shortening of the builder stroke to form a level wound taper ended fiber package.

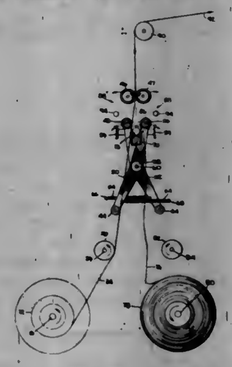
3,188,014
TAPE RECORDER
Leo F. Vergia, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,212
8 Claims. (Cl. 242—55.13)



1. Reeling apparatus for transcribing a plurality of flexible tapes, each respectively housed on separate supply reels, said apparatus comprising:
a bin having a major opening for accepting and storing said supply reels;

a supply-reel feeding mechanism for sequentially feeding one stored reel at a time from said bin;
a transport mechanism having a playing cycle for transcribing said tapes and having a rewind cycle for rewinding said tapes on their supply reels;
a program mechanism for controlling the operation of said transport mechanism and said feeding mechanism;
and a single manually actuated control member, effective during said playing cycle, for interrupting said playing cycle and initiating said rewind cycle and effective during rest intervals of said transport mechanism for directly actuating said supply-reel feeding mechanism.

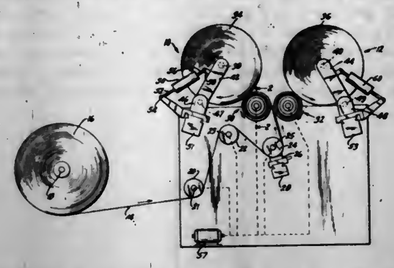
3,188,015
JOINING APPARATUS
Heinz Kuster, Kristianstad, Sweden, assignor to Heberlein Patent Corporation, New York, N.Y., a corporation of New York
Filed Nov. 21, 1962, Ser. No. 239,273
Claims priority, application Switzerland, Nov. 30, 1961, 13,937/61
14 Claims. (Cl. 242—58.3)



1. A splicing device for joining two webs of sheet material wherein one of said webs is normally running under tension comprising, a pair of guide members each adapted for engagement by one of the webs and for movement in response to tension in the web engaging it, a pair of pressing members for pressing said webs one against the other upon relaxation of said web tension, said pressing members each being adapted for engagement by one of said webs when under tension and movement thereby, linkage means interposed between said guide members and said pressing members, and each connecting one of said guide members to one of said pressing members and means urging said pressing members to pressing position upon relaxation of said web tension.

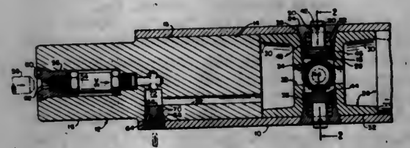
3,188,016
DIFFERENTIAL DRIVE TO SURFACE OF INDIVIDUAL REWIND ROLLS
Charles Aaron, West Caldwell, N.J., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York
Filed Jan. 14, 1963, Ser. No. 251,349
10 Claims. (Cl. 242—65)

1. In a rewind machine, a plurality of rewind shafts each adapted for the winding thereon of web material in the form of a rewind roll, a main drum having a plurality of drum sleeves rotatably mounted thereon, means for driving said drum at a preselected speed in excess of the web feed speed, a plurality of slip clutch means for said sleeves respectively and each clutch means having the driving side thereof in driving engagement with said drum and the driven side thereof drivingly



connected to its respective sleeve, and means mounting said drum in position for holding each sleeve in peripheral engagement with their respective rewind rolls.

3,188,017
WINDER SHAFT ASSEMBLY
Samuel T. Orton, Jr., Lunenburg, Mass., assignor to Orton Corporation, a corporation of Massachusetts
Filed Aug. 5, 1963, Ser. No. 299,748
15 Claims. (Cl. 242—72)

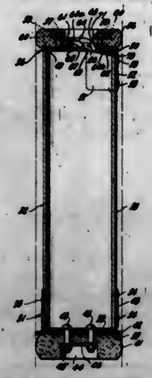


1. A winder shaft assembly for itnernally gripping and rotatably supporting a winding core, comprising a cylindrical tubular shaft, a plurality of strut means received in axially-spaced diametrically-extending relation internally of said shaft in supporting engagement with the walls thereof, said strut means forming internal cylinders extending transversely to the axis of said shaft said strut means being individually formed with bores communicating said cylinders in common through the interior of said tubular shaft, a plurality of locking pistons each slidably received in one of said cylinders to define, with said cylinders and said bores, a common expansible chamber interiorly of said tubular shaft, said locking pistons extending outwardly into lug portions, said shaft being formed with openings for projection of said lug portions outwardly of said shaft into engagement with a winding core received circumferentially about said shaft, and means for selectively admitting pressurized fluid to said expansible chamber for projecting said lug portions.

3,188,018
PNEUMATIC TUBE SYSTEM CARRIER
Wilbur M. Van Otteren, San Rafael, Calif., assignor to Automatic Tube Company, San Francisco, Calif., a corporation of California
Filed Apr. 22, 1963, Ser. No. 274,639
6 Claims. (Cl. 243—35)

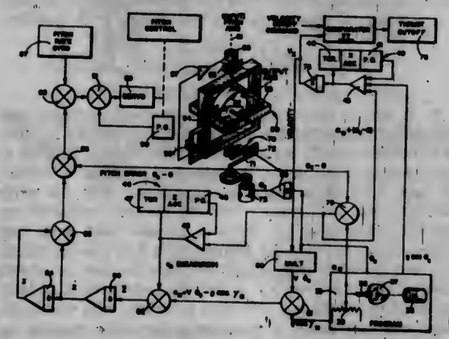
1. A carrier for use in a pneumatic tube system comprising a base member, a tubular body on the base member and extending therefrom, an elongated arm fixed at one end to the carrier adjacent the base and normally extending longitudinally of the base member at the outside thereof, a cover secured to the other, free end of the elongated arm and adapted to close the upper, free end of the tubular body member, said cover having an arcuate generally longitudinally extending flange which engages the exterior of the tubular body when the cover is in closed position, and a releasable catch secured to

the interior of the cover and adapted to engage the interior of the tubular body opposite said flange when



the cover is in closed position to lock the cover in closed position.

3,188,019
SIMPLIFIED INERTIAL GUIDANCE SYSTEM
Charles U. Boutin, Tucson, Ariz., assignor to North American Aviation, Inc.
Filed Dec. 16, 1960, Ser. No. 76,410
8 Claims. (Cl. 244—14)

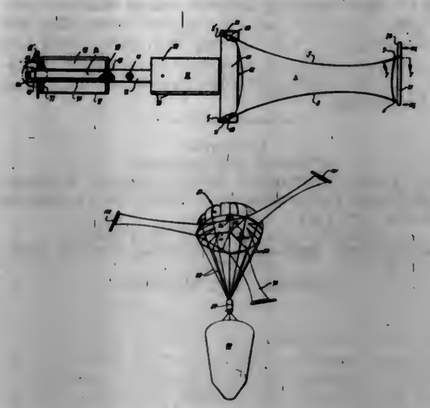


3. In combination with a vehicle adapted to be controlled along a curved path, longitudinal guidance apparatus comprising: means for generating a predicted signal representative of vehicle centripetal acceleration, said means including a programmer providing a programmed pitch rate signal, acceleration sensitive means for providing a vehicle velocity signal, and a multiplier responsive to said pitch rate and velocity signals; an acceleration sensitive device providing a measured signal representative of actual vehicle acceleration radially of said path; and means for deriving a vehicle control signal component in accordance with the difference between said predicted and measured signals.

3,188,020
ROTOR BLADE AND AIR VEHICLES EMBODYING SAME
Jack N. Nielsen, Los Altos Hills, and Jack A. Burnell, Mountain View, Calif., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,535
15 Claims. (Cl. 244—17.25)

5. A flexible blade rotor system comprising a body rotatable about an axis, a plurality of flexible rotor blades; each blade comprising a flexible membrane secured to flexible tension members at its leading and trailing edges, said leading and trailing edges being generally concave and having tensioning weight means adjacent said edges at the tip end of the blade whereby camber is imparted to the blade in operation; and means connecting the inboard end of each blade to said body including a pair of swivel members connected to the inboard ends of said tension members.

10. An auto-rotatable sustaining system for an object



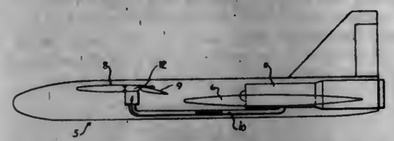
adapted to fall through the air and including a rotatable mass; comprising a plurality of flexible membrane type rotor blades which can be housed in a confined space; means connecting the inboard end of each blade to said rotatable mass; disconnectable housing means supported by said mass for storing the blades in inoperative position; and means connected to said disconnectable housing means operable to disconnect the same and allow the blades to project outwardly under the action of centrifugal force.

3,188,021
BOUNDARY LAYER CONTROL SYSTEM UTILIZING A COLLAPSIBLE DUCT POSITIONED IN A CONTROL SURFACE
Manley A. Young, Renton, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,771
8 Claims. (Cl. 244—42)



1. In an aircraft having a fuselage, wing members, tail section, and a plurality of control surfaces with a control system therefor; a boundary layer control system comprising: collapsible duct means substantially contained within at least one movable aircraft control surface, said control surface being constructed of a plurality of elements including at least two spanwise surface panel segments having at one end thereof, a common junction for pivotal movement about a spanwise axis and at their opposite ends being pivotally connected in spaced apart relationship for movement, with respect to one another upon actuation thereof such as to form a cavity therebetween upon deflection of said control surface thereby allowing said collapsible duct means contained within said cavity to have a varying cross sectional area, fluid supply means adapted to be connected with said collapsible duct means, nozzle means operatively connected with said collapsible duct means and being positioned at the forward edge and extending over the span of said control surface for discharging fluid from said collapsible duct means over said control surface, whereby the extent of movement of said control surface elements determines the cross sectional area of said collapsible duct means and the flow rate of fluid discharged from said nozzle means.

3,188,022
DELTA WING CANARD AIRCRAFT
Kjell Torsten Örnberg, Linkoping, Sweden, assignor to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden
Filed Dec. 5, 1963, Ser. No. 328,335
7 Claims. (Cl. 244—45)



1. A delta wing canard aircraft characterized by the following:

(A) a main wing having leading edges swept back at least about 55° and a thin profile, with a fineness ratio of not more than about 10% at every point, so that concentrated vortices tend to form over the upper surface of the wing, near its leading edges, which vortices induce high suction on the surface areas under them;

(B) a delta secondary wing which is of substantially smaller area than the main wing and which has similarly sharply swept back leading edges and a thin profile so that concentrated vortices tend to form over its upper surface, near its leading edges, which vortices induce high suction on the surface areas under them;

(C) the secondary wing being located

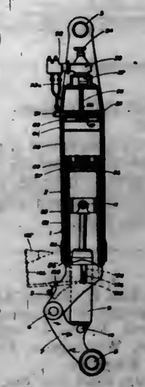
(1) above the level of the main wing and

(2) ahead of the main wing

(3) but sufficiently close to the main wing both longitudinally and vertically of the aircraft to achieve a coaction between said concentrated vortices such that the vortices of the main wing are capable of effectively preventing deflection of said vortices of the secondary wing relatively upwardly away from the upper surface of the same and such collapse thereof that their lifting effect is decreased, and whereby said vortices of said two wings are bound to one another at all angles of attack within the normal flight range so that rear control surfaces of the aircraft are prevented from being disturbed by the vortices.

3,188,023
WHEEL MOUNTINGS FOR AIRCRAFT UNDERCARRIAGES OR OTHER VEHICLES
George H. Dowty, Cheltenham, Clifford W. Tinson, St. Mark's, Cheltenham, Robert C. Eelas, Cheltenham, and Thomas Desmond Hudson Andrews, Leckhampton Hill, Cheltenham, England, assignors to Dowty Technical Developments Limited, Brockhampton Park, England
Filed Sept. 15, 1961, Ser. No. 138,379
Claims priority, application Great Britain, Sept. 17, 1960, 32,066/60; Oct. 1, 1960, 33,781/60; Dec. 24, 1960, 44,368/60
2 Claims. (Cl. 244—50)

1. A steerable undercarriage wheel mounting, including a hollow tubular outer strut having means at its upper end for attachment to an airframe of an aircraft, a hollow inner strut mounted for rotation within the outer strut, two vertically spaced journal bearings for said inner strut and carried by said outer strut, an axle mounting assembly connected to the lower end of said inner strut, a rotary vane-type fluid motor mounted within the outer strut, and having a casing part and a rotor part mounted for relative rotation on an axis coincident with the rotary axis of the



inner strut, clutch means for connecting one of said motor parts to one of said struts, and means for connecting the other motor part to the other strut, a resilient damping suspension device connected at its lower end to the axle mounting assembly, and connected at its upper end to a horizontal pivot pin rigidly secured to the inner strut, and a thrust bearing acting between said inner and outer struts to transfer the vertical thrust of said suspension device to said airframe.

3,188,024
AIRCRAFT STEERING AND PROPULSION UNIT
Albert Peter Schneider, 1339 S. 49th St., Milwaukee 14, Wis.
Filed May 6, 1963, Ser. No. 278,042
5 Claims. (Cl. 244—52)



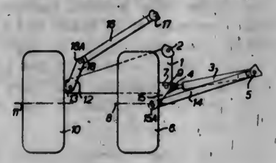
1. An aircraft, a pair of rocket engines pivotally mounted on said craft, means for pivoting said engines to selectively position said engines relative to said craft, said engines being arranged so that the exhaust from either of said engines can be directed to intersect the exhaust from the other of said engine to steer said craft.

3,188,025
MEANS FOR TAKE-OFF, CRUISE, AND LANDING OF SUBSONIC AND SUPERSONIC AIRCRAFT
James R. Meorehead, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Aug. 29, 1963, Ser. No. 305,266
6 Claims. (Cl. 244—55)



1. An aircraft comprising,
(a) a fuselage,
(b) wing means for said fuselage,
(c) an engine, and
(d) means for pivotal movement of said engine between a position completely above the plane of said wing means for take-offs and landings and a position completely below the plane of said wing means for greater than Mach 1 cruise flight.

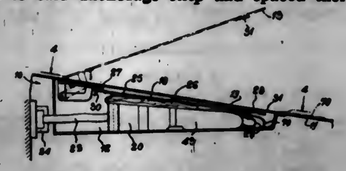
3,188,026
RETRACTABLE UNDERCARRIAGES
Jack Perdue, Great Sankey, Warrington, and Arthur Cecil Aitchison, Liverpool, England, assignors to Electro-Hydraulics Limited, Warrington, England, a corporation of the United Kingdom
Filed May 25, 1964, Ser. No. 369,878
Claims priority, application Great Britain, May 30, 1963, 21,758/63
9 Claims. (Cl. 244—102)



3. A retractable undercarriage for aircraft comprising a beam for pivotal connection to a fixed point on the aircraft for pivoting movement transverse the aircraft, means for raising and lowering the beam, means to lock the undercarriage in its raised and lowered positions, at least one inboard wheel, at least one outboard wheel, each said wheel being supported by a mounting member, said mounting members being pivotally mounted on the beam, the pivotal axes being substantially fore and aft with respect to the aircraft, at least one first link pivotally connected between the mounting member associated with an outboard wheel and a fixed point on the aircraft, at least one second link pivotally connected between an inboard wheel mounting member and the outboard wheel mounting member both wheels, when the aircraft is static on the ground, imparting a compressive load, to their respective links, the arrangement being such that on retraction the said first and second links act to rotate the associated mounting members so that the outboard wheel is stowed substantially in a vertical plane and the inboard wheel substantially in a horizontal plane.

3,188,027
PARACHUTE DEPLOYMENT BAG
Oscar W. Sepp, Jr., Merrick, N.Y., assignor to M. Steinthal & Co., Inc., New York, N.Y., a corporation of New York
Filed Oct. 26, 1962, Ser. No. 233,232
4 Claims. (Cl. 244—147)

1. A parachute deployment bag having face walls, side walls and a wall at one end, said walls conjointly defining a stowage compartment, and closure flap means for closing the other end of said bag, comprising a closure flap connected to one of said face walls and an anchorage strip connected to the other face wall, said closure flap being adapted to be folded across said compartment to said anchorage strip to close said compartment, loops secured to said anchorage strip and spaced therealong,



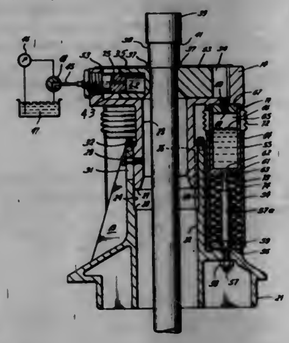
said closure flap having eyelets spaced therealong and matching said loops to permit said loops to pass through said eyelets respectively when said closure flap is folded to said anchorage strip, each of said loops being long enough to permit the next loop to pass therethrough for progressive releasable interlacing of the loops.

3,188,028
ADJUSTABLE HANGING BRACKET
Arthur Waller, Highland Park, Ill., assignor to Bull Dog Lock Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 20, 1962, Ser. No. 180,987
2 Claims. (Cl. 248—31)



1. A wall hanging bracket comprising an elongate strip, a rearwardly offset portion intermediate the ends of said strip, means in said rearwardly offset portion for attachment to the wall, clip members on the opposite ends of said strip having a forwardly extending horizontally disposed portion and an end portion extending vertically from the forward end of said horizontally disposed portion and in the direction away from the end of the strip and in spaced relationship thereto, each of said clip members being adjustably secured to the end of the strip for endwise movement in the direction toward and away from the end of the strip to increase and decrease respectively the spaced relationship between the clip members on the ends of the strip, and including a flanged portion extending rearwardly from said clips having a central opening dimensioned to enable the shank of a threaded bolt to extend therethrough, a rearwardly offset U-shaped portion on the corresponding end of the strip having interconnected upper and lower horizontally disposed walls spaced one from the other by an amount corresponding to the thickness of a nut member, a nut member disposed between said spaced upper and lower horizontally disposed walls, openings in the upper and lower walls aligned one with another and the threaded opening of the nut member and dimensioned to enable a threaded bolt to extend therethrough into threaded engagement with the nut member, and a threaded bolt having a head dimensioned to be larger than the opening in the flange and extending through the opening in the flange and the upper and lower walls into threaded engagement with the nut member whereby the clip member is displaced endwise in the direction toward and away from the end of the strip responsive to turning movement of the bolt.

3,188,029
MEANS FOR SUPPORTING A PIPE STRING IN A WELL WHILE ADDING TO AND REMOVING PIPE FROM THE STRING
Albert A. Ashton, Dallas, Tex., assignor to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio
Filed Nov. 15, 1961, Ser. No. 152,606
1 Claim. (Cl. 248—60)



Apparatus for drilling rigs comprising, a pedestal base having a central vertical passageway therethrough, a pedestal top having a central vertical passageway therethrough in register with the pedestal base passageway, said pedestal base and top split vertically into sections, means including splines securing said base and top together in telescoping relation, hinge means between said sections, latch means to fasten said hinged sections together in tubular form, a pair of rams carried by the pedestal top on opposite sides of said pedestal top passageway and having upwardly facing supporting surfaces, means for reciprocating said rams between retracted positions in which they permit free passage of pipe therebetween and extended positions in which they provide a support for the tool joints of drill pipe in said passageway to provide for suspension of drill pipe therein, resilient means urging the pedestal top upward and away from the pedestal base to a pipe-receiving position, shock absorbing means retarding downward movement of the pedestal top when a string of pipe is suspended therefrom, and cooperating stop means on the pedestal base and pedestal top limiting downward movement of the pedestal top.

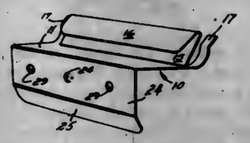
3,188,030
CLAMP OR HANGER FOR CABLES AND THE LIKE
Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Filed Dec. 11, 1962, Ser. No. 243,849
Claims priority, application Germany, Dec. 11, 1961, F 35,522
19 Claims. (Cl. 248—68)

1. A fixture for cables and similar elongated bodies, comprising a housing defining a body-receiving through opening, said housing having a first portion disposed at one side of said opening and a second portion disposed at the other side of said opening; and resilient means constituting an integral part of one of said portions and arranged to directly engage a body which is received in



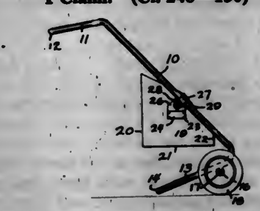
said opening for biasing such body against the other portion of said housing.

3,188,031
LITTER BAG HOLDER DEVICE
Robert F. Fournier, 24853 Tuscany, East Detroit, Macomb County, Mich.
Filed Apr. 11, 1963, Ser. No. 272,263
8 Claims. (Cl. 248—95)



1. A litter bag holder device for use on a food serving tray comprising a body portion with hook means for suspending a litter bag, a U-shaped end on the body portion, the U-shaped end opening at an obtuse angle toward the body portion so that the device can be snapped over the edge of a food service tray, the U-shaped end having a spring action by which it wedgingly engages the edge of the tray when the device is in place thereon, the body portion so constructed in relation to the U-shaped end that the former bears against the underside of the tray when the latter is wedgingly engaged over the edge thereof.

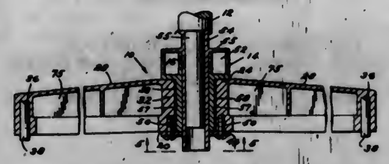
3,188,032
BATTERY CARRIER
Benjamin Nelson, Ida Grove, Iowa
Filed Apr. 15, 1963, Ser. No. 273,140
1 Claim. (Cl. 248—130)



A battery carrier comprising a framework, a pair of wheels journalled to said framework, said framework including laterally spaced support members, a carrier unit including side walls, a rear wall and a bottom wall, said carrier uint being freely pivoted with respect to said laterally spaced support members whereby said carrier unit will constantly remain in a horizontal position regardless of the position of said laterally spaced support members, said laterally spaced support members including vertical flange members attached thereto, said carrier unit including hanger elements attached to its side walls, bolts passing through said hanger elements and said flange members, said laterally spaced support members including integral handle portions angularly inclined with respect to said laterally spaced support members, and further

including further integral portions angularly inclined with respect to said laterally spaced support members, said angularly inclined portions being positioned at either ends of said framework, and being attached to the opposite ends of said laterally spaced support members, and extending outwardly therefrom in the same direction.

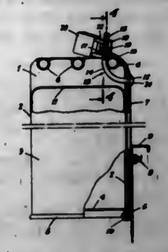
3,188,033
BASE OR PEDESTAL FOR CHAIRS, TABLES, STANDS AND THE LIKE
Eugene K. Groves, 131 Moran Road, Grosse Pointe Farms 36, Mich.
Filed Nov. 5, 1962, Ser. No. 235,195
1 Claim. (Cl. 248—188.7)



A base or pedestal for chairs, tables, stands and the like, comprising a vertically disposed cylindrical die cast hub having a central vertical bore therethrough and having angularly spaced, radially outwardly opening leg receiving grooves of dovetail cross-section extending upwardly from the lower end thereof, the upper ends of said grooves constituting leg seats, die cast legs projecting radially from said hub and having inner end portions of dovetail cross-section slidably fitting said grooves in said hub and insertable therein from the lower ends thereof, reinforcing bars cast in said legs to strengthen the same, the upper edges of said legs being in thrust engagement with said leg seats, said grooves and inner end portions of said legs tapering in an upward direction and being in full surface-to-surface engagement with each other, said hub having fastener receiving holes in the lower end thereof disposed between said grooves, said legs having fastener receiving holes in the lower edge of the inner end portions thereof, a tubular post receiving member fitted in said bore of said hub, said post receiving member having a collar adjacent its upper end supported on the upper end of said hub, and extending downwardly beneath the lower end of said hub, a disc-like leg securing member sleeved upon said post receiving member across the lower end of said hub in overlapping relation to the lower ends of said grooves and having holes therein aligned with said fastener receiving holes in said hub and legs, fasteners extending through said aligned holes to secure said leg securing member to said hub, said leg securing member having a marginal upturned annular flange extending along the radially outer surface of said hub, said legs having notches in the lower edges thereof receiving said anuular flange, said inner end portions of legs having vertically extending recesses therein cooperating with said grooves to define channels, and adhesive material in said channels bonding said inner end portions permanently to said grooves.

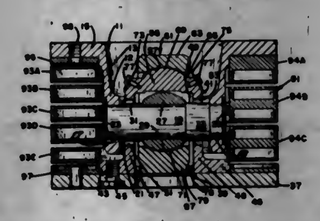
3,188,034
CAN CARRIER
Clyde E. Jackson, 1028 S. Shasta Ave., Stockton, Calif.
Filed Apr. 20, 1964, Ser. No. 361,034
6 Claims. (Cl. 248—303)

1. A carrier for a can having a horizontally extending handle spaced above the top adjacent and substantially parallel to one side of said can, and a depending bead at the lower edge of said side; the carrier comprising a rigid vertical strap adapted to be secured to a vehicle, an outwardly projecting lip across the strap at the bottom forming an upwardly opening groove for the reception of the can bead, and means provided with the strap at the top for detachable clamping engagement with said handle; said means including a curved portion on the upper end of the strap extending over and engaging said



handle, a member mounted at its lower end on the strap below the curved portion thereof and shaped to extend upwardly from its lower end in front of said handle, and means to releasably secure the member to said curved strap portion so as to clamp the handle between said member and said curved strap portion.

3,188,035
MECHANICAL TILT COUPLING
Cydwel A. Owen, Clinton, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,377
5 Claims. (Cl. 248—264)



1. A tilt coupling for attaching a device to a support to provide for universal tilting of the device with restraint to axial and torsional forces derived from the device comprised of:
upper attachment means having a circular flange for attachment to support means,
lower attachment means having a circular flange for connecting to a device from which axially-upward and torsion forces are derived,
said lower attachment means being vertically spaced from said upper attachment means and arranged so that said flanges are parallel to each other,
cylindrical lattice spring means extending between said flanges,
said upper attachment means having trunnion structure extending axially and downwardly within said cylindrical lattice spring means and providing a lower convex surface centered on the axis of said cylindrical lattice spring means and facing downwardly,
said lower attachment means having rocker structure extending upwardly within said trunnion structure and providing an upwardly-facing upper convex surface centered on the axis of said cylindrical lattice spring means,
rocker means providing an upper concave surface and a lower concave surface,
said upper concave surface of said rocker means facing said upper convex surface of said lower attachment means and having radius slightly larger than said upper convex surface to provide limited rolling on said upper convex surface,
said lower concave surface of said rocker means facing said lower convex surface of said upper attachment means and having a radius slightly larger than said lower convex surface to provide limited rolling on said lower convex surface,
said lattice spring and said convex and concave surfaces being so designed that a relatively small force is required for initial tilting of said lower attachment means when subject to an upwardly-directed force since such force causes rolling of said concave surfaces on the respective facing convex surfaces for further tilting and extension and compression of said lattice spring, and
said lattice spring providing restraint to torsional forces acting on said lower attachment means.

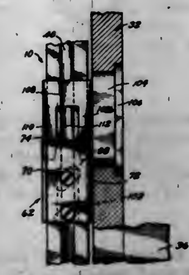
3,188,036
PAINT RECEPTACLE FOR USE WITH ARTIST'S PALETTES
Lon R. Sprung, 9226 Vista Del Mar, Playa Del Rey, Calif.
Filed Mar. 12, 1964, Ser. No. 351,361
3 Claims. (Cl. 248—205)



1. A paint receptacle comprising: an integral molded plastic structure defining a paint receiving cup, a cover, and a flexible intermediate strip integrally extending from a peripheral portion of said cup and integrally connecting to a peripheral portion of said cover whereby said cover may be swung over to cover said cup by flexing said intermediate strip into a U-shape, said intermediate strip including ears integrally extending laterally therefrom in opposite directions and thence extending parallel to each other in the direction of said cup to straddle either side of said cup when viewed in plan in such a manner that an edge of an artist's palette is receivable between the bottom surface of said receiving cup and the top end surface portions of said ears to be sandwiched thereby so that said paint receptacle is secured to said palette with the bottom surface of said cup in full engagement with a surface portion of said palette adjacent to said end to provide a firm base therefor.

3,188,037
CASING SUPPORT ASSEMBLY
Carl B. Hinrichs, Charlotte, Mich., assignor to Structural Products, Inc., Charlotte, Mich., a corporation of Michigan
Filed Apr. 18, 1963, Ser. No. 273,874
10 Claims. (Cl. 248—223)

3. A bracket and hook device assembly for mounting a casing to a structural support member comprising: a bracket adapted for mounting to said structural support member including a body portion, a first flange carried in lateral extension from one side of the body portion, and means for mounting said bracket to said structural support member, said means being carried on the other side of the body portion, whereby said body portion spaces said first flange from said structural support member, when mounted thereto, to thereby define a pair of opposite side channels with said structural support member and said flange, a hook device adapted for mounting to said casing and including an oblong body portion carrying on one side thereof means including a flange extending radially from the surface of the oblong body portion for mounting the device to a casing and carrying on the other side thereof a hook member extending from the surface of said other side of the hook device, said hook member including a first flange extending outwardly from said other side of the



body portion of said hook device and at a right angle to the longitudinal axis of the body portion, a depending flange carried adjacent the outer end of said first flange of said hook member and parallel to the longitudinal axis of said body portion of said hook device, said body portion of said hook device, said first flange and said depending flange defining a space therebetween having a side opening for mounting the hook device to said bracket, said body portion of said hook device and said depending flange being disposed in said opposite side channels of said bracket.

3,188,038
SUPPORT STRUCTURE
Russell Allen Grout, Norwood, Mass., assignor to Standard-Thomson Corporation, Waltham, Mass., a corporation of Delaware
Filed July 15, 1963, Ser. No. 294,982
11 Claims. (Cl. 248—223)



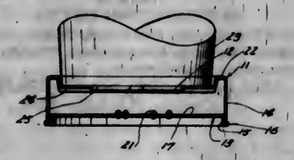
3. Support structure for securing a mirror or other device to a support element comprising:
a base having a cavity, there being a plurality of spaced-apart engagement portions within the cavity, one of the engagement portions being recessed and one of the engagement portions being inclined,
a bracket, the bracket being disposible within the cavity of the base, the bracket being provided with a plurality of abutment portions, there being an abutment portion engageable with each of the engagement portions of the base,
and means for securing the base to the bracket and to a support element, said means urging the inclined engagement portion of the base into engagement with one of the abutment portions of the bracket thus urging the recessed engagement portion of the base into engagement with another of the abutment portions of the bracket.

3,188,039
GARMENT HANGER SUSPENSION
Helgo Vilhelm Krohn, Olaf Bergersgade 9, Odense, Denmark
Filed Nov. 5, 1963, Ser. No. 321,604
Claims priority, application Denmark, Nov. 16, 1962, 4,930/62
6 Claims. (Cl. 248—317)



1. A garment hanger suspension essentially consisting of a unitary elongated member having two longitudinal end portions, one of said end portions constituting a shank adapted to be attached to a garment hanger, the other end portion being hook-shaped, the bight of said hook-shaped portion being open in a predetermined direction, and a portion of said member intermediate said end portions forming a helix having more than one turn about an axis extending in said predetermined direction.

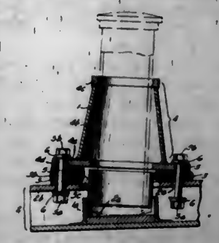
3,188,040
COASTER DEVICE
Edwin H. Eichler, 910 Lake Shore Drive, Chicago, Ill.
Filed Nov. 20, 1963, Ser. No. 324,985
2 Claims. (Cl. 248—346.1)



1. A coaster comprising a hollow member having a lower surface, an upper surface and an outer surface connecting said lower and upper surfaces, said lower surface being adapted to rest on a flat surface and said upper surface being substantially spaced from said lower surface, said upper and said lower surfaces forming closures for the space within said outer surface, a raised rim portion at the periphery of said upper surface and being an integral part of said upper surface and said outer surface, protuberances integral with said upper surface and extending upwardly therefrom for receiving a container thereon, a game device functioning interiorly of said member, and said upper surface and said outer surface being relatively transparent for permitting viewing of said game therethrough.

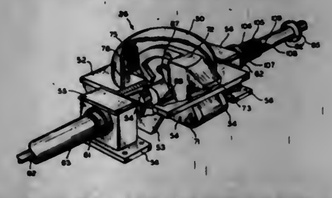
3,188,041
MINE ROOF SUPPORTS
Frank Town, Burton Joyce, England, assignor to W. E. & F. Dobson Limited
Filed Nov. 15, 1962, Ser. No. 237,869
Claims priority, application Great Britain, Nov. 21, 1961, 41,545/61
10 Claims. (Cl. 248—356)

1. A mine roof support having a base bearing for the lower end of a pit prop, a lower metal plate supported from the base bearing and extending around the prop, a rubber or the like buffer ring disposed on the lower metal plate and encircling the prop, a tubular member encircling the prop closely at its upper end and having at its lower



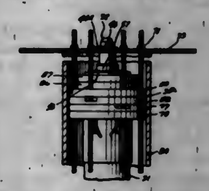
end an annular metal ring encircling the prop and disposed on the buffer ring, and means securing the buffer ring to the lower metal plate and to the annular metal ring.

3,188,042
APPARATUS FOR HANDLING FREIGHT CONTAINERS
Johnny T. Watters, Michigan City, Ind., assignor to Clark Equipment Company, a corporation of Michigan
Filed May 20, 1963, Ser. No. 281,582
19 Claims. (Cl. 248—361)



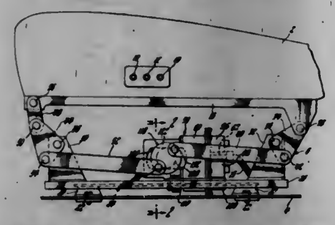
1. In an apparatus of the class described the combination of a structure having load supporting surface means, a dome assembly rotatably mounted on said structure comprising a dome member extending above and below said supporting surface means in different rotative positions of said dome assembly, an opening in said dome member, and a latch pivotally mounted on said dome assembly for movement of a portion thereof inwardly and outwardly of said opening.

3,188,043
BARBER CHAIR WITH ELECTRICAL OPERATION
John A. Dlouhy, Oak Park, and Charles L. Redfield, Downers Grove, Ill., assignors, by direct and mesne assignments, to Emil J. Paidar Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 30, 1961, Ser. No. 135,062
10 Claims. (Cl. 248—404)



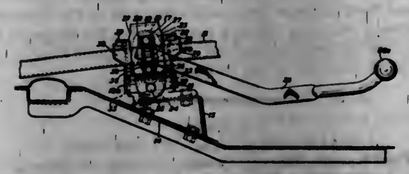
1. An elevatable and rotatable chair mechanism comprising a base for supporting a chair, an elevating and lowering mechanism on the base for supporting a frame for the chair accommodating rotation of the frame, means for providing an electrical circuit from the base of said rotatable and elevatable chair frame including first conductor elements having annular conductor surfaces and second conductor elements in engagement with the first elements, one of said elements being rotatable and the other being non-rotatable with respect to the base with said elements connected in said circuit and supported on said base to be at a fixed elevation, and vertical conductor rods slidingly connected to one of said elements and to said frame for raising and lowering with the chair.

3,188,044
VEHICLE SEAT ADJUSTER
Peter Conrad Epple, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,140
6 Claims. (Cl. 248—419)



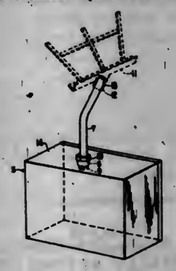
1. In a vehicle seat adjuster assembly, a seat, a movable support fixed to said seat, a reversible motor, a pair of spaced fixed supports, a rotatable wheel, linkages pivotally connected to said fixed supports, to said movable seat support and to said wheel, respectively, a gear unit including a power input shaft driven by said motor and a pair of power delivery shafts, a power input gear driven by said power input shaft, a power delivery gear on each of said power delivery shafts, respectively, in mesh with said power input gear and rotatable with respect to said power delivery shafts, respectively, selectively operable clutches for clutching said power delivery gears to said power delivery shafts, respectively, for rotating said power delivery shafts individually or together when said power input gear is rotated by said motor, and worms on said power delivery shafts, respectively, in mesh with said rotatable wheel for rotating said wheel in place when said power delivery shafts are rotated together and for rotating said wheel lineally on its perimeter when one of said power delivery shafts is rotated by itself, such movement of said wheel adjusting said seat by moving said linkages.

3,188,045
LOCKABLE ADJUSTMENT MEANS
Peter Maxwell Fowler, Dorridge, Solihull, and Louis Frank Charles Jay, Shirley, Solihull, England, assignors to Wilmot-Breeden Limited, Birmingham, England
Filed Aug. 27, 1962, Ser. No. 219,618
Claims priority, application Great Britain, Aug. 25, 1961, 30,651/61
14 Claims. (Cl. 248—429)



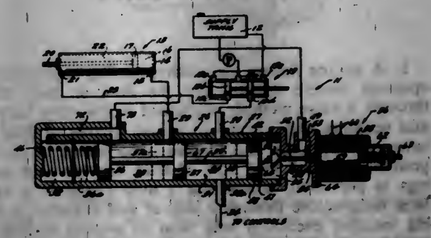
1. An assembly of a movable member and lockable adjustment means therefor; comprising said movable member, two apertured locking members which are urged in opposite directions to limit positions and through which said movable member passes, said locking members frictionally engaging the movable member with a locking action so that when in said limit positions they lock the movable member against movement in either direction, and manually operable adjusting means which can be operated to engage either one of the locking members to move it, and with it the movable member, in the corresponding direction away from the corresponding limit position and at the same time engage the other locking member to free it from locking engagement with the movable member, and resilient means which on release of the adjusting means return both locking members to said limit positions in locking engagement with the movable member without return movement of the latter.

3,188,046
ACCORDION CASE MUSIC STAND
Richard Cervenka, 1549 W. Sprague Road, Cleveland 41, Ohio
Filed Jan. 9, 1963, Ser. No. 250,399
2 Claims. (Cl. 248—441)



1. An accordion case music stand of the character described, comprising an accordion case having a flat surface which may be used as a base, a top opposite said flat surface, said case having an opening in the top thereof, a nipple secured in said opening, said nipple adapted to receive a hollow tube and means of locking the lower end within the said nipple, and a music rack provided with a centrally located socket on the underside thereof adapted to receive the uppermost end of the said hollow tube.

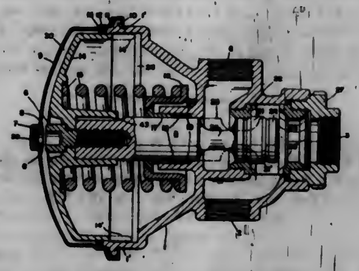
3,188,047
SOLENOID ACTUATED PILOT VALVE
Melvin E. Crisfield, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 2, 1962, Ser. No. 184,356
1 Claim. (Cl. 251—30)



A valve comprising,
a housing having an elongated cavity therein,
first and second pistons slidably positioned in said cavity dividing said elongated cavity into first, second, and third cavities,
a connecting member joining said first and second pistons,
a first spring normally biasing said pistons to a first position,

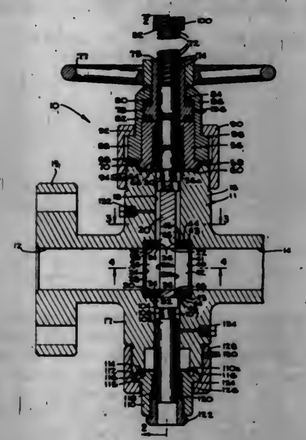
a fluid inlet in said housing opening into said first cavity between said pistons,
a first fluid outlet in said housing leading to said third cavity but positioned such that by movement of said pistons said outlet connects with said first cavity,
an orifice through said first piston allowing fluid flow between said first and second cavities,
a second fluid outlet in said housing leading from said second cavity having a fluid flow area larger than said orifice,
a control valve means in said second fluid outlet,
a second spring for maintaining said control valve means in a normally opened position,
said control valve means having a surface larger than said second fluid outlet and exposed to the fluid in said second cavity so as to be hydraulically assisted during closing, and
a solenoid to actuate said control valve means,
whereby pressured fluid entering said fluid inlet in said first cavity will pass through said orifice and flow out through said second fluid outlet until said solenoid starts to close said control valve means at which time said fluid pressure within said second cavity will assist in closing said control valve means and move said pistons from said first position to connect said first fluid outlet with said first cavity to allow fluid flow from said fluid inlet to said first fluid outlet and said first spring returns said pistons to said first position when said solenoid reopens said control valve means, thereby disconnecting said first fluid outlet from said first cavity.

3,188,048
VALVE HAVING RADIALLY CONTAINED PACKING WITH AXIALLY ACTING FOLLOWER
Eugene B. Sutherland, Akron, Ohio, assignor to Taylor Instrument Co. (Ohio) Inc., Akron, Ohio, a corporation of Ohio
Filed July 13, 1961, Ser. No. 123,845
8 Claims. (Cl. 251—62)



1. A sealing means for a valve having a plurality of openings therein adapted for the flow of fluid therethrough, a valve member positioned in the valve between said openings and adapted to permit passage of fluid between said openings and adapted to be moved to another position in which said flow of fluid between said openings is prevented, comprising a fluid chamber, a valve stem reciprocable through a wall of said chamber, a sealing member encircling said stem to prevent leakage of fluid from said chamber along said stem, a piston fixed to said stem at a point removed from said chamber wall, a follower gland adapted to press said sealing means into position between said stem and wall of said chamber, a spring plate adapted to exert pressure on said follower gland, a coil spring adapted to exert pressure between said piston and said spring plate, said sealing means comprising a series of rings of resilient material having truncated-triangular cross-sections, every other ring in said series being shaped with the base of said truncated-triangular cross-section facing toward said stem and the alternate rings in said series being shaped with the bases of said truncated-triangular cross-sections facing away from said stem.

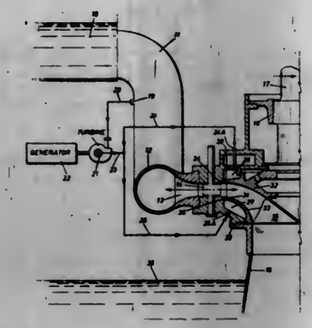
3,188,049
GATE VALVE
John P. Zawacki and John R. Yancey, Houston, Tex., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 3, 1962, Ser. No. 164,056
3 Claims. (Cl. 251—327)



3. A gate valve comprising a valve body having a flow passage and a lateral projection, said lateral projection containing a gate-receiving chamber which extends through the lateral projection and intersects the flow passage, said lateral projection having a sealing surface on the outer end thereof, a valve gate movable within said chamber, a threaded stem secured to said gate for moving the gate in said gate-receiving chamber, a stuffing box surrounding the stem for sealing thereagainst, said stuffing box having an external flange adjacent its lower end and a fixed annular shoulder at its upper end, a bonnet for said valve placed over said stuffing box, said bonnet having an internal annular shoulder adjacent its upper end, the lower end of said bonnet being in pressure engagement with the flange of said stuffing box, a threaded stem nut having an annular flange placed between the internal annular shoulder of said bonnet and the annular shoulder of said stuffing box, said nut being engaged with said stem and rotatable to move said gate, means engaging said bonnet and engaging the lateral projection for securing said stem nut to the stuffing box and clamping said lower end of said stuffing box in sealing engagement with the sealing surface of said lateral projection, the internal annular shoulder of said bonnet being spaced a predetermined fixed distance from said lower end of the bonnet to positively maintain running clearance for the flange of the stem nut between the internal shoulder of said bonnet and the fixed shoulder of the stuffing box.

3,188,050
SEALS FOR TURBO-MACHINERY
Paul Koeller, Dorval, Quebec, Canada, assignor to Dominion Engineering Works, Limited
Filed June 19, 1963, Ser. No. 289,042
7 Claims. (Cl. 253—26)

1. In a hydraulic system, a working fluid having a zone of relatively high total energy and a zone of relatively low total energy, a turbomachine located between said zones comprising a stationary housing, a shrouded rotor in communication with the working fluid and spaced from the stationary housing to form a pair of running clearances, means to prevent leakage of working fluid into at least one of said clearances comprising means for removing a portion of the working fluid from the higher



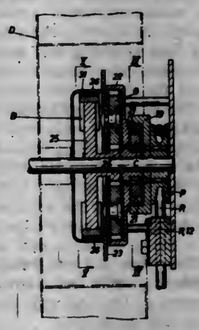
energy zone, means for converting some of the energy from said portion of working fluid into useful work, the amount of energy converted into useful work being substantially equal to the velocity energy of the working fluid at point of entry to said rotor, and means for returning said portion of working fluid to the hydraulic system at said clearance.

3,188,051
NOZZLE RING ASSEMBLY
Robert W. Kaulk, Milford, Mich., assignor to The Bendix Corporation, Oneida, N.Y., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,412
2 Claims. (Cl. 253—78)



1. A nozzle ring assembly for directing a gaseous medium at an angle to blades at the periphery of an axial-flow turbine wheel comprised of:
an inner ring having a circumferential surface,
an outer ring having a circular surface facing said circumferential surface,
said circumferential surface and said circular surface being radially spaced a predetermined distance to provide an axially-extending annulus,
a plurality of arcuate nozzle elements formed from sheet metal and arranged in a ring in said annulus and having a generally U-shaped cross section,
each of said arcuate nozzle elements having an arcuate transverse wall having a front radial edge and a rear part and first and second depending side walls,
each of said first side walls being arcuate to fit against the circular surface of said outer ring thereby providing the nozzle elements with radially-outer side walls,
each of said second side walls being arcuate to fit against the circumferential surface of said inner ring thereby providing the nozzle elements with radial-inner side walls,
each of said side walls including a rectangular section having rear part and side edge and a triangular section having inclined edge,
the inclined edge of each of said triangular sections merging to each of said front radial edge of said transverse wall,
said nozzle elements being attached to said inner ring and outer ring by connection at the radial-outer and radially-inner side walls,
said nozzle elements being arranged so that said inclined edges of said triangular sections and the radial edges of said transverse wall are in a common transverse plane to provide outlets,
said nozzle elements being further arranged so that the edges of said rectangular sections successively abut said transverse walls to provide an inlet and by overlapping an inclined gas passage, and
said rear edge part of said transverse wall being separated from its side walls and bent to give an outwardly flared end and said radially-inner wall having the rear part of the rectangular section bent to be flared outwardly to provide a partially-flared inlet giving improved inlet flow.

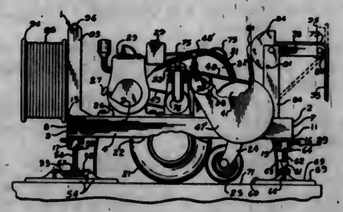
3,188,052
LOWERING APPARATUS
Robert Longworth, Blackpool, England, assignor to Safety Automatic Fire Escapes, Limited, Blackpool, England
Filed Jan. 7, 1963, Ser. No. 249,923
Claims priority, application Great Britain, Jan. 10, 1962, 904/62
3 Claims. (Cl. 254—157)



1. In a lifting and lowering apparatus, a rotatably mounted drum, a rope having one end attached to the drum and another end free of the drum and being wound at least partially on said drum, spring means for urging the drum to rotate in the direction causing winding of the rope thereon, load supporting means at the free end of the rope, a pulley engaged by the rope between its free end and the drum, a centrifugal brake, and a free wheel clutch mounted on said brake and said clutch including spring-loaded balls for interconnecting said pulley and said brake whereby the rope is subjected to brake action on unwinding from the drum to effect controlled lowering of

a load carried by said load supporting means and is adapted to return freely for rewinding on the drum by said spring means on removal of said load.

3,188,053
PORTABLE ANCHORED WINCH
Glover C. Ensley, 525 N. Woodland Drive, Kansas City North, Mo.
Filed Oct. 30, 1961, Ser. No. 149,820
1 Claim. (Cl. 254—190)



Cable pulling apparatus comprising, a mobile frame bed, a capstan rotatably mounted on said bed, an upstanding frame on said bed, an axle mounted on said upstanding frame and extending therefrom with the axis thereof spaced from and parallel to the capstan axis of rotation, said upstanding frame having a face in a plane normal to the axle axis, an elongate guide arm having an outer end and an inner end, a grooved wheel rotatably mounted adjacent each end of said guide arm with the axes thereof parallel and the grooves of both in coplanar relationship, said arm having an axle bore adjacent said inner end and extending therethrough parallel to the wheel axes and slidingly and rotatably receiving said axle and mounting the arm thereon, said arm having an enlarged portion at said inner end, a plurality of locking pins projecting from one of said enlarged arm portions and the upstanding frame and a lock bore in the other all equally radially spaced from said axle axis with said pins being selectively registrable with and movable into the bore at selected rotational positions of said arm in response to turning of the arm and sliding same toward said upstanding frame to a position in which the wheel groove plane extends transversely through the capstan, the engagement of said locking pins and bore retaining said arm in the selected position, means removably engaged with said axle and said arm to retain the arm against axial movement and disengagement of the selected locking pin and bore, motive means on said bed operatively connected with said capstan to rotate same, and a cable pulling line adapted to be connected to a cable to be pulled and extending therefrom partially around the wheel at said arm outer end and then over the other wheel to the capstan whereby wrapping said line and tightening same on said capstan while said capstan is rotating exerts a pull on said line, the direction of the line from said arm being substantially in the plane of the wheel grooves and determined by the position and engagement of the line with the grooved wheel at the outer end of said guide arm.

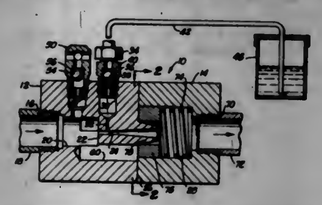
3,188,054
TUBULAR VIBRATOR
Wylie A. Mason, Jr., Thousand Oaks, Calif., assignor to Viber Company, Burbank, Calif., a corporation of California
Filed July 12, 1963, Ser. No. 294,654
7 Claims. (Cl. 259—1)

4. A vibrator head for a vibratory tool for compacting unset concrete comprising an elongated housing having a cylindrical bore and having means at one end for attachment to a drive shaft casing, and having closure means at the other end; an elongated cylindrical rotor within said housing concentric with and spaced apart from said cylindrical bore of said housing, said rotor being internally eccentrically weighted; means to operatively connect said rotor to a drive shaft for rotating it within



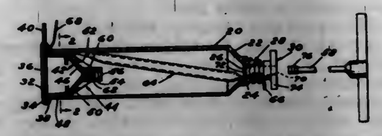
said housing, a plurality of sleeve bearings for said rotor spaced longitudinally along said housing; and lubricating means associated with said rotor for circulating oil under pressure to said sleeve bearings.

3,188,055
MIXING DEVICE
Robert D. Lutjens, Edward E. Jacobs, and John B. Marshall, Hacienda Heights, Calif., assignors to R. D. Lutjens & Co., Hacienda Heights, Calif.
Filed Oct. 11, 1963, Ser. No. 315,580
5 Claims. (Cl. 259—4)



1. A mixing device, said mixing device having a body, said body having a water inlet, a fluid inlet and an outlet;
a venturi positioned within said body, said venturi having a convergent end and a divergent end with a throat therebetween, said venturi throat being connected to said fluid inlet in said body, said convergent end being arranged in communication with said water inlet and said divergent end being in communication with said outlet from said body;
a substantially constant pressure drop valve in said body connected in parallel to said venturi so that the pressure drop across said venturi from said convergent end to said divergent end is substantially independent of water flow through said device, said substantially constant pressure drop valve having a valve disc in association with a valve seat, said valve disc being spring urged toward said seat in a direction to close communication therethrough, said valve disc being urged in the direction against said spring urge by water under pressure in communication with said convergent end of said venturi and said disc being urged against said seat by water under pressure in communication with said divergent end of said venturi.

3,188,056
CARTRIDGE TYPE PLURAL COMPONENT MIXING AND DISPENSING DEVICE
Donald E. Trumbull and Carl B. Penn, Birmingham, Mich., assignors to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan
Filed May 4, 1964, Ser. No. 365,568
19 Claims. (Cl. 259—37)



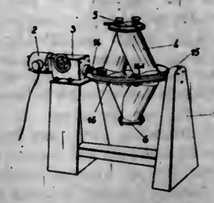
1. Apparatus of the character described, comprising, in combination: a cylindrical plastic cartridge containing a predetermined quantity of one flowable component material to be mixed, said cartridge having an open rear end and a front end defining a spout-like opening through which mixture may be dispensed; removable plug means normally blocking said spout opening against the escape of component material therethrough; a plunger member disposed in the cartridge adjacent the rear end thereof closely fitting the interior wall surface of the cartridge and shiftable toward the front end of the cartridge to dispense mixture therefrom; a mixing dasher disposed in the cartridge intermediate said plunger and said cartridge spout for reciprocal and rotational movement therebetween, said dasher defining a plurality of mixing blades having end portions contacting the interior wall surface of the cartridge for wiping contact thereagainst; a readily deformable closed envelope containing a predetermined quantity of a second component material disposed extending longitudinally within said cartridge; means for opening the envelope to dispense said second component material into said one component material within the cartridge; and actuating means releasably couplable to said mixing dasher for simultaneously rotating and reciprocating the dasher within the cartridge to mix said component materials together to provide a homogeneous mixture.

3,188,057
APPARATUS FOR MIXING AND DISPENSING MULTI-COMPONENT MATERIALS
Donald E. Trumbull, Birmingham, Mich., assignor to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan
Filed Mar. 12, 1962, Ser. No. 178,821
7 Claims. (Cl. 259—37)



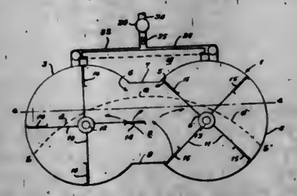
1. In apparatus of the character described, a hollow cartridge having opposite open ends and provided with a movable wall portion normally disposed at one of said ends and axially resistingly shiftable toward the opposite end of the cartridge to force material therein out of such opposite end, dasher means disposed within the cartridge in coaxial alignment with said wall portion, said dasher means positioned normally in juxtaposition with the wall portion and being rotatable and longitudinally shiftable within said container toward and away from said wall portion to mix material contained within the container, and means normally releasably coupling said dasher and said wall portion together to retain said dasher in coaxial alignment with said wall portion within the cartridge.

3,188,058
MIXING APPARATUS
Herbert Gwosnep Locke, Selb, Bavaria, Germany, assignor to Gebruder Netzsch Maschinenfabrik, Selb, Bavaria, Germany, a firm
Filed Nov. 13, 1961, Ser. No. 151,995
Claims priority, application Germany, Nov. 18, 1960, N 19,210
6 Claims. (Cl. 259—89)



1. Rotary mixing apparatus comprising a tube assembly including four lengths of tube joined together in the shape of a parallelogram providing a continuous and unobstructed passage around said lengths of tube, and means mounting said assembly for rotation on an axis passing through the center of said assembly.

3,188,059
CONCRETE MIXER
William A. Strong, 2906 W. 26th St., Pine Bluff, Ark.
Filed Feb. 21, 1963, Ser. No. 260,130
6 Claims. (Cl. 259—179)



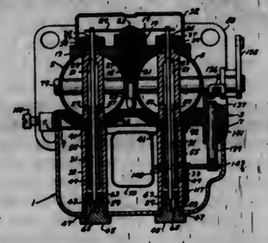
1. In a concrete mixer for producing a wet mix concrete the improvement comprising,
(1) a pair of round horizontal pump casings with openings along adjacent sides and interconnected at said openings one with the other to form a mixer casing.
(2) a charge receiving opening for said mixer casing,
(3) a pump impeller in each casing having a plurality of blades carrying rubber wipers for contact with the inside of each round pump casing, said blades being spiral lengthwise of the impeller and foraminous,
(4) means to drive said pump impellers in opposite directions,
(5) a discharge opening in said mixer casing,
(6) means to open and close said discharge.

3,188,060
CARBURETOR
Ralph E. Kalert, Jr., Granite City, Ill., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 9, 1962, Ser. No. 186,083
10 Claims. (Cl. 261—23)

1. A carburetor comprising a fuel bowl, a cover for the bowl, two tubes each constituting a mixture conduit located in side-by-side relation on top of the cover, a saddle extending across the tubes, means for fastening the saddle on the tubes and for fastening the tubes on top of the cover and providing a portion of restricted cross-sectional area in each tube comprising two tubular fastener

elements, each extending downward through the saddle, across a respective tube, through the cover and down into the bowl, each fastener element having a metering jet therein adjacent its lower end in the bowl for flow of fuel through said jet to the respective tube, said saddle being formed to provide a vertical vacuum cylinder between the tubes, said cylinder having a vacuum port at its lower end, means forming an air passage having one end connected to said vacuum port and the other end thereof positioned for connection to said engine for varying the pressure of air within said cylinder in accordance with engine operation, a piston slidable in said vacuum cylinder and extending out of the top of said vacuum cylinder, means biasing said cylinder in upward direction, a metering rod carrier on the upper end of the piston, and metering rods extending downward from said carrier through said fastener elements and metering jets.

10. A carburetor for an internal combustion engine and comprising a tubular member forming an air and fuel mixture conduit and adapted to be fixed at one end to said engine during engine operation, a molded plastic cover body fixed to one side of said tubular member, a removable fuel bowl fixed to said cover body, a choke



valve movably mounted in said tubular member, a throttle valve movably mounted in said tubular member between said choke valve and said one end thereof, means forming a fuel passage from said fuel bowl to said tubular member, said fuel passage having an opening into said tubular member between said choke and throttle valves for the passage of fuel from said fuel bowl to said tubular member, said fuel passage means including a tubular element extending across said tubular member to form a venturi restriction between said choke and throttle valves, a tubular boss depending from and formed integral with said cover body and extending into said fuel bowl, a hollow cylinder telescoped over said boss for movement relative thereto, a coil spring within said boss and hollow cylinder biasing said hollow cylinder away from said boss, an inlet opening into lower end of said cylinder, an inlet check valve in said inlet cylinder opening, an outlet passage in the upper end of said boss, an outlet check valve in said outlet passage, operative means connected to said cylinder to move said cylinder over said boss against the bias of said coil spring, and a fuel passage through said plastic cover body connecting said outlet passage and said tubular member.

3,188,061

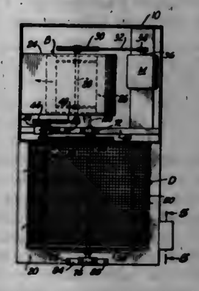
EVAPORATIVE COOLER

Ivan M. Alguire, Riverside, Calif.; Alma P. Alguire and Jackton I. Alguire, executors of said Ivan M. Alguire, deceased

Filed Nov. 27, 1961, Ser. No. 154,967
2 Claims. (Cl. 261—24)

1. In an evaporative cooler comprising a cooling filter drum, a pan adaptable for containing water, means for rotatably supporting said drum in position over said pan whereby the lower portion of the drum dips into water in the pan during operation of the cooler, a blower so positioned as to suck air from the outer surroundings through the walls of the filter drum during operation of the cooler and blow it in the desired direction, and the necessary means for supporting, supplying energy to, and otherwise contributing to the successful operation of the cooler, the improvement comprising:

(a) a shaft fixedly secured longitudinally and axially of said cooling drum whereby rotation of the shaft causes rotation of the drum;
(b) bearing support means for said shaft;
(c) support structure for said bearing support means adapted to maintain the shaft and drum in proper operating position in service; and
(d) means capable of maintaining said bearing support means on said support structure therefor during operational use of the cooler without the aid of fastening devices to prevent movement whereby the drum and shaft assembly can be readily mounted on and demounted from said support structure for said bearing support means by lifting means alone;
(e) in combination with automatic means for maintaining water in said pan at the proper level and



degree of purity during operation of the cooler, said automatic means comprising;
(f) a first line suitable for draining water from said pan connected thereto;
(g) a dump valve in said first line;
(h) a second line connecting said pan to a source of water supply;
(i) a replenishing valve in said second line;
(j) float-actuated means, controlled by the water level in said pan through the rise and fall of a float member in communication with the water in the pan during operation of the cooler, for opening said dump valve and draining a predetermined quantity of water from the pan after a predetermined quantity of water has evaporated therefrom;
(k) float-actuated means for opening the replenishing valve and closing the dump valve after the aforesaid predetermined quantity of water has been drained from the pan whereby water is fed into said pan; and
(l) means for closing said replenishing valve when an amount of water substantially equivalent to that evaporated and drained from the pan has been supplied thereto.

3,188,062

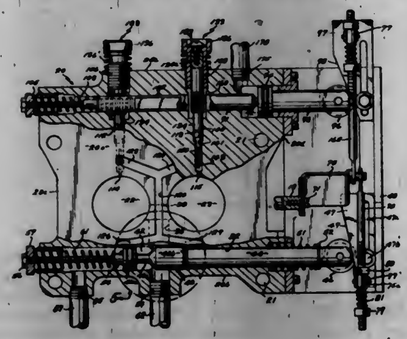
CARBURETOR

James S. Reid, Hudson, and Henry W. Brock, Willoughby, Ohio, assignors to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio

Filed May 29, 1962, Ser. No. 198,644
3 Claims. (Cl. 261—41)

1. In a carburetor assembly having a body provided with a carbureting barrel for connection to the intake of an internal combustion engine and to which are directed primary sources of fuel and air for carburetion and

throttle controlling primary valve means in said barrel actuatable between idle and accelerating positions for regulating the flow of carbureted fuel to said engine intake, a housing disposed between said carburetor body and engine intake, means in said housing defining a carbureting chamber in communication with said barrel, means for supplying secondary sources of fuel and air to said chamber, secondary valve means movably disposed in said housing between said secondary sources of fuel and air and said chamber, means connecting said secondary valve means to said primary valve means including link means connected to said primary valve means, rack means slidably supported in said housing, pinion means on said secondary valve means in meshing engagement



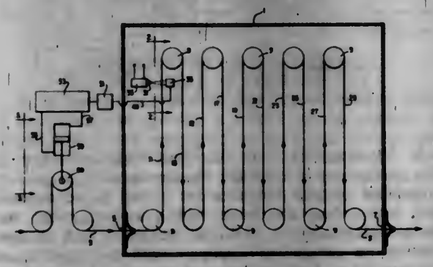
with said rack means, cam means connected to said link means and in engagement with said rack means and responsive to the movement of said primary valve means to its idle position to actuate said secondary valve means and direct a predetermined additional quantity of fuel and air into said chamber, cylinder means in said housing, piston means disposed in said cylinder means and in engagement with said rack means, and conduit means connecting with said cylinder means and the intake of said engine, said piston means being responsive to a change in the vacuum conditions in said engine intake as the engine is decelerating toward its idle speed to actuate said secondary valve means and variably regulate the quantity of fuel and air directed to said chamber.

3,188,063

METHOD AND APPARATUS FOR CONTROLLING THE POSITION OF STRIP MATERIAL IN FURNACES

Andrew L. Costakis, Highland, Ind., assignor to National Steel Corporation, a corporation of Delaware

Filed July 18, 1963, Ser. No. 295,945
12 Claims. (Cl. 263—3)



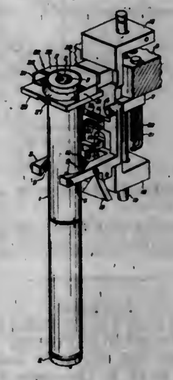
1. In a method of heating strip material passing continuously through an entirely enclosed furnace, the steps comprising detecting lateral misalignment of strip material solely within the furnace, and altering the lateral position of the strip prior to entry of the strip into the furnace in a direction to correct the lateral misalignment of the strip solely within the furnace, regardless of whether the strip outside the furnace is aligned or not.

3,188,064

LAMP BASING OVEN

Joseph J. Plescia, Euclid, Ohio, assignor to General Electric Company, a corporation of New York

Filed July 12, 1961, Ser. No. 123,561
2 Claims. (Cl. 263—4)



1. A basing oven for baking the cement in a cylindrical base attached to the end of a glass envelope comprising a holder plate, an inverted cylindrical cup portion upstanding from a surface of said holder plate and being of a diameter to snugly receive said base over its full circumference, a baffle member on the said surface of said holder plate comprising generally U-shaped side walls spaced from said cup portion and extending along opposite sides and completely around the back of said cup portion while leaving the front of said cup portion exposed and including a cover portion at the back and sides of said cup portion, said cover portion extending between the upper edges of said side walls and said cup portion and being provided with a restricted vent opening, and burner means arranged at the front of said oven to direct respective hot gas jets against the exposed front of said cup portion at either side of the center thereof and into the passages between said cup portion and the legs of said U-shaped walls of the baffle member.

3,188,065

SMELTING-FURNACE, PARTICULARLY FOR THE PRODUCTION OF STEEL

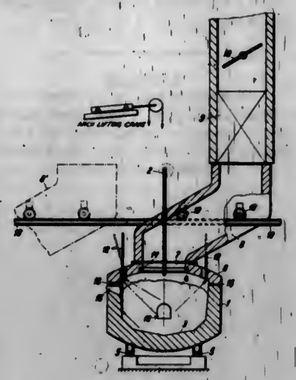
Fritz Justus Hofmann and Walter Hess, Essen-Bredeney, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung, Essen, Germany, a corporation of Germany

Filed Mar. 12, 1963, Ser. No. 264,635
Claims priority, application Germany, Mar. 15, 1962, B 66,360
11 Claims. (Cl. 263—33)

1. A smelting furnace for the production of steel from scrap iron and carburization material adapted for heating with gaseous liquid or pulverized fuel with oxygen or oxygen enriched air comprising:

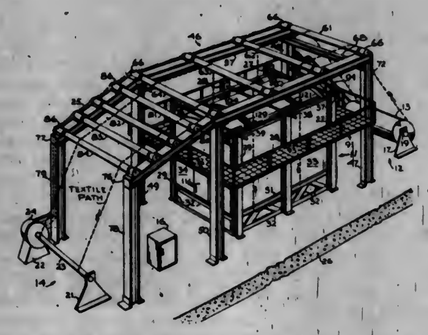
a furnace body having a width greater than its height,
a plurality of burners extending into said furnace,

the furnace including an arch having an opening for the exhaust of the waste gases,
a flue disposed on top of said arch,
means for removing said flue from its normal operative



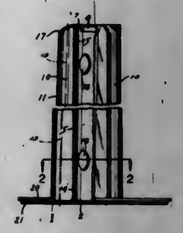
position above said opening to a lateral inoperative position, and
means for lifting said arch from the top of said furnace in order to permit the charge of the latter.

3,188,066
APPARATUS FOR HEAT TREATMENT OF VITREOUS FIBERS
Robert C. Nordberg and Hector R. Barrios, La Mirada, Calif., assignors to H. I. Thompson Fiber Glass Company, Los Angeles, Calif.
Filed June 20, 1960, Ser. No. 37,493
2 Claims. (Cl. 263—36)



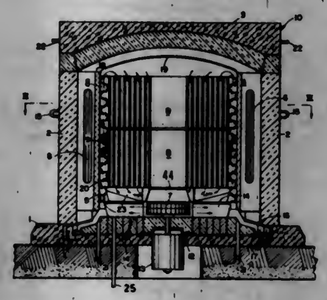
1. In a furnace for heat treating fibrous glass material having a high silica content and being wound in textile form on a supply reel, the combination comprising structure providing a first and a second chamber lined with firebricks with a vertically disposed common wall of firebricks therebetween, said structure having upper and lower slots disposed parallel to said common wall and centrally communicating with each of said first and second chambers, a plurality of heating elements disposed in said first chamber for providing an evenly distributed temperature, a plurality of heating elements disposed in said second chamber for providing an evenly distributed temperature substantially higher than the temperature in the first chamber, support and guidance means having a plurality of parallel rollers mounted about the structure between said supply reel and a takeup reel, said support and guidance means including a frame having two parallel beams mounted transverse to said slots and supporting said rollers therebetween over said structure, and means coupled to said support and guidance means for movement of fibrous glass material in textile form at a constant rate from the supply reel along a path including said rollers and extending between the upper and lower slots of said first chamber and between the lower and upper slots of said second chamber to said takeup reel.

3,188,067
WIRE ANNEALING SPIDER
James L. Whitten, Lakewood, Ohio, assignor to The Alloy Engineering Company
Filed Jan. 2, 1964, Ser. No. 335,104
10 Claims. (Cl. 266—2)



1. A spider for holding coils of wire during annealing comprising a base plate, an open-ended tube attached at one end to said plate, a plurality of elongated somewhat U-shaped staves, each stave having lower edges attached to said plate and longitudinal side edges attached to the outer surface of said tube, the attached longitudinal side edges of one stave being circumferentially spaced from the adjacent attached side edges of the adjacent staves so that each stave is independent of the other staves, and a disc-like fitting attached to the other end of said tube.

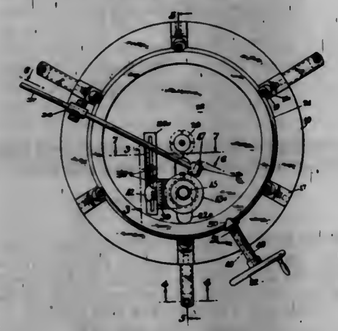
3,188,068
APPARATUS FOR HEAT-TREATING METALS
Theodor Schmidt, Essen, Germany, assignor to Indugas, Gesellschaft für Industrielle Gasverwendung m.b.H., Essen, Germany, a corporation of Germany
Filed Nov. 5, 1962, Ser. No. 235,191
Claims priority, application Germany, Nov. 9, 1961, J 20,801
4 Claims. (Cl. 266—5)



1. An annealing oven for sheet-metal coils and the like, comprising a hood-like housing forming a generally cylindrical furnace chamber for a coil to be annealed and surrounding the latter within said chamber with peripheral clearance; partition means in said chamber forming an annular compartment with said housing and confronting said coil within said chamber; burner means within said compartment for heating said partition means; circulating means for passing a protective gas through said clearance and around said coil in said chamber in

heat-exchanging relationship with said wall; and a corrugated mesh of thermally conductive wire disposed within said clearance with the corrugations thereof extending transversely to the direction of flow of said gas whereby the openings in said mesh promote turbulence in said gas, said mesh being interposed between said annular partition means and said coil for preventing excessive irradiation of the latter by said partition means.

3,188,069
FLAME CUTTING AND BEVELING MACHINE
Joseph F. Chiamparino, 1260 Athens St., San Francisco, Calif.
Filed Dec. 19, 1961, Ser. No. 160,564
4 Claims. (Cl. 266—23)



1. A flame cutting machine comprising a substantially circular frame adapted to be supported above a flat workpiece, a circular carrier mounted for rotary movement on the frame, the carrier having a radially disposed slot therein, rotatable drive means mounted on the frame and arranged in driving relationship with the carrier, a bracket secured to the carrier and aranged alongside the slot, an upstanding tubular member secured to the bracket and arranged for pivotal adjustment about a substantially horizontal axis and also arranged with its opening in vertical alignment with the slot, a tubular bushing rotatably mounted in and supported by the tubular member, a burning torch supported in the bushing, the said torch extending through the slot and positioned to direct a flame against the workpiece, a substantialy vertical post rotatably mounted on the frame, a sleeve mounted on the rotatable post and arranged for pivotal movement about a substantially horizontal axis, and a rod slidably supported in the sleeve, the rod being pivotally connected to the bushing.

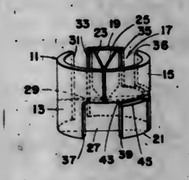
3,188,070
ADJUSTABLE AIR CONTROL FOR TUYERES
Robert S. Lee, Warsaw, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 7, 1963, Ser. No. 249,713
5 Claims. (Cl. 266—41)

4. A tuyere, comprising, a first tubular member having a fluid discharge opening; a second tubular member disposed within and supported by said first tubular member for relative longitudinal and rotational movements, said second tubular member having an open end longitudinally spaced from said discharge opening; an air duct communicating with said second tubular member; a flexible sleeve extending longitudinally between and having respective opposite ends rigidly connected to said second tubular member adjacent said open end thereof and said first tubular member adjacent said discharge opening thereof for providing fluid communication between said second tubular member and said fluid discharge opening; and means connected to said second tubular member for rotating the same to thereby twist said sleeve and vary the diameter of the minimum open-



ing therethrough to control the air flowing from said open end of said second tubular member to said fluid discharge opening of said first tubular member through said sleeve.

3,188,071
FLEXURAL PIVOT
Cydwel A. Owen, Clinton, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,985
5 Claims. (Cl. 267—1)



1. A flexural pivot comprised of:
an arcuate rotatable member,
an arcuate support member positioned opposite said rotatable member,
a first pair of flat springs extending between and connected to said members and being in facing relation,
a second pair of flat springs extending between and connected to said members and being in facing relation,
said pairs of said springs having the same flexibility and free length and being in crossed relation to provide an axis of rotation,
said members being constructed to provide rotational travel gaps, the springs of each said pair being essentially parallel for about half of their length and then gradually diverging from each other so that said springs contact at the centers thereof closely adjacent said axis of rotation upon rotation of said rotatable member relative to said support member, whereby center shift of the pivot is minimized.

3,188,072
SPRING OR DAMPING DEVICE
Ernst Wüstenhagen, Koblenz, and Wilfried Ferdinand Roos, Gals (Mosel), Germany, assignors to Stabilus Industrie- und Handelsgesellschaft m.b.H., Koblenz-Neuendorf, Germany
Filed June 17, 1963, Ser. No. 288,230
Claims priority, application Germany, June 19, 1962, St 19,378
6 Claims. (Cl. 267—65)

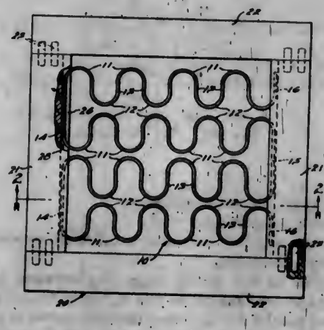
1. A spring or damping device filled with compressed gas and comprising two chambers, displacement means acting in the respective chambers, the displacement means

comprising a single displacement piston extending through one chamber and into the other chamber and movable in each chamber, a sleeve on that part of the piston which can move from one chamber to the other chamber, the respective displacement means having surfaces which are inversely proportional to the normal pressure prevailing



in the chambers in which they act and the displacement forces acting in opposition whereby the device always tends to return to an equilibrium position in which normal pressures prevail, and the displacement force applied to that end of the sleeve in the first chamber urging the piston into the second chamber.

3,188,073
SEAT CONSTRUCTION
Herbert Schneider, Dusseldorf-Holthausen, Germany, assignor, by mesne assignments, to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 13, 1963, Ser. No. 264,979
9 Claims. (Cl. 267—80)



1. A spring construction comprising a spring unit, and a frame provided with spaced grooves with a horizontal bottom side and a diverging top side the open ends of said grooves confronting one another, said spring unit being longer than the distance between the open ends of said grooves, said spring unit being compressed longitudinally sufficiently and the ends thereof being inserted into said grooves whereupon the inherent resiliency of the spring unit will hold the same in assembled relation with said frame with the ends free to pivot downwardly into engagement with the horizontal sides.

3,188,074
JALOUSIE OPERATOR
Phil F. Revitz, Miami, and Raymond K. Howdyshell, Hollywood, Fla., assignors to Baker-Alder-Jones Corp., Hialeah, Fla., a corporation of Florida
Filed July 31, 1963, Ser. No. 299,019
17 Claims. (Cl. 268—111)

1. In a system having multiple panels mounted for swinging in unison, an operating unit comprising a swingably mounted lever, a detent arrangement in said unit, yieldable in one direction of swing of said lever and arranged to normally prevent swinging of said lever in the other direction, and first means associated with said unit, and responsive to swing of said lever in said other



direction to inactivate said detent means, said first means having a lost-motion connection with said lever.

3,188,075
FIXTURE FOR MAKING A SHIPPING CARTON
William F. Mackay, Addison, and Francis X. Nemlaha, Berwyn, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Jan. 11, 1962, Ser. No. 165,687
2 Claims. (Cl. 269—44)



1. A fixture for the construction of a shipping container having a U-shaped channel of corrugated sheet material stapled to wooden end pieces and a U-shaped center piece comprising:
- a base member with a substantially flat top surface;
- a pair of solid leaf members positioned perpendicular to said surface with their lower edge secured to said base member to define the shape of and support said corrugated material, at least one of said leaf members being adjustable with respect to said base member;
- clamping means connected to each of said leaf members and projecting outward from said lower edge to receive and support said wooden end pieces against said leaf members;
- and a projecting block member extending perpendicular to said top surface and secured to said base member between said leaf members to support said U-shaped center piece;
- whereby said U-shaped channel of corrugated sheet material can be conveniently stapled to said wooden end pieces and said U-shaped center piece.

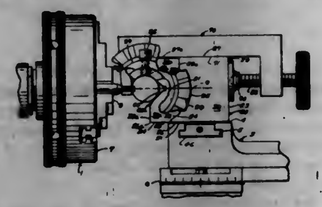
3,188,076
UNIVERSAL LATHE JIG
Jack Pryor, 102 W. Church St., Pocahontas, Ark.
Filed Nov. 17, 1960, Ser. No. 69,949
11 Claims. (Cl. 269—101)

1. A lathe supplementing block-like fixture for locating and clamping a workpiece on a lathe when installed and located thereon by being clamped down in the hold-down engaging slot means extending across an upwardly

facing horizontal surface of the lathe, which surface is always accurately parallel to the axis of rotation of the lathe's tool-carrying, rotary spindle, said fixture comprising,

a block-like main body portion having a flat bottom face unobstructed by protuberances throughout its area with upright hold-down clamp bolt means extending downwardly therefrom and vertically through said main body portion to be engaged in the lathe's engaging slot means to locate said bottom face always accurately parallel to the lathe's upwardly facing surface and thus to the axis of the lathe's spindle, said main body portion having an upright flat front face accurately perpendicular to the lathe's upwardly facing surface and also unobstructed by protuberances throughout its area and a separate, narrower from front-to-rear, upright front body portion having a substantially unobstructed upright flat front face and an accurately parallel, upright rearmost face unobstructed by protuberances and vertically and slidably engaging said front face of said main body portion and connected thereto by a plurality of final adjustment-providing vertical slide guide track means and manual clamp means,

said front face of said main body portion being inter-



connected through to said bottom face of said main body portion by solid metal and through said slidably engaging faces to always hold the plane of said front face of said front body portion perpendicular to the plane of said bottom face by rigid block-like solid portions which are substantially as high as said main body portion throughout a substantial part of the front to rear dimension of said bottom face,

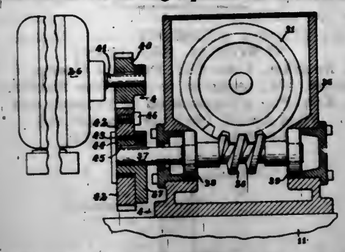
at least one V-groove to rigidly hold a workpiece pressed into and centered therein by a front to rear workpiece clamp and to always accurately locate the workpiece relative to the axis of rotation of the lathe spindle,

said V-groove extending across and opening forwardly from said front body face of said front portion with its bisecting plane always accurately perpendicular to said front face of said front body portion and to be usually held located parallel to the axis of rotation of the lathe spindle,

said main body portion having an upright rearwardly facing, flat workpiece clamp-engaging surface unobstructed by protuberances and located directly to the rear of said front body face of said front portion, being always parallel thereto, and extending along the bisecting plane of said V-groove.

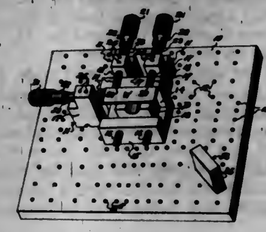
3,188,077
WORK HOLDING FIXTURE
Philip E. Olson, Rockford, Ill., assignor, by mesne assignments, to Rockford Machine Tool Co., a corporation of Illinois
Filed Dec. 20, 1961, Ser. No. 160,720
3 Claims. (Cl. 269—226)

1. A work holding fixture comprising, in combination, a base having means thereon forming one jaw of a work holding vise, a member slidable on said base forming the opposite jaw of said vise and means for moving said slidable jaw member comprising a screw and nut device, one element of which is carried on said jaw member, a worm and worm wheel device having the worm wheel connected to the other element of the screw and nut device, a high torque electric motor having a pinion on its shaft meshing



with a gear rotatably mounted on a shaft carrying said worm, and a lost motion drive means between said gear and shaft comprising a drive pin positioned eccentrically on one side of said gear and an arm fixed to said shaft and extending radially therefrom in the path of said drive pin.

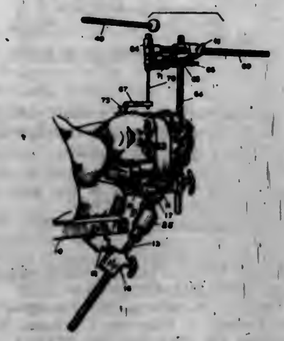
3,188,078
MICROMETER WORKPIECE GUIDE MEANS FOR DIE PRESSES
Roswald M. Peterson, Chatham, N.J., assignor of fifty percent to Kermit M. Peterson, Chatham, N.J.
Filed June 18, 1963, Ser. No. 288,811
5 Claims. (Cl. 269—305)



1. Micrometer workpiece guide means for die-stamping presses comprising:
- a rectangular bolster plate having plural uniformly spaced vertical anchoring holes in its upper face arranged in rows paralleling the respective side edges of said plate;
- a rectangular die holder mounted on the bolster plate in an interior area thereof with its side edges paralleling those of the bolster plate;
- means to secure the die holder removably in a position wherein its side edges parallel the corresponding side edges of the bolster plate; and
- at least three workpiece positioning stops detachably engageable with seleceted anchoring holes of the bolster plate with two of them abreast at the rear of the die holder and one facing an adjoining side thereof;
- each of said stops including:
  - a block-like body having a horizontal through bore;
  - a conventional micrometer having an extension rod mounted for axial movement in the said body bore and projecting therefrom with a measuring face for positioning abutment against a side edge of a workpiece operatively supported by a die installed in the die-holder; and
  - at least two vertical anchor pins depending from the bottom face of said body in the plane of its horizontal bore, said pins being spaced apart

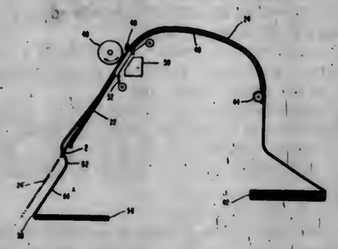
the same distance as the spacing between adjacent rows of the positioning sockets of the bolster plate and being dimensioned to fit removably in selected sockets.

3,188,079
SURGICAL HEADREST
Carl H. Boetcker, Lake City, Pa., and George T. Nager, Baltimore, Md., assignors to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1962, Ser. No. 185,428
14 Claims. (Cl. 269—328)



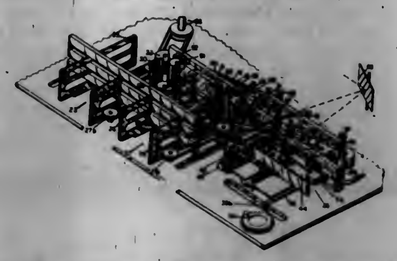
1. In combination, a headrest and an operating table, said table having a locking means fixed thereto with laterally spaced bores therein, a U-shaped bar having its legs received in said bores of said locking means, the arch of said U-shaped bar extending from said table, a universal joint attached to said arch, means to lock said universal joint to render it rigid, a bore member fixed to said universal joint, an elongated straight bar slidably received in the bore of said bored member, means to lock said straight bar against sliding and rotating movement in said bore of said bored member, and a headrest support base, said support base being fixed to one end of said straight bar.

3,188,080
RECORD MEDIUM STACKING GUIDE MEANS
Daniel W. Kelliher, Falls Church, Va., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 19, 1963, Ser. No. 310,068
4 Claims. (Cl. 270—61)



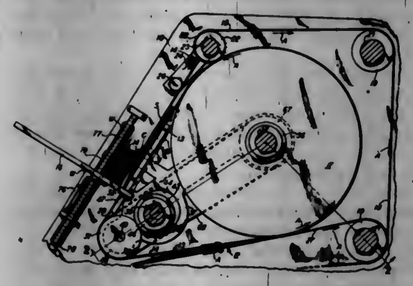
1. In a record medium driving system of the type wherein an elongated length of a record medium is caused to move across an exit chute after which said record medium is folded into a stack the improvement which comprises a folding bar disposed transverse to the direction of movement of said record medium across said exit chute, said bar having a first portion extending in said transverse direction and a pair of second members connected to said first member, extending away from said exit chute, said second members being pivotally linked to said exit chute, said record medium being passed between said exit chute and said folding bar whereby said folding bar applies a pressure to the surface of said record medium causing said record medium to fold along the perforations in said record medium.

3,188,081
DOCUMENT FEEDING SYSTEM
Walter Lee, Springfield, Va., assignor to Farrington Electronics Inc., Alexandria, Va., a corporation of Massachusetts
Filed Oct. 29, 1962, Ser. No. 233,834
15 Claims. (Cl. 271—5)



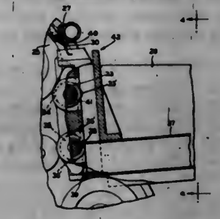
15. The method of feeding variable length documents from a document supply stack one at a time along a feed path comprising the steps of adjusting the document supply stack to physically allow for the document length whereby automatically sensing said length of the documents, applying a driving force, which is varied in time duration, responsive in preselected relation to said sensing of the length of the documents, to cause said endmost document to travel along said feed path.

3,188,082
APPARATUS AND METHOD FOR COLLECTING FLEXIBLE SHEETS
Anton R. Stobb, Racine, Wis.
(P.O. Box 5205, Clinton, N.J.)
Filed Apr. 19, 1962, Ser. No. 188,726
11 Claims. (Cl. 271—68)



1. A collector for flexible sheets comprising a rotatable support disposed for rotation about a fixed axis, an eccentric member rotatably mounted on an axis parallel to said fixed axis and with the eccentric movement being transverse to said axes, a pusher member with the ends thereof respectively rotatably mounted on said support and said eccentric member and having clearance between said eccentric member and said pusher member for displacement of the latter only in an arcuate path centered about said support and with said pusher member including a plate disposed in a plane oblique to said path, a pulley rotatably mounted on said eccentric member at the end thereof opposite said support from said eccentric member, a conveyor belt trained on said support and said pulley and extending on said plate to have the latter disposed to the inside with respect to the extent of said conveyor belt, a platform disposed adjacent said plate and said conveyor belt for receiving sheets from the latter when said conveyor belt passes said platform, and drive means for rotating said eccentric and displace said plate to push said sheets along said platform and away from said conveyor belt.

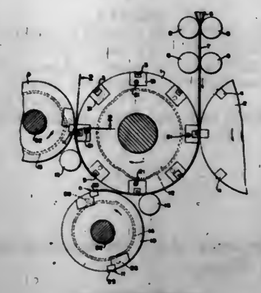
3,188,083
CARD STACKER
Albert J. Romeo, Springfield, Pa., and Charles A. Lee, Stamford, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,327
5 Claims. (Cl. 271—71)



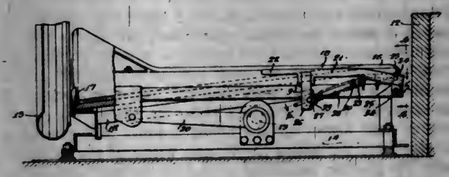
1. In a card stacker of the type having a card conveyor which transports sequentially available record cards, said cards having an information bearing sector and non-information bearing sectors adjacent said information bearing sector along the length of said record cards, said non-information bearing sectors being at the lateral edges of said record cards, said conveyor transporting said record cards from an input source to a stack, said cards being stacked on end, each succeeding card being inserted between the previously stacked cards and the termination of the card conveyor; means for preventing the accumulation of previously stacked cards from interfering with the deposition of succeeding cards comprising: a pair of rotatably driven discs mounted at the ends of a common shaft and so positioned upon said shaft so as to contact said record cards within said non-information bearing sectors, each disc having a protruding portion arranged to strike, on each disc revolution, the most recently stacked card, the discs further being arranged on said common shaft, to cause said protrusions to strike said cards in an alternate manner imparting an intermittent force against the most recently stacked card in a direction along the major axis of the card stack and downward therefrom whereby cards entering the stack are urged into alignment with said stack and a space is provided between said stack and said termination of the card conveyor sufficient to permit the next succeeding card to be placed at the end of said stack.

3,188,084
FOLDERS AND FEEDING OPERATORS
William B. Raybuck, Lansdowne, Pa., assignor to Fred'k H. Levey Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 22, 1963, Ser. No. 274,606
3 Claims. (Cl. 271—82)

1. In apparatus for cutting and transmitting printed signatures from a rotary web-fed printing press comprising at least one rotatably-mounted pin cylinder equipped with impaling pins and means for automatically projecting the pins for impaling the lead ends of the signatures and for retracting the pins as the cylinder rotates and at least one cooperating rotatably-mounted gripper cylinder equipped with at least one set of automatically operated gripper fingers for gripping the lead ends of the signatures when they are released from the pin, the improvement in means for transferring the signature from the pin cylinder to the gripper cylinder comprising so constructing the pins of the pin cylinder so as to provide an impaling portion of the pin and an abrupt shoulder thereon extending generally perpendicular to the axis of the pin, and positioned to the rear of the impaling portion of the pin, and cam means so constructed and arranged as to move the pin outwardly beyond the periphery of the pin cylinder a distance such that the shoulder thereof raises the signature from the cylinder surface as the pin approaches a gripper finger to permit the gripper finger to pass between the signature and the periphery of the pin cylinder.



3,188,085
PIT BOARD WITH QUICK RELEASE CLAMPS
Albert P. Rogers, Spring Lake, and Ernest E. Emery, Muskegon Heights, Mich., assignors to Brunswick Corporation
Filed Mar. 5, 1962, Ser. No. 177,615
3 Claims. (Cl. 273—43)



2. A pit mechanism for a bowling alley pit, said mechanism including a pit board resting on a frame, means on the frame for holding one edge of the pit board, a quick release pit board clamp for holding an opposite edge of the pit board comprising: an elongate member pivotally mounted to said frame, a holding portion at one end of said elongate member to contact said pit board, a handle portion at the other end thereof, and resilient means extended between the elongate member and said frame to hold said clamp in its pit board clamping position.

3,188,086
BODY-PIVOT GOLF PUTTER
Richard T. Parmley, 2711 Cowley Way, San Diego 10, Calif.
Filed Oct. 18, 1961, Ser. No. 145,793
9 Claims. (Cl. 273—81.3)

1. A lateral-swing golf putter club, comprising a putter head of side-hitting type; a single club shaft extending upwardly from securement to said head; a handle grip on said shaft; and an additional, elongate, shaft extension

extending beyond the uppermost portion of the handle grip sufficiently to place the upper end of the club shaft



against the abdomen of the player during the execution of a putting stroke.

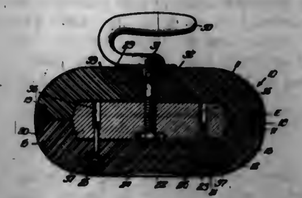
3,188,087
PIVOTED COMBINATION GAME BOARD AND EXERCISING DEVICE
Edward S. Larson, Jr., Homewood, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 13, 1963, Ser. No. 258,343
2 Claims. (Cl. 273—110)



1. An amusement and exercising device comprising an elongated member having a top portion including a pair of generally flat upper surfaces at opposite ends thereof which are dimensioned and spaced to receive the feet of a person in spaced apart positions on the top of said member, said member having a bottom portion defining a convexly curved lower surface for support of the member in a manner providing for tilting movement of the member in all directions about its center, the curvature of said lower surface being gradual and extending substantially the entire length and width of the member, said top portion including a central surface section intermediate said pair of flat upper surfaces which is defined by a generally circular rim, a plurality of recesses formed in said central surface section, and a ball disposed within the rim and adapted to be positioned in any of said recesses, said device being of material of sufficient strength to support a person thereon, whereby a person supported on said member with his feet astride said central section can cause a rocking movement of said board by shifting his weight and thereby cause said ball to roll within said circular rim and be deposited in one of said recesses.

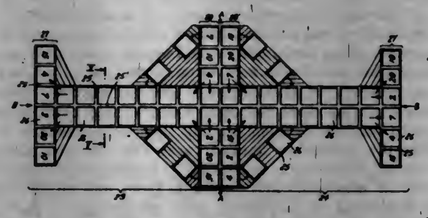
3,188,088
CURLING STONE
Frank T. Gathe, 1336 William, River Forest, Ill.
Filed Aug. 23, 1962, Ser. No. 218,980
6 Claims. (Cl. 273—128)

1. A curling stone having a body member comprising; upper and lower generally bowl-shaped sections, said sections having their rim portions confronting each other for forming therebetween a central cavity, a weight member mounted in said cavity, said upper section having a handle secured to the top surface thereof and said lower section having a concentric annular recess in the bottom



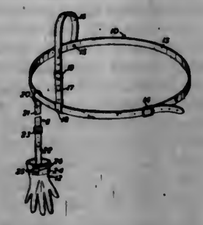
surface thereof, and a running ring mounted in said recess, said ring having a continuous wearing surface extending slightly beyond the bottom surface of said lower section.

3,188,089
GAME INCLUDING TILTABLE GAME BOARD AND GAME PIECES OF DIFFERENT WEIGHTS
James A. Odell, Mt. Ivy Trailer Park, R.R. 1, Box 386, Pomona, N.Y., and William C. Johnson, Jr., 505 S. 2nd Ave., Mount Vernon, N.Y.
Filed May 21, 1963, Ser. No. 282,016
8 Claims. (Cl. 273—131)



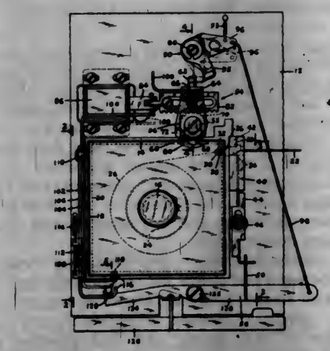
1. The combination with a support, of a game board having an axis, said game board mounted along said axis on said support to rock thereon and comprising two portions extending in opposite directions from said axis, said portions of said game board being in equilibrium when supported by said support, said game board having a top surface; indicia on said top surface arranged on both sides of said axis and designating subdivisions of said top surface; a first plurality of weighted game pieces adapted to be arranged in a first position on one of said two portions of said game board in the vicinity of said axis and each adapted to be moved along step by step on said subdivisions of said one game board portion into a position located distant from said axis; and a second plurality of weighted game pieces adapted to be arranged in a first position on the other of said two portions of said game board in the vicinity of said axis and each adapted to be moved along step by step on said subdivisions of said other game board portion into a position located distant from said axis, each of said first and second plurality of weighted game pieces comprising differently weighted game pieces, the difference in weighting of each being such that movement of one game piece between predetermined subdivisions will produce tilting of said game board whereas movement of another game piece between said predetermined subdivisions will not cause such tilting and said differently weighted game pieces being shaped so that after movement of any one of said game pieces onto any one of said subdivisions the moved game piece will stay on the respective subdivision despite tilting of said game board.

3,188,090
ARM RESTRAINING DEVICE FOR GOLFERS
Leonard Edward Job, Wrotham Heath Golf Club, Wrotham Heath, Kent, England
Filed Jan. 9, 1962, Ser. No. 165,089
Claims priority, application Great Britain, Jan. 12, 1961, 1,385/61
2 Claims. (Cl. 273—189)



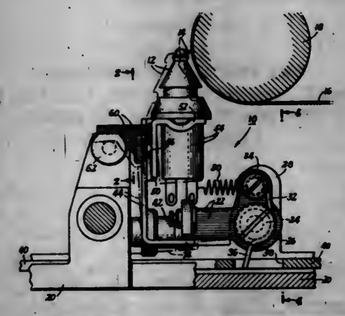
1. A golf swing trainer comprising a chest strap engageable completely around a golfer's chest just below the arm pits, a shoulder strap, front and rear attachment means for attaching the two ends of said shoulder strap to said chest strap at positions spaced from each other whereby said shoulder strap will pass over one shoulder of said golfer and said front and rear attachment means will be located in front of and behind said shoulder respectively, a ring encircling and slidable along the portion of said chest strap which lies between said front attachment means and said rear attachment means such that it passes beneath said shoulder, a non-yielding thong, means connecting one end of said thong directly to said ring, a glove having a reinforced strapped wrist portion, and means connecting the other end of said thong directly to said wrist portion of said glove.

3,188,091
TAPE CARTRIDGE INTERLOCK
John D. Goodell, Silver Spring, Md., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Nov. 10, 1960, Ser. No. 68,383
9 Claims. (Cl. 274—11)



5. In a tape recording-reproducing apparatus, the combination of means forming a tape cartridge receiving well, platform means slidably mounted in said well, means urging said platform upwardly in said well, indexing means operable to index tape cartridges on said platform successively to a reference position, the said indexing means comprising detent portions operatively engaging opposite sides of a cartridge retained at said reference position, a play button, means for locking said indexing means against inadvertent movement and displacement of a cartridge being held at said reference position, and means linking said play button with said locking means such that when said play button is depressed, the said locking means operatively engages said indexing means during a play cycle of said cartridge being retained.

3,188,092
REPRODUCING APPARATUS FOR USE WITH SOUND RECORDS OF THE EMBOSSED TYPE
Joseph A. Rescsanski, Trumbull, and John G. Wallace, Branford, Conn., assignors to Dictaphone Corporation, Bridgeport, Conn.
Filed Feb. 26, 1963, Ser. No. 261,085
11 Claims. (Cl. 274—13)

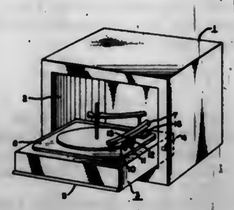


3. A reproducing assembly for use with records of the embossed type having a plurality of adjacent signal grooves separated by a land on which a reproducing stylus may by change come to rest, said assembly comprising, in combination, a reproducer head including a stylus for engaging the signal grooves on the record, support means for said reproducer head, said support means being movable in a direction generally normal to the surface of the record as well as in a lateral direction transversely with respect to the signal grooves, so that the stylus may track the engaged signal groove, means mounting said reproducer head on said support means in a position between the record and said support means, said mounting means being constructed and arranged to permit relative movement between said reproducer head and said support means in a direction at least approximately parallel to said normal direction, said mounting means including means to shift said reproducer head in said lateral direction relative to said support means as said support means moves towards said reproducer head after the stylus has engaged said record, whereby the stylus can be shifted from the land between a pair of adjacent signal grooves and into one of said signal grooves.

3,188,093
TONE ARM RESTRAINING DEVICE
Jerry A. Meyer, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,687
4 Claims. (Cl. 274—23)

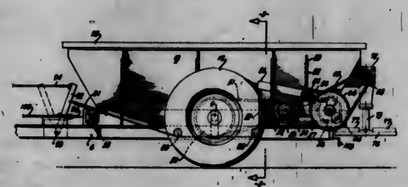
1. A record player arranged to be tilted about a horizontal axis to a vertical storage position, said record player having a base supporting a tone arm mounted to pivot about an axis parallel to said base and having a limit stop for said tone arm in its rest position, a catch on said tone arm, a lever mounted in fixed vertical orientation with respect to said base for pivoting movement about an axis substantially parallel to said horizontal axis and

including a latch adapted to engage said catch, said lever being gravity-biased to move said latch into engagement with said catch when said record player is moved toward



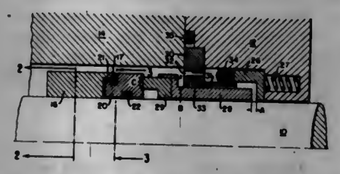
its storage position whereby said tone arm is maintained in its rest position during storage.

3,188,094
DRY FERTILIZER SPREADER
Howard T. Johnston, P.O. Box 588, Yuba City, Calif.
Filed June 24, 1963, Ser. No. 289,911
1 Claim. (Cl. 275—6)



A draft operated, dry fertilizer spreader, comprising: a body having a draft connection rigid therewith, said body including a bin having downwardly and inwardly converging side walls terminating in a longitudinal trough, ground engaging wheels supporting said body for draft movement; a transvereely disposed drive shaft rotatably mounted on said body; endless chain and sprocket means connecting said drive shaft and one of said ground engaging wheels for rotating said drive shaft in timed relation with said one wheel upon draft movement of said spreader; a chain conveyor disposed in said trough for discharging said fertilizer through an outlet opening formed in said bin at one end of said trough; a horizontal spreader disc rotatably mounted on said body below said outlet opening, said spreader disc having a diameter predetermined with respect to the transverse dimension of said chain conveyor and being at least four times said transverse dimension; a driven shaft rotatably mounted on said body parallel to and spaced from said drive shaft; chain and sprocket drive means at one end of said driven shaft connecting said spreader disc and said driven shaft for rotating said spreader disc in timed relation with said driven shaft; intermeshing gear drive means at the other end of said driven shaft connecting said driven shaft and said conveyor for driving said conveyor in timed relation with said driven shaft to discharge said fertilizer from said outlet opening onto said spreader disc; first pulley means fixedly secured to said drive shaft for rotation therewith, second pulley means fixedly secured to said one end of said driven shaft for rotation therewith; drive belt means extending over said first and second pulley means; said drive belt means being normally sufficiently slack to permit said drive shaft to rotate without transmitting rotary movement through said drive belt means to said driven shaft; belt tensioning means mounted on said body and engageable with said drive belt means; said belt tensioning means being pivotally mounted on said body for movement between a projected position in engagement with said drive belt means tensioning said drive belt means sufficiently to transmit rotary movement from said drive shaft to said driven shaft and a retracted position wherein said drive belt means is slack, and the drive between the drive shaft and the driven shaft is disengaged; resilient means biasing said belt tensioning means to said retracted position; means connected with said belt tensioning means and movable from a first to a second position for moving said belt tensioning means from said retracted position to said projected position; said latter means including a lever pivoted on the body, a tension spring and cable means interconnecting the lever and the belt tensioning means; and latch means engageable with said pivoted lever for releasably securing said pivoted lever in said second position, the tension spring returning the lever to its first position and disengaging the drive between the drive shaft and the driven shaft when the latch means is released.

3,188,095
FLUID SEAL WITH PRESSURE RESPONSIVE COMPENSATING MEANS
Frank R. Van Vleet, North Reading, Mass., assignor to A. W. Chesterton Company, Everett, Mass., a corporation of Massachusetts
Filed July 20, 1961, Ser. No. 125,512
7 Claims. (Cl. 277—27)



1. In a fluid pressure rotary shaft seal for an axial passage between a shaft and the housing in which said shaft rotates, said seal having primary sealing means including an axially movable sealing surface, an axially movable sleeve arranged in spaced concentric relation with said shaft and operable to determine the axial position of said surface, said sleeve axially operable under conditions of normal fluid pressure in said passage by means of said fluid pressure, said sleeve axially operable under conditions of abnormally low fluid pressure in said passage by means of a piston located adjacent an end of said sleeve and powered by resilient means, said piston under conditions of normal fluid pressure kept spaced from said sleeve end by the force of said fluid pressure counteracting said resilient means; secondary dynamic sealing means located between said piston and said surface and providing a seal in the portion of said axial passage lying between said sleeve and said housing, said dynamic sealing means comprising

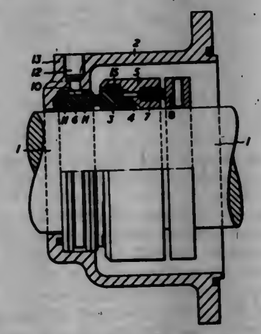
annular axially stationary drag absorbing means disposed between said sleeve and said housing and spaced from said sleeve, said drag absorbing means including a cylindrical surface extending axially in the direction of said piston, and fluid pressure transmitting means,

means sealingly fixed to said drag absorbing means and sealingly but slidingly contacting said sleeve,

and an axially movable O-ring disposed between and in sealing contact with said housing and said cylindrical surface, said movable O-ring engaging said piston and adapted to move axially along said cylindrical surface relative to said sleeve without imparting drag to said sleeve.

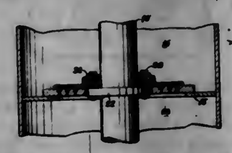
3,188,096
SEALING MEANS FOR SPLIT MEMBERS OF ROTARY MECHANICAL FACE SEALS
Samuel Clifford Walter Wilkinson, Cookham, England, assignor to Crane Packing Limited, Slough, England
Filed Nov. 16, 1960, Ser. No. 69,654
Claims priority, application Great Britain, Nov. 17, 1959, 38,890/59
9 Claims. (Cl. 277—59)

1. A rotary mechanical face seal assembly comprising a non-rotating housing, a shaft rotatable therein, a first ring-shaped seal face member embracing said shaft, a fluid-tight connection between said first member and said shaft, a second ring-shaped seal face member embracing said shaft, a fluid-tight seal between said second member and said housing, said first member being associated with said shaft to rotate therewith and said second member being associated with said housing in non-rotating relationship therewith, and said first and second seal face members being in mutual face-to-face rubbing contact over radially



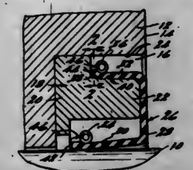
extending faces thereof, said second ring-shaped seal face member being received in a recess in said housing and being formed of a plurality of arcuate separable sections, and being further provided with an external annular groove forming an annular space between said second member and said housing, and said housing being provided with a closable passage from the outside thereof, communicating with said space, and a viscous sealing compound within and completely filling said groove.

3,188,097
PRESSURE SENSITIVE SEALING DEVICE
Wendell G. Cott, Genesee, Pa., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,719
2 Claims. (Cl. 277—74)



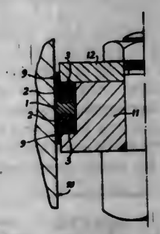
1. A sealing member for a rotary shaft that extends through a fixed casing between high and low pressure zones comprising in combination, a seal cover secured to said casing and apertured to freely receive the rotary shaft, a flange integral with said rotary shaft lying in axial alignment with said seal cover, a flexible seal member carried by said flange in the high pressure zone to laterally abut said seal cover, annular groove means formed in the face of the seal cover that abuts the flexible seal member, and duct means connecting each groove means with the low pressure zone whereby high and low pressure fluids will have direct access to opposite sides of the flexible seal member to produce a maximum sealing effect thereon.

3,188,098
FLEXIBLE SEAL
Ralph L. Skinner, Sr., Birmingham, Mich., assignor of one-half to Robert T. Skinner
Continuation of applications Ser. No. 629,680, Dec. 20, 1956, and Ser. No. 825,767, July 8, 1959. This application Dec. 10, 1962, Ser. No. 245,633
5 Claims. (Cl. 277—153)



1. A seal for sealing first and second relatively movable parts comprising an annulus of fluorocarbon resin material having one peripheral portion secured to said first part in sealed relation and the other peripheral portion sealingly riding on said second part, said other peripheral portion being unsupported so as to permit the same to be freely flexible and to follow the motion of said second part, and at least the part of the annulus at said other peripheral portion having a thickness not exceeding about .020 inch to maintain a low torque load on said second part throughout a wide temperature range.

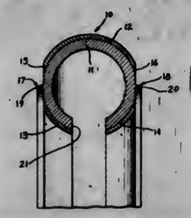
3,188,099
DEFORMABLE HYDRAULIC SEALS OF ASSOCIATED BACKING, ANTI-EXTRUSION AND SEALING RINGS
Richard Noel Johnson, Stoughton, Guildford, and Robert Stanley Turner, Knaphill, Woking, England, assignors to James Walker & Company Limited, Woking, England, a corporation of Great Britain
Filed May 22, 1963, Ser. No. 282,375
Claims priority, application Great Britain, June 8, 1962, 22,301/62
5 Claims. (Cl. 277—188)



1. A sealing or packing ring which comprises a unitary sandwich structure faced on both transverse sides by a backing ring of relatively hard and inextensible material, said sandwich structure being composed of an intermediate annular sealing ring of softer material sandwiched between and bonded to annular anti-extrusion rings of harder material, said intermediate sealing ring extending radially inwards and radially outwards beyond the inner and outer circumferences of the anti-extrusion rings to provide an internal sealing surface and an external sealing surface, and each said backing ring having a wedge-shape annular rib projecting axially from its inner transverse face and engageable with a correspondingly shaped

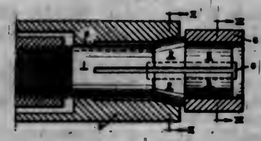
groove in the opposing transverse face of the associated anti-extrusion ring to produce radial expansion of the anti-extrusion ring in its section when the backing ring is under hydraulic pressure on its outer transverse face.

3,188,100
SEAL PROVIDED WITH RIBS
Manuel M. Delgado, 14525 Florita, La Mirada, Calif.
Filed Feb. 13, 1963, Ser. No. 258,262
7 Claims. (Cl. 277—205)



1. A seal comprising: an approximately toroidal shaped hollow body made of a spring material, said body having an annular slot therein internally thereof; and a circular rib on each of the opposite sides of said body clad thereto, said ribs being made of a relatively malleable material.

3,188,101
EXPANSIBLE CLAMP ARBOR
Johan Eric Hayden Westberg, Rodstngevagen 14, Lidingo, Sweden
Filed Nov. 5, 1962, Ser. No. 235,229
Claims priority, application Sweden, Nov. 13, 1961, 11,267/61
9 Claims. (Cl. 279—2)



1. An expansible clamp arbor having a plurality of arms, said arms having a holding portion for holding the arbor in a fixture, and a clamping portion for internal clamping of a workpiece, each of said arms being supported along a substantially axial supporting line against at least one central supporting body, and said holding portion of each arm resting in a conical seat in the fixture on one side of a plane through the central axis of the arbor and through the supporting line between said arm and said central supporting body, and said clamping portion of each arm internally contacting the workpiece on the opposite side of the plane mentioned.

3,188,102
CHUCK
Walter F. Mott, St. Clair Shores, Mich., assignor to Schulze & Burgess Co., Hazel Park, Mich.
Filed Jan. 28, 1964, Ser. No. 340,681
1 Claim. (Cl. 279—121)

A chuck comprising a body having a central axial cylindrical bore and a front chucking face normal to the axis of the body and bore;

said body having jaw tracks projecting angularly forward and radially outward from said bore to the outer surface of the body;

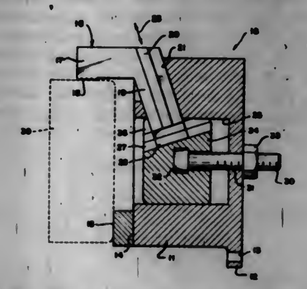
L-shaped jaws, each having a mounting leg and a chucking leg, with the chucking leg being parallel to the axis of the bore;

the two legs being angularly related to each other in the same angular relation as that between the axis of the bore and the axis of the respective jaw track;

with the mounting leg being in the respective jaw track;

a cylindrical quill slidably fitted in said bore and guided by it for axial movement in said bore; with means for axially moving said quill in said bore;

the quill having in its exterior surface longitudinally extending jaw ways, each adjacent to a jaw track, with each sloping on an acute angle relative to the quill and bore axis and to the adjacent jaw track

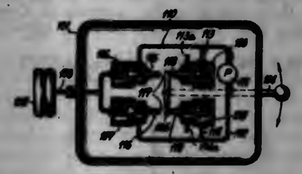


such that the jaw way extends normal to the axis of the adjacent jaw track and the mounting leg of the jaw therein;

and means on the inner end of each mounting leg interlocking with the adjacent jaw way for interlocking such leg to the quill and arrange to permit relative sliding movement of such inner end of such mounting leg and the adjacent jaw way;

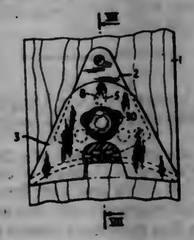
whereby axial guided movement of the quill causes movement of the mounting legs of the jaws in the jaw tracks, forward and rear of the chuck body, as well as radial of the chuck body.

3,188,103
FLUID SUSPENSIONS FOR VEHICLES
Alexander von Löwis of Menar, Mauren, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed May 11, 1964, Ser. No. 366,283
Claims priority, application Germany, May 11, 1963, B 71,859
20 Claims. (Cl. 280—6.1)



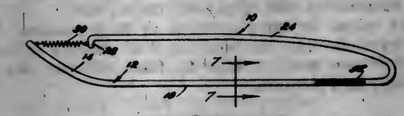
1. In a vehicle suspension, in combination, variable-volume chamber means adapted to be situated between the axle and body of a vehicle for yie dably and resiliently supporting the body of the vehicle over said axle with a fluid under pressure in the interior of said variable-volume chamber means; a container adapted to contain said fluid under pressure; pump means in said container, said pump means having a suction side and a pressure side; pressure conduit means operatively connected to said pressure side of said pump means and said variable-volume chamber means and said container for providing communication between said pressure side of said pump means and said chamber means and the interior of said container; suction conduit means operatively connected to said suction side of said pump means and to said container and variable-volume chamber means for providing communication between the suction side of said pump means and the interior of said container as well as between the suction side of said pump means and said variable-vo ume chamber means; a normally closed main pressure valve means in said pressure conduit means for controlling communication between said pump means and chamber means; a normally open auxiliary pressure valve means operatively connected to said pressure conduit means for controlling communication between said pump means and the interior of said container; a normal y closed main suction valve means in said suction conduit means for controlling communication between said suction side of said pump means and said chamber means; a normally open auxiliary suction valve means operatively connected to said suction conduit means for controlling communication between said suction side of said pump means and the interior of said container; and control means sensing the distance between said body of said vehicle and said axle and operatively connected to a l of said valve means for opening said normally closed main pressure valve means and simultaneously closing said normally open auxiliary pressure valve means for cutting off communication between the interior of the container and the pressure side of said pump means and for providing communication between the pressure side of said pump means and said chamber means so that said pump means wil. then pump fluid from the interior of said container through said normally open auxiliary suction valve means and said suction conduit means into said pump means and out of the latter through said pressure conduit means and said main pressure valve means into said chamber means for increasing the distance between the vehicle body and axle when said control means senses that said distance is less than a predetermined magnitude, and said control means automatically closing said auxi iary suction valve means and opening said main suction valve means for cutting off communication between said suction conduit means and the interior of said container and for providing communication between said chamber means and said pump means through said suction conduit means for withdrawing with said pump means fluid under pressure from said chamber means to pump said fluid under pressure out through said pressure conduit means and normally open auxiliary pressure valve means into said container when said control means senses that the distance between the vehicle body and axle is greater than said predetermined magnitude.

3,188,104
SAFETY DEVICE FOR SKI-SECURING MEANS
Georges Magnin, La Chaux-de-Fonds, Switzerland, assignor to Secuma, La Chaux-de-Fonds, Switzerland
Filed Jan. 11, 1963, Ser. No. 250,831
Claims priority, application Switzerland, Apr. 4, 1962, 4,115/62
2 Claims. (Cl. 280—11 35)



1. A safety system for ski securing means comprising a first member rigid with the ski, a second member engaging the skier's shoe and adapted to move over the first member between an operative position clamping said shoe in position and a position releasing the shoe under the action of external stresses above a predetermined value, one of said members being provided with an elongated horizontal transverse slot, a vertical cylindrical pivot rigid with the other member, engaging said slot and adapted to horizontally and vertically slide therein, the diameter of said pivot being substantially equal to that of the slot, at least one of said members being made of a self-lubricating plastic material in at least part of its surface engaging the other member, one of said members being provided with at least one recess in its surface engaging the other member, a projection raised on said other member and normally engaging the corresponding recess in said one surface and elastic means fitted between said members urging them towards each other to hold said projection on said other surface inside the corresponding recess to lock elastically the two members against a relative vertical, angular and transverse shoe-releasing shifting as long as the external stresses do not rise above said predetermined value.

3,188,105
SLED STRUCTURE
John Patrick O. Lee, R.F.D. 3, Putney, Vt.
Filed Feb. 20, 1963, Ser. No. 259,882
5 Claims. (Cl. 280—25)



1. A sled structure comprising an elongated member bent upon itself to form a first U-shaped element, the legs of said element each having a first section disposed contiguous to the bight of said element, a second section adjacent said first section and disposed horizontally, said second section being adapted to engage a ground surface, said leg first sections being bent upwardly at an angle to the horizontal, a third section bent upwardly and backwardly on said second section into substantially parallel relation with respect to said second section and extending in the form of a cantilever for a major portion of the length of the second sections, and a fourth section bent inwardly into substantial parallel spaced relation with respect to said bight, the free ends of said fourth sections being joined together to form a second bight, said second bight being on the same plane as said first bight, and a seat extending over said leg third sections and secured directly and only thereto.

3,188,106
INDUSTRIAL TRUCK
Bronislaus I. Ulinski, Flossmoor, Ill., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Dec. 18, 1961, Ser. No. 160,072
8 Claims. (Cl. 280—43.23)

1. An industrial truck comprising,

(a) a wheel supported lifting head,

(b) a load platform,

(c) means mounting the forward end of said load platform on said lifting head for vertical movement relatively to said lifting head,

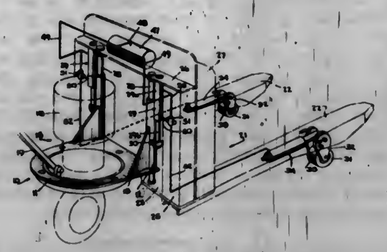
(d) ram means connected with said lifting head and said load platform for raising said forward end of said load platform relatively to said lifting head,

(e) wheel means,

(f) means mounting said wheel means on said load platform adjacent the rear end thereof for downward pivotal movement relatively to said load plat-

form to raise and support said rear end of said load platform,

(g) horizontally disposed ram means mounted on said load platform adjacent said rear end, one end of said horizontally disposed ram means being operably connected to said wheel means, the other end of said horizontally disposed ram means being mounted on a seat secured to said load platform and normally held against said seat by spring means connected be-



tween the other end of said ram means and said load platform whereby said horizontally disposed ram means may move bodily off of said ram seat through extension of said spring without relative movement between the ends of said ram means, and

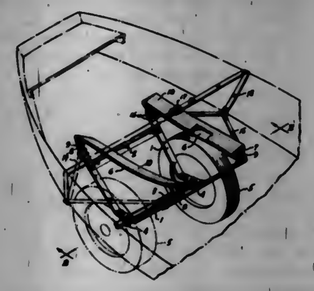
(h) means including a source of fluid pressure and hydraulic lines for applying fluid pressure to both said ram means to raise the front and rear ends of said load platform.

3,188,107
LIFT TRUCK
George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed May 17, 1962, Ser. No. 195,634
6 Claims. (Cl. 280—43.23)



1. An industrial truck comprising, a lifting head including a frame member, a supporting wheel mounted on the lower side of said frame member, a vertically extending lift ram assembly including a reservoir mounted on said frame member, a vertically extending bore in said frame member, a pump cylinder threaded at its lower end in said bore, a cylindrical insert in said bore clamped against the bottom of said bore by the lower end of said pump cylinder, check valve means in said insert for controlling the flow of fluid from said reservoir to said pump cylinder and from said pump cylinder to said lift ram cylinder, passages in said frame member connecting said valve means with said reservoir and said lift ram cylinder, a pump piston slidably mounted in said pump cylinder, an elongated steering handle pivotally attached at its lower end to said frame member, link means connecting the lower end of said steering handle to the upper end of said pump piston whereby vertical pumping movement of said steering handle effects pumping movement of said pump piston, a spring surrounding said pump cylinder and connected to the upper end of said pump piston, and said spring being of sufficient strength to counterbalance the weight of the handle when acting through said pump piston and link means, a disc member rotatably mounted on said frame below said insert with the axis thereof aligned with the axis of said insert, means extending from said disc member and engageable with the check valve means controlling flow of fluid from said pump cylinder to said reservoir, means for lifting said disc member to cause said projecting means to open said check valve means and allow flow of fluid from said pump cylinder to said reservoir to free said steering handle, a passage in said frame member connecting said lift ram cylinder with said reservoir, a spring pressed relief valve in said passage.

3,188,108
SMALL BOAT CARRIER
Richard G. Davis, 6002 41st Ave. SW., Seattle 16, Wash.
Continuation of application Ser. No. 234,374, Oct. 31, 1962. This application July 15, 1963, Ser. No. 294,932
5 Claims. (Cl. 280—47.13)



1. A boat carrier comprising a frame structure having at least one ground-engaging wheel mounted thereon and projecting beneath its lower portion, said frame structure having transversely spaced, generally upright opposite side frames each terminating in upper portions spaced to underlie a carried boat at longitudinally spaced points at the corresponding side of the boat, said side frames being, at least in part, of material that is flexible, an elongated strip of material extending between and pivotally mounted upon the spaced upper portions of each side frame, to tilt relative to the latter about a longitudinally directed pivot axis, and in position to engage the bottom of a supported boat, said strips being each of thin material that is resiliently flexible both torsionally and by bending, between its frame-supported ends, to be distorted together with the side frames by the weight of and conformably to the bottom of the supported boat.

2. A boat carrier as defined in claim 1, wherein said part of material that can flex is at the upper ends of the side frames, to permit their approach, the flexible strips joining such upper ends preventing their separation under the load of a supported boat.

3,188,109
CONTAINER STAND AND CART
Lawson K. Brondrick, 3121 Piedmont Road NE., Atlanta 5, Ga.
Filed June 25, 1962, Ser. No. 204,878
5 Claims. (Cl. 280—47.26)

1. A combination stand and cart for containers comprising a horizontal support frame, vertical support members, a supporting ring member, a handle member, wheels, said horizontal support frame including a pair of axle members and a foot member; said axle members having horizontal angular portions and a vertical angular portion; said foot member having a horizontal angular portion, a vertical angular portion, and a downwardly extending angular portion; each of said horizontal angular portions including a pair of angularly connected legs, each of said axle members having attached at one end thereof one of said wheels, one of said legs of one of said axle members connected to one of said legs of said foot member, one of said legs of the other of said axle members connected to the other of said legs of said foot mem-



ber, the remaining of said legs of said axle members being connected to each other, one of said vertical support members connecting said supporting ring member to said vertical angular portion of said foot member, the other of said vertical support members connecting said supporting ring member to said vertical angular portions of each of said axle members, said handle member connected to said supporting ring member; whereby a space is defined to receive and support a container.

3,188,110
SPRING MOUNTING STRUCTURE FOR AN AUTOMOBILE UNDERFRAME
Henry W. Wessells III, Paoli, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1963, Ser. No. 333,415
6 Claims. (Cl. 280—106)



1. A spring-seat housing structure for an automobile beam underframe kick-up comprising:

an upper kick-up frame member having a channel-shaped cross-section, said member comprising

an arcuate concave horizontal base web,

vertical end webs connected to said base web and extending downward therefrom,

a deep drawn recessed spring seat formed in said horizontal web, and a spring-seat area adjacent said spring seat providing a greater base web width than the base web width longitudinally removed from said spring-seat area,

a lower kick-up frame member having a channel-shaped cross-section, said member comprising

an arcuate convex horizontal base web,

vertical end webs connected to said base web and extending upward therefrom,

an aperture in said convex base web, and

a flanged annular ring formed in said convex base web surrounding said aperture,

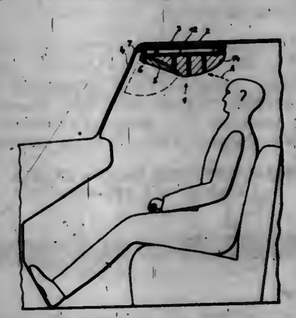
and arc welds connecting the vertical ends webs of said members to form a rectangular beam frame kick-up.

3,188,111
OVERHEAD GUARD FOR FORK-LIFT TRUCKS
Myron B. Ellis, Somerville, and Robert Caemmerer, Westfield, N.J., assignors, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
Filed Apr. 19, 1962, Ser. No. 188,680
14 Claims. (Cl. 280—150)



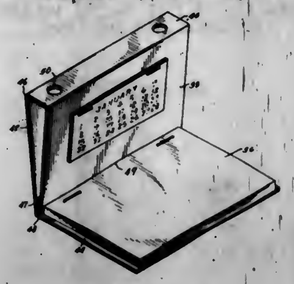
1. For use with a fork-lift truck and like vehicles having an exposed operator station, a protective guard for the operator of said vehicle comprising a support adapted to be rigidly secured to said vehicle in an upright position rearwardly of said operator station, an overhead guard member pivotally associated with said support and extending forwardly therefrom over said operator station and being unsecured at its forward end, means for maintaining said overhead guard member in said forwardly extending position, and means for moving said overhead guard member from said forwardly extending position over said operator station to a lower position.

3,188,112
HEAD GUARD FOR PASSENGERS IN AUTOMOTIVE VEHICLES
Rolf Oelkrug, Beimler Str. 17d, Augsburg, Germany
Filed Feb. 26, 1963, Ser. No. 261,059
Claims priority, application Germany, Feb. 28, 1962, O 8,588
8 Claims. (Cl. 280—150)



1. A head guard for a passenger in an automotive vehicle having a forward direction of travel, comprising support means disposed forwardly of said passenger, cushioning means swingably secured to said support means and displaceable between an inoperative and an operative position, and actuating means including a resilient body rearwardly of said cushioning means and in the path of the head of said passenger for displacing said cushioning means from its inoperative to its operative position upon being struck by the head of said passenger while propelled forwardly by the force of a collision, to intercept the head of said passenger beyond said actuating means.

3,188,113
PAPER HOLDER WITH V-SHAPED PEN RECEPTACLE
Carroll N. Cress, Rte. 2, Box 304, Maitland, Fla.
Filed June 10, 1963, Ser. No. 286,817
4 Claims. (Cl. 281—15)



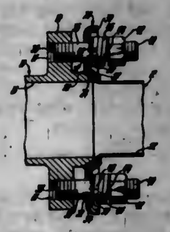
1. In a desk mount adapted to afford an area for the display of indicia, an upstanding section consisting of a face panel, a back panel of substantially the same length as said face panel and a head panel of less length than said face and back panels disposed between said face panel and said back panel, means articulating said panels along a pair of substantially parallel lines extending across said panels in spaced relation to each other, a base panel adapted to lie on a supporting surface articulated to said back panel by means of a ductile hinge joint which is self-sustaining when said back panel is rotated thereon into angular relation to said base panel in which said face panel is disposed in generally parallel position with said back panel, said face panel, said back panel, and said head panel when angularly disposed to each other forming an inverted triangular structure in which said head panel forms the base of said triangular structure and the apex thereof is located at said ductile hinge joint, and stay means supported by said base panel adapted to press one end of said face panel into engagement with said back panel in the region of said ductile hinge when said face panel is rotated in respect to said head panel, thereby maintaining the apex of said inverted triangular structure when said mount is erected.

3,188,114
BINDER FOR CONTINUOUS BUSINESS FORMS
Richard J. O'Brien, Niagara Falls, and Maurice Stuart Thomson, Lewiston, N.Y., assignors to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,618
2 Claims. (Cl. 281—21)



1. A bound volume of continuous folded forms comprising a pack of zigzag folded forms, the front edge portion of the pack comprising alternate adjacent thicknesses connected by folds to lie back-to-back with intelligence conveying sides outward, the back edge portion of the pack comprising alternate adjacent thicknesses connected by oppositely turned folds to lie face-to-face; cover boards each adapted to confine one of the end faces of said zigzag pack of forms; a flexible back binding structure connecting said cover boards at the back of the volume and securing the folds comprising the back edge of the pack; said binding structure comprising an inner lamination comprising a thin pliable film of plastic material coated with a layer of adhesive material on its inner side, said film being somewhat wider than the width of the back edge of the pack and conforming to the undulations of the folds of the pack edge, and adhering to said edge and marginally to the rearward portions of the outer surface of the cover boards; and an outer lamination comprising an outer layer of tough paper, separate double-faced adhesive strips secured to the inner surfaces of the respective lateral margins of said outer layer of tough paper, whereby said lateral margins are adhesively secured to the rearward margins of the outer surfaces of the cover boards, but the intermediate areas of both the inner and outer laminations are free of adhesion to each other.

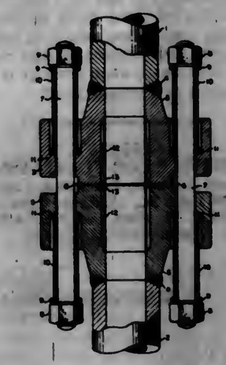
3,188,115
FLEXIBLE EXHAUST COUPLING INCLUDING A HEAT DISSIPABLE WASHER
Leonard M. Morrish and William D. Pittsley, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 4, 1958, Ser. No. 752,897
11 Claims. (Cl. 285—18)



1. A flexib'e coupling comprising a first member having a passage therethrough and an annular surface on one end thereof, a second member having a passage therethrough communicating with said passage in said first member, said second member having an outwardly turned arcuate flange slidingly engaging said one end of said first member, a pressure plate disposed about said second member and retaining said flange in sliding engagement with said one end of said first member, means including a spring connecting said pressure plate to said first member for proper engagement of said pressure plate and said first and second members, and a fusible washer disposed between said spring and said pressure plate to retain said spring in a fully compressed position and having a melting point substantial y lower than the remainder of the coupling elements and adapted to be melted by fluid flow through said coupling to allow said spring to expand into proper operating length and retain said coupling in fluid tight relation.

3,188,116
PIPING JOINT
Axel Christensen, Stamford, Conn., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 3, 1962, Ser. No. 214,720
2 Claims. (Cl. 285—47)

1. A piping joint for high pressure and high temperature service which comprises two circular conduit sections with opposed ends presented for coupling, opposed circular flanges attached to the ends of said conduits, a plurality of elongated studs extending between said flanges, said studs having threaded ends, a plurality of threaded nuts, said nuts being attached to the ends of said studs, each of said studs being provided with two sleeves, each of said sleeves extending between a nut and the adjacent flange, whereby each sleeve is maintained under compression and said stud is maintained under tension when the end nuts are tightened on said stud, a plug seal weld extending between the faces of said flanges whereby fluid leakage is prevented, and insulation means provided over at least a portion of the inner surfaces of said flanges, said inner surfaces being exposed to fluid flowing within said conduits, whereby thermal stress in said joint due to fluctuation in fluid temperature is substantially prevented, said



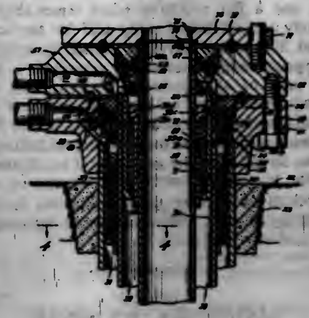
insulation means comprising a recess section in the inner surface of each of said flanges, together with a baffle mounted by its inner end in each flange and extending axially outwardly and in radially spaced relation to the walls of the recess section and terminating adjacent the radial face of said flange, said baffles defining a fluid passage which constitutes a uniform extension of the fluid passage within said conduits.

3,188,117
HOSE COUPLING HAVING A CONTINUOUS OUTER SHEATH
Irving D. Press, West Orange, and Charles E. Frederickson, Seaside, N.J., assignors to Resistoflex Corporation, Roseland, N.J., a corporation of New York
Filed Mar. 3, 1961, Ser. No. 93,213
2 Claims. (Cl. 285—55)



1. A flexible hose comprising at least two discrete lengths of plastic tube joined end-to-end by a double ended nipple and socket, adjacent ends of the tubes being positioned between the nipple and the socket, said nipple and socket including means for securing said tube ends thereto to provide a fluid-tight conduit, and a continous sheath of braided wire embracing the entire conduit including said socket, the diameter of the hose outside of said socket being reduced by the tension in the braid such that the internal diameter of the tube thereof is approximately equal to the internal diameter of the nipple, the external diameter of the sheath being greater where it overlies said socket than where it engages said hose by an amount substantially equal to the reduction in diameter of said hose caused by said sheath.

3,188,118
PIPE HOLDING APPARATUS
Marvin R. Jones, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 18,628, May 30, 1960. This application May 27, 1963, Ser. No. 284,289
7 Claims. (Cl. 285—133)



3. Apparatus for holding one cylindrical pipe against relative movement with respect to another cylindrical pipe in one axial direction, comprising a plurality of slip assemblies disposable between the pipes in circumferentially separated relation and retaining said pipes in radially spaced-apart relation, each assembly having an inner and outer slip each of which has an exterior surface with pipe gripping teeth having their points lying on a cylindrical surface, means connecting the inner and outer slips of each assembly together for relative axial and radial movement, and means on the inner and outer slips of each assembly forming a substantially confined space therebetween which is at least substantially filled with a body of deformable material, whereby the slips of each assembly are urged in opposite radial directions upon relative movement of said slips in said one axial direction.

3,188,119
PARALLEL PIPE-TO-PLATE SWIVEL CONNECTOR
Raymond J. Miller, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 29, 1963, Ser. No. 319,739
1 Claim. (Cl. 285—136)



An adjustable connector for a fluid line comprising a body with a flat surface and having at least three circular bores extending through said surface and with the axes of said bores being so placed that at least one of said bores is in a plane different from any two of the other of said bores, each of said bores having a counterbore defining a shoulder facing outwardly toward said surface, a plurality of fittings each having an enlarged circular portion thereon disposed in each of said counterbores, said circular portions being adapted to abut said shoulders to limit movement of said fittings toward the interior of said body, sealing means carried by one of said enlarged circular portion and the wall defining said counterbore to engage and seal between the wall of said

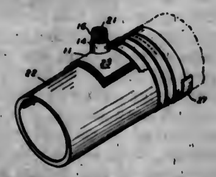
counterbore and said enlarged circular portion, said enlarged portions being rotatably and entirely disposed with axial clearance within the axial limits of said counterbores, said fittings extending outward from said counterbores and beyond said flat surface and with the outer diameter of said extending portion being reduced with respect to the diameter of said enlarged portion and having an enlarged end on the extending end of each of said reduced portions, and a flat retaining plate removably attached to said body and extending along said flat surface and between said fittings and having a half-circle notch in each of the opposite edges thereof to extend in a half-circle adjacent each of said reduced portions and with said plate being spaced from said reduced portions and overlapping said enlarged circular portions in the half-circle walls defining said notches for securing said fittings to said body in the direction of the axes of said bores, the distance between the bottom of one of said notches in one plane to the bottom of another of said notches in the other plane defining the said swivel clearance between said fittings and said retaining plate.

3,188,120
ADJUSTABLE PIPE NIPPLE
Chester H. Peterson, 20 Highland Ave., Braintree, Mass.
Filed Oct. 21, 1964, Ser. No. 405,891
3 Claims. (Cl. 285—175)



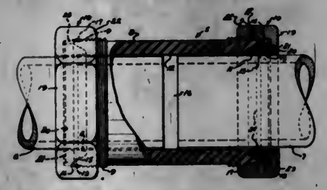
1. As a new article of manufacture, a plumbing fitting comprising an adjustable pipe nipple adapted to be rigidly joined in adjusted position, said nipple comprising a unitary pair of co-operating pipe elements, a first pipe element adapted for telescoping sliding engagement in a second pipe element, the first said pipe element having standard pipe threads at its distal end, the second said pipe element having standard pipe threads at its distal end, an interspace of a critical 0.002 to 0.004 inch between the outer wall of the inner first said pipe element and the wall of the second said pipe element when the said pipe elements are axially aligned, the ratio of the thickness of the wall of the second said pipe element to the thickness of the wall of the first said pipe element being at least as 3:2, the said pipe elements having a hardness on the Brinell scale of at least 65, and a bonding substance covering the full interface engagement for an axial distance equal to at least twice the outside diameter of the inner pipe.

3,188,121
CABLE SHEATH PRESSURE TAP FITTING
Richard A. Cude, Thousand Oaks, and Leon R. Miller, Los Angeles, Calif., assignors to Resolin, Inc., Santa Monica, Calif., a corporation of California
Filed Dec. 12, 1961, Ser. No. 158,835
4 Claims. (Cl. 285—197)



1. A cable sheath pressure tap fitting comprising a substantially cylindrically curved surface-contacting base member formed of pliable elastomeric material, and an apertured riser integral with said base member, said latter member being provided with a gasket attached to and covering a major part of the area of the inner face thereof, said gasket being coated with a pressure sensitive adhesive, said gasket being adapted when in contact with the outer surface of said cable sheath to act as a seal between said sheath and the inner face of said base member, said gasket extending nearly to the longitudinal edges of said base member, flat ridges located at least on said longitudinal edges of the outer surface of said base member, said longitudinal edges having an inner bevel adapted to provide leverage about the longitudinal edges of said gasket as a fulcrum and insure firm contact of said edges with the surface of said cable sheath when pressure is applied upon said ridges by means of a tension band.

3,188,122
COUPLING DEVICE FOR FLARELESS TUBING
Telford L. Smith, Los Altos, Calif.
(1206 Lake St., Millbrae, Calif.)
Filed Mar. 31, 1960, Ser. No. 18,962
1 Claim. (Cl. 285—249)



A coupling for unthreaded flareless tubing and the like comprising in combination:

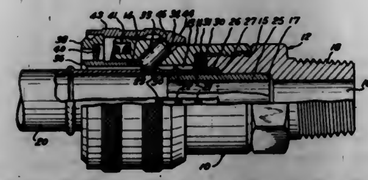
a tubular sleeve of deformable synthetic resin material having a bore adapted to receive the end of a rigid non-deformable tube section to be coupled, said bore having a diameter forming a clearance with said tube section which provides a loose, slide-on fit;

an annular recess formed in the end face of said sleeve, the walls defining said recess as seen in section diverging from a point within said wall to the outer face, the inner one of said walls being tapered axially and outwardly away from the axial centerline of the sleeve bore starting from the inner end edge thereof and continuing to said point thereby forming an axially extending and substantially knife edge annular lip member, said lip member being deflectable radially inwardly to engage the tube section, the walls of said recess defining a gasket seat;

an annular deformable gasket member of elastomeric material adapted to fit into said gasket seat and extending axially beyond the end of said sleeve; the diameter of the extending portion of said gasket being less than the outside diameter of said tubular sleeve;

an end compression thimble nut having an axially extending threaded part and an integral radially extending flange part, located about the tube being coupled and threadedly attached to said sleeve for generating an axial force against said gasket, the outer wall of the end of said tube being supported against any substantial radial deflection by the inner wall of the threaded portion of said nut, the inner diameter of said axially extending part being greater than said outer diameter of said gasket extending part whereby a gasket extrusion recess is formed by said tube end, said gasket and said nut, said nut when tightened acting to push said gasket axially into said annular recess and to extrude same into said cavity to simultaneously produce a continual loading on and thereby causing said annular lip member to deflect inwardly with a uniform circumferential pressure to form an annular lip seal around the tube, whereby fluid within the tube is prevented by said lip member from contacting the gasket, and causing chemical deterioration thereof.

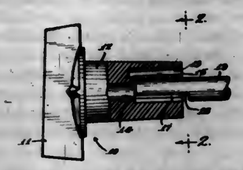
3,188,123
TUBE COUPLING
Howard J. Hansen, Bay Village, Ohio, assignor to The Hansen Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed May 5, 1961, Ser. No. 107,959
2 Claims. (Cl. 285—277)



1. A coupling for a tube having a forward end and a tube annular shoulder extending outwardly therefrom inwardly of said forward end, said tube annular shoulder having a forward side facing said forward end, said coupling comprising a socket member having an opening therethrough adapted to receive the forward end portion of said tube by insertion of said tube into said opening at one end of said socket member, said coupling having inwardly extending shoulder means in said opening spaced from said one end and adapted to limit the inward movement of said tube to a predetermined position in which said tube annular shoulder on said tube is received in said socket member, a sealing ring extending inwardly of the opening in said socket member and disposed in spaced relation to said inwardly extending shoulder means in said socket member to receive said tube and seal against the outer periphery thereof adjacent the forward side of said tube annular shoulder when said tube is in said predetermined position, locking means for releasably locking said tube in said coupling comprising a plurality of detents supported in apertures in said socket member for movement inwardly and outwardly of the side wall of the opening through said socket member and adapted to move inwardly of the side wall of the opening through said socket member to a locking position immediately adjacent the trailing side of said tube annular shoulder to cooperate with said trailing side of said tube annular shoulder to hold said tube against withdrawal when said tube is in said predetermined position, and means for releasably holding said detent means against movement outwardly from their locking position, and an internal support member coaxially disposed with said opening and extending from said shoulder means through and beyond said sealing ring and having an external diameter approximately that of the internal diameter of the tube whereby said support member is received in said tube as said tube is inserted into said socket member and said sealing ring.

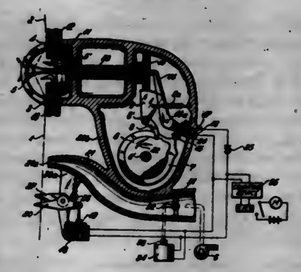
3,188,124
KNOB
John A. Pestka, Park Ridge, and Bernhard R. Kuhl, Arlington Heights, Ill., assignors to Warwick Manufacturing Corp., a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 265,133
5 Claims. (Cl. 287—53)

5. In combination, an operating knob having a stem of molded material, said stem having a wall defining an interior chamber receiving a shaft having an abutment thereon, said chamber having a width substantially equal to the diameter of said shaft, means molded into the interior surface of said wall defining a plane engageable with said abutment, and a section of said wall opposite said plane being relatively thin and flexible, the distance between said plane and said wall section being less than the



width of said chamber whereby the shaft is resiliently gripped by the knob stem and turning force applied to the knob is transmitted to the shaft through said means and said abutment.

3,188,125
YARN KNOTTER WITH YARN PORTION ELIMINATING MEANS
Albert tho Pesch, Monchen-Gladbach-Rheindahlen, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Sept. 3, 1963, Ser. No. 306,265
Claims priority, application Germany, Sept. 1, 1962, R 33,431
7 Claims. (Cl. 289—2)

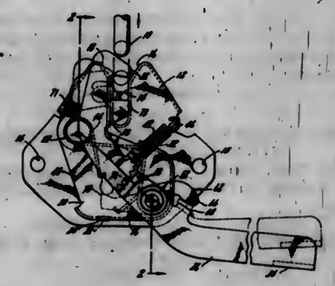


1. A knotter mechanism for knotting two yarn ends together, comprising a strength-testing device for clamping and tensioning the knotted yarn ends, said device being movable to a responded condition upon encountering insufficient strength of the knotted yarn, discharge means for eliminating yarn portions, and releasing means connected with said strength-testing device for actuating said discharge means when said strength-testing device moves to said responded condition, said discharge means comprising a yarn-severing device for severing said yarn portions, said severing device being connected to and actuable by said releasing means.

3,188,126
SELF-ADJUSTING LATCH STRUCTURE
Herbert Krause, Rockford, Ill., assignor to Chicago Forging and Manufacturing Company, Rockford, Ill., a corporation of Illinois
Filed June 25, 1963, Ser. No. 290,380
1 Claim. (Cl. 292—11)

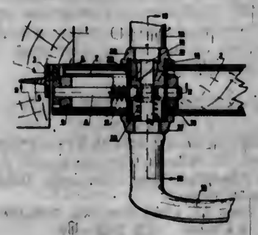
For use with vehicles having a body member and a hood member, a keepr fixed to one of said members, and a latching structure fixed to the other of said members, said latching structure including a mounting plate, said plate having a slot open at one end to receive said keeper, a locking latch pivoted to said plate, said locking latch having spaced jaws at one of its ends, said jaws being rotatable across said slot to engage said keeper, said locking latch having ratchet teeth at the other of its ends, a housing secured to said plate, said locking latch being pivoted intermediate its ends within said housing and having said spaced jaws extending outwardly from said hous-

ing, said locking latch having said ratchet teeth movable within said housing, yielding means engaging said housing and said locking latch and urging said locking latch away from keeper-engaging position, a safety latch pivoted intermediate its ends at a point spaced from said pivot point of said locking latch, said safety latch having a hook portion at one of its ends and a manually operable handle portion at the other of its ends, said safety latch being positioned for movement in a plane outwardly of said housing, a second yielding means secured to said plate and said safety latch and urging said safety latch into



keeper-engaging position, a locking pawl pivoted intermediate its ends about the pivot point of said safety latch, said locking pawl having a finger portion adjacent one of its ends, said finger portion being movable within said housing for engagement with said ratchet teeth, said pawl having its opposite end portion extending outwardly from said housing and positioned for engagement by said safety latch handle portion after a lost motion movement of said safety latch handle portion toward non-keeper-engaging position, and a third yielding means engaging said housing and said locking pawl and urging said locking pawl toward engagement with said ratchet teeth.

3,188,127
DOOR LOCK
Johannes Hendricus Hazes, Amsterdam, Netherlands, assignor to N.V. Ahrend-Libra, Amsterdam, Netherlands, a corporation of the Netherlands
Filed Feb. 18, 1963, Ser. No. 259,159
Claims priority, application Netherlands, Feb. 22, 1962, 275,120
5 Claims. (Cl. 292—224)



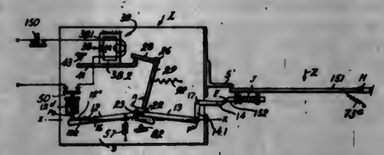
1. A door lock comprising a rotatable lock bolt, a rotatable shaft secured to said lock bolt, a spring cooperating with said shaft urging said bolt to locking position, a casing surrounding said shaft having a recess, a cam upon said shaft projecting into said recess, an actuating member located outside said casing cooperating with said cam through said recess, a rod upon which said actuating member is slidably and non-rotatably mounted, a spring biasing said actuating member, door handles mounted rotatably in a door upon the ends of said rod, a fixed cam upon said door, said actuating member having a cam cooperating with said cam upon said shaft at one end and at its other end having a cam cooperating with said fixed cam.

3,188,128
CLOSURE FASTENERS
Roland J. Olander, La Grange, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed May 29, 1961, Ser. No. 113,403
4 Claims. (Cl. 292—240)



1. A keeper-engaging member for a closure fastener comprising a stem portion, a flange on said stem extending substantially transversely of the stem, a finger extending from said flange generally parallel to the axis of said stem and offset therefrom, a first keeper-engaging surface on said finger extending parallel to the axis of said stem, and a second keeper-engaging surface comprising a surface on said flange that extends substantially transversely of the stem axis and is inclined relative to a plane transversely of the stem axis said inclined surface being substantially axially aligned in part with the axis of said stem.

3,188,129
REMOTE-CONTROLLED LOCK
Frederick J. Broch, 10 Wendell St., Cambridge, Mass.
Filed Nov. 15, 1962, Ser. No. 237,993
10 Claims. (Cl. 292—341.16)



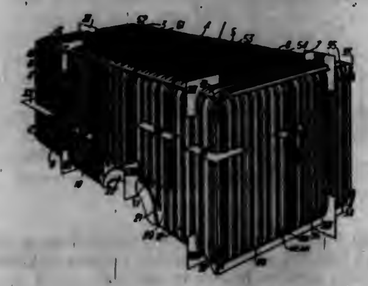
10. In combination with a hinged door, a lock of the kind wherein a pivoted striker normally prevents the door from opening in response to force tending to open it, a toggle-linkage comprising elongate primary and secondary links pivotally united at their adjacent ends to form a central joint and each pivotally supported at its other end, the central joint of the linkage being normally offset a prescribed short distance from the rectilinear dead center line connecting the outer ends of the links and always remaining at the same side of said dead center line, means so supporting the striker that force applied to the door for opening the latter tends to move the striker from normal position, means operative so to transmit force from the striker to the outer end of the primary toggle link that said force acts longitudinally of the link and thereby provides the only force for breaking the toggle-linkage so as to release the door, means normally operative to oppose force to one of the toggle links at a point adjacent to the central joint of the linkage thereby to prevent such movement of the central joint of the linkage from its normal position as to break the toggle regardless of the force applied to the locked door, and remotely-controlled electrical means operative to nullify said opposing force thereby permitting the door to open in response to pressure applied thereto such as to tend to open it.

3,188,130
SMALL GAME HANGING DEVICE
Stanley P. Pietrowicz, 1444 Houseman St. NE., Grand Rapids, Mich.
Filed Sept. 3, 1963, Ser. No. 305,928
6 Claims. (Cl. 294—74)



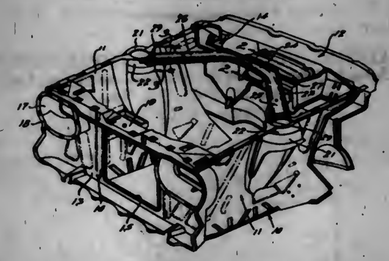
1. In a small game hanging device: a substantially straight, elongated, rigid, tubular body member having spaced ends and a medial aperture therebetween; a first looped thong firmly anchored within and extending outward from the interior of said body member upwardly through said medial aperture; closure means for each of the opposite ends of said tubular body member, both of said closure means forming apertures at said ends; second and third looped thongs firmly anchored within and extending outward from the interior of said body member through the said apertures of said closure means respectively and depending from the said spaced opposite ends of the said body elongate member; said first looped thong being adapted for attachment to an elevated support to suspend the device therefrom, and said second and third looped thongs being adapted for attachment to the legs of an animal to maintain the same in a spread condition determined by the length of the body member and the distance between its spaced ends while suspending the animal from the device.

3,188,131
VEHICLE BODY STRUCTURE
William Spencer Attwood, St. Albans, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 18, 1962, Ser. No. 231,508
14 Claims. (Cl. 296—28)



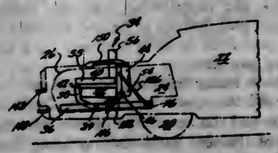
1. In a vehicle body, a wall structure comprising a pair of panels each having at least one corrugation formed adjacent and extending parallel in spaced relation to one edge thereof, said edge adjacent corrugations being internested to overlap the edge adjacent portions of the panels, the overlapping edge portion of one of the panels forming a flange extending from the adjacent corrugation therein and engageable with a corrugation adjacent portion of the other panel, the overlapping edge portion of the other panel having a first flange portion engageable with a corrugation adjacent portion of said one panel and having a second flange portion extending laterally therefrom, and means securing the internested corrugations and flanged edge portions of the panels together to form a wall joint therebetween and said second flange portion forming a joint reinforcing rib extending longitudinally of the wall joint formed between said panels.

3,188,132
MOTOR VEHICLE FRONT END STRUCTURE
Willi Schwiering, Wilhelm Wolf, and Heinz Ostendorf, Cologne, Germany, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of abandoned application Ser. No. 184,620, Feb. 14, 1962. This application July 16, 1964, Ser. No. 390,498
2 Claims. (Cl. 296—28)



1. In a motor vehicle having an engine compartment defined by spaced fender aprons and a cowl structure extending therebetween at the rear thereof, said cowl structure having a forwardly extending flange thereon, each fender apron having a suspension system spring housing intermediate the ends thereof, a single bracing channel yoke member consisting of a base portion having a rearwardly extending flange along one edge thereof and divergent forwardly extending arms, said yoke member flange being secured to said cowl flange to provide the only attachment of said yoke member base portion to said cowl structure, the free ends of said arms being secured to the spring housings, the longitudinal axis of each diverging section intersecting the plane of said cowl structure and the plane of the respective fender apron at an angle, said yoke being effective to transmit suspension system jounce forces from said spring housings to said cowl structure near the center thereof.

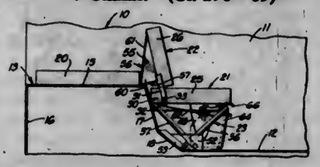
3,188,133
REMOVABLE AND REVERSIBLE AUTOMOBILE TRUNK SEAT APPARATUS
Earl R. Tewksbury, R.F.D. 151, Rockfall, Conn.
Filed Dec. 21, 1961, Ser. No. 161,054
12 Claims. (Cl. 296—65)



1. A reversible seat arrangement adapted for use in an automobile trunk space comprising a support frame hav-

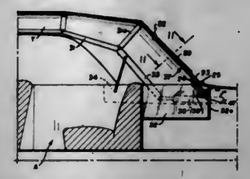
ing a first end and a second end spaced from said first end and being elevated from the space trunk floor a different distance than said first end, a first substantially flat member of less height than the spacing between said support frame ends and being pivotally connected to said frame first end, a second substantially flat member spaced from said first member and of less height than the spacing between said support frame ends and being pivotally attached to said frame second end so that said flat members may be pivoted toward one another into a substantially horizontal, stowed position, and further so that said first member may be pivoted to a substantially vertical position while said second member remains in said substantially horizontal position thereby forming a first seat and backrest arrangement facing in a first direction, and still further so that said second member may be pivoted to a substantially vertical position while said first member is in said substantially horizontal position thereby forming a second seat and backrest arrangement facing in a second direction opposite to said first direction, and means to support said members in said substantially vertical positions and said substantially horizontal positions when said members are forming said first and second seat and backrest arrangements.

3,188,134
AUTOMOBILE SEAT CONVERTIBLE TO BED
John L. Nixon, 5086 N. Hedrick, Arlington, Calif.
Filed June 24, 1963, Ser. No. 289,819
7 Claims. (Cl. 296—69)



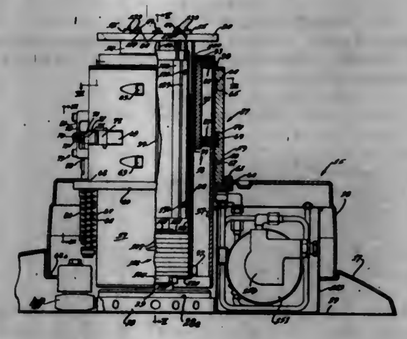
1. In an automobile having a body with a raised platform at the rear end of the interior thereof, a rear seat convertible into a bed, comprising:
a cushion resting on top of said raised platform;
a cushioned seat bottom carried on adjustable support means;
said adjustable support means being operable to move said seat bottom between a first position wherein the seat bottom is located at normal seat level with its rear edge abutting against the front side of said raised platform, and a second position wherein the seat bottom is elevated so that the top of the seat cushion is substantially level with the top of said cushion on said platform, and the rear edge of the seat bottom is spaced forwardly from the front side of said platform;
a cushioned seat back hinged to said seat bottom for vertical swinging movement between an upwardly and rearwardly inclined first position and a horizontal second position; and
means for moving said seat back to said first position responsive to movement of said seat bottom from its second position to its first position, said means comprising a cam member mounted on the rear of said seat back and cooperating with said raised platform when said seat bottom is moved between its first and second positions, to shift said seat back to the corresponding position;
said seat back being disposed, when in said second position, to fill the space between the front side of said platform and the rear edge of said seat bottom, and the top of the seat back cushion being flush with the tops of said seat bottom cushion and said cushion on said platform.

3,188,135
RIGID REAR WINDOW FOR CONVERTIBLE AUTOMOBILE
Joseph D. Bernstein and Dean Maynard, Denver, Colo., assignors to The Beverley Development Corporation, a corporation of Colorado
Filed Aug. 29, 1963, Ser. No. 305,457
11 Claims. (Cl. 296—117)



1. In a convertible automobile having a fabric top structure extended over the passenger section of the automobile with an open rear section carried upon a framework which is adapted to be collapsed, folded rearwardly, and to drop into a well in the automobile body at the rearward portion of the passenger compartment to retract the top, a rigid rear window formed of glass or like material, normally encased within the rear section opening of the fabric top when the top is extended, but being releasable therefrom when the top is to be retracted, and a supporting hinging means at the rearward edge of said well connecting with the window and being adapted to support the window, permit the window to be held within the encasement of the fabric top when the top is extended, permit the window to be swung rearwardly of the well, so that the top may be folded and lowered into the well without interference by the window, and permit the window to be subsequently swung into the well over and upon the folded top therein.

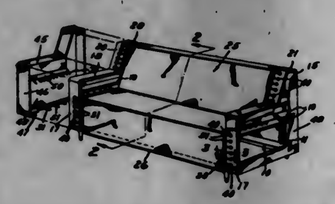
3,188,136
ELECTRO-HYDRAULIC SYSTEM FOR OPERATING ELEVATABLE CHAIRS
Charles L. Redfield, Downers Grove, and John A. Dlouhy, Oak Park, Ill., assignors, by direct and mesne assignments, to Emil J. Paidar Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 27, 1962, Ser. No. 219,388
9 Claims. (Cl. 297—71)



2. In an elevatable chair construction including a chair seat and a backrest which is movable between an upright in a reclining position relative to said seat,
hydraulic means for actuating said backrest between said positions,
a base structure,
a chair seat frame structure,

said base structure having fixedly thereon an upwardly projecting manifold tube structure,
a cylinder having an upper closed end and telescopically engaged with said manifold tube structure and defining with the manifold tube structure a pressure chamber,
said cylinder having a plurality of circumferentially spaced vertical cylinder bores spaced from said chamber and communicating with said chamber at their lower ends,
pistons in said bores having piston rods projecting above said cylinder and supportingly attached to said chair frame structure,
said manifold tube structure having hydraulic fluid passage therein communicating adjacent to the upper end of the manifold tube structure with said cylinder chamber,
means for delivering hydraulic fluid into said manifold tube passage and thereby into said chamber and said bores for simultaneously elevating said cylinder and said pistons and thereby effecting compound elevation of said chair frame structure relative to said base structure,
and means including passages through said manifold structure and said cylinder and said seat frame structure for operating said backrest actuating hydraulic means.

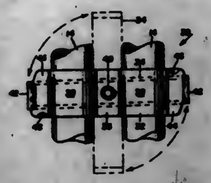
3,188,137
REMOVABLE UPHOLSTERY COVER FOR FURNITURE
Maynard C. Servas, 11375 Baskerville Road, Los Alamitos, Calif.
Filed Oct. 16, 1961, Ser. No. 145,359
5 Claims. (Cl. 297—218)



1. An upholstered article of furniture comprising a frame, cushioning material supported by the frame and forming a seat and a back rest, a first single upholstery cover consisting of a single flat sheet for the furniture extending only over the cushioning material and frame and having marginal portions disposed adjacent the frame, the frame also including arm rest portions, second upholstery covers for the arm rest portions extending over the arm rest portions and having marginal portions disposed adjacent and detachably coupled to the frame, elastic means secured along the edges of the marginal portions and along the reverse side of the first cover along the line joining the seat to the back rest, and means on the frame for detachably engaging the elastic means to separately secure the first and second upholstery covers only to the frame and stretch the first cover over the cushioning material.

3,188,138
CHAIR INTERLINKING UNIT
Samuel D. Lochridge, Northampton, Mass., assignor to Hampden Specialty Products Corporation, Easthampton, Mass.
Filed May 4, 1964, Ser. No. 364,389
1 Claim. (Cl. 297—248)

A chair interlocking unit for coupling together the adjacent legs of adjacent chairs comprising,
(a) a clamp portion extending transversely across the chair legs on one side thereof,
(b) a cam lock portion of a length substantially identical to that of the clamp portion pivoted to the clamp portion and normally extending transversely across the chair legs on the other side thereof,
(c) inturned flanges at each end of the cam lock portion, and
(d) cam lobes at each end of the clamp portion,



(e) the cam lock portion being movable between a normal locking position wherein it extends transversely across the chair legs with the inturned flanges thereof frictionally engaging the outermost surfaces of the cam lobes of the cam lock portion, and an unlocking position wherein it extends parallel to the chair legs, with the inturned flanges thereof moved out of frictional engagement with the cam lobes.

3,188,139
KNEE RESTRAINT STRAP SYSTEM
William C. Boyce, Dallas, Tex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 27, 1964, Ser. No. 347,974
3 Claims. (Cl. 297—384)

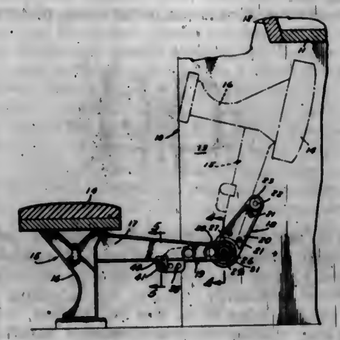


1. A knee restraint harness system for prevention of submarining comprising a strap forming a closed loop extending from above the knee of an astronaut or pilot to below the arch of the foot, a pair of straps, each attached to said loop at a position proximate to the calf of the leg, said pair of straps crossing each other below the knee of the astronaut and above the closed loop, each of said pair of straps being secured to the top portion of said loop at its intersection therewith, and a semicircular strap secured at its ends to said loop immediately below said knee.

3,188,140
KNEELER AND SUPPORTING BRACKET
William Hahnlein, Glendale, Calif., assignor to Hamlin Manufacturing Co., Glendale, Calif., a corporation of California
Filed June 24, 1963, Ser. No. 290,040
8 Claims. (Cl. 297—426)

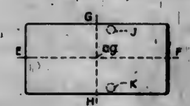
1. In a kneeler supported for swinging movements to an extended substantially horizontal lowered position of use and to an out-of-the-way raised position of nonuse:
(a) an arm support for the kneeler;

(b) means for pivotally attaching said arm at one end to an associated pew structure for swinging movements through a vertical center line directly above the pivot axis to locate the kneeler in its use and non-use positions respectively on opposite sides of the center line; and



(c) means including a loading spring acting on said arm in a direction to oppose the action of gravity with an increasing force during movement of the kneeler substantially from said vertical center line to its use position.

3,188,141
LEG AND FOOT REST
Raymond Peter Wright, Nithsdale, Brockenhurst, England
Filed May 3, 1963, Ser. No. 277,848
Claims priority, application Great Britain, May 7, 1962, 17,382/62
10 Claims. (Cl. 297—439)

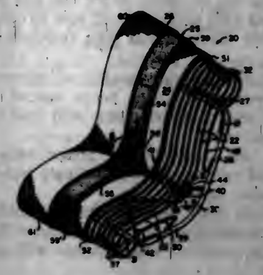


1. A foot rest comprising a base, a pair of flexible springs secured at their lower ends to the base so that they are disposed at least approximately parallel, and a supporting pad mounted on the upper ends of the springs, there being no other supporting connection between the base and the pad so that the springs can be easily flexed in parallel planes which lie normal to the plane in which the springs lie enabling the pad to be easily tilted on the springs.

3,188,142
SEAT CONSTRUCTION
Karl K. Probst, Commodore Apt. 10–C, 522 Grand Ave., Dayton, Ohio; Jack P. Probst, executor of said Karl K. Probst, deceased
Filed July 30, 1962, Ser. No. 213,290
15 Claims. (Cl. 297—456)

1. A seat construction comprising a frame means having a top back portion and a front seat portion, a plurality of back springs each having a torsion coil secured to said top back portion, a plurality of seat springs each having a torsion coil secured to said front seat portion, and a freely floating means hinged to said springs adjacent the juncture of the back of said seat construction to the seat there-

of to permit relative movement between said springs and said freely floating means, said springs each being separately hinged to said floating means so as to move relative to said floating means independently of the remaining springs.



3,188,143
TIRE TRIM MEMBER
Maurice H. Krainee, 4708 Monteith Drive, Los Angeles 43, Calif.
Filed Sept. 28, 1962, Ser. No. 226,980
4 Claims. (Cl. 301—37)

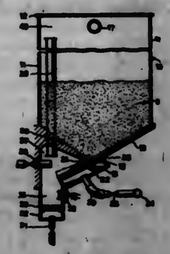


1. A side wall trim member for a mounted automobile tire comprising: a radially inward annular portion of a rubber-base material of a dark color substantially conforming to the color of the tire side wall, the radially inward edge of said portion being dimensioned to be clamped between the tire and the wheel on which it is mounted with said portion extending outwardly over the front side of the tire; a radially outward annular rubber-base material portion integrally joined to said radially inward portion along a substantially rearwardly facing surface on said radially inward portion; and having a contrasting lighter color; an annular bead on the front surface of said dark colored portion at the radially outward edge thereof and extending forwardly of the planes of both said portions; and an annular bead on the back surface of said dark colored portion and defining the radially inward limit of said light colored portion.

3,188,144
BIN DISCHARGE MEANS
Bruno Gmür and Hans Oetiker, both of St. Gallen, Switzerland, assignors to Gebrueder Buehler, Uzwil, Switzerland, a firm of Switzerland
Filed Apr. 9, 1962, Ser. No. 186,120
Claims priority, application Switzerland, Apr. 12, 1961, 4,296/61
19 Claims. (Cl. 302—29)

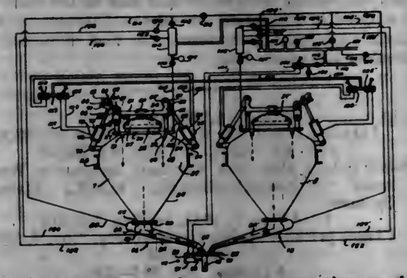
1. In a device for discharging pulverous or granular goods from bins via an inclined bin bottom into an elongate collecting channel, the improvement comprising a generally upright bin having an inclined bottom supporting fluent material in the bin, an elongated collecting channel extending along the lowermost portion of the bin bottom to receive material flowing downwardly over the bin bottom, an inclined insert overlapping the lower-

most portion of the bin bottom adjacent said channel, said insert being inclined oppositely to the inclination of the bin bottom and forming with the bin bottom a relatively narrow delivery slot, the inclinations of the bin bottom and said insert, and the width of said slot, being so coordinated with the angle of repose of the fluent



material on the bin bottom that, in the absence of ventilation, the material on the bin bottom will remain at rest, and a plurality of porous elements and of means forming ventilation chambers comprising the lowermost bin bottom portion below said insert, said lowermost bin bottom portion being subdivided longitudinally of said slot into a plurality of ventilation fields.

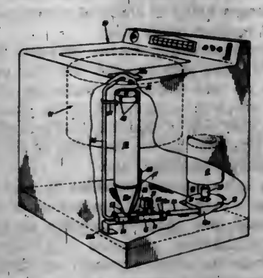
3,188,145
CONCRETE PLACEMENT MACHINE
William A. Strong, 2906 W. 26th St., Pine Bluff, Ark.
Filed Mar. 20, 1963, Ser. No. 266,636
4 Claims. (Cl. 302—53)



1. In a machine for moving wet concrete mixes or the like from a supply station to a building area at a remote location with respect to said supply station, the improvement comprising,

(1) a pair of vessels containing the mix under pressure and formed by round hoppers tapered at their discharge ends to connect to individual discharge spouts,
(2) a plurality of nozzles connected with said spouts intermediate the ends of each of said spouts, said nozzles being connected with a source of air under pressure and arranged to deliver air under pressure at spaced locations within said spouts,
(3) a shuttle valve at the discharge end of said nozzle selectively operable to keep one nozzle closed while connecting another to an outlet,
(4) a flexible conduit having an inlet end attached to said outlet and an open discharge end remote from said outlet,
(5) a discharge nozzle on the open discharge end of said conduit having an upwardly inclined diffuser section with an air vent on the top of said diffuser section adjacent its downstream end, and
(6) means for delivering said wet mix to said diffuser section in a solid stream at a rate to partially fill said diffuser section and vent the air pressure in the stream.

3,188,146
AUTOMATIC GRANULES DISPENSER
Brandon M. Cordes, Wyoming, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 9, 1963, Ser. No. 300,967
4 Claims. (Cl. 302—53)



1. A dispenser for granular materials having in combination:

(A) an enclosed hopper for temporary storage of a quantity of the product to be dispensed, said hopper having an open bottom outlet;
(B) an enclosed product feed chamber below and in communication with the hopper outlet and having incorporated therein feed control means to regulate the flow of product from the hopper;
(C) said feed control means comprising a stationary granules support surface directly underlying said bottom outlet, said granules support surface being spaced from said bottom outlet and from underlying portions of said feed chamber, said spacing serving to regulate the flow of product from the hopper and maintaining a substantially constant quantity of product in said feed chamber by action of the angle of repose of the product to be dispensed,
(D) said product feed chamber having an air inlet end and a product discharge end,
(E) an air supply system providing a source for a moving stream of air and means to place said air supply system in communication with said air inlet end of said product feed chamber only during a predetermined period of time in which the dispensing operation occurs, said period commencing at a fixed point in the cycle of an automatically controlled machine,
(F) a by-pass passageway connected in parallel with said product feed chamber and providing direct communication between the product discharge end of said product feed chamber and said air supply system during the portion of the timed cycle other than that during which dispensing occurs, and
(G) a pressure equalization passageway interconnecting the interior of said enclosed hopper with the air inlet end of said product feed chamber whereby such equalization occurs during said predetermined period.

3,188,147
LOCOMOTIVE VACUUM BRAKE EQUIPMENT WITH INDEPENDENT QUICK RELEASE OF AUTOMATIC BRAKE APPLICATION
James F. Ferguson, Irwin, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1963, Ser. No. 328,733
6 Claims. (Cl. 303—4)

1. In a combined compressed air and vacuum operated brake equipment for a railway locomotive, the combination of:

(a) a vacuum brake pipe normally evacuated to a certain degree of vacuum in which the brakes are released, and subject to a certain reduction of vacuum therein to cause a brake application,

(b) a brake control valve device comprising:

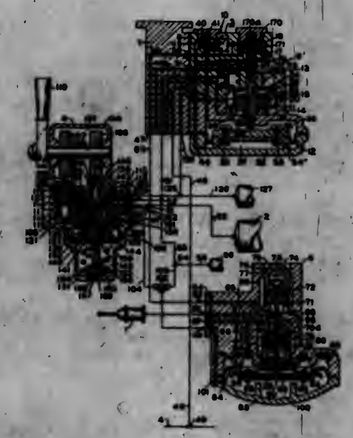
(i) a diaphragm having a chamber on each side thereof, the chamber on one side of said diaphragm being in constant communication with said vacuum brake pipe,

(ii) communication means between the chamber on the one side and the chamber on the other side of said diaphragm including choke means via which the evacuation of the chamber on the the other side of said diaphragm is effected while the chamber on the one side of the diaphragm is being evacuated, and

(iii) a valve means controlled by said diaphragm, upon a predetermined reduction of the vacuum in said one chamber relative to that in said other chamber, to cause said valve means to operate to effect a supply of fluid at super-atmospheric pressure,

(c) a relay valve device comprising:

(i) fluid pressure operated self-lapping valve



means responsive to the fluid at superatmospheric pressure supplied by said brake control valve device to effect the supply of fluid at super-atmospheric pressure to cause a brake application, and

(d) independent brake valve means comprising:

(i) an operating handle having a normal release position and being operative in one direction out of said release position to a quick release position, and

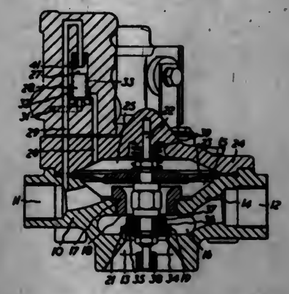
(ii) valve means operative in response to movement of said operating handle to its quick release position to establish a communication through which fluid at super-atmospheric pressure acting on said relay valve device is discharged into said other chamber thereby to reduce the degree of vacuum therein such that said brake control valve device is restored promptly to its brake release position to cause a full release of the super-atmospheric pressure from said relay valve device thereby to cause said relay valve device to effect a full release of the brake application.

3,188,148

FLUID FLOW CONTROL VALVE

Maurice Barry Eaton, Kings Norton, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company

Continuation of application Ser. No. 275,695, Apr. 23, 1963. This application Nov. 16, 1964, Ser. No. 414,490
6 Claims. (Cl. 303—21)



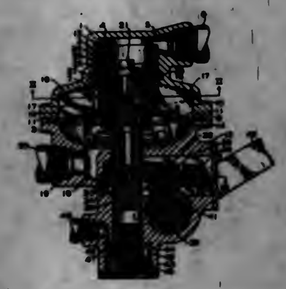
1. A fluid control valve comprising a valve body, in which is formed an inlet passage, an outlet passage and an exhaust passage, opposed seatings in said valve body located respectively between said inlet passage and said outlet passage, and between said outlet passage and said exhaust passage, a valve head adapted to engage alternatively with said seatings, and a shroud on each side of said valve head and which throughout its axial length is of a constant section complementary to and smaller than the seating with which that side of the valve head is adapted to co-operate, whereby said shroud is adapted to enter said seating and restrict the flow of fluid through it before the valve closes.

3,188,149

LOAD-ADJUSTED RELAY VALVE DEVICE FOR BRAKE CONTROL SYSTEMS

Ewald Pokrul, Hannover, Germany, assignor to Westinghouse Bremsen-Gesellschaft, m.b.H., Hannover, Germany

Filed Nov. 1, 1962, Ser. No. 234,810
Claims priority, application Germany, Nov. 4, 1961, W 31,602
4 Claims. (Cl. 303—22)



1. A fluid pressure regulating valve device comprising:

(a) a casing having an inlet pressure chamber to which a control pressure may be supplied and an outlet pressure chamber from which fluid pressure is supplied for a desired control purpose,

(b) a constant area piston having a hollow stem and subject on one side to the fluid pressure in said inlet pressure chamber,

(c) a variable area diaphragm connected at its inner area to said piston stem and at its outer periphery to said casing and being subject on one side to the pressure in said outlet pressure chamber,

(d) a valve stem coaxially carried by said piston and having:

(i) a supply valve at one end which is biased to a seated position on a valve seat on said piston to close communication therepast between said inlet pressure chamber and said outlet pressure chamber, and

(ii) an exhaust valve at the opposite end thereof,

(e) a tubular exhaust valve seat member having a valve seat at one end on which said exhaust valve seats to close communication between said outlet pressure chamber and atmosphere via a passage in said tubular exhaust valve seat member,

(f) a lever having one end pivotally supported on said casing and a free end thereof operatively connected to said exhaust valve seat member for axially shifting said exhaust valve seat member to different positions to vary the normal clearance between said exhaust valve and said exhaust valve seat,

(g) rotary cam means for operatively pivoting said lever for effecting shifting of said exhaust valve seat member to its said different positions,

(h) means for rotating said rotary cam means for effecting pivoting of said lever in accordance with variations in vehicle load,

(i) said constant area piston being effective responsively to supply of fluid pressure to said inlet pressure chamber to move the inner area of said diaphragm to provide an increasingly larger effective pressure area to a limit determined by sealing engagement of said exhaust valve on said exhaust valve seat, thereby to effect unseating of said supply valve correspondingly to cause supply of fluid pressure past said supply valve from said inlet pressure chamber to said outlet pressure chamber, the pressure established therein acting on said diaphragm to effect reseating of said supply valve on said piston by return movement of said piston and corresponding to the position of said exhaust valve seat member,

(j) a plurality of angularly spaced radially extending ribs carried by said casing and supporting said diaphragm against deflection by the pressure in said outlet chamber, and

(k) a plurality of angularly spaced ribs carried by said piston in interspersed radial relation to the aforesaid ribs carried by said casing and effective to peel off the inner area of the diaphragm to provide the increasingly greater effective area of the diaphragm in accordance with movement of said piston when subject to the pressure in the inlet pressure chamber.

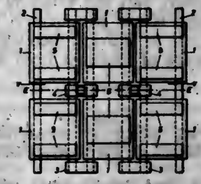
3,188,150

ENDLESS TRACK STRUCTURE

Karl Sandginger, Hamborg, Saar, Germany, assignor to Karl Gerlach and Hans Gerlach, Moers, Lower Rhine, Germany

Filed Mar. 20, 1962, Ser. No. 181,844
Claims priority, application Germany, Mar. 21, 1961, G 31,867
8 Claims. (Cl. 305—35)

1. An endless track for cross-country vehicles, particularly tanks, said track comprising links presenting profiled supporting surfaces, said links being interconnected at adjacent ends thereof to form articulated joints, and said supporting surfaces of alternating links being of different shapes and being arranged on both sides of a vertical center plane and alternating on each side of said center plane from link to link longitudinally of said endless track, said surfaces on each side being defined by widely spaced pairs of elongated narrow supporting surface ribs on one said link laterally of said track alternating with one transverse supporting surface rib on an adjacent said link presenting a supporting surface corresponding



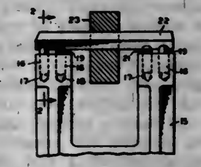
substantially to the area of the free space intermediate said elongated ribs and substantially of the same extent longitudinally of said track as said elongated ribs.

3,188,151

WEIGHING SCALE BEARING STRUCTURE

Harlan A. Hadley, P.O. Box 137, Barlington, Vt.

Original application Oct. 13, 1959, Ser. No. 846,129, now Patent No. 3,074,765, dated Jan. 22, 1963. Divided and this application Dec. 6, 1962, Ser. No. 242,760
9 Claims. (Cl. 308—2)



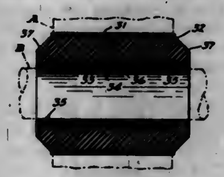
1. A knife-edge bearing for weighing scales comprising a non-flexible support having a plurality of spaced bores therein, a single substantially cylindrically-shaped non-flexible member in each of said bores, the upper extremity of each member having an inclined face thereon, said faces cooperating with each other to form a full V-bearing for the knife-edge.

3,188,152

CUSHIONED BEARING ASSEMBLY

Harvey E. Miller, Logansport, Ind., assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Jan. 4, 1962, Ser. No. 164,361
7 Claims. (Cl. 308—36.1)

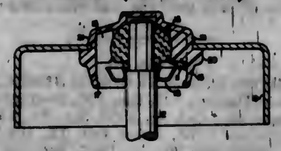


1. A cushioned bearing assembly comprising coaxial rigid sleeves disposed one within the other and a tubular insert of elastic rubber retained under radial compression between said sleeves, one of said sleeves having a bearing face composed of a low friction material, and that is provided with longitudinally extending lubricant receiving grooves, said last mentioned sleeve comprising two substantially cylindrical parts, one fitting within the other and rotatable with respect to the other, one of said parts being a circumferentially continuous bearing member and the other of said parts being interposed between the said continuous bearing member and said rubber insert, and means for restraining relative axial movement of said cylindrical parts, said circumferentially continuous bearing member being longer than the other relatively

rotatable sleeve part and projecting beyond the ends thereof, said elastic rubber insert projecting beyond the ends of the shorter sleeve part and engaging with the bearing face of the longer sleeve part beyond the ends of said shorter sleeve part to provide therewith sealing means for retarding escape of lubricant from the bearing.

3,188,153
SELF-ALIGNING SLEEVE BEARING ASSEMBLY FOR DYNAMOELECTRIC MACHINES AND THE LIKE

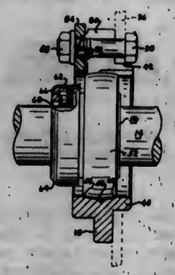
James R. Turk, Euclid, Ohio, assignor to Vincent K. Smith, Gates Mills, Ohio
Filed Oct. 17, 1961, Ser. No. 145,652
1 Claim. (Cl. 308—36.4)



A bearing assembly comprising a bearing member of porous, lubricant saturable metal having a spherical surface, a one-piece annular housing of resiliently deformable material having a plurality of radial ribs therein, said ribs forming a spherical socket into which said bearing member is snapped and yieldably retained thereby, the spaces between said ribs forming reservoir cavities for lubricant around said bearing surface, said bearing member and housing defining an annular groove within said socket intercommunicating said reservoir cavities, an annular radial inwardly directed oil retaining lip on said housing, and an annular slinger mounted adjacent to said bearing member within said lip and concaved in the direction of said reservoir cavities, said reservoir cavities being axially open within said lip toward said slinger to receive lubricant upon rotation of said slinger.

3,188,154
SHAFT BEARING

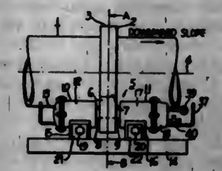
David Firth, South Bend, Ind., assignor to Dodge Manufacturing Corporation, Mishawaka, Ind., a corporation of Indiana
Filed Jan. 24, 1963, Ser. No. 253,666
11 Claims. (Cl. 308—72)



1. A pillow block comprising a one piece housing having a spherical bore therein and opposed slots at one edge of said bore, a plurality of bosses with holes therethrough spaced around the periphery of said housing with one of said holes being positioned at one of said slots, a bearing having a spherical outer race seated in said bore, a radial slot extending through said housing at said one hole, a conical projection around said last mentioned hole, a washer with a conical recess therein for engaging said conical projection, and a bolt with a nut extending through said last mentioned hole for urging said washer and projection together to draw the segments of said housing on opposite sides of said slot toward one another and thereby reduce the diameter of said bore.

3,188,155
ALIGNMENT INDICATING ROLLER TYPE SUPPORT ASSEMBLY

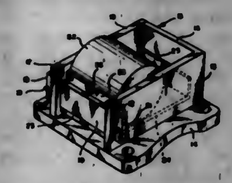
Robert H. Kennaltz, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 24, 1963, Ser. No. 253,641
5 Claims. (Cl. 308—204)



1. An alignment indicating roller type support assembly for carrying rotatable structures comprising a base structure, a housing structure movably supported on said base, a roller with a shaft projecting axially thereof and journaled in said housing, said housing structure enclosing the end of said shaft to define a fluid pressure confining chamber of predetermined volume in axial alignment with the shaft; a pressure gauge mounted on said housing and in communication with the chamber, adjusting means for moving the housing structure relative to said shaft journaled therein and to said base structure to thereby change said volume of said chamber and change the pressure of fluid contained within said chamber and registered on said gauge.

3,188,156
SIDE BEARINGS FOR RAILROAD CARS

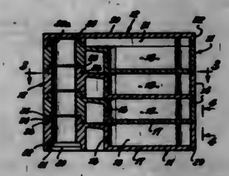
John W. Jordan, Milwaukee, Wis., assignor of twenty-five percent to Curtis B. Morsell, Jr., Milwaukee, Wis.
Filed Mar. 4, 1963, Ser. No. 262,397
3 Claims. (Cl. 308—225)



1. A side bearing assembly for railroad cars, comprising: a rectangualr housing adapted to be mounted on a railroad car truck bolster, said housing having a bottom, having an open top, having a pair of spaced upright side walls, and having a closure at one end between said side walls, the opposite housing end being open; a cylindrical bearing element movably carried in and projecting above said housing, said cylindrical bearing element being substantially smaller in diameter than the distance between the ends of said housing and being freely rollable therebetween, the closure at one end of said housing preventing said movable bearing element from passing through and out said housing end; and a second closure member removably positionable between said side walls at the open end of said housing to prevent said rollable bearing element from passing through and out said housing end when in use, said second closure member being manually removable to permit the withdrawal of said bearing element from said housing for necessary adjustment or replacement.

3,188,157
STACKED DISPENSING CONTAINERS

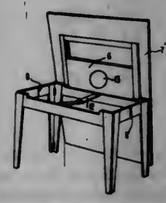
Paul D. Rand, Sherman Oaks, Calif., assignor to Spatz Corporation, Venice, Calif., a corporation of California
Filed Nov. 5, 1962, Ser. No. 235,455
6 Claims. (Cl. 312—282)



1. In combination: a plurality of containers arranged in stacked relation and each having a chamber therein; each container being an integral structure of elastic material; a swivel interconnecting adjacent containers, said swivel comprising a single pin portion of one container disposed within a single socket portion of an adjacent container, an upper container being adapted to be placed in contiguous alignment with a lower container to close the chamber of said lower container, said pin portion having a maximum unrestricted outside diameter greater than the minimum unrestricted inside diameter of said socket portion to permit insertion of said pin portion in said socket portion as a result of deflection of said pin portion and socket portion, whereupon return of said portions to their original shapes retains said pin portion in said socket portion and prevents relative axial movement between said pin portion and socket portion; releasable lock means between adjacent containers opposite said pin portion and socket portion comprising a protuberance on and integral with one container disposed within a recess of an adjacent container to releasably hold an upper container in closed position over a lower container, said protuberance being removed from said recess to release said lock means by axially deflecting one of said containers at said protuberance relative to an adjacent container.

3,188,158
FOLDING TABLE

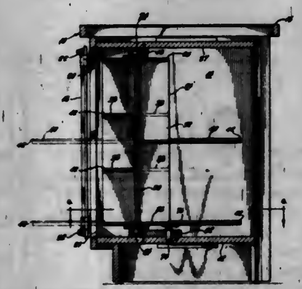
Pascual José María Oscoz Sanchez, Ibanez de Bilbao 6, Bilbao, Spain
Filed Mar. 8, 1962, Ser. No. 178,585
1 Claim. (Cl. 312—277)



A folding table comprising a plurality of vertical legs, a rigid horizontal girder fixed to the upper ends of a pair of said legs lying in one plane, additional horizontal girders at least one of which is foldable forming a closed continuous frame and securing the remaining legs to said first horizontal girder and pair of legs to form a unitary leg assembly, said additional girders being arranged to permit the remaining legs to be swung to lie in a vertical plane adjacent the plane of said pair of legs, a top panel for seating on said continuous frame of horizontal girders, a pair of parallel guides perpendicular to said rigid girder under said panel, a slide movable in said guides, hinge elements connecting said rigid girder and unitary leg assembly to said pair of guides, and pivot means fastening said slide to said panel to permit rotation of the panel in its own plane, whereby upon folding the table said legs and girders are swingable to lie in adjacent vertical planes and then turnable as a unit about said hinge elements to lie against the underside of the panel and finally are slideable as a unit to center the legs and girders so as to completely underlie the panel without extending beyond its periphery to enable use of the top panel as a cabinet closure, and whereby upon unfolding the table the reverse operations may be followed, said slide being movable to center the extended legs and girders under the top panel.

3,188,159
ROTATABLE SHELF CABINET

Arthur D. Wenger, Reading, and Robert L. Snyder, Laureldale, Pa., assignors to Quaker Maid Kitchens, Inc., Leesport, Pa., a corporation of Pennsylvania
Filed Mar. 22, 1963, Ser. No. 267,137
1 Claim. (Cl. 312—305)



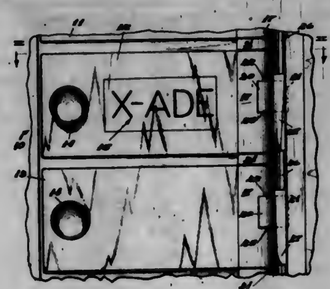
A cabinet construction comprising a cabinet closure, a shelving unit rotatably disposed within said closure for rotation about a vertical axis, bearing assemblies rotatably securing said shelving unit to the top and bottom of said closure, each of said bearing assemblies comprising a cylindrical stud secured to and extending vertically from said shelving unit, and a bearing plate on said cabinet closure, said bearing plate including a bore adapted to receive and journal said stud, said bearing plate comprising a fixed portion secured to said cabinet closure, and an adjoining removable portion adapted for attachment to said fixed portion, the juncture of said fixed portion and said removable portion passing vertically through a diameter of said bore such that removal of said removable portions from each of said bearing assemblies permits horizontal removal or insertion of said rotatable shelving unit; the vertical axis of rotation of said shelving unit being substantially closer to the front of said cabinet closure than the rear thereof, said shelving unit including horizontal top and bottom members, a vertical wall extending between said top and bottom members dividing said shelving unit into opposed front and rear storage regions, said shelving unit horizontal bottom member forming a bottom shelf of said shelving unit in both front and rear storage regions thereof, at least one additional shelf extending from said vertical wall in said front and in said rear storage regions, said shelves respectively extending substantially to the front and rear of said cabinet closure, the shelves of the rear storage region being substantially arcuate in shape to provide maximum shelf space in the rear storage region, the shelves of said front storage region being substantially shallower than the shelves of said rear storage region due to the forward position of the axis of rotation of the shelving unit, whereby on rotation of said shelving unit the shelves of said rear storage region extend beyond the front of said

cabinet closure to facilitate placement and removal of items stored thereon, and means for registering and maintaining the rotatable shelving unit in a retracted position with the shallower shelves extending toward the front of the cabinet closure, said means comprising a bullet catch mounted on the bottom of said cabinet closure, and a cam plate secured beneath said shelving unit horizontal bottom member, cam surfaces of said cam plate terminating in a central radially disposed groove, said cam plate being so positioned as to coact with said bullet catch to dispose said bullet catch in said groove and thereby arrest rotation of said shelving unit when said shelving unit is rotated into the retracted position.

3,188,160
CONTROL STRUCTURE FOR VENDING MACHINE

Richard T. Cornelius, Minneapolis, and Irving F. Snyder, Anoka, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

Filed June 13, 1963, Ser. No. 287,696
19 Claims. (Cl. 312—220)



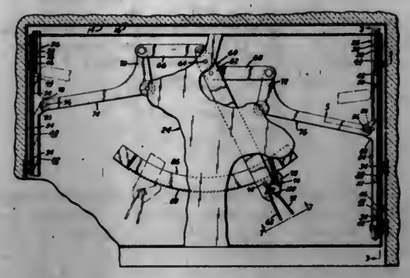
1. In a vending machine, the structure comprising in combination:
(a) a plurality of doors each pivotally supported for swinging about an axis, between a normally closed position and an open position;
(b) a cam block fixedly secured to one of said doors and pivotable therewith about said axis;
(c) stop means fixedly secured to the other of said doors; and
(d) a slide member engageable with and movable by said cam block, in response to pivoting of said one of said doors from said closed position, into juxtaposition with said stop means and engageable thereby to prevent any simultaneously attempted substantial opening of said other of said doors.

3,188,161
VERTICALLY ADJUSTABLE SHELF

Paul F. Powder, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 247,921
2 Claims. (Cl. 312—306)

1. In combination a support, a shelf, friction reducing means for slidably supporting said shelf for fore and aft movement relative to said support, actuatable means operatively associated with said friction reducing means being movable to raise and lower said shelf relative to both said friction reducing means and said support, and actuator means on the bottom of said shelf including an elongated arm having a portion thereof pivotally secured to said shelf and further including means for translating the rotary movement of said arm to translatory movement including a first link having one end thereof pivotally connected to said actuator arm, a crank arm having one end thereof pivotally connected to the opposite end of said first link and a second link disposed substantially trans-

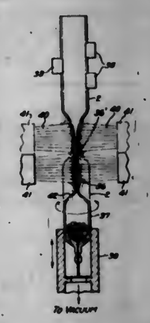


versely of said shelf being pivotally interconnected between the opposite end of said crank arm and said actuatable means for moving said actuatable means to adjust said shelf relative to said support.

3,188,162
METHOD OF MAKING FLASH LAMPS

Robert M. Anderson, Euclid and Louis A. Demchock, Jr., Cleveland, Ohio, assignors to General Electric Company, a corporation of New York

Continuation of application Ser. No. 826,032, July 9, 1959. This application Feb. 23, 1961, Ser. No. 91,279
14 Claims. (Cl. 316—20)



1. The method of making a flash lamp comprising the steps of sealing a lamp mount, comprising a pair of lead-in wires having a filament connected thereacross, into one end of a glass tube to form a sealed end thereon with the said filament located a short distance inwardly of the glass tube from its said sealed end, applying through the open other end of said glass tube a quantity of primer material onto the filament and the adjacent portions of said lead-in wires, introducing into the glass tube through its said open end and positioning adjacent the said filament a quantity of readily combustible metallic material, exhausting and introducing into the said glass tube through its said open end a combustion-supporting gaseous medium, and then heating and sealing off an intermediate portion of the length of said glass tube located between its said open end and the said combustible material.

CHEMICAL

3,188,163
BLUE DYED POLYPROPYLENE FIBERS AND PROCESS OF DYEING THEM

Joseph W. Dehn, Jr., Great Neck, and Harold J. Kuhefuss, Brooklyn, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Jan. 22, 1963, Ser. No. 253,041
2 Claims. (Cl. 8—39)

2. Process for dyeing polypropylene fibers blue, consisting essentially of
(a) immersing polypropylene fiber in an aqueous dyebath containing conventional amounts of the dye, 1,4-bis(2',4',6'-triethyl anilino) anthraquinone dispersed therein and a suitable dispersing agent,
(b) heating the bath to around 200° F. for about 1–2 hours,
(c) removing the fiber from the bath and drying.

3,188,164
POLYPROPYLENE FIBERS DYED WITH 4-NITROACRIDONE DYES

Joseph W. Dehn, Jr., Great Neck, and Harold J. Kuhefuss, Brooklyn, N.Y., and John J. Maitner, Hazlet, N.J., and Anthony J. Salina, New York, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Jan. 22, 1963, Ser. No. 253,040
6 Claims. (Cl. 8—55)

1. Polypropylene fiber dyed with a 4-nitroacridone dye selected from the group consisting of
(a) a compound having the formula

wherein R is selected from the group consisting of H and CH_3O, at least one R being H,
(b) a compound having the formula

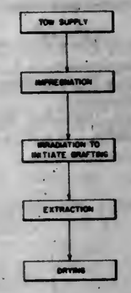
wherein R is selected from the group consisting of H, Cl, and Br, two of the R's being H,
(c) a compound having the formula

wherein one R is H and the other R is CH_3O,
(d) 7-methyl-4-nitroacridone, and
(e) 5-methylthio-4-nitroacridone.

3,188,165
PROCESS FOR GRAFTING AN ORGANIC COMPOUND TO A SHAPED ARTICLE OF AN ADDITION POLYMER

Eugene Edward Magat and David Tanner, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 19, 1958, Ser. No. 756,047
20 Claims. (Cl. 8—115.5)

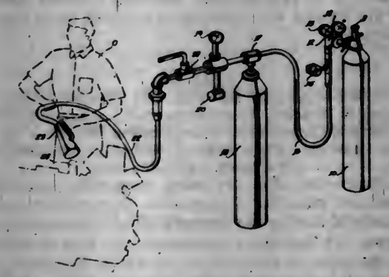


1. A process which comprises intimately contacting a solid preformed structure formed from an addition polymer with a fluid comprising an organic compound, the said fluid being substantially chemically inert to the said addition polymer and the said fluid being one in which the said addition polymer is substantially insoluble until the said organic compound has diffused to a substantial depth into the cross-sectional area of the said structure and thereafter subjecting the composition to ionizing radiation having an energy of at least about 50 electron volts wherein a radiation dosage is employed that is between about 5000 rad and that at which substantial degradation of the reactants occurs, thereby causing chemical adherence between the said addition polymer and the said organic compound.

3,188,166
METHOD OF PRESERVING COMBUSTION CHAMBERS OF ENGINE FROM CORROSION DURING STORAGE

David N. Dietz, Chicago, and Robert J. Gildea, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed Sept. 26, 1962, Ser. No. 226,270
2 Claims. (Cl. 21—2.5)



1. The method of inhibiting corrosion on the interior surfaces of an internal combustion engine during storage comprising the steps of: introducing a dry inert gas into

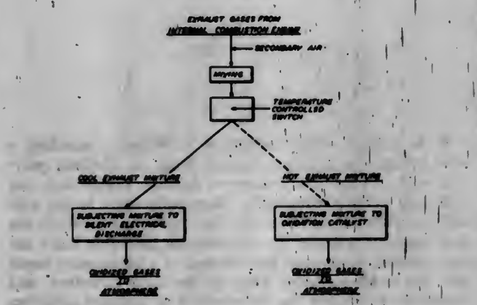
the interior of a running internal combustion engine through the air intake of said engine, said inert gas becoming intimately admixed with the engine fuel as it enters said engine, forcing said inert gas throughout the interior of said engine so as to inherently stop the engine by purging oxygen so as to prevent further combustion, said inert gas purging the corrosion producing materials as it is dispersed into said interior, said engine fuel becoming coated upon said internal surfaces as said inert gas is forced throughout said interior, and retaining said inert gas and admixed fuel in said interior whereby corrosion on said internal surfaces is prevented.

3,188,167

TREATMENT OF EXHAUST GASES

Charles A. Specht, Englewood, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

Filed July 12, 1961, Ser. No. 123,433
1 Claim. (Cl. 23—2)



A method for treating engine exhaust gases which progressively increase in temperature ranging from ambient temperature to elevated temperature at which an oxidation catalyst is active, said method comprising continuously mixing said exhaust gases with air, contacting said mixture with means responsive to the temperature of the mixture for controlling the flow in a manner such that the mixture can flow alternately into contact with a silent electrical discharge and into contact with an oxidation catalyst, said mixture passing into contact with said silent electrical discharge and being oxidized thereby when the temperature of the mixture is below the temperature of threshold activity of said catalyst and passing into contact with said oxidation catalyst and being oxidized thereby when the mixture attains a temperature of the threshold activity of said catalyst, removing oxidized gases as they are formed and discharging oxidized gases into the atmosphere.

3,188,168

PURIFICATION OF SILICON COMPOUNDS

Howard B. Bradley, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 4, 1962, Ser. No. 199,634
13 Claims. (Cl. 23—14)

1. A process for removing impurities, principally arsenic and phosphorus impurities, from silicon-containing material having the formula SiH_aX_b wherein X is a halogen, (*a*) and (*b*) are integers from 0 to 4 inclusive and the sum of (*a*)+(*b*) is 4 which comprises contacting the silicon-containing material with a halogen selected from the class consisting of iodine, bromine and chlorine to form high boiling point halogen-impurity compounds and then separating said halogen-impurity compounds from the silicon-containing material.

3,188,169

SEPARATION OF METAL VALUES BY CATION EXCHANGE FROM CONCENTRATED PERCHLORIC ACID SOLUTION

Kurt A. Kraus and Fred Nelson, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 20, 1962, Ser. No. 225,171
9 Claims. (Cl. 23—14.5)

1. The method of separating values of at least one metal in a first group consisting of Li (I), K (I), Rb (I), Ag (I), Tl (I), Be (II), Mg (II), Ba (II), Ra (II), Mn (II), Co (II), Zn (II), Cu (II), Cd (II), Hg (II), Pd (II), Au (III), Cr (III), In (III) Bi (III), Rh (III), Sb (III), Ir (III), Al (III), Ti (IV), Zr (IV), Hf (IV), Ge (IV), Sn (IV), Po (IV), V (IV), Ir (IV), Pt (IV), Pd (IV), Ru (IV), Nb (V), Ta (V), Pa (V), As (V), V (V), Mo (VI), W (VI), Te (VI), Tc (VII) and Re (VII) from values of at least one metal in a second group consisting of Ca (II), Sr (II), Tl (III), Sc (III), Y (III), rare earths (III), trivalent actinides (III), Fe (III), Ga (III), Th (IV), Sb (V), U (VI), Pu (VI) and Np (VI) which comprises contacting an aqueous so ution containing values from both of said groups together with perchloric acid at a concentration of at least 6 molar, hydrofluoric acid at a concentration of 0.01 to 1.0 molar and hydrochloric acid at a concentration of about 0.5 molar, with a cation exchange resin whereby said values from said second group are strongly adsorbed and a portion of said values from said first group are weakly adsorbed and selectively eluting said weakly adsorbed values.

3,188,170

PREPARATION OF SODIUM CARBONATE FROM CRUDE SODIUM BICARBONATE AND SODIUM CARBONATE MONOHYDRATE

John W. Mantz, Clyde B. Myers, and Cecil G. Simon, Painesville, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed June 26, 1961, Ser. No. 119,321
10 Claims. (Cl. 23—63)

1. The method of manufacturing sodium carbonate which consists of the steps of mixing a hydrated sodium carbonate with sodium bicarbonate, the proportion of said bicarbonate to said hydrated carbonate, in terms of sodium carbonate equivalents, being substantially within the range of 5:1 to 1:2, thereby to form in the mixture at least substantial amounts of sodium sesquicarbonate; rapidly heating the mixture thus formed to a temperature above that at which decomposition of said bicarbonate and sesquicarbonate begin and said hydrated carbonate becomes anhydrous, and maintaining this temperature for a sufficient period of time to effect decomposition of said mixture thus formed; removing carbon dioxide and water evolved from said mixture during said heating and recovering the sodium carbonate thus produced, which product is characterized by larger particles than those obtained by the calcination of an alkali metal bicarbonate alone, and a bulk density within the range of about 25–45 pounds per cubic foot.

6. The method of manufacturing sodium sesquicarbonate which consists of the steps of mixing a hydrated sodium carbonate with sodium bicarbonate, the proportion of said bicarbonate to said hydrated carbonate, in terms of sodium carbonate equivalents, being about 1:2; aging the mixture at about 20–100° C. under conditions preventing the loss of water and carbon dioxide from the mixture, thereby to effect substantially complete conversion to sodium sesquicarbonate; and drying said sesquicarbonate to remove grossly held water at a temperature below that at which decomposition of said sesquicarbonate begins.

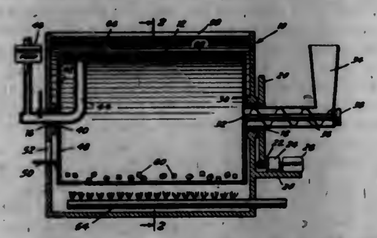
10. Solid sodium carbonate prepared according to the method of claim 1, said sodium carbonate being composed of free-flowing spheroidal granular particles having a high absorption capacity, a particle size such that about 65–100% is retained on a 100-mesh screen and more than about 92% is retained on a 200-mesh screen, and an apparent bulk density between about 25 and 45 lbs. per cubic foot.

3,188,171

PROCESS FOR PRODUCING METAL CYANATES

Leon René Ghyssaert, Feluy, Belgium, assignor to Whitmoyer International Ltd., Lebanon, Pa., a corporation of Pennsylvania

Filed Apr. 17, 1961, Ser. No. 103,339
8 Claims. (Cl. 23—75)



1. A process for producing alkali metal cyanates comprising introducing into the drum of a rotary mill containing a plurality of inert metal polyhedral-shaped particles a raw mixture of alkali metal carbonate with a compound selected from the group consisting of urea and thiourea in molar proportions ranging from 1.8 to 3.0 of said compound to said carbonate, rotating said drum to agitate said mixture, simultaneously heating said drum to a temperature no greater than 300° C. to react said mixture maintaining the reacting mixture at said temperature for a period of about four to five hours, and passing off the volatile components evolved from said reaction and discharging finely divided ground alkali metal cyanate from the mill.

3,188,172

PROCESS OF PREVENTING BLUE COLOURATION IN SODIUM CHLORIDE TREATED WITH FERRO- OR FERRICYANIDE COMPOUNDS

Martin Schultze and Karl-August Hölscher, Rheinberg, Rhineland, Germany, assignors to Deutsche Solvay-Werke Gesellschaft mit beschränkter Haftung, Solingen-Ohligs, Germany

No Drawing. Filed Nov. 16, 1962, Ser. No. 238,286
Claims priority, application Germany, Nov. 18, 1961, D 37,493
5 Claims. (Cl. 23—89)

1. A process for making a non-caking and color-inhibited ground sodium chloride salt which comprises uniformly distributing in said salt (1) an anti-caking agent selected from the group consisting of alkali metal ferrocyanides and ferricyanides at the rate of from 0.2 to 200 grams per ton of salt and (2) a color-inhibiting agent selected from the group consisting of hydroxides of alkaline earth metals, magnesium and aluminum at the rate of 50 to 500 grams per ton of salt.

3,188,173

PROCESS FOR THE PRODUCTION OF OXIDES OF Al, Si AND Ti

William Hughes, Fairfield Stockton-on-Tees, and Arthur Wallace Evans, Nunthorpe, Middlesbrough, England, assignors to British Titan Products Company Limited, Durham, England, a company of the United Kingdom

Filed Dec. 28, 1961, Ser. No. 162,747
Claims priority, application Great Britain, Aug. 6, 1953, 21,778/53; July 25, 1955, 21,503/55; Mar. 4, 1958, 6,967/58, 6,968/58
6 Claims. (Cl. 23—142)

1. In the production of metal oxide by reaction of oxygen with a chloride of a metal of the group consisting of titanium silicon and aluminium which is in vapour state at 350° C., the improvement which comprises establishing a bed of inert particles of a particle size range of 40μ–1,000μ, introducing oxygen and said metal chloride into said bed to flow through and uniformly fluidize said bed, heating the bed to cause the metal chloride to react with the oxygen, carrying evolved metal oxide from the bed with the gases leaving the bed, and controlling the temperature of the bed by withdrawing a portion of said inert particles from said bed at bed temperature, and adding to the bed, and separately from the introduction of oxygen and said metal chloride, a further portion of inert particles at a temperature below the bed temperature.

3,188,174

ALUMINUM PRODUCT AND ITS METHOD OF PREPARATION

William L. Kehl, Indiana Township, Allegheny County, and Meredith M. Stewart, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 20, 1961, Ser. No. 118,240
14 Claims. (Cl. 23—143)

1. A process for producing alumina comprising slowly adding in increments and with stirring an aqueous acidic solution of an aluminum salt whose anion is removable from said alumina to a substantially alkali metal-free aqueous ammonium hydroxide solution, maintaining the pH of the ammonium hydroxide solution at a value above 7 throughout the addition of acidic aluminum salt solution, substantially avoiding even localized zones in said ammonium hydroxide solution below a pH of 7 during the addition of acidic aluminum salt solution, precipitating a crystalline alumina hydrate containing between 1.2 and 2.6 moles of water of hydration per mole of Al_2O_3, said alumina hydrate being unstable and tending to transform into a different hydrate of alumina, preventing said transformation by maintaining said alumina hydrate precipitate at a temperature above about 170° F. throughout the mixing operation and substantially as long as it is in the wet state, continuously maintaining ammonia saturation in the mixed solution sufficient to substantially avoid even localized zones below a pH of 7, separating said alumina hydrate from supernatant liquid and drying said alumina hydrate.

11. A dry, hard crystalline alumina hydrate having between 1.2 and 2.6 moles of water of hydration per mole of alumina, said hydrate precipitated having a distinctive crystalline structure so that said hydrate is identifiable by X-ray diffraction analysis, said alumina hydrate tending to transform to a different hydrate form in the presence of water prior to drying but dried prior to transformation to a different hydrate form, said hydrate substantially free of alumina monohydrate and alumina trihydrate, said hydrate upon heating starting to lose its water of hydration at about 360° F. and completing loss of water of hydration at about 930° F. at which temperature it contains less than about 3 percent by weight of water.

13. A calcined alumina anhydride whose precursor is a hard crystalline alumina hydrate having between 1.2 and 2.6 moles of water of hydration per mole of alumina, said precursor hydrate precipitated having a distinctive crystalline structure so that said precursor hydrate is identifiable by X-ray diffraction analysis, said precursor hydrate tending to transform to a different hydrate form in the presence of water prior to drying but dried prior to transformation to a different hydrate form, said precursor hydrate substantially free of alumina monohydrate and alumina trihydrate, said precursor hydrate upon heating starting to lose its water of hydration at about 360° F. and completing loss of water of hydration at

about 930° F. at which temperature it contains less than about 3 percent by weight of water.

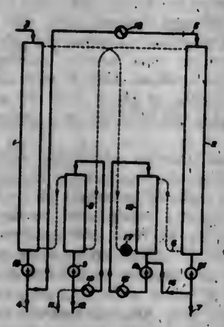
3,188,175
PROCESS FOR PRODUCING SULFAMIC ACID
Henry R. Nychka, Randolph Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed June 1, 1962, Ser. No. 199,438
4 Claims. (Cl. 23—166)

1. A process for the production of sulfamic acid which comprises admixing urea and oleum of 45±1% concentration in an amount of 100–400% in excess of the stoichiometric amount required for reaction with urea, at a temperature within the sulfamic acid forming range of 60–90° C. under substantially atmospheric pressure to effect immediate initiation of reaction and substantial completion of reaction in one stage of said urea and oleum to produce sulfamic acid and by-product carbon dioxide, said sulfamic acid being formed as a slurry in the excess oleum medium, withdrawing the sulfamic acid and excess oleum medium from the reaction zone, separating the sulfamic acid from the excess oleum medium and thereafter cooling and recycling the excess oleum to the reaction zone for further reaction with urea.

3,188,176
STABILIZATION OF LIQUID SULFUR TRIOXIDE
Everett E. Gilbert, Morristown, and Anthony W. Yodis, Whippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 8, 1962, Ser. No. 178,270
12 Claims. (Cl. 23—174)

1. A composition consisting of liquid sulfur trioxide and a stabilizing amount of a member of the group consisting of phosphonitrilic chloride polymers represented by the formula $(PNCl_2)_x$ wherein x is 3 to 6, the chloride of trichlorophosphazosulfamic acid, bis(trichlorophosphazo) sulfone, CH_3NPCl_3 and $C_6H_5NPCl_3$.

3,188,177
METHOD FOR COOLING A CIRCULATING GAS IN A PLANT FOR ENRICHMENT OF HEAVY WATER
Bengt Eriksson, Vasteras, Sweden, assignor, by mesne assignments, to Aktiebolaget Atomenergi, Stockholm, Sweden
Filed Mar. 31, 1959, Ser. No. 803,272
Claims priority, application Sweden, Apr. 16, 1958, 3,685/58
6 Claims. (Cl. 23—204)

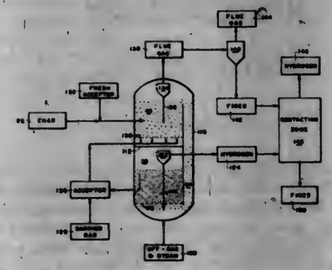


1. In the process of producing water containing deuterium concentrated therein by exchanging, at two different temperatures, hydrogen with deuterium between water and hydrogen sulphide, the steps comprising: establishing a countercurrent flow of the water and the hydrogen sulphide in an exchange unit comprising at least one first and at least one second exchange vessel by introducing a first stream of water into the first exchange vessel of the unit and passing the first stream of water therethrough, introducing a portion of the first stream of water passed through the first exchange vessel of the unit into the second exchange vessel of the unit and passing the portion of the first stream of water therethrough, and introducing the hydrogen sulphide into the second exchange vessel of the unit and passing the hydrogen sulphide therethrough, introducing the hydrogen sulphide passed through the second exchange vessel of the unit into the first exchange vessel of the unit and passing the hydrogen sulphide therethrough, whereby the water of the first stream and the hydrogen sulphide are mixed in each of said exchange vessels to cause an exchange of deuterium with hydrogen between them; maintaining the first exchange vessel of the unit at a temperature to cause the first stream of water flowing therethrough to become enriched and the hydrogen sulphide flowing therethrough to become impoverished with respect to deuterium; maintaining the second exchange vessel of the unit at a temperature to cause the hydrogen sulphide flowing therethrough to become enriched and the first stream of water flowing therethrough to become impoverished with respect to deuterium; withdrawing as product a portion of the first stream of water passed through the first exchange vessel of the unit and containing deuterium concentrated therein before at least the principal part of the remaining portion of the first stream of water is introduced into the second exchange vessel of the unit; cooling the hydrogen sulphide before it is introduced into the first exchange vessel of the unit by bringing it in countercurrent direct contact in an exchanger with a second stream of water which, at its entrance to the exchanger, is substantially saturated with hydrogen sulphide, withdrawing the second stream of water from the exchanger, supplying the second stream of water after it leaves the exchanger with added hydrogen sulphide, returning the second stream of water to the exchanger for repeated countercurrent direct contact with the hydrogen sulphide led therethrough, and cooling the second stream of water in the presence of the added hydrogen sulphide before it reenters the exchanger, whereby to saturate said second stream of water with hydrogen sulphide.

3,188,178
PROCESS OF PRODUCING SILICON TETRAHALIDE
Kenneth Arkless and Colin Francis Cole, Stockton-on-Tees, England, assignors to British Titan Products Company Limited, Durham, England, a company of Great Britain
No Drawing. Filed Dec. 26, 1961, Ser. No. 162,241
Claims priority, application Great Britain, Jan. 5, 1961, 573/61
6 Claims. (Cl. 23—205)

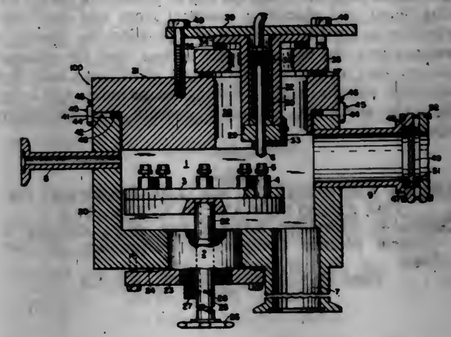
1. In the process of producing silicon tetrahalide by reaction of solid ferrosilicon in a fluidized bed at a temperature in the range of from about 400° to about 1200° centigrade with a halogenating gas selected from the group consisting of chlorine, bromine and iodine, the improvements comprising (1) diluting said halogenating gas with at least one diluent gas selected from the group consisting of nitrogen, carbon monoxide, silicon tetrachloride, silicon tetrabromide and silicon tetraiodide, said dilution with said diluent gas being in addition to the silicon tetrahalide produced by the reaction of said halogenating gas with said ferrosilicon, (2) introducing said halogenating gas and said diluent gas into the bottom of the bed through a perforated plate and (3) maintaining the pressure drop across each perforation at least about one-half the pressure drop across the fluidized bed whereby said gases are substantially uniformly distributed in said fluidized bed and a substantially uniform temperature is maintained throughout said bed.

3,188,179
PROCESS FOR PRODUCING HIGH PURITY HYDROGEN FROM HYDROCARBON GAS AND STEAM
Everett Gorin, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1961, Ser. No. 101,740
4 Claims. (Cl. 23—212)



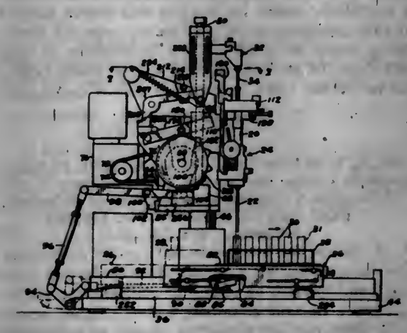
1. A process for producing high purity hydrogen from hydrocarbon gas and steam, which comprises
(a) maintaining in a reaction zone a fixed bed of steam-reforming catalyst, said fixed catalyst bed having interstices between the individual catalyst particles,
(b) maintaining in said reaction zone an inventory of fluidizable carbon dioxide acceptor particles capable of being maintained in a fluidized state within said fixed catalyst bed interstices,
(c) introducing a fluidizing quantity of a mixture of hydrocarbon gas and steam into said reaciton zone in contact with said fixed catalyst bed and said acceptor particles such that said acceptor particles are maintained in a fluidized state within said reaction zone, at least a portion of the fluidized bed of acceptor particles being maintained within the interstices of said fixed catalyst bed,
(d) reacting said hydrocarbon gas with steam in the presence of said steam-reforming catalyst and said acceptor particles in said reaction zone to yield hydrogen from which most, but not all, of the carbon dioxide has been removed,
(e) separately and continuously recovering acceptor particles substantially free of steam-reforming catalyst from said reaction zone,
(f) regenerating at least a portion of said recovered acceptor particles while in a fluidized state in a calcination zone,
(g) separately recovering from said calcination zone a first and a second portion of regenerated acceptor particles, said second portion having a finer size consist than said first portion,
(h) reintroducing said first portion of the regenerated acceptor particles into said reaction zone, and
(i) contacting said second portion of the regenerated acceptor particles with the hydrogen recovered from said reaction zone under conditions to yield hydrogen substantially free of carbon dioxide.

3,188,180
PROCESS FOR THE EXTRACTION OF GASES FROM METALS
Paul Höller, Essen-Frintrop, Germany, assignor to Firma Huttenwerk Oberhausen AG., Oberhausen, Rhineland, Germany, a corporation of Germany
Filed May 8, 1962, Ser. No. 193,229
Claims priority, application Germany, May 9, 1961, H 42,539
6 Claims. (Cl. 23—230)



1. In a method of extracting gases from metals by the interposition of a metal sample between a pair of spaced electrodes in an extraction chamber to melt said sample, the improvement which comprises the steps of filling said chamber with a gas mixture consisting essentially of an inert gas admixed with between substantially 1 and 10% by volume of hydrogen prior to the disposition of said sample between said electrodes and forming an electric arc between said electrodes to degas them; and thereafter removing said gas mixture from said chamber and arc-smelting a metal sample between said electrodes.

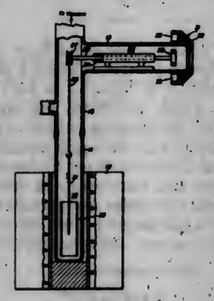
3,188,181
SERIAL DILUTION MACHINE
William A. Peterson, Birmingham, and Wiley K. Crowder, Pontiac, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 11, 1963, Ser. No. 264,266
22 Claims. (Cl. 23—259)



1. A machine for dispensing liquid into a series of containers including in combination, a carriage adapted to hold the containers arranged upright and in a row, means for moving said carriage in the direction of said row of containers, a support mounted adjacent the path of travel of the containers on said carriage, a pump-pipette assembly mounted on said support including a plunger and a pipette, said pipette extending downwardly from said support over the path of container travel for

insertion into the containers, means for reciprocating said plunger and means for moving said pipette and said container thereunder vertically relative to one another for causing insertion and removal of said pipette into and from the container, said plunger reciprocating means being interconnected with said last-mentioned means for reciprocating said plunger during the time when said pipette is inserted in said container, said carriage moving means also being operably interconnected with said last-mentioned means to index the row of containers during the time when said pipette is removed from said container whereby in a repetitive cycle of operation the pipette is inserted into the first container in said row, the plunger reciprocated, the pipette withdrawn clear from said first container and the carriage moving means indexed to bring the next successive container beneath the withdrawn pipette.

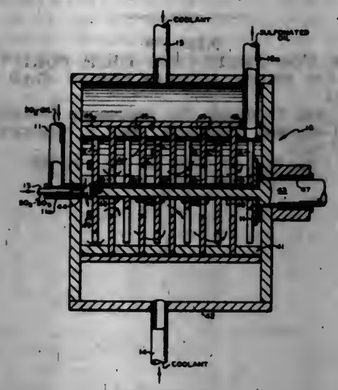
3,188,182
USE OF THE WORKING MATERIAL AS PART OF THE CRYSTAL MAKING APPARATUS
Charles R. Morelock, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 31, 1962, Ser. No. 200,023
3 Claims. (Cl. 23—273)



1. An apparatus for growing metal single crystals comprising, means defining a vaporizing chamber for growing single crystals of a source metal on a substrate, means operably connected to said vaporizing chamber to effect continuous evacuation of the atmosphere therefrom during operation, means for heating said source metal body and said substrate body, and means separate from said heating means for rendering the temperature of said substrate body below that of said source metal body, said separate means being in part said source metal body.

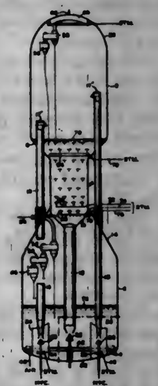
3,188,183
REACTOR FOR MIXING REACTIVE FLUIDS
Richard S. Logan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 12, 1961, Ser. No. 116,583
5 Claims. (Cl. 23—285)

1. A reactor for intimately and rapidly contacting two fluids which comprises a tubular chamber having a closure at each end thereof; an inlet port centrally located in one end closure of said chamber; a first conduit connected to said inlet port to provide a nozzle to introduce one of said fluids; a second conduit coaxially positioned within said first conduit and terminating in a nozzle at said inlet port to introduce the other of said fluids; an outlet port in the periphery of said chamber at the end of said chamber opposite said inlet port; a rotatable shaft centrally mounted in the end closure opposite said inlet port, extending coaxially through said chamber, and terminating in a solid conical end with its apex adjacent said inlet port; a plurality of stators spaced apart over the longitudinal length of said chamber extending from the chamber wall, alternate stators comprising a plurality of triangles with the bases secured to the chamber wall; a plurality of rotors fixedly mounted on said shaft and spaced between said stators, each rotor having blade sections extending the same distance from said shaft



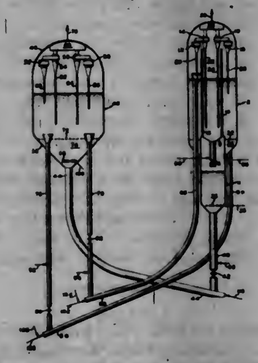
and having hub sections extending so as to occupy alternately more than and less than about 50 percent of the cross-sectional area of said chamber, said stators and rotors being relatively thin in cross-section with respect to their length; and a sealing means between said shaft and said closure opposite said inlet port.

3,188,184
FLUID CATALYTIC CRACKING UNIT
Louis F. Rice, Ridgewood, and Charles E. Slyngstad, Rutherford, N.J., assignors to Pullman Incorporated, a corporation of Delaware
Filed Apr. 15, 1960, Ser. No. 22,536
3 Claims. (Cl. 23—288)



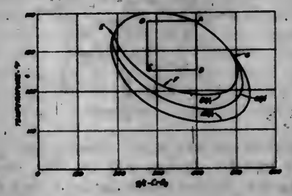
1. A unitary apparatus comprising in combination a cylindrical separator chamber, a cylindrical stripper chamber of smaller diameter than said separator chamber extending downwardly therefrom and attached thereto by an inverted conical frustum forming the bottom of said separator chamber, a standpipe extending downwardly from the bottom of said cylindrical stripping chamber and attached thereto by an inverted conical frustum, said standpipe extending into the lower portion of a regenerator chamber therebelow of larger diameter than said separator chamber, at least one riser conduit extending from the lower portion of said regenerator chamber upwardly into said separator chamber externally to said stripping chamber, an annular gaseous material distributor means positioned in the upper portion of said stripping chamber and adjacent to a joint formed by said cylindrical stripper chamber and the bottom of said conical frustrum forming the bottom of said separator chamber, at least one second gaseous material distributor means positioned in the lower portion of said stripper chamber formed by a plurality of horizontally spaced apart inverted V shaped baffle members which traverse said stripper chamber, a plurality of horizontally traversing and alternately staggered T shaped baffle members positioned throughout the vertical height of said stripper chamber with the uppermost plane of T shaped baffle members being above said annular gaseous material distributor means, a gaseous material distributor means in the bottom portion of said regenerator chamber, means for removing gaseous material from the upper portion of said regenerator chamber, means for passing a reactant material and finely divided solid material to said riser-reactor for flow upwardly therethrough and means for removing product material from the upper portion of said generator chamber.

3,188,185
MEANS FOR CONVERTING HYDROCARBONS
Charles E. Slyngstad and Frank L. Lempert, Rutherford, N.J., assignors to Pullman Incorporated, a corporation of Delaware
Filed May 12, 1961, Ser. No. 109,657
2 Claims. (Cl. 23—288)



1. An arrangement of apparatus for contacting fluidizable solid material with gasiform material which comprises a regenerator chamber positioned adjacent to a unitary reactor-stripper vessel, said unitary vessel comprising an upper cylindrical reactor chamber and a lower cylindrical stripper chamber of smaller diameter extending from within the lower portion of the reactor chamber downwardly through the base thereof to form an annular section in the lower portion of said reactor chamber, an annular grid member positioned across said annular section, a portion of said grid member being non-perforated thereby forming an annular distributing chamber in a portion of said annular section, the top of said stripper chamber formed by a funnel shaped member attached at its upper periphery to the cylindrical wall of said stripper chamber and provided with valve means in the funnel stem adjacent the bottom of the stem, at least one open end vent conduit extending from the upper portion of said stripper chamber to the upper portion of said reactor chamber, a first standpipe extending downwardly from the bottom of said stripper chamber, a first transfer conduit connected to the base of said first standpipe and extending to the bottom of said adjacent regenerator chamber, a second standpipe extending downwardly from within the lower portion of said regenerator chamber, a second transfer conduit connected to the base of said second standpipe and extending upwardly through said reactor chamber for discharge in the upper portion thereof, a third standpipe extending downwardly from within the lower portion of said regenerator chamber, a third transfer conduit connected to the base of said third standpipe which extends into said annular distributing chamber terminating beneath said non-perforated portion of said grid member, means for introducing gasiform material to the lower portion of said stripper chamber and said regenerator chamber and means for removing gasiform material from the upper portion of said reactor chamber and said regenerator chamber.

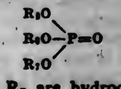
3,188,186
CHROMIUM PLATING
Robie P. Durham, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Dec. 18, 1959, Ser. No. 860,436. Divided and this application Mar. 30, 1964, Ser. No. 359,816
5 Claims. (Cl. 29—183.5)



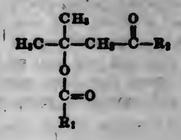
1. An article having a decorative corrosion-resistant metal coating thereon which includes a nickel coating and a dual layer chromium coating on the nickel coating, the outermost of said chromium layers having a thickness of at least about 0.000015 inch but less than 0.000050 inch and exhibiting a crack pattern denser than the crack pattern of the innermost layer, the crack pattern density of said outermost layer being at least about 50 cracks per lineal inch.

3,188,187
GASOLINE COMPOSITIONS
Hubert T. Henderson, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 4, 1962, Ser. No. 199,582
13 Claims. (Cl. 44—69)

1. A fuel composition for internal combustion engines consisting essentially of gasoline, a minor sufficiently effective antiknock amount of a tetraalkyllead antiknock compound, a trihydrocarbon phosphate having the formula



wherein R_5, R_6 and R_7 are hydrocarbyl groups having from 1 to 15 carbon atoms and a substituted tertiary ester containing carbon, hydrogen and oxygen and having the formula



wherein R_1 is selected from the group consisting of hydrogen and low molecular weight alkyl radicals containing up to 4 carbon atoms and R_2 is a low molecular weight alkyl radical containing up to 4 carbons, said trihydrocarbon phosphate being present in an amount such that the gram atom ratio of phosphorus to lead in the antiknock compound present is from about 0.03:1 to about 0.4:1 and said ester being present in an amount such that the ratio of gram equivalents of carbonyloxy in the ester to gram atoms lead in the antiknock compound present is from about 1:1 to about 50:1.

3,188,188

APPARATUS FOR MAKING FIBER OPTICAL COMPONENTS

Frederick H. Norton, Gloucester, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Original application July 3, 1957, Ser. No. 669,883, now Patent No. 2,992,516, dated July 18, 1961. Divided and this application Aug. 26, 1960, Ser. No. 52,232

3 Claims. (Cl. 65—11)



1. Apparatus for use in the manufacture of fiber optical image transfer devices and the like, said apparatus comprising first heating means having a bore therethrough arranged to receive one end of a plurality of relatively thin elongated glass members of similar cross-sectional size and shape while being held together in a predetermined side-by-side bunched formation and moved slowly along a predetermined path of travel through said apparatus, said first heating means including electrical heating elements for maintaining said bore at an elevated temperature for preheating the bunched formation therein before reaching a fusing zone in said apparatus, means for establishing said fusing zone in aligned adjacent relation to said bore, said last-named means including opposed power-operated pressure rollers for engaging and lightly pressing said bunched formation of elongated glass members in said fusing zone into engagement with each other and for slowly moving said bunched formation through said heating zone, support blocks rotatably supporting said power-operated pressure rollers and arranged to be moved inwardly toward each other and said bunched formation in said fusing zone, and electrical heating elements associated with said blocks for maintaining a fusing temperature in said fusing zone so as to cause said glass members to fuse with one another at engaging side wall surfaces thereof but without appreciable change in the cross-sectional geometric arrangement of said members, means providing a working zone disposed in aligned adjacent relation to said fusing zone and including electrical heating elements for maintaining a higher temperature in said working zone than in said fusing zone so that said fused-together bunched formation may be drawn out into a multifibered strand of appreciably reduced cross-sectional size, and opposed power-operated drawing rollers disposed in aligned relation with said bunched formation and at a location near the exit end of said working zone and arranged to grip and pull said multifibered strand at a greater rate of speed than that provided said bunched formation by said opposed power-operated pressure rollers.

3,188,189

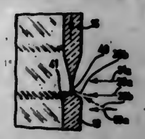
METHOD FOR SEVERING A MOIL FROM A GLASS BODY

Gerrit de Leeuw, Leerdam, Netherlands, assignor to N.V. Verenigde Glasfabrieken (United Glassworks), Schiedam, Netherlands, a limited-liability company of the Netherlands

Filed Aug. 14, 1961, Ser. No. 131,173

Claims priority, application Netherlands, Aug. 13, 1960, 254,855

1 Claim. (Cl. 65—113)



A method of severing the moil from the formed body of a glass workpiece comprising vertically positioning said workpiece in a flame corona with the moil uppermost and with the desired plane of severance between the body and moil being located at the level of the plane of said flame corona, rotating the glass workpiece until the workpiece is uniformly heated by said flame corona to a temperature sufficient to soften the glass at said plane of severance, continuously pulling upwardly on said moil so that, as the glass workpiece is softened by said flame corona, the softened glass is progressively reduced in thickness and then severed with upward removal of the said moil from said body, and directing cooling fluid radially inward in planes which are parallel to and disposed immediately above and below said plane of the flame corona to maintain the glass against which the cooling fluid impinges at a temperature below the softening point temperature of said glass during softening of the glass workpiece at said plane of severance and for a period following removal of said moil from said body so that the cooling fluid in the plane immediately above the flame corona ensures that, during softening of the workpiece, the reduction in thickness of the workpiece will occur immediately above said plane of severance and, after said removal of the moil, the cooling fluid in the plane immediately below the flame corona will divert the flame corona upwardly to ensure finishing of the edge of said body while the positioning of the body is unchanged.

3,188,190

METHOD FOR FIRE POLISHING

Raymond E. Armstrong, Clark Township, N.J., assignor to Union Carbide Corporation, a corporation of New York

Original application Nov. 15, 1957, Ser. No. 696,767. Divided and this application Oct. 31, 1961, Ser. No. 151,591

6 Claims. (Cl. 65—104)

1. Method for fire polishing a glass article comprising presenting for fire polishing the article for fire polishing to an air-fuel gas flame mixture, and replacing said mixture with an oxygen-fuel gas flame mixture of greater intensity during the period the article is in fire-polishing position.

3,188,191

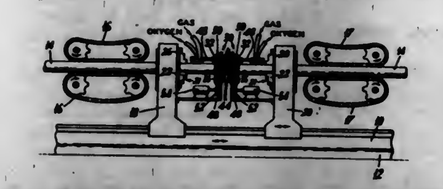
METHOD OF SEVERING GLASS TUBING

Walter B. Farnsworth, Jr., Amherst, N.Y., and Raymond E. Armstrong, Jr., Clark Township, Union County, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Aug. 6, 1959, Ser. No. 832,065

5 Claims. (Cl. 65—113)

1. A method of severing elongated glass tubing comprising applying a pair of convergent sheets of flame at the desired severing line, placing the tube under tension until severance is effected, and longitudinally separating said pair of convergent sheets of flame to impinge respectively upon the severed tube ends for simultaneously fire polishing the severed tube ends to a finished state.



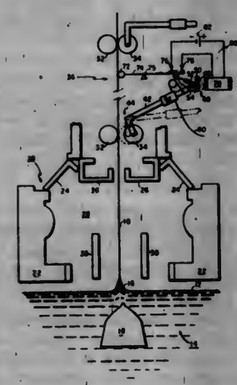
3,188,192

APPARATUS FOR CONTINUOUSLY DRAWING SHEET GLASS

Richard P. Pavoboeck, Brackenridge, and Leonard A. Knavish and Donald W. Murray, Cheswick, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh Pa., a corporation of Pennsylvania

Filed Nov. 2, 1961, Ser. No. 149,557

2 Claims. (Cl. 65—163)



1. In an apparatus for drawing sheet glass as a continuous ribbon at a predetermined speed from a bath of molten glass upwardly through a drawing chamber,

a first pair of drawing rolls disposed with opposing surfaces constantly engaged with opposite faces of the continuous ribbon of glass moving upwardly therebetween,

a second pair of drawing rolls positioned below said first pair of drawing rolls,

one of said last-named drawing rolls being movable into and out of engagement with said ribbon and being normally maintained out of engagement with said ribbon,

speed responsive means engaging a surface of said ribbon for producing an impulse indicative of a differential reduction in the speed of said moving ribbon, said speed responsive means being disposed below said first pair of drawing rolls and above said bath of molten glass, and

means for moving said movable roll of said second pair of drawing rolls into engagement with said ribbon in response to said impulse and maintaining said first and second pair of rolls in engagement with said ribbon positioned therebetween.

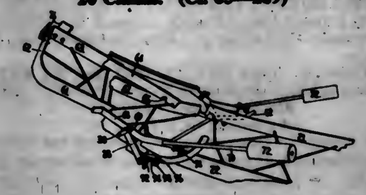
3,188,193

MOLDS FOR BENDING GLASS SHEETS WITH INTERMEDIATE SUPPORT POINTS

David H. Doehlert, Newark, Del., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of abandoned application Ser. No. 792,253, Feb. 6, 1959. This application Feb. 14, 1961, Ser. No. 89,183

20 Claims. (Cl. 65—289)



1. Apparatus for bending glass comprising a central molding member, a pair of intermediate molding members flanking the central molding member, an end molding member beyond each intermediate molding member, said molding members having upper shaping surfaces and being movable into a spread mold position for supporting flat glass sheets for bending and into a closed mold position to provide a substantially continuous shaping frame conforming in elevation and outline to the shape desired for the bent glass sheet, a cam attached to each intermediate molding member, a cam follower attached to each end molding member and in sliding contact with the cam, a first pair of hinges for each intermediate molding member, a second pair of hinges for each end molding member, connector means securing a hinge of the first pair to a hinge of the second pair, and counterweight means secured to each end molding member to locate the center of gravity of the latter and its attached cam follower inboard of the axis of rotation defined by the second pair of hinges, the center of gravity of the intermediate molding member and its associated cam being located outboard of the axis of rotation defined by the first pair of hinges, the net effect of the dispositions of the two centers of gravity serving to provide a net rotational moment tending to rotate the end and intermediate molding members into the closed mold position.

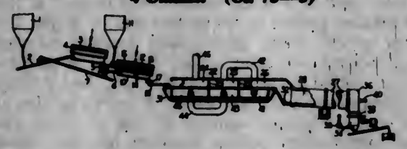
13. In a bending mold for bending glass sheets to non-uniform sharp curvature bends that are asymmetrical with respect to their longitudinal axis, a curved shaping surface of concave elevation into conformity with which a glass sheet is to be bent, said shaping surface including movable end molding members having upper edge surfaces defining the end portions of said shaping surface, means mounting said end molding members for movement from a spread mold position wherein their outer ends occupy a horizontal plane to a closed mold position, flat glass sheet engaging means comprising first flat glass sheet support means on said mold shaping surface intermediate said movable end molding members and located at spaced points on one side of the longitudinal center line of the mold intermediate its longitudinal extremities and engageable with one longitudinal side edge area of the flat glass sheet at spaced points along said horizontal plane, whereby the glass sheet when heated tends to sag between said spaced points, and second flat glass sheet support means located on the other side of the longitudinal center line of the mold intermediate its longitudinal extremities and engageable with the opposite longitudinal side edge area of the flat glass sheet only along a substantial portion of the length thereof along said horizontal plane, and means connecting said second flat glass sheet support means with said movable end molding members for movement threwith so that said second flat glass sheet support means support the flat glass sheet

above said shaping surface when said end molding members occupy said spread mold position and as said end molding members begin their movement toward said closed mold position to locate the sharp curvature properly.

3,188,194
HERBICIDAL MIXTURE AND PROCESS FOR DESTROYING PLANT LIFE THEREWITH
Francois d'Ogny, Paris, France, assignor to Pechiney-Cie de Produits Chimiques et Electrometallurgiques, Paris, France
No Drawing. Filed Nov. 15, 1960, Ser. No. 69,305
Claims priority, application France, Nov. 21, 1959, 810,868, Patent 1,249,883
3 Claims. (Cl. 71—2.5)

1. A herbicidal composition comprising the combination in admixture of a herbicide selected from the group consisting of parachlorophenyl dimethyl urea, aminotriazol, 2-chloro-4,6-bis(ethyl amino)S-triazine and the sodium salt of alpha-alpha-dichloropropionic acid and an oxygenated compound of phosphorus selected from the group consisting of tributyl phosphate, triisobutyl phosphate and tricresyl phosphate in which the oxygenated compound of phosphorus is present in the combination in at least stoichiometric proportion in the herbicide and in which the two components are present in herbicidal effective amounts.

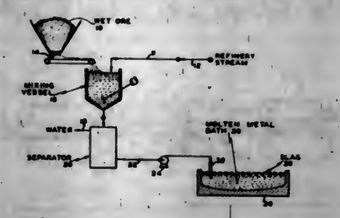
3,188,195
PELLET OF IRON ORE AND FLUX, AND METHOD FOR MAKING SAME
Eugene W. Price, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Original application Oct. 5, 1961, Ser. No. 143,096. Divided and this application Nov. 26, 1963, Ser. No. 326,283
4 Claims. (Cl. 75—5)



1. For making a strong pellet from iron ore and flux material, the process comprising: agglomerating a mixture of moisture and finely divided carbonate flux material free of added iron ore to provide a moist core; forming a composite pellet by loosely packing around said moist core an outer coating of moist iron ore free of added flux material and compressing said coating being packed about said core to the degree that said coating is permeable to vapor of said moisture and a dioxide gas of the carbon in said carbonate; shrinking said core away from said outer coating by heating said pellet to a carbonate calcining temperature which will produce and drive off from said core a vapor of said moisture and a dioxide gas of the carbon in said carbonate, with said heating for shrinking said core being applied at a rate less than a rate observed to heat escaping vapor and gases to a pressure that will fracture said coating; and then after said vapor and gases have been driven off, then further heating said pellet above the drying temperature to effect hardening of said pellet.

3,188,196
METHOD FOR DESICCATING AND REDUCING ORE
Joseph F. Skelly, New Canaan, Conn., assignor to Pullman Incorporated, a corporation of Delaware
Filed June 19, 1963, Ser. No. 289,071
11 Claims. (Cl. 75—40)

1. A method which comprises admixing ore containing free moisture and a selected hydrocarbon liquid, forming



an ore-liquid slurry therefrom, separating moisture from said slurry to reduce the moisture content thereof and introducing said slurry to an ore reduction zone.

3,188,197
METHOD OF REFINING HOT METAL IN AN ELECTRIC ARC FURNACE
Jan-Erik Ostberg, % Surahammars Bruks Aktiebolag, Huvudkontoret, Surahammar, Sweden
No Drawing. Filed Dec. 12, 1962, Ser. No. 244,003
11 Claims. (Cl. 75—56)

1. A method of refining molten iron in a furnace comprising providing a bath of iron having a predetermined temperature of at least 1500° C. and having a maximum carbon content of not more than 1.5 percent, charging to said bath simultaneously and substantially continuously molten pig iron and ferrous metal oxide ore at a rate such that said maximum carbon content of said bath is not exceeded and the rate of change of the carbon content is less than 0.3 percent and the rate of change of temperature is less than 50° C. for any five minute period, and supplying electric power to said furnace to maintain said bath at said predetermined temperature, thereby converting the iron into steel.

3,188,198
METHOD FOR DEOXIDIZING METALS
Warren F. Moore, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 23, 1962, Ser. No. 218,826
3 Claims. (Cl. 75—57)

1. A method of deoxidizing iron group metals and their alloys, which contain an excessive amount of oxygen which comprises mixing the same in a crucible with an amount of carbon sufficient to substantially completely deoxidize the metal, heating the mixture to melt the metal and cause the carbon to react with the oxygen contained therein while maintaining a flowing atmosphere of dry hydrogen at subatmospheric pressure over the mixture, the pressure of the hydrogen being maintained only sufficiently high to control the boil so as to minimize splattering, gradually reducing the pressure over the molten metal as the carbon boil reaction reaches completion until high vacuum conditions exist over the melt and holding the molten metal under these conditions until the melt is deoxidized to the desired extent and degasified.

3,188,199
PROCESS FOR RECOVERING LEAD FROM BY-PRODUCT LEAD MATERIALS
Edwin L. Mattison, Newark, Del., and Richard Wolfe, Wenonah, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 25, 1962, Ser. No. 205,075
8 Claims. (Cl. 75—77)

1. The process for recovering lead from by-product lead of the character of that obtained by the reaction of an alkyl chloride with lead monosodium alloy which comprises

(a) mixing by-product lead which consists essentially

of about 76% to about 89% by weight of finely divided metallic lead, about 9% to about 19% by weight of water, up to 0.05% by weight of sodium hydroxide, and small amounts up to about 2% by weight of lead oxide and lead sulfide,

(b) with 0.4% to about 1.2% by weight of sodium hydroxide based on the metallic lead,

(c) drying the mixture by heating it at about 100° C. to about 160° C. with agitation until the water content is reduced to about 1% to about 6% by weight,

(d) heating the dried mixture in a reverberatory furnace at a temperature of from about 650° C. to about 1200° C. until the metallic lead is molten, and

(e) separating the molten lead from the reaction mixture.

3,188,200
METHOD OF PURIFYING REFRACTORY METALS
James A. Brothers, Trenton, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed May 21, 1962, Ser. No. 196,489
13 Claims. (Cl. 75—84)

1. A process for the purification of oxygen-contaminated refractory metals which comprises contacting finely divided particles of an oxygen-contaminated refractory metal selected from the group consisting of niobium, molybdenum, tungsten, and vanadium with a mixture of hydrogen chloride gas and a gas selected from the group consisting of hydrogen, argon, and helium, and mixtures thereof in a reated reaction zone.

3,188,201
PROCESS FOR REMOVAL OF ZINC FROM BLAST FURNACE GAS WASH WATER
Heinrich Southeimer, Auf dem Self 9, Falkenstein, Taunus, Germany, and Günter Derenk, Im Finkenschlag 2, Buchschlag, near Frankfurt am Main, Germany
No Drawing. Filed June 25, 1962, Ser. No. 205,109
Claims priority, application Germany, June 30, 1961, M 49,525
5 Claims. (Cl. 75—108)

1. A method of purifying blast furnace gas wash water containing dissolved zinc and carbon dioxide, comprising separating suspended solids from the gas wash water, thereafter aerating the gas wash water substantially freed of suspended solids to precipitate zinc from solution, and separating the precipitated zinc from the water.

3,188,202
ALUMINUM-PLUTONIUM ALLOYS
Thomas Ivor Jones, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ontario, Canada, a corporation
Filed Apr. 19, 1961, Ser. No. 104,183
7 Claims. (Cl. 75—122.5)

1. An alloy consisting of from 2 to 8 wt. percent plutonium, uranium from 13 to 17 wt. percent, and the balance aluminum.

6. An alloy consisting of from 2 to 8 wt. percent plutonium, nickel in from 1 to 2 wt. percent, and the balance aluminum.

3,188,203
BRAZING ALLOYS
Robert L. Peaslee, Royal Oak, and Lester E. Oliphant, Detroit, Mich., assignors to Wall Colmonoy Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed Sept. 3, 1957, Ser. No. 681,443
7 Claims. (Cl. 75—170)

1. A brazing alloy having a melting point in the range of about 1600° F.–1850° F. consisting essentially of about 3 to about 15% phosphorus, at least 50% nickel and an alloying ingredient selected from the group consisting of 1%–12% silicon, 2% to 20% chromium, 1% to 20% manganese and .5%–18% molybdenum and mixtures of any two of said alloying ingredients.

3,188,204
NICKEL-ALLOY
Claude R. Bishop, Niagara Falls, and William J. Boesch, Utica, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 8, 1963, Ser. No. 271,488
15 Claims. (Cl. 75—170)

1. An alloy consisting essentially of, along with incidental impurities, at least 25 weight percent nickel, 1 to 25 weight percent tantalum, 20 to 50 weight percent tungsten, a maximum of 0.15 weight percent carbon, and selected amounts of at least one metal chosen from the group consisting of iron, aluminum, molybdenum and chromium.

3,188,205
COLUMBIUM ALLOY
Arthur B. Michael, Lake Forest, Ill., assignor to Fansteel Metallurgical Corporation, Chicago, Ill., a corporation of New York
No Drawing. Filed Dec. 20, 1961, Ser. No. 160,943
8 Claims. (Cl. 75—174)

1. A columbium-tantalum base alloy having high resistance to oxidation and high strength at elevated temperatures, consisting essentially of from about 20% to about 35% tantalum, a member selected from the group consisting of tungsten and molybdenum and mixtures thereof, the tungsten when selected being in the range of from about 5 to about 16%, the molybdenum when selected being in the range of from about 3% to about 10%, the mixture when selected being in the range of from about 5% to about 16% with up to about 10% molybdenum, a member selected from the group consisting of zirconium and titanium and mixtures thereof, the zirconium when selected being in the range of from about 0.3% to about 5%, titanium when selected being in the range of from about 0.2% to about 2%, the mixtures thereof when selected being in the range of from about 0.3% to about 5% with up to about 2% titanium, and the balance being substantially all columbium.

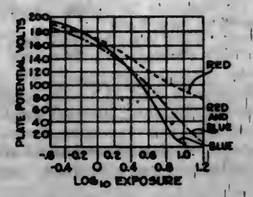
3,188,206
COLUMBIUM ALLOY
Arthur B. Michael, Lake Forest, Ill., assignor to Fansteel Metallurgical Corporation, Chicago, Ill., a corporation of New York
No Drawing. Filed Dec. 20, 1961, Ser. No. 160,944
6 Claims. (Cl. 75—174)

1. A columbium-tantalum base alloy having improved high temperature strength and high temperature oxidation resistance at elevated temperatures consisting essentially of from about 25% to about 40% by weight tantalum, and from about 0.3% to about 5% by weight zirconium, the balance being substantially all columbium.

3,188,207
COLD WORKABLE COLUMBIUM BASE ALLOY
Mortimer Schussler, Kokomo, Ind., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 8, 1963, Ser. No. 263,721
1 Claim. (Cl. 75—174)

A columbium base alloy consisting essentially of about 10 percent tungsten, 2.5 percent zirconium, a maximum of 0.01 percent carbon, a maximum of 0.04 percent in the aggregate of oxygen, nitrogen and hydrogen, balance columbium.

3,188,206
SPECTRAL CONTRAST CONTROL IN XEROGRAPHY
John T. Bickmore, Rochester, N.Y., assignor to Xerox Corporation, a corporation of New York
Filed May 4, 1959, Ser. No. 810,853
3 Claims. (Cl. 96—1)



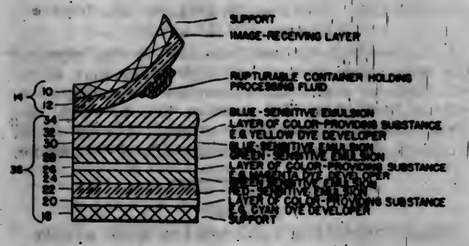
1. In the method of contrast control in making a reproduction from an original wherein a photosensitive member is exposed to a pattern of light and shadow conforming to the original the color of which pattern is selected in accordance with the desired contrast and wherein the photosensitive member comprises an electrostatically charged vitreous selenium layer

(a) the improved method of extending the tonal acceptance range at least 50% in a positive to positive reproduction system which method comprises

(b) utilizing a photosensitive layer characterized uniformly on its surface by a photoconductive response in the blue portion of the spectrum extending to about 5,600 angstroms and a distinct and separate red photoconductive response centered at about 7,000 angstroms and

(c) exposing the photoconductive member to a pattern of light and shadow conforming to the original containing at least red light and at least some blue light in a substantially lesser amount than said red light, said blue light being just sufficient relative to the amount of red light to permit substantially complete charge dissipation on the photosensitive member.

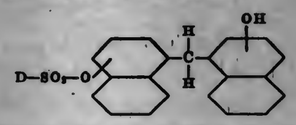
3,188,209
DIFFUSION TRANSFER COLOR PROCESSES
Edwin Land, Cambridge, and Howard G. Rogers, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 1, 1959, Ser. No. 856,541
2 Claims. (Cl. 96—3)



1. In a process for forming multicolor dye images by diffusion transfer including the steps of exposing a multilayer photosensitive element comprising a support having thereon in superposed relationship a red-sensitive silver halide emulsion layer, a green-senstive silver halide emulsion layer, and a blue-sensitive silver halide emulsion layer, a layer contiguous with each of said red-sensitive, green-sensitive, and blue-sensitive silver halide emulsions containing, respectively, a cyan dye developer, a magenta dye developer, and a yellow dye developer, each of said dye developers being a compound which is both a dye and a silver halide developing agent, applying an aqueous alkaline processing composition to said photosensitive element, each said dye developer where unoxidized being diffusible in said processing composition, developing said exposed photosensitive element, oxidizing said dye developer in developed areas thereby forming in undeveloped areas of each of said silver halide emulsions an imagwise distribution of each said associated dye developer in unoxidized condition, and transferring, by diffusion, at least part of each of said imagewise distributions of said dye developers to a superposed image-receiving layer to provide said multicolor dye transfer image, the improvement wherein said yellow dye developer is positioned, prior to said exposure, in a layer which is substantially free of silver halide, said layer of yellow dye developer being positioned between and contiguous with two layers containing blue-sensitive silver halide emulsion, said yellow dye developer being present during exposure in a form transmitting blue light whereby both of said blue-sensitive silver halide emulsion layers are exposed by blue light during said exposure, whereby said yellow dye developer diffusing inwardly toward said green-sensitive silver halide emulsion is oxidized by development of silver halide exposed by blue light thereby providing improved control of the imagewise diffusion of said dye developers and said multicolor transfer image exhibits improved color separation.

3,188,210
NAPHTHOQUINONE (1,2)-DIAZIDE-SULFONIC ACID DERIVATIVES AND PROCESS OF PRODUCING PRINTING PLATES THEREFROM
Gerhard Fritz, Wiesbaden, and Oskar Süs, Fritz Uhlig, and Wilhelm Neugebauer, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 13, 1960, Ser. No. 2,108
Claims priority, application Germany, Jan. 21, 1959, K 36,769
5 Claims. (Cl. 96—33)

1. A compound having the formula



in which D is a naphthoquinone-1,2-diazide group.

3,188,211
PRETREATMENT OF METALLIC BASE MATERIALS TO BE USED IN PHOTOENGRAVING PROCESSES
Michael Kocsuta, Willoughby, Ohio (327 E. 285th St., Willowick, Ohio)
No Drawing. Filed Apr. 4, 1960, Ser. No. 19,485
19 Claims. (Cl. 96—36)

1. A process for treating a metal selected from the class consisting of copper, aluminum, magnesium, nickel, chromium, and non-ferrous alloys thereof containing a major proportion of said metals, for improving the receptivity of an adhesive coating on said metal which comprises the steps of treating the surface of said metal by intimate contact with aqueous hydrochloric acid solution consisting essentially of 30–53 grams of hydrogen chloride per gallon of solution while said metal is maintained at a temperature of about 100° F. to 140° F. for a period of about 1 to 6 minutes, and removing said solution therefrom, said hydrochloric acid solution with respect to copper being as low as about 12 grams of hydrogen chloride per gallon of solution, and said treating period with respect to copper being as low as one-half minute.

3,188,212
HANDLING OF POULTRY
Carl H. Koonz, Downers Grove, and Eldon J. Strandine and Irvin R. Lentz, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed June 12, 1961, Ser. No. 116,435
3 Claims. (Cl. 99—107)



1. The method of trussing a poultry carcass having a substantially continuous perimeter and having the vent freed to leave a generally circular orifice around said vent which comprises: making a generally transverse, with respect to the length of said carcass, incision into the abdominal cavity of said carcass, said incision being spaced anteriorly and ventrally from said generally circular orifice to form a strip of abdominal wall tissue between said incision and said circular orifice, said strip being of a size insufficient to prevent automatic removal of portions of the legs of said carcasses subsequently positioned thereunder; removing viscera from said carcass; placing an insert under said strip through said incision, said insert being of a size sufficient to preclude extrusion thereof through said orifice, said insert including a hock-holding area; and inserting the hocks of said carcass into said hock-holding area of said insert whereby portions of the legs of said carcass are firmly held under said strip.

3,188,213
TENDERIZING OF FRESH MEATS
William Delaney, Chicago, Ill., assignor to Kadison Laboratories, Inc., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 15, 1961, Ser. No. 159,774
2 Claims. (Cl. 99—107)

1. In the tenderizing of fresh meats, the step which comprises subjecting said meats to contact with an aqueous solution, at a temperature in the range of about room temperature to about 44° F. and for a period in the range of several seconds to several minutes, said solution containing from 8 ounces to 2 pounds per gallon of a mixture of (*a*) sodium chloride, (*b*) molecularly dehydrated phosphate having a molar ratio of R_2O to P_2O_5 not greater than 1.7 to 1, where R is selected from the group consisting of hydrogen, alkali metal and ammonium, and (*c*) a proteolytic enzyme selected from the group consisting of papain, ficin and bromelin, the aforesaid ingredients being present in proportions to each other of from 75 to 95 pounds of sodium chloride, from 10 to 3 pounds of phosphate, and from ½ ounce to 2 pounds of proteolytic enzyme.

3,188,214
SAUSAGE MANUFACTURE
Robert H. Harper, Park Forest, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Mar. 27, 1961, Ser. No. 98,314
5 Claims. (Cl. 99—109)

1. An improved method of setting up a sausage emulsion comprising: directly introducing a formed sausage emulsion of fluid consistency into a hot cooking bath maintained within the temperature range of about 225° F. to about 295° F., and keeping the emulsion in contact with the bath until the emulsion has coagulated sufficiently to become self-sustaining.

3,188,215
FROZEN FOOD PACKAGE AND METHOD FOR PRODUCING SAME
William T. Snow, Jr., Greenville, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed Apr. 9, 1963, Ser. No. 271,740
2 Claims. (Cl. 99—192)

1. Packaged precooked frozen food dinner comprising

(a) a compartmented aluminum tray,

(b) dinner food portions disposed in compartments in said tray, a first compartment containing a food portion which requires dehydration during heating,

(c) as the sole protective wrapping thereof a tight fitting single layer enclosing overwrap of thin, transparent, biaxially oriented, heat shrinkable polypropylene film, said overwrap being heat sealed together peripherally of said tray,

(d) the peripheral seal extending around the outer perimeter of said first compartment having a strength of less than about 2.8 pounds per linear inch whereby this lesser strength seal delaminates and shrinks upon heating the container thereby exposing the food requiring dehydration and thus enhancing dehydration, and

(e) the peripheral seal extending around the remainder of said tray having a seal strength of at least about 3.0 pounds per linear inch and sufficient to prevent substantial delamination of said seal when the overwrapped tray is heated to about 320° F.

3,188,216
GLASS CONTAINING STRONTIUM AND GALLIUM COMPOUNDS
Carl David Southerawood Burton, Windle, St. Helens, and Alexander Mailer Reid, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
No Drawing. Filed Nov. 6, 1962, Ser. No. 235,884
Claims priority, application Great Britain, Nov. 6, 1961, 39,681/61
13 Claims. (Cl. 106—47)

1. A glass consisting essentially of strontium oxide (SrO) and gallium oxide (Ga_2O_3), there being present, by weight, from 0.66 to 1.13 parts of gallium oxide to one part of strontium oxide.

3,188,217
LIGHT FILTER
Thomas H. Elmer and John P. Hoxie, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 19, 1962, Ser. No. 231,739
5 Claims. (Cl. 106—52)

1. A light transmitting filter formed from a high silica glass containing as essential color-correcting additives NiO and Fe_2O_3 in amounts equivalent to between 0.01 and 0.2% by weight of NiO and between 0.01 and 0.15% by weight of Fe_2O_3 based on a uniformly impregnated high silica glass of 4.3 mm. thickness, said filter providing a spectral transmission curve wherein the transmission in terms of selected wavelengths is 50 to 70% at 430 mμ, 62 to 76% at 560 mμ and 78 to 88% at 660 mμ, and wherein the percent transmission at 560 mμ exceeds the percent transmission at 430 mμ by 8 to 18, and the percent transmission at 660 mμ exceeds the percent transmission at 560 mμ by 10 to 18.

3,188,218
LIGHT FILTER
Thomas H. Elmer and John P. Hoxie, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 19, 1962, Ser. No. 231,789
8 Claims. (Cl. 106—52)

1. A light transmitting filter formed from a high silica glass containing color-correcting additives consisting of Co_2O_3, an alkali-metal oxide, and P_2O_5 in amounts equivalent to between 0.04 and 0.1% by weight Co_2O_3, between 0.1 and 0.2% by weight alkali metal oxide and between 0.40 and 2.0% by weight P_2O_5, based on a uniformly impregnated high silica glass of 4.3 mm. thickness, said filter providing a spectral transmission curve wherein the present transmission in terms of selected wavelengths is 61 to 69% at 480 mμ and 22 to 34% at 590 mμ the percent transmission at 480 mμ being at least double the percent transmission at 590 mμ.

3,188,219
FUSED REFRACTORY COMPOSITIONS
William A. Miller and Karl H. Sandmeyer, Jamestown, N.Y., assignors to Harbison-Carborundum Corporation, Falconer, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 6, 1962, Ser. No. 177,736
6 Claims. (Cl. 106—59)

2. A fused cast composition composed principally of Cr_2O_3, Al_2O_3, MgO and FeO in which the combined Cr_2O_3 and Al_2O_3 constitutes from about 84 percent to about 90 percent by weight of the composition, the percent by weight of the Cr_2O_3 being from about 40 percent to about 60 percent of the percent by weight of the Al_2O_3, and the oxides being present in such proportions that the product of the mole ratio of Cr_2O_3 to Al_2O_3 and the mole ratio of R_2O_3 oxides to RO oxides is between 1.15 and 2.50 and the mole ratio of R_2O_3 oxides to RO oxides is greater than 2.0.

3,188,220
PROCESS OF MAKING REFRACTORY BRICK CONTAINING CALCINED MAGNESIA
Russell Pearce Heuer, Villanova, Pa., assignor to General Refractories Company, a corporation of Pennsylvania
No Drawing. Filed Aug. 29, 1962, Ser. No. 220,133
3 Claims. (Cl. 106—59)

1. A process of making refractory brick based on calcined magnesia which comprises mixing
(a) from 20 to 80% by weight of a magnesia having the following composition by weight:
MgO in excess of 90%,
dicalcium ferrite as a mineralogical component 2 to 7%,
lime-silica ratio in excess of 2,
ferric oxide more than 2%,
silica 0.2 to 1%, and
lime less than 5%, with
(b) an amount from 20 to 80 percent by weight of a magnesia able to react with said dicalcium ferrite to convert dicalcium ferrite to magnesium ferrite and form a compound of the class consisting of merwinite and dicalcium silicate, and the latter said magnesia having the following composition by weight:
MgO in excess of 90%,
lime-silica ratio less than 2,
ferric oxide less than 1%,
silica less than 10%, and
lime 0.1 to 3%, and
(c) said mixture containing from 0.8 to 3% silica by weight,
(d) molding said mixture into a refractory brick at a pressure in excess of 5000 p.s.i., and
(e) subjecting said refractory brick to a temperature between 1000° and 1700° C.

3. A process of claim 1, which comprises introducing from 1 to 10% by weight of the magnesia material, of a material of the class consisting of calcined alumina and chromic oxide in the mix.

3,188,221
METHOD OF RETARDING THE SETTING TIME OF CEMENT
Osaku Matsuda, Takashi Toki, and Norihiro Kudo, all of Tokyo, Japan, assignors to Onoda Cement Company, Limited, Tokyo, Japan, a corporation of Japan
No Drawing. Filed May 25, 1962, Ser. No. 197,589
Claims priority, application Japan, May 30, 1961, 36/18,675
2 Claims. (Cl. 106—89)

1. A method of retarding the setting time of a cement when said cement is admixed with water, said cement being selected from the group consisting of Portland cement and Portland type cement which contains blast furnace slag, silicious material and pozzolanic material, which comprises adding to said cement about 0.01% to about 1% by weight based on the weight of cement of a retardant consisting of magnesium silicofluoride

$(MgSiF_6)$

and at least one acid selected from the group which consists of phosphoric acid, boric acid, acetic acid, succinic acid, and mixtures thereof, said acid being used in an amount of below 50% by weight based on the weight of said silicofluoride.

3,188,222
CEMENT COMPOSITION
Philip H. Harris, Upland, Calif., assignor to American Cement Corporation, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Sept. 28, 1962, Ser. No. 227,040
4 Claims. (Cl. 106—89)

3. A dry cement composition for use as a mortar for bricks consisting essentially of Portland cement, from 0.1% to 0.5% lithium carbonate by weight of the cement, and up to 1% barium carbonate by weight of the cement.

3,188,223
PROTEIN-POLYMERIC DIALDEHYDE COMPOSITIONS AND PROCESS OF COATING A BASE THEREWITH
Francis B. Weakley and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Nov. 14, 1960, Ser. No. 69,237
14 Claims. (Cl. 106—139)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method of preparing a copolymer of a protein selected from the group consisting of casein and soybean protein and a highly polymeric dialdehyde comprising reacting a said protein in aqueous dispersion with 10 percent to 20 percent of its dry weight of the highly polymeric dialdehyde at a pH in the range 6 to 7.5, said highly polymeric dialdehyde having been formed by essentially complete periodic acid oxidation of starch to the extent where at least 90% of the anhydroglucose units of the starch are in the dialdehyde form.

3. A copolymer of a protein selected from the group consisting of casein and soybean protein and a highly polymeric dialdehyde, said dialdehyde having been produced by essentially complete periodic acid oxidation of starch to the extent where at least 90% of the anhydroglucose units of the starch are in the dialdehyde form.

3,188,224
NITROCELLULOSE COMPOSITION AND PROCESS OF PREPARATION
Raphael Matalon, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 31, 1961, Ser. No. 148,830
20 Claims. (Cl. 106—195)

1. As a new composition, a colloidal dispersion of nitrocellulose in an organic liquid composition containing from about 20% to about 50% by weight of nitrocellulose, said organic liquid composition consisting essentially of
(a) a major amount of a volatile hydrocarbon compound selected from the group consisting of aliphatic, cycloaliphatic and aromatic hydrocarbons, halogenated aliphatic hydrocarbons, and mixtures thereof, having a boiling point above 65° C.,
(b) a minor amount, at least about 20% and not exceeding about 50% by weight, based on nitrocellulose weight, of a volatile nitrocellulose solvent having a boiling point below about 65° C., the ratio of said hydrocarbon to said volatile nitrocellulose solvent being at least about 1.5 and not more than about 6.6 by weight,
(c) and containing as an essential ingredient a polar organic compound having a polar group selected from the class consisting of hydroxyl and keto groups that is capable of hydrogen bonding with nitrocellulose molecules and at least one hydrocarbon residue of more than 3 carbon atoms but less than the number of carbon atoms which reduce the solubility of said polar organic compound in water to below 0.5% by weight in an amount from about 0.1 to about 1.25 parts per part by weight of nitrocellulose, and sufficient to effect formation of a stable sol of said nitrocellulose in said organic liquid composition, said colloidal dispersion of nitrocellulose being characterized by
(1) being a clear, homogeneous, flowable, thixotropic material,
(2) the capacity to tolerate dilution without separation of the nitrocellulose when 10 grams of said colloidal dispersion are diluted with 15 cc. of a 4:1 by volume mixture of a volatile hydrocarbon:aliphatic alcohol mixture,
(3) and the capacity to produce clear, adherent, nonshrinking films on glass and also when diluted as described in (2) above.

3,188,225
METHOD OF PRODUCING CARBON-SILICATE COMPLEXES
George Forbes Walker, Blackburn, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate of Australia
No Drawing. Filed Feb. 19, 1962, Ser. No. 174,254
Claims priority, application Australia, Feb. 22, 1961, 1,739/61
5 Claims. (Cl. 106—291)

1. A method of producing a carbon-silicate complex, which comprises mixing an expanding lattice layer silicate selected from the group consisting of vermiculites, montmorillonites and hydrated halloysites, with glycerol; and heating the resulting mixture of the silicate and glycerol in a non-oxidizing medium to a temperature at least equal to the boiling point of glycerol and for a time sufficient to form a complex having a "sandwich structure," in which at least one layer of the glycerol is intercalated between adjacent silicate layers, and to decompose the intercalated glycerol in situ.

3,188,226
PROCESS FOR MAKING MOLDABLE MASONRY ARTICLES OF MANUFACTURE
Willem F. Jonas, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 22, 1962, Ser. No. 204,620
Claims priority, application Netherlands, Jan. 30, 1962, 274,172
10 Claims. (Cl. 117—5.3)

1. In a process for making molded mortar-containing objects, the improvement which comprises coating the molds used in the process with a liquid oleaginous base containing from about 0.1% to about 10% of a derivative of a polyamine and an organic acid, said derivative being selected from the group consisting of an amine salt of a polyamine and an organic carboxylic acid and an amide of a polyamine and an oganic carboxylic acid, which derivative contains a hydrocarbon group of at least 8 carbon atoms in the molecule.

3,188,227
MANUFACTURE OF COATED ELECTRIC LAMPS
Vincent Vodicka, South Euclid, and Richard F. Malinowski, Chesterland, Ohio, assignors to General Electric Company, a corporation of New York
Original application Feb. 5, 1959, Ser. No. 791,469, now Patent No. 3,067,352, dated Dec. 4, 1962. Divided and this application Apr. 30, 1962, Ser. No. 191,216
5 Claims. (Cl. 117—18)

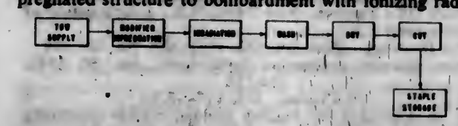


1. The method of providing a lamp bulb with an external decorative light-modifying coating which comprises, applying to the exterior surface of the bulb a base coat of a transparent lacquer, drying the said lacquer base coat, superficially redissolving the said dried base coat in a solvent therefor to soften and render tacky the surface layer only of said base coat, immediately applying to the softened and tacky surface of the bulb a layer of particles of light-translucent heat-expandable thermoplastic synthetic resin dissolvable in said solvent and containing in homogeneous dispersion therein from about 3 percent to about 5 percent by weight of a raising agent having a boiling point below the softening temperature of the said thermoplastic resin and in which said resin is insoluble, and then heating the said thermoplastic resin particles to expand them into a continuous integrated cellular layer of puffed plastic firmly adherent to said lacquer base coat.

3,188,228
METHOD OF GRAFT POLYMERIZING AN ORGANIC COMPOUND TO A SOLID SHAPED CONDENSATION POLYMER STRUCTURE
Eugene Edward Magat and David Tanner, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 14, 1958, Ser. No. 735,288
23 Claims. (Cl. 117—62)

1. A process for producing a novel, modified solid shaped structure of a condensation polymer which comprises impregnating a solid shaped structure from a condensation polymer with a fluid comprising an organic compound, the said fluid being free of any compound capable of free radical initiated self-polymerization, substantially

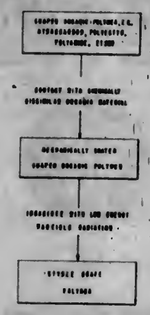
chemically inert to the said condensation polymer and being a fluid in which the said condensation polymer is substantially insoluble and thereafter subjecting the impregnated structure to bombardment with ionizing radiation having an energy of at least about 50 electron volts to provide a radiation dosage between about 5000 rads and that at which substantial degradation of the reactants occurs to produce chemical bonds between the said organic compound and the said condensation polymer.



3,188,229
PROCESS OF ADHERING AN ORGANIC COATING TO A SUBSTRATE

Boynton Graham, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 3, 1961, Ser. No. 142,732
18 Claims. (Cl. 117—62)



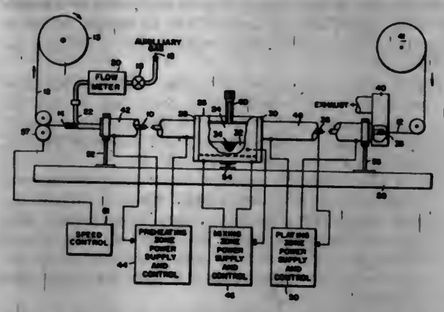
1. In a process for coating an organic polymer with a nongaseous dissimilar organic material, the improvement of subjecting the polymer, coated to the extent of not greater than about 0.0065 g./cm.² of surface thereof with said dissimilar organic material, to ionizing charged particle radiation having an energy of from 15 to 50,000 electron volts for a minimum exposure of 0.01 watt-second per square centimeter but for a maximum exposure insufficient to degrade said organic polymer to bond the coating of dissimilar organic material to the organic polymer.

3,188,230
VAPOR DEPOSITION PROCESS AND DEVICE

Robert Bakish, Brighton, Donald B. Irish, Newtonville, and Iwan Marinow, Allston, Mass., assignors to The Alloyd Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 16, 1961, Ser. No. 96,124
1 Claim. (Cl. 117—107.1)

The process of continuously metal plating a filament, said process comprising the steps of effecting movement of said filament through a continuous path, said movement in sequence being through an aperture of relatively large cross section, an elongated plating zone, a mixing zone, an elongated preheating zone and an aperture of relatively small cross section, the inner extremities of the elongated zones communicating with opposite extremities of said mixing zone, and the larger and smaller apertures communicating with the outer extremities of said elongated zones, introducing an auxiliary gas into said preheating zone at a point adjacent to said smaller diameter aperture, heating said auxiliary gas in said preheating zone, flowing said heated auxiliary gas in contact with a heat decomposible metal bearing compound in said mixing zone to generate a metal bearing vapor mixture, flowing said metal bearing vapor mixture into said plating zone, heating said metal bearing vapor mixture at said filament in said plating zone, thereby decomposing said metal bearing vapor and depositing said metal on said filament, exhausting the residue of said metal bearing vapor mixture substantially exclusively through said



larger diameter aperture from said continuous path, said larger and smaller diameter apetures establishing a decreasing pressure gradient from said smaller diameter aperture to said larger diameter aperture, the temperature of said plating zone ranging from 100 to 1000° C., the pressure within said path ranging approximately from 30 to 14 pounds per square inch, said metal bearing vapor and said auxiliary gas ranging in proportion, by total weight from 1 to 30% metal bearing gas and from 99 to 70% auxiliary gas.

3,188,231
PROCESS OF MAKING CRUCIBLES

Zbigniew D. Jastrzebski, Easton, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed July 9, 1963, Ser. No. 293,914
1 Claim. (Cl. 117—123)

As a new article of manufacture, a fired mixture consisting essentially of 85–92 percent by weight of beryllium oxide and from 8–15 percent by weight of calcium aluminate coated with a fired layer of a mixture consisting of alumina, magnesium oxide and an oxide selected from the group consisting of beryllium oxide and calcium oxide.

3,188,232
PROCESS FOR RENDERING CELLULOSIC TEXTILE FABRIC CREASE RESISTANT AND THE RESULTING ARTICLE

Günter Gruber, Frankfurt am Main, Fechenheim, and Hans-Andreas Wannow, Frankfurt am Main, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main, Fechenheim, Germany, a company of Germany

No Drawing. Filed May 15, 1962, Ser. No. 194,970
Claims priority, application Germany, May 24, 1961, C 24,188
4 Claims. (Cl. 117—139.4)

1. A process of anticrease finishing of cellulosic textile fabric which comprises impregnating the fabric with an impregnating solution containing a mixture of dimethylol-imidazolidone-2 and a methylol-substituted allylurea of the group consisting of dimethylolmonoallylurea, dimethyloldiallylurea, and dimethylolethylallylurea in such a ratio to each other that the iodine number of the dry mixture is between 10 and 100 and the impregnating solution contains between 10 and 150 grams of the mixture per liter of solution, controlling the concentration and

conditions of application to provide a retention of between 0.5 and 15% by weight of the mixture based on the dry weight of the components of the impregnating solution and the weight of the fabric, and subsequently fixing the components of the impregnating solution on the fabric by drying and heating the impregnated fabric.

3,188,233
NONWOVEN FABRIC PREPARED FROM BUTYL RUBBER LATEX

Kenneth W. Powers, Nixon, and William P. Cain, Linden, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 18, 1961, Ser. No. 145,971
9 Claims. (Cl. 117—140)

1. A nonwoven fabric comprising a web of fibers impregnated with between about 5 and about 70 wt. percent of a heat cured binder consisting essentially of a rubbery copolymer of a major portion of a C_4 to C_8 isoolefin and a minor portion of a C_4 to C_{14} multiolefin, between about 5 and about 35 parts, per 100 parts of rubbery copolymer, of casein, and between about 2 and about 35 parts, per 100 parts of rubber copolymer, of a melamine-formaldehyde resin having a mole ratio of melamine to formaldehyde of between about 1:1 and about 5:1.

3,188,234
VINYLIDENE CHLORIDE TERPOLYMER AS A COATING FOR REGENERATED CELLULOSE FILM

Harold G. Hahn, Midland, Eugene E. Kochaney, Bay City, and Wallace J. Miles and James H. Modeen, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

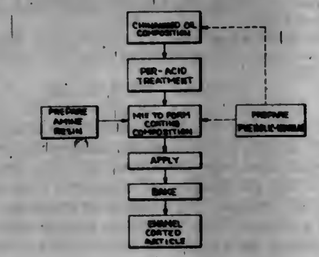
No Drawing. Filed May 2, 1962, Ser. No. 191,721
6 Claims. (Cl. 117—145)

1. A moistureproof, heat-sealable, wrapping tissue comprising regenerated cellulose film having a self-anchored coating comprising essentially a terpolymer obtained by polymerizing a mixture of (1) between about 80 and 93 weight percent of vinylidene chloride, (2) between about 4.5 and 19.5 weight percent of a copolymerizable monoethylenically unsaturated monomer and (3) between about 0.5 and 2.5 weight percent of at least one polymerizable material selected from the group consisting of a non-carboxylic acid salt of vinyl benzyl amine and 2-aminoethyl methacrylate.

3,188,235
CHINA-WOOD OIL AND AMINE RESIN COMPOSITIONS

Abraham Ravve and Sol B. Radlove, Chicago, Ill., and Joseph W. Brehaut, United States Army, assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 3, 1960, Ser. No. 86,835
20 Claims. (Cl. 117—161)

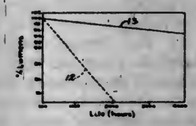


1. The method of preparing a quick-curing enamel, which comprises treating a composition containing a solid content of at least 50% China-wood oil therein with a per-acid in the presence of an acid-activated ion-exchange resin until substantially the end of exothermal reaction, and mixing the product of such treatment in a volatile organic solvent with an amine resin selected from the group consisting of phenolic amine resins and urea formaldehyde resins having therein a group selected from the class consisting of primary and secondary amine groups, the proportion of the amine resin to the product of the per-acid treatment being sufficient to furnish cross-linking therebetween.

3,188,236
CATHODES AND METHOD OF MANUFACTURE

Dimitrios M. Speros, Painesville, Ohio, assignor to General Electric Company, a corporation of New York

Filed Dec. 17, 1959, Ser. No. 860,130
8 Claims. (Cl. 117—220)



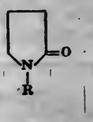
7. The process of making an activated electron emissive cathode which comprises coating a substrate with a mixture of barium thorate having the stoichiometric formula $BaO \cdot ThO_2$ and having added thorium in powdered form in a molar proportion in the range of 0.15 to 0.25, and heating said substrate and coating to a relatively low temperature in a neutral atmosphere sufficient to allow the solid state reaction to proceed to completion whereby to produce an activated material.

3,188,237
ACTIVATION OF AMYLOSE

Raymond J. Mosby, Westport, Conn., Felix J. Germino, Peekskill, N.Y., and Hans W. P. Panzer, Stamford, Conn., assignors to American Machinery and Foundry Company, a corporation of New Jersey

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,175
16 Claims. (Cl. 127—32)

1. The method for activating retrograded amylose comprising solubilizing the amylose in a solvent liquid selected from the group consisting of 2-aminoethanol; a pyrrolidone of the formula

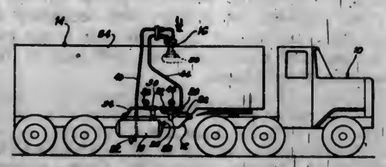


wherein R is selected from a group consisting of hydrogen and an alkyl radical of 1–3 carbon atoms; water in excess of its atmospheric boiling point; and sulfoxide compounds of the formula



wherein R^1 and R^2 are substituents from the group consisting of alkyl radicals of 1–6 carbon atoms, and precipitating the amylose from solution with a compound which is miscible with said solvent liquid but a non-solvent for the amylose.

3,188,238
TANK CLEANING METHOD AND APPARATUS
Edward S. Lyon, Oak Park, Ill., assignor to Micro-Mist Systems, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 10, 1964, Ser. No. 343,849
3 Claims. (Cl. 134—24)



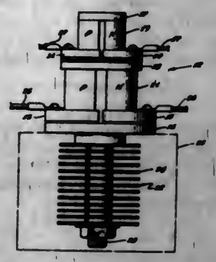
3. A method for the cleaning of tanks carried on a truck trailer and employed for the transportation of chemicals which leave a residue remaining in the tank after the trank is substantially completely emptied, comprising the steps of including a spray head in said tank at a point near the top wall thereof immediately after removal of the chemicals from the tank, introducing into said spray head under high pressure a cleaning fluid capable of dissolving the chemical residue in the tank, simultaneously introducing into said spray head a gas under high pressure whereby said fluid and said gas will commingle in said spray head and form a mist for distribution throughout said tank, and including the steps of connecting the high pressure air from the pneumatic brake system of said tank trailer to a supply of said fluid to provide for the high pressure introduction of said fluid, and connecting said high pressure air to said spray head to provide for the introduction of said gas.

3,188,239
SPINNERET CLEANING PROCESS
Heimen Kloppers, Louvenheim, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
No Drawing. Filed Feb. 4, 1963, Ser. No. 256,144
Claims priority, application Netherlands, Feb. 16, 1962, 274,929
9 Claims. (Cl. 134—26)

1. A method for cleaning apparatus used in the melt extrusion of polymeric material, said apparatus having been coated with a polyorganosiloxane during the extrusion process, consisting essentially of coating said apparatus with a white mineral oil and thereafter immersing the apparatus in a molten salt bath consisting of a mixture of alkali metal nitrite and alkali metal nitrate for a sufficient period of time to dislodge and decompose all foreign matter on the spinneret surfaces.

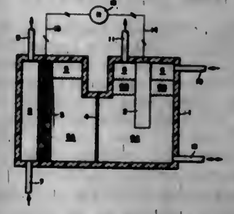
3,188,240
COPPER OXIDE INSULATION LAYER FOR THERMOELECTRIC DEVICES
H. Sam Lee, Gardena, and Thomas E. Rodgers, Burbank, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Continuation of application Ser. No. 853,343, Nov. 16, 1959. This application Sept. 11, 1961, Ser. No. 139,329
1 Claim. (Cl. 136—4)

A thermoelectric device comprising two ingots of semiconducting material forming portions of different stages thereof, two copper connector members, means respectively bonding each of said connector members to one surface of each of said ingots; a coating of copper oxide bonded on the outer face of one of said connector members, a coating of copper bonded on the outer face only of said oxide coating, and additional bonding means including a soldered joint bonding said copper coating to the other connector member, whereby a good thermal



conductive and poor electrical conductive attachment is provided between said ingots.

3,188,241
METHOD FOR OPERATING FUEL CELL WITH LIQUID FUEL
Malcolm A. Weiss, Union, Charles H. Worsham, Fanwood, and Hugh H. Horowitz and Manfred J. Prager, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed June 21, 1962, Ser. No. 204,135
4 Claims. (Cl. 136—86)

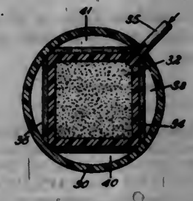


1. In a process of anodically oxidizing a liquid carbonaceous fuel at the anode of an electrochemical cell while in contact with an aqueous electrolyte, the improvement which comprises floating said fuel which is immiscible in said electrolyte upon said electrolyte, positioning said anode so as to extend through the resulting fuel-electrolyte interface and introducing about 0.001 wt. percent to 1.0 wt. percent of an organic nonionic surface-active agent comprising in combination a lipophilic component and a hydrophilic component into said electrolyte.

3,188,242
FUEL CELL BATTERY CONTAINING FLAT CARBON ELECTRODES
Karl Kordesch, Lakewood, Samuel H. S. Raub, Bay Village, and Lawrence J. Uline, Lakewood, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Original application Jan. 22, 1959, Ser. No. 788,390. Divided and this application July 13, 1962, Ser. No. 209,580
3 Claims. (Cl. 136—86)

1. A fuel cell battery comprising: (A) a generally tubular enclosure of a non-conductive material; (B) a plurality of pairs of substantially rectangular carbon electrodes, each electrode pair comprising (1) a fuel electrode having a fuel gas surface, an electrolyte surface and four outer edge surfaces, (2) an oxidant electrode having an oxidant gas surface, an electrolyte surface and four outer edge surfaces, the gas surface of said fuel electrode facing the gas surface of said oxidant electrode, and (3) a barrier of conductive gas-impervious material between the gas surfaces of said pair of electrodes, the gas surface of said

fuel electrode and one surface of said gas-impervious barrier defining a plurality of substantially straight fuel gas channels, the opposite side of said gas-impervious barrier and the gas surface of said oxidant electrode defining a plurality of substantially straight oxidant gas channels, said conductive gas-impervious barrier being in conductive contact with both of said electrodes; (C) a plurality of non-conductive annular spacer elements of substantially rectangular perimeter separating said plurality of electrode pairs, said non-conductive spacer elements being disposed around the periphery of the electrolyte surfaces of said electrodes, one of said spacer elements together with the electrolyte surface of the oxidant electrode of one of said electrode pairs and the electrolyte surface of the fuel electrode of the adjacent electrode pair defining an electrolyte chamber between said adjacent electrode pairs;



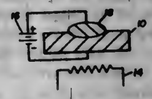
(E) all four corners of each of said electrodes and each of said spacer elements being in gas tight contact with the inner walls of said tubular enclosure; (F) a first inlet manifold and first outlet manifold communicating with the fuel gas channels of each fuel electrode to provide circulation of fuel gas across said fuel gas electrode surfaces; (G) a second inlet manifold and second outlet manifold communicating with the oxidant gas channels of each oxidant electrode to provide circulation of oxidant gas across said oxidant gas electrode surfaces, said four manifolds being defined by the inner walls of said tubular enclosure and the outer edge surfaces of said electrodes and said spacer elements; and (H) openings through said tubular enclosure and through a corner of each of said spacer elements communicating with each of said electrolyte chambers to supply electrolyte thereto.

3,188,243
METHOD OF MAKING PERMEABLE DIAPHRAGM MATERIAL
Frank Booth, Loughton, Essex, and Michael Paul Latham, Manchester, England, assignors to Oldham & Son Limited, Manchester, England, a corporation of Great Britain
Filed Mar. 17, 1961, Ser. No. 96,521
Claims priority, application Great Britain, Mar. 23, 1960, 10,344
2 Claims. (Cl. 136—148)



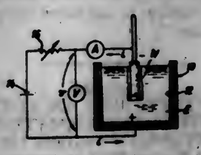
1. A process of producing a diaphragm having a small and regular pore size, comprising the steps of forming a sheet base diaphragm material having an irregular pore size, advancing the sheet base diaphragm material as a continuous web under and past a falling curtain of finely divided thermoplastic particles, brushing with a bristled implement the thermoplastic particles over the face of the base sheet diaphragm material to force some of the particles into the porous sheet base diaphragm material and to remove surplus particles so as to leave only a thin, self adherent coating of the thermoplastic particles, and heating the sheet base diaphragm material with its self adherent coating of thermoplastic particles to sinter together the abutting thermoplastic particles at their points of contact so as to form over the face of the sheet base diaphragm material a thin, fine lattice work of thermoplastic in a continuous network keyed to the sheet base diaphragm material by feet penetrating into the pores of the said material, the fine lattice work having interstices which constitute the pores of regular size.

3,188,244
METHOD OF FORMING PN JUNCTION IN SEMICONDUCTOR MATERIAL
Thomas B. Hutchins IV, Beaverton, Jean F. Delord, Portland, and William C. Myers, Hillsboro, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Apr. 24, 1961, Ser. No. 105,126
5 Claims. (Cl. 148—1.5)



1. A method of forming a PN-type junction in semiconductor material comprising:
heating semiconductor material containing a doping impurity therein above its melting temperature until it becomes at least partially liquid,
adding to this liquid portion a doping impurity of a type opposite to that already contained therein while continuing to apply said heat so that the doping impurities are melted and ionized,
applying an electrical potential across said liquid portion independently of said heating so that ions of the doping impurity opposite in type to that originally contained in said semiconductor material migrate away from the solid semiconductor material, and
cooling said liquid portion below its melting temperature while continuing to apply said electrical potential so that a PN-type junction of controlled thickness is formed between said solid semiconductor material and said portion after said portion recrystalizes into the form of a doped single crystalline semiconductor material having current carriers of a type opposite that contained in said solid semiconductor material.

3,188,245
ELECTRIC DISCHARGE HEAT TREATMENT OF METALS IN ELECTROLYTES
Kiyoshi Inoue, 182 Yoga Tamagawa, Setagaya-ku, Tokyo, Japan
Original application Aug. 15, 1960, Ser. No. 49,625. Divided and this application Jan. 2, 1963, Ser. No. 256,787
13 Claims. (Cl. 148—13)



5. A method of heat treating a metal work piece comprising: immersing the work piece in an electrolyte; passing electric current through the electrolyte with the immersed work piece connected as an electrode, at sufficient voltage and for a sufficient time period to initially generate a gaseous film at the work piece surface and then produce a gaseous-electric heating discharge through

said film for heating the work piece; and finally progressively withdrawing the heated work piece from said electrolyte while simultaneously and progressively immersing said work piece in an insulating liquid for cooling purposes.

3,188,246
METHOD OF MANUFACTURING DRAWING STEEL

Theodore F. Olt, Middletown, Ohio, Francis W. Beall, deceased, late of Middletown, Ohio, by Edythe E. Beall, executrix, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 4, 1961, Ser. No. 157,310
13 Claims. (Cl. 148—16)

1. A process of producing non-aging mild steel sheet stock for drawing purposes, said stock initially containing at least about .03% carbon and at least about .004% nitrogen, which comprises reducing said ferrous material to gauge, heat treating it in a decarburizing atmosphere having a dew point of at least about 60° F. and consisting essentially of nitrogen in preponderant quantity, sufficient hydrogen to prevent oxidation of the iron in said ferrous material, and minor quantities of carbon dioxide and carbon monoxide, whereby to reduce its carbon content to a value not greater than about .005%, and thereafter heat treating it in a furnace having an atmosphere preponderantly of hydrogen with a dew point of at least about 100° F., said atmosphere having a partial pressure of nitrogen sufficiently low to permit the reduction of nitrogen in the ferrous material to the range of about .001% to about .0005% and lower, while also reducing the carbon content to a value not greater than about .002%, and continuing the last mentioned heat treatment while passing the said atmosphere continuously over the surfaces of the ferrous material and out of the furnace, until the effluent atmosphere ceases to show traces of ammonia.

3,188,247
USE OF THE HEXAGONAL PHASE OF THE COMPOUND $(Fe,Co)_2P$ IN PARTICLE SIZE PERMANENT MAGNETS

Krijn Jacobus de Vos, Wilhelmus Antonius Johannes Josephus Veige, and Michael Gottfried van der Steeg, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 29, 1962, Ser. No. 233,526
6 Claims. (Cl. 148—101)

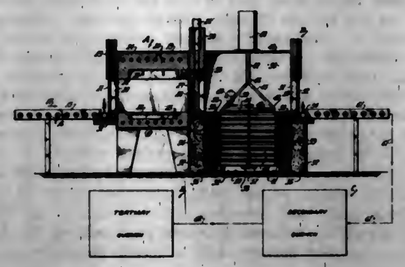
1. In the manufacture of permanent magnets from separate particle-size magnets containing the hexagonal phase of the compound $(Fe,Co)_2P$ as the constituent essential for the permanent magnetic properties, heating said particle-size magnets with a Fe/Co ratio between about 90:10 and 60:40 to a temperature at least between 900° C. and 1150° C., and cooling said particle-size magnets to a temperature below about 600° C. from said temperature a such an average rate greater than about 2° C./sec. as to prevent the formation at the lower temperatures of the orthorhombic phase.

3,188,248
METHOD OF EFFECTING AN AUSTENITE TO MARTENSITE TRANSFORMATION IN A SUSTAINED INTENSITY MAGNETIC FIELD

William I. Bassett III, Los Angeles, Calif.
(120 W. 154th St., Gardena, Calif.)

Filed Oct. 28, 1960, Ser. No. 65,858
7 Claims. (Cl. 148—108)

1. An improved process of effecting an austenite to martensite transformation in an alloy of the austenitic-martensitic type, including the following steps: heating the article to an austenitizing temperature; and then quenching the article rapidly in a quenching medium maintained at approximately the temperature of the lower limit of the transformation range for the alloy while



subjecting it to a sustained-intensity magnetic field of at least 100 gauss for a period of time not substantially less than 10 minutes.

3,188,249
METHOD OF IMMERSING CUBE-ON-EDGE ORIENTED SILICON-IRON IN SILICON-IRON BATH FOLLOWED BY ANNEALING TO FORM A CUBE-ON-EDGE ORIENTED SILICON-IRON PRODUCT

Peter J. Clemm, Malvern, Pa., assignor to General Electric Company, a corporation of New York

No Drawing. Continuation of application Ser. No. 199,285, June 1, 1962. This application Sept. 21, 1964, Ser. No. 398,111
2 Claims. (Cl. 148—112)

1. A process for producing sheets consisting essentially of from about 1.5 to 4.5 weight percent silicon, balance substantially all iron and having their constituent grains oriented in the (110) [001] crystallographic orientation, comprising the steps of subjecting a (110) [001] grain oriented matrix sheet of up to about 25 mils thickness to a dry hydrogen atomsphere having a dew point no higher than about −60° F. at a temperature of from about 700 to 1000° C. to clean the surface thereof, immersing the matrix sheet in a bath of molten silicon-iron alloy of substantially the same composition as the matrix to freeze additional metal thereon, air cooling the matrix sheet and frozen metal, and annealing the cooled product in a non-oxidizing atmosphere at temperatures of from about 1000 to 1350° C., the additional frozen metal having a (110) [001] crystallographic orientation at the termination of processing.

3,188,250
USE OF A PARTICULAR COILING TEMPERATURE IN THE PRODUCTION OF ELECTRICAL STEEL SHEET

Robert D. Holbein, Buffalo Township, Butler County, Edward B. Stanley, Washington Township, Westmoreland County, and Harry G. Stout, Peters Township, Washington County, Pa., assignors to United States Steel Corporation, a corporation of New Jersey

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,203
7 Claims. (Cl. 148—120)

1. A method of producing low-carbon steel having improved electrical properties comprising melting steel containing

		Percent
Carbon		.03 to .14
Manganese		.38 to .76
Phosphorus		.008 to .15
Sulphur	max.	.03
Silicon	max.	.02

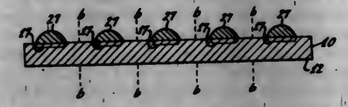
with the balance iron and residual amounts of other elements, hot rolling said steel to strip, coiling the strip at a temperature between 1200 and 1300° F., cold reducing said strip, decarburizing said strip by heating in the range

of 1150 to 1300° F. in a moist atmosphere for sufficient time to reduce the carbon content to less than .008, then raising the temperature thereof to within the range of 1450 to 1550° F. to increase the grain size thereof and thereafter temper rolling said strip to elongate it not more than 10%.

3,188,251
METHOD FOR MAKING SEMICONDUCTOR JUNCTION DEVICES

Ronald A. Straight, Mountainside, and Walter P. Alisa, Fords, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 19, 1962, Ser. No. 167,357
4 Claims. (Cl. 148—179)

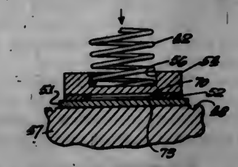


1. The method of fabricating a semiconductor device comprising the steps of preparing a given conductivity type crystalline semiconductive wafer with two opposing major faces; plating over at least one restricted area on at least one said major wafer face a thin coating of a modifier capable of inducing opposite conductivity type in said wafer; plating on said coating a layer of a solvent metal; and heating said wafer to alloy said modifier and said solvent metal to said wafer.

3,188,252
METHOD OF PRODUCING A BROAD AREA FUSED JUNCTION IN A SEMICONDUCTOR BODY

Henry Trigger, Monterey Park, and Robert A. Kosa, Los Angeles, Calif., assignors to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware

Filed Nov. 20, 1961, Ser. No. 153,455
5 Claims. (Cl. 148—184)



1. A method of producing a broad area fused junction in a semiconductor crystal body comprising the steps of:
(a) disposing a metal foil upon a horizontal heat conductive surface, said metal foil containing atoms of an active impurity and being laterally free of restraint;
(b) disposing a semiconductor crystal body upon said metal foil to thereby form a semiconductor-foil sandwich;
(c) urging said crystal body and said heat conductive surface toward each other while uniformly heating them sufficiently to alloy the metal to the semiconductor crystal body, said heating being to a temperature below the melting point of the semiconductor material whereby molten alloy is squeezed outwardly and said crystal body and said heat conductive surface are moved toward each other;
(d) arresting movement of said heat conductive surface and said crystal body toward each other after movement through a distance less than the thickness of said metal foil prior to heating; and
(e) maintaining said heat conductive surface and said crystal body at the distance apart achieved after arresting of said movement while said semiconductor crystal body and metal are cooling, whereby the thickness of said semiconductor crystal body and alloyed metal is less than the combined thickness of said metal foil and semiconductor crystal body prior to heating.

3,188,253
PROCESS FOR PREPARING A METALLIZED EXPLOSIVE

Frank D. Patrick, Freeport, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

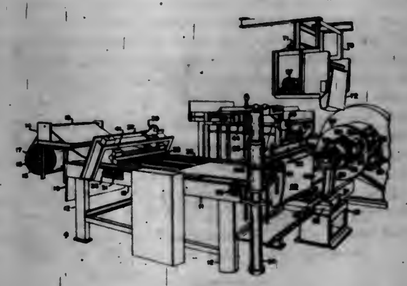
No Drawing. Filed Apr. 25, 1963, Ser. No. 275,519
3 Claims. (Cl. 149—1)

1. A novel process for preparing a metallized explosive composition which comprises;
(a) providing a source of coarse nonequiaxed particles of a first light metal,
(b) flame-spraying a multiplicity of finely divided particles of a second light metal onto the surface of said coarse particles thereby to provide a composite fine-coarse metal particle, said finely divided particles of said second light metal forming a discontinuous series of individual particles on said coarse nonequiaxed particles of said first light metal and said finely divided particles of said second light metal not entirely covering the surface of said coarse particles of said first light metal, said coarse particles consisting of from about 10 to about 90 weight percent of said composite and said finely divided particles consisting of from about 90 to about 10 weight percent of said composite, said first light metal and said second light metal being selected from the group consisting of magnesium, aluminum, magnesium alloys and aluminum alloys, and
(c) admixing an explosive member therewith.

3,188,254
METHOD AND APPARATUS FOR MAKING ENDLESS BELT BODIES

James W. Huff and Wallace H. Woodrow, Dayton, and John F. Campbell, Cuyahoga Falls, Ohio, assignors to Dayco Corporation, a corporation of Ohio

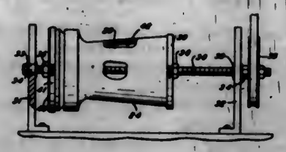
Filed Aug. 4, 1959, Ser. No. 831,677
3 Claims. (Cl. 156—137)



1. In the manufacture of an endless belt body, the steps of forming a compression section, placing said section on a supporting drum, and rotating said drum while simultaneously laying a cord on said drum in an opposite direction.

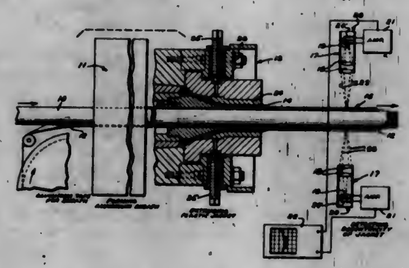
3. In an apparatus for manufacturing endless belt bodies including a compression section, a rotatable drum upon which said section is placed, means mounted internally of said drum to expand it to a desired diameter, supporting means for one end of said drum, and means for moving said supporting means in two different directions to permit mounting of said section on said drum.

3,188,255
METHOD OF MAKING PRIMARY METERING ELEMENTS WITH REINFORCED SYNTHETIC PLASTIC
William A. McMullin, Philadelphia, Pa., assignor to Penn Meter Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 6, 1962, Ser. No. 200,427
4 Claims. (Cl. 156—189)



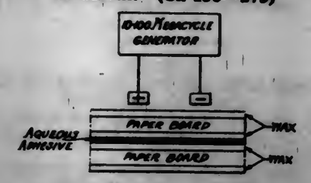
1. The method of making a primary metering element for fluid flow which comprises rotatably mounting with respect to a support in sequential abutting secured relation an inlet section forming head having a converging exterior peripheral surface, a throat ring, a recovery section forming sleeve having a diverging exterior peripheral surface, and an outlet end head, said first head and sleeve having said exterior surfaces disposed to provide with an inner face of the ring, a continuous elongated interior surface of the element, applying resinous plastic saturated fibrous reinforcing coverings in surrounding engaging relation to said surface of said first head, said ring and said surface of said sleeve, curing said resinous plastic reinforced by said coverings, separating the heads, the sleeve and the support from the element and securing a mounting flange outwardly of said throat ring.

3,188,256
THERMAL RADIATION METHOD OF MEASURING COATING THICKNESS
John H. Shoemaker, Ralston, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 22, 1961, Ser. No. 118,993
5 Claims. (Cl. 156—244)



1. The method of measuring the thickness of a hot coating on a heat conducting substrate, which comprises the steps of allowing the hot coating to cool from a selected temperature for a predetermined period of time, whereby the substrate acts as a limited capacity heat sink by conducting heat away from the coating so that the temperature of the coating decreases as an inverse function of the thickness thereof; measuring the intensity of thermal radiation emitted from a known area of the hot coating; and correlating such thermal radiation measurement with coating thickness.

3,188,257
UNITING OF WAXED SURFACES
Myer H. Hecht, 1429 Central Ave., Deerfield, Ill.
Filed Jan. 8, 1963, Ser. No. 250,981
10 Claims. (Cl. 156—273)

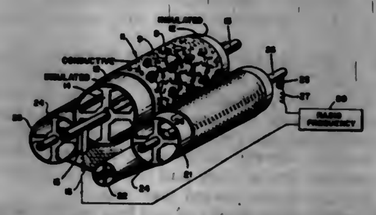


1. In a method of uniting two wax-covered paperboard surfaces, the steps of interposing between the wax-covered surfaces a water-based adhesive, and, in the presence of the water in said adhesive, subjecting the surfaces with the included adhesive to stray field dielectric heating to convert the water in said adhesive to steam to purge the surfaces being mated of the wax thereon and to promote the setting of the said adhesive while maintaining the two surfaces in direct face-to-face relationship.

3,188,258
BONDING OF OLEFIN POLYMERS
John Arthur Young, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 30, 1957, Ser. No. 705,827
12 Claims. (Cl. 156—294)

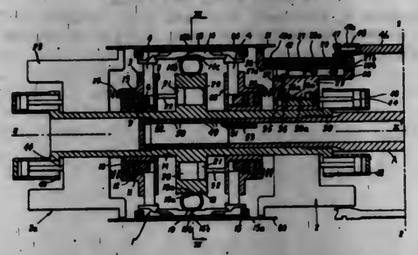
7. In a method for joining sections of pipe utilizing a sleeve to be positioned over the ends of and in contact with the outer surfaces of said pipe sections, said pipe sections and said sleeve being formed of a polymer of ethylene having a crystallinity of at least 80 percent at 25° C., the steps of immersing the ends of a pair of pipe sections to be joined and a sleeve in a liquid halogenated hydrocarbon; introducing chlorine into said halogenated hydrocarbon maintained at a temperature in the range of 50 to 180° F.; removing said pipe sections and said sleeve from said halogenated hydrocarbon when said pipe section ends and said sleeve contain from 0.5 to 5 weight percent chlorine; and with said surfaces wet with a liquid solvent selected from the group consisting of hydrocarbon solvents and halogenated hydrocarbon solvents positioning said sleeve over said ends of said pipe sections.

3,188,259
DIELECTRIC HEAT SEALING APPARATUS
John E. Leger, Nashua, N.H., assignor to Accelerated Industries, Inc., Nashua, N.H.
Filed Feb. 16, 1961, Ser. No. 89,865
5 Claims. (Cl. 156—380)



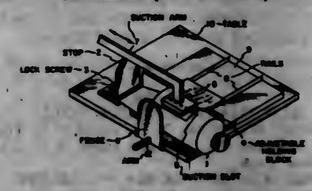
1. A machine for constructing a continuous plastic sandwich from rolls of plastic material by dielectric bonding in a patterned bond which comprises patterned pressure roller means having a raised conductive surface pattern, electrically insulating material attached to said roller means between raised portions of said pattern, a conductive endless web which is roller mounted for continuously traveling in wrapping pressure engagement with said roller means over a substantial arc of engagement to compress said sheet material into contact with said pattern, said electrically insulating material preventing mechanical distortion of said plastic material during bonding by supporting said plastic material between raised portions of said pattern, means to energize said roller means and said web for dielectrically heating said sheet material, and means including said web for continuously cooling a plastic sandwich while retaining the sheet materials thereof in register during the cooling period.

3,188,260
APPARATUS FOR MANUFACTURE OF PNEUMATIC TIRES
Noel Nebout, Montlucon, France, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed July 3, 1962, Ser. No. 207,225
Claims priority, application France, July 4, 1961, 866,947
13 Claims. (Cl. 156—415)



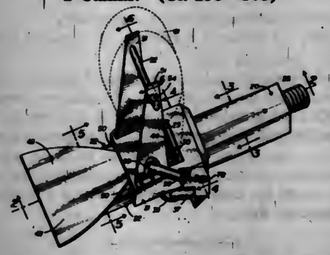
1. Apparatus for the manufacture of pneumatic tires comprising a tire building former having a tire building surface, a ply-turn-down and bead-supporting device at each end of said former each of which comprises at least one axially and radially adjustable supporting member having a securing surface both for securing engagement with the inner peripheral surface of an end of a ply extending over the end of the former and for supporting a bead region of a tire carcass located on the former, and moving means operably connected to said member to effect, upon operation of said means, a radial and axial inward ply-turn-down movement of the member from a first position, in which said surface of the member is located at substantially the diameter of the tire building surface of the former, to a second position in which the surface of the member is located adjacent the end of the former to support a bead wire.

3,188,261
LABELLING DEVICE
Julius Bernard Lagotin, Pearl River, N.Y., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine
Filed Jan. 5, 1962, Ser. No. 164,510
3 Claims. (Cl. 156—493)



1. A labelling device for filled collapsible tubes which are non-cylindrical comprising in combination means for maintaining a filled tube in a predetermined position, said means including a shaped block adapted for holding and supporting said tube, said block having a surface adapted to approximate the shape of the tube, a slot in the block and means for holding the tube thereagainst by vacuum, means for applying an adhesive edge of a label to the upper surface of the tube, tube rolling means comprising a moving resilient belt and a resilient base, said belt and base having yielding surfaces of sufficient thickness and yieldability so as to adapt themselves to the eccentricities of the non-cylindrical perimeter of the tube as it rolls, said belt being of sufficient length so as to rotate the tube through at least the full length of the label, and means for delivering the tube into contact with said belt whereby the tube is rolled by the belt between it and the resilient base and is moved forward.

3,188,262
DRY-WALL TAPING MACHINE
Edward L. Torrison, 420 Mullan St., Kellogg, Idaho
Filed Aug. 13, 1962, Ser. No. 216,486
2 Claims. (Cl. 156—575)



1. In a dry-wall taping machine of the nature aforesaid, in combination, a hollow elongate handle structurally communicating with a hollow body member having an elongate slit in its upper surface to allow tape to pass therethrough and carrying two spaced upwardly extending supports having a removeably mounted spindle therebetween adapted to rotatably carry a roll of tape thereon; a feeding mechanism carried by said body member opposite said handle having a plurality of sheet-like septums and filets forming two spaced mastic chambers each having a forward elongate narrow orifice on either side of a central tape chamber adapted to deposit mastic passing therethrough on both side of tape passing from said tape chamber; a smoothing knife removeably carried by said feeding mechanism to smooth said mastic and tape to a finished seam; fingers carried in the orifice of said upper mastic chamber to press tape passing thereover into underlying mastic; a mastic supply system communicating from the rearward portion of said handle member through said device to said upper and said lower mastic chambers, said system having a valve therein to regulate complete flow therethrough and a second valve to regulate the relative flow of mastic to said upper chamber relative to that through said lower chamber.

3,188,263
HEAT STABILIZED VINYL PLASTIC COMPOSITIONS, FLOOR TILES MADE THEREFROM, AND METHODS FOR PREPARING SAME
Arthur E. Plassmer, Norristown, Pa., assignor to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 4, 1959, Ser. No. 791,856
The portion of the term of the patent subsequent to Aug. 11, 1976, has been disclaimed
7 Claims. (Cl. 161—165)

3. A vinyl asbestos tile composition stabilized against discoloration by heat comprising a copolymer of 70% to

95% vinyl chloride and 30% to 5% vinyl acetate, at least an equal weight of asbestos fibers, 10% to 40% by weight of pulverulent inorganic filler and an amount up to 10% based on the weight of the copolymer of a stabilizer selected from the group consisting of bisalkylol ureas, bisalkylol ethylene ureas, polyalkylol melamine, heat-convertible polymers thereof, the lower alkylol ethers thereof, and heat-convertible polymers of said ethers wherein the alkylol groups contain 1 to 5 carbon atoms.

3,188,264
LOOSE FILL PACKING MATERIAL
Robert E. Holden, Aloha, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Dec. 21, 1962, Ser. No. 247,469
9 Claims. (Cl. 161—168)



1. Loose-fill packing material, comprising:
a plurality of resilient members of expanded thermoplastic material; and
surface indentation means on each of said members for causing the outer surfaces of adjacent contacting members to interlock and prevent relative movement thereof when said members are compressed together but to also allow said material to flow when said members are free from such compression so that said members may be poured into a container like a granular fluid.

3,188,265
PACKAGING FILMS
Robert R. Charbonneau, Mahtomedi, and Joseph F. Abere, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Nov. 12, 1957, Ser. No. 695,532
11 Claims. (Cl. 161—188)

1. A composite laminated transparent film having a total composite thickness in the range of about 1 to 10 mils and comprising preformed polymer layers and being heat-sealable at moderately elevated temperatures below about 400° F., said film consisting essentially of a thin, tough, difficultly heat-sealable organic polymer as a film layer, and a preformed readily heat-sealable organic polymer as a film layer surfacing at least one side thereof and being self-unified therewith and chemically interfacially bonded thereto, the interfacial union of the layers with one another being so strong that the layers cannot be mechanically separated.

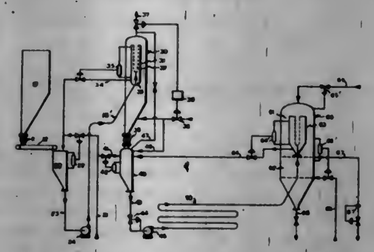
3,188,266
INTERFACE BONDING OF POLYMERS AND PRODUCT THEREOF
Robert R. Charbonneau, Woodbury Township, Washington County, Minn., and Joseph F. Abere, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,065
18 Claims. (Cl. 161—188)



2. An article of manufacture comprising (a) a layer of a solid linear polymeric polyester, self-sustaining in thin film form, of polybasic aliphatic alcohol and polycarboxylic aromatic acid; and (b) a layer of an organic hydrogen-containing polymer having a plurality of carbon atoms in the skeletal chain, said article having high interfacial bonding at an interface between said layers, said interface having been strongly irradiated with ultraviolet light from an artificial source at an intensity and for a time sufficient to provide effective bonding of the interfacial surfaces without substantially degrading the polymer.

17. The method which comprises (a) forming an interface between organic polymer layers, one of which is more transmissive to ultraviolet light than the other, and, (b) strongly irradiating said interface with ultraviolet light from an artificial source at an intensity and for a time sufficient to provide effective bonding of the said layers to one another at said interface without substantially degrading said polymers.

3,188,267
APPARATUS FOR CONTINUOUSLY PULPING CELLULOSE MATTER
Salvatore A. Guerrieri, Scarsdale, N.Y., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,120
4 Claims. (Cl. 162—237)

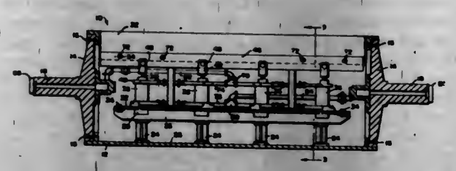


1. Apparatus for pulping cellulosic material comprising a mixing tank; means for introducing cellulosic material into said mixing tank; means for introducing liquor into said mixing tank to form a material-liquor suspension; a degasser including a separator vertically positioned therein, said separator being formed with a basin in the lower portion thereof and having a perforated inner wall to enable liquor to drain from said suspension and to pass into said basin; means to sequentially steam and vent the degasser to degas said material; a second mixing tank; means to introduce said degassed material into said second mixing tank, means for maintaining a pressure balance between said degasser and second mixing tank; means to introduce a delignifying liquor into said second mixing tank to form a suspension of the degassed material and liquor; an impregnator; means for passing said suspension of degassed material and liquor through said impregnator wherein said material is impregnated with liquor; a digester to delignify the impregnated material in non-submergence in an atmosphere of steam; and means for passing said impregnated material to said digester.

3,188,268
AUTOMATIC CUT-OFF ROLL
Arthur Cooper, Waterford, N.Y., assignor to The Noble & Wood Machine Co., Hoosick Falls, N.Y., a corporation of New York
Filed Apr. 17, 1964, Ser. No. 360,590
9 Claims. (Cl. 162—260)

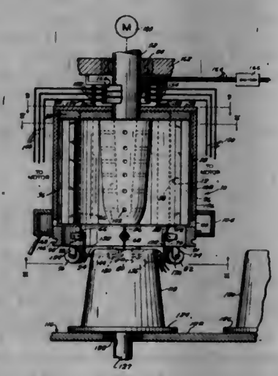
1. In a wet board machine make roll of the type having a frame mounted journalled hollow drum with a

longitudinally extending slot therein, a knife positioned within said drum in alignment with said slot, and a knife actuating mechanism internally mounted within said drum and arranged to drive said knife through said slot to cut off layers of material accumulated on said make roll, the improvement therein comprising; said knife actuating mechanism including a cylinder assembly having a plurality of aligned hollow cylinders; a piston positioned in each said cylinder for reciprocal movement therein, a piston rod connected to each said piston and extending from the head of said cylinder; a common cylinder head sealing the head ends of the plurality of



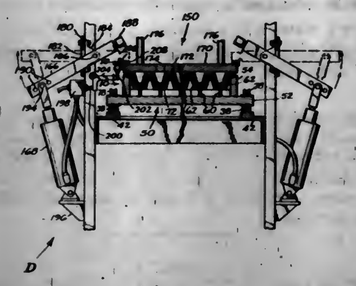
cylinders, said cylinder head having apertures through which said piston rods reciprocate; a common cylinder base sealing the base ends of the plurality of cylinders; and walls forming a longitudinal manifold in said cylinder head and walls forming a longitudinal manifold in said cylinder base, each said manifold having ports opening into each of said cylinders, whereby compressed air for driving the pistons is introduced and exhausted through the internal manifolds.

3,188,269
PIPE MOLDING DEVICE
Lloyd Hornbostel, Jr., Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 27, 1963, Ser. No. 268,258
11 Claims. (Cl. 162—384)



1. A device for molding hollow articles comprising,
a hollow body of revolution having an assembled state and an expanded state,
means in said body for depositing material to be molded within said body,
means for rotating said body, and
means carried by said body and effected by centrifugal force to expand said body from said assembled state to said expanded state for releasing by gravity material deposited thereon.

3,188,270
APPARATUS FOR CONSOLIDATING AND CALENDERING MOLDED PULP ARTICLES
Watson S. Eastman and Eugene M. Alsman, Portland, Oreg., assignors to Molded Container Corporation, a corporation of Oregon
Filed Apr. 29, 1963, Ser. No. 276,619
5 Claims. (Cl. 162—395)



1. In pulp molding apparatus including overlapping dual conveyor means having article-forming vacuum dies on one conveyor and mating vacuum transfer dies on the other, the forming and transfer dies, when mated, forming die pairs, press means for pressing the transfer dies against the articles on the forming dies, thereby consolidating and calendering them, the press means comprising:
(a) lever means mounted at a press station for angular reciprocation between a pressing position and a rest position with reference to the die pairs as they pass the press station in succession,
(b) motor means connected to the level means for reciprocating it between its two positions, and
(c) motor actuating means positioned in the path of travel of the die pairs for actuating the motor means at intervals timed to the passage of the dies past the pressing station.

3,188,271
3α-ACID ESTERS OF 3α-HYDROXY-5β-PREGNANE-11,20-DIONE
Lewis H. Sarett, Princeton, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed May 16, 1956, Ser. No. 585,163
10 Claims. (Cl. 167—52)

8. Pharmacologically acceptable salts of acid esters of 3α-hydroxy-11,20-diketopregnane and an aliphatic polycarboxylic acid having from 4 to 8 carbon atoms.

9. A pharmaceutical composition which comprises a compound as claimed in claim 8 together with a pharmaceutically acceptable carrier.

3,188,272
ANTIBIOTIC FILIPIN
David Gottlieb and Alfred Ammann, Urbana, Ill., assignors to The University of Illinois Foundation
Filed Nov. 29, 1954, Ser. No. 471,811
7 Claims. (Cl. 167—65)

1. A substance comprising the compound designated as filipin having in its crystalline form the following properties: soluble in dimethylformamide, pyridine, 95 percent ethanol, methanol, n-butanol, isopropanol, tertiary-butanol, glacial acetic acid, ether, ethyl acetate and amyl acetate; containing the elements carbon, hydrogen and oxygen in the following proportions: C=60.95%; H=8.90%; O (by difference)=30.15%; having a melting point between 195 and 205 degrees centigrade, with de-

composition; having the following R_f values by papergram analysis:

Solvent system:	R_f
81% n-butanol in water	0.85
81% n-butanol in water 0.25% p-toluenesulfonic acid	0.85
n-Butanol:acetic acid:water; 2:1:1	0.85
81% n-butanol in water 2% piperidine	0.85
96% water, 4% n-butanol	0.10
96% water, 4% n-butanol, 0.25% p-toluenesulfonic acid	0.10

specific rotation $[\alpha]_D^{22}$—minus 148.3 degrees (c., 0.89, methanol); ultraviolet absorption spectrum maxima (95 percent ethanol) at 355 mμ; 338 mμ; and 322 mμ; exhibiting a characteristic absorption, in the infrared of the spectrum when suspended in Nujol, as shown in FIGURE 1 of the drawing.

3,188,273

COMPOSITION COMPRISING SALT OF 1,1'-METHYLENE-BIS-(2-HYDROXY-3-NAPHTHOIC ACID) AND 1-DIPHENYLMETHYL-4-METHYL-PIPERAZINE

Emanuel Krell and Herbert A. Lieberman, Dover, Del., assignors to International Latex Corporation, Dover, Del., a corporation of Delaware

No Drawing. Filed Apr. 20, 1961, Ser. No. 104,245
5 Claims. (Cl. 167—65)

1. A pharmaceutical composition comprising the salt of 1,1'-methylene-bis-(2-hydroxy-3-naphthoic acid) and 1-diphenylmethyl-4-methylpiperazine and a non toxic tasteless surfactant which reduces the surface tension of aqueous 0.1 N hydrochloric acid below 70 dynes per centimeter and a pharmaceutically acceptable carrier.

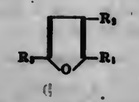
3,188,274

PRODUCING VASODILATATION AND ANALEPTIC ACTIVITY WITH THERAPEUTIC COMPOSITIONS CONTAINING AROMATIC FURAN DERIVATIVES

Gustave Deroanne, 83 Rue Louvrex, Liege, Belgium

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,209
Claims priority, application Belgium, May 26, 1961, 604,272/61
2 Claims. (Cl. 167—65)

1. A method for producing vasodilatation and analeptic activity in animal subjects comprising administering to said subjects, vasodilatation and analeptic producing quantities in dosage units, of an active ingredient constituted by a furan derivative of the general formula:



in which R_1 and R_2 are selected from the group consisting of hydrogen, the 4'-hydroxybenzoyl radical and the 3',5'-diiodo-4'-hydroxybenzoyl radical, provided that when R_1 is hydrogen, R_2 is selected from the group consisting of the 4-hydroxybenzoyl and 3',5'-diiodo-4'-hydroxybenzoyl radicals and when R_1 is selected from the group consisting of the 4'-hydroxybenzoyl and 3',5'-diiodo-4'-hydroxybenzoyl radicals, R_2 is hydrogen, and R_3 is selected from the group consisting of hydrogen and the methyl and ethyl radicals, 50 to 600 mg. of said furan derivative being used per dosage unit at least until vasodilatation and analeptic activity has been produced in said subjects.

3,188,275

VINYL ACETATE POLYETHYLENE GLYCOL COPOLYMER HAIR SETTING COMPOSITION

Gustav Erlemann, Riehen, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 21, 1962, Ser. No. 204,038
Claims priority, application Switzerland, June 26, 1961, 7,470/61
11 Claims. (Cl. 167—87.1)

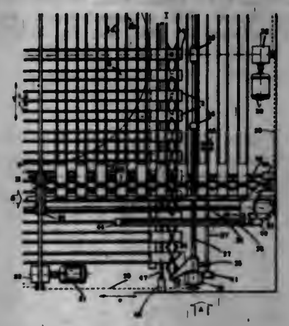
1. A composition comprising (a) a copolymer of vinyl acetate and polyethylene glycol, (b) a compound selected from the group consisting of panthenol, panthenol methyl ether, panthenol ethyl ether, panthenol allyl ether, panthenol n-decyl ether, panthenol cetyl ether, panthenol diethylaminoethyl ether, panthenol phytyl ether, panthenol geranyl ether, panthenol tetrahydrofurfuryl ether, panthenol guaicol ether and panthenol ethyl mercapto ether, and (c) a member selected from the group consisting of aqueous ethyl alcohol and aqueous isopropyl alcohol, there being present in said component (a) from about 1 to about 3 parts by weight of polyethylene glycol for each part by weight of vinyl acetate therein and there being present in said component (c) from about 30% to about 70% by weight of said alcohol, said component (a) comprising from about 1% to about 10% and said component (b) comprising from about 0.1% to about 3% of the total weight of the composition.

3,188,276

FUEL ELEMENTS ADJUSTING DEVICES IN NUCLEAR REACTOR

Eric Aramovitch, Varese, Pierre Bonnaure, Sesto Calende, and Guido Mollica, Varese, Italy, assignors to Communauté Europeenne de l'Energie Atomique, Brussels, Belgium

Filed Feb. 7, 1963, Ser. No. 260,940
6 Claims. (Cl. 176—28)



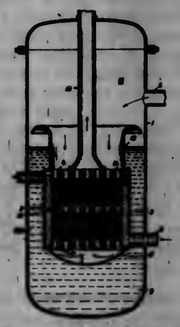
1. In a nuclear reactor having a horizontal regular lattice and having fuel elements located in spaced relationship at the apices of the lattice, a first set of guide bars parallel to a predetermined direction, each of said first guide bars comprising two first parts parallel to said direction, said parts defining first vertical spaces therebetween, a second set of guide bars parallel to a direction transverse to said predetermined direction, each of said second guide bars comprising two second parts parallel to said transverse direction, said two second parts defining second vertical spaces therebetween, first mechanical linkage means interconnecting said first guide bars for simultaneously changing the distance between said first bars while maintaining a constant ratio between said first spaces, second mechanical linkage means interconnecting said second guide bars for simultaneously changing the distance between said second guide bars while maintaining a constant ratio between said second spaces, and a plurality of carriages each receiving one of the fuel elements, each of said carriages being slidably supported by a bar of one of said sets for movement along said bar and each of said carriages projecting into the space of an adjacent bar of the other of said sets for movement along said space.

3,188,277

SUPERHEATER REACTOR

Heinz Kornbichler, Walldorf, and Erhard Fischer and Hans Kluge, Frankfurt, Germany, assignors to Licentia Patent-Verwaltung-G.m.b.H., Frankfurt am Main, Germany

Filed Feb. 25, 1960, Ser. No. 11,096
Claims priority, application Germany, Feb. 26, 1959, L 32,559
5 Claims. (Cl. 176—59)



1. A superheater reactor comprising a pressure vessel, a reactor core including a tank-like structure being filled with moderator water and being disposed in said pressure vessel, a plurality of tubular elements disposed in said tank constituting cooling channels and being divided so as to form an outer cooling zone and an inner cooling zone, all tubular elements being inserted in said moderator water, a plurality of fuel elements in said tubular elements each consisting of a bundle of fuel rods, means defining a narrow gap between each tubular element and the fuel elements therein, which gap is filled with stagnating steam for thermally insulating said fuel elements from the moderator water, a steam chamber disposed at one end of said tank-like structure and communicating with the cooling channels of only said outer cooling zone, means for removing superheated steam at said one end, and communicating with the cooling channels of only said inner cooling zone, means for feeding saturated steam into said steam chamber, said steam passing in one direction through said tubular elements forming said outer zone, so as to become pre-superheated, and a mixing chamber disposed at the opposite end of said tank-like structure, communicating with all tubular elements and constituting steam guiding means for passing the pre-superheated steam from the outer zone channels in opposite direction through said channels forming said inner zone, so as to become finally superheated to the desired maximum temperature.

3,188,278

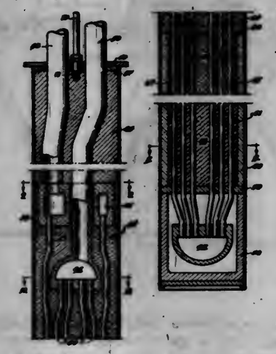
FUEL ELEMENT FOR A SUPERCRITICAL PRESSURE POWER REACTOR

Harold Harty and James J. Reglenbal, Richland, Kadmiken G. Toyoda, Pasco, and Richard D. Widrig, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

Original application Oct. 22, 1962, Ser. No. 232,315, now Patent No. 3,156,625, dated Nov. 10, 1964. Divided and this application Sept. 22, 1964, Ser. No. 403,684
1 Claim. (Cl. 176—68)

A fuel element for a supercritical pressure power reactor comprising:

a metallic jacket having metallic closures at both ends thereof;
a graphite cup disposed within one end of said jacket;
a fuel zone containing uranium oxide disposed within said jacket;
a spacer element of zirconium dioxide between said fuel zone and said graphite cup;
an insulating layer of compacted zirconuium dioxide between said fuel zone and said jacket;
a spacer element at the other end of said fuel zone;
zirconium dioxide powder disposed in the remainder of said jacket;
an inlet and an outlet pipe penetrating the jacket closure at the end away from said graphite cup;



a distributing chamber disposed in said zirconium dioxide powder, said inlet pipe terminating in said distributing chamber;
a hemispherical collecting chamber, said outlet pipe passing through said distributing chamber and terminating in said collecting chamber;
a plurality of inlet pressure tubes extending through the fuel zone, said tubes being disposed about the periphery of said fuel zone;
a hemispherical return chamber disposed in said graphite cup, said inlet tubes terminating in said return chamber; and,
a plurality of outlet pressure tubes extending from the return chamber to the collecting chamber, said outlet tubes being positioned interiorly of said inlet tubes.

3,188,279

MALTING PROCESS USING CARBONYL-CONTAINING COMPOUNDS

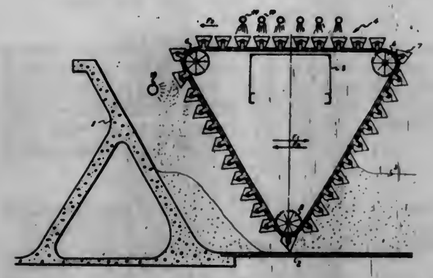
Eric Kneen, Elm Grove, John G. Fleckenstein, Brookfield, and Lawrence D. Beckord, Elm Grove, Wis., assignors to Kurth Malting Company, Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed May 13, 1963, Ser. No. 280,118
16 Claims. (Cl. 195—70)

1. In the process of malting a cereal grain which employs steeping grain until it acquires a moisture content suitable for germination, germinating the steeped grain under suitable conditions of aeration and moisture until green malt is produced and kilning the green malt, the improvement which comprises applying about 20 to 60,000 parts by weight of a nonacidic organic carbonyl-containing compound, and about 0.05 to 3 parts by weight of gibberellic acid, per million parts of dry cereal grain, to the grain in the period from harvesting the grain to a time after steep-out and before germination of the grain is substantially completed, the amount of said carbonyl-containing compound used being sufficient to

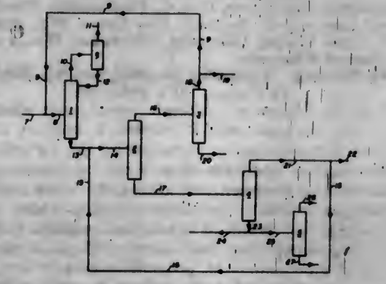
significantly increase the malting yield and give a malt with an alpha-amylase and modification values of industrial utility.

3,188,280
DEVICE FOR A COMBINED STEEPING AND GERMINATING MULTI-PROCESS
Henri Vilain, 7 Spitzackerstrasse, Bottmingen, Basel-Land, Switzerland
Filed Dec. 27, 1962, Ser. No. 250,730
Claims priority, application France, Dec. 29, 1961, 883,456, Patent 1,320,049
1 Claim. (Cl. 195—130)



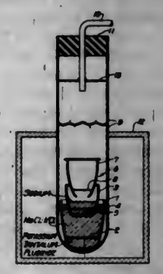
Device for a combined steeping and germinating multi-process comprising a germinating bin, means including a continuous movement bucket chain having a horizontal top run for displacing the grain in said bin in such manner that the said grain circulates in a small volume; and means including a first series of water sprayers for moistening the grain in the buckets of said bucket chain in the top run area thereof, and a second series of water sprayers for moistening the grain during the free drop of the same after discharge from the buckets of said bucket chain for moistening the grain during its displacement.

3,188,281
PRODUCTION OF METHYL DICHLORO-PHOSPHINE OXIDE
Donald H. Briggeman, Niagara Falls, N.Y., Alan Longacre, Whittier, Calif., and Charles J. Smith, Jr., Grand Island, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 31, 1954, Ser. No. 419,982
2 Claims. (Cl. 202—40)



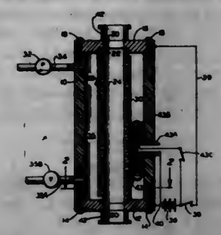
1. A method for the recovery of methyl dichlorophosphine oxide from a mixture which consists essentially of major amounts of carbon dioxide, hydrogen chloride, phosgene and methyl dichlorophosphine oxide in admixture with small amounts of methyl chloride, phosphorus oxychloride and tetramethylphosphonium chloride which comprises introducing said mixture and additional methyl chloride into a first distillation zone operated at moderate pressure, removing CO_2 and HCl as overhead and removing methyl chloride, phosgene, phosphorus oxychloride, methyl dichlorophosphine oxide and tetramethylphosphonium chloride as bottoms; introducing bottoms from the first distillation zone and additional phosphorus oxychloride into a second distillation zone operated at substantially atmospheric pressure, removing methyl chloride and phosgene as overhead and removing phosphorus oxychloride, methyl dichlorophosphine oxide and tetramethylphosphonium chloride as bottoms; introducing overhead from the second distillation zone into a third distillation zone operated at moderate pressure, removing methyl chloride as overhead and removing phosgene as bottoms; and introducing bottoms from the second distillation zone into a fourth distillation zone operated under a vacuum, removing phosphorus oxychloride as overhead and removing methyl dichlorophosphine oxide and tetramethylphosphonium chloride as bottoms; methyl chloride introduced into the first distillation zone being derived from overhead from the third distillation zone and phosphorus oxychloride introduced into the second distillation zone being derived from overhead from the fourth distillation zone.

3,188,282
ELECTROLYTIC METHOD FOR PRODUCTION OF REFRACTORY METALS
Meyer L. Freedman, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 6, 1961, Ser. No. 93,471
3 Claims. (Cl. 204—64)



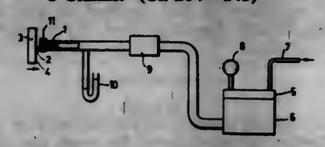
1. In the method of producing refractory metal by electrolytic reduction of a compound of the metal dissolved in molten salt inert to said refractory metal under an inert atmosphere contained in an electrolytic cell having a soluble metal anode, the steps comprising introducing into the cell as the soluble anode a reductant for the metal compound, which reductant is liquid at a temperature at which the salt is molten, introducing at the cathode of the cell as the oxidant the metal compound to be reduced and positioning between the reductant and the oxidant means for restricting the diffusion of the reductant and the oxidant in the molten salt to the diffusion of ions only, connecting together the anode and the cathode of the cell by a conductor of electrons and heating the cell to a temperature and for a time sufficient to cause the anode to dissolve and electrons to flow in the electron conductor from the anode to the cathode of the cell to reduce the metal compound to metal.

3,188,283
ELECTROLYTIC PROCESS FOR REMOVING MOISTURE
Leland G. Cole, Fullerton, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Jan. 3, 1961, Ser. No. 80,188
6 Claims. (Cl. 204—129)



1. The method for removing moisture from a fluid substance by electrolytic decomposition and for recovering one of the products of decomposition independently of the fluid substance and of the other product of decomposition, which method includes the simultaneous performance of the following steps:
(a) exposing the moist substance to one side of a selected portion of a body of a sorption medium which has the characteristic of sorbing moisture from the substance and becoming electrically conductive in response thereto so that the moisture is sorbed from the substance into the medium,
(b) contacting said selected portion of the body of medium with a pair of electrodes at spaced locations,
(c) applying to the electrodes a voltage sufficient to effect electrolytic decomposition of moisture sorbed by said portion of the medium to release decomposition products of the moisture from the medium,
(d) extracting the decomposition products from said portion, and
(e) passing one of the decomposition products through a barrier permeable to said one product but impermeable to moisture, the substance and the other decomposition product to separate said one product from the moisture, the substance and the other decomposition product.

3,188,284
METHOD OF ETCHING BODIES
Ian Flinn, Bucks, and Brian Thomas Scofield, Linkfield Corner, Redhill, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 12, 1959, Ser. No. 852,481
Claims priority, application Great Britain, Feb. 26, 1959, 6,711/59
3 Claims. (Cl. 204—143)



1. A method of etching the surface of a body and removing a predetermined depth of material from the body, comprising arranging a nozzle close to but spaced from the surface of the body to define a channel between the end of the nozzle and the opposed body surface, forcing etchant capable of removing body material under a given pressure through the nozzle onto the body surface and through the said channel whereby material of the surface is removed widening the said channel, the nozzle being spaced at such a distance the body and the etchant flowing at such a rate that a slight widening of the said channel will cause a significant reduction in the pressure required to force the etchant through the said channel, continuing the said etchant flow while measuring the said pressure reduction due to widening of the channel, and terminating the etching when the pressure reduction reaches a value indicating the predetermined depth of material removal has been attained.

3,188,285
ELECTRODE ASSEMBLY
Hideo Watanabe and Lynn B. Leonard, Fullerton, and Maurice L. Deushane, Whittier, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Sept. 26, 1961, Ser. No. 140,900
9 Claims. (Cl. 204—195)

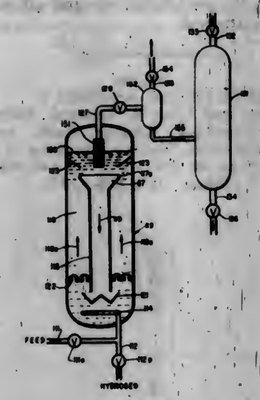


1. An electrode assembly for chemical analysis adapted to be used in any physical orientation, comprising:
a hollow tubular member, said tubular member having a constriction intermediate the ends thereof, said constriction defining an open capillarly passage providing pressure communication between opposite sides of said constriction;
a pH sensitive glass membrane sealingly connected to one end of said tubular member; said membrane, said constriction and the wall of said tubular member defining a first compartment in said tubular member;
a cap on the other end of said tubular member; said cap, said constriction and the wall of said tubular member defining a second compartment in said tubular member;
a body of liquid electrolyte substantially completely filling said first compartment;
and an electrode positioned in said first compartment in contact with said electrolyte;
said open capillary passage being sufficiently small to prevent flow of said electrolyte from said first compartment to said second compartment solely under the influence of gravity;
and means adapted to couple said electrode in an electrical circuit.

3,188,286
HYDROCRACKING HEAVY HYDROCARBON OIL
Roger P. Van Driesen, Hasewell, N.J., assignor, by mesne assignments, to Cities Service Research and Development Company, a corporation of Delaware
Filed Oct. 3, 1961, Ser. No. 142,629
3 Claims. (Cl. 208—108)

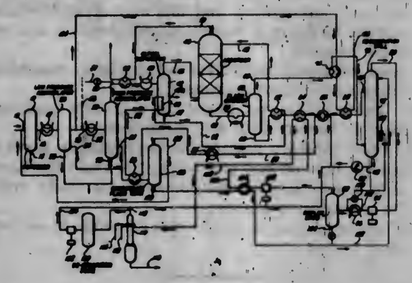
1. The process for hydrogenating hydrocarbon oil which comprises flowing said oil upwardly through a liquid phase reaction zone containing finely divided hydrogenation

catalyst and added hydrogen while maintaining said reaction zone under suitable hydrogenation conditions to thereby hydrogenate at least a portion of said oil with simultaneous deactivation of catalyst, continuously adding catalyst to said reaction zone, separately withdrawing liquid and gaseous product from said reaction zone through a vertically extending screen positioned in the upper portion of said reaction zone so as to establish an upper



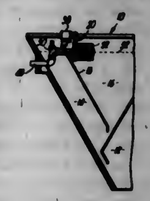
liquid level in said reaction zone and permit separate withdrawal of liquid and gas through a common conduit, and withdrawing catalyst from said reaction zone with said liquid product at the same rate at which catalyst is added to the reaction zone to thereby maintain a desired level of conversion and a desired quantity of catalyst in said reaction zone, the concentration of catalyst in the reaction zone being substantially greater than the concentration of catalyst in the liquid product.

3,188,287
OIL ABSORPTION PROCESS
Raymond James Hull, Orange, Calif., assignor to Gas Processors, Inc., Brea, Calif., a corporation of California
Filed Sept. 7, 1961, Ser. No. 136,476
10 Claims. (Cl. 208—346)



1. A process for the removal of C_3 and heavier hydrocarbon constituents from a wet natural gas which process comprises the steps of contacting wet natural gas with an absorption oil at superatmospheric pressure to obtain a rich absorption oil stream and a natural gas stream substantially free of C_3 and heavier constituents, reducing the pressure of the rich absorption oil stream to separate as a gaseous stripping medium low molecular weight hydrocarbon constituents absorbed from the wet natural gas by the absorption oil, heating the absorption oil, contacting the heated absorption oil with the gaseous stripping medium to obtain a lean absorption oil and a gaseous mixture of low molecular weight hydrocarbon constituents and C_3 and heavier constituents removed from the absorption oil, compressing the gaseous mixture, passing the compressed gaseous mixture and the absorption oil in indirect heat transfer relationship to heat the oil before it is heated and contacted by the gaseous stripping medium; and to cool the compressed gaseous mixture to condense a substantial portion of the C_3 and heavier constituents, and passing the compressed gaseous mixture together with the condensed constituents to a de-ethanizer.

3,188,288
METHOD FOR CONTROLLING THE MICROBE AND SOLID MATERIALS IN SEWAGE TREATMENT EQUIPMENT
Burks Alden Smith, Shawnee Mission, Kans., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 12, 1962, Ser. No. 178,870
6 Claims. (Cl. 210—11)



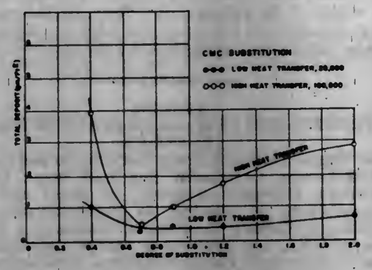
1. A method of retaining sufficient solid organic material in a sewage treating system to enhance the growth rate of living organisms capable of abstracting substances from said solid organic material and maintain the organism population at a maximum level, said method comprising the steps of:

(a) confining a quantity of the sewage;
(b) impinging directly on the surface of a mechanical filter screen having openings of a size between about 1 to 150 microns in the discharge liquid flow from said system, solid organic material and organisms in such size range;
(c) moving at least a portion of said filter above the upper surface of said liquid so as to elevate the impinged solid organic material and organisms above said confined sewage;
(d) continuously cleaning down to the bare surface of said filter by removing substantially all of the elevated-impinged solid organic material and organisms therefrom
(e) returning the thus removed solid organic material and organisms to said confined sewage; and
(f) sequentially repeating steps (b) through (e) as defined above.

3,188,289
INHIBITING BOILER DEPOSITS
Harry Lewis Kahler, Feasterville, and Ray T. Zerby, Levittown, Pa., assignors to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 28, 1961, Ser. No. 162,848
6 Claims. (Cl. 210—58)

1. A process of reducing phosphate, hydroxide and silicate deposits in steam generating equipment having water containing alkalinity, phosphate, silicate, an oxygen scavenger and antifoam, which comprises introducing into the water of the steam generating equipment between

5 and 100 p.p.m. of a sodium salt of carboxymethylcellulose having a substitution of carboxymethyl groups within the range from 0.7 to 0.9, inclusive, having a polymer



length of between 500 and 2000 anhydroglucose units and having a viscosity in a 2% water solution of between 15 and 40,000 centipoises.

3,188,290
METHOD OF MANUFACTURING A MAGNET CORE FOR USE AS A MEMORY ELEMENT
Reynier Willem Dam, Albert Cornelis Anton Marie Bleyenberg, and Antonius Johannes de Rooy, Eindhoven, Netherlands, and John Walter Gibson and Ernest Charles Schwenzel, Poughkeepsie, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 27, 1959, Ser. No. 816,210
Claims priority, application Netherlands, June 3, 1958, 228,379
3 Claims. (Cl. 252—62.5)

1. A method of manufacturing an annular magnet core having an outer diameter of not more than 4 mms. and particularly adapted for use in electronic computing devices comprising the steps of forming a mixture constituted of about 30 to 55 mol percent of Fe_2O_3, about 30 to 65 mol percent of MnO, up to about 15 mol percent CuO, and not more than 15 mol percent ZnO, presintering said mixture at a temperature of about 500° C. to 1000° C., comminuting the presintered product, molding the comminuted product into an annular core having an outer diameter less than about 4 mms., heating the annular core in a zone having an atmosphere containing at least as much oxygen as air at a temperature of about 1150° C. to 1350° C., slowly cooling said body to a temperature of at least 700° C. and not more than 1050° C. in the heating zone, and removing the core from said zone and rapidly cooling said core in air at ambient temperature to form a core having a substantially square hysteresis loop having a ratio $I_d:I_m$ of at least 0.61, and a value of q at most equal to 0.15, where I_m is the peak value of a current pulse at which a magnetic field is produced in the core having a value of H_m, I_d is the peak value of a current pulse at which a magnetic field is produced in the core having a value H_d, H_m being the magnetic field which produces a flux density B_m at which the hysteresis loop closes and H_d has a value less than H_m and at which a remanent flux density $B_{rd}{}^+$ is produced which is the limit value of remanent flux density when a field $-H_d$ is successively applied and removed from the core, q is a ratio between flux variations underlying dvz and $rv1$, dvz being a voltage pulse proportional to $B_m{}^+ - B_{rd}{}^+$ where $B_m{}^+$ is the maximum flux density at which the hysteresis loop closes, and $rv1$ is a voltage pulse proportional to $B_m{}^- - B_{rd}{}^+$ where $B_m{}^-$ is the remanent flux density after a field $-H_m$ is removed.

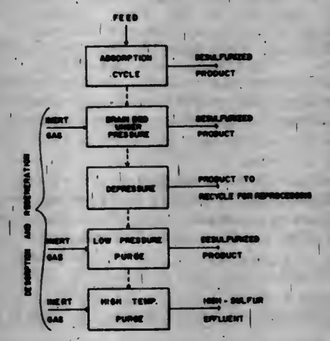
3,188,291
DETERGENT COMPOSITIONS AND GRANULES AND METHOD OF MAKING THEM
Harry J. Hagues, Upper Darby, and George D. Evans III, Broomall, Pa., assignors, by mesne assignments, to Parex Corporation, Ltd., a corporation of California
No Drawing. Filed Dec. 23, 1959, Ser. No. 861,451
12 Claims. (Cl. 252—117)

1. A carrier composition for synthetic detergents consisting essentially of a mixture of a sodium soap of a fatty acid having from 12 to 18 carbon atoms, with a mono-(lower alkylol)amide of a fatty acid having from 8 to 14 carbon atoms, the ratio of soap to alkylolamide being from 1:1 to 12:1 by weight.

3,188,292
PICKLING INHIBITING COMPOSITIONS
Eugene Pirotte, Ixelles, Brussels, Belgium, assignor to UCB (Union Chimique-Chemische Bedrijven), S.A., Saint-Gilles-Lez-Bruxelles, Belgium, a corporation of Belgium
No Drawing. Filed May 29, 1961, Ser. No. 113,138
Claims priority, application Great Britain, June 13, 1960, 20,756/60
9 Claims. (Cl. 252—149)

1. An inhibiting composition for metal pickling consisting essentially of (a) a member selected from the group consisting of alkyl-thiourea, the alkyl group having from 1 to 5 carbon atoms, tolyl-thiourea and phenyl-thiourea and (b) a substantially non-emulsifying non-ionic surface active agent consisting of a condensation product of from 5 to 30 moles of ethylene oxide per mole of a compound selected from the group consisting of beta-naphthol and xylenol, the proportion of (a) to (b) being about 2 to 25 parts by weight of (a) per about 5 to 75 parts by weight of (b).

3,188,293
PROCESS FOR REGENERATING MOLECULAR SIEVES
Kenneth H. Bacon, Tulsa, Okla., and Norman L. Carr, Allison Park, Alfred M. Henke, Springdale, and Harry C. Stauffer, Cheswick, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 182,999
2 Claims. (Cl. 252—411)



1. A process for regenerating molecular sieves used in an adsorption zone for the removal of sulfur which comprises:

(1) passing an inert gas through the adsorption zone at a temperature from about 0° to 100° F. and a pressure of 50 to 500 p.s.i.g., and recovering an effluent of low sulfur content;
(2) reducing the pressure in the adsorption zone to about one atmosphere while maintaining the tem-

perature therein at from 0° to 100° F. to recover a high sulfur content effluent;

(3) passing an inert gas through the adsorption zone at a temperature of 0° to 100° F. and a pressure not above about 50 p.s.i.g. to recover a low sulfur content effluent; and then

(4) passing an inert gas through said adsorption zone at a temperature of from about 400° to 850° F. and a pressure of about one atmosphere to recover a sulfur-rich effluent.

3,188,294

PHOSPHONIUM SALTS, POLYMERS PREPARED THEREFROM AND PROCESSES OF MAKING SAME

Ludwig Maier, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 15, 1961, Ser. No. 152,953
Claims priority, application Switzerland, Mar. 17, 1960, 3,006/60
(Filed under Rule 47(b) and 35 U.S.C. 118)
17 Claims. (Cl. 260—2)

17. A polymeric phosphonium salt having recurring structural units of the formula



wherein R is selected from the class consisting of hydrocarbon, R'''S, R'''O and hydrocarbonamino radicals free of aliphatic unsaturation and having not more than 18 carbon atoms in the hydrocarbon group, R'' and R''' are hydrocarbon radicals free of aliphatic unsaturation and having not more than 18 carbon atoms, M is selected from the class consisting of polyvalent metals, phosphorus, silicon and boron, X is an acid anion, *v* is the valence of M, and *n* is an integer greater than 1 and indicative of the length of the polymer chain.

3,188,295

METHOD OF FOAMING A THERMOPLASTIC ORGANIC POLYMER CONTAINING A NUCLEATING AGENT AND AN ORGANIC BROMIDE

Donald E. Bellust and John Dennis Griffin, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,534
15 Claims. (Cl. 260—2.5)

1. In a process for making a cellular article from a polymer composition capable of being foamed to produce a cellular body composed for the most part of individually-closed thin-walled cells and wherein the polymer composition comprises a synthetic normally solid thermoplastic organic polymer selected from the group consisting of (a) copolymers of from 40 to 35 percent by weight of at least one monoalkenyl aromatic hydrocarbon of the benzene series and from 60 to 65 percent of methyl methacrylate, (b) polyethylene, (c) polypropylene, and (d) alkenyl aromatic polymers containing in chemically combined form at least 50 percent by weight of at least one alkenyl aromatic compound having the general formula:



wherein A represents an aromatic radical of the group consisting of hydrocarbon and nuclear halohydrocarbon radicals of the benzene series and R is a member of the group consisting of hydrogen and the methyl radical, having a volatile fluid organic compound having a boiling point below 100° C. at 760 millimeters absolute pressure, uniformly distributed throughout as foaming agent, which polymer composition is heated to at least its oftening point and foamed, the improvement for controlling the size of the cells which consists in intimately incorporating throughout the polymer composition prior to its being foamed from 0.001 to 3 percent by weight based on the weight of the polymer, of a finely divided nucleating agent selected from the group consisting of indigotin, blue copper phthalocyanine and mixture thereof.

3,188,296

PROCESS FOR PREPARING POLYURETHANE PLASTICS

Peter Hoppe, Troisdorf, Erwin Weinbrenner and Cornelius Mühlhausen, Leverkusen, and Karl Broer, Cologne-Flittard, Germany, assignors, by direct and mesne assignments, of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation, and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 30, 1963, Ser. No. 312,789
Claims priority, application Germany, Dec. 24, 1951, F 7,986
9 Claims. (Cl. 260—2.5)

5. A process which comprises mixing an organic polyisocyanate, an organic compound having at least two reactive hydrogen atoms and an inert gas and allowing the resulting mixture to react to form a cellular polyurethane, the inert gas being added as a stream of compressed gas and being substantially uniformly dispersed in the said mixture, said organic compound being capable of forming a polyurethane by reaction with said organic polyisocyanate and having a molecular weight of at least about 500, an hydroxyl number of not more than about 224 and an acid number of not more than about 2.

3,188,297

PROCESS OF RECOVERY OF ELASTOMERS FROM SOLUTIONS WITH AN INORGANIC SULFIDE

John Leonard Snyder, Long Beach, Calif., and Godfried J. van der Bie, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 14, 1962, Ser. No. 223,830
7 Claims. (Cl. 260—33.6)

1. The process comprising

(1) mixing a solution of synthetic substantially cis-1,4-polyisoprene elastomer in a low-boiling aliphatic hydrocarbon solvent, contaminated with trace amounts of metals, with

(a) about 1 phr. of N-phenyl-beta-naphthylamine,

(b) about 0.1 phr. of sodium hydrosulfide, and

(c) about 1 phr. of a compatible naphthenic rubber-extending oil,

(2) injecting the mixture into water maintained at about 90° C., whereby said rubber is converted to solid crumbs,

(3) recovering said elastomer crums, and

(4) drying said elastomer crums at about 75–80° C.

3,188,298

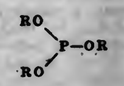
STABILIZER COMBINATIONS OF ORGANIC PHOSPHITES WITH HYDROXY SUBSTITUTED BENZOPHENONES OR SALICYLIC ACID ESTERS FOR POLYOLEFIN COMPOSITIONS

George R. Williamson, Davyhulme, near Manchester, and Bernard Wright, Eccles, near Manchester, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

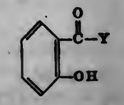
No Drawing. Filed Feb. 12, 1962, Ser. No. 172,784
Claims priority, application Great Britain, Feb. 15, 1961, 5,620/61
10 Claims. (Cl. 260—45.85)

1. A polyethylene composition consisting essentially of Ziegler polyethylene containing therein from 0.001% to

10% by weight of a synergistic combination consisting of (a) an organic phosphite having the formula



in which R is selected from the group consisting of alkyl and alkaryl radicals, and (b) a U.V. stabilizer having the formula



in which Y is a member selected from the group consisting of 4-methoxyphenyl, 2-hydroxy - 4 - alkoxyphenyl wherein the alkoxy is selected from the group consisting of methoxy and octoxy, 2-hydroxyphenyl and 4-alkphenoxy wherein the alkyl group is selected from the group consisting of isopropyl, tertiary butyl and normal alkyls of from 8 to 14 carbon atoms, said components (a) and (b) having a weight ratio in the range of from 1:20 to 20:1.

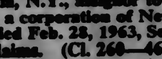
3,188,299

PREPARATION OF STABLE MIXTURES OF ORGANOSILICON COMPOSITIONS IN THE PRESENCE OF A NITROGEN-CONTAINING LIGAND

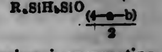
Alan J. Chalk, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,855
24 Claims. (Cl. 260—46.5)

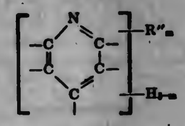
1. The process for reducing the activity of a platinum catalyst employed to effect copolymerization of a mixture of copolymerizable ingredients comprising (*a*) an olefinic polysiloxane having units of the formula



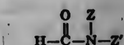
and (*b*) a hydrogen polysiloxane having units of the formula



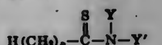
which process comprises incorporating in the mixture of ingredients a nitrogen-containing ligand selected from the class consisting of aromatic heterocyclic nitrogen compound having the formula



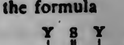
where R'' is an alkyl group of from 1 to 6 carbon atoms, and *m* is a whole number of from 0 to 5, inclusive, pyridazine, pyrazine, quinoline, 2,2'-biquinoline, bipyridine, naphthyridine, quinaldine, dialkyl formamides of the formula



thioamides of the formula



alkyl thioureas of the formula



and ethylene thiourea, where Z and Z' are alkyl radicals of from 1 to 2 carbon atoms, and Y and Y' are members of the class consisting of hydrogen and alkyl radicals of from 1 to 2 carbon atoms, R is a member selected from the class consisting of alkyl, aryl, aralkyl, alkaryl, halogenated aryl, cyanoalkyl radicals, and mixtures of such radicals, R' is an organic radical selected from the class consisting of vinyl, allyl, methallyl, butenyl and ethinyl radicals, *q* is a whole number from 0 to 1, inclusive, *a* has a value from 0 to 3, inclusive, *b* has a value from 0.005 to 2.0, inclusive, and the sum of $a+b$ is equal to from 1.0 to 3, inclusive.

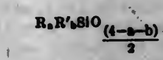
3,188,300

PREPARATION OF STABLE COPOLYMERIZABLE ORGANOSILICON COMPOSITIONS CONTAINING A PLATINUM CATALYST AND A PHOSPHORUS LIGAND

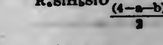
Alan J. Chalk, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,872
23 Claims. (Cl. 260—46.5)

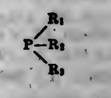
1. The process for reducing the activity of a platinum catalyst effective to cause copolymerization of a mixture of copolymerizable ingredients comprising (a) an olefinic polysiloxane having units of the formula



and (b) a hydrogen polysiloxane having units of the formula



which process comprises incorporating in the platinum-containing mixture of ingredients an organophosphorus ligand having the formula



where R is a member selected from the class of radicals consisting of alkyl, aryl, aralkyl, alkaryl, halogenated aryl, cyanoalkyl radicals, and mixtures of such radicals, R' is an organic radical selected from the class consisting of vinyl, allyl, methallyl, butenyl, and ethinyl radicals, R_1, R_2 and R_3 are selected from the class consisting of alkyl, aryl, aralkyl, alkaryl, alkoxy, aryloxy, aralkoxy, and alkaryloxy radicals, *a* has a value from 0 to 3, inclusive, *b* has a value from 0.005 to 2.0, inclusive, and the sum of $a+b$ is equal to from 1.0 to 3, inclusive.

3,188,301

RESIN AND PROCESS FOR ITS PREPARATION

Lyman R. Roberts and Cyril B. Coenen, Concord, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 17, 1962, Ser. No. 188,253
2 Claims. (Cl. 260—57)

1. The process for the preparation of a resin which comprises simultaneously reacting an aromatic fraction consisting of mixtures of aromatic hydrocarbons boiling within the limits from about 450° F. to about 715° F., substantially free from olefins and alpha-alkyl naphthalenes, and containing at least about 70% by weight of beta-alkyl naphthalenes with 15–30% by weight each of formaldehyde and a monohydric phenol of the group consisting of phenol and alkylated phenols in the presence of at least one water soluble C_{1-4} fatty acid and zinc chloride under substantially anhydrous conditions at about the reflux temperature of the acid, whereby substantially only light-

colored resins are formed, and separating the resins from the reaction mixture.

3,188,302
DIAMINE CURED FLUID POLYETHER URETHANE COMPOSITIONS

John C. Lorenz, White Clay Creek Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 30, 1959, Ser. No. 790,853
10 Claims. (Cl. 260—77.5)

1. A polyurethane product prepared by a process comprising (a) preparing a fluid isocyanato-terminated composition by reacting at a temperature between about 25° C. and 100° C., (1) an organic diisocyanate selected from the group consisting of toluene-2,4-diisocyanate and a mixture of toluene-2,4-diisocyanate and toluene-2,6-diisocyanate, with (2) about one mol of a polyalkyleneether glycol having a molecular weight between about 1,000 and 2,500 and (3) from about 0.5 to 3.0 mols of a glycol having a molecular weight below about 350; the ratio of the number of isocyanate groups provided by said organic diisocyanate to the sum of the number of hydroxyl groups provided by said polyalkyleneether glycol and said glycol having a molecular weight below about 350 having a value ranging from about 1.5:1 to 2.0:1, and (b) reacting, at a temperature between about 25° C. to 135° C., said fluid isocyanato-terminated composition with an arylene primary diamine having a pKb at 25° C. of at least 9.7; with the proviso that the amount of arylene primary diamine be sufficient to react with from 50–100% of the free isocyanato groups in said fluid isocyanato-terminated composition.

3,188,303
PROCESS AND PRODUCT RELATING TO THE REACTION OF DICYCLOPENTADIENE AND α,β DI- AND TRI-CARBOXYLIC ACIDS

Israel J. Dissen, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 17, 1961, Ser. No. 96,353
15 Claims. (Cl. 260—78.4)

1. A process which comprises reacting a compound selected from the group consisting of cis-α,β-monounsaturated di- and tricarboxylic acids containing 4 to 6 carbon atoms, their anhydrides and mixtures thereof, and dicyclopentadiene at a temperature between about 0° C. and about 115° C. in the presence of a free radical catalyst.

3,188,304
COLD RUBBER POLYMERIZATION PROCESSES USING A MIXTURE OF DECYL AND UNDECYL MERCAPTANS AS MODIFIERS

Roland H. Goshorn, Fort Washington, Harry E. Albert, Lafayette Hill, Bernard Buchholz, Fleurtown, and Alfred C. Whiton, Norristown, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 17, 1961, Ser. No. 124,318
6 Claims. (Cl. 260—84.3)

1. In the process of preparing a cold rubber polymer by copolymerizing a butadiene and a styrene in an aqueous emulsion system, the improvement which comprises modifying said polymerization with a mercaptan mixture consistiing of decyl and undecyl mercaptan, and wherein said mercaptans are secondary and tertiary isomers and are present in an amount sufficient to limit the molecular weight of said polymer to a plastic workable mass; said mercaptan mixture being prepared by the reaction of hydrogen sulfide with an olefinic polymer selected from the group consisting of polymers of propylene, butylene, amylene and mixtures of such olefinic polymers.

3,188,305
CROSSLINKING OF VINYL HALIDE RESINS

Meyer M. Safford, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

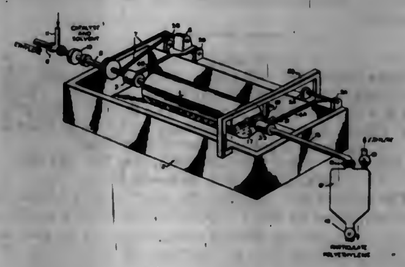
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,844
6 Claims. (Cl. 260—92.8)

1. A composition of the matter comprising a vinyl chloride resin, a plasticizer therefor, and, as the sole curing agent for the vinyl chloride resin, from 0.25 to 6 percent, by weight, based on the weight of the vinyl halide resin, of a nitrogen compound selected from the class consisting of 2,2'-azobisisobutyronitrile and p,p-oxy-bis-(benzene sulfonyl hydrazide).

3,188,306
PROCESSES AND APPARATUS FOR THE HANDLING OF POLYETHYLENE

Frank Porter, Morris Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Feb. 28, 1961, Ser. No. 96,341
3 Claims. (Cl. 260—94.9)



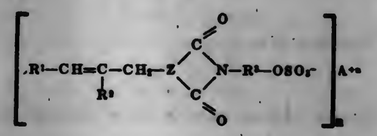
1. In the process for transferring a body of particulate, solid polyethylene wetted with a solvent for ethylene and containing a catalyst promoting polymerization of ethylene from a first zone under elevated pressure of a gas in contact with said body of polyethylene into a second zone under a lower gas pressure, that improvement which comprises providing a passageway from within said body of polyethylene into said second zone and establishing differential gas pressures on said body of polyethylene in said first zone and in said second zone under which said polyethylene accompanied by no more than about 15% of the gas by weight of the polyethylene passes in dense phase flow from said body of particulate, solid polyethylene through said passageway and into said second zone.

3,188,307
ALKENYL-N-SULFO-OXY-HYDROCARBON-IMIDES

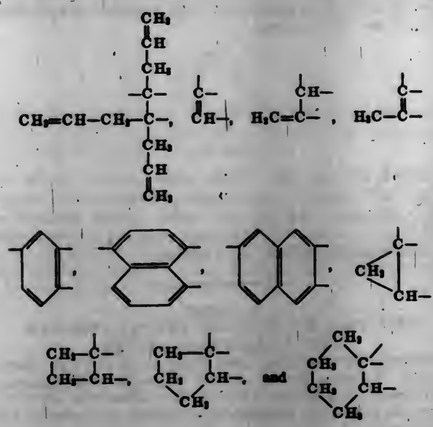
Walter E. Kramer, Niles, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Mexico

No Drawing. Filed Apr. 13, 1962, Ser. No. 187,211
10 Claims. (Cl. 260—239.3)

1. A compound of the formula:

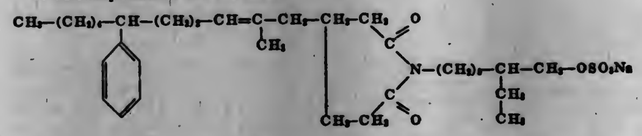


wherein Z is selected from the group consisting of



R¹ is selected from the group consisting of hydrogen, alkyl having 6 to 20 carbon atoms, cyclohexyl, octylcyclobutene, phenyloctyl, phenylnonenyl and cyclopentylnonyl; R² is selected from the group consisting of alkyl having 1 to 4 carbon atoms, hydrogen, alkenyl having 2 to 4 carbon atoms; R³ is selected from the group consisting of alkylene having 2 to 12 carbon atoms, cyclohexylene, butylcyclobutenylene, phenylene and naphthylene; A is selected from the group consisting of hydrogen, alkali metals, alkaline earth metals, mercury, iron, lead, aluminum, ammonium, ureido, guanidino, pyridinium, 2-aminopyridinium, dimethylammonium, trimethylammonium, isohexylammonium, diisopropylammonium and benzylammonium; and *n* is the valence of A.

7. A compound of the formula:

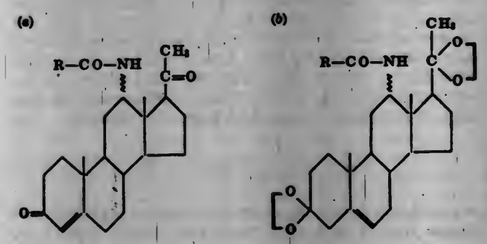


3,188,308
12-ACYLAMINOSTEROID OF THE PREGNANE SERIES

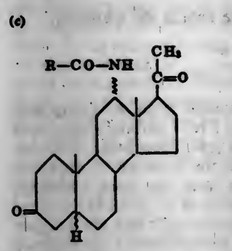
Kazuo Sasaki, Osaka-shi, and Junichi Kawanami, Toyonaka-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Apr. 16, 1963, Ser. No. 273,320
Claims priority, application Japan, Apr. 20, 1962, 37/16,347
19 Claims. (Cl. 260—239.55)

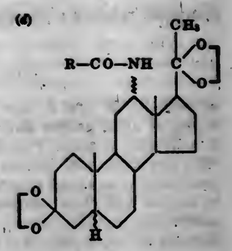
1. A compound selected from the group consisting of the compounds of the formulae:



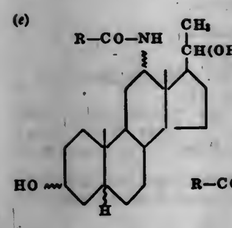
(c)



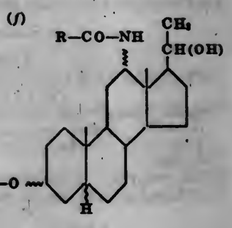
(d)



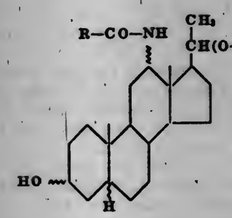
(e)



(f)

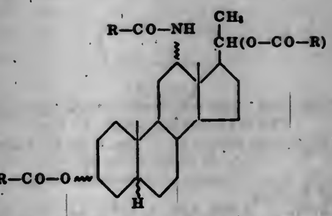


(g)



and

(h)



wherein R is a member selected from the group consisting of H and lower alkyl.

3,188,309
PROCESS FOR PREPARING ORGANO-PHOSPHATE ESTERS

Teruaki Mukaiyama, Tokyo, and Tsujiaki Hata, Yokosuka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,717
Claims priority, application Japan, Mar. 31, 1962, 37/12,131
10 Claims. (Cl. 260—211.5)

3. A process for producing a phosphate ester, which

comprises reacting a phosphite having the formula:



wherein R^1, R^2 and R^3 are selected from the group consisting of alkyl groups having 1 to 4 carbon atoms, with a nucleoside selected from the group consisting of adenosine, guanosine and inosine in the presence of an active methylene compound selected from the group consisting of bromo- and chloro-derivatives of N-cyclohexyl cyanoacetamide, cyanoacetamide, malonamide and alkyl cyanoacetates in which the alkyl group contains 1 to 4 carbon atoms in a solvent non-reactive to an enol-phosphate formed by the Perkow reaction to produce the corresponding phosphate ester of the nucleoside.

3,188,310
PROCESS FOR PREPARING PYROPHOSPHATE NUCLEOTIDES
Teruaki Mukaiyama, Tokyo, and Tsujiaki Hata, Yokosuka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,719
Claims priority, application Japan, Mar. 31, 1962, 37/12,129
3 Claims. (Cl. 260—211.5)

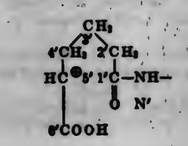
1. In a process wherein a phosphite having the formula:



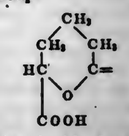
in which R^1, R^2, R^3 are selected from the group consisting of benzyl, p-nitrophenyl and alkyl having 1 to 4 carbon atoms, is added to a phosphate selected from the group consisting of monoalkyl phosphate, dialkyl phosphate, monobenzyl phosphate, dibenzyl phosphate, monophenyl phosphate, diphenyl phosphate, p-nitrophenyl phosphate, bis-paranitrophenyl phosphate, chlorophenyl phosphate, dichlorophenyl phosphate, and a nucleotide, said alkyl having 1 to 4 carbon atoms to produce the corresponding pyrophosphates, an improvement which comprises conducting the addition in the presence of at least one active methylene compound selected from the group consisting of chloro and bromo derivates of N-cyclohexyl cyanoacetamide, cyanoacetamide, malonamide, and alkyl cyanoacetate which alkyl has 1 to 4 carbon atoms, and a solvent for the phosphite and the active methylene compound, said solvent being non-reactive to enolphosphates formed by the Perkow reaction.

3,188,311
PROCESS FOR THE PREPARATION OF 7-AMINO-CEPHALOSPORANIC ACIDS
Robert B. Morin, Edwin H. Flynn, Billy G. Jackson, and Roger W. Roeske, all of Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed Apr. 3, 1961, Ser. No. 100,018
12 Claims. (Cl. 260—243)

1. The process which comprises subjecting a 7-(5'-amino-N'-adipamyl) cephalosporin C compound to reaction with a substance selected from the class consisting of nitrosating agents, carbocyclic arenediazonium salts, and substances affording positive halogen, whereby the 5'-amino group is split off and a transient intermediate is obtained,



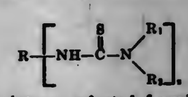
having an electron-deficient center at the 5' carbon atom, which intermediate cyclizes spontaneously through the 1'-carboxamido oxygen to produce a second intermediate having the cyclic group



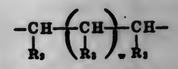
attached through the double bond thereof to the N' atom, and subjecting said second intermediate to hydrolytic cleavage, whereby said cyclic group attached to the N' atom is cleaved therefrom, yield the corresponding 7-aminocephalosporanic acid nucleus.

3,188,312
NEW PROCESS FOR THE PREPARATION OF THIOUREA DERIVATIVES
Wolfgang Gündel, Dusseldorf-Oberkassel, and Peter Berth and Wilhelm Jakob Kaiser, Dusseldorf-Holthausen, Germany, assignors to Dehydag, Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany, a corporation of Germany
No Drawing. Filed Feb. 24, 1961, Ser. No. 91,331
Claims priority, application Germany, Feb. 27, 1960, D 32,747; Aug. 24, 1960, D 34,088; Oct. 7, 1960, D 34,452
1 Claim. (Cl. 260—247.1)

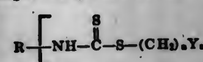
The process of producing substituted thioureas of the formula:



wherein z is an integer selected from 1 and 2; R is a radical selected from the group consisting of (A) when z is 2, alkylene having from 3 to 18 carbon atoms of the formula



where R_3 represents a member of the group consisting of hydrogen and lower alkyl and w represents an integer selected from 1 to 8, and (B) when z is 1 alkyl having from 1 to 22 carbon atoms, alkenyl having from 3 to 22 carbon atoms, phenyl alkyl having from 7 to 22 carbon atoms, phenyl, naphthyl, alkylphenyl having from 7 to 22 carbon atoms, alkylnaphthyl having from 11 to 22 carbon atoms, nitrophenyl and nitroaminophenyl, and R_1 and R_2 represent radicals selected from the group consisting of hydrogen, alkyl having from 1 to 22 carbon atoms, alkenyl having from 3 to 22 carbon atoms, hydroxyalkyl having from 2 to 22 carbon atoms, cycloalkyl having from 5 to 6 carbon atoms, alkylcycloalkyl having from 7 to 22 carbon atoms, alkylcycloalkenyl having from 7 to 22 carbon atoms, aminoalkyl having from 2 to 22 carbon atoms, phenyl, naphthyl, aminophenyl, aminonaphthyl, phenylalkyl having from 7 to 22 carbon atoms, alkylphenyl having from 7 to 22 carbon atoms, alkylnaphthyl having from 11 to 22 carbon atoms, alkylaminoalkyl having from 3 to 22 carbon atoms, dialkylaminoalkyl having from 4 to 22 carbon atoms, aminoalkylaminoalkyl having from 4 to 22 carbon atoms, and, when taken together, alkylene having 4 to 5 carbon atoms, ethylaminoethyl and ethyloxyethyl which comprises the steps of reacting a compound having the formula:



where R and z have the above meanings, n represents an integer from 1 to 4, m represents an integer from 1 to

2 and Y represents a water-solubilizing group selected from the group consisting of hydroxyl, carboxyl and sulfo groups, dissolved in an aqueous solution with the stoichiometric amount of a compound having the formula



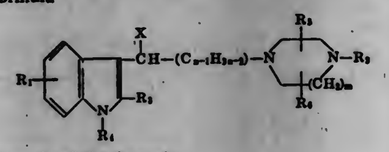
where R_1 and R_2 have the above meanings in the presence of an alkaline reactant selected from the group consisting of alkali metal hydroxides and



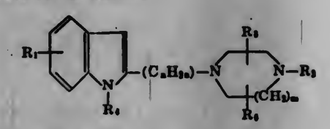
where R_1 and R_2 have the above meanings at a temperature between about 20° C. and about 100° C. and recovering said substituted thioureas.

3,188,313
1-[(1-, 2- AND 3-INDOLYL)-LOWER]PIPERAZINE DERIVATIVES AND INTERMEDIATES AND PROCESSES FOR THE PREPARATION THEREOF
Sydney Archer, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 25, 1959, Ser. No. 842,203
60 Claims. (Cl. 260—268)

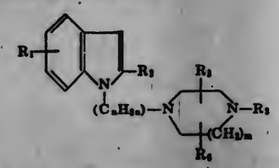
1. A member of the group consisting of compounds of the formula



compounds of the formula



and compounds of the formula



wherein R_1 is a member of the group consisting of a hydrogen atom and from one to four substituents selected from the group consisting of halogen, lower-alkyl, lower-alkoxy, hydroxy, methylenedioxy, ethylenedioxy, lower-alkylmercapto, lower-alkylsulfinyl, lower-alkylsulfonyl, trifluoromethyl, lower-alkanoyloxy, benzyloxy, and benzyloxy substituted by from one to three substituents selected from the group consisting of halogen, lower-alkyl, lower-alkoxy, hydroxy, methylenedioxy, ethylenedioxy, lower-alkylmercapto, lower-alkylsulfinyl, lower-alkylsulfonyl, trifluoromethyl, and lower-alkanoyloxy; R_2 is a member of the group consisting of hydrogen, lower-alkyl, hydroxy-lower-alkyl, phenyl, benzyl, phenethyl, benzhydryl, cinnamyl, pyrimidyl, pyrazinyl, pyridyl, thiazolyl, oxazolyl, 1,3,5-triazinyl, and thienyl; R_3 is a member of the group consisting of hydrogen, lower-alkyl, and phenyl; R_4 is a member of the group consisting of hydrogen, lower-alkyl, phenyl, benzyl, phenethyl, and cinnamyl and wherein the benzene ring of the phenyl, benzyl, phenethyl, and cinnamyl moieties of the groups R_2, R_3, and R_4 can be substituted by from one to two substituents selected from the group consisting of halogen, lower-alkyl, hydroxy, lower-alkoxy, methylenedioxy, ethylenedioxy, lower-alkylmercapto, lower-alkylsulfinyl, lower-alkylsulfonyl, and trifluoromethyl; R_5 and R_6 each is a member of the group consisting of hydrogen and lower-alkyl; X is a member of the group consisting of hydrogen and hydroxyl; m is an integer from 1 to 2; and n is an integer from 1 to 7.

45. 1-[(3-indolyl)glyoxalyl]-4-methylpiperazine.
56. 1-[2-(3-indolyl)-1-ketoethyl]-4-phenylpiperazine.
59. 1-[2-(3-indolyl)ethyl]-4-methyl-2-piperazinone benzochloride.
60. 1-[2-(3-indolyl)ethyl]-4-phenyl-3-piperazinone.

3,188,314
PREPARATION OF N,N'-HYDROCARBON SUBSTITUTED HYDRAZINES
Howard V. Holler, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 27, 1962, Ser. No. 219,718
6 Claims. (Cl. 260—293)

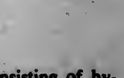
1. Process for preparing N,N'-hydrocarbon substituted hydrazines at least one of said hydrocarbon substituents being allyl, comprising reacting an amine of the formula



wherein R'' is selected from the group consisting of hydrogen, alkyl and aryl having up to 8 carbon atoms and X is selected from the group consisting of halogen, —O—SO_3H, —O—$SO_2C_6H_5$, and



with a tertiary amine having from 1 to 3 N-allylic substituents

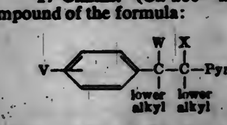


wherein R' is selected from the group consisting of hydrogen and alkyl of 1 to 3 carbon atoms with the remaining N-substituents of said tertiary amine being hydrocarbon of 1 to 8 carbon atoms, in an anhydrous basic inert organic solvent, and effecting a rearrangement with agitation and distillation at a temperature from 0 to 150° C.

6. Process for preparing N-allyl, N',N'-pentamethylene hydrazine by reacting chloramine with allyl piperidine in dioxane containing sodium hydroxide and effecting a rearrangement by agitation and distillation at a temperature from 25° to 75° C.

3,188,315
NOVEL COMPOUNDS FOR LOWERING BLOOD CHOLESTEROL LEVELS
Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed May 18, 1960, Ser. No. 29,786
17 Claims. (Cl. 260—297)

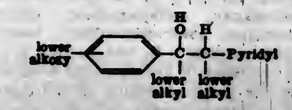
1. A compound of the formula:



wherein V is a member of the group consisting of hydrogen, hydroxy, lower alkoxy, lower alkyl and halogen; W and X are members of the group consisting of hydrogen and hydroxy with the proviso that at least one of W and X is hydrogen, and when W and X are taken

together they form an additional double bond between the carbon atoms to which they are attached.

4. A compound of the formula:



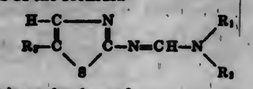
3,188,316
THIAZOLE FORMAMIDINES

Norbert Steiger, Nutley, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation of applications Ser. No. 153,693, Nov. 20, 1961; Ser. No. 153,694, Nov. 20, 1961, now Patent No. 3,133,078, dated May 12, 1964; Ser. No. 153,695, Nov. 20, 1961; Ser. No. 153,715, Nov. 20, 1961; Ser. No. 153,732, Nov. 20, 1961; and Ser. No. 153,733, Nov. 20, 1961, now Patent No. 3,135,755, dated June 2, 1964. This application Apr. 20, 1964, Ser. No. 361,287

4 Claims. (Cl. 260—306.8)

1. A compound selected from the group consisting of compounds of the formula



and acid addition salts thereof,

wherein R_1 and R_2 each represents a member selected from the group consisting of hydrogen and lower alkyl; and R_3 represents a member selected from the group consisting of hydrogen and nitro.

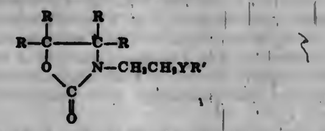
3,188,317
OXAZOLIDINONE DERIVATIVES

Richard A. Hickner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,436

9 Claims. (Cl. 260—307)

1. A compound having the formula:



wherein each R is independently selected from the class consisting of hydrogen and lower alkyl radicals, and R' is a phenyl group having from 0 to 4 halogen substituents, said halogens having an atomic number from 17 to 35, and Y is a chalcogen having an atomic number from 8 to 16.

3,188,318
PROCESS FOR PRODUCING PHTHALOCYANINES

Darrel E. Mack, Webster Groves, Mo., assignor, by mesne assignments, to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 30, 1958, Ser. No. 783,976

12 Claims. (Cl. 260—314.5)

1. In the production of phthalocyanine compounds from the required proportions of urea, a metal compound of the group consisting of copper, iron, nickel, cobalt, aluminum, chromium, tin and magnesium, and an ortho-arylene derivative selected from the group consisting of ortho-arylene anhydrides, the corresponding free acids, mono-amides, diamides, imides and imimides of said acids, the ortho-arylene cyano-carboxylic acids, and ammonium salts of the latter; the improvement which comprises feeding the reacting compounds into a reacting chamber at a substantially continuous and uniform rate, the reaction chamber having an essentially oxygen-free atmosphere and containing an amount of dry, granular previously formed phthalocyanine equal to at least two hours of such feed, and removing the reacted material from the chamber substantially at the rate of feed.

3,188,319
PRODUCTION OF VINYL ESTERS

Jürgen Smidt, Munich-Solln, and Alex Sabel, Munich-Großhadern, Germany, assignors to Consortium für Elektrochemische Industrie G.m.b.H., Munich, Germany

No Drawing. Filed Oct. 25, 1961, Ser. No. 147,466

Claims priority, application Germany, Oct. 28, 1960, C 22,631

7 Claims. (Cl. 260—326)

1. In a process for transesterifying vinyl esters by transesterifying lower vinyl esters with a higher molecular weight carboxylic acid in a water free medium in the presence of a catalyst, the step of carrying out such transesterification in the presence of a salt of a metal of the platinum group selected from the group consisting of halides and lower alkyl carboxylic acid salts of metals of the platinum group as the catalyst.

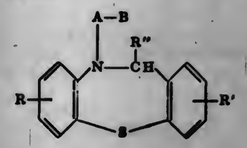
3,188,320
DIHYDRODIBENZOTHIAZEPINES

Francis A. Sowinski, Edison, and Harry Louis Yale, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 8, 1962, Ser. No. 193,316

7 Claims. (Cl. 260—327)

1. A compound selected from the group consisting of bases of the formula



wherein A is lower alkylene of at least two carbon atoms, B is selected from the group consisting of lower alkylamino, benzylamino, lower alkylbenzylamino and dibenzylamino, at least one of R and R' is selected from the group consisting of halogen and lower alkoxy, R'' is hydrogen; and non-toxic acid-addition salts thereof.

3,188,321
DIHYDRODIBENZOTHIAZEPINES

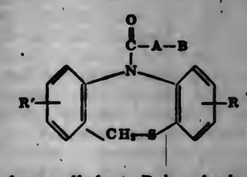
Harry L. Yale, New Brunswick, Francis A. Sowinski, Edison, and Jack Bernstein, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,546

The portion of the term of the patent subsequent to Jan 1, 1980, has been disclaimed and dedicated

7 Claims. (Cl. 260—327)

1. A compound selected from the group consisting of bases of the formula



wherein A is lower alkylene, B is a basic saturated nitrogen-containing radical of less than twelve carbon atoms, and R and R' are each selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, trifluoromethyl, trifluoromethylmercapto, trifluoromethoxy and N,N-dimethylaminosulfonyl and non-toxic acid-addition salts thereof.

4. 2-dimethylaminoethyl 5,11-dihydrodibenzo[b,e][1,4]thiazepin-5-yl ketone.

3,188,322
DIHYDRODIBENZOTHIAZEPINES

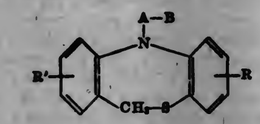
Harry L. Yale, New Brunswick, Francis A. Sowinski, Edison, and Jack Bernstein, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,547

The portion of the term of the patent subsequent to Dec. 18, 1979, has been disclaimed and dedicated to the Public

8 Claims. (Cl. 260—327)

1. A compound selected from the group consisting of bases of the formula



wherein A is lower alkylene of two to eight carbon atoms; B is a basic saturated nitrogen-containing radical of less than twelve carbon atoms selected from the group consisting of amino, (lower alkyl)amino, di(lower alkyl)amino, di(hydroxy-lower alkyl) amino, piperidyl, (lower alkyl)piperidyl, di(lower alkyl)piperidyl, (lower alkoxy)-piperidyl, homopiperidino, pyrrolidyl, (lower alkyl)pyrrolidyl, di(lower alkyl)pyrrolidyl, (lower alkoxy)pyrrolidyl, morpholinyl, (lower alkyl)morpolinyl, di(lower alkyl)morpholinyl, (lower alkoxy)morpholinyl, thiamorpholinyl, (lower alkyl)thiamorpholinyl, di(lower alkyl)thiamorpholinyl, (lower alkoxy)thiamorpholinyl, piperazyl, (lower alkyl)piperazyl, di(lower alkyl)piperazyl, (lower alkoxy)piperazyl, (hydroxy-lower alkyl)piperazyl, (lower alkanoyloxyalkyl)piperazyl, (hydroxy-lower alkoxy-lower alkyl)piperazyl, (carbo-lower alkoxy)-piperazyl and homopiperazino, and R and R' are each selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, trifluoromethyl, trifluoromethylmercapto, trifluormethoxy and N,N-dimethylaminosulfonyl; and non-toxic acid addition salts thereof.

2. 5-[di(lower alkyl)amino(lower alkyl)]-5,11-dihydrodibenzo[b,e][1,4]thiazepine.

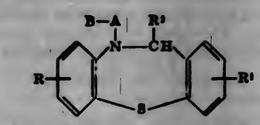
3,188,323
DIHYDRODIBENZOTHIAZEPINES

Francis A. Sowinski, Edison, and Harry L. Yale, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

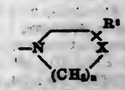
No Drawing. Filed Feb. 12, 1963, Ser. No. 257,848

11 Claims. (Cl. 260—327)

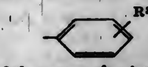
1. A compound selected from the group consisting of bases of the formula



wherein A is lower alkylene of at least two carbon atoms; B is a member of the group consisting of amino, (lower alkyl)amino, di(lower alkyl)amino, phenyl-lower alkylamino, and



R and R^1 each is a member of the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, lower alkylmercapto and trifluoromethyl; R^3 is



R^3 is a member of the group consisting of hydrogen, halogen, lower alkoxy and lower alkylmercapto; R^4 is a member of the group consisting of hydrogen, lower alkyl, lower alkoxy, hydroxy-lower alkyl, lower alkanoyloxy-lower alkyl and di(lower alkyl)amino-lower alkoxy-lower alkyl; X is a member of the group consisting of NH and CH_2; and n is an integer from 1 to 3; and non-toxic acid addition salts of said bases.

3,188,324
NEOPENTYL-SUBSTITUTED EPOXY ALCOHOLS AND CHLORIDES

Seymour H. Patinkin, Chicago, Robert R. Chambers, Homewood, and Russell Wagner Walker, Lansing, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

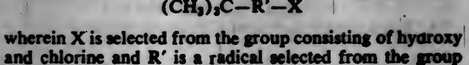
No Drawing. Original application Nov. 19, 1958, Ser. No. 774,814. Divided and this application Feb. 1, 1960, Ser. No. 5,624

5 Claims. (Cl. 260—348)

1. Compounds of the formula

$$(CH_3)_3C—R'—X$$

wherein X is selected from the group consisting of hydroxy and chlorine and R' is a radical selected from the group consisting of



3,188,325
16α-HYDROXY-STEROIDS

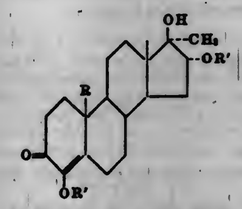
Alba Maria Amici, Via Meriggi 13; Maria Luisa Bianchi, Via S. Eufemia 2; Renato Modelli, Via E. Filiberto 4; Celestino Spalla, Via Tagliera 16; Aurelio di Marco, Via Argenta 10; and Marcello Gastaui, Largo Rio de Janeiro 5, all of Milan, Italy

No Drawing. Filed July 13, 1962, Ser. No. 209,784

Claims priority, application Italy, July 17, 1961, 13,227/61; Mar. 14, 1962, 5,068/62

5 Claims. (Cl. 260—397.4)

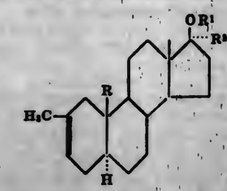
1. Steroid compounds having the following formula:



wherein R is selected from the group consisting of hydrogen and methyl; R' is selected from the group consisting of hydrogen and a radical selected from the group consisting of an aliphatic, cycloaliphatic and aromatic acid having from 1 to 9 carbon atoms.

3,188,326
2-METHYL DERIVATIVES OF Δ^2-ANDROSTEN-17β-OL
Albert Bowers, John Edwards, and James C. Orr, all of Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama
No Drawing. Filed Oct. 20, 1961, Ser. No. 146,453
Claims priority, application Mexico, Apr. 4, 1961, 62,219
19 Claims. (Cl. 260—397.5)

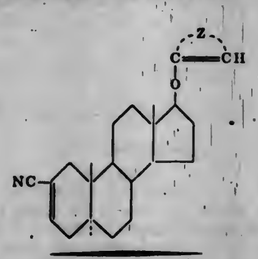
1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and methyl; R^1 is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms and R^2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkynyl.

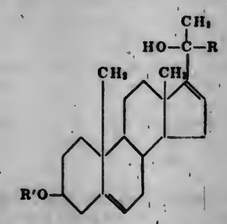
3,188,327
17β-(LOWER CYCLOALK-1'-ENYLOXY) AND 17β-(1'-LOWER ALKOXY-LOWER CYCLOALKOXY) DERIVATIVES OF 2-CYANO-Δ^2-ANDROSTEN-17β-OL
Albert Bowers and Pierre Crabbe, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed June 17, 1963, Ser. No. 288,443
9 Claims. (Cl. 260—397.5)

1. A compound represented by the formula:



3,188,328
20-ALKYNYLPREGNA-5,16-DIENE-3β,20β-DIOLS AND ESTERS THEREOF
Walter R. Bean, Deerfield, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 5, 1964, Ser. No. 365,136
3 Claims. (Cl. 260—397.5)

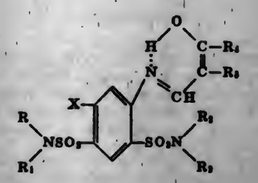
1. A compound of the formula



wherein R is a lower 1-alkynyl radical, and R' is selected from the group consisting of hydrogen and lower alkanoyl radicals.

3,188,329
DIURETIC ANILS
Jerry E. Robertson, Milwaukee, Wis., assignor to Colgate-Palmolive Company, a corporation of Delaware
No Drawing. Filed Apr. 10, 1962, Ser. No. 186,355
12 Claims. (Cl. 260—397.7)

1. Compound of the formula



wherein X is a member of the group consisting of halogen, nitro and halo-lower alkyl, R, R_1, and R_2 are members of the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl, phenyl-lower alkyl and halo-lower alkyl R_2 is a member of the group consisting of lower alkyl, lower alkenyl, lower alkynyl, phenyl-lower alkyl and halo-lower alkyl, and R_4 and R_5 represent members of the group consisting of hydrogen, lower alkyl, phenyl, phenyl-lower alkyl and groups in which R_4 and R_5 are joined to each other and together constitute a lower alkylene having 3 to 5 carbons.

2. 2-lower alkyl sulfamyl-4-sulfamyl-5-halo-N-(3-hydroxy-2-butenylidene)-aniline.

3,188,330
PROCESS FOR PREPARING ESTERS AND KETONES FROM ALCOHOLS
Arthur C. Hecker, Forest Hills, and Mark W. Pollock, Bronx, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York
No Drawing. Filed July 12, 1961, Ser. No. 123,437
9 Claims. (Cl. 260—410.6)

1. A process for converting primary alcohols having from two to about fifty-one carbon atoms, and having in the molecule at least one CH_2OH group, to esters, which comprises reacting the alcohol with itself in the liquid phase in the presence of a salt of an organic carboxylic acid having from two to about thirty carbon atoms and a metal of Group IIB of the Periodic Table, at a temperature within the range from about 25 to about 350° C. to form an ester of that alcohol and the acid oxidation product of that alcohol.

7. A process for converting secondary alcohols having from two to about fifty-one carbon atoms and having in the molecule at least one CHOH group to ketones which comprises dehydrogenating the alcohol in the liquid phase in the presence of a salt of an organic carboxylic acid having from two to about thirty carbon atoms, and a metal of Group IIB of the Periodic Table at a temperature within the range from about 25 to about 350° C. to form hydrogen and the ketone of that alcohol.

3,188,331
TIN-CONTAINING FATTY ACID DERIVATIVES AND PROCESS OF PREPARATION
Gustav Weissenberger, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed July 19, 1962, Ser. No. 211,131
Claims priority, application Switzerland, July 21, 1961, 8,582/61
2 Claims. (Cl. 260—414)

1. A compound of the formula

$$R^1R^2R^3Sn—R^4—COOSnR^1R^2R^3$$

wherein R^1, R^2 and R^3 are alkyl radicals each having not more than 8 carbon atoms, R^4 is $(CH_2)_{10}$.

3,188,332
PREPARATION OF TETRAMETHYL LEAD
Paul Kobetz and Francis M. Beaird, Jr., Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed May 29, 1963, Ser. No. 284,002
8 Claims. (Cl. 260—437)

1. The process of manufacture of tetramethyllead comprising reacting as essentially the sole reactants a sodium lead alloy and methyl chloride in the presence of a catalyst system formed by adding an aluminum catalyst and at least one co-catalyst which is an organic compound consisting of carbon, hydrogen and oxygen, the aluminum catalyst being selected from the group consisting of
aluminum,
aluminum trichloride,
aluminum tribromide,
aluminum triiodide, and
a hydrogen aluminum compound having at least one hydrocarbon group bonded to aluminum by a carbon-aluminum linkage and selected from the group consisting of
trihydrocarbon aluminum compounds,
hydrocarbon aluminum chlorides,
hydrocarbon aluminum hydrides, and
hydrocarbon aluminum alkoxides,
wherein the said hydrocarbon groups bonded to aluminum are hydrocarbon groups selected from the group consisting of alkyl, phenyl and mixtures thereof, said co-catalyst being a compound selected from the group consisting of meta-dioxane and hydrocarbon substituted meta-dioxane, the hydrocarbon radicals of the said co-catalyst being radicals selected from the group consisting of alkyl, phenyl, and mixtures thereof.

3,188,333
PREPARATION OF TETRAMETHYL LEAD
Francis M. Beaird, Jr., and Paul Kobetz, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 6, 1963, Ser. No. 285,856
4 Claims. (Cl. 260—437)

1. The process of manufacture of tetramethyllead comprising reacting as essentially the sole reactants sodium lead alloy with methyl chloride in the presence of a catalyst system including a hydrocarbon aluminum compound consisting of aluminum, hydrogen and carbon, and a promoting quantity of methylal said hydrocarbon aluminum compound having at least one hydrocarbon radical attached to the aluminum atom, and with the radicals attached to the aluminum atom being selected from the group consisting of alkyl, phenyl and hydrogen.

3,188,334
TETRAALKYLLEAD PROCESS EMPLOYING ALKYL ALUMINUM-AMINE CATALYST SYSTEMS
Francis M. Beaird, Jr., and Paul Kobetz, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 22, 1963, Ser. No. 318,075
10 Claims. (Cl. 260—437)

1. The process of manufacture of tetramethyllead comprising reacting sodium lead alloy with methyl chloride and in the presence of catalyst components including
(a) an alkyl aluminum compound selected from the group consisting of lower alkyl aluminum trialkyls and lower alkyl aluminum chlorides, and
(b) an amine selected from the group consisting of a lower alkyl amine having from 2 to 3 alkyl groups, ethylene diamine and diethylenediamine.

3,188,335
ORGANO-METALLO-CARBONYL COMPLEXES PREPARED BY THE REACTION OF ACETYLENE WITH A METAL CARBONYL
Karl W. Hubel, Brussels, Belgium, assignor to Union Carbide Company, a corporation of New York
No Drawing. Filed Aug. 24, 1962, Ser. No. 219,102
Claims priority, application Great Britain, Jan. 18, 1957, 1,857/57; May 16, 1957, 15,526/57; Oct. 25, 1957, 33,330/57
29 Claims. (Cl. 260—439)

1. An organo-metallo-carbonyl complex having from one to two rings, each of said rings comprising between 5 and 8 ring members inclusive, and pi-bonded to each of said rings from one to two transition metals of the sixth, seventh and eighth groups of the periodic table; an even number between 4 and 6 inclusive of members of each of said rings being carbon atoms having only a single covalent bond available after ring bonds to other ring members, and at least one but not more than two members of each of said rings being selected from the class consisting of from zero to two carbonyl groups and from zero to one transition metal of the sixth, seventh, and eighth groups of the periodic table; the residual valence of each of said ring member carbon atoms being satisfied by a covalent bond with a monovalent radical, and at least one of said ring member carbon atoms being bonded to a monovalent radical other than hydrogen, said monovalent radicals containing up to 18 carbon atoms and being selected from the group consisting of hydrogen, alkyl, phenyl, halogen-substituted phenyl, halogeno, —COOZ wherein Z is selected from the group consisting of hydrogen and alkyl groups, alkenyl, alkynyl, cycloaliphatic, and hydrides and alkyl-substituted hydrides of an element selected from the group consisting of silicon, arsenic, phosphorous, and antimony; any residual valence of said metal member in each of said rings being satisfied by a bond with a group selected from the class consisting of carbonyl groups and said pi-bonded metal; each remaining residual valence of said pi-bonded metal being satisfied by a bond with a group selected from the class consisting of carbonyl groups, another pi-bonded metal, and said metal member in said ring, and said metal being the same throughout said complex.

3,188,336
TRIFLUOROMETHYL-HYDROCARBON DICHLORO SILANES
Robert N. Haszeldine, Windyridge, Lyna Road, Disley, Cheshire, England
No Drawing. Filed July 10, 1958, Ser. No. 747,902
Claims priority, application Great Britain, July 22, 1957, 23,209/57
1 Claim. (Cl. 260—448.2)

A compound of the formula

$$[(CF_3)_2CHCH_2]_2SiCl_2$$

3,188,337
PREPARATION OF ORGANIC ISOCYANATES
Alois M. Gemassmer, Pittsburgh, Pa., assignor, by direct and mesne assignments, of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Oct. 6, 1958, Ser. No. 765,298
Claims priority, application Germany, Mar. 27, 1953, F 11,460
22 Claims. (Cl. 260—453)

1. In the process for the production of an organic isocyanate selected from the group consisting of aromatic, alicyclic and acylic isocyanates in which an amine is reacted with phosgene in a primary phosgenation step to form a carbamyl chloride and in which the reaction mix-

ture from the primary phosgenation step is heated to a temperature of at least about 100° C. in a second phosgenation step to form an isocyanate, the improvement for the primary phosgenation which comprises continuously pumping a liquid containing phosgene and amine in an inert solvent together through a high speed mixer at a temperature not substantially above about 80° C. to the second phosgenation step at a flow rate sufficient to maintain the residence time of the reactants in the primary phosgenation step below about one minute.

3,188,338

CHLOROFLUOROPHENOXYALKANOLS AND ESTERS THEREOF

Everett E. Gilbert, Morris Township, Morris County, N.J., and Christ N. Yiannois, Los Angeles, Calif., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 16, 1958, Ser. No. 748,829
6 Claims. (Cl. 260—458)

1. A compound selected from the group consisting of 2(2 - chloro - 4 - fluorophenoxy) ethanol-1,4(2-chloro-4-fluorophenoxy) butanol-1, and esters thereof selected from the group consisting of their acetic acid esters; their trichloroacetic acid esters; their dichloropropionic acid esters; their benzoic acid esters; their alkali metal monosulfates, and their triesters of phosphorous acid.

3,188,339

THIOPYROPHOSPHONATE ESTERS AND PROCESS FOR MAKING SAME

Ludwig Maier, University City, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 7, 1960, Ser. No. 54,369
Claims priority, application Switzerland, Sept. 9, 1959, 76,044/59
8 Claims. (Cl. 260—461)

1. A process for the preparation of a thiopyrophosphorus compound having the formula

$$R(R'O)P(O)O(S)P(R'O)R$$

wherein R and R' are aliphatic hydrocarbons, which comprises reacting a compound of the formula

$$R(R'O)P(O)H$$

wherein R and R' are defined as above, with a reagent selected from the group consisting of sulfur dichloride and dialkylaminosulfenic chloride and an acid binding agent is added to react with the hydrogen chloride formed when sulfur dichloride is a reactant.

8. Iso-C_3H_7O(Allyl)P(O)-O-(S)P(Allyl)iso-OC_3H_7.

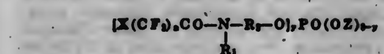
3,188,340

POLYFLUORO ALKANAMIDOALKYL PHOSPHATES

Alan K. Mackenzie, Redding, Conn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 8, 1961, Ser. No. 158,121
3 Claims. (Cl. 260—461)

1. A compound of the formula



wherein X is an atom of the group consisting of hydrogen and fluorine, R_1 is a member of the group consisting of hydrogen and lower alkyl, R_2 is a C_2 to C_{12} alkylene bridging group, n is an integer from 6 to 12, y is a number of an average value from 1.5 to 2.5, and Z is a water-solubilizing cation selected from the class consisting of sodium, potassium, ammonium, lower alkyl ammonium, lower hydroxyalkyl ammonium, and morpholinium.

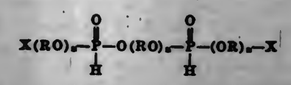
3,188,341

BIS(HYDROGEN PHOSPHONATE) DIESTERS OF GLYCOLS AND PROCESS FOR MAKING SAME

John C. Smith, Brad H. Miles, and Leonard Levine, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

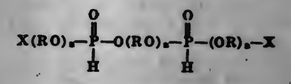
No Drawing. Filed July 26, 1962, Ser. No. 212,725
13 Claims. (Cl. 260—461)

1. Compounds having the formula:



wherein R is an alkylene radical containing from 2 to about 8 carbon atoms, each n is an independently selected integer from 1 to 3 and X is a halogen having an atomic number from 17 to 35.

10. The method for making a compound having the formula:



wherein R is an alkylene radical containing 2 to about 8 carbon atoms, n is an integer from 1 to 3 and X is a halogen having an atomic number from 17 to 35, comprising reacting by contacting at a temperature of about −10° to 50° C. a phosphorus halide, PX_3, with about 1.5 molecular equivalents of a glycol, $HO(RO)_nH$, wherein R, n and X are as previously defined, said contacting being effected by adding the glycol to the PX_3.

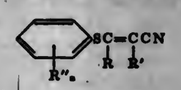
3,188,342

3-(ARYLTHIO)ALKENENITRILES

Samuel Allen Heininger, St. Louis, and Gail H. Birum, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 28, 1962, Ser. No. 197,897
6 Claims. (Cl. 260—465)

1. A 3-(arylthio)alkenenitrile of the formula



wherein R and R' are selected from the class consisting of hydrogen, saturated hydrocarbon redicals containing from 1 to 6 carbon atoms and the phenyl radical, provided that only one of R and R' is a hydrocarbon radical, R'' is a lower alkyl radical, and n is an integer from 0 to 5.

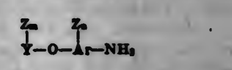
3,188,343

NITRO AND AMINOPHENOXYHYDROQUINONES AND THE ESTERS AND ETHERS THEREOF

Milton Green and Warren E. Soloder, Newton Center, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

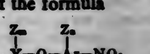
No Drawing. Filed Sept. 10, 1962, Ser. No. 222,703
11 Claims. (Cl. 260—479)

1. A compound of the formula:



wherein Ar is an aryl nucleus selected from the group consisting of benzene and naphthalene nuclei; each Z is selected from the group consisting of lower alkyl and phenyl-substituted lower alkyl; m is an integer from 0 to 3, inclusive; n is an integer from 0 to 2, inclusive; and Y is selected from the group consisting of p-dihydroxyphenyl and o-dihydroxyphenyl.

6. A compound of the formula



wherein Ar is an aryl nucleus selected from the group consisting of benzene and naphthalene nuclei; each Z is selected from the group consisting of lower alkyl and phenyl-substituted lower alkyl; m is an integer from 0 to 3, inclusive; n is an integer from 0 to 2, inclusive; and Y is selected from the group consisting of p-dihydroxyphenyl and o-dihydroxyphenyl.

3,188,344

PROCESS FOR THE PREPARATION OF β-CHLOROPROPIONIC ACID

Henry E. Bronner, Jr., and Arthur L. Kranzfelder, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed July 2, 1962, Ser. No. 207,047
3 Claims. (Cl. 260—539)

1. A process for the preparation of β-chloropropionic acid which comprises reacting at a temperature of about 70–150° C. a mixture of about 1 mole of acrylonitrile, between about 2 and 3 moles of sodium chloride, and between about 2 and about 2.5 moles of 60 to 80 percent aqueous sulfuric acid.

3,188,345

B-HALO PHOSPHINE BORINES

Anton B. Burg, Los Angeles, and Ross I. Wagner, Whittier, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Nov. 2, 1959, Ser. No. 850,063
1 Claim. (Cl. 260—543)

$H_2CH_3P{:}BCl_2CH_3$.

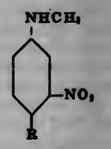
3,188,346

4-AMINO-3-NITRO METHYLAMINO-ANILINE AND PROCESS FOR THE PREPARATION THEREOF

Gregoire Kaloptsis, Paris, and Raymond Bugaut, Boulogne-sur-Seine, France, assignors to L'Oreal, a corporation of France

No Drawing. Original application July 13, 1959, Ser. No. 826,454, now Patent No. 3,117,911, dated Jan. 14, 1964. Divided and this application Oct. 18, 1961, Ser. No. 146,006
Claims priority, application France, Apr. 23, 1959, 792,972
3 Claims. (Cl. 260—577)

1. A compound of the formula:



where R represents an amino group.

3,188,347

5(4-DIMETHYLAMINOCYCLOHEXY)-DIBENZO [a,d]CYCLOHEPTA[1,4]DIENE AND SALTS THEREOF

Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 18, 1961, Ser. No. 161,766
3 Claims. (Cl. 260—570.5)

1. A compound selected from the group consisting of 5-(4-dimethylaminocyclohexyl) - dibenzo[a,d]cyclohepta-[1,4]diene, and the pharmaceutically acceptable acid addition salts thereof.

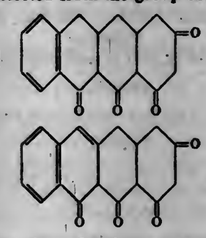
3,188,348

12a-DEOXYTETRACYCLINE OXIDATION PROCESS

Kenneth Butler, Waterford, Conn., Robert B. Woodward, Belmont, Mass., and Philip N. Gordon, Old Lyme, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 9, 1962, Ser. No. 208,343
7 Claims. (Cl. 260—559)

1. The process which comprises contacting metal chelate of a 12a-deoxytetracycline with an oxidizing substance in a reaction inert solvent, the pH in an aqueous reaction-inert solvent system being from about 2 to about 11, said metal of said chelate being selected from the group consisting of those in groups IB, IIB, IIIB, IVB, VB, VIB, VIIB, VIII, IIA, IIIA and IVA of the Periodic Chart of the Elements, said oxidizing substance being selected from the group consisting of air, oxygen, hydrogen peroxide, alkali metal peroxides and N-oxides of hydrocarbon tertiary amines, and said 12a-deoxytetracycline being selected from the group consisting of



tautomeric forms thereof and mono- and poly-substituted analogs thereof, the substitution of said substituted analogs being limited to the 2, 4, 4a, 5, 5a, 6, 7, 8, 9, 10 and 11a positions.

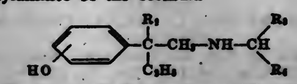
3,188,349

N-SECONDARY-ALKYL-2-(3-HYDROXYPHENYL)-2-ETHYL-ALKYLAMINES

Walter Krohs, Bad Soden, Taunus, Leopold Thor and Gerhard Vogel, Frankfurt am Main, and Heinrich Ott, Eppstein, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 8, 1961, Ser. No. 94,131
Claims priority, application Germany, Mar. 11, 1960, F 30,735
5 Claims. (Cl. 260—570.8)

1. A member selected from the group consisting of phenylalkylamines of the formula



in which R_3 is an alkyl group containing 1–4 carbon atoms, and R_3 and R_4 are members selected from the group consisting of alkyl groups containing 1–4 carbon atoms and together with the adjacent carbon atom form an alicyclic saturated ring system containing 5–6 carbon atoms, and the salts of these compounds with physiologically compatible acids.

3,188,350

VAPOR PHASE PREPARATION OF ALLYL-SUBSTITUTED KETONES

George R. Martin, Freeport, and Nicholas B. Lorette, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 5, 1961, Ser. No. 107,989
1 Claim. (Cl. 260—586)

A process for preparing alpha-allyl substituted ketones by reacting by contacting in the vapor phase at a temperature of from about 175° C. to about 475° C. allyl

alcohol with a dialkyl ketal derived from a ketone selected from the group consisting of alkanones having from three to eight carbon atoms and cycloalkanones having from 5 to 6 membered carbon rings, and containing at least one hydrogen atom on a carbon adjacent to the carbonyl group, in the presence of a catalyst selected from the group consisting of calcium-nickel phosphate, gold (Au), silver (Ag), platinum (Pt), cobalt (Co), nickel (Ni), chromic oxide (Cr_2O_3), manganese dioxide (MnO_2), cadmium chloride ($CdCl_2$), zirconium chloride ($ZrCl_4$), antimony trichloride ($SbCl_3$), chromic chloride ($CrCl_3$), aluminum fluoride (AlF_3), lanthanum sulfate ($La_2(So_4)_3$), gadolinium sulfate ($Gd_2(So_4)_3$), thorium sulfate ($Th(So_4)_2$), aluminum sulfate ($Al_2(SO_4)_3$), thallium sulfate ($Tl_2(SO_4)_3$), zirconium sulfate ($Zr(SO_4)_2$), antimony sulfate ($Sb(SO_4)_3$), maganous sulfate ($MnSO_4$), nickel sulfate ($NiSO_4$), silver phosphate (Ag_3PO_4), cadmium phosphate ($Cd_3(PO_4)_2$), lathanum phosphate ($LaPO_4$), cerous phosphate ($CePO_4$), thorium phosphate

($Th(PO_3)_4$)

aluminum phosphate ($AlPO_4$), thallium phosphate

($TlPO_4$)

chromic phosphate ($CrPO_4$), manganic phosphate

($MnPO_4$)

ferric phosphate (Fe_3PO_4), gadolinium phosphate

($GdPO_4$)

mercuric oxide (HgO), zinc oxide (ZnO), cadmium oxide (CdO), molybdenum trioxide (MoO_3), thorium chloride ($ThCl_4$), zirconium dioxide (ZrO_2), uranium oxide

(U_3O_8)

cupric chloride ($CuCl_2$), silver chloride (AgCl), barium chloride ($BaCl_2$), cobaltous chloride ($CoCl_2$), ferrous chloride ($FeCl_2$), nickel chloride ($NiCl_2$), lanthanum chloride ($LaCl_3$), gadolinum chloride ($GdCl_3$), sodium sulfate (Na_2SO_4), potassium sulfate (K_2SO_4), magnesium sulfate ($MgSO_4$), lithium phosphate (Li_3PO_4), potassium phosphate (K_3PO_4), sodium phosphate (Na_3PO_4), beryllium phosphate ($Be_3(PO_4)_2$), magnesium phosphate ($Mg_3(PO_4)_2$), calcium phosphate ($Ca_3(PO_4)_2$), barium phosphate ($Ba_3(PO_4)_2$), strontium phosphate ($SrHPO_4$), $TiO_2 \cdot Ti_3(PO_4)_2$, zirconium phosphate ($Zr_3(PO_4)_4$), alumina treated with H_3BO_3, alumina treated with

$H_3UO_2PO_4$

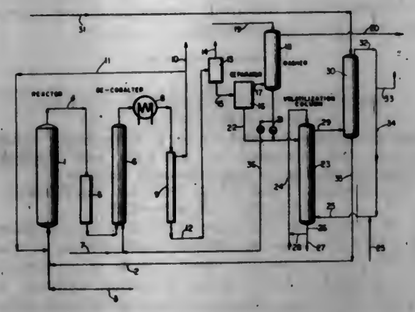
$UO_2(SO_4)_3$ and $U(OH)PO_4$.

3,188,351
RECOVERY OF A CARBONYL COMPOUND OF COBALT

Hans Lemke, 10 Rue de Champagne, Asnieres, France

Filed Jan. 24, 1963, Ser. No. 253,694
Claims priority, application France, Dec. 17, 1958, 782,064
17 Claims. (Cl. 260—604)

1. In a hydroformylation process wherein an olefinic compound is reacted with carbon monoxide and hydrogen in the presence of a carbonyl compound of cobalt as a catalyst to produce a reaction mixture containing a carbonyl compound of cobalt and an aldehyde having one more carbon atom than the olefinic compound, cobalt-containing material is recovered from the reaction mixture and recovered cobalt-containing material is recycled to the hydroformylation process, the improvement which comprises intimately contacting the reaction mixture having the carbonyl compound of cobalt therein at a temperature of between about 20° C. and 250° C. and at a pressure of at least atmospheric with from between 10% and 100% by volume of said organic liquid of an aqueous medium containing at least one substance selected from the group consisting of the oxides, hydroxides and salts of the alkali and alkaline earth metals to form a water soluble cobalt compound which has the cobalt present substantially entirely in the anionic portion of the molecule and dissolved in the aqueous medium, separating the aqueous medium containing the dissolved cobalt compound from the reaction mixture, adding a strong mineral acid to the aqueous medium



to produce a volatile carbonyl compound of cobalt, thereafter passing gas inert to the volatile carbonyl compound of cobalt through the aqueous medium to recover the carbonyl compound of cobalt in volatile form in the gas, and recycling the recovered carbonyl compound of cobalt to the hydroformylation process to catalyze the reaction.

3,188,352
PHENOLIC THIOETHERS

Walter Reifschneider, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,502
2 Claims. (Cl. 260—609)

1. o-(p-Isopropylphenylthio)phenol.
2. m-(o-Cyclohexylphenylthio)phenol.

3,188,353
METHOD OF PREPARING POLYETHERS

Hans Holtschmidt, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 29, 1961, Ser. No. 134,595
Claims priority, application Germany, Sept. 17, 1960, F 32,149
3 Claims. (Cl. 260—615)

1. In the preparation of a polyhydric polyalkylene ether by a process which comprises heating an aliphatic polyhydric alcohol having at least two primary hydroxyl groups and having at least six carbon atoms in the carbon to carbon chain between said primary hydroxyl groups, in the presence of a sulfonic acid catalyst to a temperature of from about 120° C. to about 250° C. to form said polyhydric polyalkylene ether, the improvement which comprises heating said polyhydric alcohol while mixed with a sulfonic acid selected from the group consisting of naphthalene disulfonic acid and benzene disulfonic acid.

3,188,354
PROCESS FOR PURIFYING ALCOHOLS

Charles Roming, Jr., Towaco, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed July 1, 1959, Ser. No. 824,389
3 Claims. (Cl. 260—643)

1. A process for separating and purifying a mixture of straight-chain primary alcohols wherein each of the alcohols contains from 2 to 22 carbon atoms, said alcohols being present in a mixture comprising 50 to 95 mole percent of said alcohols, 5 to 50 mole percent of olefinic and paraffinic substances and about 0.2 to 2 mole percent of carbonyl substances, the non-alcohol substances boiling in the same range as said alcohols, consisting of fractionating the mixture by distillation into gross fractions in which the carbon number spread of the alcohols in said fractions is not more than 6, reacting each fraction with a slight excess of finely divided, solid boric acid at about 200° to 280° F. in a first esterification zone for a sufficient time to esterify a major portion of the alcohols in said mixture, transferring the partially esterified mixture to a second esterification zone maintained at about the same temperature as the first esterification zone wherein essentially complete esterification of the alcohols occurs, withdrawing overhead from said first and second esterification zones an azeotrope comprising the water formed by the esterification reaction and at least a portion of said olefinic and paraffinic substances, separating said olefinic and paraffinic substances from the water, returning at least a part of the separated olefinic and paraffinic substances to each esterification zone, withdrawing the esterified mixture from said second zone and separating the excess, solid boric acid from the esterified mixture, passing the separated boric acid to the second esterification zone, stripping the unesterified substances from the esterified mixture in a distillation zone maintained at reduced pressure, withdrawing said unesterified substances from said distillation zone, saponifying the esterified mixture, separating the alcohol product from the saponified mixture, removing the water from said alcohol product and fractionally distilling said product into pure alcohol fractions, said pure alcohol fractions having a carbonyl content less than 0.1 mole percent.

3,188,355
STABILIZATION OF TRICHLORETHYLENE

Wilbur H. Petering, Detroit, Mich., assignor to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan

No Drawing. Filed Aug. 5, 1959, Ser. No. 831,709
7 Claims. (Cl. 260—652.5)

1. A composition of matter consisting essentially of stabilized trichlorethylene containing synergistically cooperative additive consisting of (1) a monohydric alcohol selected from the group consisting of unsubstituted secondary and tertiary aliphatic monohydric alcohols having from 3 to 5 carbon atoms, and (2) an epoxide selected from the group consisting of epichlorhydrin, butylene oxide, diisobutylene oxide, isopropyl glycidyl ether, ethyl glycidyl ether, allyl glycidyl ether, 2-pentene oxide and cyclohexene oxide, each if said additives being present in amounts between about 0.01% and 1% of the weight of the trichlorethylene.

3,188,356
METHOD FOR PRODUCING VINYLIDENE FLUORIDE

Murray Hauptschein, Glenside, and Arnold H. Fainberg, Elkins Park, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 8, 1961, Ser. No. 150,898
8 Claims. (Cl. 260—653.5)

1. A method for producing vinylidene fluoride by the pyrolytic dehydrofluorination of 1,1,1-trifluoroethane which comprises passing a stream of said fluoroethane through a reactor heated to a temperature of 1050 to 1500° C. at a contact time of less than about 0.3 second.

3,188,357
DEHYDROCHLORINATION OF 1,2,3-TRICHLOROBUTANE

John H. Blumbergs, Highland Park, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 8, 1961, Ser. No. 115,611
2 Claims. (Cl. 260—655)

1. In the process for production of chloroprene from 1,2,3-trichlorobutane involving dehydrochlorinating 1,2,3-trich orobutane to produce a mixture of chloroprene convertible dichlorobutenes, and subjecting said mixture of dichlorobutenes to non-catalytic thermal dehydrochlorination at temperature within the range of 450° C.–650° C. to produce chloroprene; the step of subjecting 1,2,3-trichlorobutane at a temperature within the range of 100° C. to 250° C. and under oxygen free conditions to the action of sodium hydroxide as dehydrochlorinating agent to produce a mixture of chloroprene convertible dichlorobutenes in which 2,3-dich.orobutene-1 is the major component.

3,188,358
PREPARATION OF METHYLPENTALANE

Abraham Schneider, Overbrook Hills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

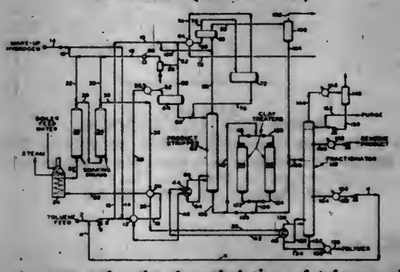
No Drawing. Filed Aug. 7, 1962, Ser. No. 215,286
12 Claims. (Cl. 260—666)

9. Method of making dimethylperhydropyrene which comprises contacting hydrindane with an aluminum halide catalyst at a temperature in the range of −10° C. to 50° C., whereby isomerization occurs with the formation of methylpentalane, continuing the contacting with said catalyst at such temperature until at least a substantial amount of a separate phase comprising crystalline dimethylperhydropyrene has been formed, and separating crystalline dimethylperhydropyrene from the reaction mixture.

3,188,359
NON-CATALYTIC DEALKYLATION OF ALKYL SUBSTITUTED BENZENE-RING COMPOUNDS

Frank L. Lempert, Rutherford, N.J., and Robert J. Reid, Hastings on Hudson, N.Y., assignors to Pullman Incorporated, a corporation of Delaware

Filed Mar. 1, 1962, Ser. No. 176,713
12 Claims. (Cl. 260—672)



1. A process for the demethylation of toluene which comprises passing a preheated feed mixture containing hydrogen and toluene upwardly through a first reaction zone maintained under thermal demethylation conditions including an elevated pressure and a thermal demethylation temperature below about 1500 F. in the absence of a catalyst to obtain an effluent containing benzene and toluene at such elevated temperature and pressure, introducing a cooled high-pressure vaporous fraction obtained from a later portion of the process as hereinafter defined to quench-cool said effluent to a lower thermal demethylation temperature, passing such effluent at such lower temperature upwardly through a second reaction zone maintained under demethylation conditions including an ele-

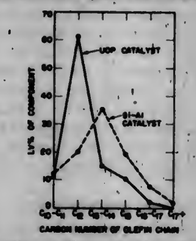
vated temperature and pressure in the absence of a catalyst to obtain a second effluent containing more benzene and less toluene than said first effluent at an elevated pressure and thermal demethylation temperature, introducing a cooled high-pressure vaporous fraction obtained from a later portion of the process as hereinafter defined to quench-cool such second effluent to a temperature at least slightly but not substantially below 1100° F., further cooling said second effluent by indirect heat exchange against suitable process streams thereby providing a substantial portion of the process heat requirements, and then flashing said cooled effluent at an elevated pressure to separate therefrom said cooled high-pressure vaporous fraction employed as a quench-cooling medium as hereinbefore defined and a first liquid stream, separating the first liquid stream to obtain a benzene product stream from unconverted toluene and recycling unconverted toluene to said first reaction zone.

3,188,360

PROPYLENE POLYMERIZATION TO C_{15}–C_{20} OLEFINS FOR DETERGENTS

David A. Gudelis, Sarnia, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Feb. 2, 1961, Ser. No. 86,790
12 Claims. (Cl. 260—683.15)



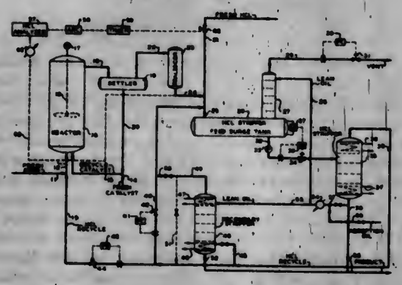
1. A process for polymerizing propylene selectively to large amounts of C_{15}–C_{20} olefins which comprises reacting propylene in the presence of a silica alumina catalyst containing a predominant weight concentration of silica and a silica:alumina weight ratio ranging from >1 to 15:1 and having a surface area of above 350 $m.^2/g.$ at temperatures in the range of 375 to 425° F. at essentially anhydrous reaction conditions of less than 100 parts per million of water and pressures ranging from 300 to 1500 p.s.i.g.

3,188,361

ISOMERIZATION PROCESS

John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 30, 1962, Ser. No. 191,201
11 Claims. (Cl. 260—683.74)



1. In a process for the isomerization of hydrocarbons with a metal halide catalyst and hydrogen halide, in which the isomerization reaction effluent is introduced to a surge absorption zone from which non-condensable gases, including hydrogen halide and lighter materials, are vented, material from said surge absorption zone is introduced to a stripping zone wherein a gaseous material rich in hydrogen halide is separated, said gaseous material is recycled to the isomerization reaction and fresh hydrogen halide is introduced to the process as makeup, the improvement which comprises passing a portion of said gaseous recycle to a reboiled absorption zone to separate light hydrocarbon gases therefrom by contacting with a liquid absorption medium, removing said light hydrocarbon gases from said reboiled absorption zone and from the system, and returning a stream concentrated in hydrogen halide from said reboiled absorption zone to the system, the reboiled absorption zone serving to remove light hydrocarbons heaver than hydrogen halide from the system with a resultant decrease in the loss of hydrogen halide.

3,188,362

SEMI-RIGID EPOXY RESIN COMPOSITIONS AND METHOD

John Delmonte, Glendale, Calif., assignor to Furane Plastics, Inc., Los Angeles, Calif., a corporation of California

No Drawing. Filed July 6, 1962, Ser. No. 208,115
20 Claims. (Cl. 260—835)

1. An epoxy resin composition comprising a glycidyl polyether of a polyhydric organic compound in which the polyhydric organic compound is selected from the group consisting of polyhydric alcohols and polyhydric phenols, from 0.01 to about 0.5 mol of a polyhydric alcohol per mol of said glycidyl polyether, and between 0.8 and about 1.5 mols of dodecenyl succinic anhydride per mol of said glycidyl polyether.

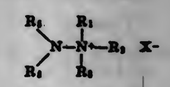
3,188,363

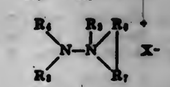
INHIBITORS OF PREMATURE GELATION IN POLYESTER RESINS

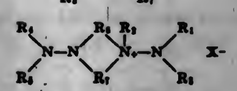
Roger W. Amidon, Woodbury, and Thomas H. Newby, Middlebury, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

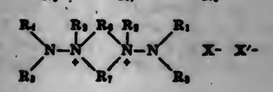
No Drawing. Filed Sept. 13, 1961, Ser. No. 137,719
36 Claims. (Cl. 260—863)

1. A method for inhibiting the polymerization of a polymerizable composition containing a polyester obtained by reacting an alcohol having at least two hydroxyl groups capable of ester formation with a compound selected from the group consisting of alpha-beta ethylenically unsaturated dicarboxylic acids and the anhydrides thereof and an ethylenically unsaturated monomeric compound containing the $>C=CH_2$ group which comprises adding inhibiting amounts of a hydrazine addition salt-organic copper salt mixture, wherein said hydrazine addition salt is selected from the group consisting of salts having the formulae:

(I) 

(II) 

(III) 

(IV) 

wherein R_1 is an organic radical with up to 7 carbon atoms in said radical, and R_2, R_3, R_4 and R_5 are selected from the group consisting of hydrogen, and organic radicals with up to 7 carbon atoms in said radical and R_6 and R_7 are selected from the group consisting of alkylene and substituted alkylene radicals with up to 3 carbon atoms, and X and X' are anionic radicals selected from the group consisting of organic and inorganic acids having a dissociation constant of at least 1×10^{-5}, to said polymerizable composition to give a polymerizable composition having enhanced storage life with freedom from premature gelation.

3,188,364

COMBINED MASTERBATCH PREPOLYMERIZATION FEED FOR SUSPENSION POLYMERIZATION

Renee P. Brown, Robert H. Dyer, Warden W. Mayes, and Paul D. Meek, all of Big Spring, Tex., assignors, by mesne assignments, to Cosden Oil & Chemical Company, Big Spring, Tex., a corporation of Delaware

Filed Dec. 20, 1960, Ser. No. 77,052
4 Claims. (Cl. 260—880)

1. The method of polymerizing a 2 to 30% solution of a preformed solid polymer of the group consisting of polybutadiene and copolymer of butadiene with styrene in monomer styrene as the solvent, comprising prepolymerizing said solution in a mass with agitation at a temperature between about 200 and 240° F., and withdrawing equal batch portions up to about one half of the original batch quantity being polymerized, discarding said batches and replenishing the original batch with said fresh unpolymerized solution while continuing said polymerization until, at the time of said batch withdrawal, said solution being polymerized has a constant preselected polymerized monomer solvent content in the range of 5 to 40%, continuing the withdrawal of solutions batchwise from the said continuously polymerizing masterbatch solution and then independently polymerizing each batch withdrawal portion from said masterbatch by agitating the same continuously as a suspension in water until the polymerization thereof is completed to hard bead form and replenishing said masterbatch with unpolymerized solution of polymer and monomer following each batch withdrawal.

3,188,365

THERMOPLASTIC COMPOSITION COMPRISING A RESINOUS STYRENE-ACRYLONITRILE-METHACRYLIC ACID TERPOLYMER AND A RUBBERY BUTADIENE - ACRYLONITRILE-METHACRYLIC ACID TERPOLYMER

Stephen V. Slovenkai, Pompton Lakes, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed July 3, 1961, Ser. No. 121,325
2 Claims. (Cl. 260—893)

1. A thermoplastic blend characterized by high impact strength and high heat-distortion temperature, comprising:

(A) a major proportion of a resinous copolymer of styrene, acrylonitrile, and methacrylic acid, said resin containing copolymerized therein from 50% to 60% of styrene, from 20% to 30% of acrylonitrile, and from 15% to 25% of said acid, and

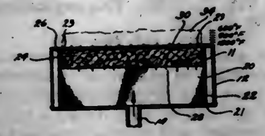
(B) a minor proportion of a rubbery copolymer of butadiene, acrylonitrile, and methacrylic acid, said rubbery copolymer containing copolymerized therein from 60% to 70% of butadiene, from 20% to 30% of acrylonitrile, and from 3% to 10% of methacrylic acid.

3,188,366

HEATING PROCESS

Charles S. Flynn, 2991 Sherwood Court, Muskegon, Mich.

Filed Jan. 17, 1962, Ser. No. 166,843
2 Claims. (Cl. 263—52)



1. A method of rapidly heating material in a completely protective atmosphere comprising the steps of: providing an integral, compressible layer of fibrous refractory material interengaged and compressed to form myriads of minute passages, said layer being compressed uniformly, and sufficiently to prevent any combustion beneath said surface in said layer to cause infrared glow when a combustible gaseous mixture is forced therethrough and combusted, the fibers on the surface of said layer being pressed flat against said surface with a fine mesh screen to prevent extension of individual fibers and glowing thereof; forcing a mixture of pressurized combustible gas and air through said layer; continuously combusting said mixture after emergence thereof from the surface of said layer and forming a continuous, substantially thick mantle of high temperature, air-excluding flue gases over the entire surface of said layer, while maintaining said surface blue and completely free of glow and radiant heat; and inserting the material to be heated into said mantle closely adjacent said surface for a short interval of time.

3,188,367

PROCESS FOR MANUFACTURING PLATES FROM WOOD SHAVINGS AND FIBERS

Ulrich Gottschalk, Ludwigstrasse 1A, Jockgrim, Pfalz, Germany

Filed Sept. 28, 1961, Ser. No. 141,491
Claims priority, application Germany, Sept. 30, 1960, G 30,614
7 Claims. (Cl. 264—37)



1. A process of manufacturing plates from wood shavings and fibers comprising the steps of mixing wood shavings and fibers with a binder; forming a pair of layers from said binder treated material with a third layer of wood shavings and fibers without a binder sandwiched therebetween; applying heat and pressure to said superimposed layers to form a pair of plates from said layers of binder treated material, whereby moisture contained in said pair of layers and vapors forming during the process will be at least in part absorbed by said third layer; separating said plates from said third layer; mixing the material of said third layer with a binder; and using the thus obtained mixture for forming at least part of a pair of layers for forming plates therefrom during the next operating cycle.

3,188,368

COMPOSITION, CASTING AND PROCESS FOR PRODUCING A HIGH-TEMPERATURE RESISTANT CONCRETE

Robert F. Stewart and Ben T. Larson, Granada Hills, and John D. McClendon, Canoga Park, Calif., assignors to North American Aviation, Inc.

No Drawing. Continuation of abandoned application Ser. No. 11,493, Feb. 29, 1960. This application Aug. 13, 1963, Ser. No. 301,905
6 Claims. (Cl. 264—56)

1. A mixture which upon hydration forms a solid mass and when the surface of said mass is subjected to impingement of gases at a temperature sufficient to cause the surface of the mass to melt, forms a high temperature resistant concrete, said mixture consisting essentially of at least 19 weight percent of fine and the balance of coarse particles, wherein said fine particles are of a size which will pass through a No. 4 mesh screen and wherein from about 60 to 70 weight percent of said fine particles will pass through a No. 200 mesh screen, and said coarse particles are of a diameter ranging from about one-eighth to about one and one-half inches with not over 20 weight percent of coarse particles ranging in diameter from three-eighths to one and one-half inches; the composition of said mixture consisting essentially of the following components:

(1) alumina in an amount of from about 33 to about 51 weight percent in said fine particles;
(2) at least one oxide of the Group IIA metals in an amount in said fine particles of from about 18 to about 32 weight percent, and wherein at least about 90 weight percent of component (2) in said fine particles is calcia;
(3) silica in an amount such that the mol ratio of component (2) in said fine particles to silica in said fine particles is from about 1.7:- to about 2.4:1;
(4) zirconia in an amount of from 0 to about 49 weight percent;
(5) at least one oxide of the Group IA metals in an amount of from 0 to about 6 weight percent;
(6) iron oxide in an amount of from 0 to about 17 weight percent; and,
(7) silicon carbide in an amount of from 0 to about 24.8 weight percent.

3. A process of producing a high temperature-resistant concrete comprising mixing, to provide a uniform composition, the mixture of claim 1 with a minor quantity of water sufficient to form a uniform paste thereof, permitting said paste to set in order to form a solid mass, and thereafter causing a stream of gases at supersonic velocities to impinge upon at least a portion of the surface of said solid mass, said gases being at a temperature sufficient to cause at least a portion of the components in said surface to melt, whereby said molten components react to provide a concrete surface which is resistant to erosion at high temperatures.

3,188,369

REINFORCED PLASTIC

Roger T. Guthrie, Enka, N.C., assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

No Drawing. Filed Feb. 9, 1962, Ser. No. 172,090
2 Claims. (Cl. 264—128)

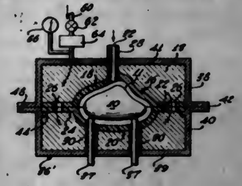
1. A method of producing a fiber reinforced article having an increased impact strength and superior electrical characteristics which comprises disposing a fibrous polypropylene reinforcing material in a confined zone, introducing a resin-forming low viscosity liquid consisting essentially of styrene and divinylbenzene into the zone at a controlled rate to insure thorough impregnation of the polypropylene reinforcing material without entrapment of gases, copolymerizing the resin-forming liquid by initially heating at low temperatures and gradually increasing the temperature whereby the resin begins to gel before it exercises any solvent action on the polypropylene, and finally subjecting the mass to a curing temperature.

3,188,370

METHOD OF INCAPSULATING AN OBJECT

Paul L. Getzy, Lansdale, Pa., assignor to Andrew A. Halacsy

Filed Nov. 14, 1960, Ser. No. 68,822
10 Claims. (Cl. 264—226)



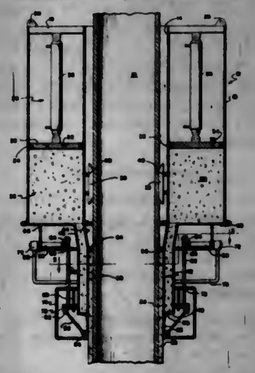
1. A method of incapsulating an object in a coating, comprising the steps of providing said object with a plurality of superposed incapsulating layers, forming a separable mold from said object with the outer incapsulating layer forming part of the mold and defining a cavity thereof, opening said mold and stripping the inner incapsulating layer from said object, closing said mold with said object positioned in the cavity thereof so as to define a space between said object and cavity corresponding to said stripped layer, and thereafter filling said space with an incapsulant so as to incapsulate said object therein.

3,188,371

COATING APPARATUS AND METHOD THEREFOR

Goldwyn Weekley, 24 Chestnut St., Belle Vernon, Pa.

Filed Oct. 13, 1960, Ser. No. 62,471
10 Claims. (Cl. 264—269)



9. An apparatus for lining the outside wall of a conduit comprising means defining a chamber adapted to be positioned around said conduit and in spaced relationship to said outside conduit wall, means to vary the volume of said chamber, a circumferential passageway connected with said chamber and containing a plurality of orifices in a wall adapted to be disposed adjacent said outer conduit wall, a circumferential seal connected to the said orifice containing wall and adapted to contact said outer conduit wall to determine the thickness of the lining applied to said conduit, said seal containing vents to permit venting of air as said lining is applied, trowel means disposed adjacent said passageway and said conduit wall, and means for varying the position of said trowel means.

10. A method of lining a wall of a conduit with a lining material comprising the steps of positioning a chamber contaiing lining material in spaced relationship to said conduit wall, exuding lining material from said chamber through a plurality of orifices onto said conduit wall to a predetermined thickness while moving said chamber in a direction at right angles to the exudation, said thickness being determined by seal means positioned between said conduit wall and said chamber, venting air through said seal means during said exudation step, and simultaneously smoothing the surface of the exuded material by the application of a force thereto, the force exerted on the lining material to smooth it being independent of the force which exudes the lining material from the chamber.

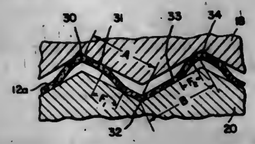
3,188,372

MACHINE AND METHOD FOR COMPACTING MATERIALS

John T. Ross, Westwood, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts

Filed Aug. 25, 1961, Ser. No. 133,915
10 Claims. (Cl. 264—287)

8. The process of treating a traveling web comprising forming longitudinal corrugations in said web as it travels and passing the thus corrugated web through a nip of opposed traveling press surfaces for crushing the corrugations without pleating, at least partially supporting the corrugations at least at one surface of said web as it passes through said nip by causing the corrugations of the web to intermesh with ridges and grooves in a press



surface having the same pitch and a lesser amplitude at the nip than the corrugations of the web, thereby preventing buckling of the web increments extending between successive, opposite extremities of the corrugations while these increments are crushed by applying compressive forces to said extremities with corresponding portions of said press surfaces.

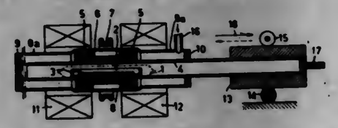
ELECTRICAL

3,188,373

DEVICE FOR ZONE MELTING

Michel Brunet and Emile Deyris, Caen, France, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 17, 1962, Ser. No. 245,289
Claims priority, application France, Dec. 15, 1961, 882,069
9 Claims. (Cl. 13—1)



1. Zone-melting apparatus comprising an elongated tubular member for supporting an elongated charge of a material to be treated by zone-melting, high-frequency heating means for said charge, said high-frequency heating means comprising an electrically-conductive ring surrounding a section of the tubular member and a high-frequency heating coil surrounding a peripheral portion of said ring, whereby when said high-frequency currents traverse the heating coil, heat is induced in the ring which in turn melts a transverse zone of this charge lying within it, said electrically-conductive ring including a tubular portion which contacts and bears against substantially all sides of a peripheral section of the tubular member whereby said tubular member is journalled in the said electrically-conductive ring, which thus serves as a bearing for the tubular member, and means for moving the tubular member and the electrically-conductive ring relative to one another in the longitudinal direction of the tubular member for advancing the molten zone through the charge.

3,188,374

LOUDSPEAKER ASSEMBLY

Richard D. Schotter, Pompton Plains, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 18, 1963, Ser. No. 296,023
3 Claims. (Cl. 181—31)

1. A loudspeaker assembly comprising a mounting panel having first and second major surfaces with an aperture extending therebetween, a loudspeaker having a circular peripheral frame member positioned in said aperture, and a resilient member having a first center



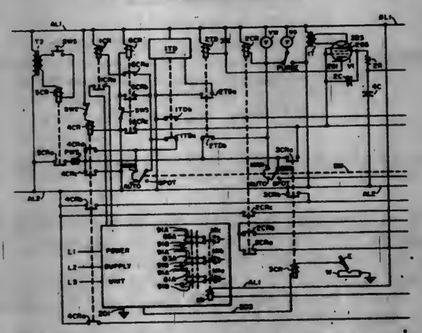
portion in compression between said frame member and edges of said aperture, a second portion bonded to said first major surface and a third portion extending outwardly from said second major surface.

3,188,375

ARC WELDING APPARATUS

Floyd E. Adamson, Eggertsville, N.Y., and Roger R. Giller, Canonsburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 13, 1962, Ser. No. 216,689
3 Claims. (Cl. 219—131)



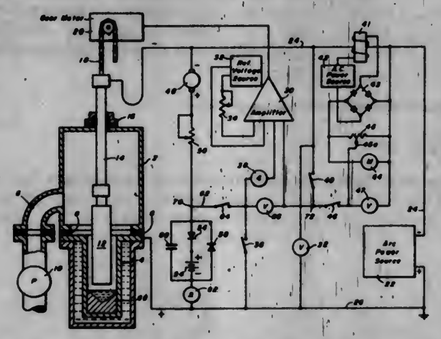
1. Arc-welding apparatus for welding work with a consumable electrode comprising means connected to said

electrode for advancing said electrode into welding relationship with said work, power-supply means connected to said electrode and work for maintaining a welding arc between said electrode and work, timing means connected to said power-supply means for timing the duration of said welding arc, and selective means connected to said advancing means and to said timing means for setting said advancing means to advance said electrode at a selected one of a plurality of speeds and simultaneously setting said timing means to a corresponding one of a plurality of durations.

3,188,376
ELECTRODE POSITION CONTROL IN VACUUM ARC FURNACE

Richard E. Lyman, Homewood, Ill., assignor to United States Steel Corporation, a corporation of New Jersey

Filed Mar. 29, 1962, Ser. No. 183,588
5 Claims. (Cl. 13—31)



4. In a vacuum arc furnace including a crucible for holding a pool of molten metal, a consumable electrode adapted to be moved toward and away from the molten metal in said crucible, and a source of electric current having one lead to the crucible and a second lead to the electrode; a control for positioning said electrode comprising means for moving said electrode toward and away from said molten metal, an amplifier having its output connected to said means for moving said electrode toward and away from said molten metal, means providing to said amplifier a voltage proportional to increases and decreases in arc voltage, and means preventing the operation of said amplifier to move said electrode away from said molten metal when said arc voltage decreases are due to side arcing of less than a predetermined value.

3,188,377
ARMATURE BAR TRANSPOSITION

William C. Hughes, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 8, 1962, Ser. No. 201,170
5 Claims. (Cl. 174—33)



1. A transposed conductor bar for a dynamoelectric machine having a core member with longitudinal slots for receiving the conductor bars, comprising:

first, second and third adjacent stacks of insulated conductor strands disposed to form a bar three strands wide and one stack high,

said bar having a transposed portion adapted to occupy the slot portion of the core member, wherein the topmost strands of said first and second stacks are alternately bent transversely into said third stack; while the bottommost strands of the third stack are correspondingly bent transversely into the first and second stacks alternately.

3,188,378
TRANSPOSITION FITTING

Harry L. Kitselman, Wayzata, Minn., assignor to Indiana Steel & Wire Company, Inc., Muncie, Ind., a corporation of Indiana

Filed Dec. 5, 1963, Ser. No. 328,270
6 Claims. (Cl. 174—33)



1. A transposition fitting for use in transposing spaced, paired conductors, comprising an elongated member, first and second heads carried by said member and rotatable relative to each other about the axis of the member, each of said heads being provided on opposite sides of such axis with outwardly opening grooves adapted respectively to receive the two conductors to be transposed, and releasable means for maintaining the two heads in fixed relative positions about such axis, said fitting being adapted to be disposed between two parallel conductors to be transposed with said conductors received in said grooves whereby relative rotation of the heads will transpose the conductors, said releasable means being operable after such relative head-rotation to maintain the heads in their relative rotated position and the conductors transposed.

3,188,379
WEATHERPROOF ELECTRICAL INSTALLATION WITH PIVOTALLY ATTACHED HOOD MEANS

Peter Simon, 1255 W. Chippewa River Road, Rte. 5, Midland, Mich.

Filed Mar. 18, 1963, Ser. No. 265,969
14 Claims. (Cl. 174—38)

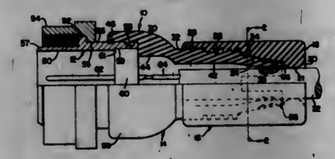


6. An electrical fixture adapted to contain an electrical device and allow access to the desirably exposed portion of said device, said fixture comprising a hollow body having means to support an electrical device, an entrance means for at least one electrical cable and a means to support a housing, a pivot affixed to said housing, a hood freely pivotally attached to said housing, said hood so constructed and arranged that when said housing is oriented with the electrical device in the desired position the hood protects the device and the uppermost portion of the hollow body together with a major portion of the hollow body adjacent the electrical device from falling rain and snow and said hood when pivoted on said pivot for access to said device will return to a protective position when the hood is no longer manually supported by external means, the hood having a top, a front and two sides, the front being disposed in adjacent spaced relationship to the access means when in the protective position and portions of the sides being in immediately adjacent overlapping relationship to the sides of the body, the hood and body adjacent the access means defining a space having a downwardly facing opening remotely disposed from the pivot means.

3,188,380
WIRING DEVICE

Victor H. Lorenz, St. Louis, Mo., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 28, 1962, Ser. No. 198,078
10 Claims. (Cl. 174—75)



1. A wiring device comprising, a first housing portion having a first bore therein, said first housing portion being of a material that is readily deformable radially with respect to the longitudinal axis of said bore, securing means having a first portion located at least adjacent a portion of the surface of said first bore and a second portion located at least adjacent a portion of an outer surface of said first housing portion spaced transversely outwardly from said first portion of said securing means with respect to said first bore, a second housing portion having a tapered bore therein encompassing at least a portion of said first housing and said first bore and cooperable therewith to radially inwardly deform a portion of said first housing portion so as to reduce a transverse axis of said first bore said bores being generally coaxial, said second portion of said securing means having integral means for securing said securing means to said first housing portion when said first housing portion is so encompassed, and said first portion of said securing means having integral means for at least partially securing an electrical conductor within said first bore.

3,188,381
QUICK-DISCONNECT CABLE CLAMP

Stephen L. Stillman, Jr., North Falmouth, Mass., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 16, 1961, Ser. No. 117,761
4 Claims. (Cl. 174—92)

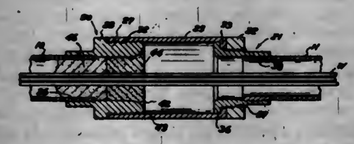
1. For use in a quick disconnect cable clamp for armor-covered electrical towing cables, the subcombination of first and second plates, a cable groove cut in one face of said first plate, said cable groove being hook-shaped with the upright portion thereof terminating at one edge of said first plate and with the curved portion terminating in an enlarged groove, a well cut in said one face of said first plate, an aperture extending from said one face of said first plate to an opposite face thereof and a first cable slot connecting the end of the curved portion of said hook-shaped groove to said well, a second cable slot connecting said well to said aperture, said second plate having an arcuated surface projecting from one face thereof, said arcuated surface having a configuration which is a mirror image of said cable groove whereby said raised surface dovetails into said cable groove when said first and second plates are secured together with said one faces contacting each other, an armor-covered electrical cable, one end of said cable having the armored covering removed therefrom, said cable being disposed within said cable groove such that the portion thereof which has the armored covering removed therefrom is accommodated within said first cable slot with one end of said armored cable extending into said well, a jumper cable, a portion of said jumper cable being accommodated within said second cable slot with one end of said jumper cable extending into said well, said one end of said armored cable and said one end of said jumper cable being connected in an electrical splice, means for securing said first and second plates together with said one faces contacting each other and with said raised surface dovetailing into said cable groove, and a moldable, waterproof compound disposed within said first well and encapsulating said electrical splice.



3,188,382
EXPLOSION PROOF JOINT FOR ELECTRICAL CONDUIT

William H. Fuss, 5338 Redan Road, Stone Mountain, Ga.

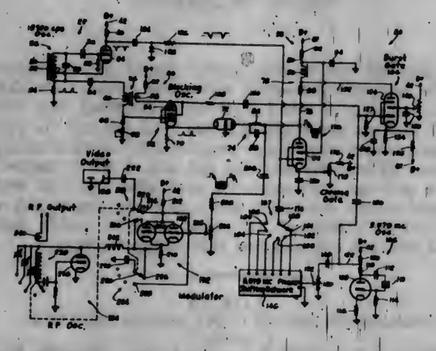
Filed Feb. 14, 1963, Ser. No. 258,579
1 Claim. (Cl. 174—93)



A gas tight explosion proof sealable union joining electrical conduit pieces end to end and sealing same comprising a plurality of rings and a cylindrical sleeve; there being a first ring having an internally threaded part receiving an externally threaded conduit end and an externally threaded sleeve joining part; the internal thread of the first ring terminating between the ends of such ring so that the conduit may be inserted only part way into such ring to leave a gap between the end of the conduit and the far end of such ring; with the first ring having an external flange at the far end of the external thread; the sleeve having a first end part internally threaded receiving the externally threaded sleeve joining part of the first ring and having an internally flanged second end part; the external flange of the first ring stopping the sleeve on such ring; there also being a second ring having an externally flanged end part inside the sleeve and against the flange of the sleeve and also having an externally threaded part receiving an internally threaded conduit end; said second ring also having an externally threaded part outside the sleeve, the device including an internally threaded locking ring threaded on the second named externally threaded part of the second ring and against the flanged end of the sleeve locking the parts in assembly;

the externally threaded part of the first ring containing a sealing compound between the end of the conduit therein and the far end of such ring visible at the sleeve joining end of such ring when such end of such ring is exposed by the removal of the sleeve from such rings;
the externally threaded part of the first ring being bevel bored or tapered at its far end;
with such compound filling the bevel-bore or taper in such part of such ring.

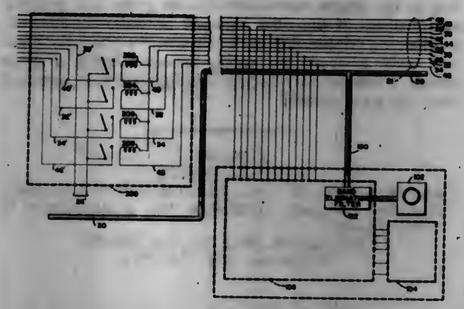
3,188,383
COLOR TELEVISION FLAT-FIELD SIGNAL GENERATOR
Irvin C. Rebeschini, Glen Ellyn, Ill., assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois
Filed June 2, 1961, Ser. No. 114,425
14 Claims. (Cl. 178—5.4)



4. In a signal generator for producing color television test signals, the combination comprising a Class C oscillator operating at the horizontal synchronizing frequency and having an electronic device conductive for a minor fraction of the cycle of said oscillator, first means for deriving pulses from said oscillator corresponding to the relatively brief intervals of conduction of said electronic device, second means for deriving relatively long pulses corresponding to intervals of nonconduction of said electronic device, third means connected to said first means for producing a synchronizing pulse and a delayed carrier burst in response to each of the pulses from said first means, fourth means connected to said second means for producing a train of chroma signals superimposed on a brightness signal in response to each of the pulses from said second means, and means for combining the signals produced by said third and fourth means.

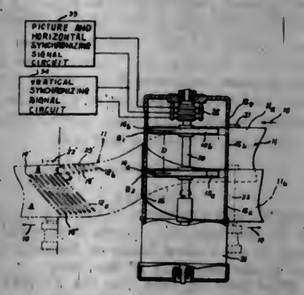
3,188,384
SIGNAL DISTRIBUTION SYSTEM INCLUDING AN INTERROGATION SIGNAL CHANNEL CONNECTED SERIALLY BETWEEN SUBSCRIBER STATIONS
Charles L. Townsend, Dumont, N.J., assignor to Telepromptor Corporation, New York, N.Y., a corporation of New York
Filed Mar. 31, 1961, Ser. No. 99,889
7 Claims. (Cl. 178—6)

1. A signal distribution system comprising a central station, a plurality of subscriber's stations, a source of signals at the central station, a transmission line for said signals extending from said central station and having a branch extending to each of said subscriber's stations, signal blocking means removably insertable into each of said branches, separate means at each subscriber's station operable together from said central station for inserting said blocking means, separate means at each subscriber's station to disable said inserting means, means at each subscriber's station for producing an indication of the condition of said disabling means at such station, means at said central station for recording the condition of said disabling means at each of said subscriber's stations, a system signal channel extending from said central station to one of said



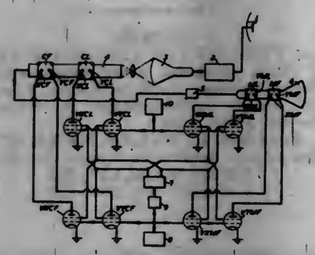
subscriber's stations and extensible at each of said subscriber's stations to another of said subscriber's stations, means for extending said system signal channel to said subscriber's stations in sequence, and means at each said subscriber's station responsive to extension of said signal channel thereto for coupling said indication producing means at each subscriber's station to said recording means at said central station.

3,188,385
MAGNETIC RECORDING AND REPRODUCING SYSTEM
Nobutoshi Kihara, Shibuya-ku, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed June 15, 1962, Ser. No. 202,742
Claims priority, application Japan, June 21, 1961, 36/22,136
9 Claims. (Cl. 178—6.6)



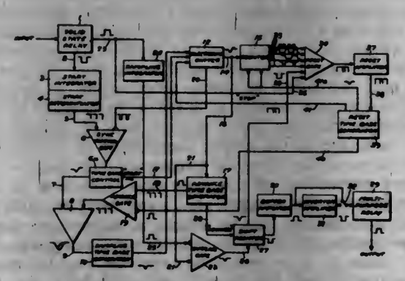
1. The method of transducing a composite signal including a signal part and a synchronizing part occurring alternately in time which is characterized by moving a pair of transducer heads along paths extending obliquely across respective first and second record zones of a record medium at a skew angle to the direction of movement of the record medium, bringing a first one of the heads into scanning relation to the first zone for a first part of each scanning cycle to transduce the synchronizing part of the composite signal and bringing a second one of said heads into scanning relation to the second zone during a second part of each scanning cycle to transduce the signal part of the composite signal.

3,188,386
TELEVISION SCANNING SYSTEMS
Dennis William George Byatt, Great Baddow, England, assignor to The Marconi Company Limited, a British company
Filed Aug. 20, 1962, Ser. No. 217,919
Claims priority, application Great Britain, Nov. 13, 1961, 40,500/61
4 Claims. (Cl. 178—6.8)



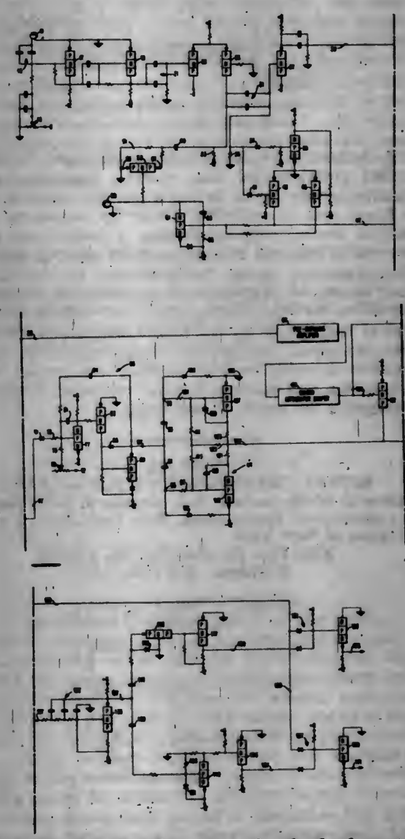
1. A television line scanning equipment comprising two line deflection systems for deflecting a scanning electron beam in two mutually perpendicular directions, two field deflection systems for deflecting said beam in said two mutually perpendicular directions, a line frequency source, a field frequency source, two line electronic switches connected respectively between the line frequency source and the two line deflection systems, two field electronic switches connected respectively between the field frequency source and the two field deflection systems, and means connected to the electronic switches and controlled by the field frequency source to alternate between a first and a second switching condition at a whole number of fields per second, said means alternately opening and closing the electronic switches so that in the first switching condition only one of the line switches and only one of the field switches are open, thereby allowing line and field deflections of said beam in mutually perpendicular directions, and in the second switching condition only the other line and field switches are open, thereby interchanging the directions of the line and field deflections.

3,188,387
START-STOP REGENERATOR
Francis T. Cassidy, Jr., Brooklyn, N.Y., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Apr. 12, 1962, Ser. No. 187,062
18 Claims. (Cl. 178—70)



1. A regenerator comprising
(a) means for receiving sequences of signal pulses,
(b) means responsive to the receipt by said receiving means of the first of said pulses for producing a train of sampling pulses,
(c) means for utilizing said sampling pulses for sampling a predetermined portion of each pulse received by said receiving means,
(d) regenerating means responsive to said sampling pulses for producing pulses of a predetermined duration corresponding to the signal pulses received by said receiving means,
(e) means for counting the number of said sampling pulses,
(f) means responsive to a predetermined count of said counting means for stopping the operation of said sampling-pulse-producing means, and
(g) means for transmitting the output of said regenerating means.

3,188,388
VOICE INFLECTION DETECTION CIRCUIT
Gosung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,327
7 Claims. (Cl. 179—1)



1. An inflection detection system for the fundamental frequency contained in a complex wave comprising:
(a) amplifier means responsive to said complex wave for generating an output signal;
(b) amplitude detecting means responsive to variations in the output of said amplifier for generating an output signal pulse;

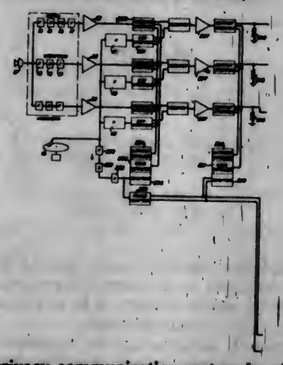
(c) an integrating network responsive to pulses from said amplitude detecting means for applying a corrective signal to said amplifier to vary the amplification of the same to insure a uniform intensity output signal;
(d) an integrating pulse shaper connected to said amplitude detecting means and responsive to pulses therefrom to generate an output pulse having a predetermined duration;
(e) a balanced integrator connected to said integrating pulse shaper and responsive to said output pulses for generating an output voltage indicative of the frequency of the output pulses from said amplitude detecting means; and
(f) an inflection circuit responsive to said output voltage of said balanced integrator for generating an indication of variation in frequency from a median frequency.

3,188,389
SOUND REVERBERATING DEVICE
Adam J. Jamicki, 3813 Bernard St., Chicago 18, Ill.
Filed Jan. 18, 1962, Ser. No. 168,312
10 Claims. (Cl. 179—1)



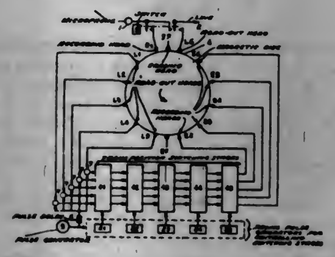
1. Apparatus for delaying an electric signal for a controlled predetermined time interval, comprising a first electromagnetic device having a member movable along a linear path in accordance with the waveform of an electric current supplied thereto, a helical coil spring secured at one end to said movable member, a second electromagnetic device for producing an electric current having a waveform corresponding to mechanical vibrations supplied thereto, means for securing the other end of said spring to said second electromechanical device to impart mechanical vibrations thereto, and a resilient damping member partially compressed within said spring, said damping member extending substantially throughout the length of said spring.

3,188,390
SIGNAL TRANSMISSION WITH SECRECY
Milton E. Mohr, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 20, 1943, Ser. No. 514,996
5 Claims. (Cl. 179—1.5)



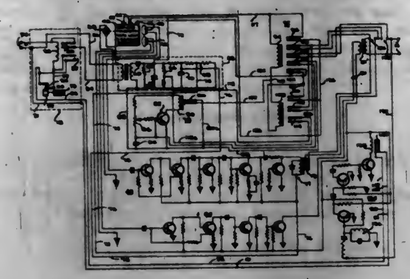
1. In a privacy communication system in which coded message waves are in the form of impulses of differing amplitude with equal spaces between them, means for transforming such waves into an uninterrupted output voltage wave of stepped amplitude comprising means to sample the coded message waves at equal intervals at their peak amplitudes, means to place a charge on a condenser that is proportional to the coded message waves at the instants of sampling, and means for continuously taking off as output the voltage existing across said condenser.

3,188,391
PRIVACY DEVICE FOR TELEPHONE SYSTEMS
François Henri Raymond, Saint-Germain-en-Laye, and Jean Henri Lemoine, Rueil-Malmaison, France, assignors to Societe d'Electronique et d'Automatisme, Courbevoie, Seine, France
Filed Sept. 27, 1961, Ser. No. 141,107
Claims priority, application France, Oct. 10, 1960, 840,895, Patent 1,276,733
4 Claims. (Cl. 179—1.5)



1. In a device for securing privacy in telephone communications wherein the communication is recorded on one portion of a moving record carrier, and the recorded communication is picked up by a plurality of read-out heads spaced apart along one section of the path of travel of the record carrier, and the separate parts of the communication picked up by the different read-out heads are transposed in time sequence and re-recorded by a like plurality of recording or read-in heads arranged in spaced relation along another portion of the path of travel of said record carrier, an improved switching system for transposing the fractional parts of the communication picked up by the different read-out heads and supplying the fractional parts to different ones of the read-in heads in a predetermined time sequence which may be varied, said switching system comprising a plurality of switching stages arranged in cascade, each stage comprising a control relay having an operating winding and one switch tongue for each read-out head, said tongues being operated from one position to another upon energizing the relay winding, each switching stage further including output connections equal in number to the number of read-out heads and connected to the relay tongues of the next succeeding switching stage, a pair of contacts for each tongue element arranged to be engaged by the tongue in said two positions, said pair of contacts being connected to the output connections of its stage to effect connections from the tongues of each stage to the output connections of the same stage according to one pattern when the tongues are in one position, and according to another pattern when the tongues are in the other position, the tongues of the first switching stage being connected to be energized from the read-out heads respectively, and the output connections for the last switching stage being connected to energize the read-in heads for re-recording the fragmentary parts of the communication in a different time sequence determined by the positions of the tongue elements in the various switching stages.

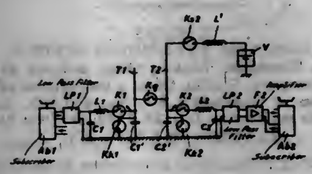
3,188,392
TELEPHONE BURGLAR ALARM SYSTEM WITH SUCCESSIVE ALARM SIGNAL TRANSMISSION MEANS
Edward E. Ferrell, 314 W. 6th St., Sanford, Fla.
Filed Feb. 9, 1962, Ser. No. 172,256
2 Claims. (Cl. 179—5)



1. In a telephone subscriber station having a telephone line connection to a central station, said central station having means responsive to dialing pulses from said subscriber station to connect said subscriber station to another station, signal detection means for deriving a signal in response to the occurrence of a predetermined event in the locale of said subscriber station, first message reproducing means actuable in response to said signal for transmitting recorded dialing pulses to the central station whereby said another station receives ringing pulses, second message reproducing means actuatable at a predetermined interval after actuation of said first message reproducing means for transmitting a recorded voice signal to said another station, means for recycling indefinitely the sequence of transmitting said dialing pulses and said voice signals in the event of no response at said another station to said ringing pulses, said recycling means including an endless tape loop having a conductive strip located thereon, contact means including first, second and third contacts located adjacent said endless tape loop for engagement with said conductive strip, said second contact being connected to a source of power, first relay means energizable when said conductive strip bridges said second and another of said contact means to connect said first message reproducing means to said telephone line, second relay means energizable to disconnect said first message reproducing means from the telephone line and to simultaneously connect said second message reproducing means to said telephone line, said recycling means further including a relay timing circuit the timing interval of which is initiated responsive to the energization of said second relay means, the relay of said relay timing circuit being energized to disconnect said first and second relay means at the end of said timing interval, whereby said sequence of energization of said first and said second relay means may be repeated responsive to engagement of said conductive strip with said contact means, and means at said subscriber station responsive to a tone signal received from said another station for de-energizing both message reproducing means at said subscriber station.

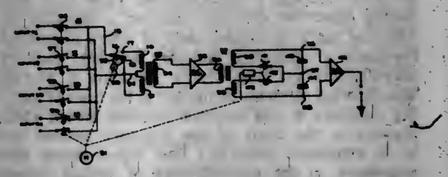
3,188,393
TIME-MULTIPLEXING TELEPHONE SYSTEM
Walter Emil Wilhelm Jacob, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Aug. 22, 1960, Ser. No. 51,158
Claims priority, application Sweden, June 29, 1960, 6,312/60
3 Claims. (Cl. 179—15)

1. In a time-multiplexing system wherein a number of subscribers are connectable to a communication line, an inductance, filter means having a shunt capacitor forming together with said inductance an oscillator circuit, switching means for connecting said line to each subscriber through said inductance and filter means, said switching means being closed and opened at a time τ to transmit a pulse between two subscribers and said oscillator circuit having a natural oscillation period which is substantially twice time τ, a common charging circuit for charging said oscillator circuit of one of said subscribers, said charging circuit comprising a signal source and an inductance, switching means for connecting the



charging circuit to the communication line, said signal source providing a signal pulse symmetric over substantially half of time τ and having minimum amplitudes at zero time and time τ, respectively, across the oscillator circuit of a subscriber when said subscriber is connected to the communication line through the switching means and said charging circuit is connected to the communication line for a time less than τ, the value of said inductance in said charging circuit being less than the value of said inductance in said oscillator circuit of said subscriber.

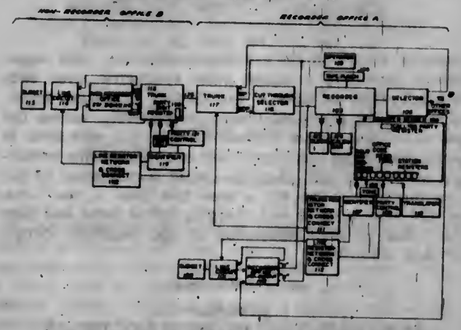
3,188,394
LOW-LEVEL TIME DIVISION MULTIPLEX SYSTEM
Lonnie S. McMillian, Jr., and John H. Searcy, Fort Lauderdale, Fla., assignors to Radiation, Inc., Melbourne, Fla., a corporation of Florida
Filed Sept. 12, 1961, Ser. No. 137,697
10 Claims. (Cl. 179—15)



1. A time division multiplex system for low-level analog signals comprising: a plurality of input channels, each channel including means, effective when energized, for sampling the analog signal conveyed thereby; means for sequentially energizing said sampling means, each for a predetermined period of the same duration for all of the channels; an output channel including magnetic core means having primary winding means and secondary winding means; switching means coupled to each of said sampling means for alternately applying the signal sampled thereby during each period to respective first and second equal portions of said primary winding means for equal parts of the period to reverse the polarity of the signal applied to said primary winding means at the conclusion of each part of the period, so that said magnetic core means is subjected to flux reversals of equal magnitude and duration during each period and is absent any residual magnetism at the conclusion of each

period, the signal induced in said secondary winding means during each period thereby having an amplitude and phase representative respectively only of the magnitude and polarity of the analog signal from which it is derived; means coupled to said secondary winding means for amplifying each induced signal; synchronous converter means for converting each amplified signal cycle to a D.C. pulse of magnitude and polarity proportional to the amplitude and phase of said amplified signal cycle; and means for synchronizing the operation of said sequentially energizing means, said switching means and said synchronous converter means.

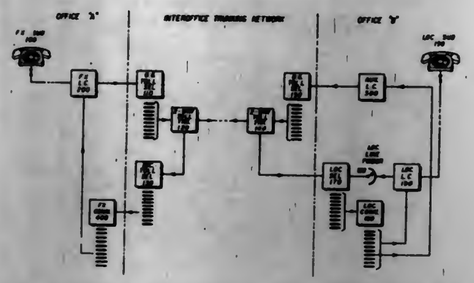
3,188,395
AUTOMATIC TELEPHONE SYSTEM
William H. Blashfield, Galion, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Continuation of application Ser. No. 677,953, Aug. 13, 1957. This application July 24, 1962, Ser. No. 214,782
22 Claims. (Cl. 179—17)



1. In an automatic telephone system having switching means for establishing connections between subscriber lines in the exchanges in the system, and ticketing equipment for making a record of at least certain of said connections; a common marking means including a plurality of marking members, each of which is operative as energized to represent a predetermined value of a digit of a calling subscriber directory number, a plurality of identification marking means, each of which is connected to represent a subscriber directory number, each of said identification marking means including a plurality of identification elements connected to the ones of said marking members in said common marking means which correspond to the digits of the directory number assigned to its associated subscriber line, signal means operative responsive to the establishment of certain connections over said switching means by calling subscriber to apply signals over the established connection to the identification marking means for the calling line and the ones of the common marking members connected thereto, and a common detector means operative in each line identification cycle to scan each of said marking members according to a predetermined pattern and to provide signals indicating the ones of the conductors having said marking signals thereon.

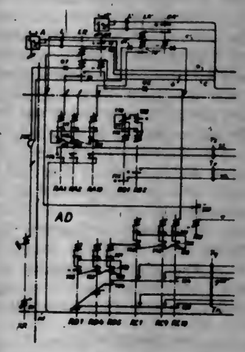
13. In a telephone system, a multiparty line connected to a line circuit having a control lead, each station on said multiparty line adapted to originate calls, a signal voltage, a matrix having a unique input point for each station on said line, means for applying said signal voltage to said control lead responsive to any one of said stations originating a call, and means for selectively transmitting said signal voltage to the matrix input point corresponding to the station originating the call whereby said station may be identified.

3,188,396
FOREIGN EXCHANGE TRUNKING
Gordon F. MacFarlane, West Vancouver, British Columbia, Canada, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 3, 1962, Ser. No. 184,795
6 Claims. (Cl. 179—18)



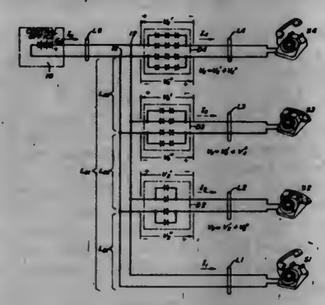
2. In a telephone system, a first exchange including switching means and a called station, a second exchange including a calling station, switching means connected to said calling station, and control means, said second exchange switching means controlled by the calling device at said calling station to extend a connection to said control means, said control means operated in response to extension of said connection to automatically extend said circuit connection to said first exchange switching means and automatically operate said first exchange switching means to further extend said connection to said called station.

3,188,397
TELEPHONE SYSTEM FOR CENTRALIZING OF PBX-EXCHANGES
Anders Karlby Bergmann, Galion, Ohio, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 22, 1960, Ser. No. 77,607
Claims priority, application Sweden, Dec. 23, 1959, 12,126
3 Claims. (Cl. 179—27)



1. In an automatic telephone exchange, subscribers' lines, crossbar switches, links, registers and a marker cooperating with said registers and switches to set up communications between said lines, a multiple-digit number being assigned to each of said lines, several of said subscribers' lines forming a separate group of lines, additional crossbar switches, links and registers being provided for said group, some of the lines in said group forming sub-groups, an individual short telephone number being assigned to each line in each sub-group for use for traffic between the lines within the sub-group; a relay for each sub-group; means for connecting a calling line on one of said sub-groups through said additional crossbar switches to one of said additional registers; means operating the relay of the respective sub-group from said register when the short telephone number of a called subscriber's line is registered in the register and the register is connected to the marker, the marker receiving said short number from the register cooperating with said relay to set up a connection between the calling line and the subscriber's line within the sub-group which corresponds to the registered short telephone number.

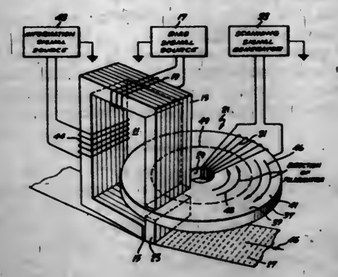
3,188,398
TRANSMISSION IMPROVEMENT IN PARTY-LINE TELEPHONE SYSTEMS
Alessandro Busala, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 27, 1961, Ser. No. 141,147
3 Claims. (Cl. 179—35)



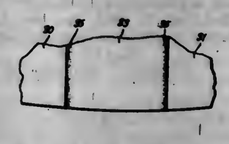
1. In a party-line telephone system, a central office comprising a source of common battery current; a plurality of subscriber loops; a main transmission line; each of said loops having one end connected across said main line and having another end connected across a telephone set; said main line connecting said central-office source of common battery current to each of said loops; and a plurality of semiconductor networks inserted serially in said loops, said networks being capable of bilateral conduction and having various direct-current resistances for dissipating direct-current power to insure a substantially equal flow of said common battery current in said loops, said networks further having alternating-current resistances which are substantially less than said direct-current resistances when said common battery current flows through said networks.

3,188,399
MAGNETIC TRANSDUCING ASSEMBLY
Donald F. Eldridge, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Nov. 28, 1960, Ser. No. 72,122
11 Claims. (Cl. 179—100.2)

1. A magnetic transducing assembly comprising: a stationary magnetic control element; a magnetic transducer magnetically coupled to said element; said transducer having a wide transducer path including a nonmagnetic gap, said transducer path normally having a very high reluctance, said control element coupled to said transducer and for enabling small portions of said transducer path to assume a very low reluctance in a predetermined manner; and means coupled to said transducer for supplying an information signal, means coupled to said control element for activating said control element with a predetermined control signal so that the transducing action of said transducer is controlled by said control element in accordance with said activating means.



3,188,400
FERRITE COATING
Michel B. Vilensky, San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Jan. 9, 1961, Ser. No. 81,479
5 Claims. (Cl. 179—100.2)

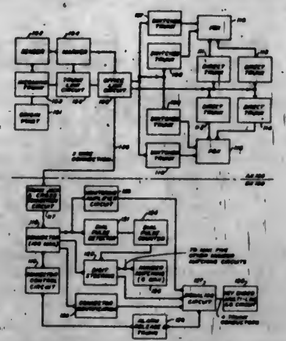


4. A magnetic head assembly including a pair of ferrite pole elements and a vitreous spacer element firmly united to each of the pole elements, the vitreous spacer element including approximately 35% of a soda-lime fluxing glass, approximately 40% of a lead type wetting glass, and approximately 25% of a pulverized ferrite material corresponding to the material of the ferrite pole elements, the pulverized ferrite material being sufficiently fine to pass a 325 mesh, the melting temperature of the fluxing glass and wetting glass being below that of the ferrite material, and there being microstructural transition layers consisting of ferrite solid solutions at each junction surface between the spacer element and a ferrite pole element.

3,188,401
SELECTIVE SERVICE OBSERVING CIRCUIT
William G. Barrett, Middletown, and George E. Koch, Middletown Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 15, 1961, Ser. No. 152,427
11 Claims. (Cl. 179—175.2)

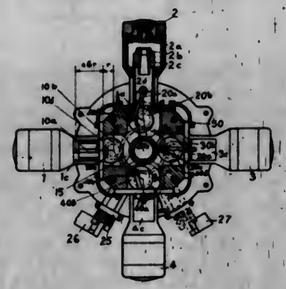
1. In a telephone system including a plurality of attendant-controlled private branch exchanges each associated with a respective one of a plurality of trunks, a service observing circuit comprising means for storing a plurality of numerical indications each corresponding to the calling number of a respective one of said private branch exchanges, means responsive to dial pulses on any one of said trunks for comparing the number corresponding to said dial pulses with the numbers corresponding to said indications, and means responsive only to a match between a stored one of said numerical indications and a number corresponding to said dial pulses as determined by said comparing means for generating a service observ-

ing alerting signal, whereby service observing may be restricted to calls made to said private branch exchange



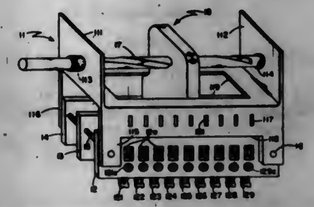
attendants and avoided with respect to calls processed automatically by said exchanges.

3,188,402
STEP SWITCH FOR OPERATION OF FOUR LOAD SWITCHING CONTACTS FOR REGULATING TRANSFORMERS
Karl Bühler, Nussbaumen, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Sept. 7, 1961, Ser. No. 136,580
Claims priority, application Switzerland, Sept. 7, 1960, 10,125/60
3 Claims. (Cl. 200—4)



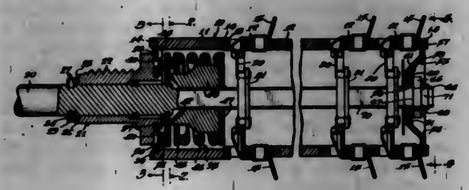
1. In an electrical switching device for actuating a plurality of sets of load switching contacts of a regulating transformer in a sequential manner, the combination comprising a main driving spur gear mounted for rotation about its axis, a contact operating spur gear for each set of load switching contacts, said contact operating spur gears being meshed with and arranged in spaced relation about the periphery of said main spur gear, a crank plate mounted on each of said contact operating spur gears, a crank rod for each of said crank plates and having one end thereof connected on said crank plate by an articulated joint for rotation about the axis of the contact operating spur gear, a piston connected to the opposite end of each said crank rod by an articulated joint, and a stationary guide cylinder for and receiving each said piston, each said set of load switching contacts being constituted by a stationary contact mounted internally of the guide cylinder correlated thereto and a movable contact mounted on the head of the piston operating therein, said sets of movable and stationary contacts being actuated in sequence by rotation of said main spur gear and being closed only when said crank rods and pistons occupy essentially their outermost position, the length of each said crank rod being greater than n but less than $6n$ wherein n constitutes the radius of crank rotation, and movement of said contacts between their full open and closed positions is effected with an angle of crank rotation between 150 and 240 degrees.

3,188,403
SELECTIVE MULTIPLE SWITCH
Marcel S. Semo, 12 La Grange St., Chestnut Hill, Mass.
Filed Dec. 6, 1961, Ser. No. 157,490
1 Claim. (Cl. 200—5)



A selective multiple switch comprising: a frame, a control rod containing intermediate threading and supported by said frame, a connector member threadably moveable along said rod by rotation of said rod, and at least three arrays of separate electrical contacts; each array of contacts being mounted on a separate parallel insulating panel with the wiring ends in the same direction with the result that all the wiring ends extend from a single side of the switch; said insulating panels being supported by said frame; said connector member having conductive means which provides selective electrical connection between a contact in one array and a contact in a second array as said connector member is moved along said rod.

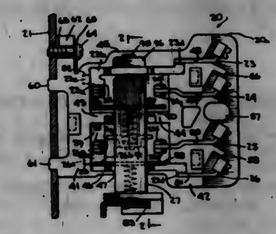
3,188,404
ROTARY ELECTRIC SWITCH WITH INTERFITTING MEANS
Ludwig J. Fichter, Crystal Lake, Ill., assignor to Oak Manufacturing Co., a corporation of Delaware
Filed May 29, 1962, Ser. No. 198,534
8 Claims. (Cl. 200—14)



1. In a rotary switch, a casing having front and rear ends, a mounting member at said front end, said mounting member being detachably interlocked with said casing front end against rotation with respect to said casing and movement inwardly of said casing, a rotary switch operating shaft within said casing and journalled in and extending outwardly from said mounting member, said shaft having an index portion intermediate the ends thereof, a retaining ring separate from said shaft and received on said shaft in abutting relationship with said member to hold said shaft against movement rearwardly of said casing and position said shaft index portion within said casing, means effectively preventing relative rotation between said ring and said shaft and retaining said ring operatively axially fixed on said shaft, means defining pockets about said shaft index portion and stationary with respect to said casing, balls releasably and normally received in said pockets, means disposing said balls in spaced

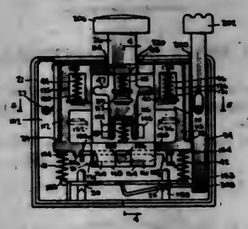
relationship about said shaft index portion and mounting said balls for rotation with said shaft, a thrust member adjacent said balls, resilient means including a spiral compression spring telescoped on said shaft index portion and seated against said thrust member for urging said thrust member against said balls and said balls into said pockets, and urging said shaft rearwardly of said casing to seat said ring against said mounting member, an end member seated against the rear end of said casing and having a central opening receiving said shaft with an end of the shaft extending outwardly from said end member, a spring washer received on said shaft outwardly of said end member and seated against said end member, a retaining member on said shaft rearwardly of said spring washer and seated against said spring washer for stressing said spring washer and resiliently urging said end member against said rear end of said casing, said retaining member having a first collar extending rearwardly about said shaft, and a second collar extending through said opening to center said shaft relative to said casing and align said balls with said pockets, and means locking said retaining member on said shaft and including a flattened side of said shaft and said first collar engaging said flattened side.

3,188,405
MULTI-POLE RELAY WITH INTERCHANGEABLE SPRING BIASED CONTACT STRUCTURE
John Scholl, Jr., Elmsford, N.Y., assignor to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York
Filed Aug. 30, 1961, Ser. No. 134,881
1 Claim. (Cl. 200—16)



A contact member comprising a molded insulating piece having a chamber closed on one side and open on the other side and having a top wall, a bottom wall and two end walls, oppositely positioned members intermediate said top and bottom walls to define said chamber into upper and lower portions and spaced to receive a movable contact carrier, a pair of fixed contacts mounted in said insulating piece and laterally spaced on opposite sides of the upper portion of said chamber and being intermediately positioned between said top wall and said oppositely positioned members, a second pair of fixed contacts mounted in said insulating piece and laterally spaced on opposite sides of the lower portion of said chamber and being intermediately positioned between said bottom wall and said oppositely positioned members, a contact carrier mounted in said insulating piece between the first pair of contacts and between the second pair of contacts, means on the open side for holding said carrier in the chamber, said contact carrier having three slots aligned in the direction of movement of said carrier forming upper and lower slots and an intermediate slot and having two upper and lower movable contacts in said slots to engage said pairs of fixed contacts in various relationships, said carrier having in said intermediate slot a spring with one of said movable contacts mounted at one end and a spring support with a socket for receiving the other end of said spring, said carrier having a partition with a recess forming a bottom to said intermediate slot, said spring support having in one position a projection fitting in said recess to hold said spring with said contact in an upper normally open position for engaging said first pair of fixed contacts and in the reverse position holding said spring with said contact as a lower contact in a normally closed relationship with said second pair of fixed contacts and having flanges for engaging said oppositely positioned members to provide on said normally closed lower contact in said intermediate slot a contact spring pressure independent of said carrier.

3,188,406
MULTIPLE PLUNGER ELECTRICAL SWITCH FOR SEQUENTIAL CONTACT OPERATION AND DYNAMIC BRAKING
Arthur Clayton Scribner, Rowayton, Conn., assignor to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York
Filed Jan. 5, 1961, Ser. No. 80,862
11 Claims. (Cl. 200—17)

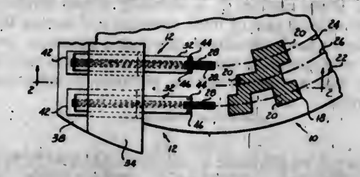


2. In an electrical switch; fixed main contacts, a main contact carrier reciprocally mounted to move along a line of movement in and out of engaging position with said main contacts, resilient means engaging said carrier for urging said carrier out of engaging position, a first and second pair of fixed auxiliary contacts spaced along the line of movement of said contact carrier, a contact plunger reciprocally mounted on said main contact carrier to move in the direction of said contact carrier to engage the first pair of auxiliary contacts on movement in main contact engagement and to engage the second pair of auxiliary contacts on movement from the main contact engagement, resilient means mounted between said plunger and carrier for urging said plunger out of engaging position with said first pair and said main carrier, said plunger being normally spaced from said main carrier along the line of movement to provide an initial leading advance into auxiliary contact engaging position of said plunger over main contact position of said carrier, and said plunger resilient means returning said plunger to a position out of contact with either of said pairs of said auxiliary contacts on maintained engagement of the main contact carrier and on disengagement of said contact carrier from the engaging position said main resilient means forcing said plunger in cooperation with said plunger resilient means into engagement with the second pair of auxiliary contacts.

3,188,407
BRUSH AND HOLDER ASSEMBLY
Costas Avgerinos, Wilton, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 6, 1961, Ser. No. 143,384
4 Claims. (Cl. 200—24)

1. A brush assembly for contacting a relatively movable conductive area including in combination a plurality of light elongated brushes of resilient conductive material, a support, means mounting said brushes on said support in intimate side-by-side relationship with a predetermined

length of said brushes extending outwardly from said support to provide indepedently movable portions of said brushes remote from said support adapted lightly to contact said relatively movable conductive area, an elongated resilient stabilizer element form of a material stiffer than



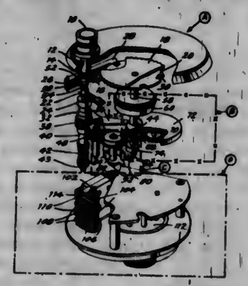
said brush material and means mounting said stabilizer element on said support with a length of said stabilizer element extending outwardly from said support to make contact with all of said brushes on a line extending across the brush lengths.

3,188,408

INTERVAL TIMER WITH CONTROLLED TIME DELAY MEANS

James W. Farmer, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Aug. 31, 1961, Ser. No. 135,352
19 Claims. (Cl. 200—38)



1. An interval timer for periodically causing a plurality of devices to operate at discrete time intervals comprising: a control shaft system; a timing system including timing means coupled to said control shaft system whereby operation of said control shaft system drives said timing means; a switch drive system having input and output means; means coupling said input means of said switch drive system to said control shaft system whereby operation of said control shaft system drives said switch drive system; escapement means coupled to said output means of said switch drive system for controlling the movement thereof; said escapement means being driven by said timing means whereby the movement of said escapement means causes a plurality of devices to periodically operate at discrete time intervals.

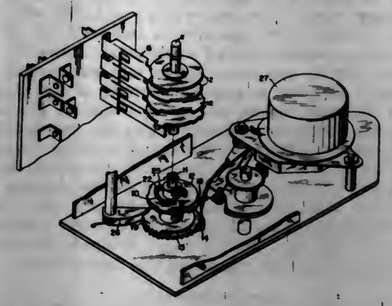
3,188,409

MOTOR DRIVE, CAM ACTUATED ELECTRICAL MULTI-SWITCH WITH RATCHET ESCAPEMENT

Wallace L. Linn, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,153
7 Claims. (Cl. 200—38)

1. A variable timing device comprising: a drive means; a shaft driven by said drive means; a plurality of cams coupled to said shaft; a plurality of movable switch elements actuated by said cams; a floating assembly being loosely fitted on said shaft to have a floating characteristic thereon, said floating assembly comprising a variable cam and a partial ratchet fixedly coupled in spaced parallel relationship by a hub means; said variable cam having a shoulder; a spring means fixedly coupled between one of said plurality of cams and said floating assembly for providing lost motion coupling therebetween; an initial position between said one of said plurality of cams and said floating assembly; and a means engageable with said



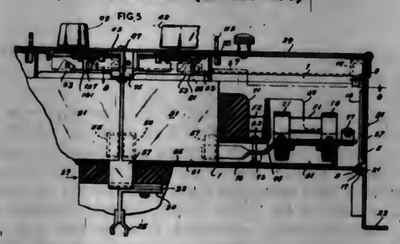
shoulder for retaining said floating assembly at a predetermined position as said plurality of cams are displaced thereby storing energy in said spring means, said drive means actuating said floating assembly until said floating assembly disengages said drive means thereby releasing said energy stored in said spring means causing said floating assembly to return to its initial position with said one cam, said floatin gassembly providing an additional variable time period.

3,188,410

ENCLOSED SWITCH WITH DEFEATABLE DOOR INTERLOCK

Lester A. Hercules, St. Louis, Mo., assignor to Frank Adam Electric Company, St. Louis, Mo., a corporation of Missouri

Filed Aug. 26, 1960, Ser. No. 52,234
5 Claims. (Cl. 200—50)



1. In a fused switching unit, the improvement that comprises an enclosure having back and side walls and an open front, a door hinged at one end of the enclosure to extend partially across the front opening, fuse holders mounted within said enclosure behind said door, a panel fixed to the front of said enclosure adjacent the free end of said door, a switch handle pivoted on the outer surface of said fixed panel, a switch mounted within the enclosure in spaced relationship behind said fixed panel, a door latch member movably mounted behind said fixed panel, said latch member having a part exposed for manipulation from the exterior of said panel and door, a switch-operating member movably mounted behind said fixed panel for actuation by said switch handle and for actuation of said switch, and interlock means actuated by said switch-operating member and cooperable with said door latch member to lock the door latch member when the switch

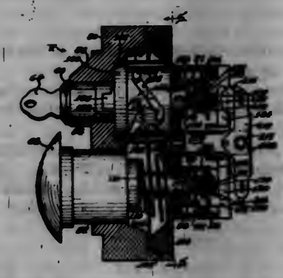
handle is in its switch-closed position, said interlock means comprising an interlock member mounted upon said switch-operating member for movement relative thereto, crank means actuated by the switch handle for actuating said switch-operating member and having a lost-motion connection therewith, so as to permit limited relative movement between the handle and switch-operating member in the switch-on condition, said crank means having a direct connection with the interlock member, thereby to permit movement of the interlock member clear of the latch member in the switch-on condition.

3,188,411

RUN BUTTON WITH SAFETY LOCKOUT FOR A PRESS CONTROL CIRCUIT

Kurt K. Luenser, Monee, Ill., assignor to Verson Allsteel Press Company, Chicago, Ill., a corporation of Delaware

Original application Jan. 29, 1959, Ser. No. 789,932, now Patent No. 3,056,481, dated Oct. 2, 1962. Divided and this application Aug. 21, 1961, Ser. No. 132,775
1 Claim. (Cl. 200—50)



A switch construction comprising a first operator axially movable between first and second positions for controlling a set of contacts, a second axially movable operator for controlling another set of contacts, a manual push button connected to said second operator, interlock means engageable by said both operators for preventing the movement of said second operator when said first operator is in its first position, said first operator having a plurality of lugs projecting therefrom transverse to its longitudinal axis, a stationary sleeve encircling said first operator and having peripheral angularly disposed camming slots therein in which said lugs are slidably engaged, said first operator having an elongated base, a drive cage having a plurality of fingers embracing said elongated base and rotatably mounted within said sleeve, a key operated tumbler connected to said drive cage for rotating said cage and said first operator whereby said lugs slide in said camming slots to move said first operator between said first and second positions, said elongated base having a slot in its bottom, a pin movably mounted in said slot in a position transverse to said first operator and extending therebeyond, a pair of V-shaped slots in said sleeve into which the ends of said pin project to lock first operator in its first and second positions, and a spring extending between said cage and said pin to hold said pin in said slot.

3,188,412

RACKING MECHANISM FOR METAL ENCLOSED ELECTRIC SWITCHGEAR

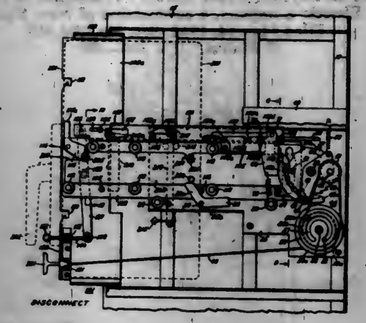
Philip C. Netzel, Swarthmore, Pa., assignor to General Electric Company, a corporation of New York

Filed Nov. 27, 1961, Ser. No. 154,942
7 Claims. (Cl. 200—50)

1. In switchgear apparatus: a relatively stationary enclosure unit including a pair of spaced sidewalls; a movable unit disposed between the side walls of said enclosure unit and adapted to support an electric circuit interrupter; and a racking mechanism for moving said movable unit relative to the enclosure unit between different predetermined positions, the racking mechanism comprising:

(a) a pair of interengageable camming elements mounted on said enclosure and movable units, respectively, with one of the elements being movable relative to the other,

(b) rotatable actuating means for moving said one camming element, said one element coacting with the



other camming element upon angular advancement of said actuating means to drive said movable unit between its predetermined positions,

(c) a driving pawl disposed adjacent to said actuating means for advancing the same upon oscillation of the pawl,

(d) a manually operative handle, and

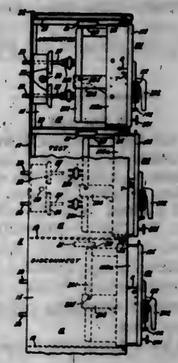
(e) a flexible connecting member anchored to said handle and coupled to said pawl for oscillating the pawl, and thereby incrementally advancing said actuating means, upon operation of the handle.

3,188,413

EXPANDABLE SWITCHGEAR HOUSING FOR DRAWOUT ELECTRIC APPARATUS

Philip C. Netzel, Swarthmore, Pa., assignor to General Electric Company, a corporation of New York

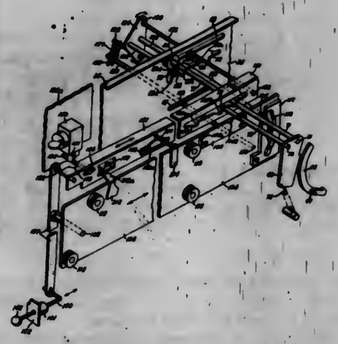
Filed Nov. 27, 1961, Ser. No. 154,960
13 Claims. (Cl. 200—50)



1. Means for enclosing electric apparatus comprising: a metal-walled housing having an opening therein, the housing including a retractable inner part inseparably attached to a wall of the housing for telescopic movement through said opening so as partially to protrude without the housing; a metal access cover for closing said opening; and means for supporting said cover on said inner

part, whereby the cover travels with the inner part on movement thereof; said inner part including means for receiving electric apparatus and means for maintaining the apparatus substantially wholly enclosed when the inner part is in its protuberant disposition.

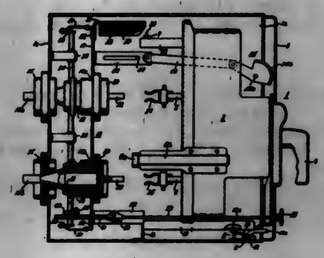
3,188,414
RELEASABLE STOP MEANS FOR A MOVABLE UNIT IN A STATIONARY ENCLOSURE
Albert M. Boyden, Upper Darby, Pa., assignor to General Electric Company, a corporation of New York
Filed May 14, 1962, Ser. No. 194,360
7 Claims. (Cl. 200—50)



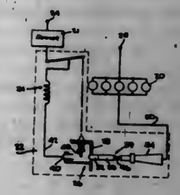
1. In combination:
(a) a relatively stationary enclosure unit;
(b) a movable unit located in the enclosure unit, said enclosure unit including means for supporting said movable unit for reciprocating movement between a first position within said enclosure unit and a second position spaced apart from said first position;
(c) means for driving said movable unit between said first and second positions;
(d) releasable stop means operative automatically when said movable unit reaches said second position for preventing continued movement of the movable unit until released;
(e) manually operative reset means for releasing said stops means; and
(f) means effective upon stop-means-releasing operation of said reset means to maintain said stop means released while said movable unit remains in its second position.

3,188,415
SWITCHGEAR DISCONNECT MECHANISM
Philip C. Netzel, Millmont Park, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 11, 1962, Ser. No. 243,922
12 Claims. (Cl. 200—50)

12. In electric switchgear apparatus, an enclosure adapted to receive, in a releasably fixed disposition between opposing sidewalls and behind a front panel of the enclosure, a removable circuit breaker having a first pair of disconnect members extending rearwardly therefrom, the enclosure comprising:
(a) a rear wall having stationary line terminals mounted thereon;
(b) an intermediate member supported immediately in front of said rear wall for horizontal reciprocating movement relative thereto, said intermediate member having mounted thereon a second pair of disconnect members disposed in continuous electric contact with the respective line terminals and adapted, when the intermediate member is in a predetermined forward position, separably to engage the disconnect members of said breaker when received in said fixed disposition; and
(c) means for moving said intermediate member to and from its forward position, said means including:
(i) a manually operable actuating member disposed for movement in front of the front panel of the enclosure,
(ii) an angularly movable mechanism coupled to said actuating member for actuation thereby, and
(iii) means connecting said mechanism to said intermediate member to convert the angular motion of said mechanism to horizontal reciprocating motion of said intermediate member.

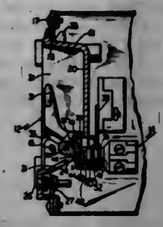


3,188,416
CIRCUIT BREAKER DISCONNECTOR
William J. Schultz, Yonkers, N.Y., assignor to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York
Filed Apr. 25, 1962, Ser. No. 190,143
3 Claims. (Cl. 200—51.09)



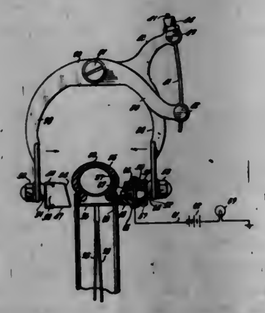
1. Electric apparatus for completing an electrical circuit while maintaining the circuit in open condition during completion or disruption of the circuit comprising a prong having a conductive tip, a receptacle having a prong holder and a conductive socket for receiving said prong with said tip fitting in said socket for transferring current therebetween, electrical means having contacts in make or open relation in series with said socket and tip and having a trip mechanism for opening the contacts, trip means for actuating said trip mechanism independent of the current through said contacts including movable projecting means engageable by said prong to actuate said trip means and said prong having means for actuating said projecting means to render said contacts in an open condition while said tip is forming an engagement with or disengagement from said socket.

3,188,417
ALARM SIGNAL STATION
Donald R. Rasmussen, Upper Montclair, and Benjamin Wendroff, Teaneck, N.J., assignors to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Mar. 18, 1963, Ser. No. 265,643
5 Claims. (Cl. 200—61.08)



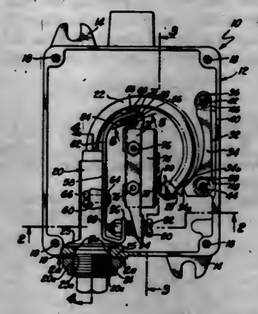
1. In alarm signal station apparatus, the combination of a box having a wall formed with an opening; a closure member for said opening; a frangible element having its ends supported by said closure member; a lever pivotally mounted on said closure member including a handle portion, a portion for breaking said element to give an indication that said lever has been operated; a switch operating arm and a pushbutton type signalling switch mounted in said box including a head engaged by said switch operating arm, a spring mounted on said switch adjacent said head for biasing said lever in a rotational direction to normally maintain said element breaking portion out of bias with said element, and cooperating blade means on said spring and recess means on said switch operating arm for locking said lever in an operated position to give a second indication that said lever has been operated.

3,188,418
BICYCLE BRAKE SWITCH
Charles Albert Pino, 8732 Bay 16th St., Brooklyn, N.Y.
Filed Mar. 8, 1961, Ser. No. 94,186
4 Claims. (Cl. 200—61.12)



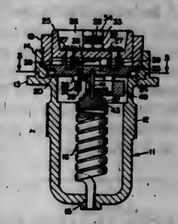
1. A bicycle brake switch comprising a brake pad formed of electrical insulation material, a wheel rim contacting braking surface provided on said pad, a recess defined within said pad and extending to said surface, an electrically conductive bolt provided on said pad and extending across said recess, an electrical contact provided in said recess and projecting from said surface, and an electrically conductive spring provided within said recess, said spring extending between said bolt and said contact and biasing said contact outwardly from said surface.

3,188,419
BOURDON TUBE PRESSURE SWITCH ASSEMBLY
Lilburn S. Barksdale, Los Angeles, Calif., assignor to General Metals Corporation, San Francisco, Calif., a corporation of California
Filed Jan. 15, 1962, Ser. No. 166,167
7 Claims. (Cl. 200—81.9)



1. In a Bourdon tube pressure switch assembly, the combination of:
(a) a housing;
(b) a pressure inlet fitting mounted on and extending into said housing;
(c) a Bourdon tube mounted on and communicating with said pressure inlet fitting;
(d) a switch actuating element on the free end of said Bourdon tube;
(e) a rigid adjustable stop carried by and movable relative to said housing and directly engageable by said Bourdon tube to positively limit straightening deflection thereof;
(f) means for locking said stop in an adjusted position relative to said housing; and
(g) a switch mounted in said housing and having an actuator engageable by said switch actuating element.

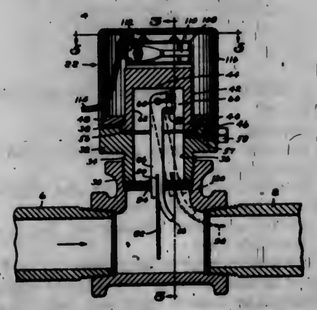
3,188,420
ADJUSTABLE MAGNETIC SNAP-ACTION PRESSURE SWITCH
William D. Huston, Rochester, N.Y., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 5, 1962, Ser. No. 207,562
14 Claims. (Cl. 200—81.9)



9. A pressure switch comprising
(a) a housing,
(b) a helically wound Bourdon tube in said housing having its open end fixed in said housing for connection to a fluid pressure source,
(c) a block fixed to the closed end of said Bourdon tube,
(d) means for oscillatably mounting said block in said housing to rotate coaxially of the helical axis of said tube upon expansion and contraction of said tube,

(e) electrical switch means positioned in said housing,
(f) a lever mounted intermediate its ends on said block and oscillatable coaxially therewith from one position to another to respectively open and close said switch means, and
(g) magnetic means positioned adjacent each of the ends of said lever and tending to attract and hold a respective end with increasing force as the latter approaches said magnetic means, whereby the pressure switch tends to be balanced and less subject to failure resulting from vibrations or shock loads.

3,188,421
FLUID FLOW SENSING MEANS
William G. Rowell, Milton, Mass., assignor to Scully Signal Company, Melrose, Mass., a corporation of Massachusetts
Filed Dec. 21, 1961, Ser. No. 161,133
4 Claims. (Cl. 200—81.9)



1. Fluid flow sensing means comprising a housing having a lower tubular element adapted to be positioned in an opening in the side of a fluid flow line and an upper tubular element closed at its remote end, means for securing the upper and lower tubular elements in fluid-tight engagement at any selected angular disposition relative to each about their common longitudinal axis, a shaft extending through opposite sides of the upper tubular element of said housing whereby the shaft ends will be subject to equal atmospheric pressures, sealing means for preventing leakage along said shaft from the interior of said upper tubular element, a vane fixed with respect to said shaft and positioned beyond said lower tubular element and adapted to be located in the said flow line whereby movement of said vane will cause rotative movement of said shaft, a switch associated with the upper tubular element of said housing, means on said shaft exterior of said housing for actuating said switch as the vane is moved by fluid flow in said flow line, and biasing means acting on said shaft for continuously urging said vane in the direction opposite to said fluid flow.

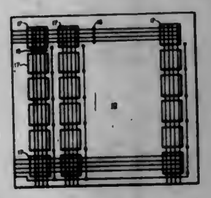
3,188,422
TREADLE-OPERATED TRAFFIC DETECTOR HAVING MEANS FOR REFILLING WHILE MOUNTED IN A ROADWAY
Harry A. Wilcox, Westport, Conn., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Apr. 20, 1961, Ser. No. 104,393
1 Claim. (Cl. 200—86)

A treadle-operated traffic detector for mounting in a road surface and actuation by traffic passing thereover, said detector comprising a first substantially rigid and flat metal base plate, a second substantially flat flexible metal electrical contact plate mounted in subtantially parallel position and closely above said first plate and engageable therewith, both said first and second plates having large surface area in relation to thickness with said second plate having an area smaller than said first plate, said second plate overlying the central part of said first plate and leaving uncovered a strip portion of said first plate adjacent the edges of the latter, a resilient insulating casing attached to said first plate along said strip portion enclosing and supporting said second plate to maintain said second plate normally spaced closely from said first plate thereby forming a thin cavity of large area between the plates and said casing, said thin cavity lying between said first and second plates wherein said second plate is depressed into contact with said first plate by pressure



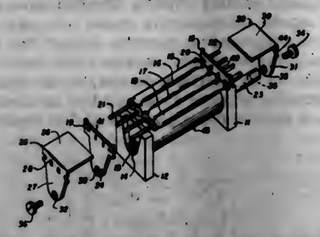
through the upper part of said casing, means in said casing for filling the thin cavity while the detector is mounted in a road surface in operative condition comprising an extended cavity in the casing over said strip portion and outside the edge of the second plate and contiguous with said thin cavity, and said means constituting an access for a needle to be inserted into said cavity by penetration of said casing, said needle serving as a hollow tube for introduction of gas into said cavity whereby the gas pressure is controlled and the sensitivity of the detector is adjusted, and an electrical conductor connected with said second plate and extending through said casing for external electrical connection.

3,188,423
CROSSPOINT SWITCHING ARRAYS
Edward J. Glesner, Skokie, and Kore K. Spelinos, Glen Ellyn, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,237
3 Claims. (Cl. 200—87)



1. A crosspoint matrix comprising: a board of insulating material; sets of printed conductors carried by said board, certain sets of said conductors lying in a substantially straight-line pattern which is oriented in a vertical direction on one side of said board, and other sets of said conductors lying in a substantially serpentine pattern which is oriented in a horizontal direction on the opposite side of said board; pairs of terminals connected to a conductor of said straight line pattern and a conductor of said serpentine pattern respectively; and a plurality of reed relays parallel to said board and arranged in rows and columns on said board, each of said relays having a coil and at least one reed switch operated in response to the energization of said coil and connected between one of said pairs of terminals.

3,188,424
RELAY CONSTRUCTION
Robert K. Else and Arvo Talkio, Oak Park, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 191,238
1 Claim. (Cl. 200—87)



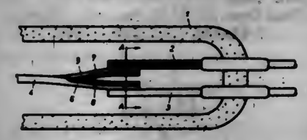
A switching device comprising: a frame structure made of insulating material and having a tubular section with a flange at each end thereof, at least one of said flanges having a depression and the other including at least two apertures located substantially along one section of the periphery thereof; a key member made of insulating material and being insertable within said depression, said key member having also apertures corresponding to said apertures in said flange; a core made of magnetic material and positioned within said tubular section; terminal means embedded in at least one of said flanges; a coil wound on said tubular section and comprising at least one winding, the ends of said coil being connected to said terminals; a pair of flux concentrators being made of magnetic material and substantially L-shaped and being positioned adjacent the external surfaces of said flanges so as to be insulated from said coil, one leg of each flux concentrator being connected to an end of said core and the other leg thereof extending inwardly over said coil toward each other; said flux concentrators including apertures corresponding in location to said apertures in said key member and said flange; and at least two glass encapsulated reed switches having cooperating contact ends and terminal ends, said contact ends being normally opened and responsive upon energization of said coil, said terminal ends extending through said apertures in said key member, said flange and said flux concentrators so as to be in a plane intermediate said coil and said other end of said flux concentrators and to be secured from any material relative motion with said device.

3,188,425
ELECTROMECHANICAL SWITCH FOR USE AS A CROSSPOINT FOR CONVERSATION CIRCUITS
André Jean Henquet and Fernand Sillerne, Boulogne-Billancourt, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 4, 1962, Ser. No. 199,916
Claims priority, application France, June 14, 1961, 864,957, Patent 1,299,665
4 Claims. (Cl. 200—87)



1. An electromechanical switch for use as a crosspoint comprising: at least one set of magnetic reed contacts; means including a permanent magnet of relatively high coercive force for providing a substantially constant flux within operating limits of said reed contacts; an electromagnetic device having a core made of material with a low coercive force, high permeability and a square hysteresis loop; means for reversing the direction of magnetization of said core responsive to electrical pulses of short duration; magnetic circuit means coupling said magnet and said core for carrying substantially no flux when the magnet and core flux are in series aiding and for carrying a high level of flux when the magnet and core flux are in series opposing; and yoke means for completing said magnetic circuit; said yoke means having three branch means, a first of said branch means providing an air gap surrounding one of said contacts, a second branch means providing an air gap surrounding another of said contacts, and a third of said branch means receiving and holding said core.

3,188,426
MAKE BEFORE BREAK MAGNETICALLY-OPERATED REED-TYPE CONTACT
Gerhard Wessel, Kornwestheim, Württemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 2, 1962, Ser. No. 234,960
Claims priority, application Germany, Nov. 22, 1961, St 18,590
1 Claim. (Cl. 200—87)

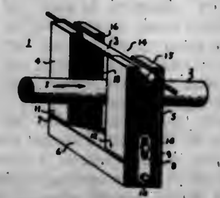


A reed type make before break contact assembly, comprising:
first and second spaced apart stationary contacts;
a bifurcated movable contact having first and second blades;
said first and second blades being mounted to move independently between the first and second stationary contacts and being normally biased so that said blades rest in contact with said first stationary contact;
said first blade including a magnetic part for contacting said first stationary contact;
said second blade including a first part made of conductive material to contact said first stationary contact and a second part made of magnetic material substantially coextensive to and in contact with said first part, to contact said second stationary contact;
said magnetic part of said second blade being spaced closer to said second stationary contact than the magnetic part of said first blade;
said relative spacing of the respective magnetic parts of said blades from said second stationary contact determining the order in which said blades will shift from contact with one stationary contact to the other in response to changing magnetic forces.

3,188,427
ELECTROMAGNETIC CURRENT CARRYING SWITCH
David Cooper, Laszlo De Kornyei, and William B. Zeller, Erie, Pa., assignors to General Electric Company, a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,745
10 Claims. (Cl. 200—87)

1. An electromagnetic device comprising: a magnetic structure adapted to fit about and link the magnetic flux about a current carrying means, said magnetic structure defining a magnetic circuit including in series relation

a first magnetic flux path portion having a low reluctance, a second magnetic flux path portion having a reluctance which is high compared to the reluctance of said first flux path portion and a third magnetic flux path portion having a reluctance higher than that of said second flux



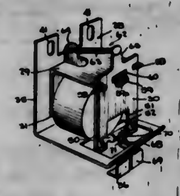
path portion; a magnetically responsive switch shunting said third magnetic flux path portion; and means for varying the reluctance of said magnetic circuit to control the response of said switch with respect to the current in said current carrying means.

3,188,428

RELAY ARMATURE LATCH WITH A RELAY DISCONNECT

John Schelb, Jr., Elmsford, N.Y., assignor to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York

Filed Dec. 29, 1960, Ser. No. 79,398
7 Claims. (Cl. 200—166)



1. In combination with an electromagnet relay having an armature for opening and closing contacts, a reset latch comprising a catch mounted on and movable with said relay armature, an electromagnet having a latch armature mounted to move in and out of engagement with the electromagnet, means for resiliently biasing said latch armature out of engagement with said electromagnet, said latch armature having a roller movable by said armature generally normal to the movement of the relay armature, said catch having a notch surface extending generally parallel to the movement of said roller and receiving said roller on energization of said relay to hold said relay armature in the energized position on deenergization of said relay and permitting said roller to move from said catch on energization of said electromagnet and said catch having a ramp surface extending laterally to the arc of movement of said roller and extending in continuity with said notch surface to provide a smooth transition of said roller from the non-holding position to the holding position on actuation of said relay armature.

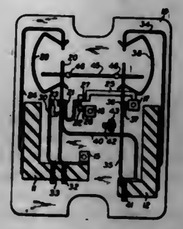
3,188,429

MOTOR STARTING RELAY WITH INITIALLY PARTIALLY SHUNTED OVERLOAD CONTROL

Henry Ehrens and Sidney Weiner, Cranskill, N.J., assignors to Sealed Unit Parts Co., Inc., New York, N.Y., a corporation of New York

Filed July 31, 1963, Ser. No. 298,910
10 Claims. (Cl. 200—113)

1. A starting and overload relay for a motor having a starting winding and a running winding, said relay comprising in combination, dielectric base means; a line terminal, a starting winding terminal and a running winding terminal on said base means; first thermomotive means electrically connected to said line terminal and initially connecting said starting winding terminal to said line terminal, said first thermomotive means, after a predetermined interval of heating by current flow therethrough, disconnecting said starting winding terminal from said line terminal; second thermomotive means normally connecting said running winding terminal to said line terminal through said first thermomotive means and operable, upon heating due to an overload current, to disconnect said running winding terminal from said line terminal; means operable, in the initial position of said first thermomotive



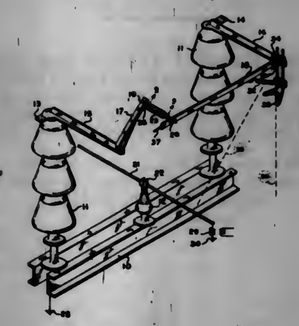
means, to complete a bypass circuit for said second thermomotive means and connecting said running winding terminal to said line terminal through said first thermomotive means; means, including said second thermomotive means, operable upon said first thermomotive means disconnecting said starting winding terminal from said line terminal, to maintain a flow of heating current through said first thermomotive means to maintain it in its disconnecting position; and means operable by said first thermomotive means and effective, upon cooling of said first thermomotive means for return to its initial position, to move said second thermomotive means to a position reestablishing a connection between said running winding terminal and said line terminal.

3,188,430

HIGH-VOLTAGE FUSE CONSTRUCTION WITH TRANSIENT GROUNDING FEATURE

Carroll H. Walsh and Raymond W. Toler, both % Arkansas Power & Light Co., Pine Bluff, Ark.

Filed Jan 2, 1962, Ser. No. 163,582
3 Claims. (Cl. 200—114)



1. A high-voltage fuse construction comprising
a conducting base,
insulating means mounted on said base,
spaced insulated load and source conducting members carried by said insulating means,
a fixed fuse terminal member mounted on the load conducting member,

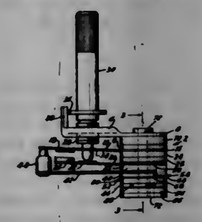
a swingably movable fuse terminal member hinged at one end on said source terminal member and extending toward said fixed fuse terminal member in spaced relationship therewith,
means biasing said swingably movable fuse terminal member for swingable movement along a predetermined path away from said fixed fuse terminal member,
a fuse link bridging the space between said fuse terminal members and normally restraining movement of said movable fuse terminal member,
said fuse link when unfused normally electrically connecting the fuse terminal members and upon fusing releasing the movable fuse terminal member for movement in response to the arc initiated by the fusing of said fuse link and thereby elongating the arc along the path of movement of the unhinged end of said movable fuse terminal member,
additional insulating means mounted on said base,
and a grounded conducting member carried by said additional insulating means,
said grounded conducting member extending to a point adjacent to and spaced from the path of movement of the unhinged end of said swingably movable fuse terminal member.

3,188,431

INFINITE HEAT SWITCH

Robert N. Levine, Catskill, N.Y., assignor to American Thermostat Corporation, South Cairo, N.Y., a corporation of New York

Filed Mar. 22, 1962, Ser. No. 181,633
9 Claims. (Cl. 200—122)



1. A thermostat assembly comprising a support, a pair of contacts, means mounting said contacts on said support for movement toward and away from one another, a pair of terminals on said support, first and second electrical connections mounted on said support and connected to and extending between said terminals and said contacts respectively, and thermostatic means on said support, operatively connected to said contacts, and effective to control the relative position of said contacts in accordance with the temperature sensed thereby, said thermostatic means having a first part directly mounted on said support and a second part extending out from said support, one of said electrical connections between one of said terminals and the contact corresponding thereto comprising a high resistance conductive heater element in operative heat-transfer relation to said first part of said thermostatic means.

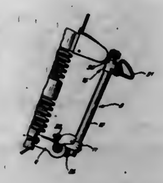
3,188,432

COMPONENT FOR PREVENTING ARC-EROSION IN THE TERMINAL STRUCTURE OF A FUSED CUTOUT

Raymond J. Bronikowski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed May 31, 1960, Ser. No. 32,977
7 Claims. (Cl. 200—127)

1. A fuse cutout device comprising, in combination, an elongated generally hollow fuse tube, rupturable fuse link means, electrically conductive terminal means supported at one end of said fuse tube, said fuse link means connected to said terminal means and extending into said fuse tube and said fuse tube being subject to a build-up of a gaseous media therein as a result of rupture of said fuse link means, said electrically conductive terminal means including a bore communicating with said one end of said fuse tube to provide a passage for discharge of said gaseous media, pressure sensitive means normally



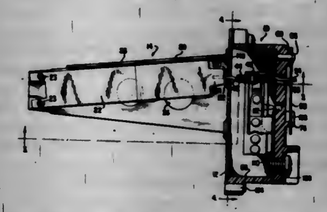
closing said one end of said fuse tube and operative, in response to a build-up of gaseous media in said fuse tube, to open said fuse tube end for discharge of said gaseous media, and means disposed in said bore beyond said fuse tube end and characterized by being resistant to the arc drawn when said fuse link means ruptures and to said gaseous media, said means in said bore extending around the inner bore surface to protect said terminal means from said arc and gaseous media.

3,188,433

THERMALLY RESPONSIVE SWITCH ADAPTED TO FUNCTION AS A HIGH LIMIT SWITCH OR AS A FAN SWITCH WITH A FIXED ADJUSTABLE TEMPERATURE DIFFERENTIAL

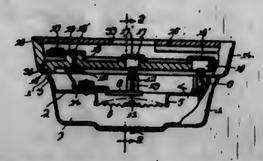
Hollis Lee Randolph, Lakewood, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Jan. 23, 1962, Ser. No. 168,044
13 Claims. (Cl. 200—138)



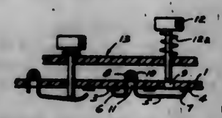
1. A thermally responsive switch comprising,
a switch casing,
a mainspring mounted in the casing,
a movable contact carried by the mainspring,
a fixed contact in the casing,
a pair of levers pivotally mounted in scissors fashion on the mainspring,
adjustment means on the casing,
each of the levers having one end rotatably engaged with the adjustment means,
and a thermally responsive movable element connected with the casing,
the free ends of the levers being positioned in the path of movement of the thermally responsive element for moving the movable contact into and out of engagement with the fixed contact in response to temperature changes.

3,188,434
FIRE DETECTION APPARATUS OF THE COMPENSATION TYPE
Yoshiro Numayama, Kawasaki-shi, Kanagawa-ken, Japan, assignor to Nippon Kasai Tanchiki Company Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 30, 1963, Ser. No. 276,832
Claims priority, application Japan, Apr. 8, 1963, 38/23,944
1 Claim. (Cl. 200—140)



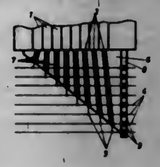
A fire detection apparatus of the compensation type comprising
a heat receiving shell,
a boundary plate secured to the open end of said heat receiving shell,
said heat receiving shell and said boundary plate being of thin sheet metal and having a high coefficient of linear expansion,
the central part of said boundary plate having a cylindrical wall,
the latter being directed toward the inner surface of the bottom of said heat receiving shell,
the lower end of said cylindrical wall being closed by a diaphragm,
said heat receiving shell and said boundary plate defining a heat receiving chamber,
a leak cylinder mounted on said boundary plate and providing communication between said heat receiving chamber and the atmosphere,
a spring member fixed at one end to said boundary plate,
oppositely disposed contacts provided on said diaphragm and on a free end of said spring member,
said contacts being adapted to be connected with an electrical circuit of an alarm device,
an operating member of metal having a low coefficient of linear expansion mounted at both of its ends on said boundary plate,
said operating member being bent at its middle part extending across and above said free end of said spring member, and
an adjusting screw threaded through the middle part of said operating member and adapted to be contacted resiliently with the free end of said spring member.

3,188,435
CONTACT DEVICE FOR PRINTED CIRCUITS
Johan Fredrik Rugsten, Copenhagen, Denmark, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 1, 1962, Ser. No. 234,728
Claims priority, application Denmark, Nov. 7, 1961, 4,421
4 Claims. (Cl. 200—166)



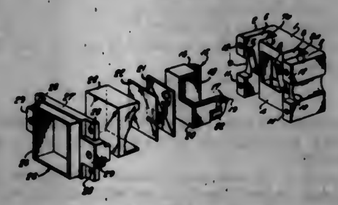
1. A switching device for a printed circuit board bearing on one side a circuit pattern including several terminal contacts, said switching device comprising an insulation board bearing a circuit pattern including terminal contacts and having at least two holes therethrough, a contact spring including a substantially U-shaped loop intermediate the ends of the spring, said loop extending through a first one of said holes from the side of the board bearing said circuit pattern and protruding on the opposite side of the board, an insulation member extending through the protruding loop portion to anchor the spring in the board, each end of said spring being biased into contact engagement with one of said terminal contacts, thereby connecting the two engaged contacts, and a lengthwise displaceable push-button pin protruding through the second hole and into engagement with a branch of the spring extending between the loop thereof and the respective end of the spring, whereby displacement of the pin toward the spring disengages said spring end from the respective contact terminal.

3,188,436
BARE-WIRE MULTIPLE ARRANGEMENT FOR CROSSBAR SWITCHES
Johannes Bernatz, Ludwigsburg-Hohenecke, and Peter Jordan, Fellabach am Wendelstein, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 26, 1963, Ser. No. 270,785
Claims priority, application Germany, Apr. 3, 1962, St 19,040
6 Claims. (Cl. 200—166)



1. A bare-wire multiple for crossbar switches with wire-spring contacts comprising spring plates holding wire-springs of said wire-spring contacts, insulating means juxtaposed to said spring plates having grooves receiving individual terminal tips of said wire-spring contacts, a series of notches substantially normal to said grooves in said insulating means receiving said bare wires and said notches each positioned at a different distance from said juxtaposed spring plate causing individual ones of said bare wires to traverse said grooves at different distances from said spring plates whereby each of said tips can readily be soldered to selective ones of said bare wires.

3,188,437
PUSH BUTTON SIGNAL LIGHT SWITCH WITH REMOVABLE INDICIA
Bernard R. Lauren, Louisville, and Buckley R. Reed, Valley Station, Ky., assignors to K. M. White Company, Inc., Louisville, Ky., a corporation of Kentucky
Filed Dec. 18, 1962, Ser. No. 245,501
8 Claims. (Cl. 200—167)



1. An elevator button switch with removably mounted indicium element comprising an insulator block having a lamp housing and electrical contact elements biased in an open position, a plastic button housing having a translucent button element associated therewith in slidable cooperation with said block and said biased contact elements, a removably mounted inidcium element of translucent plastic material in faying relationship with the top of said button element, a retaining member maintaining the indicium element in said faying relationship, bracket means which fit snugly about said button housing and through which said housing slides and is held in place in the insulator block, and means associated with said bracket and said block for connecting the two together.

3,188,438
TOGGLE SWITCH INSULATOR
John Lovasco, 7008 Rosemead Blvd., San Gabriel, Calif.
Filed Mar. 22, 1962, Ser. No. 181,643
5 Claims. (Cl. 200—168)



1. In combination, a wall structure with a flat, front surface and a forwardly opening switch-receiving opening, a toggle type switch arranged within the opening and having an elongate, forwardly projecting lever, rectangular in cross-section, pivotally mounted on a horizontal axis spaced rearward of the front surface and projecting forwardly therefrom, a cover plate engaging said front surface to overlie the opening and having a flat, rearwardly disposed rear surface and a vertically extending aperture freely receiving said lever and a unitary molded rubber insulator related with the lever and the plate to insulate the lever and seal between the lever and the plate, said insulator having a front portion with a front wall, side walls, and top and bottom walls slidably engaged over the forward end of the lever, a rear portion continuing rearwardly from the front portion and having parallel side walls and rearwardly divergent top and bottom walls, the rear end of the rear portion corresponding in outside configuration with the inside configuration of the aperture and projecting rearwardly therethrough, and a retaining flange projecting radially outwardly from about the rear end of the rear portion and having a flat front surface opposing the rear surface on the plate, the normal longitudinal extent of said insulator being less than the distance between the forward end of the lever and the rear surface of the plate whereby the rear portion is tensioned and the forward portion is thereby yieldingly held in engagement on the lever and the flange is thereby yieldingly urged forwardly toward the plate.

3,188,439
SWITCHPLATE MOUNTED EXTENSION OPERATOR FOR WALL SWITCH
George H. Fullerton, Decatur, Ga.
(1038 Keene Road, Largo, Fla.)
Filed Sept. 20, 1960, Ser. No. 57,239
1 Claim. (Cl. 200—172)

For a wall switch having a switch plate mounted to a wall by a pair of vertically displaced screws passing through the switch plate and a toggle switch actuator extending outward from the wall through the switch plate, said toggle actuator having an uppermost and lowermost position, a switch operator extension comprising: a pair of T-blocks each having an opening extending therethrough from the top to the base for passage of the switch plate wall mounting screws to mount the T-blocks to the switch plate, said T-blocks when mounted having their bases in contact with the outer face of the switch plate, a switch operating member having a T-channel extending vertically along the back portion, the T-channel being of lesser depth than the height of the T-blocks, a pair of passages extending horizontally forward through said operating member from the base of said T-channel, said passages appropriately spaced to provide access to the wall mounting screws for the switch plate and T-blocks when the operating member is mounted on the switch plate through the T-blocks, a chamber forming depression in the base of the T-channel intermediate said passages, said chamber receiving the toggle switch actuator when the operating member is mounted on the switch plate through the T-blocks for actuating the toggle switch actuator as the operating member is moved upward or downward on the T-blocks, an extension means depending downwardly from the operating member whereby it can be moved to actuate the toggle switch actuator from a level below that of the toggle switch

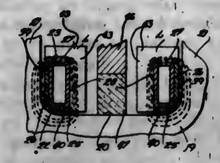


actuator and a spacing between the face of the switch plate and the back of the operating member when it is mounted on the T-blocks, the size of the spacing being substantially the difference between the height of the T-blocks and the depth of the T-channel, a slit located in the base of the T-channel and perpendicular to the longitudinal axis thereof, a strip spring bias means having a first bowed portion and an arm portion at one end of the bowed portion and extending substantially at right angle thereto, said arm portion recessed within said slit with said bowed portion extending downwardly therefrom along the base of the T-channel, said bowed portion bowing outwardly from the T-channel base whereby said outward bowed portion will rest on the upper outer corner of the lower T-block to prevent the operating member from moving from its uppermost to lowermost positions inadvertently and said bowed portion can be flattened between confronting surface portions of the lower T-block and T-channel base when the operating member is moved to its lowermost position by positive actuation.

3,188,440
HIGH FREQUENCY INDUCTOR ASSEMBLY
Richard W. Wokas, Cicero, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Dec. 26, 1962, Ser. No. 247,236
3 Claims. (Cl. 219—10.43)

1. An induction heating apparatus for induction heating crankshaft bearing surfaces and fillets located at opposite ends of said bearings between the surfaces and circumferential projections on said crankshaft; comprising an inductor having a pair of spaced parallel side conductors each including sides, one side facing said bearing surfaces and the other side facing said projections, an end conductor connecting said side conductors, means con-

necting said inductor to a source of high frequency electrical power, and first L-shaped magnetic laminations and second U-shaped magnetic laminations supported on each of said side conductors, said first laminations inducing a greater heated depth area in said fillets, the second lamina-

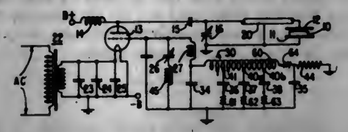


tions inducing a greater heated depth area in said projections, and guide means supported on said inductor between said laminations and projecting below certain of said laminations and for engaging a bearing surface and spacing said side conductors from said bearing surface.

3,188,441
SAFETY DEVICE FOR MICROWAVE OVENS
Göran Axel Runo Öjelid, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden
Filed Mar. 1, 1961, Ser. No. 92,689
Claims priority, application Sweden, Mar. 4, 1960, 2,199/60
5 Claims. (Cl. 219—10.55)

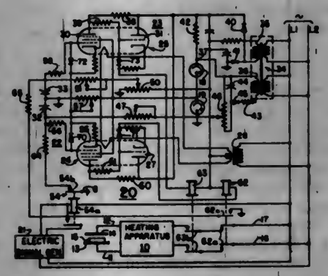
1. In a micro-wave oven: an oven space; a pivotal door through which access may be had to said oven space; a high frequency generator coupled to said oven space for supplying high frequency energy thereto; circuit means connecting said high frequency generator with terminals to be connected to an electric supply system; a voltage converting and increasing means interconnected in said circuit means; a switch interconnected in said circuit means between said terminals and said voltage converting and increasing means and having at least one pair of stationary contacts and at least one pair of movable contacts, said movable contacts being conductively interconnected and adapted to bridge said stationary contacts in the operative position of said movable contacts, and a mechanical connection, positively connecting said door with the movable contacts of said switch during the initial opening movement of said door and comprising a rod-like member, said rod-like member being linked to said door adjacent to the pivot axis of said door and movable approximately in its longitudinal direction in response to opening movements of said door, and a coupling means, which is movable transversely to the longitudinal direction of said rod-like member and connects said rod-like member to said movable contacts, during the initial opening movements of said door, for displacing said movable contacts in response to the initial opening movements of said door.

3,188,442
HIGH FREQUENCY HEATING SYSTEM
Thomas Lamont Wilson, Lyndon, and Willard H. Hickok, Louisville, Ky., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 28, 1962, Ser. No. 219,928
6 Claims. (Cl. 219—10.75)



1. In a dielectric heating system comprising an oscillator tube, a tuned anode circuit therefor including plates between which a dielectric load is disposed for heating, and a grid circuit, the combination therewith of an inductance coil in said grid circuit having a plurality of spaced turns of wire insulated from each other by the air gap between them provided by their spacing, ensuring that arcing between coil turns will not cause carbonization of the insulation, a support member for said coil turns, and insulator means extending between said support member and the turns of said coil providing a higher electrical insulation strength between adjacent coil turns than that of the air gaps between them, so that any arcs at said coil will occur across the air gaps between coil turns.

3,188,443
ELECTRONIC TIMING APPARATUS
Willard H. Hickok, Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 1, 1962, Ser. No. 170,330
13 Claims. (Cl. 219—10.77)



2. Timing apparatus as claimed in claim 1, in which the means to control the duration of the delay time interval is sensitive to changes in source voltage such as to directly relate the duration of the delay time interval to the magnitude of the source voltage, and the voltage sensitive means interrupts energization after a heat time interval of a duration which is inversely related to the magnitude of the source voltage, so that the duration of the timing cycle is a preselected constant in spite of source voltage variations.

3,188,444
RESISTANCE WELDING MACHINE
Erich Ramstein, Wettingen, Aargau, Switzerland, assignor to H. A. Schlatter A.G., Zurich, Switzerland
Filed Nov. 5, 1962, Ser. No. 236,472
Claims priority, application Switzerland, Nov. 8, 1961, 12,960/61
15 Claims. (Cl. 219—56)

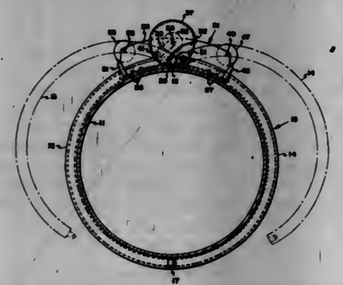
1. In a welding machine, particularly for forming joints between intersecting longitudinal and transverse wire-like components which form a comparatively rigid net-like

work, in combination; a supporting member; carrier means pivotally mounting said supporting member so that the latter is pivotable about a fixed axis; a first electrode fixed to said supporting member; a second electrode reciprocable toward and away from said first electrode; guide means for guiding the work between said electrodes; and pressure generating means mounted on said supporting member and operatively connected with said second



electrode for reciprocating the same toward, into and subsequent to engagement with the work in a path which crosses said fixed axis in space whereby, once said second electrode engages the work and said pressure generating means continues to move said second electrode toward said first electrode, said supporting member pivots with respect to said carrier means to move said first electrode into engagement with the work.

3,188,445
APPARATUS FOR FORMING GIRTH WELDS BETWEEN LARGE TUBULAR METAL SECTIONS
Perry J. Rieppel, Worthington, Glenn E. Faulkner and Jerome W. Nelson, Columbus, Ohio, and Harry C. Cook, Orange, N.J., assignors, by direct and mesne assignments, to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 26, 1961, Ser. No. 147,850
3 Claims. (Cl. 219—60)



1. An apparatus for welding girth joints between large tubular metal sections of the type which comprises a guide track and carriage means adapted to travel around said track to perform both preparatory and welding operation, the combination which comprises an orbitally movable carriage, a cutter preparatory device mounted on a mid-portion of said carriage, and a welding device mounted towards either end of said carriage, whereby the cutter preparatory function and the welding function may be performed in either direction with the preparatory function proceeding ahead of the welding function.

3,188,446
METHOD AND APPARATUS FOR ASSEMBLY OF NUCLEAR CONTROL RODS AND FUEL TUBES
William E. Ray and George R. Davis, Great Barrington, Mass., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 10, 1961, Ser. No. 144,162
8 Claims. (Cl. 219—72)

1. The process of sealing a container by welding, comprising the steps of

(A) preheating the container casing in the open area to be sealed

(1) to a temperature approximating that of the container material under welding heat to expand the opening,

(B) preliminarily sealing the container



(1) by inserting a closely fitting plug into the preheated, expanded open area, and then

(C) sealing the plug to the container by welding, whereby gas density in the container is reduced by preheating and welding heat expands the plug more than the open area of the container to retain a container pressure seal during the welding step.

3,188,447
METHOD OF WELDING
Robert D. Bremer and Alfred J. Sacksteder, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Sept. 16, 1957, Ser. No. 684,159, now Patent No. 3,068,340, dated Dec. 11, 1962. Divided and this application Aug. 27, 1962, Ser. No. 219,651
2 Claims. (Cl. 219—118)



1. The method of welding the opposite end portions of a metal bracket to metal tubing which includes the steps of selecting a metal bracket whose cross-sectional size, electrical resistance and length is such as to effect a welding temperature at the contacting surfaces of said bracket with said tubing at least as soon as a welding temperature is reached at the contacting surfaces of said tubing, applying a welding electrode to each end portion of the bracket to force the end portions into contact with the metal tubing while the metal tubing is supported upon a support of metal, and while the end portions are forced against said metal tubing applying a welding current at a suitable potential through said electrodes to said end portions to cause sufficient current to flow through the bracket to bring its ends to welding temperature at least as soon as the contacted surfaces of the metal tubing are raised to welding temperature by the flow of current through the adjacent and contacting surfaces of the bracket and metal tubing and said support.

ERRATUM

For Class 219—131 see:
Patent No. 3,188,375

3,188,448
SOLDERING IRON HAVING TEMPERATURE CONTROL MEANS
Carl E. Weller, 601 Stone's Crossing Road, Easton, Pa.
Filed May 20, 1963, Ser. No. 281,708
12 Claims. (Cl. 219—241)

1. In an electric soldering iron having a soldering tip, a thermomagnetic element positioned to be heated in response to the temperature of said tip, and an electric heating element in thermal communication with said tip; the improvement of a control subassembly for regulating current supplied to said heating element comprising, switch means associated with the control subassembly,

an elongated non-magnetic guide tube having an end adapted to be located adjacent said thermomagnetic element, a magnet slidably disposed in said tube adjacent said end, the magnet being coupled with said switch means, and stationary magnetic means fixed in said tube



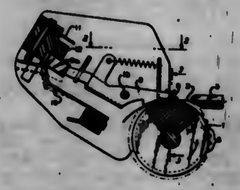
for withdrawing said magnet through a selected stroke away from said thermomagnetic element by magnetic attraction of said magnet therefor when the temperature of the thermomagnetic element surpasses a selected value, so that the magnet is adapted to operate the switch means to regulate the current supplied to the heating element.

3,188,449
HEATING UNIT
Leroy C. Hanson, Elmhurst, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Feb. 23, 1962, Ser. No. 174,981
4 Claims. (Cl. 219—455)



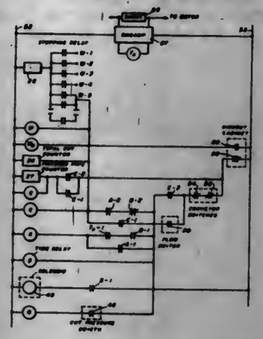
2. A heating unit comprising: a spider having outwardly diverging legs each with opposite sides and an edge between said sides, a generally coplanar coiled heating element having a metallic sheath with a bottom portion supported by the edges, a rigid plate received on said edge of one of said legs, means on said plate loosely embracing opposite sides of said one leg for limited movement of said plate transversely across said one leg, means on said one leg mounting said plate for limited movement along said leg, and saddle portions spaced apart on opposite sides of said support and generally complementary to and receiving an adjacent bottom portion of said heating element, and means firmly connecting said saddle portions with said heating element and said plate.

3,188,450
PERFORATED RECORD SENSING DEVICE
Heinrich W. Wagemann, West Orange, N.J., assignor to Monroe International Corporation, a corporation of Delaware
Filed June 10, 1960, Ser. No. 35,163
2 Claims. (Cl. 235—61.11)



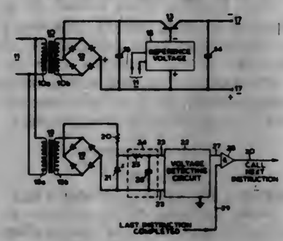
1. In a device for sensing a perforated record strip having a linear row of like perforations including equidistantly spaced perforations and perforations spaced at multiples of the distance of the spacing of said equidistantly spaced perforations; a rotatable drum having an annulus of like recesses equidistantly spaced circumferentially around its periphery, the centers of said recesses being spaced a distance substantially equal to the spacing of the centers of said equidistantly spaced perforations, means for transporting said strip linearly upon rotation of said drum to bring said perforations successively into registration with said recesses, a wheel having teeth adapted for meshing engagement with said annulus of recesses, said teeth being so spaced as to be engaged successively by the successive recesses of said drum upon rotation of said drum in either direction thereby rotating said wheel and said recesses having a depth to permit said driving engagement with said teeth without the bottoms of said recesses engaging said teeth, means adjustably mounting said wheel for movement away from and toward engagement of its teeth with said annulus of recesses, means for yieldably urging said wheel toward said drum for passage of its teeth through said perforations into meshing engagement with said annulus of recesses, a pair of electrical contacts, and means simultaneously operable with movement of one of said teeth to engagement with one of said recesses to close said contacts.

3,188,451
MECHANISM FOR COUNTING THE OPERATIONS OF A MACHINE
Edwin B. Henry, Jr., Mount Lebanon Township, Allegheny County, and William L. Zemberry, Swissvale, Pa., assignors to United States Steel Corporation, a corporation of New Jersey
Filed Mar. 21, 1962, Ser. No. 181,345
9 Claims. (Cl. 235—92)



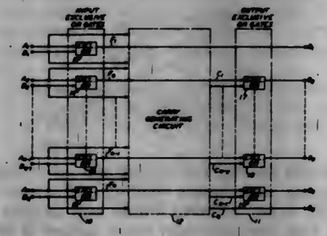
1. In an electrically driven machine adapted to perform an operation on an article, which machine has a characteristic that the total number of operations may exceed the number of articles handled and which draws a relatively large current while performing an actual operation and a smaller current while idling, and which operation entails application of a force to the article, the combination therewith of a mechanism for counting both the number of actual operations and the number of articles handled, said mechanism comprising first and second counters, an electric circuit operatively connected with said counters, means in said circuit responsive to the relatively large current of an actual operation, separate means in said circuit responsive to the application of force to the article, said circuit being completed to actuate said counters only when both said means respond at the same time, and means in said circuit for preventing further actuation of said second counter after the first actuation thereof as long as subsequent operations are performed on the same article, whereby said first counter shows the total number of operations, said second counter shows the number of articles handled, and simulated operations actuate neither counter.

3,188,452
SUPPLY AND CONTROL MEANS FOR AN ELECTRIC DIGITAL COMPUTER
Allen Asbury, Stoke-on-Trent, England, assignor to The English Electric Company Limited, Strand, London, England, a British company
Filed Sept. 7, 1962, Ser. No. 222,071
Claims priority, application Great Britain, Sept. 13, 1961, 32,845/61
5 Claims. (Cl. 235—151)



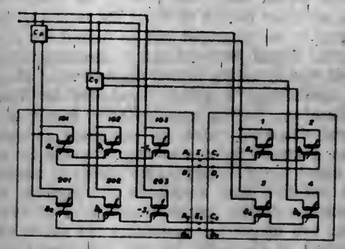
1. Supply apparatus for an electric digital computer including a "supply" rectifying means having input alternating current connections and output direct current connections, means for connecting the input connections with an alternating current supply source, means for connecting the output connections with an electric digital computer whereby to supply it with electrical energy derived from the alternating current supply source, an electric storage capacitor connected between the output connections and having an energy storage capacity which under normal conditions of the supply source is sufficient at least to enable the computer to carry out, if initiated, a predetermined "supply-failure" emergency action, "supply-failure" detecting means for supplying to the computer on failure of the supply source a control signal whereby to initiate the computer to cause it to carry out the predetermined supply-failure emergency action, and means for connecting the supply-failure detecting means to the said input alternating current connections, the computer being brought by such emergency action to a predetermined condition prior to the loss of an adequate supply of electrical energy from the storage capacitor consequent upon a failure of the supply source, in which condition such loss of an adequate supply is of no substantial detriment to the computer and to information in the computer at the time of detecting a supply failure.

3,188,453
MODULAR CARRY GENERATING CIRCUITS
Herbert A. Schneider, Millington, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 14, 1961, Ser. No. 159,285
10 Claims. (Cl. 235—175)



4. In combination, a source of N binary addend digit signals A_1 through A_N, a source of N binary augend digit signals B_1 through B_N, a first bank of N binary half-adding circuits, means for applying addend and augend signals to correspondingly numbered first half-adding circuits, a first binary array of logical AND-OR circuits having rows and columns, the rows of said first array corresponding in number to said first half-adding circuits, the presence and absence of said ANDOR circuits in each row of said first array corresponding to the presence and absence of ones in the binary representation of the number $(n-1)$, where n is the number of said row, a second binary array of logical AND circuits having rows and columns, the rows of said second array corresponding in number to said first half-adding circuits, each row of said second array having one less AND circuit than the number of AND-OR circuits in the corresponding row of said first array, means for connecting the output of each said AND circuit of said second array to the input of the AND-OR circuit of said first array in the corresponding row and column, a second bank of $(N-2)$ half-adding circuits, and means connecting the outputs of said first half-adding circuits to said first and second arrays and to said second bank of half-adding circuits.

3,188,454
SIMULTANEOUS LINEAR EQUATION COMPUTER SYSTEMS
Etienne Honore, Emile Torcheux, and Jean Tubeuf, Paris, France, assignors to Societe Marocaine de Recherches, d'Etudes et de Developpements "Semarode," a corporation of Morocco
Filed July 13, 1959, Ser. No. 826,651
Claims priority, application France, July 11, 1958, 770,091
12 Claims. (Cl. 235—160)



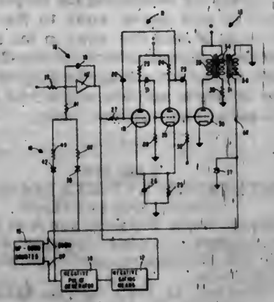
1. An equation computer for solving a system of n linear equations with p unknowns of the type

$$a_{11}x_1+\ldots+a_{1i}x_j+\ldots a_{1p}x_p-S_1=0$$
$$\cdots\cdots\cdots\cdots$$
$$a_{i1}x_1+\ldots+a_{ij}x_j+\ldots+a_{ip}x_p-S_i=0$$
$$\cdots\cdots\cdots\cdots$$
$$a_{n1}x_1+\ldots+a_{nj}x_j+\ldots+a_{np}x_p-S_p=0$$

comprising: p generator means for providing adjustable electric magnitudes respectively simulating said unknowns, said means having respective control inputs for receiving control input voltages and outputs; a feedback loop, associated with said generator means, for adjusting the values of said magnitudes to make them respectively equal to the roots of said equations; in said feedback loop, error calculating means coupled to said outputs for calculating the n respective values of said n equations upon respective incorporation therein of said electric magnitudes and having n outputs, thus providing n error signals; n sets of p reversible four terminal networks, each network having inputs and outputs comprising respectively two secondary terminals, and two primary terminals, the networks of each set having respective transformation ratios equal to the respective coefficients of one equation of the system, the primary terminals of the network of each set being respectively coupled in parallel with the primary terminals of one network in each other set, to said control input of one of said generator means; the primary ter-

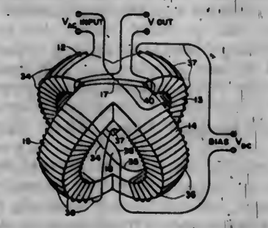
minals of said sets being interconnected for obtaining a signal proportional to the sum of said control voltages multiplied respectively by the transformation ratios of said networks, and for feeding said sum signal to said n outputs of said error calculator.

3,188,455
INTEGRATING MEANS
John R. Quick, Sr., St. Louis, Mo., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1960, Ser. No. 79,406
5 Claims. (Cl. 235—183)



1. Apparatus for integrating an electrical signal over a relatively long duty cycle and transforming said integral into stored digital form, comprising: an integrating operational amplifier having an input for receiving the electrical signal to be integrated and an output for providing an electrical signal proportional to the time integral of said input signal; gating means connected to the output of said operational amplifier responsive to signals received therefrom having magnitudes in excess of a predetermined threshold value for providing an excitation signal; an electrical pulse generator actuated by said excitation signal for providing output pulses of substantially constant duration and amplitude in response thereto; pulse counting means operably connected to said pulse generator; and means for presenting the pulses as negative feedback to the input of said operational amplifier thereby reducing the input signal to said amplifier.

3,188,456
MAGNETIC MODULATOR FOR COMPUTING DIVISIONS AND MULTIPLICATIONS
Raymond L. King, Jr., Arlington, and Robert L. Conger, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 24, 1961, Ser. No. 133,748
2 Claims. (Cl. 235—194)
(Granted under Title 35, U.S. Code (1952), sec. 266)



2. A magnetic device comprising a hollow sphere of magnetic material having a desired wall thickness and having a large portion of each of the four quadrants of said sphere removed to form a magnetic core configuration of two like rings intersecting each other at right angles at the poles of said sphere, a plurality of electrical windings arranged on various portions of said core, said plurality of windings consisting of at least one input winding, at least one bias winding and at least one pick-off winding, an A.C. input applied to said at least one input winding for setting up an A.C. flux, a D.C. bias applied to said at least one bias winding for setting up a D.C. flux which modulates said A.C. flux, the resultant magnetic flux being detected by said pick-off winding, said at least one input winding being wound on portions of said magnetic core forming one of said two like intersecting rings and said at least one bias winding being wound on portions of said magnetic core forming the other of said intersecting rings, and said at least one pick-off winding being wound about at least one of the intersections of said rings at the poles of said sphere.

3,188,457
AIRPORT RUNWAY LUMINAIRE
Franklin M. Neal, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 15, 1962, Ser. No. 194,869
5 Claims. (Cl. 240—1.2)



1. A luminaire for directing light through a range of low angles of elevation above a substantially horizontal surface and throughout a range of horizontal angles, which luminaire comprises a lens having a top surface slightly above said substantially horizontal surface and a light source, said lens comprising an incident surface on the same side of said lens as said light source and an emergent surface on the opposite side thereof and opposed to said incident surface throughout substantially its entire area, one of said surfaces being convex in both vertical and horizontal cross section and the other of said surfaces being convex in vertical section and having horizontal sections in the form of curves which are convex in a central area and concave on both sides thereof, said lens spreading light from said source through vertical angles above said horizontal surface varying from a maximum for light emitted near the bottom of said emergent surface to a minimum for light emitted near the top thereof.

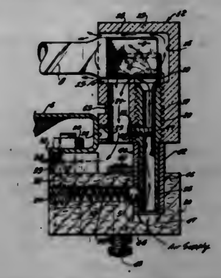
3,188,458
LIGHTING AND HEAT TRANSFERRING APPARATUS
John S. Hickman, Shorewood, Wis., assignor to Inland Steel Products Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 23, 1961, Ser. No. 146,994
6 Claims. (Cl. 240—9)



1. Apparatus adapted for lighting and selectively cooling and heating an enclosure comprising a support member, lighting means mounted within said support member, and a heat energy transfer panel located in the path of light from said lighting means, said panel including at least one header having a passage through which a heat energy transfer medium is conducted, said panel including said header, being removably mounted on said support

member beneath said lighting means and further including a plurality of light diffusing and heat energy transferring elements having portions thereof imbedded in and integral with said header.

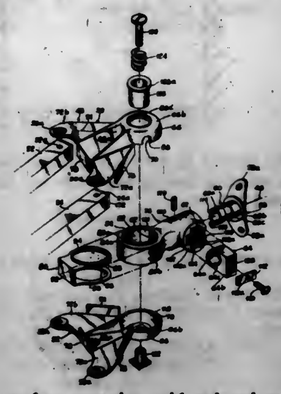
3,188,459
LAMP HOLDER
Robert A. Bridwell, Lynwood, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Nov. 2, 1962, Ser. No. 235,066
10 Claims. (Cl. 240—47)



8. A holder for the support and temperature control of each end of a tubular lamp having at each end thereof and end seal and terminal wire, comprising:
(a) a body of dielectric material,
(b) a socket in said body and having an opening at one end of said body to receive and completely enclose at least a major portion of said end seal of said lamp, the inside dimensions of said socket being larger than said end seal to provide a clearance therebetween,
(c) an air supply passage having an opening in said socket adjacent to said end seal,
(d) a hollow stud to receive and retain said terminal wire and mounted in said air supply passage to define a conduit to direct forced air into said socket for circulation around said end seal,
(e) screw means to fasten said terminal wire in the interior of said hollow stud,
(f) and means adapting the free end of said stud for connection with a source of electricity and forced air.

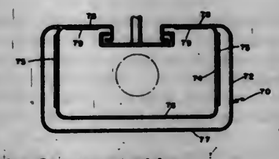
3,188,460
ADJUSTABLE LAMP
Thorbjorn L. Thorsen, Armonk, N.Y., and Reidar Wilhelm Andreesen, Lambertseter, Oslo, Norway, assignors to Tobey Manufacturing Corporation, Armonk, N.Y.
Filed Dec. 6, 1962, Ser. No. 242,819
6 Claims. (Cl. 240—52)

3. In an adjustable lamp structure having a support and a lamp socket assembly, a coupling joining said support and said socket assembly for attitude orientation of said socket assembly about two axes, comprising in combination:
(A) a fitting connected to said socket assembly,
(1) having a shaft portion extending concentrically with a first axis about which said fitting is rotatable,
(a) means forming a reduced portion on said shaft portion;
(B) a stem for rotatably supporting said fitting shaft, including
(1) means forming a bore through said stem around said shaft,
(2) means forming an opening into and transverse of said bore, and
(3) a cylindrical bulb portion on said stem having annular braking surfaces thereon about a second axis of rotation;
(C) a frictional bearing member in said transverse opening having



(1) a surface engaging said reduced portion of said fitting shaft; and
(D) a bracket connected to said cylindrical bulb portion,
(1) and slidably engaging said annular braking surfaces thereof.

3,188,461
PLURAL WALLED FIXTURES
Willis L. Lipscomb, 2208 Willow, San Diego, Calif.
Filed Mar. 12, 1963, Ser. No. 264,550
4 Claims. (Cl. 240—78)

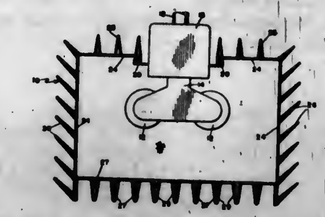


1. A lighting fixture comprising:
an elongated light diffuser having inner and outer translucent walls, portions of said walls being of double wall form and defining an air sealed space therein, contiguous edges of said walls sealed together and turned back upon themselves to define longitudinally extending, inwardly returned edge portions;
means supporting said light diffuser and engaging said returned edge portions;
and light reflective material on a portion of the radially outward surface of said inner wall.

3,188,462
LIGHTING FIXTURE DIFFUSER WITH BRIGHTNESS CONTROL
Willis L. Lipscomb, 520 Spreckles Bldg., San Diego, Calif.
Filed Apr. 1, 1963, Ser. No. 269,568
5 Claims. (Cl. 240—78)

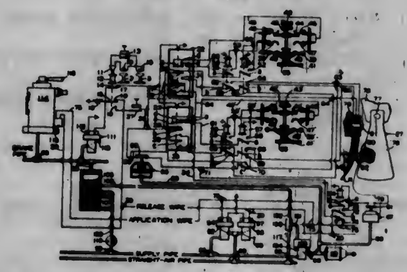
1. A lighting fixture diffuser comprising:
an elongated substantially rigid light transmitting wall member and
said wall member having on one side thereof and as unitary portions thereof a plurality of elongated, imperforate parallel, hollow, light transmitting fins, the proximal ends of the legs of the said fins being unitary with the wall member, all said fins extend-

ing horizontally and in one direction only and laterally from one side of said wall member and longitudi-



nally thereof to form an enclosed space therewith; and a reflective coating applied to the interior surfaces of said fins.

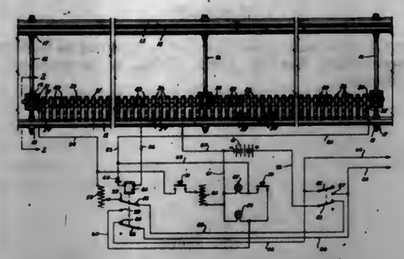
3,188,463
BRAKE CONTROL APPARATUS FOR UNMANNED TRAINS
Claude M. Hines, Verona, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Apr. 25, 1960, Ser. No. 24,446
17 Claims. (Cl. 246—182)



2. In an apparatus for automatically controlling the brakes of a train after it reaches a predetermined point on a railway track so that the train will always stop within a predetermined zone at a preselected distance beyond said point, the combination of: train-carried means conditioned upon the train reaching said point to initiate an application of train brakes, timing means set into operation upon the train reaching said point for thereafter measuring out certain time periods independently of movement of the train along the track, means controlled by train speed, means controlled by said timing means and speed-controlled means to select a desired rate of deceleration for the train during at least some of the time periods according to how the actual train speed compares with an ideal train speed at the commencement of each such period, and means controlled by the last-introduced means to adjust the degree of brake application as necessary to maintain deceleration at substantially said desired rate.

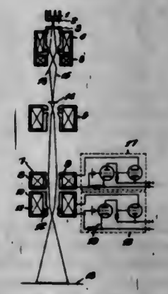
3,188,464
RAILWAY WHEEL DEFECT DETECTOR
Marion W. Gleckler, 1333 S. Franklin St., Denver, Colo.
Filed July 9, 1962, Ser. No. 208,246
5 Claims. (Cl. 246—246)

1. Means for detecting broken flanges on railway car wheels as the latter roll along the rail of a railway track comprising: bars secured to and extending between said rails; an elongated member supported by said bars parallel to one of said rails; a plurality of spaced-apart, depressible fingers secured to said elongated member at their one extremities and extending toward said rail in parallel relation at their other extremities; insulated means on said fingers to be contacted by the flange of a passing railway wheel for depressing said other extremities downwardly; a signal actuating circuit including said rail and said fingers; and an upwardly extending electric contact



on each finger positioned to contact and short-out said electric signal actuating circuit through the tread of said wheel should the flange of said wheel fail to depress the finger as it passes.

3,188,465
TWO STAGE ELECTRON BEAM MAGNIFICATION DEVICE COMPRISING PLURAL ADJUSTABLE MAGNETIC LENS SYSTEM
Kazuo Ito, Tokyo, and Takashi Yanaka, Kanazawa-ku, Yokohama-shi, Japan, assignors to Kabushikikaisha Nihondenshi Kagaku Kenkyusho, Tokyo, Japan, a corporation of Japan
Filed Dec. 20, 1960, Ser. No. 77,206
Claims priority, application Japan, Dec. 29, 1959, 34/41,167
1 Claim. (Cl. 250—49.5)



A two stage electron beam magnification device comprising a first electron lens, a second electron lens spaced from said first electron lens in the direction of travel of the electron beam, means for exciting said first lens, and separate means for exciting said second lens, the lens dimensions being such that the value

$$\left(\frac{S_1+b_1}{S_2+b_2}\right)^2$$

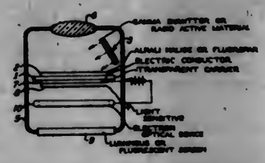
is sufficiently greater than unity so that the excitation of one of said lenses may be varied while holding the excitation of the other lens constant to vary the focal length of said one lens without introducing distortion aberration, S_1 and b_1 being the gap width of the magnetic pole pieces and the diameter of the first lens, respectively, and S_2 and b_2 being the gap width of the magnetic pole pieces and the diameter of the second lens, respectively.

3,188,466
SERIALOGRAPH WITH SPACED CARRIERS FOR MOVABLE X-RAY FILM CASSETTES IN SHIELDED TRAYS
Roberto J. Jimenez, 1456 Ashford Ave., Santurce, Puerto Rico
Filed Jan. 31, 1962, Ser. No. 170,077
10 Claims. (Cl. 250—66)



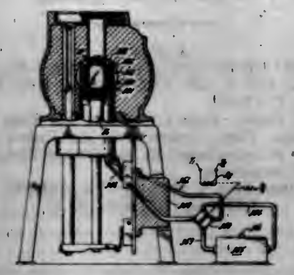
1. In a serialograph, in combination, frame means including three mutually spaced, substantially parallel walls between which a pair of cassettes are adapted to be located with the intermediate one of said walls located between the pair of cassettes; a parallel grid having substantially the same area as the cassettes carried by one of said walls for exposing a cassette therebeneath; a tray located on said intermediate wall beneath said one wall in alignment with the parallel grid thereof and said tray carrying a shield of substantially the same area as said parallel grid and the cassettes, and the second cassette being located between said intermediate wall and third wall also in alignment with the parallel grid, whereby during exposure of a cassette on said tray the shield carried by the latter will prevent exposure of the cassette between the intermediate and third walls, so that after exposure of the cassette on the tray the exposed cassette and tray may be shifted on said intermediate wall to a position out of alignment with the parallel grid so that a second exposure may then be made on the second cassette located between the intermediate and third walls in alignment with the parallel grid.

3,188,467
INSTRUMENT FOR THE DETECTION OF INFRA-RED RADIATION
Gustav Weissenberg, Wetzlar (Lahn), Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Oct. 26, 1959, Ser. No. 848,864
Claims priority, application Germany, Dec. 11, 1958, L 31,947
16 Claims. (Cl. 250—71)



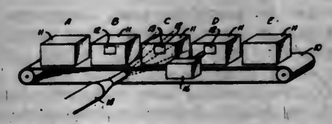
1. Apparatus for indicating infra-red radiation, comprising a layer of a thermoluminescent substance constituting an intercepting device for the infra-red radiation and a source of radioactive rays operatively associated with and exciting the thermoluminescent layer to raise the energy level therein to a metastable condition whereby luminous energy corresponding to the intensity distribution of the original infra-red radiation is produced when the infra-red radiation impinges upon the layer.

3,188,468
METHOD AND APPARATUS FOR AUTOMATIC STANDARDIZATION IN LIQUID SCINTILLATION SPECTROMETRY
Lyle E. Packard, Hinsdale, Ill., assignor to Packard Instrument Company, Inc., Downers Grove, Ill., a corporation of Illinois
Filed June 18, 1964, Ser. No. 376,000
36 Claims. (Cl. 250—71.5)



19. Radioactivity spectrometry apparatus for use in analyzing test samples of the type including a light transmissive sample vial having a liquid scintillator and having a radioactive isotope disposed therein, said apparatus comprising, in combination, a housing defining a shielded detection chamber, means for introducing said test samples into said chamber one at a time, means defining an emitter of radiations characterized by its ability to produce a known energy spectrum and supported in disoperative association with respect to the liquid scintillator introduced into said chamber, means supported in said housing and positioned adjacent said chamber for producing output signals proportional to the energy of light scintillations occurring within said chamber, means for counting at least certain of the output signals produced during first and second counting periods, means responsive to termination of said first counting period for automatically exposing the liquid scintillator in said chamber while the associated test sample is disposed in said chamber to the radiations emanating from said emitter so that light scintillations are created in the liquid scintillator during said second counting period by both decay events occurring in the isotope and standardized radiations emanating from the emitter, and means for ejecting said test samples from said detection chamber only after said counting means has counted at least certain of the output signals produced by the composite effect of decay events occurring in said isotope and standardized radiations emanating from said emitter.

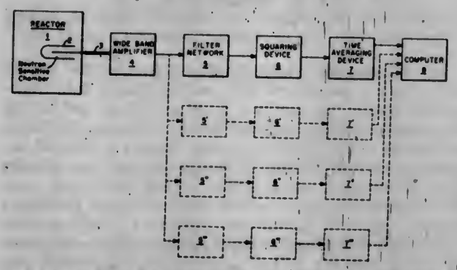
3,188,469
RADIATION DOSAGE MEASUREMENT OF IRRADIATED MATERIAL
Warren W. Eukel, Walnut Creek, Calif., assignor, by mesne assignments, to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed July 16, 1957, Ser. No. 672,313
The portion of the term of the patent subsequent to Feb. 22, 1982, has been disclaimed
4 Claims. (Cl. 250—83)



1. A method of irradiation checking comprising the steps of including with a material to the irradiated with ionizing radiation a sample of an element having a high

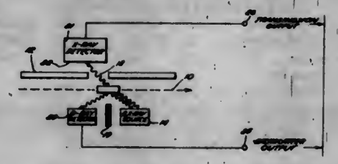
level of induced radioactivity together with a short half-life less than the time required for the material to be made available to a consumer and a threshold for induced radioactivity slightly below the level of irradiation desired for said material whereby material irradiation of equal or greater energy than desired induces radioactivity in said sample, and the step of detecting induced radioactivity of said sample following material irradiation as a measure of minimum material irradiation.

3,188,470
METHOD OF DETERMINING THE NEGATIVE REACTIVITY OF NEUTRONIC MULTIPLYING SYSTEMS
Charles W. Ricker, Alain L. Colomb, and Estle R. Mann, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 5, 1963, Ser. No. 263,087
5 Claims. (Cl. 250—83.1)



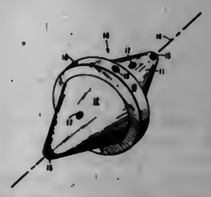
1. A method for measuring the negative reactivity of a neutronic multiplying system by analysis of the signal generated by a neutron detector exposed to neutrons from said system, comprising the steps of:
(1) amplifying the said signal;
(2) filtering said amplified signal to isolate signals in at least two different discrete frequency channels;
(3) measuring the spectral densities of each of said isolated signals; and
(4) computing the negative reactivity of said neutronic multiplying system from said spectral densities.

3,188,471
COIN IDENTIFICATION APPARATUS UTILIZING RADIATION BOMBARDMENT
Carl Woodrow Hansen, Wayland, and Peter J. Clack, Bedford, Mass., assignors, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Jan. 23, 1961, Ser. No. 84,236
8 Claims. (Cl. 250—83.3)



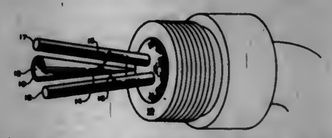
1. Apparatus for identifying coins comprising, means defining a path of travel for said coins; a radioactive source disposed in fixed relationship to said path, said radioactive source being adapted to emit a beam of beta rays and X-rays impinging upon said coin within said path; a beta ray detector disposed in a manner to receive beta rays backscattered from said coin; a shielding element adapted to shield said detector from non-scattered beta rays from said source; an X-ray detector disposed to receive X-rays from said source transmitted through said coins, means responsive to the outputs of said beta ray and said X-ray detectors providing an output indicative of the type of said coin.

3,188,472
METHOD AND APPARATUS FOR DETERMINING SATELLITE ORIENTATION UTILIZING SPATIAL ENERGY SOURCES
Eldon C. Whipple, Jr., Washington, D.C., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 12, 1961, Ser. No. 123,597
18 Claims. (Cl. 250—83.3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An orientation determining device for a rotating space vehicle having an outer surface and including a vehicle coordinate system, said vehicle being adapted for location at a known position in a known orbit in a region of diverse energy emission sources having vector directions, comprising in combination, a plurality of first particle traps disposed in spaced relationship on said surface of said vehicle in a plane including the axis of rotation of said vehicle, said first traps producing an ouput signal the magnitude of which is determined by the angle of incidence of energy from a first energy emission source relative to said first traps, a second particle trap disposed on said surface at a predetermined angular position from the plane containing said first traps, said second trap producing an output signal the magnitude of which is determined by the angle of incidence of energy from a second energy emission source relative to said second trap whereby said first traps will generate a combined output indicative of the angle of incidence of said first energy emission source on said surface and said second trap will generate a signal indicative of the location of a plane including said second energy emission source.

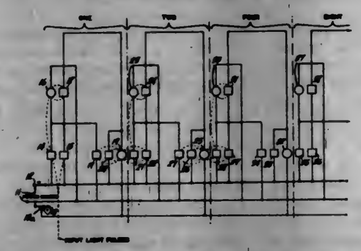
3,188,473
BLACK INFRARED RADIATION DETECTOR STANDARD
Richard L. Bates, La Sierra, and Wesley L. Eisenman, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 18, 1963, Ser. No. 266,111
6 Claims. (Cl. 250—83.3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A black radiation detector standard for the spectral calibration of long-wavelength infrared detectors and the like comprising:
(a) a hollow thin-wall cone of highly electrical and heat conductive material having the base thereof open to expose the conical cavity to incident radiation,

(b) the internal surface of said cone being blackened with a coating of material having high absorption characteristics in the long wavelength region of 1–15 microns, this absorption of the coating together with the conical geometry of said cavity resulting in absorption of nearly all incident radiation independent of the wavelength of the incident radiation,
(c) a thermocouple junction to transduce the incident radiant energy into an electrical signal attached directly to the outer surface of said cone at a point midway between the base and apex of the cone,
(d) the other ends of the two wires of the thermocouple being electrically fastened to respective electrode support means said thermocouple wires being the only means of mechanical support for said cone to reduce thermal conductance from said cone to a minimum for maximum sensitivity of the detector.

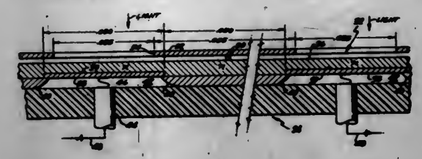
3,188,474
PHOTOSENSITIVE ELECTRO-OPTICAL CALCULATING MACHINE
Thomas I. Ross, Riverton, N.J., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application Jan. 24, 1956, Ser. No. 560,938, now Patent No. 2,985,763, dated May 23, 1961. Divided and this application Aug. 4, 1958, Ser. No. 752,951
1 Claim. (Cl. 250—209)



A two-stage, cyclically operable electro-optical device adapted to have operating voltage applied thereto, and elements each adapted to become and remain illuminated comprising first and second solid state electro-luminescent only when the voltage across the element exceeds a predetermined value, first and second circuits adapted to control the voltages across said elements and comprised, respectively, of first and second solid state photoconductors which are electrically coupled to said second and first elements, respectively, and which are optically coupled to said first and second elements, respectively, to receive light therefrom, at least said second photoconductor being electrically in parallel with the element to which the photoconductor is electrically coupled, and means adapted by at least applying successive input signals to said circuits to render said circuits effective to produce operation cycles for said device which are repetitive for every successive group of two successive signals, and in which, in any one cycle, said first element is activated to be illuminated while said second element is non-illuminated and said second element is activated to be illuminated while said first element is non-illuminated.

3,188,475
MULTIPLE ZONE PHOTOELECTRIC DEVICE
Solomon L. Miller, Sunnyvale, Calif., assignor, by mesne assignments, to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,791
3 Claims. (Cl. 250—211)

1. A light sensing system comprising a body of semiconductor material having a continuous zone of one type of conductivity over one face and a plurality of isolated zones of the opposite type of conductivity over an opposite face, the isolated zones being in contact with the continuous zone to form a plurality of discontinuous p-n junctions within the body, a support, the body being



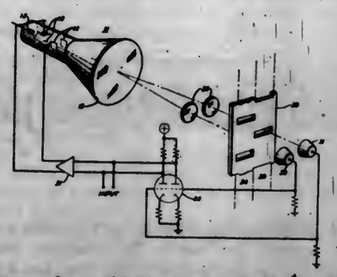
mounted on the support with the said opposite face adjacent the support, and means for selectively irradiating the junctions through the continuous zone, and a separate respective resilient electrically conductive spring disposed between the support and said opposite face of the body to be in contact with each isolated zone.

3,188,476
PHOTO-ELECTRIC CELL
Dick Karmiggelt, Herman Mathieu Schroder, and Hendrikus Johannes Marie van Tol, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,730
Claims priority, application Netherlands, Jan. 29, 1962, 274,115
8 Claims. (Cl. 250—211)



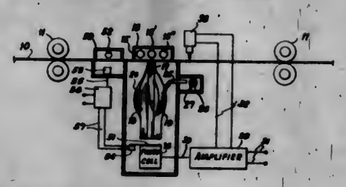
1. A photoconductive device comprising an elongated tubular envelope of insulating material having an open end, an elongated metal cooling plate extending almost throughout the entire envelope and including an integral portion projecting beyond the open end and outside the envelope, an elongated plate-like photosensitive body containing electrodes on one active side thereof disposed within the envelope and mounted with its other neutral side on the cooling plate with the active side separated by a layer of electrically insulating material and electrically insulated from the cooling plate and with the mounted photosensitive body defining between its periphery and the inside wall of the envelope only a small clearance space, a material filling and sealing the open end of the envelope and adhered to the inner walls thereof and to the projecting portion of the cooling plate, and lead-in conductors passing through an end of the envelope and connected to the said electrodes but spaced and insulated from the cooling plate.

3,188,477
LIGHT BEAM POSITIONING SYSTEM
Cyrus F. Ault, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 17, 1961, Ser. No. 132,232
12 Claims. (Cl. 250—217)



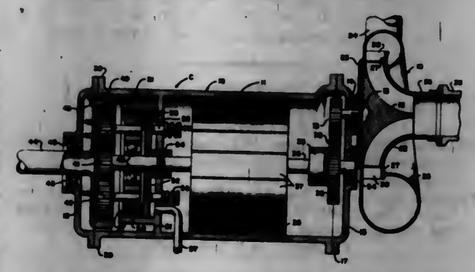
1. A system for positioning light on any one of a plurality of preselected positions comprising a light source, target means having at least two distinct sets of individual light-pervious areas, adjacent ones of said light-pervious areas being separated by opaque areas each corresponding to one of said preselected positions for said light source, means independent of said target means for focusing light from said source on said target means, a plurality of light-sensitive means each for producing signals only in response to the receipt of light from said source through any individual light-pervious area in a corresponding one of said sets of light-pervious areas, and means operative in response to the receipt of said signals for altering the position of said light source until the light focused on said target means impinges wholly on one of said opaque areas and fails to reach said light sensitive means.

3,188,478
PINHOLE DETECTOR OPTICAL SYSTEM
Melvin J. Binks, 4880 N. Marine, Chicago, Ill.
Filed Jan. 11, 1962, Ser. No. 165,579
8 Claims. (Cl. 250—219)



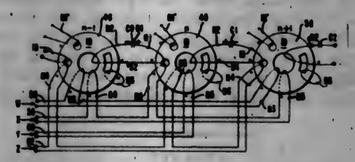
1. In a pinhole detector for detecting holes in a rapidly moving continuous sheet of material having two major surfaces, the means including a light source, a photosensitive element, means actuated by said photosensitive element for indicating the presence of a hole in said sheet of material, means defining a path between said light source and said photosensitive element for said rapidly moving continuous sheet of material, said light source being disposed adjacent to and across said path for directing light against one major surface of said sheet of material, and means shielding said photosensitive element from extraneous light; the means comprising a plurality of separate elongated light conductors each having a first end and a second end, said first end including an end face disposed adjacent to and in scanning relationship to the other major surface of said sheet of material, said first ends of said plurality of light conductors being in side-by-side relationship and said end faces thereof being aligned with and confronting said light source whereby light from said light source impinges upon at least one of said end faces when a hole in said sheet of material passes said light source, each of the second ends of said plurality of light conductors having an end face disposed to discharge conducted light into said photosensitive element.

3,188,479
COMBINATION ENGINE STARTER AND ACCESSORY DRIVE MECHANISM
Palmer R. Wood, Scottsdale, and Evart R. Chapman and William W. Sprague, Phoenix, Ariz., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 14, 1960, Ser. No. 68,927
10 Claims. (Cl. 290—4)



1. A combination starter and generator for use with a gas turbine engine comprising: a main shaft; an output shaft; electric current generating means having a part mounted on said main shaft; an air turbine motor; means for connecting said air turbine motor to said main shaft to cause said air turbine motor to drive said main shaft and said electric current generating means; gear means adapted in a first condition of operation to establish a driving connection between said main shaft and said output shaft and in a second condition of operation to interrupt such driving connection; and means for selecting the condition of operation of said gear means whereby said air turbine motor may be used to drive said main shaft to operate said current generating means for preliminary checking or to drive said gear means for turning said output shaft in a gas turbine starting function, said gear means also serving in said first condition of operation to transmit rotary motion from said output shaft to said main shaft and said electric current generating means.

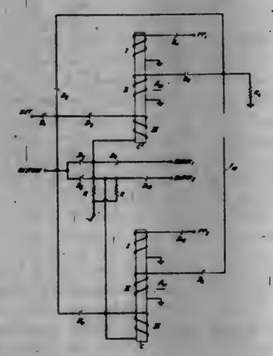
3,188,480
MULTIAPERTURE-CORE LOGIC CIRCUIT
Robert Betts, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,619
1 Claim. (Cl. 307—88)



An OR logic circuit comprising, in combination: a first and a second multiaperture-core with input states and output states, each of said cores having a substantially rectangular hysteresis loop characteristic, said states being determined by the remanant magnetic flux condition around a first and second aperture in said core, respectively, representative of stored binary information; each

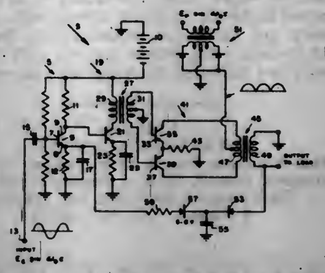
said core having first, second, third and fourth legs defining respective cross-sectional areas of the core associated with the first and second apertures and a third aperture in said core, each said core having an input winding on said first leg, an input-reset winding on said first leg, a drive winding on the second leg magnetically enclosing the second opening and the periphery of said core, a core-reset winding on said second leg, an inhibit winding on said fourth leg and an output winding on said third leg; clock pulse timing means providing sequential first, a second, third and fourth clock pulses, said first clock pulse being applied to said drive winding on said first core, said second clock pulse being applied to said core-reset winding on said first core and said input-reset winding on said second core, said third clock pulse being applied to said drive winding on the second core and said fourth cock pusle being applied to said input-reset winding on said first core and said core-reset winding on said second core; a series capacitor circuit coupling said third leg of said first core to said first leg of said second core; means to store a particular binary bit of information in said third leg of said first core; said clock pulse means transferring said binary information to said second core during discharge of said coupling capacitor therebetween.

3,188,481
SIGNAL TRANSLATING DEVICE
Theodore H. Bonn, Merion Station, and John Presper Eckert, Jr., Gladwyne, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Application June 25, 1959, Ser. No. 882,943, now Patent No. 3,041,468, dated June 26, 1962, which is a division of application Ser. No. 382,180, Sept. 24, 1953, now Patent No. 2,892,998, dated June 30, 1959. Divided and this application Feb. 8, 1962, Ser. No. 171,961
4 Claims. (Cl. 307—88)



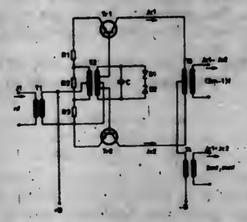
2. In combination, first and second magnetic amplifiers having a common input and a common output conductor, first and second signal sources, means coupled to said amplifiers for rendering said amplifiers operable in alternation, a blocking pulse generator connected to both amplifiers to supply blocking pulses alternately to each of said amplifiers for rendering the inputs of said magnetic amplifiers inoperable in alternation, wherein said first signal source is coupled to said common input conductor, the common output conductor from both amplifiers is connected to said common input conductor, and said second signal source is connected to both amplifiers to supply signals rendering said common input for both amplifiers inoperative simultaneously.

3,188,482
STABILIZED SERVO SYSTEM
William H. Woodworth and Jack A. Crawford, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 10, 1959, Ser. No. 852,155
1 Claim. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A stabilized servo system comprising, in combination:
(a) an output member subject to position error;
(b) means providing an error signal which is phase-reversible and variable in amplitude in accordance with the sense and magnitude, respectively, of said position error;
(c) an error signal amplifier comprising an input stage and an output stage;
(d) said output stage providing an output voltage reversible in phase in accordance with said error signal;
(e) said input comprising a transistor including an emitter electrode and having its amplification variable inversely with the magnitude of a feedback delay voltage applied to said emitter electrode;
(f) means responsive to and controlled by said output voltage to drive said output member toward a null position at which said error signal reduces to zero value;
(g) rectifier means for deriving from said output voltage a unipolar voltage varying in magnitude directly with said output voltage; and
(h) circuit means including a series-connected zener diode for deriving from said unipolar voltage and applying to said emitter electrode said feedback delay voltage.

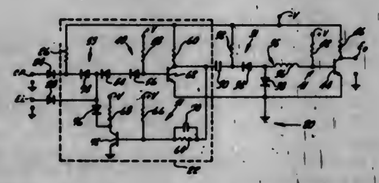
3,188,483
FEEDBACK TRANSISTOR MODULATOR FOR FREQUENCY DIVISION AND FREQUENCY MULTIPLICATION
Erhard Steiner, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Dec. 15, 1959, Ser. No. 859,775
Claims priority, application Germany, Dec. 17, 1958, S 61,019
7 Claims. (Cl. 307—88.5)



1. Circuit arrangement for effecting frequency division and frequency multiplication in a predetermined rational relation by the use of a feedback modulator in which is formed the difference from the frequency to be divided

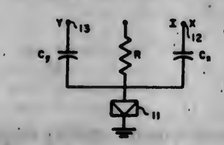
and a harmonic of the divided frequency, comprising two transistor operating in push-pull relation, means connected between the base electrodes of said transistors in push-pull arrangement and forming a resonance circuit tuned to the divided frequency, means for conducting to the emitter and base electrodes in phase the control currents with the frequency to be divided while, in cooperation with said resonance circuit, conducting to said transistors in opposed phase the feedback currents with the divided frequency, and means for obtaining from the collectors of said transistors the output currents with the divided frequency and the harmonic frequencies thereof.

3,188,484
PULSE SYNCHRONIZER
Arnold J. Jorgensen, Duarte, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 21, 1961, Ser. No. 118,664
9 Claims. (Cl. 307—88.5)



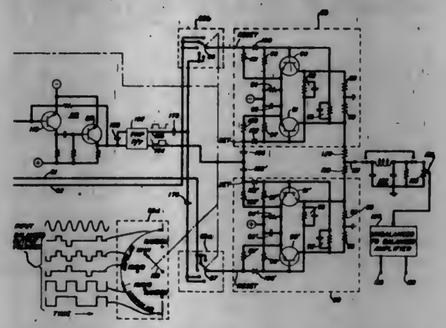
1. A synchronizing circuit for synchronizing pulse signals with substantially evenly spaced recurring timing pulses of predetermined pulse width, comprising a bistable circuit having first and second states and normally arranged in said first state, a separate gating circuit connected to be responsive to the coincidence of a pulse signal to be synchronized and a timing pulse delivered thereto for forming an output signal, said bistable circuit being connected to be responsive to said output signal for switching into said second state, a switching circuit and a time delay circuit for controlling the switching circuit, said time delay circuit being responsive to the occurrence of the change in state of the bistable circuit and arranged with a time delay such that the switching circuit is switched to form a synchronized pulse beginning with the termination of the timing pulse causing the output signal from the gating circuit and ending during the time interval beginning with the termination of the next sequential timing pulse and ending with the beginning of the second timing pulse following the timing pulse causing the output signal from the timing circuit for thereby forming a synchronized pulse simultaneously with a single one of the timing pulses delivered to said gating circuit.

3,188,485
TUNNEL DIODE MEMORY WITH NON-DESTRUCTIVE READOUT
James G. Miller, Hamilton Square, N.J., and Kam Li, Levittown, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 11, 1961, Ser. No. 123,319
2 Claims. (Cl. 307—88.5)



1. A method of storing and reading information in an electronic computer memory comprising providing a tunnel diode, a resistive load connected to said tunnel diode and a pair of coupling capacitors connected to a pair of selection lines; adjusting the current through said resistive load so that the tunnel diode has two stable states, writing digital information into the diode by applying respective write voltage pulses coincidentally to said coupling capacitors, each of said write voltage pulses having a sharper rise time than fall time and the algebraic sum of said pulses being of sufficient amplitude to cause said tunnel diode to change from one of said two stable states to the other depending on the polarity of the write pulses but each of said write pulses being of insufficient amplitude to cause change of state if applied to only one of said pair of coupling capacitors, and reading said digital information by determining the state of said diode, said reading being accomplished by applying respective read voltage pulses coincidentally to said coupling capacitors, said read voltage pulses having insufficient amplitude to cause said diode to change state when applied to one of said pair of coupling capacitors, but having sufficient amplitude only when applied coincidentally to cause unstable oscillation when said diode is in a predetermined one of said two stable states, said oscillation thereby being indicative of the state of said tunnel diode.

3,188,486
TEST-SIGNAL GENERATOR PRODUCING OUTPUTS OF DIFFERENT FREQUENCIES AND CONFIGURATIONS FROM FLIP-FLOPS ACTUATED BY SELECTIVELY PHASED PULSES
David L. Favin, Whippany, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,043
22 Claims. (Cl. 307—88.5)

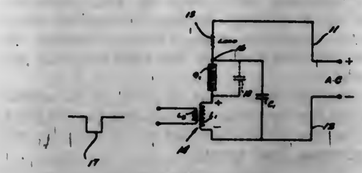


4. A test signal generator comprising two bistable circuits having complementary triggering characteristics, a source of pulses, means coupled to said source and responsive to a portion of the pulses from said source for actuating said bistable circuits alternately, connections applying to the actuated one of said bistable circuits a restoring signal in response to said pulses, and means combining the outputs of said bistable circuits.

3,188,487
SWITCHING CIRCUITS USING MULTILAYER SEMICONDUCTOR DEVICES
Jearld L. Hutson, Richardson, Tex., assignor to Hunt Electronics Company, Dallas, Tex., a corporation of Texas
Filed Dec. 19, 1961, Ser. No. 160,541
39 Claims. (Cl. 307—88.5)

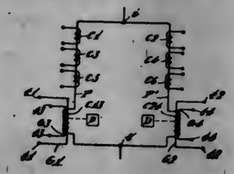
1. A switching circuit comprising a multilayer diode semiconductor device capable of being switched from a normally high impedance state to a low impedance state, inductive means connected in circuit with said semiconductor device, means to couple a control signal voltage

to said inductive means, and reactance means cooperating with said inductive means to produce a triggering voltage



across the semiconductor device sufficient to switch same to the low impedance state responsive to the presence of said control voltage.

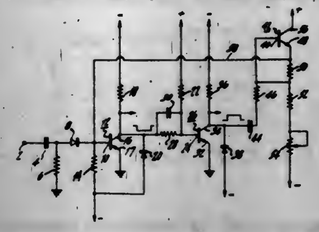
3,188,488
MULTI-STABLE SUPERCONDUCTIVE ELECTRICAL CIRCUIT
Carl Russell Smallman, Lexington, and Alfred G. Emslie, Scituate, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 14, 1962, Ser. No. 173,309
7 Claims. (Cl. 307—88.5)



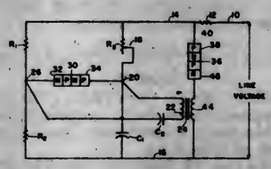
4. A multi-stable electrical circuit comprising current input and output terminals, superconductive means forming at least two current carrying paths between said terminals, said superconductive means being responsive to a magnetic field to change between a state of zero resistance and a resistive state, said paths being magnetically independent of each other so that current may flow simultaneously in both paths, for each path control means for independent y applying a magnetic field to said path thereby to influence a change of path to resistive state, whereby current may be diverted from said path in resistive state to the other path in non-resistive state, and superconductive gate means in the magnetic field of each of said paths, said gate means being influenced when current is diverted as aforesaid, whereby said circuit can assume any one of three stable states, a state in which current flows in one of said two paths, a state in which current flows in the other of said paths, and a condition in which current flows in both of said paths simultaneously.

3,188,489
MONOSTABLE MULTIVIBRATOR HAVING EMITTER FOLLOWER FEEDBACK CONTROLLED BY A TIMING NETWORK
Denis P. Dorsey, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 27, 1962, Ser. No. 182,837
7 Claims. (Cl. 307—88.5)

1. A circuit for producing a long duration pulse having short rise and fall time comprising
first and second transistors of one conductivity type,
means for coupling the output electrode of said first transistor resistively to the input electrode of said second transistor,
means for clamping the output electrodes of said first and second transistors to predetermined voltages,
means for connecting the output electrode of said second transistor through a series connection including a condenser to the input electrode of a third transistor,
said third transistor being of an opposite conductivity type to the first and second transistors,
a variable resistance network for connecting another electrode of the third transistor to a voltage source,
means for connecting a point on said resistance network to said input electrode of said third transistor,
means for connecting said another electrode to the input electrode of the first transistor,
and means for connecting still another electrode of said third transistor directly to a voltage source.

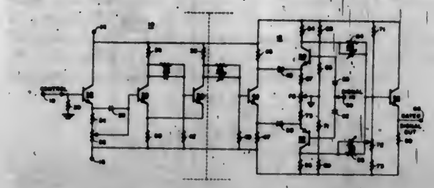


3,188,490
POWER CONTROL CIRCUIT UTILIZING A PHASE SHIFT NETWORK FOR CONTROLLING THE CONDUCTION TIME OF THYRATRON TYPE DEVICES
Frederick B. Holt, Jr., and Jearld L. Hutson, Richardson, Tex., assignors to Hunt Electronics Company, Dallas, Tex., a corporation of Texas
Filed Apr. 3, 1962, Ser. No. 184,841



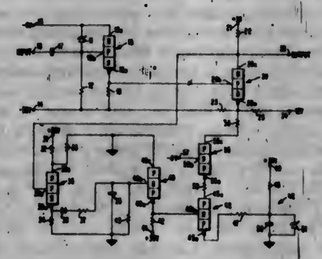
1. A switching circuit for controlling the power applied to a load from a source of alternating current supply voltage that comprises a first diode device capable of being switched from a normally high impedance state to a low impedance state, means for connecting said first device in series with a load and said source of alternating current supply voltage, a phase shift network having an output, means connecting said phase shift network in parallel with said first device to produce an alternating current voltage at said output, said phase shift network including a variable component for varying the phase relationship between the line voltage and the voltage produced at said output, a second diode device capable of being switched from a normally high impedance state to a low impedance state, a transformer having a primary winding and a secondary winding, a capacitor, means connecting said second device, said capacitor and said primary winding in a series loop, and means connecting said output across one of said second device and said capacitor, said first device being characterized by a forward breakdown voltage greater than the maximum instantaneous amplitude of the applied line voltage and said second device being characterized by a forward breakdown voltage less than the maximum instantaneous amplitude of the voltage produced at said output.

3,188,491
TRANSMISSION OR BLOCKING GATE
Raymond W. La Baw, Orange, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 25, 1962, Ser. No. 226,783
2 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



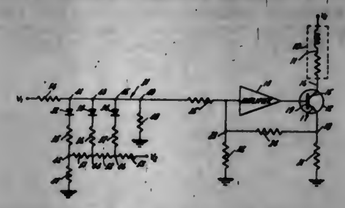
1. In a gating circuit the combination comprising:
(a) a first transistor having a base, collector and an emitter,
(b) a Schmidt trigger generator for generating positive and negative control pulses,
(c) the base of said first transistor being coupled to the output of said Schmidt trigger generator,
(d) second and third transistors each having a base, collector and emitter,
(e) resistor circuit means connecting the emitters of said second and third transistors,
(f) first rectifying means connected between the collector of said first transistor and the emitter of said second transistor,
(g) second rectifying means being oppositely polarized to that of said first rectifying means connected between the emitter of said first transistor and the emitter of said third transistor,
(h) circuit means coupling an input signal to be gated to the bases of said second and third transistors and
(i) output circuit means coupled to the collectors of said second and third transistors.

3,188,492
CLAMP LEVEL CONTROL CIRCUIT
Ronald J. Bymers, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 15, 1962, Ser. No. 230,324
12 Claims. (Cl. 307—88.5)



1. A voltage level clamp circuit comprising
an input circuit adapted to receive a continuous unreferenced signal and including means for clamping the maximum voltage excursions of one polarity to a desired value,
circuit means including a transistor having emitter and collector terminals and a base terminal coupled to the input circuit for producing at the collector terminal the input signals in inverted form and referenced to a desired voltage level,
a source of fixed reference potential,
means including a differential amplifier coupled to the collector terminal of the transistor for comparing the collector reference level with the fixed reference potential and producing a feedback current the value of which is a function of the difference between the collector reference level and the fixed reference potential, and
means coupling the differential amplifier to the emitter terminal of the transistor for injecting the feedback current into the emitter terminal to maintain the collector reference level constant.

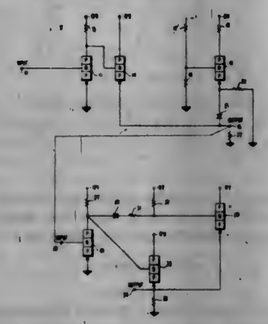
3,188,493
SHAPING NETWORK FOR FERRITE ATTENUATOR
Paul E. Malagari, Binghamton, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 20, 1962, Ser. No. 246,663
1 Claim. (Cl. 307—88.5)



An attenuator device for producing a linear attenuation of R.F. energy within a waveguide comprising;
a ferrite attenuator within a waveguide, said ferrite attenuator having first and second input leads,
a first voltage source connected to said first input lead,
a transistor having emitter, collector and base electrodes, said collector electrode being connected to said second input lead,
a feedback amplifier having an input and an output, said output being connected to said base electrode of said transistor,
a feedback circuit connected between said emitter electrode and said input of said feedback amplifier,
a diode shaping network having an output connected to said input of said feedback amplifier, and
a second voltage source connected to said diode shaping network whereby a nonlinear current is provided for driving said ferrite attenuator thereby providing a linear attenuation of R.F. energy within said waveguide.

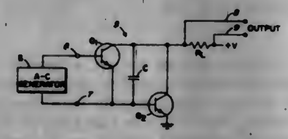
3,188,494
READ-OUT DRIVER AND LEVEL SETTER CIRCUIT
Melvin P. Xylander, Apalachin, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 6, 1963, Ser. No. 256,690
8 Claims. (Cl. 307—88.5)

1. A read-out driver and lever setter circuit comprising in combination:
(a) a read-out driver stage including a plurality of transistors each having a base, emitter, and collector with a first transistor connected in inverter configuration and a pair of transistors connected in emitter follower configuration with an asymmetric current conducting means coupled between the emitters of the transistors connected in emitter follower configuration,
(b) means for applying an input signal to the base of said first transistor,
(c) means for deriving a signal from the collector of said first transistor and applying said signal to the base of transistor in the first emitter follower configuration whereby the signal serves to control the conductivity in the first emitter follower transistor which, in turn, controls the amount of conductivity in the second emitter follower transistor with the emitter follower configurations and the asymmetric current conducting means serving to provide output signals having predetermined voltage levels,
(d) a voltage level setting stage including a plurality of transistors each having a base, emitter, and collector with one transistor connected in inverter configuration and a pair of transistors connected in emitter follower configuration,



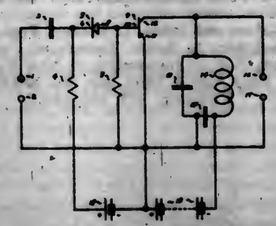
(e) means for applying the output signal of the read-out driver stage to the base of the first transistor in the voltage level setting stage,
(f) means for deriving a signal from the collector of said first transistor in the voltage level setting stage and applying said signal to the bases of the transistors in the emitter follower stages of the voltage level setting stage for reversibly changing the state of conduction in the two emitter follower stages to produce output signals in the emitters having predetermined voltage level characteristics and adapted for deliverance to utilization means.

3,188,495
A.C. DETECTOR CIRCUIT
Donald K. Grimm, Fargo, N. Dak., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Apr. 8, 1963, Ser. No. 271,198
4 Claims. (Cl. 307—88.5)



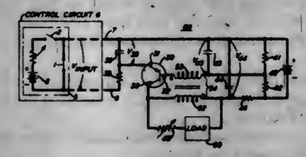
1. A detector circuit, comprising: first and second input terminal means adapted to receive an A.-C. signal to be detected; a first transistor having its base connected to said first input terminal means and its emitter connected with said second input terminal means; a capacitor one end of which is connected to the collector of said first transistor and the other end of which is connected to the emitter of said first transistor; a second transistor having its collector connected to said one end of said capacitor and its base connected to said other end of said capacitor; load means serially connected with the emitter and collector of said second transistor and a source of direct current supply voltage, and an output taken across said load means.

3,188,496
TRANSISTOR FREQUENCY MULTIPLIER EMPLOYING DIODE PROTECTED TRANSISTOR AND TUNED CIRCUIT
Lyttleton W. Ballard, 2217 Wake Forest St., Virginia Beach, Va.
Filed Apr. 15, 1963, Ser. No. 273,196
5 Claims. (Cl. 307—88.5)



1. A Class C frequency multiplier comprising:
a transistor having a control junction and an output element;
electrical power source means;
circuitry coupling said source means with said transistor for operating the latter in the Class C mode, and including means for applying an input signal to said junction and means preventing substantial reverse biasing of said junction during nonconduction of the transistor; and
a resonant circuit coupled with said output element and tuned to a multiple of the frequency of said input signal.

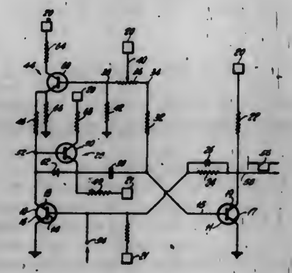
3,188,497
SINGLE-TRANSISTOR CIRCUIT PRODUCING PULSE PREDETERMINED INTERVAL FROM TRAILING EDGE OF FINAL PULSE IN ANY PULSE-TRAIN
George W. Dick, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 29, 1963, Ser. No. 284,042
9 Claims. (Cl. 307—88.5)



1. A delayed pulse generator circuit comprising
a switch set in a first impedance condition,
an input source of pulses,
pulse train applying means connected between said switch and said input source for causing said switch, upon the appearance of one of said pulse trains, to assume a second impedance condition, said applying means including timing means for holding said switch in said second impedance condition for the duration of appearance of said one train and for a predetermined time interval thereafter,
a source of fixed potential,
an output-forming storage device connected to said source of fixed potential and chargeable thereby during the time interval said switch is in said second impedance condition,
a load device connected in a circuit including said storage device and said switch,
and switch control means cooperaitng with said timing means for first operating said switch to a third impedance condition for discharging said storage device into said load device circuit at the conclusion

of said predetermined time interval and for thereafter restoring said switch to said first impedance condition.

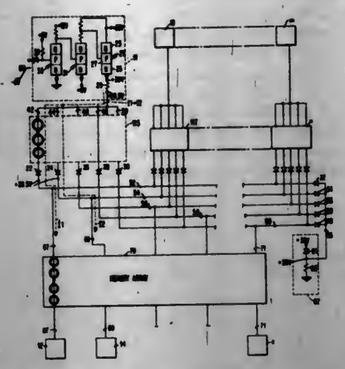
3,188,498
MONOSTABLE MULTIVIBRATOR WITH BIAS APPLIED TO TAP OF VARIABLE RC NETWORK FOR LINEARIZATION OF CHARGE-TIME
Andrew Gabor and Janos T. Barany, Port Washington, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Aug. 8, 1963, Ser. No. 300,842
7 Claims. (Cl. 307—88.5)



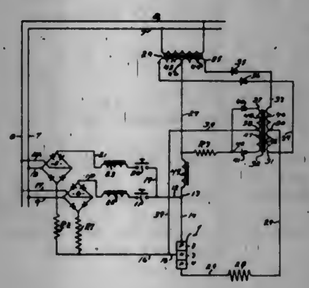
1. A monostable multivibrator having,
a first and second transistor,
each of said transistors having at least a base, collector and emitter electrodes,
a timing capacitor coupling the collector electrode of said first transistor to the base electrode of said second transistor,
a biasing source,
a potentiometer having a first and second terminal and a tap electrode adjustably positioned between said first and second terminal,
means coupling said biasing source to said tap electrode,
a first resistor coupling said base electrode of said second transistor to said first terminal of said potentiometer,
a second resistor coupling said collector electrode of said first transistor to said second terminal of said potentiometer,
a third resistor coupling said second terminal of said potentiometer to ground,
whereby movement of said tap electrode simultaneously changes the effective resistance in the timing circuit including said timing capacitor and changes the potential applied to the collector electrode of said first transistor.

3,188,499
PROTECTIVE CIRCUIT FOR A TRANSISTOR GATE
Melvin P. Xylander, Apalachin, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 24, 1960, Ser. No. 64,473
6 Claims. (Cl. 307—93)

1. A protective circuit for limiting the current from a plurality of sources flowing through an electronic gate comprising, in combination, a first group of paths for channeling the current from said sources to said gate, a current sink, auxiliary paths from said sources to said current sink, unilateral conducting devices connected in said paths, means for biasing said devices in said first paths to conduct when the current flowing through said gate is within a set limit, and means for biasing said devices in said auxiliary paths to conduct current from said sources to said current sink when the current flowing through said gate tends to go above said set limit.

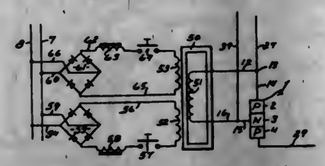


3,188,500
ELECTRIC CONTROLS WITH TRANSISTORS
Steve A. Zarieng, Akron, Ohio, assignor to The Clark Controller Company, Cleveland, Ohio, a corporation of Ohio
Original application June 24, 1958, Ser. No. 744,251, now Patent No. 3,070,710, dated Dec. 25, 1962. Divided and this application July 20, 1962, Ser. No. 211,452
9 Claims. (Cl. 307—112)



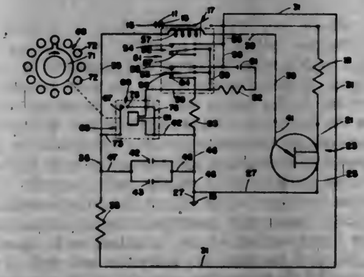
7. In an electric control system, a source of current; a load connected to receive current supplied by the source; a transistor having a main current path therethrough in series with load, and said path being normally non-conducting; and the transistor having an activating current path therein which when energized renders the main path of the transistor conducting; a first contactor in a circuit connected to a current source and to the activating path and energizing it to render the transistor conducting when the contactor is closed, to thereby cause current to flow in the load; a maintaining circuit arranged to derive current from the load current and connected to the activating path of the transistor to maintain it activated; a second contactor in a second circuit connected to a current source and to the activating path and neutralizing activation of the transistor to render the transistor non-conducting when the second contactor is closed, and thereby interrupting the current in the load and in the maintaining circuit.

3,188,501
ELECTRIC CONTROLS WITH TRANSISTORS
Steve A. Zarieng, Akron, Ohio, assignor to The Clark Controller Company, Cleveland, Ohio, a corporation of Ohio
Original application June 24, 1958, Ser. No. 744,251, now Patent No. 3,070,710, dated Dec. 25, 1962. Divided and this application July 20, 1962, Ser. No. 211,453
6 Claims. (Cl. 307—112)



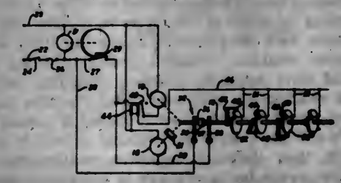
1. In an electric control system, a transistor having a main and an activating circuit, a main source of current connected to a load; the main circuit of said transistor connected between the load and the source to allow current flow therethrough when conductive and to prohibit said current flow when non-conductive; a sustaining circuit arranged to drive current from the load current and connected to the activating circuit of said transistor to maintain it conducting when once it has been rendered conducting; a saturable magnetic core having a first and second primary winding and a secondary winding; said secondary winding connected to the activating circuit of said transistor; a first circuit means comprising a first contactor, said first primary winding and a direct current source connected in circuit, and upon closure of the first contactor current flows through said first primary winding to saturate the core in one direction and induce a pulse in the secondary winding to supply a pulse of current to the activating circuit of said transistor to render it conducting; a second circuit means comprising a second contactor, said second primary winding and a direct current source connected in circuit, and upon closure of the second contactor current flows through said second primary winding to saturate the core in the opposite direction and induce a pulse in the secondary winding to supply a pulse of current to the activating circuit of said transistor in the direction to render said transistor non-conducting.

3,188,502
ELECTRICAL CYCLING TIMER
Arthur W. Skoog, Clinton, and Florian E. Tepolt, Utica, N.Y., assignors to The Bendix Corporation, Oneida, N.Y., a corporation of Delaware
Filed Nov. 2, 1961, Ser. No. 149,615
6 Claims. (Cl. 307—132)



6. An electrical cycling timer comprised of a PN unijunction transistor having a first base connector, an emitter and a second base connector, a battery having a positive terminal and a negative terminal, a first circuit connecting said positive terminal of said battery through a control switch and a temperature compensating resistor to said second base connector, said first base having a ground connection to the negative terminal of said battery, a second circuit connecting said control switch through a timing resistor and a relay coil to said emitter of said transistor, said relay coil being part of a relay having normally-open switch means, said normally-open switch means having first contact means and movable means contacting second contact means, said relay coil when energized being constructed to cause contact between said first contact means and said movable means, said first contact means being connected to said control switch, a stepper switch having an operating coil, said movable means being connected to said operating coil of said stepper switch, said stepper switch coil having a connection to said negative terminal of said battery, capacitance means connected to said ground connection of said transistor second base connector and connected to said second circuit between said timing resistor and said relay coil, said capacitance means being such that when charged to a predetermined value it will trigger said transistor and said relay coil will be energized, said stepper switch coil having a return connection to said ground connection of said first base transistor connector so that it will be energized when said relay is actuated, said stepper switch having a contact and movable element arranged to be closed when said stepper switch coil is energized, said stepper switch contact being connected to said return connection of said stepper switch coil, said stepper switch movable element being connected to said second circuit between said timing resistor and said relay coil so that when said stepper switch is closed upon the closing of said relay said capacitance means is provided with a discharge path, said timing resistor and said capacitance means being such that said transistor, said relay and said stepper switch are operated after predetermined time delays, arc suppression means including a capacitor connected across said relay movable means and said first relay contact means for offsetting the inductive effect of said stepper switch coil, said second contact means being connected through a resistor to said return connection of said stepper switch coil, said second contact means being connected through a resistor to said return connection of said stepper switch coil to provide a discharge path for said arc suppression capacitor.

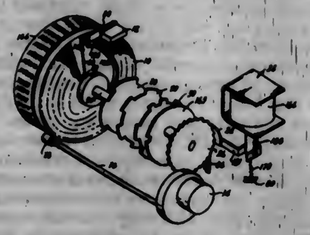
3,188,503
ADJUSTABLE TIMER
David W. Hendry, 215 Crocker Ave., Piedmont, Calif.
Filed Oct. 17, 1961, Ser. No. 145,676
11 Claims. (Cl. 307—141)



8. In an adjustable timer for water systems and the like having a shaft, and control means responsive to the rotational position of the shaft, in combination, means for rotating the shaft in variable angular velocities according to a predetermined program comprising a first motor for driving the shaft through the programmed rotational positions, a second motor for driving the shaft at a higher rate of speed than said first motor, means for allowing the second motor to drive the shaft independently of the first motor, means for stopping the motors driving the shaft after the shaft has passed through its programmed movements, a relay connected to the second motor for

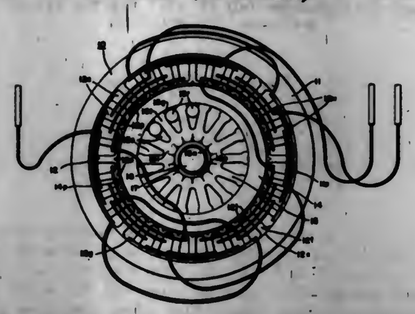
controlling the operation thereof, a plurality of electrically conductive brushes mounted for rotation on the shaft, each serving as a switch terminal for controlling the relay, a plurality of cam units associated with said brushes, each of said cam units having a cam surface including an electrically conducting terminal adapted to contact one of said brushes to operate said relay, the cam surfaces being formed to contain an adjustable member movable above an end portion of the terminal on the cam surface and a recess at the other end of the terminal, a lever on said adjustable member for making the adjustment, indicia for showing the position of adjustment of said adjustable member, and spring means on the brush to urge the brush against the cam surface and terminal and to effect a quick make and quick break as the brush reaches the ends of the terminal.

3,188,504
MULTI-CYCLE PROGRAM TIMER
Maynard E. Anderson, Detroit, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 12, 1960, Ser. No. 75,330
24 Claims. (Cl. 307—141.4)



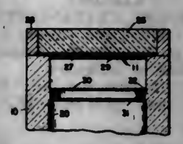
16. A control device for sequentially activating a series of electrical circuits in accordance with a predetermined cycle of operation, comprising master control means, slave control means, and slave drive means interposed between the master and slave control means; said master control means including a member rotatably mounted, master drive means to drive said rotatable member at a timed rate, track means on the rotatable member, a cycle of operation comprising alternate signaling and non-signaling portions recorded on said track means, signaling means to track in said track means and being actuable in response to the recorded cycle of operation, said signaling means being operative when actuated by the signaling portions of the cycle to actuate the slave drive means, said slave control means including at least one member rotatably mounted, switch-operating means along said slave rotatable member, switching means in operative relationship with said slave rotatable member and being actuable by the switch-operating means to sequentially activate a series of electrical circuits in accordance with their different operative relationships, said slave drive means being effective to drive said rotatable slave member to different operative positions, correlating means to move with the driven slave member, said correlating means being effective after actuation of the slave drive means to temporarily supersede the master drive means and drive the driven master member over the signaling portion of the recorded cycle whereby the driven slave member is moved a distance related to the length of the signaling portion plus the length of the preceding non-signaling portion of the recorded cycle, said slave member remaining in this position for a time related to the timed movement of the driven master member and the length of the next succeeding non-signaling portion of the recorded cycle.

3,188,505
DYNAMOELECTRIC MACHINE MEANS
John B. Wiley, St. Catharines, Ontario, Canada, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 18, 1960, Ser. No. 70,262
4 Claims. (Cl. 310—259)



1. Dynamoelectric machine stator and rotor lamination structural means, each comprising an annular portion having a continuous periphery as well as a slotted portion press-fitted thereto, the slotted portion having a metal body arcuate in configuration as bent from a continuous strip of metal having a plurality of slots initially small in area to save waste of material and then enlarged as to slot area when teeth defining the slots are caused to spread from each other adjacent to free radially outer ends while notches along radially inner edging in alignment with slots and intermediate thin hinge segments joining said teeth facilitate bending, said slotted portion having said hinge segments and inner edging with notches directly press-fitted onto said continuous periphery of said annular portion.

3,188,506
CATHODE RAY TUBE WITH SIGNAL PLATE CONNECTED TO CONTACT RING HAVING ENVELOPE DIAMETER
Martin Rome, Stamford, Conn., assignor to The Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut
Filed Nov. 23, 1959, Ser. No. 854,656
3 Claims. (Cl. 313—65)



1. A cathode ray tube comprising an evacuated dielectric envelope embodying a tubular bulb having one end sealed and having the other end closed by a transparent faceplate sealed to the end of the bulb, an electron gun structure at the sealed end of the envelope, and a target on the inner side of the faceplate and arranged to be scanned by an electron beam from the electron gun, the electron gun including a cathode and at least one electrode spaced longitudinally of the bulb inwardly from the cathode, the target comprising a thin transparent layer of electrically conductive material covering substantially the entire inner surface of the faceplace and extending through the seal between the faceplate and end of the bulb, a layer of photoesnsitive material on the conductive layer entirely within the interior of the bulb, and a terminal for the target comprising a metal ring closely enclosing the edge of the faceplate and in abutting relation to the periphery of the conductive layer, the ring being sealed

directly to the end of the bulb and having an outer diameter substantially equal to the outer diameter of the adjacent portion of the bulb.

3,188,507
BEAM PENETRATION COLOR CATHODE RAY TUBE
Harold B. Law, Princeton, N.J., John J. Thomas, Levittown, Pa., and Josef Gross, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Dec. 7, 1961, Ser. No. 157,668
6 Claims. (Cl. 313—69)



5. A cathode ray tube comprising a luminescent viewing screen and an electron gun assembly including three electron guns disposed side-by-side in delta array and for projecting three different velocity electron beams toward said screen through a common deflection zone for establishing a common deflection field therein, a first magnetic tubular shield surrounding the path of a first one of said beams in said deflection zone, and a second magnetic tubular shield surrounding the path of a second one of said beams in said deflection zone, one of said shields being shorter and of larger diameter than the other and axially disposed between and spaced from the ends of said other shield, the relative lengths, relative diameters, and relative axial dispositions of said shields being such that for given beam velocities and a given field shape and strength, substantially equal size rasters are scanned by the three beams and the deflection field distortions caused by the two shields have substantially corresponding effects on the raster of the third beam which is scanned through the two field distortions.

3,188,508
BEAM PENETRATION COLOR CATHODE RAY TUBE
John J. Thomas, Levittown, Pa., assignor to Radio Corporation of America a corporation of Delaware
Filed Dec. 7, 1961, Ser. No. 157,644
8 Claims. (Cl. 313—69)



2. A cathode ray tube comprising a luminescent screen and three electron guns disposed side-by-side in triangular array for projecting different velocity electron beams through a common deflection zone toward said screen for use in a system including deflection means for establishing beam reflection fields in said deflection zone for scanning said beams over said screen in mutually transverse directions at different scan frequencies to form a composite raster, the two of said guns for projecting the two slower of said different velocity beams including magnetic tubular shields which surround their respective beams and which extend into said deflection zone, the one of said guns for projecting the fastest of said different velocity beams being positioned in the central plane of said screen perpendicular to the direction of scan produced by the higher frequency one of said deflection fields.

3,188,509
GLOW-DISCHARGE DIGIT LAMP
Dirk Arie van den Berg, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 29, 1961, Ser. No. 113,188
Claims priority, application Netherlands, July 15, 1960, 253,676
4 Claims. (Cl. 313—109.5)



3. A glow-discharge indicator tube comprising a gas-filled envelope having a transparent window, a stack of character-shaped cathode electrodes arranged in two groups of five cathodes, a screen electrode between the two groups of electrodes, an anode associated with each group of cathodes whereby with a potential applied between a cathode of one group and its associated anode a glow-discharge appears at said cathode, and a separate character-shaped cathode electrode spaced from said stack and in the plane of said screen and in glow-discharge relationship with the anode associated with each stack whereby with a potential applied thereto said cathode can glow.

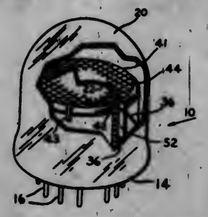
3,188,510
DIGIT INDICATOR GLOW-DISCHARGE LAMP
Theodoor Peter Johannes Botden, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 6, 1961, Ser. No. 115,707
Claims priority, application Netherlands, July 15, 1960, 253,675
1 Claim. (Cl. 313—109.5)



An indicating tube of the glow-lamp type comprising an envelope having a transparent viewing portion, and within the envelope an ionizable medium, a pair of insulating support rods, and mounted on said support rods in viewable position a plurality of character-like cathodes positioned in parallel planes, a grid-like anode positioned between each pair of successive cathodes, and an annular metal member adjacent to and separated from each cathode by an insulating member having a given diameter, said annular member constituting an auxiliary anode, said auxiliary anode being spaced from an adjacent cathode a distance at which with a small positive potential applied thereto relative to the anode a discharge is initiated between the cathode and anode associated therewith, said annular metal member having a diameter not exceeding

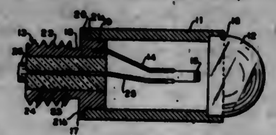
twice the diameter of the annular insulating member, and means to connect the cathodes and the anodes, respectively, in parallel.

3,188,511
COLD CATHODE INDICATOR TUBE
George A. Kupsky, North Plainfield, Roger W. Wolfe, Plainfield, and David Glaser, Green Brook, N.J., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 68,450, Nov. 10, 1960. This application Apr. 10, 1964, Ser. No. 364,875
7 Claims. (Cl. 313—109.5)



1. A cold cathode gaseous indicator tube comprising
an envelope having a gas filling suitable for sustaining cathode glow,
an anode electrode,
a plurality of glow cathode electrodes which sputter and emit metal particles in operation,
each cathode having a pair of apertured mounting tabs which are mechanically and electrically connected thereto, the pairs of mounting tabs being aligned on two parallel axes,
support posts threaded through and engaging said mounting tabs and supporting said cathodes parallel to each other in a stack in said envelope,
and generally annular insulating spacer bodies threaded on said posts between adjacent cathodes for providing insulation therebetween,
each spacer being in contact with a cathode mounting tab on either side of it,
each spacer also including a projecting portion which projects from the support post on which the spacer is mounted into the space between adjacent cathode electrodes and is spaced from the adjacent cathodes whereby the length of the surface of a spacer body from its region of contact with the cathode mounting tab on one side to its region of contact with the cathode mounting tab on its other side is greater than the perpendicular distance between adjacent cathodes,
at least a portion of the surface of said projecting portion being positioned parallel to and close to the surface of the adjacent cathode which it faces.

3,188,512
MINIATURE LAMP AND METHOD FOR MAKING IT
William C. Moore, Skaneateles, N.Y., assignor to Welch Allyn, Inc., Skaneateles Falls, N.Y., a corporation of New York
Filed Dec. 22, 1960, Ser. No. 77,743
2 Claims. (Cl. 313—110)



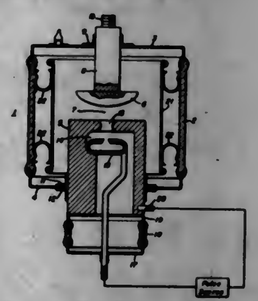
1. In a miniature lamp, a tubular metal lamp body having a precise predetermined length, a metal base assembly forming a sealed bottom closure for said body, means on said base assembly in engagement with said body for locating the inner surface of the base assembly an exact predetermined distance from the top edge of the body, an independent optically ground lens forming a sealed top closure for said body, coacting engaging means on said body and lens for locating the inner surface of the lens an exact predetermined distance from the top edge of the body, lead-in wires supported by said base assembly, said wires extending axially into the interior of said lamp body an exact predetermined distance from the inner surface of said base assembly, and a filament connecting the inner ends of said wires and located at an exact predetermined distance from the wire inner ends whereby said filament and lens inner surface are positioned at an exact predetermined distance from one another, said metal lamp body and base assembly permitting accurate machining to insure location of said lamp parts at said exact distances.

3,188,513
OPTICAL FILTERS AND LAMPS EMBODYING THE SAME
Richard L. Hansler, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 10, 1963, Ser. No. 272,806
3 Claims. (Cl. 313—112)



1. An electric lamp comprising the combination of an envelope having a source of radiant energy enclosed therein, and a self-supporting flexible filter member rolled up and inserted into said envelope and retained therein solely by engagement with the walls of said envelope.

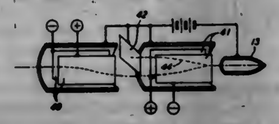
3,188,514
GAS GENERATING ELECTRIC DISCHARGE DEVICE
James D. Cobine, Rexford, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 16, 1961, Ser. No. 109,691
7 Claims. (Cl. 313—174)



1. An electric discharge device adapted to change from a non-conducting state to a conducting state in response to a pulsed signal and comprising: an hermetically sealed envelope evacuated to a pressure of 10^{-6} mm. of mercury or less; a pair of primary electrodes located within said envelope and spaced apart from each other to define a breakdown gap therebetween; means for connecting said

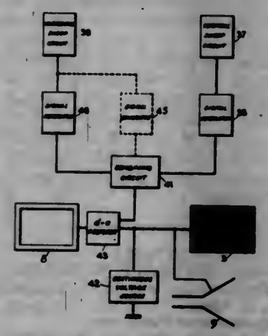
electrodes between terminals of a voltage to be switched; a trigger electrode comprising a body of high dielectric constant having a gap therein and adapted to sustain a trigger discharge across said gap when a voltage is supplied thereto; and means for supplying pulsed voltage signals to said trigger electrode to render said breakdown gap conducting.

3,188,515
BEAM COLLECTOR WITH AUXILIARY COLLECTOR FOR REPELLED OR SECONDARILY-EMITTED ELECTRONS
Rudolf Kompfner, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 5, 1961, Ser. No. 114,988
5 Claims. (Cl. 315—3.5)



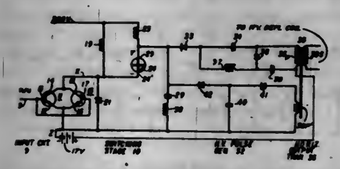
1. An electron discharge device having a central axis and comprising: means for forming and projecting an electron beam along said axis; means for producing a magnetic field that is parallel with said axis, said field establishing a cyclotron frequency of electron rotation in said beam; a source of signal wave energy; a slow wave structure coupled to said source and extending along a portion of said axis; first means for deflecting said beam away from said axis; second means adjacent said first means for deflecting the beam back to the axis; a primary collector adjacent said second means; and an auxiliary collector between said first and second means, the auxiliary collector being at a higher positive potential than the primary collector.

3,188,516
DYNAMIC IMPACT CONTROL FOR COLOR RECEIVER TUBE
Henri de France and Roger R. Cahen, Levallois-Perret, France, assignors to Compagnie Francaise de Television, a corporation of France
Filed Mar. 19, 1963, Ser. No. 266,278
Claims priority, application France, Mar. 21, 1962, 891,723; Feb. 26, 1963, 926,000
18 Claims. (Cl. 315—22)



1. A colour television picture tube comprising: at least one electron gun for generating a beam; a screen comprising phosphor elements of different colours; an electron permeable focusing electrode parallel to said screen and adapted to form therewith a convergent system for said beam, said system including means for applying to said focusing electrode a potential lower than the potential of said screen; a horizontal deflection system and a vertical deflection system for sweeping said focusing electrode with said beam; a peripherical electrode surrounding the space portion swept by said beam between said gun and the vicinity of said focusing electrode; at least one correcting electrode, located between and insulated from said peripherical electrode and said focusing electrode, and shaped for attracting the electrons from said beam so as to compensate, at least partially, in at least one direction parallel to said screen, the deviation imparted to said beam in the space portion comprised between said focusing electrode and said screen; said tube having means for applying to said peripherical electrode a potential equal to that of said focusing electrode and further means for applying to said correcting electrode a potential which is variable as a function of the instantaneous position of said beam.

3,188,517
TRANSISTORIZED HORIZONTAL SWEEP OUTPUT CIRCUIT
George H. Balding, Fremont, Calif., assignor, by mesne assignments, to Kaiser Aerospace & Electronics Corporation, Oakland, Calif., a corporation of Nevada
Filed Apr. 19, 1960, Ser. No. 23,325
8 Claims. (Cl. 315—27)



1. A high-voltage, high-current switching circuit for controlling a high voltage generator circuit to generate a high voltage pulse from a low voltage source, comprising at least a first semiconductor switching member rated to withstand a relatively low voltage thereacross, a second semiconductor switching member capable of withstanding a potential thereacross which is of a substantially larger value than said low voltage, including at least an input and an output circuit, means for coupling the output circuit of said second switching member to said high voltage generator circuit, and means for coupling the input circuit of said second switching member to the output circuit for said first switching member, and also to a source of potential which is of a lower value than the potential pulse generated by said high voltage generator circuit, and voltage limiter means coupled to the junction of the output circuit of said first switching member and the output circuit of said second switching member and to said source of potential in parallel with said first switching member to provide an arrangement in which a low voltage semiconductor switching device controls the switching of a high voltage generator circuit.

3,188,518
UNDULATING BEAM TRAVELING WAVE TUBE FOCUSING STRUCTURE
Robert M. Phillips, Redwood City, Calif., assignor to General Electric Company, a corporation of New York
Filed Sept. 26, 1961, Ser. No. 140,875
16 Claims. (Cl. 315—39)

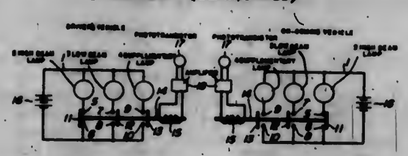
1. A charged particle stream focusing structure comprising: means for projecting a stream of charged particles along an axis; and a magnetic field producing structure disposed along said axis for producing a steady magnetic field perpendicular to said axis, said magnetic field alternating in direction as a function of a distance along said axis whereby said stream is caused to undulate

in a direction transverse to said axis, said magnetic field producing structure including means providing a greater



magnetic field strength at a predetermined transverse distance from said axis than at said axis.

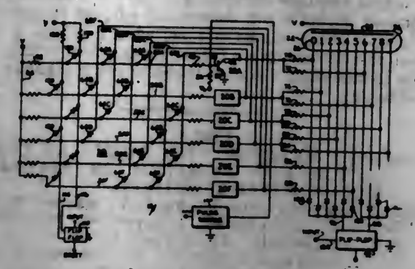
3,188,519
AUTOMATIC CONTROL SYSTEM FOR HEADLIGHTS OF MOTOR VEHICLES COMPRISING A SUPPLEMENTARY LIGHT WITH FILTER
Bunsaku Shimai, Tokyo, Japan, assignor to Tokuji Kiuyama, Nagoya-shi, Japan
Filed Oct. 13, 1959, Ser. No. 846,149
Claims priority, application Japan, Nov. 11, 1958, 33/32,030
4 Claims. (Cl. 315—83)



1. In an automatic control system for headlights of motor vehicles having at least one high beam headlight means and a low beam headlight means, at least one supplementary lamp device, a photosensitive device sensitive to visible and infra-red radiations, and switching means connected between said high beam headlight means, low beam headlight means and supplementary lamp device and said photosensitive device and controlled by the output of said photosensitive device for switching off said high beam headlight means while switching on said low beam headlight means and said supplementary lamp device, that improvement in which said supplementary lamp device consists of an incandescent lamp, a reflector in which said lamp is positioned and having an opening through which direct and reflected light from said lamp passes, a filter over said opening through which all of the light from the filament of said lamp is projected, said filter having a colored film formed of an organic material passing only light in the blue-green portion of the visible light spectrum and infra-red light.

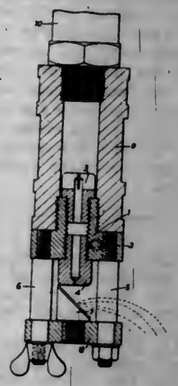
3,188,520
SEMICONDUCTOR COUNTER CIRCUIT FOR DRIVING DECADE INDICATOR
Paul E. La Bonnie, Livingston, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 27, 1962, Ser. No. 205,617
10 Claims. (Cl. 315—84.6)

1. A counter circuit including
a cold cathode gaseous indicator tube including an anode and a plurality of cathode indicator electrodes, said cathode electrodes being arranged in two groups,
cathode control means coupled to said groups of cathodes for rendering said groups separately operable,
separate switch means each coupled to a pair of cathodes including one cathode from each group for energizing a pair of cathodes,
other switch means each coupled to a single cathode electrode,



and means coupled to said switch means for separately energizing each in order.

3,188,521
PROTECTION OF BEARINGS
John Campbell Hart, Fetcham, England, assignor to The Hoyt Metal Company of Great Britain Limited, London, England, a British company
Filed Mar. 1, 1961, Ser. No. 92,635
4 Claims. (Cl. 317—2)

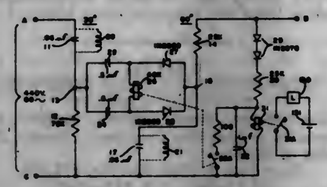


1. A method of protecting bearings of machinery from electro-chemical attack which results from the discharge of charged particulate contaminants in a dielectric lubricant liquid, said method comprising projecting said lubricant liquid against the surface of a conductive member at a position remote from the bearings to be protected and at a velocity such that the lubricant liquid striking the surface of the conductive member will have a velocity considerably in excess of the maximum velocity imparted to the liquid in the bearings, and grounding said conductive member through a conductive path other than through the bearings.

3,188,522
PHASE SEQUENCE NETWORK
George T. Culbertson, Gardena, Calif., assignor, by mesne assignments, to Master Specialties Company, Gardena, Calif., a corporation of California
Filed Aug. 24, 1960, Ser. No. 51,701
9 Claims. (Cl. 317—48)

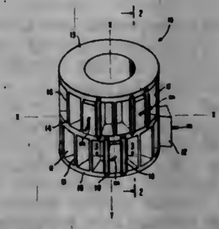
1. A phase sequence network of the class described including a first, second and third terminal for receiving three phases of line voltage at a predetermined frequency, a first series circuit extending from said second to said first terminal including a reactive element, a first junction point and a resistive element respectively, a second

series circuit extending from said third to said first terminal including a resistive element, a second junction point and a reactive element respectively, said first and second circuits having a phase shift angle of substantially 30 degrees and 60 degrees respectively, a first relay winding connected between said first and second junction points



for indicating the line phase sequence in response to the voltage magnitudes across said junction points, and semiconductor means connected to said first relay winding between said junction points whereby said relay winding may be prevented from giving a false indication of the line phase sequence in response to at least one of said line voltage source lines becoming open.

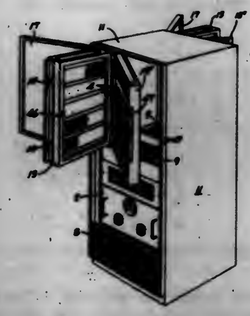
3,188,523
ELECTRICAL CIRCUIT MODULAR ASSEMBLY
Charles R. Youngbirth, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 6, 1961, Ser. No. 157,399
2 Claims. (Cl. 317—101)



1. A circuit modular assembly, comprising:
a base of substantially cylindrical geometry, said base having a plurality of openings directed outwardly from the curved portion thereof;
a plurality of modules dimensioned for individual reception into said openings in a tight frictional engagement along a first direction while simultaneously being of smaller dimension than the opening along another direction whereby slippage of the module within said associated opening can be effected along said second direction; and
securing means carried by said base and engaging portions of said modules facing outwardly from said openings to hold the same against movement in said first direction without restricting movement in said second direction whereby externally applied shocks and vibrations are converted to heat energy by frictionally opposed translations of said modules within said openings along said second direction.

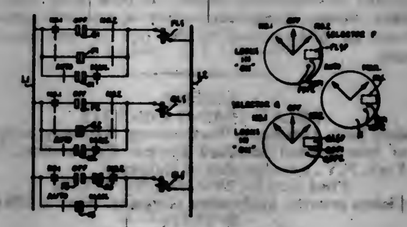
3,188,524
HIGH DENSITY CIRCUIT CARD PACKAGING
Francis L. Williams, Sunnyvale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 20, 1962, Ser. No. 224,949
3 Claims. (Cl. 317—101)

1. In electronic enclosure cabinet frame assembly, means for mounting printed circuit cards, said means including a first and a second gate, a plurality of connectors secured to said gates for mounting said printed circuit cards thereon, hinge means secured on said first gate for movably mounting both first and second gates within said frame assembly, means secured to said first and second



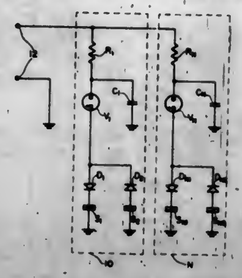
gates for movably mounting said second gate on said first gate, flat, flexible interconnection means connecting between said first and second gates to provide electrical interconnection therebetween, said second gate is offset in relation to said first gate in the direction of the hinge to provide unobstructed access for said interconnection means between said first and second gates.

3,188,525
SELECTOR SWITCH INTERLOCK CIRCUITS
Douglas W. Fath, Brookfield, Theodore Kraschinsky, Jr., Milwaukee, and Gene C. Lutsch, Hales Corners, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 15, 1961, Ser. No. 96,024
10 Claims. (Cl. 317—136)



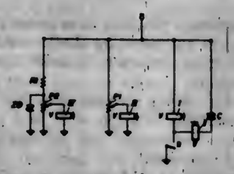
1. In combination, a plurality of selector switches each of which comprises an operating shaft rotatable between at least two definite angularly spaced operating positions, a stop member carried by said shaft and an electromagnetic device having an operating coil and plunger biased into interferring relation with said stop member when said coil is deenergized and retractable therefrom when said coil is energized, and electrical control means for the operating coils of said devices including and being under the direction of switch contacts of said selector switches and affording when the operating shafts of the latter are in predetermined positions deenergization of the coil of the electromagnetic device of one of said selector switches to prevent its operating shaft from being operated in another operating position.

3,188,526
VOLTAGE AND POLARITY SENSING DEVICE
Charles E. Engel, Upland, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 28, 1961, Ser. No. 106,417
3 Claims. (Cl. 317—137)
(Granted under Title 35, U.S. Code (1952), sec. 266)



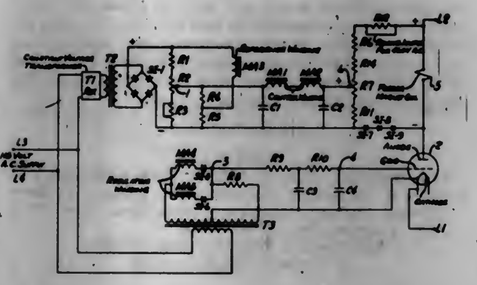
1. A switching circuit for selecting at least one of a plurality of available circuits and functions comprising a pair of input terminals, one of said input terminals connected to ground, a plurality of select circuits, each of said select circuits connected between said other input terminal and ground; each said select circuit consisting of a resistor and capacitor in series connected between said input terminal and ground respectively forming an R–C network, a non-polarity-sensitive voltage diode having a specific firing threshold for detecting a desired voltage level and one side thereof connected to the junction of said resistor and capacitor in series for discharging said capacitor when the firing threshold is reached, the other side of said voltage diode connected directly to one side of a pair of unidirectional diodes such that current therefrom can flow through only one of said unidirectional diodes depending upon the polarity thereof, a switch connected between the other side of each unidirectional diode and ground operable to be actuated by current flow therethrough; the magnitude of the voltage impressed across the input terminals determining which of said plurality of select circuits will operate depending on the firing threshold of the voltage diode, the polarity of said impressed voltage determining which of said switches will actuate as differentiated by the pair of unidirectional diodes.

3,188,527
RELAY TIMING CIRCUITS
Rudolf Luce, Ditzingen, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,382
Claims priority, application Germany, Nov. 3, 1961, St 18,510
5 Claims. (Cl. 317—141)



1. A timing circuit comprising a relay associated with a capacitor in an electrical circuit, said relay consisting of first and second oppositely wound operating coils and one bias coil, switch means for completing an operating circuit to said first and second operating coils, means for connecting said first operating coil between said switch means and a common power source, means for coupling said second operating coil to said capacitor in a series circuit, means for connecting said series circuit across said first operating coil, means for adjustably connecting one side of said bias coil to said common power source, means for connecting said other side of said bias coil to a supply of regulated voltage and means for supplying said regulated voltage from said common power source.

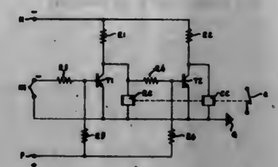
3,188,528
ELECTROMAGNET VOLTAGE COMPENSATOR CONTROL CIRCUIT
Junius Denny Scott, Homer City, Pa., assignor, by mesne assignments, to Link-Belt Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 9, 1962, Ser. No. 172,196
17 Claims. (Cl. 317—149)



1. An automatic compensator for an electromagnet consisting of an electromagnet operating coil, a thyratron having grid and plate circuits, said plate circuit connected to supply from an alternating current source the operating voltage to said coil, a magnetic amplifier having two magnetically coupled cores each with a regulating winding and connected to control the operation of said grid circuit, a reference winding and a control winding wound on both cores, a circuit connected to supply from an alternating current source a constant rectified voltage to said reference winding and to one side of said control winding, a circuit to rectify the voltage impressed on said operating coil and supply it to the other side of said control winding, the current flowing in opposite directions in said control winding driving said cores toward and away from saturation to respectively control the firing of said thyratron earlier and later in the cycle to compensate for lower and higher voltage impressed across said operating coil to maintain a constant operation of the electromagnet regardless of the non-linear operating characteristics of the electromagnet.

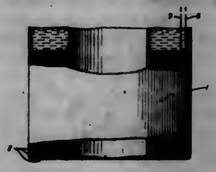
3,188,529
SYSTEM FOR CONTROLLING ELECTRO-RESPONSIVE MEANS
Richard J. Byrnes, West Allis, and Carl J. Weiss, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,377
3 Claims. (Cl. 317—155.5)

1. In a system for controlling an electroresponsive switch device, said switch device being of the memory type and comprising an operating coil and a resetting coil and at least one switching contact which is actuated to an active position by the operating coil when it is energized and is actuated to its normal position by the resetting coil when it is energized, said switch device further comprising resilient means for maintaining said contact in said normal position when actuated thereto until said operating coil is energized and latch means for maintaining said contact in said active position when actuated thereto until said resetting coil is energized, means for controlling said operating coil and said resetting coil comprising a unidirectional power supply source, and control circuit means connecting said source to said operating coil and said resetting coil, said control circuit means comprising first and second controllable semi-conductor devices for alternately controlling the respective resetting and operating coils and being respectively connected thereacross, means normally biasing said first semi-conductor device to non-conduction thereby to cause energization of said resetting coil, means



responsive to energization of said resetting coil for applying a control voltage to said second semi-conductor device to render the latter conducting thereby effectively to shunt said operating coil, means for applying a small input signal to said first semi-conductor device to render the latter conducting thereby effectively to shunt said resetting coil and to deenergize the same, and means responsive to conduction of said first semi-conductor device for biasing said second semi-conductor device to non-conduction thereby to unshunt and cause energization of said operating coil.

3,188,530
VANADIUM-TITANIUM COMPOSITION IN A SUPERCONDUCTIVE DEVICE
Bernd T. Matthias, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 24, 1961, Ser. No. 104,993
6 Claims. (Cl. 317—158)

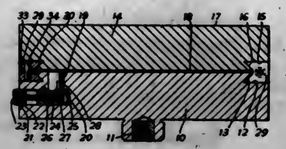


1. A superconducting magnet configuration comprising a plurality of turns of a material comprising a composition of the V-Ti system consisting essentially of from 10 to 90 atomic percent V and from 90 to 10 atomic percent Ti, together with means for maintaining the said turns at a temperature at least as low as the critical temperature for the said material and with means for introducing a current of such magnitude that the fraction

$$\frac{4\pi ni}{10l}$$

equals at least 30 kgauss, where n equals the number of turns, i equals the current in amperes and l equals length in centimeters.

3,188,531
POLE TIPS FOR MAGNETS
Ian Irvine Boswell, Newport Pagnell, England, assignor to Newport Instruments (Scientific and Mobile) Limited, Newport Pagnell, England, a British company
Filed Nov. 9, 1962, Ser. No. 236,508
Claims priority, application Great Britain, Nov. 13, 1961, 40,523/61
15 Claims. (Cl. 317—158)



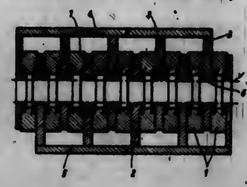
1. Magnet apparatus comprising two magnet pole pieces disposed in substantially co-linear and mutually opposing relationship, said pole pieces having mutually opposing and spaced-apart end faces, a separate plate-form pole tip member on said end face of each of said pole pieces, each of said pole tip members having a planar pole face surface on the side facing the opposite pole piece, pivotal mounting means pivotally mounting each of said pole tip members adjacent said end face of the associated pole piece for pivotal movement about an axis disposed at right angles to the axis of said pole piece, and position control means for effecting controlled rocking movement of each of said pole tip members whereby the angle of inclination of said pole face surface of said pole tip member relative to a plane normal to the axis of said pole piece may be altered, the axes of pivotal movement of the two opposing pole tip members being disposed at right angles to one another.

3,188,532
ELECTROMAGNET WITH BALANCED ARMATURE
Ulrich Wolfgang Auer, Geneva, Switzerland, assignor to Sodeco Societe des Compteurs de Geneve, Geneva, Switzerland, a firm
Filed Aug. 6, 1963, Ser. No. 300,345
Claims priority, application Switzerland, Sept. 29, 1962, 11,467/62
9 Claims. (Cl. 317—197)



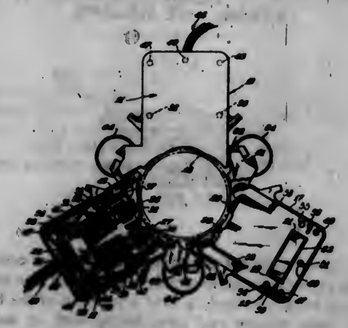
2. An electromagnet comprising a stationary coil-carrying yoke including a main section and at least one inturned projecting section extending over a fraction of the breadth of said main section and terminating with at least one bevelled ridge, an armature including a main section bounded by a transverse ridge registering with the bevelled ridge on the yoke and two lateral projections extending beyond said main section and a bridge rigidly secured to said lateral projections on the armature and bounded laterally by a bevelled ridge registering with the bevelled ridge on the yoke, the system including the armature and the bridge being adapted to rock round the pivotal axis formed by said bevelled ridge on the yoke and with reference to which the system is balanced.

3,188,533
FOCUSSING SYSTEM FOR AN ELECTRON BEAM INCORPORATING AXIALLY MAGNETIZED ANNULAR MAGNETS
Jerk Bretting, Ulm (Danube), and Hans-Jürgen Grieu, Ehrenstein, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Feb. 18, 1963, Ser. No. 259,286
Claims priority, application Germany, Feb. 23, 1962, T 21,644
14 Claims. (Cl. 317—200)



1. For use with a vacuum envelope, a system for focussing an electron beam within the envelope, said focussing system comprising, in combination:
(a) a plurality of coaxially aligned and spaced-apart annular magnet means each having axially spaced-apart N and S poles, said magnet means being arranged so that any one magnet means has its N-pole directed toward the N-pole of an adjacent magnet means and its S-pole directed toward the S-pole of an adjacent magnet means;
(b) a set of first pole shoes each interposed between two respective facing N-poles;
(c) a set of second pole shoes each interposed between two respective facing S-poles;
(d) first yoke means magnetically connecting said set of first pole shoes to each other; and
(e) second yoke means magnetically connecting said set of second pole shoes to each other.

3,188,534
CONVERGENCE COIL ASSEMBLY
Vincent J. Patti, Norridge, Ill., assignor to Thompson Ramo Wooldridge, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 6, 1963, Ser. No. 263,304
5 Claims. (Cl. 317—200)



1. An electromagnetic convergence assembly for a cathode ray tube comprising:
a plurality of individual housings disposed symmetrically about a central axis,
spring means connecting said housings together,
each of said housings having means for receiving a coil structure therein and posts therein in close proximity to the inner walls of said housings, a coil seated in each of said housings, electrical leads extending into said housings and connected to the coils, at least some of said posts being spaced from said walls with a sufficiently small clearance so that said electrical leads passing therebetween are pinched between said posts and said inner walls.

3,188,535
SEMI-CONDUCTOR ELECTRODE SYSTEM HAVING AT LEAST ONE ALUMINIUM-CONTAINING ELECTRODE
Diederik Wahraven and Bert Veenemans, Nijmegen, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 24, 1960, Ser. No. 51,704
Claims priority, application Netherlands, Aug. 29, 1959, 242,762
4 Claims. (Cl. 317—234)



1. A semiconductor device comprising a semiconductive body, an electrode containing aluminum on said body, a resilient contact member having a portion in pressure engagement with and making electrical connection to said electrode, and a layer of a soft metal coated on the said portion engaging the electrode, said layer having a thickness between about 10 and 200 microns.

3,188,536
SILICON RECTIFIER ENCAPSULATION
Albert D. Rittmann, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 14, 1960, Ser. No. 68,907
4 Claims. (Cl. 317—234)



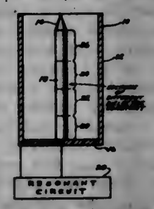
1. In rectifier means, a semiconductor rectifier wafer, a sheet of electrically conductive material secured to each opposite face of said semiconductor rectifier wafer forming a sandwich, said electrically conductive material having substantially the same coefficient of expansion as the semiconductor rectifier wafer, a multi-part housing of electrically conductive material, said parts having flanges facing each other, said sandwich of the semiconductor rectifier wafer and the two sheets of electrically conductive material being secured within one part of the housing, a partially collapsed conductive ring secured to the available surface of the electrically conductive material in the one part of the housing, and a terminal insulatably mounted through the other part of the housing and adapted to deform the conductive ring substantially only in its contact area with said terminal when the two parts are brought together, said terminal protruding into said deformed area, said flanges being sealed together to form a hermetically sealed unit.

3,188,537
DEVICE FOR ASYMMETRIC CONDUCT OF CURRENT
Robert H. Wentorf, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1961, Ser. No. 139,029
10 Claims. (Cl. 317—235)



9. A point contact p-p type electrical rectifier comprising in combination, electrical nonconductive support means, a rectification junction comprising a pair of p-type semiconducting crystals affixed to said support, said crystals being taken from the class consisting of diamond crystals and cubic form of boron nitride crystals, said crystals being electrically connected in crystal-to-crystal point contact series relationship, and terminal means electrically connected to said crystals to apply current to said crystals.

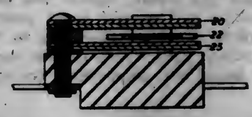
3,188,538
REACTANCE TEST CELL
Lowell A. Moe, Minneapolis, Minn., assignor to F. H. Peavey & Company, Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 1, 1960, Ser. No. 19,303
11 Claims. (Cl. 317—246)



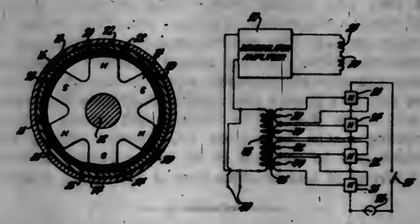
1. In a material receiving and holding capacitance type tubular electric test cell wherein the material is subject to packing axially along the cell, a pair of spaced apart tubular electrodes, capacitance forming means extending axially therebetween, said means including a tubular layer comprised of dielectric material and impurity means axially disposed in predetermined quantity therewith so as to provide an axial variable dielectric quality for said layer whereby the distributed capacitance of the layer is varied from one end to the other end of said capacitance forming means.

3,188,539
VARIABLE CAPACITOR WITH BIMETALLIC STATORS
Robert F. Oxley, Priory Park, Ulverston, England
Filed July 25, 1961, Ser. No. 126,574
Claims priority, application Great Britain, July 26, 1960, 26,005/60
9 Claims. (Cl. 317—248)

1. An electric condenser comprising a base structure, at least one plane rotor vane rotatably mounted on said base structure for rotation about an axis perpendicular to the plane of said vane, and a pair of plane stator vanes associated with each rotor vane and mounted on said base structure with their planes generally parallel to and spaced from the plane of said rotor vane providing an air gap therebetween, said stator vanes lying on opposite sides of said axis of rotation, at least one of each pair of said stator vanes being of temperature sensitive bimetallic construction and having a fixed end and a free end, said fixed end being mounted on said base structure and said free end being adjacent said rotor vane, whereby a change in temperature of said bimetallic stator vane causes said vane to move axially, thereby changing the mean thickness of said air gap.



3,188,540
SIGNAL PICK-OFF AND D.C. TORQUER
Argyle G. Lautzenhiser, Essex, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of application Ser. No. 187,107, Apr. 12, 1962. This application Aug. 26, 1964, Ser. No. 393,483
5 Claims. (Cl. 318—23)

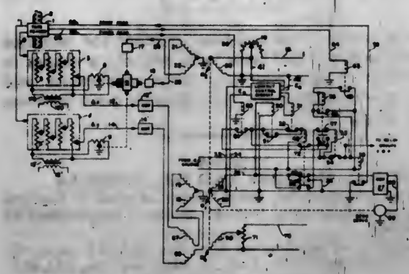


1. A signal pick-up and torque generator for a rotatable member comprising a first body including means for establishing a plurality of permanent magnetic poles circumferentially about an axis of the first body, a second body coaxially disposed with respect to the first body, mounting means for permitting relative rotation between the first and second bodies about the common axis thereof in accordance with rotation of said member, a pair of Hall effect devices mounted on the second body for producing output signals related to the magnitude of a magnetic field incident thereon, the Hall effect devices being disposed adjacent the magnetic poles when the first body occupies a reference position with respect to the second body such that relative rotation of the bodies complementaly varies the field incident upon the devices, output means connected to the Hall effect devices for producing displacement signals of a character corresponding with the direction and extent of relative displacement between the bodies, a torquing coil carried by the second body adjacent one of the magnetic poles of the first body, and control means connected to receive the displacement signals and to energize the torquing coil thereby to effect relative rotation between the bodies to return the bodies to the reference position.

3,188,541
CONTOUR TRACING CONTROL DEVICE
Robert H. Ekengren, Skaneateles, and Francis O. Blackwell III, Seneca Falls, N.Y., assignors to Seneca Falls Machine Company, Seneca Falls, N.Y.
Filed July 26, 1962, Ser. No. 212,769
9 Claims. (Cl. 318—28)

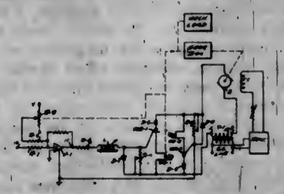
1. A machine control system comprising a machine part movable along plural axes, means defining a target position, means for driving said machine part along said axes to said target position, means generating a first

signal corresponding to the displacement of said machine part from said target position along one of said axes, means generating a second signal corresponding to the displacement of said machine part from said target position along another of said axes, first resolver means resolving said first and second signals into the direction from said machine part to said target position, means generating a third signal corresponding to the rate of feed of said machine part, second resolver means resolving said third signal into components corresponding to



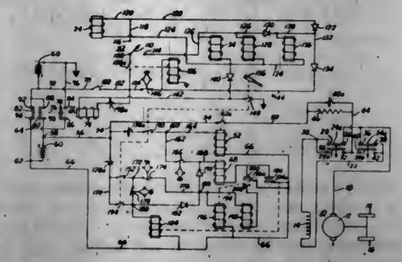
said axes, said driving means being responsive to said third signal components, direction correcting means responsive to said first resolver means and arranged in controlling relation to said second resolver means, and means automatically operable upon arrival of said machine part at a point a predetermined distance in advance of said target position for locking said second resolver correcting means in position and thereby causing said machine part to continue in its last corrected direction until arrival of said machine part at said target position.

3,188,542
ELECTRIC POSITION SERVOMECHANISM
Arnold K. Dietrich, Binghamton, N.Y., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 250,285
10 Claims. (Cl. 318—28)



1. A position servomechanism, comprising in combination: a source of alternating current; a direct current motor having an armature and a separately-excited shunt field; first and second semi-conductor controlled rectifiers each having an anode, a cathode and a gate terminal, the anode-cathode circuits of said controlled rectifiers being connected oppositely-poled in parallel between a pair of conductors; said source, said armature and said pair of conductors being connected in a series loop; first and second impedances connected respectively between said cathode and said gate terminal of said controlled rectifiers; a direct-coupled servoamplifier having an input circuit and a pair of output terminals; a reactance element; circuit means connected said first impedance, said amplifier output terminals, said reactance element and said second impedance element in series between said pair of conductors; and means mechanically operated by rotation of said armature for applying an input signal to said input circuit of said amplifier.

3,188,543
BATTERY OPERATED ELECTRIC MOTOR CONTROL FOR VEHICLE
Donald E. Colvill, Richard L. Sprague, Kenneth H. Clayton, Richard L. Konopa, and Robert E. Johnson, all of Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 29, 1960, Ser. No. 79,355
4 Claims. (Cl. 318—139)

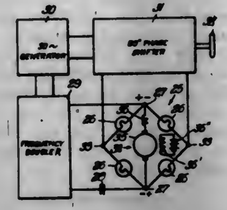


4. A motor control system for an electric motor driven vehicle comprising, first and second batteries, an electric motor, a resistor, a first electromagnetic switch including a first coil winding and first contacts, said first contacts being connected across said resistor and being closed only when said first coil winding is energized, a second electromagnetic switch including second contacts and a second coil winding, said second contacts connecting said batteries in parallel when said second coil winding is energized and operative to connect said batteries in series when said second coil winding is deenergized, first and second manually operable switch means operated by a common manually operable actuator and closable in a predetermined sequence, first and second centrifugal switch means driven by said electric motor and closable at different predetermined speeds, a third electromagnetic switch including a third coil winding and third contacts, said third contacts connecting said batteries with said motor through said resistor or through said first contacts depending upon whether said first contacts are opened or closed, a control circuit for said third coil winding including said first manually operable switch means, a control circuit for controlling the energization of said second coil winding including said second manually operable switch means and said second centrifugal switch means, and a control circuit for controlling the energization of said first coil winding including said first manually operable switch and said first centrifugal switch means.

3,188,544
ELECTRIC CURRENT CONVERTING MEANS
Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill.
Original application June 27, 1956, Ser. No. 594,322. Divided and this application Feb. 21, 1962, Ser. No. 174,810
5 Claims. (Cl. 318—257)

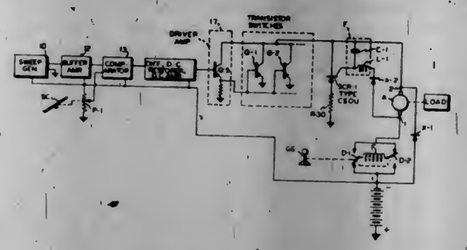
2. A motor control system comprising, in combination, a four arm bridge circuit having in at least each of two adjacent arms a non-linear resistance device, means for energizing a pair of opposite terminals of said bridge circuit from a source of alternating current, means for energizing the remaining pair of opposite terminals of said bridge circuit at least one of which is between said non-linear resistance devices from a source of alternating current the frequency of which is twice that of the first mentioned alternating current, a direct current motor having armature and field windings one of which is

separately excited and the other is connected between said remaining pair of terminals, and means for shifting the



phase of one of said alternating currents with respect to that of the other to vary the speed and direction of rotation of said motor.

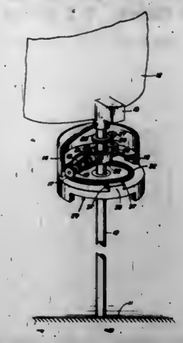
3,188,545
MOTOR CONTROL SYSTEMS
Shay J. Sheheen, Freeville, N.Y., assignor to The Raymond Corporation, Greene, N.Y., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,588
9 Claims. (Cl. 318—261)



1. A direct current motor control system, comprising, in combination: a direct voltage source; a motor comprising an armature circuit and a field winding circuit; a current modulating circuit, said source, at least one circuit of said motor and said current modulating circuit being connected in a closed series circuit; means for reversing the relative polarity connection between said armature circuit and said field winding circuit of said motor to reverse the direction of operation of said motor; a controlled rectifier having an anode-cathode circuit and a control terminal; first circuit means connecting said anode-cathode circuit in parallel with said current modulating circuit; and second circuit means for applying the voltage across said armature circuit to said control terminal.

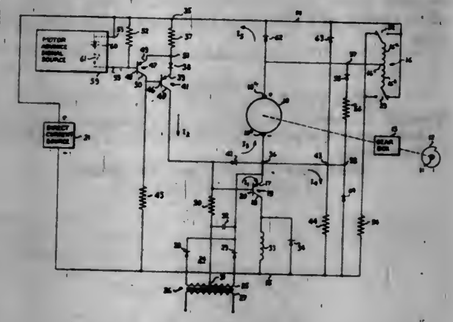
3,188,546
MOTOR REVERSING CONTROL WITH COUNTERWEIGHT TO REDUCE REACTION TORQUES
John E. Dawkins, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Feb. 27, 1963, Ser. No. 261,366
9 Claims. (Cl. 318—286)

1. A vibration eliminating device for a support means comprising a utilization device rotatably supported by the support means, a counterweight rotatably supported by the support means adjacent the utilization device, a motor means rotatably supported by the support means and connected to the utilization device and the counterweight to rotate them in opposite directions, so that the effects of the



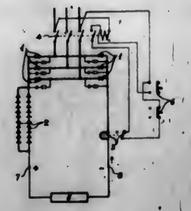
utilization device on the support means are offset by the counterweight.

3,188,547
POSITIONING MOTOR CONTROL SYSTEM
William B. Zellna, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed June 18, 1962, Ser. No. 203,213
7 Claims. (Cl. 318—370)



4. An arrangement for driving an object toward a desired position upon occurrence of a driving signal comprising: a motor adapted to drive said object; means for connecting said motor across a source of electrical energy, said means including the emitter-collector circuit of a first transistor; means providing a saturating forward bias on said first transistor; means providing a current path across said motor, said means including the emitter-collector circuit of a second normally conducting transistor and a unidirectional conducting device connected between the base electrode and another electrode of said first transistor so that the current in said path provides a voltage drop across said unidirectional conducting device operative to reverse bias said first transistor to render said first transistor nonconductive to establish an interlock operative to prevent said first and second transistors from conducting at the same time; and means responsive to occurrence of a driving signal for rendering said second transistor non-conductive to thereby remove the reverse bias from said first transistor and rendering it conducting so that current may flow from said source of electrical energy through said motor.

3,188,548
SYSTEM FOR PROTECTION OF SILICON, SELENIUM AND GERMANIUM RECTIFIERS
German Arana Ormazabal, 1 Campomarlo St., San Sebastian, Spain
Filed Feb. 10, 1961, Ser. No. 88,509
5 Claims. (Cl. 321—14)



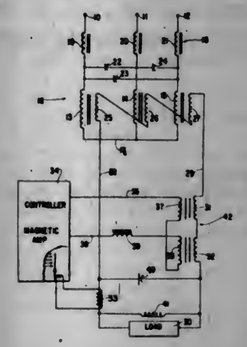
1. In a rectifier system of the type including a source of alternating current, a pair of load terminals for connection to a given load, a rectifier circuit having direct current output terminals and semiconductor rectifier means adequate for said given load connected between said source and said output terminals, and direct current lines connecting said rectifier circuit output terminals to said load terminals, the improvements comprising a battery of semiconductors connected in one of said direct current lines to pass current in the rectified direction, said battery of semiconductors having an increasing electrical resistance to flow of increased current whereby to protect said rectifier means from the full effects of peak surges and short circuits in a load when connected to said load terminals.

3,188,549
HIGH VOLTAGE SILICON RECTIFIER
Chester L. Schuler, Brooklyn, N.Y., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed June 20, 1962, Ser. No. 204,003
14 Claims. (Cl. 321—27)



6. A high voltage rectifier module comprising a hollow puck-shaped insulation casing having a threaded metal insert in each end, at least one of said inserts being internally threaded, the outer end of the internally threaded insert being flush with the flat face of the end of the puck, a relatively long string of silicon diodes, a resistor and a capacitor in shunt with each diode, said capacitors being of the flat ceramic disc type, and being externally insulated, said diodes and resistors being tiny cylinders with short leads extending generally perpendicular to the axis of the cylinder, tiny metal cups receiving the six leads at the adjacent ends of successive units of the string, said six leads being soldered in said cup, the resulting string being bendable but stiff enough to be initially self-supporting and being coiled to form a helix received in said casing with the capacitors in somewhat overlapped relation at the inside of the coil and with the cups in radial position at the outside of the coil and with the resistors and diodes in approximately tangential relation intermediate the capacitors and the cups, the capacitors being overlapped in uniform sequence so that the adjacent faces have minimum potential difference, the ends of the string being connected each to its adjacent insert, a helix of sheet Mylar insulating material disposed with its coils between the coils of the aforesaid string of diodes, and resistors and capacitors, and an epoxy potting material filling said casing around said string and insulation helix.

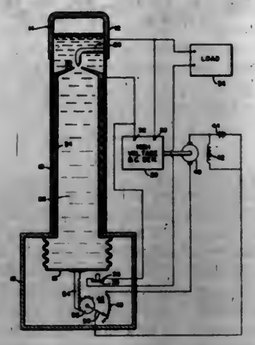
3,188,550
REGULATOR FOR A FREQUENCY MULTIPLIER
Aloysius J. Hauck, Milwaukee, Wis., assignor to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 16, 1961, Ser. No. 117,737
3 Claims. (Cl. 321—68)



1. In a frequency multiplier for changing a 3-phase A.C. source to a higher multiple frequency thereof, the combination including a 3-phase star connected primary, a three winding series connected secondary, means for connecting said primary to a source of A.C., means connecting said secondary to a load, saturable reactor means series connected in one of said secondary connections to the load, said saturable reactor means having D.C. control windings, current sensing means in the load circuit, comparing and amplifying means connected to said sensing means, and means controlled by said comparing and amplifying means for supplying D.C. to said control windings in accordance with the load current so as to control the power delivered to said load.

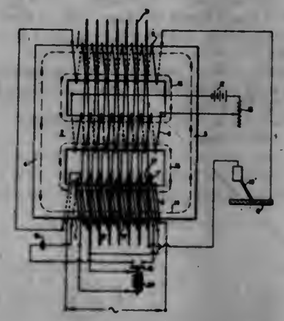
3,188,551
PRESSURE RESPONSIVE ELECTRIC CONTROL SYSTEM EMPLOYING AN ION DRAG PUMP
Otmar M. Stuetzer, Hopkins, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed May 31, 1961, Ser. No. 113,819
6 Claims. (Cl. 322—39)

1. An electric regulator comprising a housing containing a quantity of ionizable fluid, an emitter electrode fixedly disposed at one locus within said fluid, a collector electrode fixedly disposed at a second locus within said fluid, a relatively high voltage supply circuit connected to said electrodes for causing said electrodes to pump said fluid and create fluid pressure in said housing and a device responsive to said fluid pressure developed in said housing



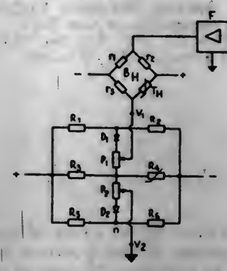
by said electrodes for controlling an electrical characteristic of said supply circuit in accordance with said developed fluid pressure.

3,188,552
SATURABLE CORE WELDING TRANSFORMER
Frederick C. Owen, 206 Fenton Place, Charlotte, N.C.
Filed Oct. 8, 1963, Ser. No. 314,696
3 Claims. (Cl. 323—48)



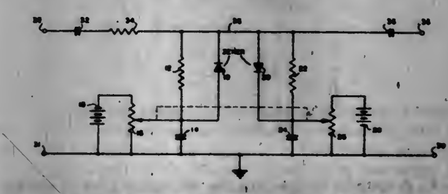
1. A welding transformer comprising, a magnetic core having at least three substantially parallel legs joined at respective ends, a primary winding carried by one of the two outer parallel legs of said core to produce an A.C. flux therethrough with a return path through the opposite outer parallel leg, a first secondary winding wound with said primary winding on said one of the two outer parallel legs, a second secondary winding carried by the other of the two outer parallel legs, a saturation control winding carried by the central parallel leg of said core to produce a variable D.C. flux in the same direction in the two outer parallel legs of said core for selective adjustment of the effective A.C. flux in said core, and a third secondary winding surrounding said primary and said first and second secondary windings and connected in series aiding with said first and second secondary windings to form a welding circuit.

3,188,553
TEMPERATURE CONTROL SYSTEM
Karl Petrus Arne Ehrenius, Solna, Sweden, assignor to Regulator A.G., Glarus, Switzerland, a company of Switzerland
Filed Dec. 5, 1961, Ser. No. 157,234
Claims priority, application Sweden, Dec. 6, 1960, 11,789/60
4 Claims. (Cl. 323—69)



1. In a control system, a circuit responsive to the magnitude of a quantity such as temperature to provide a control signal, said circuit comprising a measuring bridge, said bridge having input terminals and additional terminals at which the balance of said bridge is determined, said bridge further including means responsive to the quantity being measured for controlling the balance of the bridge, unidirectionally conducting means connected between said additional terminals, said unidirectionally conducting means comprising a pair of diodes connected in series, said responsive means being joined between one of said input terminals and a point intermediate said diodes whereby unbalance of the bridge in one sense causes one of said diodes to conduct and unbalance in the other sense causes the second diode to conduct, said unidirectionally conducting means being operative during unbalanced conditions of said bridge to conduct thereby providing a control signal for the control system.

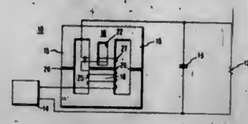
3,188,554
ATTENUATION NETWORK
Albert C. Reid, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed June 13, 1961, Ser. No. 126,757
3 Claims. (Cl. 323—74)



1. An attenuation network including a pair of Zener diodes, one said diode having an electrode thereof connected to the electrode of opposite polarity of the other said diode, D.C. bias means connected to the other electrode of each said diode whereby the applied voltage on each said diode is in the negative non-conducting region between zero potential and the Zener potential, a pair of capacitive means serially interconnected between said other electrodes of said pair of diodes, input circuit means coupled to the common connection of said first named electrodes of said diodes and to the common connection of said capacitive means for applying an A.C. signal across said diodes, and output circuit means coupled to said

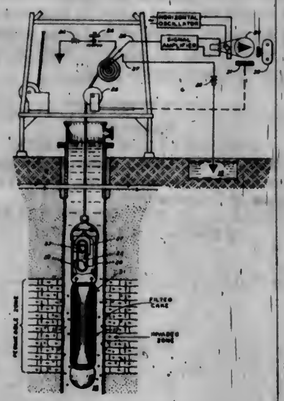
common connection of said first named electrodes of said diodes and to the common connection of said capactive means.

3,188,555
SATURABLE REACTOR VOLTAGE REGULATOR WITH SERIES CONNECTED MAIN AND CONTROL INDUCTANCE WINDINGS
Pierre Essinger, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1960, Ser. No. 78,577
5 Claims. (Cl. 323—89)



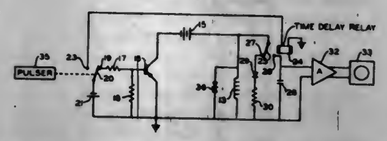
1. In an inductance device, a core of magnetic material having an opening through a portion thereof and an air gap therein, an inductance winding on said core and a saturation control winding connected in series with the inductance winding, said control winding passing through said opening with a figure-8 configuration so as to provide a local control flux about the opening in accordance with the current in the inductance winding.

3,188,556
NUCLEAR MAGNETIC LOGGING METHOD
Albert E. Worthington, Fullerton, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Mar. 4, 1955, Ser. No. 492,293
9 Claims. (Cl. 324—5)



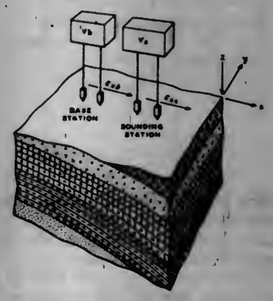
1. A method of changing the relaxation time of nuclear magnetic signals from protons within one of the fluids in and around a well bore which comprises adding a paramagnetic material that is molecularly soluble in said one fluid to the well bore fluids in an amount sufficient to reduce measurably the nuclear magnetic relaxation time of protons in said well bore fluids and then introducing said well bore fluids into said well bore under sufficient pressure whereby said molecularly soluble paramagnetic material will penetrate the filter cake formed by said well bore fluids to change the relaxation time of said nuclear magnetic signal from said one fluid in and around that portion of the well bore wherein said molecularly soluble paramagnetic material has been introduced.

3,188,557
NUCLEAR MAGNETIC RESONANCE SWITCHING CIRCUITRY
Russell L. Collins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 13, 1962, Ser. No. 187,262
3 Claims. (Cl. 324—.5)



1. Apparatus for use in making nuclear magnetic resonance measurements comprising a coil having one grounded end terminal, a first voltage source, a Zener diode, a capacitor, first switching means to apply said first voltage source across said coil to pass current through said coil when said first switching means is actuated, a second voltage source, second switching means to connect said second voltage source to said first switching means to actuate same when said second switching means is in a first position, time delay switching means to connect said diode in parallel with said coil when said time delay switching means is not actuated and to connect said capacitor in parallel with said coil a preselected time after said time delay switching means is actuated, said diode being connected to said coil so as to discharge said coil to ground when said first voltage source is removed from said coil, means responsive to said second switching means being in a second position to connect said second voltage source to said time delay switching means to actuate same, and measuring means connected across said capacitor to measure the potential thereacross.

3,188,558
TELLURIC SOUNDING METHOD IN WHICH RECORDED VARIATIONS IN THE TELLURIC FIELD WITH TIME ARE CONVERTED INTO AMPLITUDE-VERSUS-FREQUENCY SPECTRA
Sulhi H. Yungul, College Station, Tex., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Dec. 6, 1961, Ser. No. 157,391
4 Claims. (Cl. 324—1)



3. In a method for the geophysical exploration of the underground in a given area, the steps of:
(a) at a first station where the electrical resistivity variation with depth of subsurface formations is known, measuring and recording over a given period of time values representing variations occurring in at least a component of the electric telluric field at said first station,
(b) over the same given period of time at a second station having a known location with respect to said first station, measuring and recording values representing variations in at least the same component of the telluric electric field at said second station,
(c) analyzing said recorded values to derive amplitude-versus-frequency spectra at each of said stations during said period of time,
(d) and comparing selected peaks representing the same frequency in said derived frequency spectra from said first and second stations to relate said known electrical resistivity variation with depth at said first station to predict the electrical resistivity variation with depth at said second station.

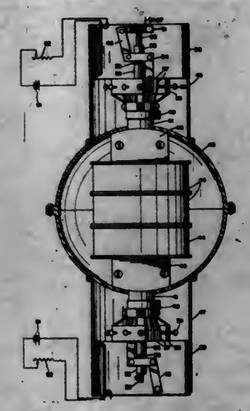
3,188,559
TELLURIC CURRENT METHOD OF DETERMINING ELLIPSE AREA BY SIMULTANEOUSLY MEASURING TWO VOLTAGES WITH A COLLINEAR THREE ELECTRODE ARRAY
Sulhi H. Yungul, College Station, Tex., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Jan. 19, 1961, Ser. No. 83,654
5 Claims. (Cl. 324—1)



1. A telluric current prospecting method for determining the relative ellipse area of selected locations in a survey line across the earth's surface comprising the steps of:
(a) measuring as a continuous function of time a first voltage between one end electrode and the middle electrode of a collinear three electrode array, simultaneously measuring as a continuous function of time a second voltage between said middle electrode and the other end electrode of said collinear three electrode array;
(b) determining the voltage change in said first voltage during a plurality of intervals of time during the measurement of said first voltage;
(c) determining the change in said second voltage during each of the same intervals of time;
(d) correlating the change in said first and said second voltage during each of said intervals of time to derive a ratio between the changes in said two voltages for each of said intervals of time;
(e) and determining the limit between which limit and unity said ratios cluster, said limit being numerically equal to said sought relative ellipse area.

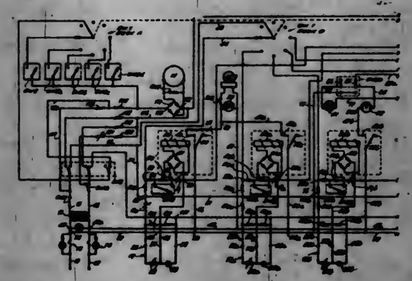
3,188,560
SURVEY APPARATUS HAVING SYNCHRONOUSLY ROTATABLE MEANS FOR DETERMINING AND RECORDING MINUTE DEVIATIONS IN THE EARTH'S TOTAL MAGNETIC FIELD
Donald L. Hings, Vancouver, British Columbia, Canada, assignor to Electronic Geophysical Surveys Ltd., Vancouver, British Columbia
Filed Dec. 4, 1959, Ser. No. 857,336
16 Claims. (Cl. 324—3)

12. In a geophysical survey apparatus, iron core means having an axis, coil means mounted on said iron core means, means to support said iron core means with its axis substantially in alignment with the direction of the earth's total magnetic field, armature means, means to rotate said armature means about said axis and relative to said iron core means to generate an alternating current sine wave voltage in said coil means by cutting the earth's total magnetic field, said iron core means having an end portion constituting core coupling means, said armature means having an end portion constituting sweeping coupling means, said core coupling means comprising a plurality of iron core coupling members positioned about said axis and disposed in an annular series of alternately close and loose coupling relationships with said sweeping coupling means as it is rotated in a course of one revolution, said sweeping coupling means passing relative to said plurality of iron core coupling members in a course of one revolution of said armature means to vary the



magnetic coupling between said first core means and said armature means to substantially neutralize said generated sine wave voltage as said armature means is revolved about said axis of said iron core means supported in substantial alignment with the directions of the earth's total magnetic field.

3,188,561
CONDUCTIVITY MONITORING SYSTEM
Maxwell Ingram, 15 Hamilton Ave., Dumont, N.J.
Filed June 27, 1961, Ser. No. 119,866
5 Claims. (Cl. 324—30)



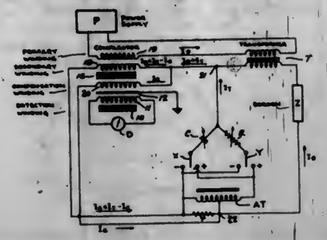
1. An electric system for monitoring the saline content of a liquid, said system comprising a conductivity cell in thermal proximity to the liquid to be monitored, said cell including a pair of electrodes adapted to be immersed in said liquid and a temperature responsive resistor in series circuit therewith, said cell being connected to a source of alternating electric current whereby variations in the electrical resistance of the fluid affect the flow of current therethrough, a meter circuit for indicating the state of said current flow and a relay circuit for actuating an indicator when the salinity of said liquid exceeds a predetermined value, said meter and relay circuits being in parallel circuit connection with said temperature responsive resistor, said relay circuit including a relay and variable resistor, said variable resistor being connected in parallel with the relay terminals and a fixed resistor connected in series circuit with the parallel network formed by said relay and variable resistor.

3,188,562

PLURAL MAGNETIC CORE AND MULTIPLE WINDING CURRENT COMPARATOR DEVICE WITH OUTER WINDING MEANS FOR PASSING ERROR CURRENT THERETHROUGH

Norbert L. Kusters and William J. M. Moore, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a corporation of Canada

Filed Dec. 18, 1962, Ser. No. 245,474
7 Claims. (Cl. 324—55)



1. The combination of
(a) a primary circuit and a secondary circuit, the currents in which are to be compared,
(b) a current comparator device comprising
(i) an inner magnetic core closed on itself to form a magnetic circuit,
(ii) a detection winding around said core,
(iii) a second magnetic core closed on itself to form a magnetic circuit, said second core extending coaxially with the inner core and being positioned radially outwardly of said detection winding,
(iy) two outer windings extending around both said cores,
(v) and a further winding positioned radially between said cores,
(vi) said further winding having the same number of turns as a selected one of said outer windings,
(c) means connected to said detection winding for detecting zero output therefrom,
(d) means connecting said outer windings respectively in said primary and secondary circuits, with said selected outer winding in the secondary circuit,
(e) means connecting said further winding in series opposition with said selected outer winding,
(f) means for exciting said serially connected windings whereby to generate no flux in said inner core while generating flux in said second core and inducing a voltage in each of the outer windings,
(g) means for producing an error current including means for controlling the magnitude and phase of such error current in relation to the current in said secondary circuit,
(h) and means for injecting said error current into said device comprising means for passing said error current through said selected outer winding.

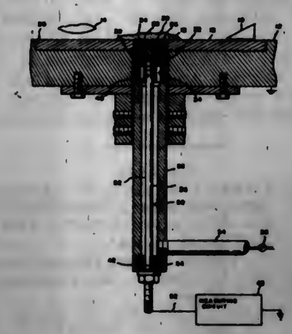
3,188,563

POROUS ELECTRODE FOR AIR PERMEABLE MOISTURE PROBE

Howard L. Jameson, Ferndale, Mich., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan

Filed Feb. 9, 1960, Ser. No. 7,582
2 Claims. (Cl. 324—61)

1. Apparatus for determining a compensated moisture content of granular material which comprises a mixer for receiving the granular material, a compensating probe in a wall of said mixer, first means in said mixer for repeatedly depositing moist specimens of granular material against said probe and after a predetermined interval removing them, second means for compressing said specimens against said probe at predetermined intervals after deposit of said specimens on said probe, said probe comprising a porous electrically conducting electrode, said



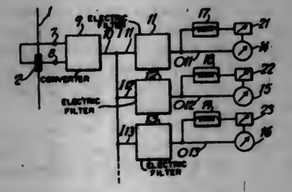
electrode being a shaped body consisting of sintered metallic particles, means for connecting said electrode to a source of electrical potential, and means for blowing drying air through said porous electrode.

3,188,564

APPARATUS FOR CLASSIFYING SPORADICALLY OCCURRING DIFFERENT DEFECTS IN MATERIAL BY CONVERTING DEFECT CAUSED OUTPUT SIGNALS INTO A FUNCTION OF TIME

Ernst Felix, Uster, Switzerland, assignor to Zellweger Ltd., Uster Factories for Apparatus and Machines, Uster, Switzerland, a corporation of Switzerland

Filed Feb. 29, 1960, Ser. No. 11,850
Claims priority, application Switzerland, Mar. 2, 1959, 70,245/59
2 Claims. (Cl. 324—61)



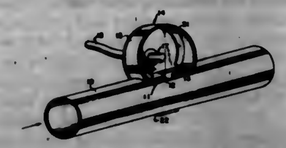
1. An apparatus for classifying a number of sporadically occurring different phenomena in a variable function, such as defects in a textile material, into a like number of different defect classes, said apparatus comprising means for measuring said variable function, said measuring means including a test probe through which the material is passed, said test probe having an extension longitudinally of the passing material greater than the length of the defects to be classified, means for converting the measured variable function into an equivalent, variable, electrical function, electric filter means having inputs connected in parallel and connected to the output of said converting means, each filter means being adapted to selectively pass a specific Fourier component of the fundamental frequency of said electrical function, said component representing a certain phenomenon, and indicator means individually connected to the outputs of said filter means and individually indicating said specific components, said filter means individually comprising a transit-time-discriminator for discriminating pulses with a given time duration between their leading- and trailing edges for classifying different defects which are shorter than the test probe.

3,188,565

DRUM SHAPED FLUID STREAM ANALYSIS DETECTOR HAVING VORTICAL FLOW OF THE FLUID THEREIN

Robert H. Kolb, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 29, 1962, Ser. No. 183,645
10 Claims. (Cl. 324—61)



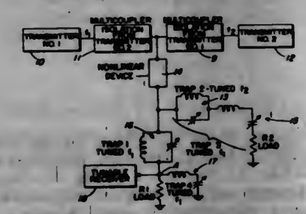
1. An apparatus for sensing properties of a stream of fluid flowing through a conduit, comprising; a drum, port means extending through a wall of said drum and in communication with the fluid flowing through the conduit; means for inducing vortical flow of said fluid within said drum, and a sensing probe disposed in said drum along the axis thereof.

3,188,566

INTERMODULATION MEASUREMENT SYSTEM INCLUDING RESONANT FILTER TRAP MEANS

Robert C. Bullene, Hiawatha, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 8, 1962, Ser. No. 229,036
5 Claims. (Cl. 324—128)



1. An apparatus for measuring power at various frequencies comprising a nonlinear device receiving input signals from two sources at different frequencies f_1 and f_2, a parallel trap parallel resonant at frequency f_2 connected to the nonlinear device, a second trap connected to the parallel trap and the combination of the parallel and second trap series resonant at a frequency of f_1, a second parallel trap connected to the nonlinear device and parallel resonant at frequency f_1, a fourth trap connected to the second parallel trap and series resonant at a frequency f_1, and a power measuring means connected across the fourth trap to measure power at frequency f_2, and to measure intermodulation products produced by the nonlinear device.

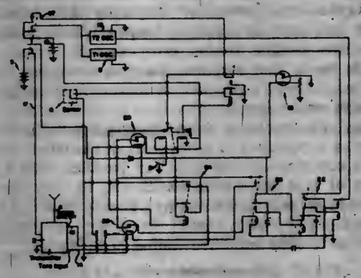
3,188,567

REMOTE STATION SIGNAL SYSTEM

Wilbur Jackson, P.O. Box 286, Chatsworth, Ga.

Filed May 24, 1963, Ser. No. 282,899
6 Claims. (Cl. 325—163)

1. In a condition responsive signalling system, a pair of discrete tone generators; a tone output circuit; slave relay means having switch means actuatable for selectively connecting said generators to said tone output circuit and having a control element energizable for sequentially actuating said switch means; a main power control relay having power input and power feed connections with normally open switch means therebetween; a condition sensing device; means responsive to the sensing of a condition by said device for closing said normally open switch means of said main power control relay; a first circuit running from one of said feed connections for energizing the control element of the slave relay means; a master relay having a normally open switch in said first circuit between the power feed connection thereof and the control element of the slave relay means and having a control element energizable for closing said switch means; a second circuit running from one of said feed connections for energizing the control element of the master relay; a polarized relay having a bi-stable switch in said second circuit between the feed connection thereof and the control element of the master relay and having first and second control elements selectively energizable for shifting said bi-stable switch respectively between open and closed conditions; a third circuit for energizing the first control element of the polarized relay and having a power input connection with the first circuit between the switch of the



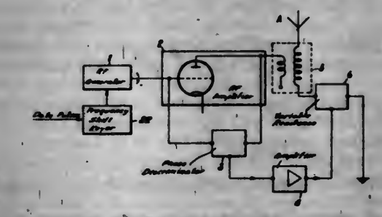
master relay and the control element of the slave relay means; a time delay relay including a normally open switch in said third circuit between the power input connection thereof and the first control element of the polarized relay and including time-lag control means connected to the first circuit between the switch of the master relay and the control element of the slave relay means for closing the normally open switch of the polarized relay at the end of a predetermined interval running concurrently with energization of the control element of the slave relay means whereby to shift said bi-stable element to circuit opening condition; and a fourth circuit for energizing the second control element of the polarized relay, said fourth circuit running from a power feed connection independent of the power feed connection of the main power supply relay and including a normally open switch for resetting said bi-stable switch to circuit-closing condition.

3,188,568

ARRANGEMENT FOR TUNING OF THE TRANSMITTING ANTENNA OF A DATA TRANSMISSION SYSTEM

Luigi Monacheei, Milan, Italy, assignor to Marelli Lenkart S.p.A., Milan, Italy

Filed Nov. 23, 1962, Ser. No. 239,543
Claims priority, application Italy, Dec. 5, 1961, 21,866/61; Sept. 15, 1962, 18,174/62
2 Claims. (Cl. 325—173)



1. Arrangement for the tuning of the transmitting antenna of a data transmission system using frequency shift

keying for transmitting the intelligence represented by the data pulses, said arrangement comprising:

an RF signal generator;

frequency shift keying means for frequency modulating said signal generator in response to said data pulses so that said resulting frequency modulation represents said intelligence;

a high Q resonant antenna circuit tuned to a first frequency;

an RF power amplifier having an input terminal and an output terminal, said amplifier coupling said keyed signal generator to said antenna circuit;

a phase discriminator with two input terminals, one of said discriminator input terminals coupled to said amplifier input terminal, the other of said discriminator input terminals coupled to said amplifier output terminal, said phase discriminator detecting a keyed signal generator frequency shift from said first frequency to a second frequency and producing a corresponding tuning error signal;

a wide band, fast response amplifier coupled to the output of said phase discriminator, to amplify said tuning error signal;

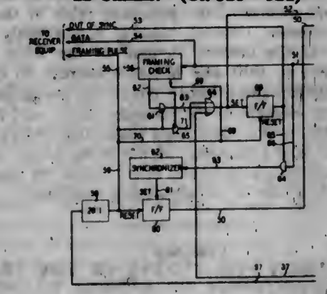
and variable reactance means comprising the combination of a capacitor in series with an electronic switch, said combination connected in parallel with a portion of said tuned antenna circuit, to vary the resonance of said tuned antenna circuit from said first frequency to said second frequency in direct response to said amplified tuning error signal.

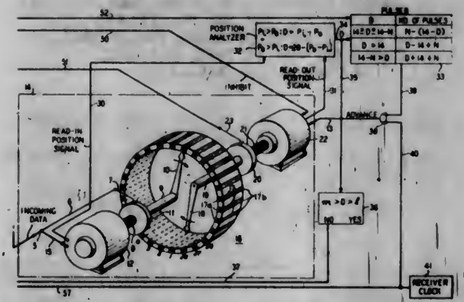
3,188,569

RECEIVER INPUT UNIT-SYNCHRONIZING CIRCUIT

John P. Mahony, Weehawken, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 14, 1962, Ser. No. 246,858
12 Claims. (Cl. 325—321)





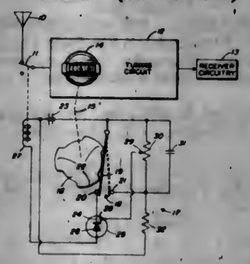
1. A terminal unit for a data pulse receiver comprising storage means having a number of stages equal to the number of bits in an incoming word, read-in means for continuously storing incoming bits in said storage means, read-out means for reading out said bits from said storage means and normally operating approximately a half word length behind said read-in means, means for advancing said read-out means when said receiver falls out of synchronism, a synchronizing circuit for identifying the position in said storage means containing the first bit of a word, means for inhibiting said read-out means after said synchronizing circuit identifies said position until said receiver is prepared to operate upon a new word, and means for controlling said advancing means to advance said read-out means to a predetermined position behind the position of said read-in means that is equal to the difference of a half word length and the statistical average of the number of bit-times during which said read-out means is inhibited.

3,188,570

TIME DELAY ANTENNA DISCONNECT DURING TUNING

Grant G. Myers, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Dec. 10, 1962, Ser. No. 243,268
7 Claims. (Cl. 325—362)



5. An antenna to radio tuning circuit tuning actuated disconnect system having time delay reconnect characteristics, including: an antenna, a tuning circuit, a line between the antenna and the tuning circuit, and tuning means for the tuning circuit; switch means having a normally closed contact and a normally open contact; means activated by motion of said tuning means for moving said switch means back and fourth between said normally closed contact and said normally open contact; solid state switch trigger means; a relay having a relay switch in the line between the antenna and the tuning circuit; a power supply; a first power circuit loop with said switch means connected to one side of said power supply, the normally closed contact connected to a first electrode of said solid state switch, and a second electrode of said solid state switch connected through the coil of said relay to the other side of said power supply; a second power circuit loop including a first resistor and a capacitor connected in parallel between one side of said power supply and a common junction, with said common junction connected both to said open contact and through a second resistor to the other side of said power supply; said first resistor being provided with a tap connection; and said tap being connected to a third electrode of said solid state switch.

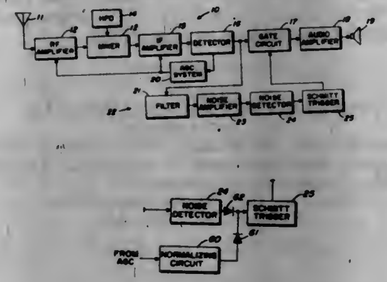
3,188,571

DETECTED NOISE ACTUATED, AGC NOISE-QUIETING ACTION DEPENDENT, AND TOTAL NOISE LEVEL ADAPTIVE RF RECEIVER SQUELCH SYSTEM

Harlan G. Michael, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Nov. 28, 1962, Ser. No. 240,512
4 Claims. (Cl. 325—402)

1. A radio receiver having a first squelch system depending on the noise-quieting action of an AGC circuit in the receiver and with said first squelch system acting on noise out of a receiver detector, and having an override squelch set to provide continued audio with input signal levels above a predetermined signal threshold level wherein, said receiver includes: an RF amplifier; an AGC circuit; a detector; an audio circuit connected to said detector and having gating means; squelch circuit means of said first squelch system connected to said receiver detector and said gating means for controlling said gating means in response to variation in the noise out of the receiver detector through a predetermined power level while the input remains below said predetermined input signal threshold level; and over-ride squelch circuit means connected to said AGC circuit and said gating means for insuring continued audio above said predetermined input signal threshold level.

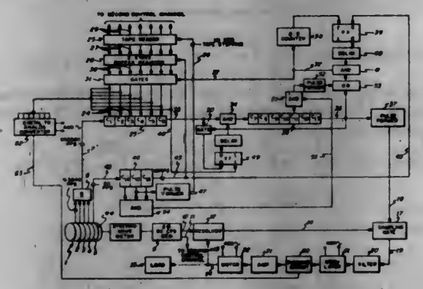


3,188,572

SERVO DISPLACEMENT AND SPEED CONTROL SYSTEM

William W. Bell III, Manhasset, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Mar. 26, 1962, Ser. No. 182,337
6 Claims. (Cl. 328—34)



1. Generating means for producing a fixed number of output pulses time spaced from each other in accordance with the value of a number represented by a digital signal, said generating means comprising:

a source for producing timing pulses and interval measuring pulses, the frequency of said timing pulses being higher than the frequency of said measuring pulses,

a source for producing said digital signal,

a pulse counter comprising a first group and a second group of counting stages connected in cascade,

the first stage of said first group being connected to receive said timing pulses and each stage of said first group being connected to receive a respective bit of said digital signal, each of said timing pulses changing the value of the count in said first group by the same predetermined amount, said digital signal changing the value of the count in said first group by an amount determined by the value of the number represented by said digital signal,

first actuable means responsive to a control signal for applying said digital signal to said first group,

second actuable means connected to pass a signal from one of the stages of said second group when said second actuable means is actuated, said interval measuring pulses being applied to and actuating said second actuable means,

means for summing the output of said second actuable means and the output of the last stage of said second group to produce said control signal, said last stage of said second group producing said output pulses,

third actuable means for selectively connecting the output of said summing means to said first actuable means when said third actuable means is actuated,

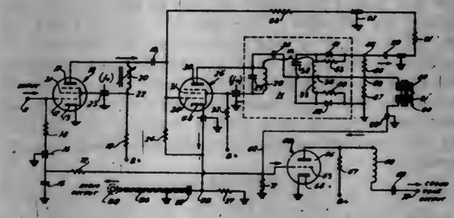
and means for counting the outputs from said third actuable means to produce an output signal when a fixed number of said outputs have occurred, said output signal deactuating said third actuable means.

3,188,573

DUAL MODULATION COMMUNICATION SYSTEM

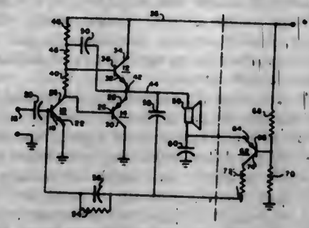
Clifford Dale Nestlerode, West Covina, Calif., assignor to Standard Kollsman Industries, Inc., Melrose Park, Ill., a corporation of Illinois

Filed Dec. 21, 1960, Ser. No. 79,478
8 Claims. (Cl. 329—135)



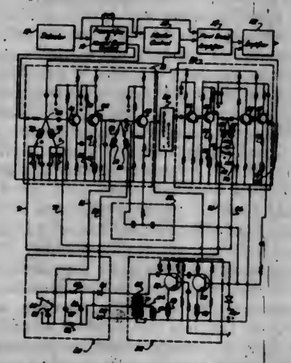
1. A demodulator circuit for a simultaneous frequency modulated and amplitude modulated carrier signal with independent bands about a central carrier frequency comprising an input amplifier stage having an output tuned to the carrier frequency, a discriminator containing a circuit resonant at the carrier frequency coupled to the output of said amplifier stage and a pair of diodes circuit connected within the discriminator for demodulating the frequency modulated band of the carrier signal, circuit means connected across said diodes to establish an audio response at a first terminal thereof corresponding to the frequency modulated band, said pair of diodes further serving as detector means for detecting the amplitude modulated signal in said carrier signal simultaneously with detection of said frequency modulated signal to provide said detected amplitude modulated signal at a second terminal of said discriminator, means including carrier frequency filter means circuit connected between said circuit means and the input of said amplifier stage for applying the audio signals thereto, an impedance in the amplifier circuit for establishing a low impedance output signal corresponding to said audio response, and second circuit means for coupling said detected amplitude modulated signal to corresponding output means, said amplifier stage providing both amplification of said simultaneously modulated amplitude modulated and frequency modulated signals to said discriminator and said low impedance output amplification of said detected audio signal.

3,188,574
COMPLEMENTARY SYMMETRY TRANSISTOR AMPLIFIER HAVING A CONSTANT COMMON CONNECTION OPERATING POTENTIAL
Harry W. Parmer, 239 Pinewood Ave., Oakhurst, N.J.
Filed Feb. 11, 1963, Ser. No. 257,801
2 Claims. (Cl. 330—13)
(Granted under Title 35, U.S. Code (1952), sec. 266)



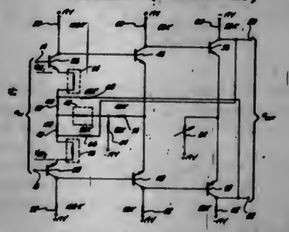
1. In a transistor amplifier having a common-emitter driver stage directly coupled to an output stage which includes two transistors connected in complementary symmetry with respective emitters connected in common, said common connection being at a prescribed operating potential, feedback means connected between said output stage and said driver stage for maintaining said operating potential constant when the amplifier is dynamically operated, said feedback means comprising a control transistor having an emitter, collector and base, a voltage divider network connected across a fixed unidirectional voltage source, said control transistor having its base connected to said voltage divider for maintaining a fixed emitter-base bias and having its emitter coupled to said common connection, the collector of said control transistor being coupled to the input of said driver stage, the current in the collector circuit of said control transistor being representative of said operating potential of said common connection, said driver stage being responsive to changes in the collector current of said control transistor for maintaining said common connection at the prescribed operating potential.

3,188,575
AUTOMATIC VOLUME CONTROL SYSTEM FOR SEISMOGRAPH AMPLIFIER SYSTEM
David Sheffet, Altadena, Calif., assignor to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware
Filed Oct. 16, 1961, Ser. No. 145,036
6 Claims. (Cl. 330—23)



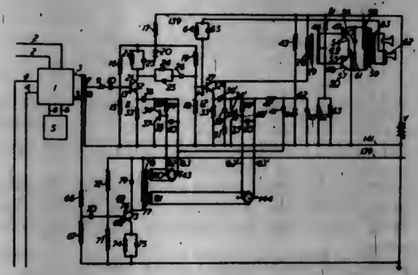
6. In an AVC system including a rectifier driver transformer and wherein an applied signal voltage is amplified and impressed across the primary winding of said rectifier driver transformer, thence rectified and the resulting AVC control voltage applied to AVC-controlled amplifier stages through a varistor lattice network utilizing semiconductor diodes as varistors, the improvement comprising the series combination of a resistor and a thermistor connected across a predetermined portion of the primary winding of said rectifier driver transformer, the resistance values of said resistor and thermistor being selected to compensate for the negative temperature coefficient of resistance of the semiconductor diode varistors and thereby render the resulting AVC output voltage substantially independent of temperature.

3,188,576
TEMPERATURE COMPENSATION FOR D.C. AMPLIFIERS
Howard B. Lewis, Jr., Reading, Mass., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Feb. 16, 1962, Ser. No. 173,732
5 Claims. (Cl. 330—23)

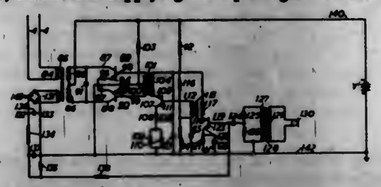


3. A balanced amplifier stage comprising a pair of transistors each having an emitter, a collector, and a base electrode, a potential source, a pair of load impedances connected respectively between one terminal of the potential source and the two collector electrodes, and means including first and second resistors connecting respectively the two emitters to the other terminal of the potential source, said first resistor having a substantially zero temperature coefficient and the second resistor having a relatively large substantially constant temperature coefficient.

3,188,577
AUTOMATIC GAIN CONTROL CIRCUIT FOR AN AMPLIFIER
Alfons Stoop, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 7, 1960, Ser. No. 976
Claims priority, application Belgium, Jan. 20, 1959, 574,887
2 Claims. (Cl. 330—136)

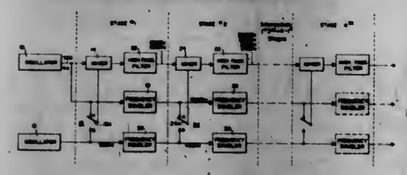


1. An automatic gain control circuit for a signal amplifier comprising at least one amplifying stage having an input circuit and an output circuit, negative feedback means common to said output and input circuits for providing said automatic gain control, said feedback means comprising a fixed impedance means, means including a variable impedance means and a decoupling capacitor connected in series bridging said fixed impedance means to provide variable negative feedback to said amplifying stage, means for supplying an input signal to said input



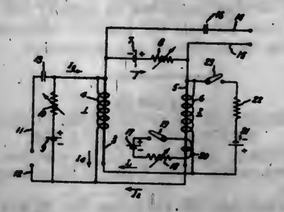
circuit, rectifier means for rectifying a portion of said input signal and means for supplying said rectified signals to said variable impedance means to cause a varation in the impedance thereof proportional to the amplitude of the rectified signals, said impedance variation altering the negative feedback to control the gain of said amplifying stage.

3,188,578
MULTI-FREQUENCY SIGNAL GENERATOR HAVING PLURAL MIXERS IN CASCADE
Paul Wisser III, Paoli, Pa., assignor to Auerbach Electronics Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 7, 1963, Ser. No. 256,916
8 Claims. (Cl. 331—39)



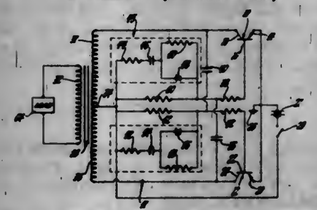
1. A system for producing a plurality of signal waves spaced in frequency from one another comprising:
(a) a source of a selected number of input signals having different frequencies and
(b) a selected number of successive stages each of which includes:
(i) means for combining two signals and producing output signals in response thereto
(ii) frequency selective means constructed to pass desired frequency components of said output signals
(iii) a first frequency multiplication means
(iv) a second frequency multiplication means, and
(v) means for applying one of two signals to said combining means,
the first of said stages having a first input to its combining means coupled to receive a first of said input signals and a second input thereto to receive via said applying means either said first or a second of said input signals, said first and second multiplication means of said first stage being respectively arranged to multiply said first and second input signals,
the following ones of said stages having their respective first inputs to their respective combining means coupled to receive respectively the signals passed by the frequency selective means of the preceding stage and also to receive via said respective applying means a selected one of the two signals produced respectively by the two frequency multiplication means of the preceding stage, said latter two signals also being respectively applied, to the corresponding multiplication means of the next following stage.

3,188,579
CRYOGENIC OSCILLATOR
William H. Mellichamp, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 30, 1962, Ser. No. 213,456
5 Claims. (Cl. 331—107)



2. A cryogenic oscillator comprising a source of substantially constant current, first and second superconductive circuit branches coupled in parallel across said source, a first cryotron having a first gate included in said first branch and a first control conductor included in said second branch, said first control conductor being disposed in close relation to said first gate for applying a magnetic field to said first gate capable of rendering it resistive as current from said source flows in said first control conductor, a second cryotron having a second gate included in said second branch in series with said first control conductor and having a second control conductor included in said first branch in series with said first gate, the said second control conductor being disposed in close relation to the said second gate for applying a magnetic field to the said second gate capable of rendering it resistive when current from said source flows in said second control conductor, and means associated with one of said control conductors and independent of said gates for opposing to an increasing degree the magnetic effect of the current supplied by said source as the current from said source in the said one of said control conductors decreases.

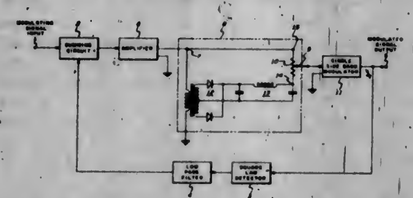
3,188,580
SYMMETRICAL SELF-BLOCKING OSCILLATOR WITH SYMMETRICAL STARTING CIRCUIT
Marvin J. Fink, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 161,073
3 Claims. (Cl. 331—113)



1. A circuit for supplying a relatively high voltage to an initially low impedance load comprising a source of relatively low voltage, a symmetrical self-locking oscillator comprising a pair of transistors each having input, output and common electrodes, a transformer having a pair of primary windings and a secondary winding, said load being connected across said secondary winding, means connecting one of said primary windings across said source through the common and output electrodes of one of said transistors, means connecting the other of said primary windings across said source through the common and output electrodes of the other of said transistors, the input electrode of each of said transistors being connected

through a resistor and a capacitor to the output electrode of the other of said transistors to provide a regenerative feedback circuit, a discharge circuit for each of said capacitors having a larger time constant than the time constant of the feedback circuit, a starter circuit including a capacitor and a serially connected unidirectional conducting element providing an initially low impedance to current flow through the junction between the input and common electrodes of said transistors.

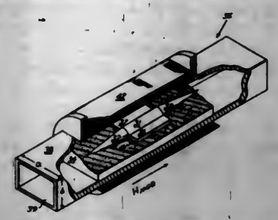
3,188,581
FEEDBACK CONTROLLED SINGLE SIDEBAND GENERATOR
Winslow Palmer, Amityville, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 10, 1961, Ser. No. 81,889
3 Claims. (Cl. 332—45)



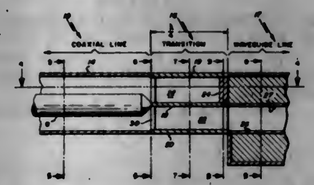
3. A signal generator comprising a single sideband modulator having input and output terminals, said modulator producing an amplitude and phase modulated high frequency signal at said output terminal in response to a control signal applied to said input terminal, said high frequency signal having a spectrum which is either identical to or mirror-symmetrical to the spectrum of said control signal except for a predetermined frequency shift, a signal summing circuit having two input terminals and an output terminal, a low-pass filter and a square law detector connected in series circuit between one of said input terminals of said summing circuit and said output terminal of said modulator, a source of modulating signals connected to the other of said input terminals of said summing circuit, a signal amplifier connected to said output terminal of said summing circuit, and a signal processing network for connecting the output of said signal amplifier to said input terminal of said modulator; said network comprising means for producing a first signal representing the average value of the signal at the output of said signal amplifier, and means for combining said first signal and said signal at the output of said signal amplifier to produce said control signal, said control signal being applied to said input terminal of said modulator.

3,188,582
RECTANGULAR WAVEGUIDE MICROWAVE AMPLITUDE MODULATOR WITH A PLANAR RESISTIVE ATTENUATOR EXTENDING ALONG FERROMAGNETIC ROD
Colin Bowness, Weston, Mass., assignor to Raytheon Company, Waltham, Mass., a corporation of Delaware
Continuation of application Ser. No. 842,690, Sept. 28, 1959. This application Jan. 10, 1964, Ser. No. 339,063
6 Claims. (Cl. 333—24.2)

1. A microwave modulator device comprising the combination of a rectangular waveguide having a longitudinal axis, means for applying a longitudinal magnetic field within the waveguide, a rodlike ferromagnetic element supported within the waveguide and having its longitudinal axis extending coaxially with the axis of said waveguide, and planar resistive means extending along the length of and supported by said rod and located wholly in a plane which is disposed parallel to the longer side walls of the waveguide, which plane extends through the ferromagnetic element, said planar resistive means terminating in end wall portions spaced from the narrower sidewalls of the waveguide.

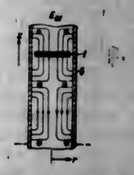


3,188,583
PARALLEL PLATE LINE TRANSITION SECTION BETWEEN A COAXIAL LINE AND A RIDGED WAVEGUIDE
Merle R. Boyd, Auburndale, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Oct. 12, 1961, Ser. No. 144,614
5 Claims. (Cl. 333—26)



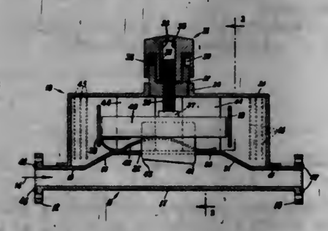
1. A radio wave transmission line comprising a section of coaxial line, a section of ridged guide, a section of three-element parallel plate strip transmission line coupled between said coaxial and waveguide sections with the intermediate element of said parallel line being connected to the center conductor of said coaxial line, means shorting the intermediate and one of the outer elements of said strip transmission line to define a radio wave choke to waves propagated in one half of said coaxial line.

3,188,584
HIGH-FREQUENCY PIEZOELECTRIC SYSTEM
Hans Awender, Berlin-Nikolassee, and Rudolf Stark, Berlin-Tempelhof, Germany, assignors to Telefunken Aktiengesellschaft, Berlin, Germany
Filed June 10, 1959, Ser. No. 819,281
29 Claims. (Cl. 333—72)



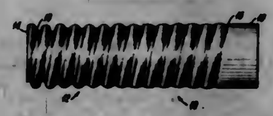
1. A frequency-sensitive selective filter system comprising an *n*-terminal network containing a flat, plate-like piezoelectric oscillating resonator free of electrodes, said network containing a portion of a high frequency transmission line carrying a high frequency wave having an oscillating component of a frequency corresponding to one of the natural frequencies of said piezoelectric resonator, the latter having at least one of its dimensions, taken across one of its larger surfaces, corresponding in order of magnitude to a quarter wave length of said oscillating component, the position of said piezoelectric resonator within the field of said transmission line being such that that portion of the field which intercepts said piezoelectric resonator and excites the latter as a frequency-selective resonator is, intermittently with respect to a substantially travelling wave and constantly with respect to a standing wave, non-homogeneous with the algebraic sign (±) of the direction of the lines of said field changing in such a manner that the distribution of the field coincides at least approximately to the distribution of the vibration pattern of said piezoelectric resonator at said frequency, thereby to provide close coupling for exciting said piezoelectric resonator.

3,188,585
WAVEGUIDE ATTENUATOR WITH VANE MOVABLE INTO HEIGHTENED PORTION OF WAVEGUIDE
Martin Zanichkowsky, 6 Gulls Cove, Plandome Manor, N.Y.
Filed Aug. 28, 1963, Ser. No. 305,040
6 Claims. (Cl. 333—81)



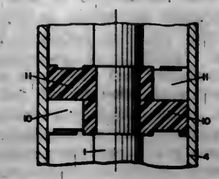
1. A wave guide attenuator comprising, a rectangular wave guide having a heightened central section in which the top and the bottom walls of the wave guide are separated by a greater distance than in the remainder of the wave guide, the top wall of said central section being provided with a slot, an attenuator element, and means for moving said attenuator element through said slot and into the heightened central section of the wave guide.

3,188,586
HELICALLY CORRUGATED WAVEGUIDE TRANSITION SECTION
Helmut Martin, Hannover, and Gunter Mohring, Langenhagen, Hannover, Germany, assignors to Hackethal-Draht- und Kabel-Werke Aktiengesellschaft
Filed May 14, 1963, Ser. No. 280,315
7 Claims. (Cl. 333—95)



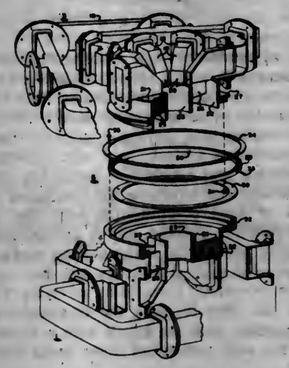
1. A waveguide junction for the transmission of electromagnetic waves therethrough comprising a tubular member having a transversely corrugated section and a smooth walled section extending from one end of said corrugated section, the depth of the corrugations of said corrugated section progressively decreasing as said corrugations approach the juncture of said corrugated and smooth walled sections, said corrugated section including the corrugations of progressively decreasing depth having an axial extent of at least two operating wave lengths to its juncture with the smooth walled section.

3,188,587
DIELECTRIC SUPPORT FOR THE INNER CONDUCTOR OF COAXIAL SYSTEMS
Franz R. Huber and Heinrich Neubauer, Munich, Germany, assignors to Rohde & Schwarz, Munich, Germany, a partnership
Filed Dec. 17, 1962, Ser. No. 247,438
8 Claims. (Cl. 333—96)



1. A coaxial transmission line having an inner conductor and an outer conductor, dielectric means for supporting said inner conductor relative to said outer conductor, recesses in one of said conductors for matching the characteristic impedance of the supported portions of the coaxial transmission line to adjacent unsupported coaxial sections, said support means including cut-out portions for reducing reflections, the edges of said cut-out portions extending substantially parallel with and selectively perpendicular to the electric field lines within the coaxial transmission line, said support means further including two ring-shaped portions each having a set of support arms, each of said sets covering together an angular region of at least 180 degrees, said ring-shaped portions forming a single supporting unit, and being angularly displaced with respect to each other in such a manner that said support arms of one ring-shaped portion cover the recesses of the other ring-shaped portion.

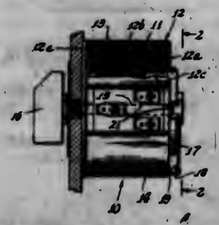
3,188,588
TE_{01} MODE COAXIAL WAVEGUIDE SYSTEM AND ROTARY JOINT
Henry S. Keen, Commack, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed May 28, 1963, Ser. No. 283,923
7 Claims. (Cl. 333—98)



1. An around-the-mast type rotary joint for transferring electromagnetic wave energy between a first main rectangular waveguide that is adapted to be coupled to a source and a second rectangular waveguide adapted to be coupled to a load, said second main waveguide being rotatable with respect to said first waveguide about an axis, comprising: a coaxial waveguide having cylindrical inner and outer conductors coaxial with said axis, a first mode conversion device including a plurality of substantially identical rectangular waveguide sections each including a portion ex-

tending parallel to said axis and terminating in a common plane adjacent an end of said coaxial waveguide and perpendicular to said axis, the broad walls of said portions being parallel to respective equiangularly spaced radii from said axis, means coupling each of said rectangular waveguide sections to a respective sector of an annular region conformal in cross section to the space between the inner and outer conductors of said coaxial waveguide, said rectangular waveguide sections each including a further portion extending outwardly from said axis, means including a plurality of symmetrical waveguide junctions interconnecting said waveguide sections electrically in series with each other to said first main rectangular waveguide, all of said interconnecting means and waveguides, except said portions extending parallel to said axis, being disposed at distances from said axis exceeding the radius of said cylindrical outer conductor of said coaxial waveguide; a second mode conversion device substantially identical to said first mode conversion device, disposed in similar relationship to the other end of said coaxial waveguide and connected to said second rectangular waveguide, and rotatable therewith about said axis, said second mode conversion device being axially spaced from the adjacent end of said coaxial waveguide to provide circumferential gaps between the ends of the conductors of said coaxial waveguide and the respective portions of said mode conversion device.

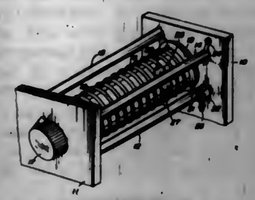
3,188,589
ELECTRICAL COMMUTATING SURFACE
Arthur E. Snowdon, Bristol, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Mar. 20, 1961, Ser. No. 97,076
2 Claims. (Cl. 336—149)



1. In an adjustable voltage autotransformer having a closed paramagnetic core, a length of electrical conducting wire wound on the core in inductive relation thereto and having a plurality of commutating turns on the core with each commutating turn having a portion that forms a planar commutating surface, said wire having an inner copper conductor and an exterior insulation covering the copper conductor but exposing the conductor at least at the portion of each commutating turn that forms the planar commutating surface, and a carboniferous brush movable along the planar commutating surface in electrical engagement with at least one of the commutating turns, the improvement comprising covering the exposed portions of the wire forming the commutating surface that is engageable with the brush with a layer of ruthenium with the said ruthenium layer being the final, exterior layer.

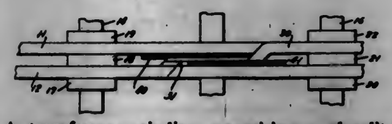
3,188,590
ROLLER CONTACT CONCEPT
Joseph J. Earley, Cedar Rapids, Iowa, assignor to Collins Radio Company, a corporation of Iowa
Filed Feb. 18, 1963, Ser. No. 259,297
6 Claims. (Cl. 336—149)

1. A rolling and slide contact comprising a pair of balls formed with an opening therethrough, a shaft structure extending through the opening, a spring on said shaft biasing said balls together, a rod mounted between the balls and urging them apart, and a coil in engage-



ment with the balls such that the balls make electrical contact between the balls and the coil.

3,188,591
TRANSFORMER DISK WINDINGS FORMED OF A CONTINUOUS CONDUCTOR
Isadore K. Dertort, Philadelphia, Pa., and Sylvester B. Heberig, Glendora, N.J., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 17, 1963, Ser. No. 252,211
2 Claims. (Cl. 336—185)

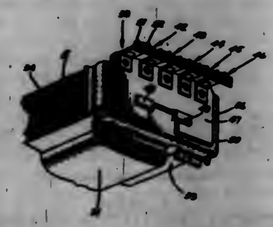


1. A transformer winding comprising a plurality of disks each having a plurality of turns; each of said plurality of turns of each of said plurality of disks being formed of a single continuous conductor of constant cross-sectional shape; said single conductor having a flat rectangular cross-section; each of said disks comprising a spiral of single coplanar convolutions; each of said disks being stacked with respect to one another with adjacent disks being spaced from one another and in insulated relation with one another; said single continuous conductor having a plurality of connecting conductor portions in said single continuous conductor; the outer end of each of said plurality of disks being connected to the inner end of a disk adjacent thereto by a respective connecting conductor portion of said plurality of connecting conductor portions; and insulation means enclosing each of said connecting conductor portions to insulate said connecting conductor portions from the disks adjacent thereto; said insulation means comprising a first and second insulation spacer means positioned on either side of each of said connecting conductor portions.

3,188,592
MAGNETIC CORE AND COIL ASSEMBLY AND TERMINAL PAD ARRANGEMENT THEREFOR
Robert F. Kukla, Danville, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 11, 1961, Ser. No. 144,411
4 Claims. (Cl. 336—192)

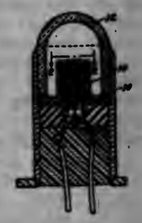
1. A ballast transformer comprising an elongate shunt type magnetic core having a pair of yoke members and a center winding leg, said yoke member being disposed at the side of said center winding leg to define coil receiving windows therein, said yoke members and center winding leg being formed of flat laminations, a plurality of coils disposed on said center winding leg within said coil receiving windows and having a top side and a bottom side extending outwardly therefrom, means for joining said yoke members and center winding leg in assembled relation, said means joining said yoke members and center winding leg at the ends of the magnetic core, a first and

a second terminal pad having a straight edge, each of said terminal pads having a base portion and a plurality of terminals, all of said terminals substantially aligned with said straight edge of the terminal pad, each of said terminals having at least one conductor tab cut out from said terminal, said tab extending from said terminal and folded over for retaining at least one conductor in posi-



tion on said terminal in an overlying relation with said terminal, said base portion of said first terminal pad attached on said joining means at one end of the magnetic core attached on said joining means at the other end of the magnetic core, and a plurality of coil conductors brought out from said coils and connected in electrical engagement with said terminals.

3,188,593
DETECTOR ASSEMBLY
Alfred W. Vasel, 222 Linwood St., Abington, Mass., and Rudolph W. Kalas, Weymouth, Mass. (21 Mason St., East Weymouth, Mass.)
Filed Oct. 10, 1962, Ser. No. 229,586
4 Claims. (Cl. 338—18)



2. A fire detector assembly of the type described, comprising a photo-resistive cell, said cell comprising two portions formed of the same type of photo-resistive material, said portions having a common junction at one electricial end and means for making an electricial connection to said junction and to the opposite electricial ends of said portions, and a different light filter disposed over each of said portions, the filter over one portion transmitting principally light above a predetermined frequency, the filter over the other portion transmitting principally light below said predetermined frequency, said cell portions and their associated filters being disposed closely adjacent each other, whereby substantially the same amount and type of radiation impinges on each filter.

3,188,594
THERMALLY SENSITIVE RESISTANCES
Lewis R. Koller, Cambridge, Mass., and Henry D. Coghill, Burnt Hills, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 25, 1962, Ser. No. 168,662
4 Claims. (Cl. 338—28)

1. A thermally sensitive resistance device comprising: a continuous crystalline film of substantially intrinsic semiconductive material having a thickness in the range of about 10^{-6} to 10^{-1} centimeters and exhibiting a negative temperature coefficient of resistance of at least 4% per centigrade degree throughout the temperature range of 0° C. to 200° C., said semiconductive material selected



from the group consisting of zinc telluride, cadmium telluride and zinc-cadmium telluride; and electrodes disposed on opposite surfaces of said film.

3,188,595
ADJUSTABLE RESISTOR
Chesver A. Hult, Bradley Beach, and Joseph Bebel, Lakewood, N.J., assignors to Weston Instruments, Inc., a corporation of Texas
Filed Sept. 28, 1962, Ser. No. 226,874
13 Claims. (Cl. 338—148)



1. An adjustable resistor comprising:
an electrically non-conductive tubular base member having a smooth, cylindrical inside wall,
a helix of a thin film of an electrically resistive material on said inside wall of said tubular base member,
an electrically conductive terminal on at least one end of said tubular base member contacting at least a portion of said thin film,
a slider adapted to move along said helix, said slider including
an electrically conductive contactor, said contactor having a protuberance adapted to engage said thin film,
said protuberance being elongated in the direction of its travel over said resistive film,
means for adjusting said resistor by moving said slider along said helix substantially from one end of said film to the other thereby to obtain improved resolution of the resistance change between said contactor and said terminal as said slider is moved,
and means for connecting said terminal and said contactor into an electrical circuit.

3,188,596
WIRING DEVICE WITH SIMPLIFIED GROUNDING AND MOUNTING MEANS
Prescott K. Turner, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed July 2, 1962, Ser. No. 206,931
6 Claims. (Cl. 339—14)



1. A wiring device for securing an electric cord to a panel, said device comprising an insulating body, said cord including at least three conductors at least one of

which terminates within said insulating body, a grounding contact disposed in said body and connected therein to an end of said one conductor, said insulating body having an aperture extending therethrough between two of said conductors, said grounding contact being integrally associated with the walls of said aperture, at least one end of said grounding contact being essentially flush with one face of said insulating body, and means including said aperture and said grounding contact for fastening said device to a panel thereby to secure said device to the panel and directly engage said grounding contact thereto.

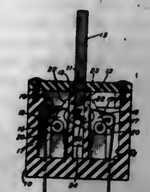
3,188,597
TERMINAL DEVICE
Prescott K. Turner, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed July 2, 1962, Ser. No. 206,948
1 Claim. (Cl. 339—14)



For use with a panel, a cordset comprising a cord and an electrical terminal device adapted to be supported by the panel, said device including a molded insulating body attached to one end of a cord, said cord including at least three conductors of substantially the same length and entering into said insulating body from a first end wall thereof, a pair of spaced apart power contacts facing outwardly from a second end wall of said body, said power contacts being connected respectively to the bared ends of two associated power conductors of said cord within said body, the other of said three conductors of said cord being doubled back upon itself within said body and including an external portion extending outwardly from said first end wall of said insulating body, said doubled back portion of said other conductor encapsulated by said insulating body and held in fixed relation to said two associated power conductors and contacts by said insulating body, a grounding contact connected to the free end of the external portion of said other conductor, said external portion and grounding contact being of such a length that the grounding contact is unable to engage said power contacts, thereby prohibiting the possibility of said grounding contact short circuiting with said power contacts, and fastening means for securing said terminal device to the panel.

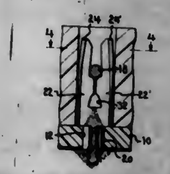
3,188,598
PRINTED CIRCUIT BOARD CONNECTOR
William Pferd, Watchung, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 20, 1962, Ser. No. 203,840
7 Claims. (Cl. 339—17)

1. A connector for a printed circuit board comprising an insulating block having guide means for said board and a plurality of flexible contacts, a rotatable shaft bearing cams and turning means, said shaft mounted in said block, said contacts being made of a flat sheet of resilient electrically conducting material and being J-shaped in form, said contacts including at least one cam within the hooked portion of each contact, the latter resiliently urged toward said board in their nondeflected attitude,



rotation of said shaft causing said cams to deflect said contacts first away and then toward said board.

3,188,599
ELECTRICAL CONNECTOR FOR PRINTED CIRCUIT BOARD
Lincoln E. Roberts, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 2, 1962, Ser. No. 235,034
2 Claims. (Cl. 339—17)



1. An electrical connector adapted to fit into an aperture in a printed circuit board comprising a base member adapted to be secured into said apertures, a body member extending outwardly from said base member, finger means extending outwardly from said body member, said finger means having continuous opposed inner edge surfaces, portions of which are relatively close together, proximate the outer ends of said finger means and diverging in a direction toward said body member for receiving an electrical conductor means, intersections of said diverging edge surface portions with parallel planes normal to a longitudinal axis of said connector being parallel, said finger means having inwardly tapered surfaces at the outer ends to facilitate insertion of said conductor means between said finger means, portions of said edge surfaces spaced from said diverging portions defining an opening shaped to prevent solder from traveling from the base member to said finger means.

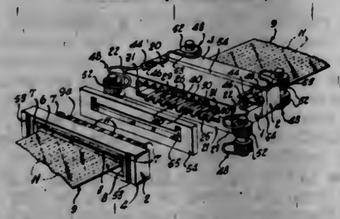
3,188,600
TERMINAL AND MOUNTING MEANS
Robert C. Woofter, Cortland, and Donald G. Baer, Girard, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Sept. 12, 1960, Ser. No. 55,483, now Patent No. 3,146,051, dated Aug. 25, 1964. Divided and this application May 22, 1962, Ser. No. 196,818
7 Claims. (Cl. 339—47)



6. Universal electrical connector means that interlock linearly to include correspondingly identical terminals in self-retaining pairs each having terminal centers drawn together closely and compactly free of need for any ex-

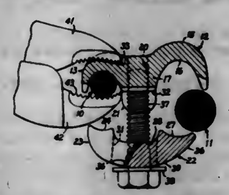
ternal housing for maintenance of interlock per se though usable with insulating tape wrapping as well as at least one insulating housing portion having a side-shouldered passage longitudinally therethrough and a longitudinal rail means alone one side thereof, comprising, in combination, a pair of identical metal terminal bodies each including a conductor attaching portion, a box-like intermediate portion integral at one end with said conductor attaching portion, an extended blade-like floor portion integral with said box-like intermediate portion at an end opposite to that of said conductor attaching portion, said box-like portion being open at opposite ends and slotted longitudinally along one side for resilience and also to complement the longitudinal rail means when used, a stabilizing rib means extending longitudinally between said intermediate box-like portion and said floor portion, a spring tongue portion integral with said blade-like floor portion at an end thereof remote from said intermediate portion so as to project back angularly to said floor portion and to terminate in an offset abutment within confines of said box-like intermediate portion having width greater than that of both said spring tongue and blade-like floor portions, each box-like intermediate portion having a length substantially equal to length of said extended floor portion such that with identical terminal bodies in mating telescopic relation said box-like intermediate portions complement each other and abut axially though transposed against each other longitudinally, and shoulder engageable first as well as second tang means extending laterally outwardly in opposite directions from said box-like intermediate portion, said telescopically mating spring tongue portions having resiliently-backed wiping connection snugly locked and pressed into contiguous face-to-face electrical contact with each other totally within confines of said box-like intermediate portions, said blade-like extended floor portion of a mating terminal body internally closing off the slotted side of said intermediate box-like portion of the other terminal body and collectively with said box-like portions being in formation structurally in a protective shield externally around internal resiliently mated wiping face-to-face contact of said tongue portions as well as maintaining guaranteed protection against lateral dislocation therebetween.

3,188,601
ELECTRICAL CONNECTOR FOR TAPE-LIKE ELECTRICAL CABLE
Donald R. De Tar, Stratford, Conn., assignor, by mesne assignments, to Litton Precision Products, Inc., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,042
4 Claims. (Cl. 339—75)



1. An electrical connector for a flat, tape-like cable of the type in which a sheath of insulating material encloses a number of spaced parallel conductive elements extending a lengthwise direction, which comprises:
(a) a plug comprising a hollow housing having a front end wall with an elongated slotted opening therein,
(b) a cable-supporting element fitted within the housing and having a forward end extending through said slotted opening to a point beyond the front end wall of the housing,
(c) a flat tape-like cable extending through the housing with an end thereof resting directly on opposite faces of the cable-supporting element and extending around the forward end thereof,
(d) the conductive elements in said end of the cable resting on opposite faces and extending around the end of the support element having exposed surfaces facing outwardly, the housing of said plug having a recess surrounding the cable-supporting element and cable, and sealing material in said recess serving to seal the housing and also hold the cable and cable-supporting element in said housing,
(e) a receptacle comprising a hollow body having a slotted opening in an end face thereof which is shaped to receive the forward end of the cable-supporting element, and
(f) a series of spring contact elements mounted in spaced relation to each other within the receptacle body,
(g) said contact elements being aligned with the conductive elements of the cable and each including a pair of opposing spring fingers positioned to engage with the exposed surface of one of the conductive elements on opposite faces of the support element.

3,188,602
PARALLEL-GROOVE ELECTRICAL CONNECTOR
John A. Toedtman, Warson Woods, and Elmer H. Hornung, St. Louis, Mo., assignors to Jasper Blackburn Corporation, St. Louis, Mo., a corporation of Missouri
Filed Nov. 19, 1962, Ser. No. 238,417
3 Claims. (Cl. 339—109)

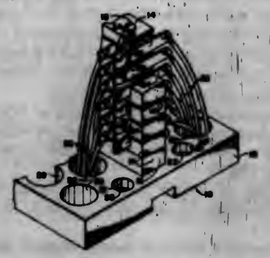


1. An electrical connector comprising:
(a) a pair of body sections, said body sections having a tap wire groove and a main wire groove therebetween,
(b) one of said body sections being provided with an outer clamping surface aligned directly opposite to and extending across the tap wire groove, and
(c) fastening means interconnecting the body sections and selectively closing the body sections onto the tap wire and main wire located respectively in the tap wire groove and main wire groove, while the tap wire is temporarily held in the tap wire groove of said one body section by clamping forces applied directly to said clamping surface and to the tap wire,
(d) the other said body section being provided with a recess extending through and across the tap wire groove, the recess being adapted to position and pass freely part of a clamping tool for access to the tap wire in applying the clamping forces directly to the outer clamping surface and to the tap wire across the diameter of the tap wire.

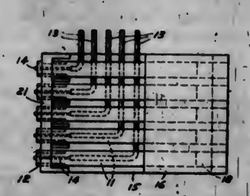
3,188,603
CONNECTOR FOR A TERMINAL BLOCK OR THE LIKE
Paul H. Snider, 211 S. Parkwood Lane, Wichita, Kans.
Filed Aug. 6, 1962, Ser. No. 214,945
7 Claims. (Cl. 339—198)

5. Connector means for a terminal block or the like, comprising, in combination, an insulator member, a plurality of elongated conductor means connected to said

insulator member, each of said conductor means having end portions projecting from one face of said member and positioned in spaced relation to each other, said projecting end portions of said conductor means being shaped to form longitudinally extending spaced clips attachable to a terminal pin of a terminal block or the like and establish electrical contact therewith, a stop on said insulator member projecting from said one face thereof and positioned relative to said clips to limit movement of said connector when mounted on said pins, one end portion of said member having a notch to prevent inadvertent removal of said member from said terminal block when wiring same.

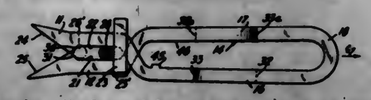


3,188,604
BLOCK TERMINAL
Folke Teodor Mogestad, Hagersten, and Rune Nils Anders Thyak, Alvsjo, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 16, 1963, Ser. No. 251,851
Claims priority, application Sweden, Feb. 14, 1962, 1,623/62
3 Claims. (Cl. 339—198)



1. An electric connector for releasably connecting two sets of conductors, said connector comprising a substantially plate-shaped insulation body having in one of its face sides a substantially straight row of pockets and including a flexible portion of reduced gauge between said row and the remaining full-gauge portion of the body, said flexible portion extending across the length of said row, a set of substantially straight contact elements secured at one end to the full-gauge portion of the body on said one face side, said secured ends of the contact elements constituting first terminals for one of said sets of conductors, each of said elements protruding from the full-gauge body portion parallel to said flexible body portion and spaced apart therefrom and terminating in a second terminal, each of said second terminals being engaged with the respective pocket when said contact elements and said flexible body portion are parallel to each other and being disengaged from the respective pocket when said contact elements and said flexible body portion are bent apart in reference to each other, whereby upon bending of the flexible body portion into a position in which said second terminals are disengaged from said pockets, space is made available for attaching conductors of said second set to said second terminals, and upon restoring of the flexible body portion to its position parallel to said contact elements, said conductors of the second set are retained in the respective pockets by the re-engaged second terminals.

3,188,605
SPRING CLIP FASTENER
Stephen A. Stenker, 363 Concord Road, Billerica, Mass.
Filed Dec. 6, 1960, Ser. No. 75,058
7 Claims. (Cl. 339—213)



5. A spring clip formed from a resilient unitary metallic strip having opposite surfaces that define the length and width of the strip, said clip comprising:
(a) a body portion that includes a pair of spring lever arms, one end of each of said arms being connected by a bight portion; and
(b) a jaw portion that includes a member connected to the other end of each of said arms;
(c) said bight portion being U-shaped and defining a plane that is parallel to the opposite surfaces of the portion of said strip that constitutes said bight portion;
(d) the members of said jaw portion being relatively disposed to provide a scissors-type opening and closing when said bight portion is flexed about an axis perpendicular to the plane thereof;
(e) each of said lever arms being undulated to define a lever arm plane that is perpendicular to the plane defined by said bight, the opposite surfaces of the portion of said strip that constitutes each of said lever arms being respectively perpendicular to each of said lever arm planes.

3,188,606
ELECTRICAL CONNECTOR
Armand René de Lyon and Allen E. Travis, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 21, 1963, Ser. No. 317,622
3 Claims. (Cl. 339—256)



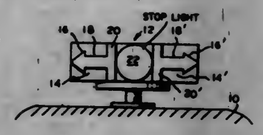
1. An electrical receptacle for a substantially flat insertable electrical blade member, said receptacle comprising a sheet metal blank having spring characteristics, said blank being formed to define a base portion adapted to engage along one surface of said blade member, flange portions overlying said base portion, said flange portions being spatially disposed from said base portion and substantially parallel thereto which are adapted to engage about one half of the other surface of said blade member, end sections extending away from the ends of said base and flange portions, each end section having a bottom portion and inturned ends which are disposed at a greater distance from the median plane of said receptacle than said base and flange portions, and curved portions connecting said bottom portions and said inturned ends to said base portion and said flange portions to impart thereto spring power so that said base portion and flange portions provide a resilient blade engaging area which when said blade member is inserted therein will yieldingly engage said blade member in a mechanical and electrical connection.

3,188,607
WELL GEOPHONE
John H. Woodworth, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Aug. 26, 1959, Ser. No. 836,171
7 Claims. (Cl. 340—17)



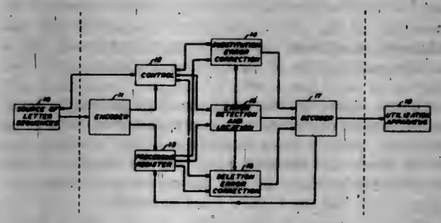
1. A well geophone comprising a central mandrel having a central channel extending from one end toward an opposite end thereof; a plurality of transducers; each of said transducers supported on said mandrel and in flow communication with said central channel, means for exposing the transducers to well pressures; said transducers being arranged in pairs with the transducers of each pair being oppositely disposed on said mandrel and being connected electrically in series aiding relation for noise cancellation; and means for rendering said transducers responsive solely to dynamic well pressure changes; said means comprising means forming a reservoir for receiving a pressure-transmitting liquid and responsive to well pressures, and a flow passage including a first flow restriction interconnecting said reservoir and said central channel for transmission to said transducers solely of changes in static well pressures.

3,188,608
VEHICLE COMBINATION TURN AND DECELERATION INDICATOR
Adna G. Clarke, Jr., 2131 Armstrong St., Honolulu 14, Hawaii
Filed Nov. 21, 1962, Ser. No. 239,147
1 Claim. (Cl. 340—74)



A combination turn and deceleration indicator for motor vehicles especially for use on high speed, long visibility highways, said combination comprising: a fixture of a width substantially approximating the width of a vehicle roof and of substantial height relative to its width; means for mounting said fixture on a vehicle roof to project above said roof; an illuminatable deceleration indicator located substantially centrally of said fixture; means in said fixture for illuminating said indicator; left and right turn indicators on opposite sides of said deceleration indicator; said right and left turn indicators illuminatable areas extending to approximately the outer extremities of said fixture and being of substantially less height than said fixture, each of said turn indicators having adjacent said deceleration indicator, a vertically extending illuminatable area of substantial width and of a height approximating the height of said fixture; means under the control of the vehicle operator for selectively illuminating either of said turn indicators, and parallel circuits for illuminating said deceleration indicator, one of said parallel circuits containing a brake operated switch and the other containing an inertially operated switch responsive to any deceleration of the vehicle.

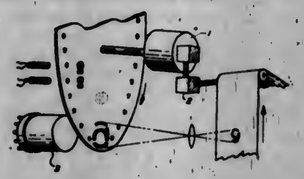
3,188,609
METHOD AND APPARATUS FOR CORRECTING ERRORS IN MUTILATED TEXT
Leon D. Harmon, Warren Township, Somerset County, and Edward J. Sitar, Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 4, 1962, Ser. No. 192,465
7 Claims. (Cl. 340—146.1)



6. Apparatus for processing electrical representations of meaningful combinations of patterns comprising: (1) a source of electrical notations of individual patterns; (2) means for detecting individual pattern errors in said combinations of patterns including, means for developing coded electrical notations of the individual patterns of a combination, means for systematically forming a plurality of digrams of said notations, means for obtaining representations of the natural likelihood of occurrence of said digrams from preregistered digram probability data, and means for designating each digram that fails to exceed a pre-assigned threshold of probability as one in error; (3) means for locating that pattern of a given digram whose probability lies below threshold including, first means for selecting that pattern combination common to two adjacent digrams below threshold as the pattern in error, second means responsive to a failure of said first selecting means to locate said pattern in error for selecting that one pattern from a preregistered table of probabilities of error for single patterns, third means responsive to a failure of said second selecting means to locate said pattern in error for selecting other digram combinations of said individual pattern notations to determine that one of said other digrams that has the lowest probability of natural occurrence, and fourth means responsive to a failure of said third selecting means to locate said pattern in error for selecting that pattern representation as the pattern in error that is designated to be a blank; and (4) means for correcting located pattern errors including, means for developing coded electrical notations of all of the possible antecedent patterns which, according to preregistered statistical data, most probably give rise to the pattern indicated to be in error, said antecedent patterns being derived from known past performance records of said source of electrical notations of individual patterns, means for systematically forming a plurality of trigrams

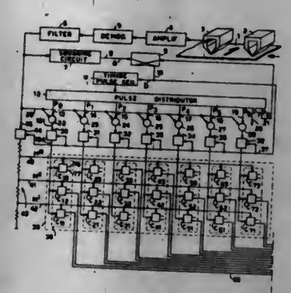
each of which includes one of said antecedent patterns, means for obtaining representations of the natural likelihood of occurrence of said trigrams from preregistered trigram probability data, fifth means for selecting as the correct antecedent pattern that pattern included in the trigram which has the highest indicated likelihood of occurrence, means responsive to a failure of said fifth means to select a correct antecedent pattern for forming a plurality of digrams each of which includes one of said antecedent patterns, means for obtaining representations of the natural likelihood of occurrence of said digrams from preregistered digram probability data, sixth means for selecting as the correct antecedent pattern that pattern included in the one of said last-formed digrams which has the highest indicated likelihood of natural occurrence; and in the event that said fourth selecting means selected a blank as the pattern in error and consequently that said fifth and sixth selecting means indicate a failure to select a correct antecedent pattern, means for developing coded electrical notations of all of the possible antecedent patterns which, according to preregistered data, most probably give rise to a blank, means for forming a plurality of trigrams each of which includes one of said antecedent patterns indicated most likely to give rise to a blank, means for obtaining representations of the probability of the natural likelihood of each of said last-mentioned antecedent patterns being transformed into a blank by said source of electrical notations of individual patterns in accordance with its statistical record of performance, means for forming the joint probabilities of said trigram probabilities with said probabilities of a given antecedent pattern being transformed into a blank, and seventh means for selecting as the correct antecedent pattern that one included in said last-mentioned plurality of trigrams that has the highest joint probability.

3,188,610
MACHINE READABLE CHARACTERS AND PROCESS OF TRANSLATING CHARACTERS
Jacob Rabinow, Takoma Park, and Arthur W. Holt, Silver Spring, Md., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 15, 1959, Ser. No. 820,262
5 Claims. (Cl. 340—146.3)



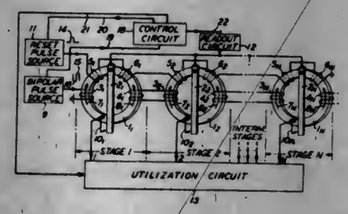
1. A character reading machine for use with a special font of characters having cuts along certain individual predetermined paths transversely intersecting the character lines to define a positional code identifying the character without impairing the legibility of the font, comprising optical scanning means to traverse the character line by line parallel to said predetermined paths transverse to the character lines, electronic means actuated by said scanning means to produce an indication of the individual predetermined paths at which the character has been cut, other electronic means actuated by said optical means for indicating the number of times the scan crosses a part of the character during each traverse, and output coding means producing a unique code response for each character in accordance with the positional relationship of the cuts and the said number of crossings.

3,188,611
CHARACTER RECOGNITION APPARATUS
Pier Giorgio Perotto, Turin, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed July 19, 1962, Ser. No. 210,937
Claims priority, application Italy, July 25, 1961, 14,134/61
4 Claims. (Cl. 340—146.3)



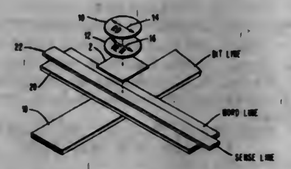
1. Apparatus for recognizing printed characters, comprising in combination:
means for sequentially scanning said characters,
means fed by said scanning means for producing for each one of said characters a signal having a wave shape characteristic of said character,
a plurality of analog amplitude storage elements,
a plurality of normally closed transmission gates each one connecting said signal producing means to one of said storage elements,
timing means responsive to the beginning of each one of said produced signals for defining a plurality of sequential sampling time points,
means responsive to said timing means for sequentially opening said gates at said time points, whereby a sample of the instantaneous amplitude of said signal is stored in each one of said storage elements,
and means fed by said storage elements for producing a binary coded signal pattern representative of said character.

3,188,612
SEQUENTIAL ARRANGEMENT
Harold N. Wagar, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 17, 1962, Ser. No. 195,640
14 Claims. (Cl. 340—174)



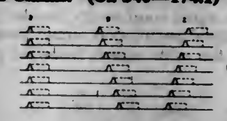
3. A sequential arrangement comprisjng at least a first and a second toroidal-shaped and closed magnetic core structure, each definable in half sections thereof, means for oppositely remanently magnetizing said half sections of each core, a source of alternate polarity pulses, a first winding being on one half section of said first core and effective for altering in a first step the remanent magnetization of only said one half section of said first core and for altering in a second step the remanent magnetizations of both first core half sections, second means under the control of alterations in the remanent magnetizations of both first core half sections for altering the remanent magnetization of only one half section of said second core, said second means including a second winding on the other half section of said first core interconnected with a third winding on one half section of said second core, and read out means including a plurality of magnetizable armatures, each operatively associated with a respective core and magnetically coupled to both half sections thereof whereby responsive to said opposite remanent magnetizations of both half sections of a core its associated armature will be attracted thereto and whereby responsive to said altered remanent magnetization of only one half section of a core its associated armature will be released therefrom.

3,188,613
THIN FILM SEARCH MEMORY
George A. Fedde, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 25, 1962, Ser. No. 212,310
20 Claims. (Cl. 340—174)



6. Apparatus comprising first and second magnetic films, each film having two stable remanent magnetic states and a preferred axis of remanent magnetization, said films being disposed adjacent one another, with said axes parallel, and said second film being susceptible to and having an antiparallel field applied to it by the remanent magnetization of said first film, first means for placing said first film in a first of its stable remanent magnetic states and said second film in the second of its stable remanent magnetic states to indicate the storage of a first type of information and for placing said first film in a second of its stable remanent magnetic states and second film in its first stable remanent magnetic state to indicate the storage of a second type of information; second means for applying a field transverse to said preferred axis of remanent magnetization of said films to displace said remanent magnetization of said second film in a direction parallel with said transverse field, third means for applying a field longitudinal to said preferred axis of remanent magnetization of said films in directions parallel or antiparallel to said preferred axis for displacing the remanent magnetization of said second film in a direction parallel to the original remanent magnetic state when said longitudinal field is parallel to said original remanent magnetic state and for displacing the remanent magnetization of said second film in a direction antiparallel to said original remanent magnetic state when said longitudinal field is antiparallel to said original remanent magnetic state of said second film; and fourth means to detect a large output signal when the remanent magnetization of said second film is displaced by said antiparallel longitudinal field and a small output signal when the remanent magnetization of said second film is displaced by said parallel longitudinal field.

3,188,614
APPARATUS FOR COMPENSATING FOR SKEWED DIGITAL INFORMATION UPON A MAGNETIC TAPE
Petrus Ludovicus Maria van Berkel, Voorburg, Netherlands, assignor to de Staat der Nederlanden, ten deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed Feb. 8, 1961, Ser. No. 87,934
Claims priority, application Netherlands, Feb. 19, 1960, 248,625
12 Claims. (Cl. 340—174.1)

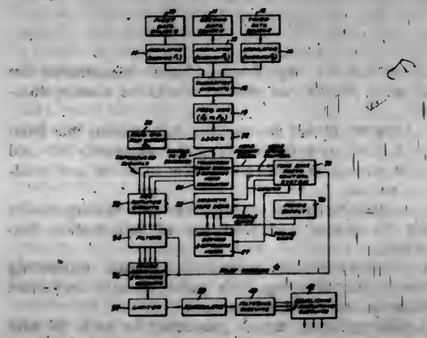


1. A device for reproducing digital information recorded on a plurality of parallel tracks on a strip, comprising:
(a) separate means for reading information bits from each track simultaneously and transversely of said strip as said strip moves relative to all of said reading means,
(b) translating means connected to each reading means for translating said read bits of information into pulses,
(c) delaying means connected to each translating means for delaying each pulse of said translated information an equal amount,
(d) differentiating means connected to each of said translating means for detecting the trailing edge of each translated pulse,
(e) trigger means connected to said differentiating means responsive to the first occurring trailing edge of said simultaneously read and translated pulses,
(f) pulse shaping means connected to said trigger means for producing a synchronizing pulse corresponding with said first occurring trailing edge of said simultaneously read and translated pulses, and
(g) gating means connected to each of said delay means and connected to said pulse shaping means to pass said delayed information under the control of said synchronizing pulse.

3,188,615
RECORDING AND REPRODUCING SYSTEM
Dwight D. Wilcox, Jr., Los Altos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 29, 1961, Ser. No. 113,321
9 Claims. (Cl. 340—174.1)

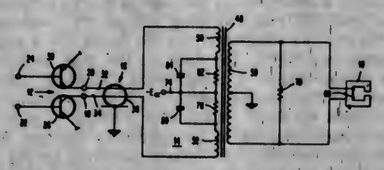
6. In a magnetic tape reproducing system of the type which uses a transverse track scanning head drum having four separate heads which successively scan the tape substantially transversely as the tape is moved longitudinally, a transient free switching system for combining signals reproduced successively by the heads into a single continuous data signal, the data on the tape including a pilot carrier signal, a combination including: means responsive to the scanning drum rotation for providing gating signals in timed relationship thereto; a pair of first gates each coupled to an oppositely disposed pair of heads and combining the signals therefrom during reproduction by one head as the opposite head of the pair is inactive, under control of the gating signals; a variable frequency oscillator having a control input to which control signals may be applied to effect a relatively slow change in frequency; first and second phase adjustment signal channels, each coupled to receive signals from a different one of the first gates and each including a voltage variable delay line, the input terminal of the voltage

variable delay line being coupled to receive signals from the associated first gate; the signal channel also including a bandpass filter coupled to the output terminal of the voltage variable delay line which is selected to extract the pilot signal therefrom; phase comparator means coupled to the variable frequency oscillator and to the bandpass filter for comparing the phase of the reproduced pilot signal to the signal from the variable frequency oscillator, the output signal from the phase comparator means being coupled to the control input of the voltage variable delay line; and band elimination filter means coupled to the output terminal of the voltage variable delay line for rejecting pilot signal components therein; the system also including a signal summation circuit coupled to receive and combine the error signals from the phase compara-



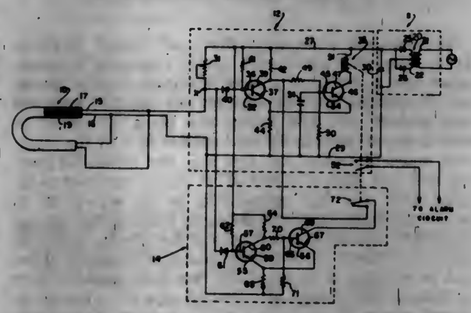
tors; lowpass filter means coupling the signal summation circuit to the control input of the variable frequency oscillator, such that the slow varying components in the combined error signals from the signal summation circuit slowly shift the frequency of the variable frequency oscillator to control the amount of delay introduced by the voltage variable delay lines so as to tend to maintain a selected average delay in the voltage variable delay lines; and slow switching means comprising second gates controlled by the gating signals and coupled to receive the phase adjusted signals from the signal channels for combining the signals into a common output channel, the slow switching of the signals constituting a gradual blending effected over a predetermined interval of the signal contributions from each of the channels.

3,188,616
TRANSISTOR COMPENSATING CIRCUIT FOR MAGNETIC RECORDING HEAD
William F. Simon, Oreland, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 17, 1961, Ser. No. 132,159
1 Claim. (Cl. 340—174.1)



In a circuit for connecting a double ended transistor drive circuit to a recording coil of a magnetic recording head the combination of a cable having two conductors each of which has one end connected to a different side of said double ended transistor drive circuit; a coupling circuit having two sides each of which is connected to a different one of said cable conductors at another end thereof; said coupling circuit including a transformer having a primary winding for each side and a secondary winding, a separate compensating circuit for each side, and a common return lead connecting said coupling circuit to said transistor drive circuit; each of said compensating circuits being connected in series with a different one of said primary windings; each of said compensating circuits including a resistor and a capacitor connected in parallel, said resistor in each of said compensating circuits having a value substantially equal to one-half of the characteristic impedance of said connecting cable, said capacitor in each of said compensating circuits being of such a value that the time constant of the parallel combination of said capacitor and said resistor in each of said compensating circuits is substantially equal to the time constant of the circuit across said secondary winding, said circuit across said secondary including in parallel connection a resistor and said recording coil, said last-named resistor being of such value that its impedance in combination with intrinsic losses of said recording coil, as reflected in each of said primary windings is substantially one-half of the characteristic impedance of said connecting cable, whereby the effective impedance of each side of said coupling circuit between said other end of each of said wires of said cable and said common return lead appears resistive and of value substantially equal to said impedance of said connecting cable at all frequencies.

3,188,617
CONDITION RESPONSIVE SYSTEM WITH PREVENTION OF FALSE INDICATION
Roger B. Jones, North Caldwell, and Raymond Bruce Smith, Wayne, N.J., assignors to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Jan. 3, 1962, Ser. No. 164,877
3 Claims. (Cl. 340—213)



1. In a condition responsive system, the combination of

(A) condition responsive means having an electrical property which varies in response to variations in said condition from a normal value when said condition is normal toward an extreme abnormal value when said condition becomes abnormal;

(B) first means for monitoring said electrical property including

(1) first switching circuit means having normal and operated conditions and connected to said condition responsive means to be placed in the operated condition in response to a first predetermined value of said electrical property which value is between said normal value and said extreme abnormal value including

(a) inerting circuit means holding said first switching circuit means in its normal condition when a predetermined electrical current flows through said inerting circuit means,

(2) self-resetting relay means including

(a) control circuit means connected to said first switching circuit means to be energized only when said first switching circuit means is in its operated condition and

(b) first switch means under the control of said control circuit means and connected to give an indication only when said control circuit means is energized, and

(3) time delay means for delaying the operation of said first switching circuit means for a predetermined time interval after said electrical property moves through said first predetermined value in changing from said normal value toward said extereme abnormal value;

(C) second means for monitoring said electrical property including

(1) second switching circuit means

(a) having an input connected to said condition responsive means and

(b) having an output connected to said inerting circuit means and

(c) being responsive to a second predetermined value of said electrical property which value is more extreme in the abnormal direction than said first predetermined value for operating to produce said predetermined current flow through said inerting circuit means to hold said first switching circuit means in its normal condition when said electrical property changes in value as a result of a circuit fault from said first predetermined value to said second predetermined value in less than said predetermined time interval required to give an indication, and

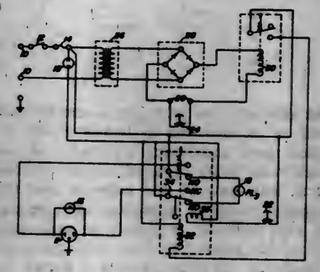
(2) second switch means under the control of said circuit means of said relay means for normally providing the connection between said output of said second switching means and said inerting circuit means and for disconnecting said second switching circuit means from said inserting circuit means when said control circuit means is energized,

whereby the system is prevented from giving an alarm in response to a circuit fault, is automatically resetting and the operation of said second switching circuit means after the expiration of the predetermined time interval will not interrupt the alarm.

3,188,618
POSITIVE LOCKOUT CONTROL FOR OIL AND WATER BATHS
John C. Reuts, Abingdon, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed May 21, 1962, Ser. No. 196,537
2 Claims. (Cl. 340—227)
(Granted under Title 35, U.S. Code (1952), sec. 266)

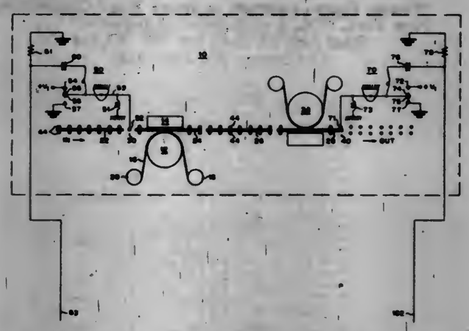
1. A power control device of the character described comprising in combination two terminal power input means, two terminal power output means, control circuit means interconnecting said power input and output means, said control circuit means consisting of a direct current supply, a thermal switch, a single pole relay and a two pole double throw relay, said direct current supply, thermal switch and the coil of said single pole relay being serially connected, the pole of said single pole relay being connected to one terminal of said two terminal input means and to a first pole of said two pole relay, the contact of said single pole relay connected to the other terminal of said two terminal input means through the coil

of said two pole relay, a second pole of said two pole relay connected to said other terminal of said two terminal input means, said first and second poles normally in contact with a pair of contacts connected to said two terminal output means, a second pair of contacts connected to an indicating lamp, said single pole relay in response to the closing



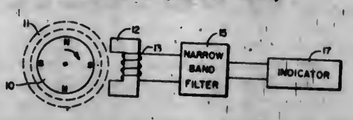
of said thermal switch activating the double pole double throw relay whereby the two terminal power output means is disconnected from the two terminal power input means and the indicating lamp connected to said two terminal power input means, and latching means for releasably retaining said two pole relay in this position.

3,188,619
JAM DETECTOR FOR CARD FEEDING DEVICE
Sylvester David Hemphill and Ori Even-Tov, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 4, 1959, Ser. No. 838,308
8 Claims. (Cl. 340—259)



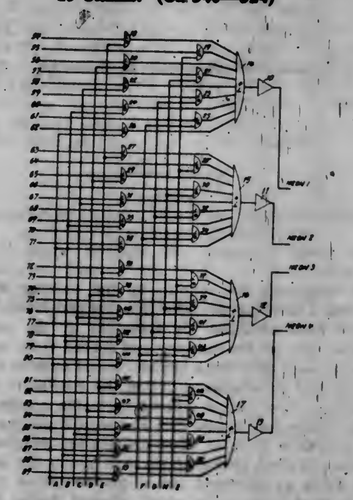
8. Apparatus for monitoring the passage of articles through a machine, comprising a first and second detector device both arranged for actuation by the passage of articles through the machine and spaced from each other by a distance such that a predetermined number of articles are located therebetween during the continuity of article feeding, a first and a second electronic counter respectively connected to said first and second detector devices for actuation thereby when articles are detected by the detector devices, said counters each having the same radix and being so arranged that a predetermined relation is maintained between the counts thereof during continuity of article feeding, and comparing means connected to the counters and operable to produce an output signal when the relation between the counts is other than said predetermined relation thereby to give an indication that there is a hold-up of articles in the areas of the detector devices in that the number of articles between the detector devices is different from said predetermined number.

3,188,620
REMOTE MOTOR ROTATION INDICATOR
Alan M. MacCallum, Denver, Colo., assignor to Martin-Marietta Corporation, a corporation of Maryland
Filed Jan. 30, 1961, Ser. No. 85,859
5 Claims. (Cl. 340—263)



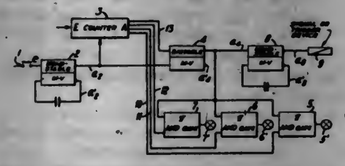
1. An apparatus for providing a remote indication that the rotor of an enclosed hysteresis motor is turning at a specified speed comprising a plurality of poles on said rotor, said rotor being designed, constructed and arranged so that at least two of said poles of said plurality will have unequal magnetic strengths, inductive pickup means located with sufficient proximity to said rotor to detect magnetic fields emanating from said poles, the said unequal magnetic strengths causing a signal to appear at said inductive pick-ip means at a subharmonic of the excitation voltage frequency for said motor when said rotor is turning at the said specified speed, narrow band filter means connected for receiving the output of said inductive pick-up means and being designed to produce an output signal therefrom only when signals substantially equal to said subharmonic are introduced thereto, and indicator means coupled to said narrow band filter means so as to be activated by output signals therefrom.

3,188,621
DISPLAY PANELS WITH SELECTABLE INDICATORS
George R. Cogar, Doylestown, and Donald O. Neddenriep, Willow Grove, Pa., Ernesto G. Seville, New York, N.Y., Torkjell Sekse, Norristown, Pa., and Earl E. Masterson, Weston, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,274
13 Claims. (Cl. 340—324)



1. A display unit for indicating the potential at a plurality of points including a number of indicators, a mask having a number of apertures equal to said number of indicators, control means for selectively positioning said apertures relative to said indicators, a gate circuit for connecting a different one of a first portion of said plurality of points to each of said indicators, and a switching circuit adapted to be controlled by said control means to connect a different one of a second portion of said plurality of points to each of said indicators.

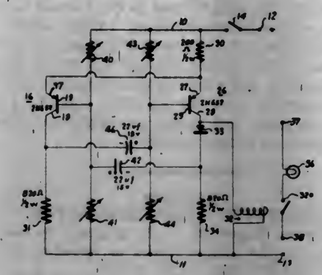
3,188,622
SYSTEM AND APPARATUS FOR MEASURING DISTANCES TRAVELLED BY A VEHICLE
Hansruedi Bühler, Wallisellen, Switzerland, assignor to Maschinenfabrik Oerlikon, Zurich, Switzerland
Filed Nov. 5, 1962, Ser. No. 235,427
Claims priority, application Switzerland, Nov. 7, 1961, 12,970/61
4 Claims. (Cl. 340—324)



1. A distance indicating and control initiating system for a vehicle, comprising: a first mono-stable multi-vibrator having an input terminal and an output terminal; switch means connected to the input terminal of the first mono-stable multi-vibrator; counter means having an input terminal and plural output terminals, the output terminals of the first mono-stable multi-vibrator being connected to the input terminal of the counter means; a first bistable multi-vibrator having an output terminal and two input terminals, the output terminal of the first mono-stable multi-vibrator being connected to one input terminal of the bistable multi-vibrator and one output terminal of the counter being connected to the other input terminal of the bistable multi-vibrator; a second mono-stable multi-vibrator having an input terminal and an output terminal, the input terminal being connected to the output terminal of the bistable multi-vibrator; means for initiating control of the vehicle connected to the output terminal of the second mono-stable multi-vibrator; a plurality of AND circuits, each having two input terminals and one output terminal, each AND circuit having one of its input terminals connected to the output terminal of the bistable multi-vibrator, each AND circuit having the other of its input terminals connected to a different one of the plural terminals of said counter means; and, a plurality of display means, each display means being connected to the output terminal of a different AND circuit.

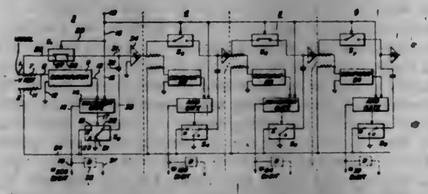
3,188,623
FREE RUNNING MULTIVIBRATOR CIRCUIT ENERGIZING AN INDICATOR CIRCUIT
George T. Culbertson, Gardena, Calif., assignor, by mesne assignments, to Master Specialties Company, Gardena, Calif., a corporation of California
Filed Feb. 8, 1960, Ser. No. 7,469
4 Claims. (Cl. 340—331)

1. In an electrical system for alternately energizing and de-energizing an output indicator, the combination comprising an input direct current potential applied to a pair of input lines, a pair of junction transistors having base, emitter and collector electrodes, means connecting the emitter-collector circuits of said transistors across said input lines, fault switch means connected to said input lines to provide power at a predetermined time to said transistors, a winding of an output relay connected in the emitter-collector circuit of one of said transistors, an isolating diode poled in a forward conduction direction included in said emitter-collector circuit of the transistor driving said input relay winding, said diode permitting conduction therethrough only when its associated transistor conducts, output indicating means controlled by contacts of said output relay, capacitor means cross-connected from each collector electrode to the base electrode of the opposite of said transistors, a plurality of resistors



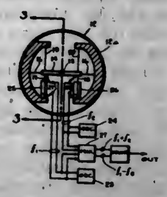
connected to said capacitor means from the base electrode of each transistor to the input lines to regulate the discharge time of said respective capacitor means, the charge of said capacitors alternately maintaining said respective transistors in a non-conducting state.

3,188,624
A/D CONVERTER
Lonnie S. McMillian, Jr., Melbourne, Fla., assignor to Radiation, Inc., Melbourne, Fla., a corporation of Florida
Filed Nov. 17, 1959, Ser. No. 853,498
20 Claims. (Cl. 340—347)



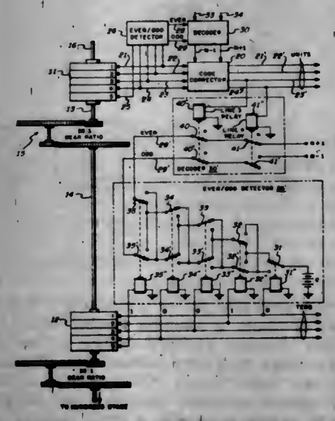
20. In an analog to digital converter for converting consecutive analog voltage samples to digital code groups, each group including a plurality of bits of differing significance, each bit having one or the other of two possible values, a plurality of cascaded one-bit encoder stages, each stage of higher order than that stage for generating the least significant bit including means for storing an analog voltage applied thereto for a portion of a predetermined time interval, means for comparing said applied analog voltage with a predetermined reference voltage, means for isolating said applied analog voltage from said storing means during another portion of said predetermined time interval, means for generating a bit representative of said comparison, means for altering said stored voltage only when said generated bit has a value equal to said one of its two possible values and means coupling said storing means to the next lower order encoder stage, so that each encoder stage accepts at least a portion of a new analog voltage sample during each said predetermined time interval, whereby said converter fully encodes an analog voltage sample in approximately one said predetermined time interval.

3,188,625
ANALOG TO DIGITAL CONVERSION TRANSDUCER
Stanley R. Sporn, Oceanside, N.Y., assignor to American Bosch Arma Corporation, a corporation of New York
Filed Dec. 1, 1960, Ser. No. 73,017
5 Claims. (Cl. 340—347)



1. Analog-to-digital conversion means comprising: a casing; a shaft rotatable in said casing; a lever bar supported on said casing for rotation about a pivot axis therein; a pair of elongated tensioned members connected respectively between said casing and points on said bar on opposite sides of said axis so as to be susceptible of transverse vibration at their natural frequencies and to be differentially tensioned by rotation of said bar about said axis; and a torsionally-resilient member connected between said shaft and said bar for applying a torque to said bar about said axis in response to rotation of said shaft, whereby rotation of said shaft through a given angle produces a predetermined change in said differential tension and in said natural frequencies.

3,188,626
ANALOGUE-TO-DIGITAL-CONVERTER
Winslow Palmer, Amityville, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,415
5 Claims. (Cl. 340—347)



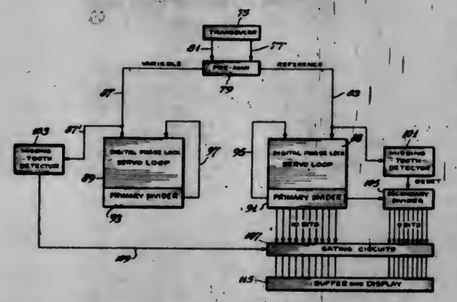
5. In an analogue-to-digital converter the combination of a plurality of rotatable code wheels linked together so that the rotational speeds of successively linked wheels are related by a factor N, each of said wheels having fixed thereon a pattern of a cyclic code of N characters each comprised of Y binary digits, each character being represented on said pattern by a pair of adjacently positioned sub-characters, each sub-character further including an additional binary digit and the additional digits of a pair of corresponding sub-characters being of opposite binary values and arranged in said pattern in a manner to preserve between successive sub-characters

the cyclic nature of said code, sensing means for each wheel for producing signals representing the values of the respective digits of the sub-character of the code present at a reference position, means respectively responsive to the sensed digit signals from each wheel except the highest speed wheel for producing a first signal when an odd number of said sensed digits are of a given binary value and for producing a second signal when an even number of said digits are of said given binary value, means for monitoring at least two of the Y digit positions on the next-higher-speed code wheel, said monitored digit positions having different combinations of binary values for the first and Nth characters of said code, said combinations being present in the pattern only in the immediate regions of the first and Nth characters, means operating in response to said first and second signals and in response to correct signals representing said two monitored digits from said next-higher-speed wheel for producing a first correcting signal when the sensed character on a given wheel changes from the Nth to the first character but the next-higher-speed wheel does not so change and for producing a second correcting signal when the order of change of said two wheels between the Nth and first characters is reversed, means responsive to said correcting signals for decreasing by one the value of the sensed character on said given wheel upon the occurrence of the first correcting signal and for increasing by one the value of the sensed character upon the occurrence of the second of said correcting signals.

3,188,627
SHAFT ANGLE ENCODING APPARATUS

Richard C. Webb and Stanley B. Peterson, Broomfield, Colo., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Jan. 30, 1962, Ser. No. 169,715
10 Claims. (Cl. 340—347)

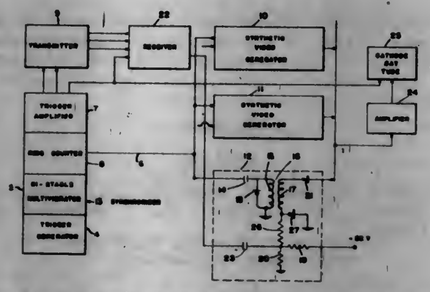


7. A wave generated device comprising a first and a second pair of rotors, a common support means for the pair of rotor elements whereby rotation of the support is adapted to rotate each rotor element at identical angular velocities, each rotor having thereon a like number of uniformly spaced serrations providing peripherally arranged teeth, means to support a stator element in concentric relationship to each of the rotor elements, the stator elements having peripherally arranged serrations of a number coinciding with the number on the associated rotor and with like angular spacing, means for supporting one of the stator elements in permanently fixed location relative to its associated rotor, means to support the other stator element relative to its rotor in an adjustable position to be movable with angular rotation clockwise and counterclockwise relative to its rotor, each of the stator and rotor elements having one of the peripherally arranged serrations missing thereby to provide one peripheral tooth of exaggerated length relative to the other peripheral teeth, means for electrically insulating the rotor and stator elements, means for supplying a charging voltage to each variable capacitor formed by the related rotor and stator combinations so that rotation of each rotor element relative to its associated stator is adapted, as a result of supplied charging current to the formed capacitor, to produce an amplitude-charging voltage wave which measures the rotor and stator teeth alignment and of which the amplitude at the instant of alignment of the elongated teeth of the stator and rotor elements exceeds that of the produced electrical wave for all other conditions during each rotor rotation, and means to supply the developed voltage wave to an output circuit.

3,188,628
SYNTHETIC VIDEO GENERATOR

Earl J. Peterson, Bountiful, Utah, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Mar. 25, 1963, Ser. No. 267,872
3 Claims. (Cl. 343—5)



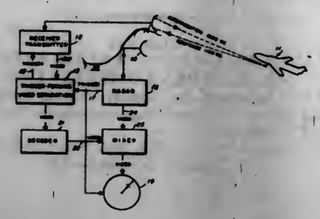
1. In a circuit for operating a cathode-ray tube to provide displays of equal brightness in response to pulses reflected from large and small radar targets, the combination with said tube of an output diode, means connecting said diode to a control electrode of said tube, means providing a source of synchronized control pulses, means for differentiating and clipping said control pulses to apply to said output diode gating pulses of constant amplitude and fixed polarity, means for maintaining said gating pulses at a direct-current level insufficient to conduct current through said diode, and means for applying said target-reflected pulses to said direct-current level maintaining means with a polarity raising said direct-current level to a value at which said output diode conducts said gating pulses to said control electrode for display on said cathode-ray tube.

3,188,629
DECODER-READOUT AND DEGARBLER

Bernarr H. Humpherys, Escondido, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 30, 1962, Ser. No. 169,976
10 Claims. (Cl. 343—6.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A selective identification system comprising: interrogation means for interrogating an object in space; receiving means for receiving coded identification signals from said interrogated object in space; decoder means operatively connected to said receiver means for decoding said input signal to determine the identity of the interrogated object in space; degarbler means operatively connected to said decoder means and said receiver means for examining a time interval preceding and following said received identification signal to prevent garbling of said received identification signal from the interrogated object in space; display means operatively connected to said decoder means for providing a digital display of said received identification signal; and target selector means

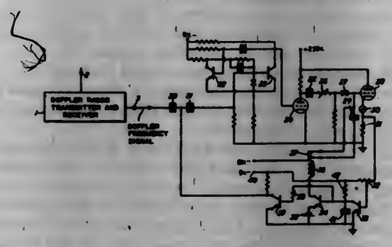


operatively connected to said decoder means and said display means for routing decoded identification signals to said display means.

3,188,630
RADAR SYSTEMS

Michael William Rignall, Chelmsford, Essex, England, assignor to The Marconi Company Limited, a company of Great Britain

Filed Nov. 2, 1959, Ser. No. 850,190
Claims priority, application Great Britain, Nov. 3, 1958, 25,276/58
6 Claims. (Cl. 343—8)



1. A speed measuring Doppler radar system comprising a radio transmitter, a radio receiver adapted to receive radio waves transmitted from said transmitter and reflected back by a target encountered by the transmitted waves, means for deriving from the transmitted and received waves a signal representative of the Doppler frequency due to the relative speed of said target towards or away from the receiver, means for storing said signal, means for measuring the stored signal to ascertain said relative speed and means actuated automatically on storage of a signal for preventing the supply of further Doppler-representative signals to the storage means.

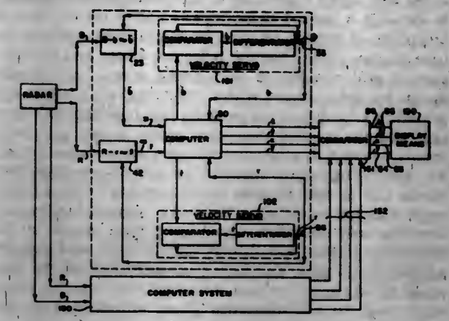
3,188,631
ELECTRONIC PLOTTING BOARD

Willard B. Birtley, State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Delaware

Filed Apr. 2, 1962, Ser. No. 184,092
19 Claims. (Cl. 343—9)

18. An electronic plotting board system comprising means to determine the distance and bearing of a target from a reference location and the relative velocity,

including display means to display said distance and bearing determination and also including means to display said relative velocity,

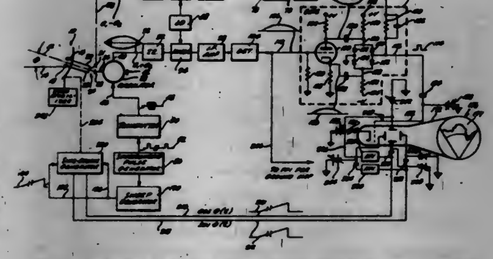


said means including predicting means for displaying the future distance and bearing of said target.

3,188,632
OBSTACLE CLEARING SYSTEM

George Jeromson, Sherman Oaks, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

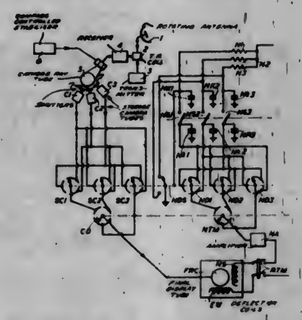
Filed Mar. 1, 1961, Ser. No. 92,708
9 Claims. (Cl. 343—11)



1. An obstacle indicating system operable in a craft comprising an elevation angle monopulse antenna mounted on said craft and having first and second horns mounted vertical to each other, said antenna having a stabilizer and a boresight axis maintained at a predetermined depression angle relative to a horizontal clearance plane selected at a predetermined distance below the craft, said antenna scanning a selected azimuth angle, energy dividing means coupled to the first and second horns of said antenna, transmitting means coupled to said energy dividing means for applying pulses of energy at radio frequency to said horns for transmission to the obstacles, said energy dividing means responding to reception of return energy by said horns to develop sum and difference signals at radio frequency, first and second mixing means coupled to said energy dividing means for respectively responding to said sum and difference signals at radio frequency to develop sum and difference signals at intermediate frequency, first and second amplitude detecting means respectively coupled to said first and second mixing means for developing video sum signals and video difference signals, said video sum signals and video difference signals having amplitude characteristics representative of said boresight axis, pulse generating means coupled to said second amplitude detecting means for developing first pulses in response to said video difference signal falling to a predetermined amplitude, gating means coupled to

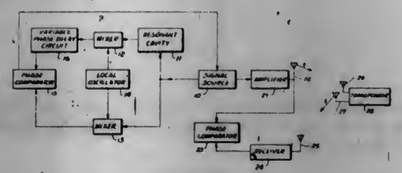
said pulse generating means and to said first amplitude detecting means to respond to said first pulses and to said video sum signal increasing to a predetermined amplitude to develop a second pulse representative of the time of reception of energy on said boresight axis, cathode ray tube display means having deflection plates and having a control grid coupled to said gating means, said display means having a screen with a reference arc thereon representing a fixed slant range along said boresight axis from said antenna to said clearance plane, sweep generating means coupled to said transmitting means, deflection signal generating means coupled to said sweep generating means and to said antenna for responding to the azimuth angle thereof to develop deflection signals, and means coupling said deflection signal generating means to said deflection plates, said display means over said selected azimuth scan angle developing an indication of the slant range to obstacles on said boresight axis relative to the slant range to said clearance plane as indicated by said reference arc.

3,188,633
RADAR SYSTEMS
James Watt, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Apr. 6, 1962, Ser. No. 187,479
Claims priority, application Great Britain, Apr. 18, 1961, 13,945/61
7 Claims. (Cl. 343—11)



1. A radar system suitable for marine use and comprising means for deriving, at a predetermined low periodicity, a succession of sets of information, each set being of information as to the direction and distance of radio reflecting targets within the range of the system; a plurality of information storage means; means for cyclically storing a sequence of said derived sets in said information storage means with a different sequential set stored in each storage means; means for taking off, at a relatively high cyclic speed of repetition which is high relative to the first-mentioned low periodicity, the sets of information stored at any given time in said information storage means; signal storing means for storing, during the deriving of the succession of sets of information, signals representative of the amount and direction of movement of the radar system as a whole during the time taken to derive said succession of sets, means for utilizing the sets of information taken off to produce a final display of the P.P.I. type, and further means for utilizing the stored movement representing signals to deflect the origin of the P.P.I. display of each set of information in said final display on the surface on which said final display is produced by an amount representative of the amount of and in a direction opposite to the direction of said movement of the radar system as a whole during the time elapsing between the deriving of the set in question and the deriving of the last set to be derived so that the final display is a true motion display in which the last position, at any time, of the radar system as a whole is always located at a predetermined position on the surface on which the final display is produced.

3,188,634
DISTANCE MEASURING SYSTEM WITH AUTOMATIC INDEX COMPENSATION
Moody C. Thompson, Jr., Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce
Filed Dec. 28, 1961, Ser. No. 163,001
5 Claims. (Cl. 343—12)

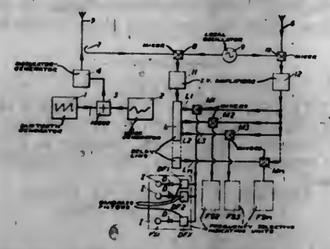


1. A distance measuring system having automatic compensation for the refractive index of the medium through which a measuring frequency is transmitted comprising: a local station including a signal source for generating and means for transmitting said measuring frequency, a resonant cavity open to said medium and having a resonant frequency substantially equal to said measuring frequency, means for applying the output of said signal source to said resonant cavity, means for providing a control signal having a magnitude dependent upon the phase relationship between the outputs of said source and said cavity, means for applying said control signal to said source, a distant station including means for receiving and for resending the frequency to said local station, and means for measuring the difference in phase between the frequency as transmitted to said distant station and as received at said local station.

5. In a distance measuring system having automatic compensation for the refractive index of the medium through which a measuring frequency is transmitted, a local station comprising: a signal source for generating a measuring frequency, means responsive to said measuring frequency and to the refractive index of said medium for generating a first frequency whose magnitude varies inversely with said refractive index, means responsive to said first frequency and said measuring frequency for providing a control signal, means for applying said control signal to said signal source, and means for transmitting said measuring frequency through said medium to a distant station; said distant station including means for receiving and resending the measuring frequency to said local station; and means for measuring the difference in phase between the measuring frequency as transmitted to said distant station and as received at said local station.

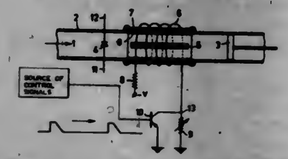
3,188,635
RADAR SYSTEMS
John Hosking Blythe, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Aug. 20, 1962, Ser. No. 217,845
Claims priority, application Great Britain, Aug. 31, 1961, 31,318/61
14 Claims. (Cl. 343—14)

11. A moving target detecting radar system comprising means for transmitting a continuous R-F signal which is simultaneously subjected to repetitive frequency modulation and to random frequency modulation, means for receiving reflected echo signals, means for delaying a portion of the transmitted signal retained within the radar system, and range measuring means for ascertaining the amount of time delay required to bring said portion of



the transmitted signal and the received reflected echo signal substantially into correlation with one another.

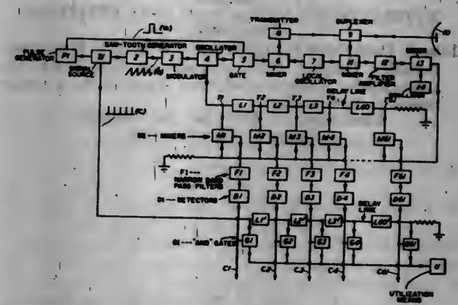
3,188,636
TIME-DEPENDENT HIGH-FREQUENCY INTENSITY CONTROL IN A RADAR RECEIVER
Joan Maarten George Seppen, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,405
Claims priority, application Netherlands, Apr. 5, 1962, 276,864
3 Claims. (Cl. 343—17.1)



1. In a radar receiver of the type wherein echo pulses of high frequency energy are applied to waveguide means having a mixer diode for producing intermediate frequency signals, means for reducing the intensity of high frequency energy applied to said mixer diode during the transmission of radar pulses comprising short circuit means in said waveguide means spaced from said mixer diode, variable phase-shifting means in said wave-guide means between said mixer diode and said short circuit means, and means for controlling the phase-shift of said phase-shifting means in response to the transmisison of said radar pulses whereby the effective distance between said mixer diode and said short circuit means is substantially an even multiple of one quarter the wavelength of the frequency of said radar pulses during said transmission, and said effective distance is substantially an odd multiple of one-quarter the wavelength of said frequency during reception of said echo pulses.

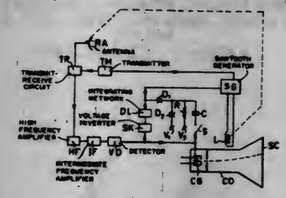
3,188,637
FM PULSED RADAR WITH INTRAPULSE RANGE DISCRIMINATION
Wilfrid Sinden Mortley, Great Baddow, England, assignor to The Marconi Company Limited, a company of Great Britain
Filed July 5, 1960, Ser. No. 40,956
Claims priority, application Great Britain, July 7, 1959, 23,211/59
9 Claims. (Cl. 343—17.2)

9. A pulsed radar system comprising a signal source of predetermined frequency; a variable frequency wave source; means controlled by said signal source for cyclically varying the frequency of said wave source in accordance with a predetermined law of variation to vary the wave frequency in response to each signal from said signal source; means for transmitting radio pulses of predetermined length, each radio pulse consisting of a similar band of frequencies derived from said wave source during one cycle of variation; means for deriving from received echo signals a modulated band of frequencies of width corresponding to the frequency band width of the transmitted pulse; a delay line of length equal to the aforesaid signal source period and having a plurality of terminals each separated from the next by a portion of line having a delay equal to a fraction of said period; a plurality of mixers each connected to mix two inputs derived one from said wave source and one from said modulated band, one of the two inputs to each mixer being fed directly thereto and the other being fed thereto via a



different terminal on said delay line whereby the said other inputs to the different mixers are delayed by amounts differing from one another by the delay of one portion of said delay line; a plurality of narrow band filters each having substantially the same band pass and each fed with the output from a different mixer, the band pass width of each filter being approximately equal to the quotient of the width of the transmitted frequency band divided by the number of filters and each centered on the common beat frequency output from the mixers; means for separately detecting the outputs of the filters; and means for combining the detected outputs for utilization.

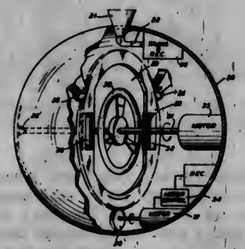
3,188,638
TUNING INDICATOR FOR RADAR RECEIVER-TRANSMITTERS
Joan Maarten George Seppen, Hilversum, Netherlands assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 159,846
Claims priority, application Netherlands, Jan. 13, 1961, 260,846
7 Claims. (Cl. 343—17.7)



1. In a radar system of the type having a cathode-ray tube with a screen and an electron gun for directing an electron beam to said screen, a source of video radar signals connected to said electron gun to modulate said beam, a source of sawtooth signals, and means connected to said source of sawtooth signals for deflecting said beam to provide a plan position indicator type of scan of said beam on said screen, means for indicating the tuning of said radar system on said screen, said last-mentioned means comprising means connected to said source of video signals for providing a control signal having an

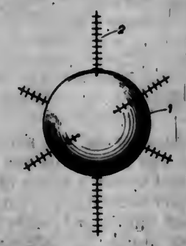
amplitude dependent upon the mean intensity of echo signals received by said system from a given direction, means comparing said sawtooth signal and control signal to provide an output pulse which occurs at a time with respect to the beginning of the cycle of said sawtooth signal that is dependent upon the amplitude of said control signal, and means applying said output pulse to said electron gun, whereby a spot occurs on said screen that is displaced from the center of the screen at a distance that is a fraction of the tuning of said system.

3,188,639
SATELLITE STABILIZATION AND ATTITUDE CONTROL
John S. Cook, New Providence, and Warren E. Danielson, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 29, 1961, Ser. No. 141,648
6 Claims. (Cl. 343—100)



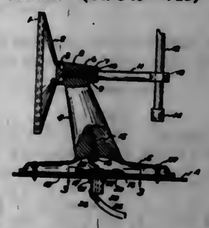
2. A communications satellite comprising a magnet mounted within said satellite and having a magnet axis which tends to align itself with the geomagnetic field of the earth, a wheel of significant mass supported within said satellite and being driven about an axis normal to said magnetic axis to produce a gyroscopic torque that tends to align the axis of said wheel with respect to the torque produced by said magnet as it aligns itself with said geomagnetic field, a highly directive antenna for said satellite supported for movement about the axis of said wheel, and means for moving said antenna relative to said magnet about the axis of said wheel.

3,188,640
RADIO LINK RELAYS
Jean-Claude Simon and Victor Biggi, Paris, France, assignors to C.S.F.-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Dec. 29, 1961, Ser. No. 163,184
Claims priority, application France, Jan. 6, 1961, 848,951
9 Claims. (Cl. 343—100)



1. A radio link relay, adapted to be placed on an artificial satellite comprising: a support; a plurality of simultaneously receiving and transmitting aerials equally spaced from each other and carried by said support; said aerials having respective directive radiation patterns, the respective patterns of adjacent aerials overlapping each other, substantially at 3 db's, the aperture angle at 3 db's of said patterns, being substantially equal to the solid angle within which the terrestrial globe is seen from the satellite.

3,188,641
ROD ANTENNA USED AS LEVER WHEN SCREWING MIRROR HOUSING ONTO VEHICLE
John Y. Gergely, Taylor, Mich., assignor to Wren Products Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 4, 1962, Ser. No. 185,054
3 Claims. (Cl. 343—715)



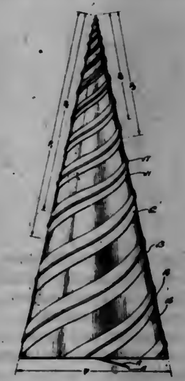
1. In a radio antenna system for vehicles,
(a) a rear-view mirror,
(b) a housing receiving said mirror,
(c) a bracket,
(d) means to secure said bracket upon the body of a vehicle,
(e) a dielectric element interposed between the bracket and the vehicle body,
(f) a screw releasably securing the housing to the bracket, said screw having an elongated shank extending from the bracket and said shank being formed with a hole extending transversely therethrough,
(g) an elongated antenna received in said hole, whereby said housing, bracket, and antenna jointly receive radio signals, and whereby the antenna may be used as a lever to turn the screw to release or engage the housing, and
(h) an antenna lead-in wire having one end conductively connected to said bracket and its other end adapted for connection to a radio to conduct said radio signals thereto.

3,188,642
POLARIZATION GRATING FOR SCANNING ANTENNAS
Marvin J. Bock, Woodland Hills, and Harold A. Rosen, Santa Monica, Calif., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Aug. 26, 1959, Ser. No. 836,849
6 Claims. (Cl. 343—756)



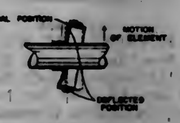
1. In combination, a polarization grating for electromagnetic energy having a fixed polarization comprising a plurality of parallel strips alternately of conductive material and dielectric material, the widths of said conductive strips being substantially less than the widths of said dielectric strips, the thickness of each conductive strip being small with respect to its width, an electromagnetic energy radiating element positioned adjacent to said polarization grating, said radiating element comprising a rotatable disc having three apertures symmetrically disposed in a plane perpendicular to the axis of rotation, means for rotating said rotatable disc about said axis, means for exciting said apertures with electromagnetic energy having a fixed polarization, and means for reflecting electromagnetic energy from said apertures toward said polarization grating.

3,188,643
CIRCULARLY POLARIZED OMNIDIRECTIONAL CONE MOUNTED SPIRAL ANTENNA
John D. Dyson and Paul E. Mayes, Champaign, Ill., assignors to The University of Illinois Foundation, a non-profit organization of Illinois
Filed Dec. 29, 1960, Ser. No. 79,432
10 Claims. (Cl. 343—895)



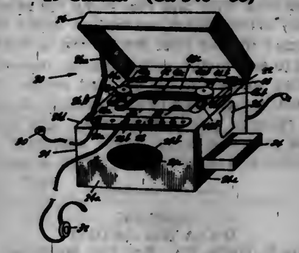
1. A broadband antenna comprising an even number greater than 2 of substantially identical electrically conducting elements wound so as to lie on a conical surface having an included cone apex angle in the range between approximately 15° and 20°, at least one of said elements being electrically insulated from the remainder, each of said elements having at least one edge which projected on a plane perpendicular to the axis of said conical surface is substantially in the form of a spiral, said elements being symmetrically placed about the axis of said conical surface.

3,188,644
WEIGHTED DEVICE FOR DAMPING OUT VIBRATION IN AN ANTENNA ELEMENT
Ernst A. Sielaff, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 12, 1961, Ser. No. 116,376
8 Claims. (Cl. 343—904)



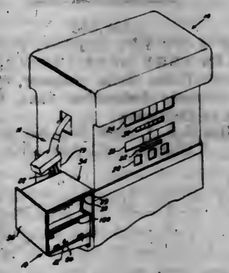
1. In an antenna structure, the combination of: a substantially rigid antenna element a portion of which is subject to vibratory forces; and a damping member connected to the portion of said antenna element subject to vibratory forces, said damping member having a readily flexible portion extending outwardly from said antenna element and a second portion of greater weight than said readily flexible portion with said second portion being connected to and extending from said readily flexible portion whereby the energy of vibrations transferred to said antenna element from said vibratory forces are absorbed by said damping member.

3,188,645
STETHOSCOPIC SPECTROGRAPH
Jay W. Trumpy, Pacific Palisades, and Hubert O. Rilland and Melvin O. Ovitt, Los Angeles, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Sept. 26, 1963, Ser. No. 311,691
19 Claims. (Cl. 346—33)



1. A stethoscopic spectrograph, comprising:
recording material having a surface adapted to be marked;
means for moving said recording material over a recording platen in a first direction;
pen means movable in a second direction at substantially right angles to the first direction, said pen means being energizable to mark the surface of said recording material;
microphone means adapted to pick up generally periodic sounds and convert the same into electrical signals;
means for moving said recording material and said pen means at first and second speeds, respectively;
means coupled with said moving means and adjustably varied thereby for detecting different frequency components of the electrical signals and energizing said pen means therewith; and
means for varying movement speed of said pen means in response to the periodic rate of a predominant sound of the periodic sounds picked up by said microphone means, so that said pen means is moved substantially equal distances over respective periods of different periodic rates of the predominant sound of the periodic sounds whereby recordings of uniform size are produced over a wide range of different periodic rates of the predominant sound of the periodic sounds.

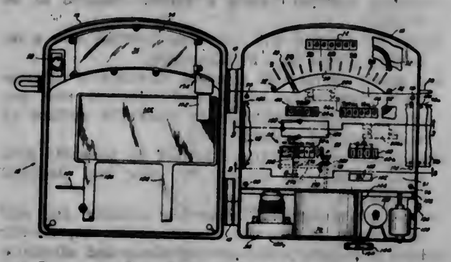
3,188,646
DATA RECORDER
Ramona E. Davis, P.O. Box 174, Stanhope, Iowa
Filed June 30, 1961, Ser. No. 121,245
20 Claims. (Cl. 346—43)



1. In a fuel pump having registering devices for indicating the amount of fuel pumped and the monetary value therefor and a reset mechanism for returning said registering devices to zero readings, the combination there-

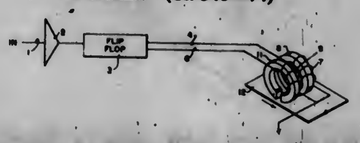
with of printing means for making a printed record duplicating the data on said registering devices, an electric circuit operatively connected to said fuel pump and including a solenoid connected to said printing means for operating the same, a momentarily acting switch connected to said solenoid for momentarily actuating the same, means associated with said fuel pump for actuating said momentarily acting switch, an electric motor in said circuit connected to said reset mechanism, a holding relay connecting to said motor, switch means connected to said holding relay, means on said printing means acting after the momentarily actuation of said solenoid on said switch means to energize said holding relay and actuate said motor, and switch breaker means associated with said reset mechanism to deactuate said motor at zero readings.

3,188,647
DATA RECORDER
Ramona E. Davis, P.O. Box 174, Stanhope, Iowa
Filed Apr. 6, 1961, Ser. No. 101,228
9 Claims. (Cl. 346—60)



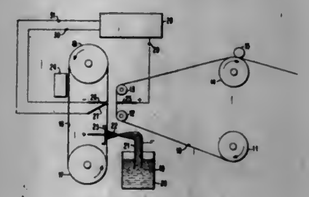
1. In a recording device to be mounted on a truck, the combination of a housing, an odometer type data providing mechanism in said housing, means connecting said mechanism to the speedometer cable of the truck for synchronized operation therewith, reset gearing on said mechanism, an electric motor operably connected to said mechanism, an electric circuit including a normally open holding relay, a switch breaker means associated with said relay, a momentarily acting normally open switch connected to said relay, solenoid actuated printing means operable relative to said mechanism, means on said printing means after the completion of a printing operation to close said momentary switch so as to energize said holding relay and actuate said motor, means on said mechanism operatively connected to said relay to act upon said switch breaker means to de-energize said holding relay at a predetermined time and thereby terminate operation of said motor, and manually operable switch means exteriorly of said housing for actuating said solenoid.

3,188,648
METHOD OF TAPE RECORDING PULSES OCCURRING IN VERY NEAR COINCIDENCE
Joseph N. Cecil, Tulsa, Okla., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 3, 1960, Ser. No. 6,426
5 Claims. (Cl. 346—74)



1. An apparatus for recording pulses applied to an electric circuit comprising a plurality of recording channels, means for sequentially and successively connecting each of said recording channels to said circuit in pulse recording relationship, said means including control means responsive to each of the pulses to be recorded to change the channel connected to said circuit.

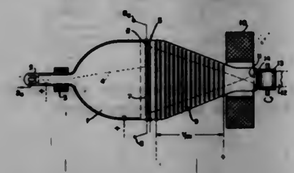
3,188,649
ELECTROSTATIC PRINTER APPARATUS
Max Preisinger, Fohrenbuhlstrasse 36, and Walter Schoerer, Richard-Wagner-Strasse 23, both of Sindelfingen, Baden-Wurttemberg, Germany
Filed June 23, 1960, Ser. No. 38,395
4 Claims. (Cl. 346—74)



1. In a printing apparatus, means for producing a mosaic data pattern on an electrostatically markable print medium, comprising in combination record electrode means located at a print location,
(a) means for moving said print medium at a constant speed past said record electrode means and in proximity thereto,
(b) means for applying a uniform sequence of mark producing record potential pulses to said record electrode means in timed relation with the advance of said print medium,
(c) record suppression electrode means located proximate said record electrode means,
(d) means for applying a record inhibit control potential to said suppression electrode means,
(e) said control potential having a magnitude and polarity capable of inhibiting the production of a record mark on said print medium by said record electrode means when said record electrode means is energized with said mark producing pulses,
(f) and means for selectively applying said control potential to said suppression electrode means in a selectively variable sequence in timed relation with the application of said uniform pattern of record pulses to said record electrode means, said control potential pattern being in accordance with a data pattern to be reproduced on said print medium.

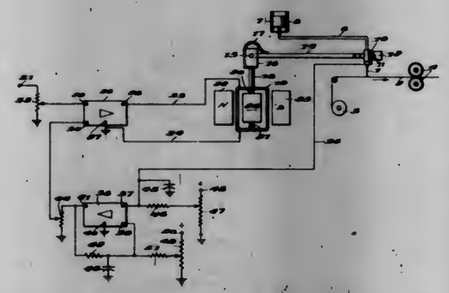
3,188,650
ELECTROSTATIC WRITING
Fritz Schröter, Neu-Ulm (Donaube), Germany, assignor to Telefunken Aktiengesellschaft, Berlin, Germany
Filed Dec. 19, 1960, Ser. No. 76,663
Claims priority, application Germany, Dec. 22, 1959, T 17,634
5 Claims. (Cl. 346—74)

1. Apparatus for electrostatically providing a charge distribution on a carrier of insulating material in accordance with input signals preparatory to fixing of the image by dusting of a powder on the carrier, comprising, in combination: cathode ray beam generating means; beam deflection means for repeatedly sweeping said beam in a transverse direction; beam modulation means for modulating the intensity of said beam in accordance with said input signals; a mechanical storage lattice disposed in said transverse direction and impinged upon by said beam when swept; a source of low-energy electrons on one side of said lattice and extending therealong in the direction of the beam impingement; low-energy electron accelerating means on the other side of said lattice; a sealed evacuated envelope surrounding said beam generating means, said beam modulating means, said mechanical storage lattice, said electron source and said accelerating means; electron lens means in the path of said electrons and disposed between the accelerating means and the carrier, the mechanical storage lattice permitting the low-energy electrons from the source to pass toward the accelerating means with a density distribution in the



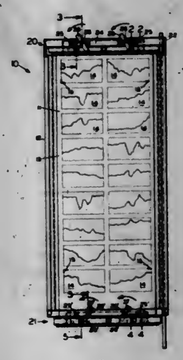
transverse direction proportional to the charges written on the lattice by said beam, and the electron lens means focusing said accelerated low-energy electrons of the carrier to provide a reproduction of said density distribution thereon and means for longitudinally advancing the carrier during each transverse writing scan by a distance equal to the width of one image point, whereby each beam line pertaining to a charge line is temporarily stored in said mechanical storage lattice and each transverse image line comprising a charge line is exposed to the influence of a prolonged electron beam impingement throughout substantially the entire total time interval of one line.

3,188,651
DIRECT-WRITING OSCILLOGRAPH
Franklin F. Offner, 1890 Telegraph Road, Deerfield, Ill.
Filed Feb. 8, 1963, Ser. No. 257,121
7 Claims. (Cl. 346—117)



1. In a recording oscillograph, the combination comprising a coil mounted for rotation about its axis, said coil being rotatable in a magnetic field in response to current passed through the coil, a stylus arm mounted with said coil for rotation therewith, a stylus assembly including a stylus element and an electrical contact member pivotally mounted on said stylus arm, a rigid rectilinear resistance member mounted transversely of a movable tape, spring means loading said stylus assembly against said rectilinear resistance member such that said contact member executes a rectilinear sliding movement across said rigid resistance member and said stylus element executes a rectilinear signal recording movement across said movable tape upon rotation of said coil and stylus arm, means including said resistance member for developing at said contact member a feedback voltage depending upon the position of said contact member on said resistance member, amplifier means, means connecting said feedback voltage and an input signal voltage in opposition at the input to said amplifier means, and means connecting said coil to the output from said amplifier means.

3,188,652
HOLDING AND POSITIONING APPARATUS
William E. Van Horne, Glenroy W. Barnett, and Marion Frederick Goddard, Columbus, Ohio, assignors to Keinath Instrument Company, Columbus, Ohio, a corporation of Ohio
Filed June 6, 1961, Ser. No. 115,182
7 Claims. (Cl. 346—134)



7. Apparatus for placing and holding paper and like material in a predetermined position thereon in such manner as to prevent any movement of said material from such position, comprising: means for supporting at least a portion of a sheet of material that may be held on said apparatus; a sheet of material having a plurality of marks thereon substantially spaced apart at least in the direction between a pair of opposite ends thereof; means for defining a predetermined location on said apparatus for each said mark; said predetermined locations on said apparatus being spaced farther apart than said marks on said sheet in the direction between said pair of opposite ends; and a gripping and positioning mechanism adjacent each of a pair of opposite ends of said supporting means, each said gripping and positioning mechanism comprising means for gripping one of said opposite ends of said sheet of material and for adjustably stretching said sheet and positioning said end in such manner as to place said marks on said sheet of material in their respective predetermined locations as defined by said location defining means, and including a stationary member fixedly attached to said supporting means; a first clamp jaw slidably mounted in said stationary member; a pair of spaced-apart manually adjustable means for positioning said first clamp jaw; a second clamp jaw slidably mounted adjacent said first clamp jaw; yieldable means normally pressing said clamp jaws tightly together to hold said end of said sheet of material firmly between the clamping edges of said clamp jaws; and means for limiting one extreme position of said second clamp jaw to permit movement of said first clamp jaw relative to said second clamp jaw to provide an opening between the clamping edges of said clamp jaws.

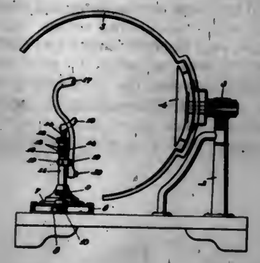
3,188,653

METHOD OF ESTABLISHING THE LOCATION OF THE NODAL POINT OF THE EYE WITH RESPECT TO FIXATION CONFIGURATIONS

Katsuji Omoto, 462 Nishi Okubo 1-chome, Shinjukuku, Tokyo, Japan

Filed Feb. 21, 1958, Ser. No. 716,640
Claims priority, application Japan, Mar. 23, 1957, 32/6,868, 32/6,869; Aug. 16, 1957, 32/20,205, 32/20,206, 32/20,207; Sept. 20, 1957, 32/23,204, 32/23,205
2 Claims. (Cl. 351—39)

1. A method of establishing the location of the nodal point of an eyeball comprising positioning spaced parallel and similar configurations of different sizes from one another, viewing the configurations with the eyeball, with the larger of the configurations spaced further from the eyeball, adjusting the distance between the eyeball and the configurations until the latter apparently coincide, whereby the extension of lines joining corresponding points which coincide on each of the configurations defines a common intersection which corresponds to the nodal point of the eyeball, the distance from the configurations to the



intersection being a measure of the position of the nodal point with respect to said configurations.

DESIGNS

JUNE 8, 1965

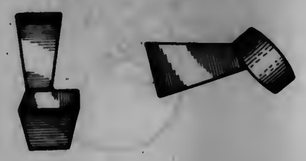
201,271
ARTICLE
Conrad J. Escalante, Los Alamitos, Calif. (% Superior Outdoor Display Inc., 125 W. Gaylord St., Long Beach 13, Calif.)
Filed Aug. 24, 1964, Ser. No. 81,429
Term of patent 14 years
(Cl. D1—12)



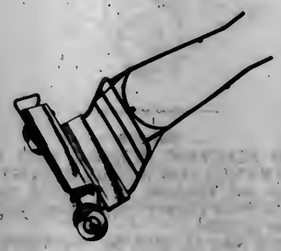
201,272
WATER CLOSET
James A. Tiller, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 69,624
Term of patent 14 years
(Cl. D4—5)



201,273
END POST FOR A HANDLE
Dagfinn O. Amdal, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 82,572
Term of patent 14 years
(Cl. D10—6)



201,274
PONY CART OR THE LIKE
Byron T. Carrier, York Cemetery Road, Yorktown, Ind.
Filed Oct. 28, 1963, Ser. No. 77,184
Term of patent 14 years
(Cl. D14—3)



201,275
AUTOMOBILE
Frank A. Petry, 1615 Armacost Ave., West Los Angeles, Calif.
Filed Apr. 20, 1964, Ser. No. 79,590
Term of patent 14 years
(Cl. D14—3)



201,276
CHAIR
Henry Peter Glass, Northfield, Ill., assignor to Contour Chair-Lounge Co., Inc., St. Louis, Mo., a corporation of Missouri
Filed Aug. 19, 1963, Ser. No. 76,286
Term of patent 14 years
(Cl. D15—11)



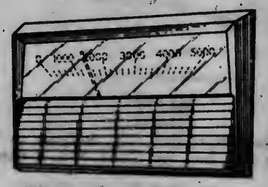
201,277
BUTTON TAB FOR A SUSPENDER END
Anthony Ernest Lillie, Thurnby, England, assignor to Steels & Busks Limited, Leicester, England, a British company
Filed July 10, 1964, Ser. No. 80,799
Claims priority, application Great Britain Feb. 29, 1964
Term of patent 14 years
(Cl. D17—8)



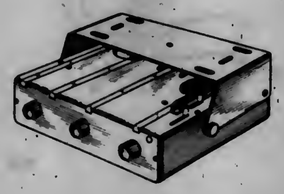
201,278
COMBINED ELECTRIC CLIPPER AND VACUUM CLEANER FOR A HAIR STYLIST
John F. Wahl and Thaddeus E. Bednarski, Sterling, Ill., assignors to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed Nov. 18, 1964, Ser. No. 82,678
Term of patent 14 years
(Cl. D22—3)



201,279
ELECTRIC METER
David L. Swindler, Bedford, and Robert M. Schramm, Maple Heights, Ohio, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Mar. 25, 1964, Ser. No. 79,195
Term of patent 14 years
(Cl. D26—1)



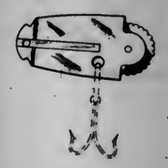
201,280
MAGNETIC TAPE PLAYBACK UNIT
George H. Eash, 14617 Keswick St., Van Nuys, Calif.
Filed Jan. 23, 1964, Ser. No. 78,327
Term of patent 14 years
(Cl. D26—14)



201,281
RIFLE
George A. Beck and Roy R. Bradbury II, Manlius, N.Y., assignors to Oy Sako AB, Ruhimaki, Finland, a corporation of Finland
Filed Aug. 31, 1964, Ser. No. 81,514
Term of patent 7 years
(Cl. D30—1)



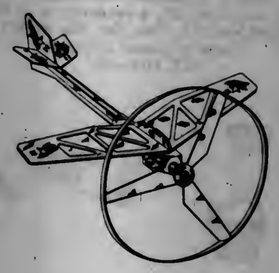
201,282
FISH LURE
Stanley A. Mason, 608 Hamilton Ave., Colonial Heights, Va.
Filed Oct. 16, 1964, Ser. No. 82,198
Term of patent 14 years
(Cl. D31—4)



201,283
REVERSIBLE AND STACKABLE GAME PIECE
Henry A. Wilson, 1000 Eldorado Ave., Clearwater Beach, Fla.
Filed Dec. 6, 1963, Ser. No. 77,705
Term of patent 14 years
(Cl. D34—5)



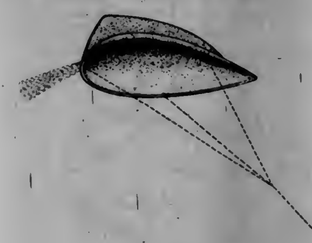
201,284
TOY AIRPLANE
Helmut Karl Bross, Weichselgartenstr. 40, Altenberg uber Nurnberg, Germany, assignor of fifty percent to Frank T. Johmann, Berkeley Heights, N.J.
Filed July 6, 1964, Ser. No. 80,717
Claims priority, application Germany Feb. 12, 1964
Term of patent 14 years
(Cl. D34—15)



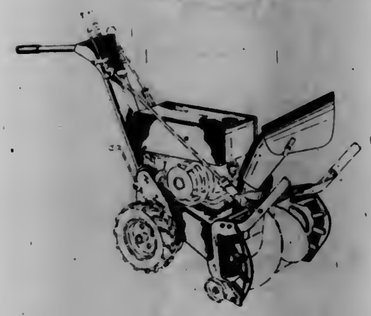
201,285
KITE
Loran E. Osburn, 7800 E. 91st St., Kansas City, Mo.
Filed Nov. 19, 1964, Ser. No. 82,695
Term of patent 14 years
(Cl. D34—15)



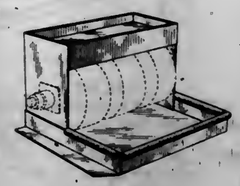
201,286
KITE
Loran E. Osburn, 7800 E. 91st St., Kansas City, Mo.
Filed Nov. 23, 1964, Ser. No. 82,751
Term of patent 14 years
(Cl. D34—15)



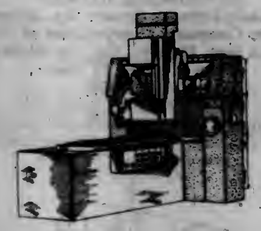
201,287
SNOW BLOWER
Frederick S. Brennan, Wilmette, Ill., assignor to Simplicity Manufacturing Company, Port Washington, Wis., a corporation of Wisconsin
Filed Mar. 29, 1963, Ser. No. 74,212
Term of patent 14 years
(Cl. D35—2)



201,288
HOUSING FOR LAPIDARY EQUIPMENT
Emmett Stephenson, 6609 Elm, and Vincent A. Coddington, 7344 College, both of Kansas City, Mo.
Filed Sept. 8, 1964, Ser. No. 81,640
Term of patent 14 years
(Cl. D37—1)



201,289
GRINDING MACHINE
Gilbert Heubi, La Chaux-de-Fonds, Switzerland, assignor to Voumard Machines Co. SA, a firm of Switzerland
Filed Oct. 8, 1964, Ser. No. 82,101
Claims priority, application Switzerland Sept. 30, 1964
Term of patent 14 years
(Cl. D37—1)



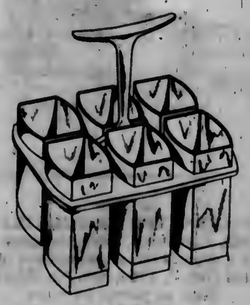
201,290
FOOD MIXER OR THE LIKE
Richard B. Hall, Cincinnati, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Dec. 7, 1964, Ser. No. 82,943
Term of patent 14 years
(Cl. D44—1)



201,291
FORK OR SIMILAR ARTICLE
Joseph C. Varinia, Rte. 440 at Danforth Ave., Jersey City, N.J.
Filed May 20, 1964, Ser. No. 80,074
Term of patent 14 years
(Cl. D44—29)



201,292
SILVERWARE BASKET
Robert D. Mundt, Jefferson County, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 28, 1964, Ser. No. 81,894
Term of patent 14 years
(Cl. D44—29)



201,293
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 21, 1964, Ser. No. 78,295
Term of patent 7 years
(Cl. D45—4)



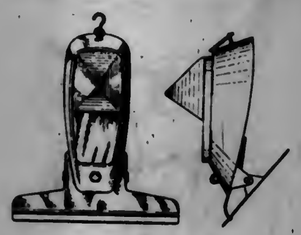
201,294
LINK CHAIN FOR A BRACELET OR THE LIKE
Emil Rodriguez, New York, N.Y., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed July 13, 1964, Ser. No. 80,835
Term of patent 7 years
(Cl. D45—4)



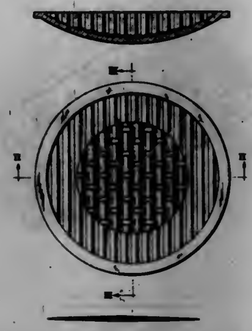
201,295
COMBINED LAMP BASE AND CABINET
John F. Robichaud, 1626 N. Jackson St., Milwaukee, Wis.
Filed May 20, 1963, Ser. No. 74,960
Term of patent 14 years
(Cl. D48—20)



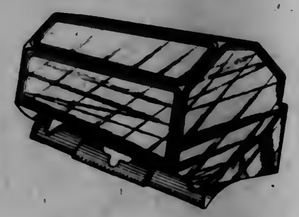
201,296
CLIP-ON AUTOMOBILE TROUBLE LIGHT
Robert D. Kahn, Hewlett Harbor, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation
Filed May 11, 1964, Ser. No. 79,930
Term of patent 14 years
(Cl. D48—20)



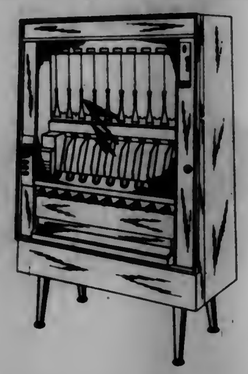
201,297
SIGNAL COVER GLASS
William K. Lockhart, Penn Hills Township, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed June 27, 1963, Ser. No. 75,548
Term of patent 14 years
(Cl. D48—32)



201,298
PAPER TOWEL DISPENSER OR SIMILAR ARTICLE
Erwin B. Bahnsen, Hinsdale, Ill., assignor, by mesne assignments, to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
Filed Mar. 29, 1963, Ser. No. 74,221
Term of patent 14 years
(Cl. D52—2)



201,299
VENDING MACHINE FOR CANDY OR THE LIKE
Walter E. Moore, Bel-Nor, Mo., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed May 4, 1964, Ser. No. 79,796
Term of patent 14 years
(Cl. D52—3)



201,300
MULTIPLE SCALE RULER
Douglas D. Seely, Jr., 20138 Brick Road, South Bend, Ind.
Filed Feb. 28, 1964, Ser. No. 78,821
Term of patent 14 years
(Cl. D52—6)



201,301
FORK OR SIMILAR ARTICLE
Rudolph Ernshouse, 849 Earth Drive, Baldwin, Long Island, N.Y.
Filed Nov. 27, 1963, Ser. No. 77,590
Term of patent 14 years
(Cl. D54—12)



201,302
OIL-SEAL PULLER TOOL
Roy N. Bowden, 143 Washington St., Morristown, N.J.
Filed Dec. 26, 1963, Ser. No. 77,932
Term of patent 14 years
(Cl. D54—13)



201,303
MANIPULATOR UNIT FOR PROGRAMMING MACHINING OPERATIONS
Anthony J. Kaye, Schenectady, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 17, 1963, Ser. No. 75,354
Term of patent 14 years
(Cl. D55—1)



201,304
RECORDER
Harry Bernard, General Delivery, Hoboken, N.J.
Filed June 25, 1964, Ser. No. 80,580
Term of patent 14 years
(Cl. D56—1)

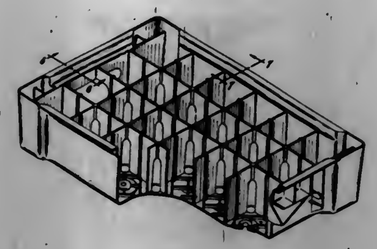


201,305
HIGH FIDELITY CABINET
Alfred R. Gilbert, Paoli, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 1, 1963, Ser. No. 74,694
Term of patent 7 years
(Cl. D56—4)

201,306
CONSOLE PHONOGRAPH OR THE LIKE
Francis W. Campbell, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1964, Ser. No. 78,063
Term of patent 14 years
(Cl. D56—4)

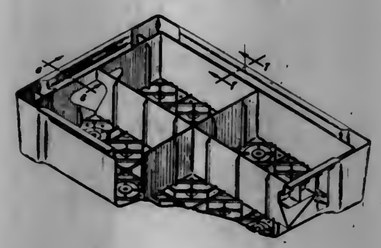


201,307
CASE FOR BEVERAGE CONTAINERS
Louis H. Peters, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1964, Ser. No. 78,049
Term of patent 14 years
(Cl. D58—5)

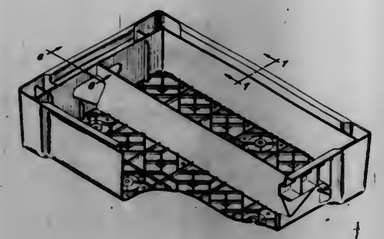


201,308
CASE FOR BEVERAGE CONTAINERS
James H. Versteeg, 27 Starlit Drive, Middlesex, N.J.
Filed Jan. 3, 1964, Ser. No. 78,050
Term of patent 14 years
(Cl. D58—5)

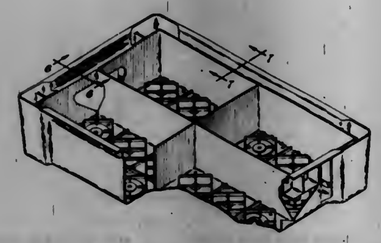
201,309
CASE FOR BEVERAGE CONTAINERS
James H. Verateeg, Middlesex, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1964, Ser. No. 78,051
Term of patent 14 years
(Cl. D58—5)



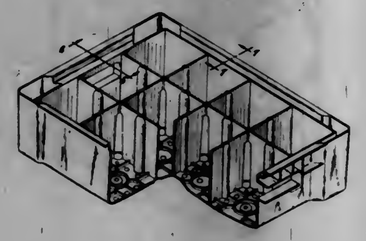
201,310
CASE FOR BEVERAGE CONTAINERS
James H. Versteeg, Middlesex, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1964, Ser. No. 78,052
Term of patent 14 years
(Cl. D58—5)



201,311
CASE FOR BEVERAGE CONTAINERS
Louis H. Peters, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Feb. 27, 1964, Ser. No. 78,805
Term of patent 14 years
(Cl. D58—5)



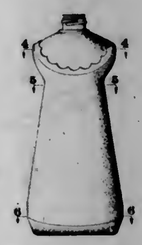
201,312
CASE FOR BEVERAGE CONTAINERS
Louis H. Peters, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 10, 1964, Ser. No. 81,227
Term of patent 14 years
(Cl. D58—5)



201,313
JUG OR THE LIKE
Roy C. Josephsen, Hillsdale, Joseph R. Tino, Clifton, and Charles R. Fulcher, Bloomfield, N.J., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Aug. 18, 1964, Ser. No. 81,346
Term of patent 14 years
(Cl. D58—5)



201,314
BOTTLE
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 6, 1964, Ser. No. 79,845
Term of patent 14 years
(Cl. D58—6)



201,315
BOTTLE OR SIMILAR ARTICLE
Victor Koenigsberg, Franklin Square, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 7, 1963, Ser. No. 77,323
Term of patent 14 years
(Cl. D58—8)



201,316
COMBINED STAND AND BOTTLES THEREFOR
Adolf G. Kreiss, 5044 Litchfield Road, San Diego, Calif.
Filed Sept. 3, 1964, Ser. No. 81,583
Term of patent 7 years
(Cl. D58—9)



201,317
PACKAGE FOR CIGARS OR THE LIKE
Bernard J. Tamarin, Whitemarsh, Pa., assignor, by direct and mesne assignments, to Pull-Packaging, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 8, 1964, Ser. No. 79,398
Term of patent 14 years
(Cl. D58—12.6)



201,318
CIGAR PACKAGE OR THE LIKE
Bernard J. Tamarin, Whitemarsh, Pa., assignor, by direct and mesne assignments, to Pull-Packaging, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 8, 1964, Ser. No. 79,399
Term of patent 14 years
(Cl. D58—12.6)



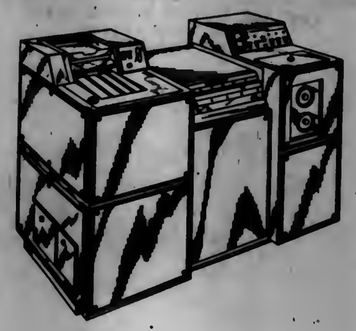
201,319
INSULATED PORTABLE CONTAINER
Herbert M. Pike, Wyoming, Ohio, assignor to The Hamilton-Skotch Corporation, Hamilton, Ohio, a corporation of Ohio
Filed May 27, 1964, Ser. No. 80,181
Term of patent 14 years
(Cl. D58—17)



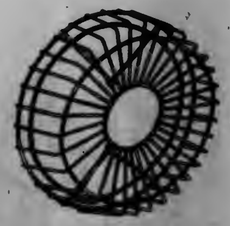
201,320
CLOSURE CAP
Juji Hirohama, 17 2-chome, Ishihara-cho, Sumida-ku, Tokyo, Japan
Filed May 8, 1963, Ser. No. 74,812
Term of patent 14 years
(Cl. D58—26)



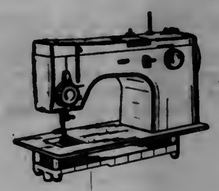
201,321
PHOTOELECTROSTATIC REPROGRAPHER
William R. Beck, Jr., 10 Rochefort Drive, Wilbraham, Mass., and Albert W. Dunning, 24 Dennis Road, Longmeadow, Mass.
Filed Apr. 10, 1963, Ser. No. 74,389
Term of patent 14 years
(Cl. D61—1)



201,322
BLADE GUARD FOR FAN
Robert S. Knapp, St. Louis, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 69,540
Term of patent 14 years
(Cl. D62—4)



201,323
FLAT BED SEWING MACHINE
Marcel Fresard, Petit-Lancy, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Nov. 21, 1963, Ser. No. 77,536
Claims priority, application Switzerland May 28, 1963
Term of patent 14 years
(Cl. D70—1)



201,324
BOAT
Myron T. Stevens, Kenosha, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed May 14, 1964, Ser. No. 79,988
Term of patent 14 years
(Cl. D71—1)



201,325
FLOATING SHOE
Hisao Hatae, Tamano, Okayama, Japan, assignor to Mitsui Shipbuilding & Engineering Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed May 26, 1964, Ser. No. 80,166
Claims priority, application Japan Nov. 29, 1963
Term of patent 7 years
(Cl. D71—1)



201,326
MULTICARTRIDGE PEN
Emil Hechtle, Oradell, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Filed June 21, 1963, Ser. No. 75,470
Term of patent 14 years
(Cl. D74—17)



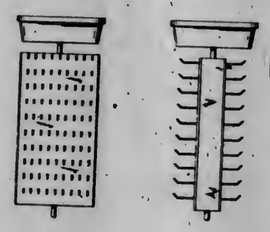
201,327
INTERNAL COMBUSTION ENGINE
Makoto Hori and Minoru Morioka, Tokyo, Japan, assignors to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Saitama-ken, Japan, a corporation of Japan
Filed Dec. 9, 1963, Ser. No. 77,729
Claims priority, application Japan June 13, 1963
Term of patent 14 years
(Cl. D77—1)



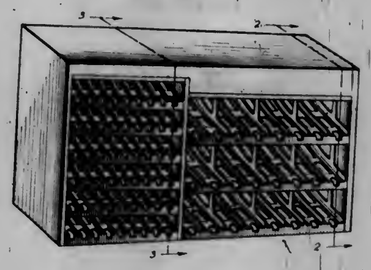
201,328
GARMENT SUPPORTING ATTACHMENT FOR A CLOTHES HANGER
Richard E. Quadara, 12 McLean St., Passaic, N.J.
Filed June 9, 1964, Ser. No. 80,355
Term of patent 14 years
(Cl. D80—8)



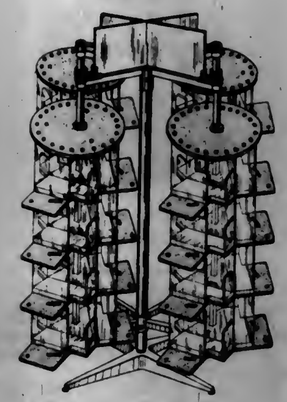
201,329
COMBINED DISPLAY RACK AND CABINET FOR KEYS
Nathan S. Lieptz, Beachwood, Ohio, assignor, by mesne assignments, to Curtis Noll Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 13, 1963, Ser. No. 73,547
Term of patent 14 years
(Cl. D80—9)



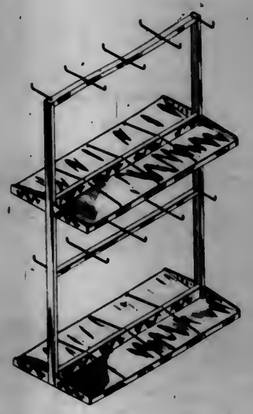
201,330
COMBINED DISPLAY AND DISPENSING CASE
Fred O. Kolstad, 18733 Plummer St., Northridge, Calif.
Filed July 22, 1963, Ser. No. 75,905
Term of patent 14 years
(Cl. D80—9)



201,331
COMBINED DISPLAY AND STORAGE STAND
Henry Ullmann, 453 Wellingborough Road, Northampton, England
Filed Sept. 6, 1963, Ser. No. 76,584
Claims priority, application Germany Mar. 12, 1963
Term of patent 14 years
(Cl. D80—9)



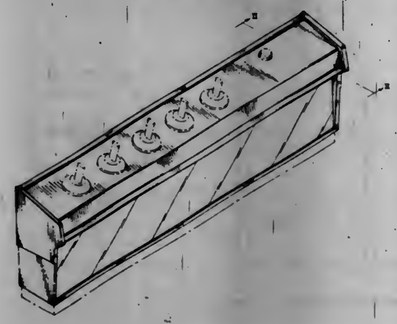
201,332
COMBINED STORAGE AND DISPLAY STAND FOR GOLF BAGS
John B. Caldwell, Canton, Ohio, assignor to The A. G. Stafford Company, Canton, Ohio, a corporation of Ohio
Filed Apr. 23, 1964, Ser. No. 79,667
Term of patent 14 years
(Cl. D80—9)



201,333
RUSSIAN BATH HEATING UNIT
Sven-Olof Jansson, Halmstad, Sweden, assignor to El-Spiraler, Halmstad, Sweden, a corporation of Sweden
Filed Nov. 12, 1963, Ser. No. 77,358
Claims priority, application Sweden May 10, 1963
Term of patent 14 years
(Cl. D81—20)



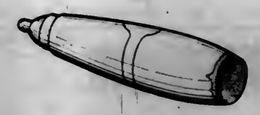
201,334
RANGE BACKGUARD OR THE LIKE
Robert L. Gault, Hillsdale, Mich., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1964, Ser. No. 81,781
Term of patent 14 years
(Cl. D81—25)



201,335
COMBINED ADJUSTABLE SUPPORT AND ULTRASONIC TRANSDUCER HEAD FOR DIAGNOSTIC SCANNERS
Edward P. Meyer, Boulder, and William L. Wright, Longmont, Colo., assignors to Physionic Engineering, Inc., Longmont, Colo., a corporation of Colorado
Filed Dec. 26, 1963, Ser. No. 77,921
Term of patent 14 years
(Cl. D83—1)



201,336
NURSING BOTTLE
Warren W. Nelson, 5132 Logan Ave. S., Minneapolis, Minn.
Filed Oct. 12, 1964, Ser. No. 82,137
Term of patent 14 years
(Cl. D83—6)



201,337
COMBINED CIGARETTE HOLDER AND ASHTRAY
Mary B. Johns, 413 S. 11th St., Cambridge, Ohio
Filed Nov. 21, 1963, Ser. No. 77,517
Term of patent 14 years
(Cl. D85—2)



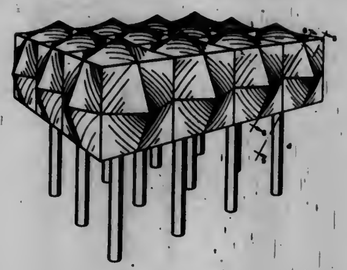
201,338
TEASING COMB OR THE LIKE
Anton Abraham, Perchtoldsdorf, Austria, assignor to Wiener Kammfabrik Anton Abraham Komm. Ges., Wiener Neudorf, Austria, a corporation of Austria
Filed Mar. 18, 1963, Ser. No. 73,999
Term of patent 14 years
(Cl. D86—8)



201,339
TEASING COMB OR THE LIKE
Anton Abraham, Perchtoldsdorf, Austria, assignor to Wiener Kammfabrik Anton Abraham Komm. Ges., Wiener Neudorf, Austria, a corporation of Austria
Filed Mar. 18, 1963, Ser. No. 74,600
Term of patent 14 years
(Cl. D86—8)



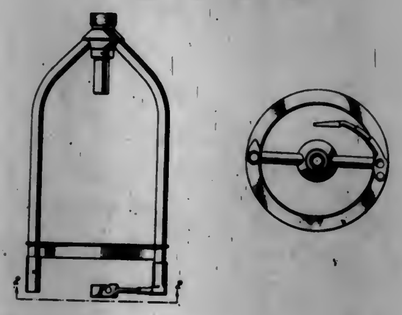
201,340
STORAGE TANK
Robert Q. King, 1125 Alta Vista Ave., Escondido, Calif.
Filed Feb. 7, 1964, Ser. No. 78,556
Term of patent 14 years
(Cl. D91—1)



201,341
WOVEN FABRIC
John S. Davis, Glendale, and David R. Boles and Paul E. Wells, Los Angeles, Calif., assignors to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 78,037
Term of patent 14 years
(Cl. D92—1)



201,342
FLYER
Andrew C. Adams, Sanford, N.C., assignor to Roberts Company, Sanford, N.C., a corporation of North Carolina
Filed May 1, 1961, Ser. No. 64,987
Term of patent 14 years
(Cl. D92—15)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 8TH DAY OF JUNE, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Claypoole Stewart A, to Corning Glass Works. Composite article and method. Re. 25,791, 6–8–65, Cl. 220—2.1.
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Hold, Peter, and Parrella. Re. 25,794.
Fiala, Richard J., to A. E. Staley Mfg. Co. Refining soybean oil. Re. 25,796, 6–8–65, Cl. 260—424.
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Maurer, Philip W., and J. Wishart, Jr., to General Motors Corp. Manual-automatic cruise control circuit. Re. 25,793, 6–8–65, Cl. 180—82.1.
Parrella, Alfred T.: *See*—
Hold, Peter, and Parrella. Re. 25,794.
Schurr, Charles A., and F. A. Manners to Square D Co. Rolling mill control. Re. 25,795, 6–8–65, Cl. 72—12.
Staley, A. E., Mfg. Co.: *See*—
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Maurer, Philip W., and Wishart. Re. 25,793.

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Anderson, Frederic F., to Arthur Bright. Almond tree. 2,534, 6–8–65, Cl. 30.
Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,530, 6–8–65, Cl. 11.
Bright, Arthur: *See*—
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Cooke, L. E., Co.: *See*—
Anderson, Frederic W. 2,533.
DuPuis, John G., Jr. Avocado tree. 2,528, 6–8–65, Cl. 44.
DuPuis, John G., Jr. Avocado tree. 2,529, 6–8–65, Cl. 44.
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Zombory, William, and S. B. 2,531.
Zombory, Sophia B.: *See*—
Zombory, William, and S. B. 2,531.
Zombory, William, and S. B., to Jackson & Perkins Co. Rose plant. 2,531, 6–8–65, Cl. 5.

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Abraham, Anton, to Wiener Kammfabrik Anton Abraham Komm. Ges. Teasing comb or the like. 201,338, 6–8–65, Cl. D86—8.
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Bahnsen, Erwin B., to Georgia-Pacific Corp. Paper towel dispenser or similar article. 201,298, 6–8–65, Cl. D52—2.
Beck, George A., and R. E. Bradbury II, Oy Sako AB. Rifle. 201,281, 6–8–65, Cl. D30—1.
Beck, William R., Jr., and A. W. Dunning. Photoelectrostatic reprographer. 201,321, 6–8–65, Cl. D61—1.
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Bernard, Harry. Recorder. 201,304, 6–8–65, Cl. D56—1.
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Bowden, Roy N. Oil-seal puller tool. 201,302, 6–8–65, Cl. D54—13.
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Brennan, Frederick S., to Simplicity Mfg. Co. Snow blower. 201,287, 6–8–65, Cl. D35—2.
Bross, Helmut K., 50% to Frank T. Johmann. Toy airplane. 201,284, 6–8–65, Cl. D34—15.
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Campbell, Francis W., to General Electric Co. Console phonograph or the like. 201,306, 6–8–65, Cl. D56—4.
Carrier, Byron T. Pony cart or the like. 201,274, 6–8–65, Cl. D14—9.
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Fedtro, Inc.: *See*—
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Fulcher, Charles R.: *See*—
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Heubi, Gilbert, to Voumard Machines Co. SA. Grinding machine. 201,289, 6–8–65, Cl. D37—1.
Hirohama, Juji. Closure cap. 201,320, 6–8–65, Cl. D59—26.
Hori, Makoto, and M. Morioka, to Kabushiki Kaisha Honda Gyutsu Jenkyusho. Internal combustion engine. 201,327, 6–8–65, Cl. D77—1.
Jacoby-Bender, Inc.: *See*—
Rodrigues, Emil. 201,294.
Jansson, Sven-Olof, to El-Spiraler. Russion bath heating unit. 201,333, 6–8–65, Cl. D61—20.
Johmann, Frank T.: *See*—
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Johns, Mary B. Combined cigarette holder and ashtray. 201,337, 6–8–65, Cl. D85—2.
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Kahn, Robert D., to Fedtro, Inc. Clip-on automobile trouble light. 201,296, 6–8–65, Cl. D48—20.
Kaye, Anthony J., to American Machine & Foundry Co. Manipulator unit for programming machining operation. 201,303, 6–8–65, Cl. D55—1.
King, Robert Q. Storage tank. 201,340, 6–8–65, Cl. D91—1.
Knapp, Robert S., to Knapp-Monarch Co. Blade guard for fan. 201,322, 6–8–65, Cl. D62—4.
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Koenigsberg, Victor, to Colgate-Palmolive Co. Bottle or similar article. 201,315, 6–8–65, Cl. D58—8.
Kolstad, Fred O. Combined display and dispensing case. 201,330, 6–8–65, Cl. D80—9.
Kreiss, Adolf G. Combined stand and bottles therefor. 201,316, 6–8–65, Cl. D58—9.
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Lillie, Anthony E., to Steels & Busks Ltd. Button tab for a suspender end. 201,277, 6–8–65, Cl. D17—8.
Lockhart, William K., to Westinghouse Air Brake Co. Signal cover glass. 201,297, 6–8–65, Cl. D48—32.
Mason, Stanley A. Fish lure. 201,282, 6–8–65, Cl. D31—4.
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Meyer, Edward P., and W. L. Wright, to Physionic Engineering, Inc. Combined adjustable support and ultrasonic transducer head for diagnostic scanners. 201,335, 6–8–65, Cl. D83—1.
Mitsui Shipbuilding & Engineering Co. Ltd.: *See*—
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Nelson, Warren W. Nursing bottle. 201,336, 6–8–65, Cl. D83—8.
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Peters, Louis H., to Union Carbide Corp. Case for beverage containers. 201,311, 6–8–65, Cl. D56—5.
Peters, Louis H., to Union Carbide Corp. Case for beverage containers. 201,312, 6–8–65, Cl. D58—5.
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Rodrigues, Emil, to Jacoby-Bender, Inc. Link chain for a bracelet or the like. 201,294, 6–8–65, Cl. D45—4.
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Brennan, Frederick S. 201,287.
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Swindler, David L., and Schramm. 201,279.
Stafford, A. G., Co., The: *See*—
Caldwell, John B. 201,332.
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Stevens, Myron T., to Outboard Marine Corp. Boat. 201,324, 6–8–65, Cl. D71—1.
Swindler, David L., and R. M. Schramm, to Square D Co. Electric meter. 201,279, 6–8–65, Cl. D26—1.
Tamarin, Bernard J., to Pull Packaging, Inc. Package for cigars or the like. 201,317, 6–8–65, Cl. D58—12.6.
Tamarin, Bernard J., to Pull Packaging, Inc. Cigar package or the like. 201,318, 6–8–65, Cl. D58—12.6.
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Tino, Joseph R.: *See*—
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LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 8TH DAY OF JUNE, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Duinker, Simon, and Bos. 3,187,411.
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Botden, Theodoor P. J., to North American Philips Co., Inc. Digit indicator glow-discharge lamp. 3,188,510, 6-8-65, Cl. 313—109.5.
Bourget, David L. Spout for milk container. 3,187,995, 6-8-65, Cl. 222—518.
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Bowditch, Hoel L., to The Foxboro Co. Diaphragm. 3,187,-641, 6-8-65, Cl. 92—94.
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Bowers, Albert, J. Edwards, and J. C. Orr, to Syntex Corp. 2-methyl derivatives of Δ^4-androsten-17β-ol. 3,188,326, 6-8-65, Cl. 260—397.5.
Bowers, Albert, and P. Crabbe, to Syntex Corp. 17β-(lower cycloalk-1'-enyloxy)and 17β-(1-lower alkoxy-lower cycloalkoxy) derivatives of 2-cyano-Δ^4-androsten-17β-ol. 3,188,-327, 6-8-65, Cl. 260—397.5.
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Boyce, William C., to United States of America, Air Force. Knee restraint strap system. 3,188,139, 6-8-65, Cl. 297—384.
Boyd, Merle R., to Raytheon Co. Parallel plate line transition section between a coaxial line and a ridged waveguide. 3,188,583, 6-8-65, Cl. 333—26.
Boyden, Albert M., to General Electric Co. Releasable stop means for a movable unit in a stationary enclosure. 3,188,414, 6-8-65, Cl. 200—50.
Boyer, Neil E.: *See*—
Crookston, James A., Boyer, and Hodges. 3,187,694.
Bosek, John S., to Continental Can Co., Inc. Full tab tear strip with circular score line in seam. 3,187,927, 6-8-65, Cl. 220—54.
Bosek, John S., to Continental Can Co., Inc. Plastic pull handle pivotally secured to scored metal can end. 3,187,928, 6-8-65, Cl. 220—54.
Bradley, Howard B., to Union Carbide Corp. Purification of silicon compounds. 3,188,168, 6-8-65, Cl. 23—14.
Bradley Washfountain Co.: *See*—
Booker, Robert J., and Wagner. 3,187,349.
Bradshaw, Harold A., to Ingersoll-Rand Co. High vacuum steam ejector. 3,187,682, 6-8-65, Cl. 103—278.
Bratton, John T.: *See*—
Cromwell, Roy, and Bratton. 3,187,631.
Bratton, Neal S. Torque measuring device. 3,187,550, 6-8-65, Cl. 73—1.
Braun, Eric A., to Ex-Cell-O Corp. Rotating carton tucker apparatus. 3,187,647, 6-8-65, Cl. 93—44.1.
Brannberger, Benjamin A., Quick disconnect coupling. 3,187,-773, 6-8-65, Cl. 137—614.04.
Breer, Karl: *See*—
Hoppe, Peter, Weinbrenner, Muhlhausen, and Breer. 3,188,296.
Bremer, Robert D., and A. J. Sacksteder, to General Motors Corp. Method of welding. 3,188,447, 6-8-65, Cl. 219—118.
Brettling, Jork, and H. J. Griem, to Telefunken Patentverwertungs-G.m.b.H. Focussing system for an electron beam incorporating axially magnetised annular magnets. 3,188,-533, 6-8-65, Cl. 317—200.
Brewer, William R., to Armstrong Cork Co. Wire-bending tool. 3,187,545, 6-8-65, Cl. 72—328.
Bridwell, Robert A., to Northrop Corp. Lamp holder. 3,188,-450, 6-8-65, Cl. 240—47.
Bridwell, Robert A., to Northrop Corp. Method for effecting a metal working process. 3,187,544, 6-8-65, Cl. 72—364.
Briggeman, Donald H., A. Longacre, and C. J. Smith, Jr., to Olin Mathieson Chemical Corp. Production of methyl dichlorophosphine oxide. 3,188,281, 6-8-65, Cl. 202—40.
British Petroleum Co. Ltd., The: *See*—
Holbourne, Peter G. 3,187,867.

British Titan Products Co. Ltd.: *See*—
Arkless, Kenneth, and Cole. 3,188,178.
Hughes, William, and Evans. 3,188,173.

Britten, George C., to Injecticon International, Inc. Apparatus for molding hollow articles. 3,187,381, 6–8–65, Cl. 18—5.

Broadley, Esra R., to Wharfedale Wireless Works Ltd. Loudspeaker assembly. 3,187,832, 6–8–65, Cl. 181—31.

Broadrick, Lawson K. Container stand and cart. 3,188,109, 6–8–65, Cl. 280—47.26.

Broch, Frederick J. Remote-controlled lock. 3,188,129, 6–8–65, Cl. 292—341.16.

Brock, Henry W.: *See*—
Reid, James S., and Brock. 3,188,062.

Bromer, Henry E., Jr., and A. L. Kranzfelder, to Eli Lilly and Co. Process for the preparation of β-chloropropionic acid. 3,188,344, 6–8–65, Cl. 260—639.

Bronikowski, Raymond J., to McGraw-Edison Co. Component for preventing arc-erosion in the terminal structure of a fused cutout. 3,188,432, 6–8–65, Cl. 200—127.

Broske, William F., and W. E. Jaycox, to AMP Inc. Explosively-actuated crimping tool. 3,187,500, 6–8–65, Cl. 60—26.1.

Brothers, James A., to Wyandotte Chemicals Corp. Method of purifying refractory metals. 3,188,200, 6–8–65, Cl. 75—84.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Buhler, Karl. 3,188,402.

Brown, Lemual G. Grille or screen. 3,187,857, 6–8–65, Cl. 189—82.

Brown, Renee P., R. H. Dyer, W. W. Mayes, and P. D. Meek, to Cosden Oil & Chemical Co. Combined masterbatch prepolymerization feed for suspension polymerization. 3,188,364, 6–8–65, Cl. 260—880.

Brown, Robert K., to Sawyers, Inc. Projector slide tray. 3,187,890, 6–8–65, Cl. 206—73.

Bruner Corp.: *See*—
Rudelick, John. 3,187,771.

Brunet, Michel, and E. Deyris, to North American Philips Co., Inc. Device for zone melting. 3,188,373, 6–8–65, Cl. 13—1.

Brunswick Corp.: *See*—
Rogers, Albert P., and Emery. 3,188,085.

Bryant, Albert: *See*—
Canna, Julius D., Bryant, and Lichau. 3,187,628.

Bryant, Clifford A. C. D. Elliott, R. F. Hackney, L. C. La Duke, and O. C. Payne, to Cabin Crafts, Inc. Machine for producing cut and uncut pile fabrics. 3,187,690, 6–8–65, Cl. 112—79.

Bryson, James R., and R. R. Cassilly, to United States of America, Army. Muffler having spaced frusto-conical baffle plates with perforated center tube and attached cooling fins. 3,187,834, 6–8–65, Cl. 181—44.

Bubniak, William C., to General Motors Corp. Regenerator seal mount. 3,187,805, 6–8–65, Cl. 165—9.

Buch, Philip O., to Stapling Machines Co. Lined wirebound container. 3,187,921, 6–8–65, Cl. 217—3.

Buchholz, Bernard: *See*—
Goshorn, Roland H., Albert, Buchholz, and Whitton. 3,188,304.

Budd Co., The: *See*—
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Wessells, Henry W., III. 3,188,110.
Zandman, Felix. 3,187,623.

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Buensod-Stacey Corp.: *See*—
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Kreuttner, Joseph W., and Rickelton. 3,187,806.
Waterfill, Robert W. 3,187,768.

Bugaut, Raymond: *See*—
Kalopissis, Gregoire, and Bugaut. 3,188,346.

Bühler, Hansradi, to Maschinenfabrik Oerlikon. System and apparatus for measuring distances travelled by a vehicle. 3,188,622, 6–8–65, Cl. 340—324.

Buhler, Karl, to Brown, Boveri & Cie, Aktiengesellschaft. Step switch for operation of four load switching contacts for regulating transformers. 3,188,402, 6–8–65, Cl. 200—4.

Bull Dog Lock Co.: *See*—
Waller, Arthur. 3,188,028.

Bullene, Robert C., to Collins Radio Co. Intermodulation measurement system including resonant filter trap means. 3,188,566, 6–8–65, Cl. 324—128.

Bulova Watch Co., Inc.: *See*—
Stellar, Arthur P. 3,187,575.

Bunnelle, Philip R., to FMC Corp. Speed control mechanism for variable speed pumping units. 3,187,510, 6–8–65, Cl. 60—54.

Burg, Anton B., and R. I. Wagner, to American Potash & Chemical Corp. B-halo phosphine borines. 3,188,345, 6–8–65, Cl. 260—643.

Burgeni, Alfred A., and J. C. Simkevich, to Johnson & Johnson. Surgical absorbent pad having ion exchange properties. 3,187,747, 6–8–65, Cl. 128—156.

Burnell, Jack A.: *See*—
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Burroughs Corp.: *See*—
Jorgensen, Arnold J. 3,188,484.
Zupsky, George A., Wolfe, and Glaser. 3,188,511.
La Beaume, Paul E. 3,188,520.
Ohntrup, Frederick F. 3,187,403.
Ohntrup, Frederick F. 3,187,606.

Burton, Carl D. S., and A. M. Reid, to Pilkington Bros. Ltd. Glass containing strontium and gallium compounds. 3,188,216, 6–8–65, Cl. 106—47.

Burton, Paul F., and P. F. Fleagle, to Dixie-Narco, Inc. Vending machines. 3,187,941, 6–8–65, Cl. 221—125.

Busala, Alessandro, to Bell Telephone Laboratories, Inc. Transmission improvement in party-line telephone systems. 3,188,398, 6–8–65, Cl. 179—35.

Bushong, Robert J., G. C. Noll, and V. F. Kramer, to Koehring Co. Crane with pneumatically extensible Gantry mast. 3,187,906, 6–8–65, Cl. 212—59.

Business Research and Engineering Corp.: *See*—
Wales, Nathaniel B., Jr. 3,188,001.

Butler, Kenneth, R. B. Woodward, and P. N. Gordon, to Chas. Pfizer & Co., Inc. 12a-deoxytetracycline oxidation process. 3,188,348, 6–8–65, Cl. 260—559.

Buttner-Werke Aktiengsellschaft: *See*—
Kamp, Heinrich, and Krichel. 3,187,441.

Byatt, Dennis W. G., to The Marconi Co. Ltd. Television scanning systems. 3,188,386, 6–8–65, Cl. 178—6.8.

Bymers, Ronald J., to International Business Machines Corp. Clamp level control circuit. 3,188,492, 6–8–65, Cl. 307—88.65.

Byrnes, Richard J., and C. J. Weiss, to Cutler-Hammer, Inc. System for controlling electroresponsive means. 3,188,529, 6–8–65, Cl. 317—155.5.

C.S.F.-Compagnie Generale de Telegraphie Sans Fil: *See*—
Simon, Jean-Claude, and Bigel. 3,188,640.

Cabbage, John T., to Phillips Petroleum Co. Isomerization process. 3,188,361, 6–8–65, Cl. 260—683.74.

Cabin Crafts, Inc.: *See*—
Bryant, Clifford A., Elliott, Hackney, La Duke, and Payne. 3,187,699.

Caddell, Alfred M. Oscillatory valves and fluid-seal means therefor. 3,187,731, 6–8–65, Cl. 123—81.

Caemmerer, Robert: *See*—
Ellis, Myron B., and Caemmerer. 3,188,111.

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Cain, William P.: *See*—
Powers, Kenneth W., and Cain. 3,188,233.

Cairns, John H. Extrusion of metals. 3,187,531, 6–8–65, Cl. 72—41.

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Caldwell, Washington J., to Eltra Corp. Automatic high-speed armature winding and coil lead-inserting machine. 3,187,784, 6–8–65, Cl. 140—71.

Calgon Corp.: *See*—
Sherrard, George E. 3,187,767.

Calhoun, Clinton W., Jr.: *See*—
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California Research Corp.: *See*—
Worthington, Albert E. 3,188,556.
Yungul, Sulbi H. 3,188,558.
Yungul, Sulbi H. 3,188,559.

Callanen, Frederick B.: *See*—
Frank, David S., Callanen, and Walter. 3,187,765.

Calumet & Hecla, Inc.: *See*—
Claes, Arthur L., and Singer. 3,187,417.
Witt, Elmer A. 3,187,537.

Cambridge Filter Corp.: *See*—
Bauder, Carl J., and Quick. 3,187,489.

Cameo Inc.: *See*—
Ownby, Warren G. 3,187,815.

Cameron Iron Works, Inc.: *See*—
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Cameron Machine Co.: *See*—
Aaron, Charles. 3,188,016.

Campbell, John F.: *See*—
Huff, James W., Woodrow, and Campbell. 3,188,254.

Campolong, Joseph F., to Pall Corp. Magnetic pressure indicator. 3,187,711, 6–8–65, Cl. 116—70.

Canna, Julius D., A. Bryant, and C. Lichau. Three mirror vehicle safety device for lateral and rear viewing. 3,187,628, 6–8–65, Cl. 88—86.

Cappel, Leona R. Illuminated table type rabbit immobilizer. 3,187,721, 6–8–65, Cl. 119—103.

Carbary, Richard J., to General Electric Co. Unitary ice cube tray and storage bin with pivotal connection. 3,187,517, 6–8–65, Cl. 62—344.

Carbone, Frank A. Mooring whip anchoring means. 3,187,707, 6–8–65, Cl. 114—230.

Carlson, Drexel T.: *See*—
Leigh, Lawrence E., and Carlson. 3,187,774.

Carman, Edward C., and H. Ritter, to Avco Corp. Transportable shelter. 3,187,852, 6–8–65, Cl. 189—2.

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Carrier, Robert M., Jr., to Carrier Mfg. Co. Feeding apparatus. 3,187,884, 6–8–65, Cl. 198—220.

Carroll, John T., to The Lorac Co., Inc. Lariat slide. 3,187,396, 6–8–65, Cl. 24—123.

Casagrande, John T. Position plotting device. 3,187,434, 6–8–65, Cl. 33—1.

Case, J. I., Co.: *See*—
Miller, Raymond J. 3,188,119.

Casella Farbwerke Mainkur Aktiengesellschaft: *See*—
Gruber, Gunter, and Wannow. 3,188,232.

Cassidy, Francis T., Jr., to International Telephone and Telegraph Corp. Start-stop regenerator. 3,188,387, 6–8–65, Cl. 178—70.

Cassilly, Robert R.: *See*—
Bryson, James R., and Cassilly. 3,187,834.

Cave, Boyd D., and D. Reimann, to Reynolds Metals Co. Metal-forming press adapted for making hollow passageway panels. 3,187,533, 6–8–65, Cl. 72—61.

Cecil, Joseph N., to Dresser Industries, Inc. Method of tape recording pulses occurring in very near coincidence. 3,188,648, 6–8–65, Cl. 346—74.

Cervenka, Richard. Accordion case music stand. 3,188,046, 6–8–65, Cl. 248—441.

Ceskoslovenska akademie ved: *See*—
Hrdina, Jiri. 3,187,786.

Chaffee, William H., to Model Builders, Inc. Self-closing container. 3,187,925, 6–8–65, Cl. 220—35.

Chalk, Alan J., to General Electric Co. Preparation of stable mixtures of organosilicon compositions in the presence of a nitrogen-containing ligand. 3,188,299, 6–8–65, Cl. 260—46.5.

Chalk, Alan J., to General Electric Co. Preparation of stable copolymerizable organosilicon compositions containing a platinum catalyst and a phosphorus ligand. 3,188,300, 6–8–65, Cl. 260—46.5.

Chambers, Robert R.: *See*—
Patinkin, Seymour H., Chambers, and Walker. 3,188,324.

Chapman, Evart R.: *See*—
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Charbonneau, Robert R., and J. F. Abere, to Minnesota Mining and Mfg. Co. Packaging films. 3,188,265, 6–8–65, Cl. 161—188.

Charbonneau, Robert R., and J. F. Abere, to Minnesota Mining and Mfg. Co. Interface bonding of polymers and product thereof. 3,188,266, 6–8–65, Cl. 161—188.

Charles, Max E., and J. G. Hamar, to Ikon Mfg. Co., Inc. Packing for washing machines. 3,187,887, 6–8–65, Cl. 206—46.

Charlo, Louis F., to Olin Mathieson Chemical Corp. Apparatus for assembly of a primer component with a centerfire cartridge case. 3,187,622, 6–8–65, Cl. 86—12.

Chausson, André, to Usines Chausson. Societe Anonyme des. Electromagnetically maintained oscillating movement compressor. 3,187 990, 6–8–65, Cl. 230—55.

Check, Mathias M., to Yale & Towne, Inc. Anti-tamper keyless lock. 3,187,528, 6–8–65, Cl. 70—299.

Cheeley, William E., to Reynolds Metals Co. Container and method of making the same or the like. 3,187,932, 6–8–65, Cl. 220—54.

Cheeley, William E., to Reynolds Metals Co. Container and method of making the same or the like. 3,187,933, 6–8–65, Cl. 220—54.

Chemetron Corp.: *See*—
Hickok, Willard H. 3,188,443.
Shaw, Robert W., Jr. 3,187,929.
Wilson, Thomas L., and Hickok. 3,188,442.

Chemical Construction Corp.: *See*—
Christensen, Axel. 3,188,116.

Chesterton, A. W., Co.: *See*—
Van Vleet, Frank R. 3,188,095.

Chiamgarino, Joseph F. Flame cutting and beveling machine. 3,188,069, 6–8–65, Cl. 266—23.

Chicago Forging and Mfg. Co.: *See*—
Krause, Herbert. 3 188,126.

Chicago Pneumatic Tool Co.: *See*—
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Chichester, Kenneth J., W. F. Clarke, and A. C. Palmer, to Universal Match Corp. Document handling apparatus. 3,187 891, 6–8–65, Cl. 209—73.

Chlorator G.m.b.H.: *See*—
Arenhold, Karl-Heins. 3,187,764.

Christensen, Axel to Chemical Construction Corp. Piping joint. 3,188,116, 6–8–65, Cl. 285—47.

Christensen, Gaylor H. Magnetic tray. 3,187,923, 6–8–65, Cl. 220—18.

Christenson, John C., to Clark Equipment Co. Lift mechanism. 3,187,911, 6–8–65, Cl. 214—140.

Christian, Eugene A., Jr., to Anaconda Wire and Cable Co. Method and appaartus for stranding cable. 3,187,495, 6–8–65, Cl. 57—34.

Christopher, Robert D. Portable pipe machining tool. 3,187,738, 6–8–65 Cl. 125—13.

Cincinnati Milling Machine Co., The: *See*—
Glenn, Ashley C. 3,187,601.
Grzymek, Rolf. 3,187,466.
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Cities Service Research and Development Co.: *See*—
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Claes, Arthur L., and D. A. Singer, to Calumet & Hecla, Inc. Apparatus for fabricating extended surface plates. 3,187,417, 6–8–65, Cl. 29—202.

Clapper, Genung L., to International Business Machines Corp. Voice inflection detection circuit. 3,188,388, 6–8–65, Cl. 179—1.

Clark Controller Co., The: *See*—
Zarleng, Steve A. 3,188,500.
Zarleng, Steve A. 3,188,501.

Clark Equipment Co.: *See*—
Christenson John C. 3,187,911.
Watters, Johnny T. 3,188,042.

Clark, Frank M.: *See*—
Adamson, Arthur P., and Clark. 3,187,585.

Clark, J. L., Mfg. Co.: *See*—
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Clark, John W., to General Motors Corp. Self-adjusting parking brake control mechanism. 3,187,595, 6–8–65, Cl. 74—156.

Clark-Reliance Corp., The: *See*—
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Clark, Willard, to Ball Bros. Co. Inc. Method and apparatus for aligning endless belts. 3,187,861, 6–8–65, Cl. 198—202.

Clarke, Adna G., Jr. Vehicle combination turn and deceleration indicator. 3,188,608, 6–8–65, Cl. 340—74.

Clarke, William F.: *See*—
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Clayton, Kenneth H.: *See*—
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Cleary, James M., to The Atlantic Refining Co. Percussive drilling tool with exhaust chamber. 3,187,823, 6–8–65, Cl. 175—69.

Cleereman, Francis W., to The Filer and Stowell Co. Sawmill carriage. 3,187,789, 6–8–65, Cl. 143—118.

Clements, Francis J.: *See*—
Shive, William M., and Clements. 3,188,012.

Clemm, Peter J., to General Electric Co. Method of immersing cube-on-edge oriented silicon-iron in silicon-iron bath followed by annealing to form a cube-on-edge oriented silicon-iron product. 3,188,249, 6–8–65, Cl. 148—112.

Clifford, Peter J., and R. J. Notman, to Massey-Ferguson Inc. Earth working tool and implement guide. 3,187,822, 6–8–65, Cl. 172—701.

Cobine, James D., to General Electric Co. Gas generating electric discharge device. 3,188,514, 6–8–65, Cl. 313—174.

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Roberts, Lyman R., and Coenen. 3,188,301.

Cogar, George R., D. O. Neddenriep, E. G. Sevilla, T. Sekse, and E. E. Masterson, to Sperry Rand Corp. Display panels with selectable indicators. 3,188,621, 6–8–65, Cl. 340—324.

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Koller, Lewis R., and Coghill. 3,188,594.

Coghill, James T., to The Black Clawson Co. Flexible doctor blade coating apparatus. 3,187,718, 6–8–65, Cl. 118—126.

Cole, Colin F.: *See*—
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Cole, Leland G., to Consolidated Electrodynamics Corp. Electrolytic process for removing moisture. 3,188,285, 6–8–65, Cl. 204—129.

Coleman Co., Inc., The: *See*—
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Coleman, David G.: *See*—
Moss, Norman S., Jeavons, and Coleman. 3,187,627.

Colgate-Palmolive Co.: *See*—
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Colley, Rowan H., to Rolls-Royce Ltd. Power plant, R.G. for ground effect aircraft. 3,187,917, 6–8–65, Cl. 170—135.2.

Collins Radio Co.: *See*—
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Dawkins, John E. 3,188,546.
Earley, Joseph J. 3,188,590.
Fenwick, Charles A. 3,187,713.
Grimm, Donald K. 3,188,496.
Michael, Harlan G. 3,188,571.
Myers, Grant G. 3,188,570.
Sielaff, Ernst A. 3,188,544.

Collins, Russell L., to Phillips Petroleum Co. Nuclear magnetic resonance switching circuitry. 3,188,557, 6–8–65, Cl. 324—5.

Colomb, Alain L.: *See*—
Ricker, Charles W., Colomb, and Mann. 3,188,470.

Colvill, Donald E., R. L. Sprague, K. H. Clayton, R. L. Konopa, and R. E. Johnson, to General Motors Corp. Battery operated electric motor control for vehicle. 3,188,543, 6–8–65, Cl. 318—139.

Combustion Engineering, Inc.: *See*—
Cott, Wendell G. 3,188,097.
Ravese, Thomas. 3,187,727.
Stockman, Richard. 3,187,804.

Commonwealth Scientific and Industrial Research Organisation: *See*—
Walker, George F. 3,188,225.

Communaute Europeenne de l'Energie Atomique: *See*—
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Compagnie Francaise de Television: *See*—
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Condell, William J., Jr.: *See*—
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Conger, Robert L.: *See*—
King, Raymond L., Jr., and Conger. 3,188,456.

Consolidated Cigar Corp.: *See*—
Readel, William C., and Flinchbaugh. 3,187,874.

Consolidated Coal Co.: *See*—
Gorin, Everett. 3,188,179.

Consolidated Electrodynamics Corp.: *See*—
Cole, Leland G. 3,188,283.
Lewis, Howard B., Jr. 3,188,576.

Consortium fur Elektrochemische Industrie G.m.b.H.: *See*—
Smidt, Jurgen, and Sabel. 3,188,319.

Continental Can Co., Inc.: *See*—
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Bosek, John S. 3,187,928.
Dorn, Henry J. 3,187,920.
Gans, Robert H. 3,187,479.
Henchert, John. 3,187,930.
Henchert, John. 3,187,931.
Holmes, George S. 3,187,938.
Klygis, Mindaugas J. 3,187,966.
Ravve, Abraham, Radlove, and Brehaut. 3,188,235.
Shults, Richard H., and Schenck. 3,187,539.
Simpson, Justin. 3,187,876.

Control Data Corp.: *See*—
Rabinow, Jacob, and Holt. 3,188,610.

Cook, Harry C.: *See*—
Rieppel, Perry J., Faulkner, Nelson, and Cook. 3,188,445.

Cook, John S., and W. E. Danielson, to Bell Telephone Laboratories, Inc. Satellite stabilization and attitude control. 3,188,630, 6–8–65, Cl. 343—100.

Coombs, Verner D., to General Electric Co. Fatigue testing machine. 3,187,566, 6–8–65, Cl. 73—100.

Cooper, Arthur, to The Noble & Wood Machine Co. Automatic cut-off roll. 3,188,268, 6–8–65, Cl. 162—260.

Cooper, David, L. De Koranyi, and W. B. Zelina, to General Electric Co. Electromagnetic current carrying switch. 3,188,427, 6–8–65, Cl. 200—87.

Cooper & Turner Ltd.: *See*—
Turner, Rodney F. 3,187,621.

Cope, R. Duane, to The Frank G. Hough Co. Reciprocating hydraulic motor. 3,187,645, 6–8–65, Cl. 92—258.

Corah, N., (St. Margaret) Ltd.: *See*—
Freeman, Ernest W., and Harris. 3,187,702.

Cordes, Brandon M., to The Procter & Gamble Co. Automatic granules dispenser. 3,188,146, 6–8–65, Cl. 302—53.

Coren, Simon, and D. R. Stentiford; said Stentiford, assor. to said Coren. Ear lobe piercing device. 3,187,751, 6-8-65, Cl. 128—330.

Cornelius Co., The: *See*—
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Cornelius, Richard T., and I. F. Snyder, to The Cornelius Co. Control structure for vending machine. 3,188,160, 6-8-65, Cl. 312—330.

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Elmer, Thomas H., and Hoxie. 3,188,218.
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Cortesi, Antonio. Machine for bevelling the edges of glass plates or the like. 3,187,467, 6-8-65, Cl. 51—34.

Corwin, Melvin P., to Becton, Dickinson and Co. Pipette assembly and package therefor. 3,187,888, 6-8-65, Cl. 206—63.

Cosden Oil & Chemical Co.: *See*—
Brown, Renee P., Dyer, Mayes, and Meek. 3,188,264.

Costakis, Andrew L., to National Steel Corp. Method and apparatus for controlling the position of strip material in furnaces. 3,188,092, 6-8-65, Cl. 266—6.

Costello, Robert B., and B. E. Persell, to General Motors Corp. Dynamic anchor. 3,187,705, 6-8-65, Cl. 114—206.

Cott, Wendell G., to Combustion Engineering, Inc. Pressure sensitive sealing device. 3,188,097, 6-8-65, Cl. 277—74.

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Cousins, Richard G., to Telephone Mfg. Co. Ltd. Push button device. 3,187,602, 6-8-65, Cl. 74—463.

Cox, Marvin H., to Sun Electric Corp. Combustion gas analyser. 3,187,580, 6-8-65, Cl. 73—27.

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Crifield, Melvin E., to General Electric Co. Solenoid actuated pilot valve. 3,188,047, 6-8-65, Cl. 251—30.

Cromwell, Roy, and J. T. Bratton, to United States of America, Navy. Missile launcher detent. 3,187,631, 6-8-65, Cl. 89—1.7.

Crookston, James A., N. E. Boyer, and C. M. Hodges, to A. P. Green Fire Brick Co. Metal cased refractory with protected suspending means. 3,187,694, 6-8-65, Cl. 110—99.

Crosby, Alton L., M. G. De Lucia, S. J. Gartner, and H. D. Losey, to Sylvania Electric Products Inc. Method and apparatus for manufacture of electrodes. 3,187,785, 6-8-65, Cl. 140—71.5.

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Culbertson, George T., to Master Specialties Co. Phase sequence network. 3,188,522, 6-8-65, Cl. 317—48.

Culbertson, George T., to Master Specialties Co. Free running multivibrator circuit energising an indicator circuit. 3,188,623, 6-8-65, Cl. 340—331.

Cummings, Joseph P., and L. E. Rice, to International Harvester Co. Blow plate for core blowers. 3,187,391, 6-8-65, Cl. 22—10.

Cuomo, Gaetano, to Pollio Dairy Products Corp. Cheese cutting apparatus. 3,187,432, 6-8-65, Cl. 31—21.

Cusi, Dante S. Comminuting method and apparatus. 3,187,385, 6-8-65, Cl. 19—8.

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Dake, Burton S., Jr., and P. S. Weersing, to Plastics, Inc. Unitary polishers and polish receptacles. 3,187,364, 6-8-65, Cl. 15—534.

Dalton, Oran G., J. L. McDaniel, and R. K. May, to General Dynamics Corp. Method for forming articles. 3,187,606, 6-8-65, Cl. 76—108.

Dam, Reynier W., A. C. A. M. Bleyenberg, A. J. de Rooy, J. W. Gibson, and E. C. Schuensel, to North American Philips Co., Inc. Method of manufacturing a magnet core for use as a memory element. 3,188,290, 6-8-65, Cl. 252—62.5.

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Roelsgaard, Knud. 3,187,992.
Roelsgaard, Knud. 3,187,996.
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Davis, Ramona E. Data recorder. 3,188,647, 6-8-65, Cl. 346—60.

Davis, Richard G. Small boat carrier. 3,188,108, 6-8-65, Cl. 280—47.13.

Davy, Robert E. Sewing machine having automatic interrupter. 3,187,700, 6-8-65, Cl. 112—203.

Dawkins, John E., to Collins Radio Co. Motor reversing control with counterweight to reduce reaction torques. 3,188,546, 6-8-65, Cl. 318—286.

Dawson, Joseph C. Liquid dispensing apparatus. 3,187,956, 6-8-65, Cl. 222—185.

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Debrie, André V. L. C. Handle assembly for cameras. 3,187,658, 6-8-65, Cl. 95—96.

Decker, Raymond E., and E. C. Word, to FMC Corp. Bulk tank truck and discharge means therefor. 3,187,910, 6-8-65, Cl. 214—83.36.

De France, Henri, and R. R. Cahen, to Compagnie Francaise de Television. Dynamic impact control for color receiver tube. 3,188,516, 6-8-65, Cl. 315—22.

Dehn, Joseph W., Jr., and H. J. Kuhefuss, to Interchemical Corp. Blue dyed polypropylene fibers and process of dyeing them. 3,188,163, 6-8-65, Cl. 8—39.

Dehn, Joseph W., Jr., H. J. Kuhefuss, J. J. Maitner, and A. J. Salina, to Interchemical Corp. Polypropylene fibers dyed with 4-nitroacridone dyes. 3,188,164, 6-8-65, Cl. 8—55.

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Gundel, Wolfgang, Berth, and Kaiser. 3,188,312.

Deibel, William T., to Eaton Mfg. Co. Wheel brake operating assembly. 3,187,849, 6-8-65, Cl. 188—152.

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De Leeuw, Gerrit, to Vereenigde Glasfabrieken (United Glassworks), N.V. Method for severing a moil from a glass body. 3,188,189, 6-8-65, Cl. 65—113.

Delgado, Manuel M. Seal provided with ribs. 3,188,100, 6-8-65, Cl. 277—205.

Delmonte, John, to Furane Plastics, Inc. Semi-rigid epoxy resin compositions and method. 3,188,362, 6-8-65, Cl. 260—835.

Delord, Jean F.: *See*—
Hutchins, Thomas B., IV, Delord, and Myers. 3,188,244.

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De Lyon, René, and A. E. Travis, to AMP Inc. Electrical connector. 3,188,606, 6-8-65, Cl. 339—256.

De Malo, James. Portable wind screen. 3,187,761, 6-8-65, Cl. 136—5.

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Densmore, Samuel P. Insect exterminator. 3,187,458, 6-8-65, Cl. 43—113.

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Derouaux, Gustave. Producing vasodilatation and analeptic activity with therapeutic compositions containing aromatic furan derivatives. 3,188,274, 6-8-65, Cl. 167—65.

Desbois, Theodore J. Four-way pallets. 3,187,690, 6-8-65, Cl. 108—58.

Des Champs, Nicholas H., to Atlantic Research Corp. Anchoring device. 3,187,858, 6-8-65, Cl. 189—92.

De Staat der Nederlanden, ten deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie: *See*—
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Dick, George W., to Bell Telephone Laboratories, Inc. Single-transistor circuit producing pulse predetermined interval from trailing edge of final pulse in any pulse-train. 3,188,497, 6-8-65, Cl. 307—88.5.

Dictaphone Corp.: *See*—
Ressanashi, Joseph A., and Wallace. 3,188,092.

Diehl, John M.: *See*—
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Dies, Herbert F. Padlock constructed for quick key change. 3,187,525, 6-8-65, Cl. 70—38.

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Di Marco, Aurelio: *See*—
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Dinelli, Dino, M. Taramasso, and S. Polesso, to Laboratori Riuniti Studi e Ricerche S.p.A. Process and device for bidimensional gas chromatography for preparative purposes. 3,187,486, 6-8-65, Cl. 55—67.

Dissen, Israel J., to Velsicol Chemical Corp. Process and product relating to the reaction of dicyclopentadiene and α,β diacid and tri-carboxylic acids. 3,188,303, 6-8-65, Cl. 260—78.4.

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Dobson, W. E. & F., Ltd.: *See*—
Town, Frank. 3,188,041.

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Doerr, Frank J. Ball chain drive with ball ejection means. 3,187,596, 6-8-65, Cl. 74—229.

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Dominion Engineering Works, Ltd.: *See*—
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Dorfmann, Heinrich: *See*—
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Dorn, Henry J., to Continental Can Co., Inc. Resilient liner and cap for closing containers. 3,187,920, 6-8-65, Cl. 215—40.

Dorsak, John W., and T. F. Van Denberg, to Air Reduction Co., Inc. Incubator. 3,187,744, 6-8-65, Cl. 128—1.

Dorsey, Denis P., to Radio Corp. of America: Monostable multivibrator having emitter follower feedback controlled by a timing network. 3,188,489, 6-8-65, Cl. 307—88.5.

Dortort, Isadore K., and S. B. Heberlig, to I-T-E Circuit Breaker Co. Transformer disk windings formed of a continuous conductor. 3,188,591, 6-8-65, Cl. 336—185.

Dotson, Claude R. Luminous license plate and holder. 3,187,452. 6-8-65, Cl. 40—202.

Double, Plummer E., to Multifastener Corp. Method of installing a clinch nut. 3,187,427, 6-8-65, Cl. 29—509.

Double, Plummer E., to Multifastener Corp. Multi-purpose pierce and clinch nut. 3,187,796, 6-8-65, Cl. 151—41.73.

Double, Plummer E., and J. H. Steward, to Multifastener Corp. Method of applying a fastener. 3,187,424, 6-8-65, Cl. 29—432.

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Bellast, Donald E., and Griffin. 3,188,295.
Hahn, Harold G., Kochaney, Miles, and Modeen. 3,188,234.
Hickner, Richard A. 3,188,317.
Martin, George R., and Lorette. 3,188,350.
Patrick, Frank D. 3,188,253.
Reifschneider, Walter. 3,188,352.
Smith, John C., Miles, and Levine. 3,188,341.

Downing, Kenneth D., to General Motors Corp. Integral fuel filler pipe and vent tube. 3,187,936, 6-8-65, Cl. 220—86.

Dowty, George H., C. W. Tinson, R. C. Eeles, and T. D. H. Andrews, to Dowty Technical Developments Ltd. Wheel mountings for aircraft undercarriages or other vehicles. 3,188,023, 6-8-65, Cl. 244—50.

Dowty Technical Developments Ltd.: *See*—
Dowty, George H., Tinson, Eeles, and Andrews. 3,188,023.

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Dreyfus, Robert L., to W. R. Grace & Co. Method of making a special package. 3,187,477, 6-8-65, Cl. 53—30.

Ducat, Robert, to Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone. Tool holders. 3,187,407, 6-8-65, Cl. 29—96.

Duchin, Maurice, Creations, Inc.: *See*—
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Ducrot, Albert. Sofa convertible into a bed by unfolding in one direction only. 3,187,351, 6-8-65, Cl. 5—31.

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Du Fresne, Eugene R., to General Dynamics Corp. Method and apparatus for shaping crystals. 3,187,799, 6-8-65, Cl. 125—23.

Duggan, James E., to Watts Electric & Mfg. Co. Lubricating assembly having a pressure venting seal. 3,187,590, 6-8-65, Cl. 74—18.

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Duinker, Simon, and J. Bos, to North American Philips Co., Inc. Method of manufacturing pole-piece units for magnetic heads. 3,187,411, 6-8-65, Cl. 29—155.5.

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Magat, Eugene E., and Tanner. 3,188,228.
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Dvorovy, John E.: *See*—
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Dyson, John D., and P. E. Mayes, to The University of Illinois Foundation. Circularly polarised omnidirectional cone mounted spiral antenna. 3,188,643, 6-8-65, Cl. 343—895.

Earley, Joseph J., to Collins Radio Co. Roller contact concept. 3,188,590, 6-8-65, Cl. 336—149.

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Lydard, Martin L. 3,187,856.

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Edens, Charles O., and A. H. Schick, to Eastman Kodak Co. Drum processing device. 3,187,659, 6-8-65, Cl. 95—89.

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Edwards, Theodoric B., to United States of America, Army. Adjustable height propeller and drive assembly. 3,187,709, 6-8-65, Cl. 115—41.

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Ehrens, Henry, and S. Weiner, to Sealed Unit Parts Co., Inc. Motor starting relay with initially partially shunted overload control. 3,188,429, 6-8-65, Cl. 200—113.

Eichler, Edwin H. Coaster device. 3,188,040, 6-8-65, Cl. 248—346.1.

Eichorn, Roger H., and W. G. Lewis, to Xerox Corp. Xerographic reproducing apparatus. 3,187,651, 6-8-65, Cl. 95—1.7.

Eisengrein, Robert H., and F. O. Blackwell, III, to Seneca Falls Machine Co. Contour tracing control device. 3,188,541, 6-8-65, Cl. 318—28.

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Ellis, Hampton. Combined measuring and scribing device. 3,187,437, 6–8–65, Cl. 33—88.

Elms, Robert W., and W. L. Thompson, to The Osborn Mfg. Co. Sand throwing machine. 3,187,392, 6–8–65, Cl. 22—36.

Ells, Myron B., and R. Caemmerer, to Johnson & Johnson. Overhead guard for fork-lift trucks. 3,188,111, 6–8–65, Cl. 280—150.

Elmer, Thomas H., and J. P. Hoxie, to Corning Glass Works. Light filter. 3,188,217, 6–8–65, Cl. 106—52.

Elmer, Thomas H., and J. P. Hoxie, to Corning Glass Works. Light filter. 3,188,218, 6–8–65, Cl. 106—52.

Else, Robert K., and A. Talliste, to Automatic Electric Laboratories, Inc. Relay construction. 3,188,424, 6–8–65, Cl. 200—87.

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Rogers, Albert P., and Emery. 3,188,085.

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English, John B., to Reynolds Metals Co. Method of treating aluminum and aluminium alloys preparatory to bright finishing. 3,187,428, 6–8–65, Cl. 29—527.

Ensley, Glover C. Portable anchored winch. 3,188,053, 6–8–65, Cl. 254—190.

Epple, Peter C., to General Motors Corp. Vehicle seat adjuster. 3,188,044, 6–8–65, Cl. 248—419.

Erickson, Lowell H.: *See*—
Merrill, Marcellus S., and Erickson. 3,187,440.

Ericson, William L.: *See*—
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Eriksson, Bengt, to Atomenergi, Aktiebolaget. Method for cooling a circulating gas in a plant for enrichment of heavy water. 3,188,177, 6–8–65, Cl. 23—204.

Erlemann, Gustav, to Hoffmann-La Roche Inc. Vinyl acetate polyethylene glycol copolymer hair setting composition. 3,188,275, 6–8–65, Cl. 167—87.1.

Esch, Eberhard. Micrometer head. 3,187,438, 6–8–65, Cl. 33—170.

Essinger, Pierre, to International Business Machines Corp. Saturable reactor voltage regulator with series connected main and control inductance windings. 3,188,555, 6–8–65, Cl. 323—89.

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Fiedler, William S., S. O. Fiedler (deceased), by W. S. Fiedler, administrator, J. W. Frost, and J. M. Diehl. Internal combustion engine starting device and method. 3,187,735, 6–8–65, Cl. 123—187.5.

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Firth, Donald, and R. H. Y. Hancock, to National Research Development Corp. Hydraulic ball pumps and motors. 3,187,681, 6–8–65, Cl. 103—161.

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Fugate, James A. Roller applicators for liquids. 3,187,369, 6–8–65, Cl. 15—548.

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Gabriel, Martin G., to Ford Motor Co. Multiple element hydrokinetic torque converter. 3,187,512, 6–8–65, Cl. 60—54.

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Goodell, John D., to Minnesota Mining and Mfg. Co. Tape cartridge interlock. 3,188,001, 6-8-65, Cl. 274—11.
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Gorman, William G., to Sterling Drug, Inc. Non-metallic pump dispenser. 3,187,960, 6-8-65, Cl. 222—321.
Goshorn, Roland H., H. E. Albert, B. Buchholz, and A. C. Whiton, to Pennsalt Chemicals Corp. Cold rubber polymerization processes using a mixture of decyl and undecyl mercaptans as modifiers. 3,188,304, 6-8-65, Cl. 260—84.3.
Gottlieb, David, and A. Ammann, to The University of Illinois Foundation. Antibiotic filipin. 3,188,272, 6-8-65, Cl. 167—65.
Gottlieb, Robert. Play pen. 3,187,352, 6-8-65, Cl. 5—99.
Gottschalk, Ulrich. Process for manufacturing plates from wood shavings and fibers. 3,188,367, 6-8-65, Cl. 264—37.
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Harrison, John W. 3,187,380.
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Snow, William T., Jr. 3,188,215.
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Granryd, Thorvald G., to The Frank G. Hough Co. Hydrostatic arrangement for tractor loaders. 3,187,497, 6-8-65, Cl. 60—19.
Graybill, Paul J. Dispensing containers having double layered tuck-tab and opposing marginal tuck-slots. 3,187,977, 6-8-65, Cl. 229—17.
Graybill, Paul J. Dispensing container with tucklock-tab. 3,187,978, 6-8-65, Cl. 229—17.
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Green, Edward H. Variable spray control for an aerosol dispenser. 3,188,006, 6-8-65, Cl. 239—337.
Green, Milton, and W. E. Solodar, to Polaroid Corp. Nitro and aminophenoxylhydroquinones and the esters and ethers thereof. 3,188,343, 6-8-65, Cl. 260—479.
Greenblott, Bernard J., and R. J. Hart, to International Business Machines Corp. High speed spark discharge print device. 3,187,669, 6-8-65, Cl. 101—114.
Greene, Haskell M., Jr. Apparatus for depositing cement or the like in a well. 3,187,813, 6-8-65, Cl. 166—55.1.
Gresham, Paul J. Flush tank valve. 3,187,348, 6-8-65, Cl. 4—57.
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Gruber, Gunter, and H. A. Wannow, to Casella Farbwerke Mainkur Aktiengeesellschaft. Process for rendering cellulosic textile fabric crease resistant and the resulting article. 3,188,232, 6-8-65, Cl. 117—139.4.
Grsymek, Rolf, to The Cincinnati Milling Machine Co. Roll grinding machine. 3,187,468, 6-8-65, Cl. 51—49.
Gudelis, David A., to Esso Research and Engineering Co. Propylene polymerization to C_9—C_{30} olefins for detergents. 3,188,360, 6-8-65, Cl. 260—683.15.
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Hansen, Carl W., and P. J. Clack, to Laboratory for Electronics, Inc. Coin identification apparatus utilizing radiation bombardment. 3,188,471, 6-8-65, Cl. 250—83.3.
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Hanson, Leroy C., to Ferro Corp. Heating unit. 3,188,449, 6-8-65, Cl. 219—455.
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Harmon, Leon D., and E. J. Sitar, to Bell Telephone Laboratories, Inc. Method and apparatus for correcting errors in mutilated text. 3,188,609, 6-8-65, Cl. 340—146.1.
Harper, Robert H., to Swift & Co. Sausage manufacture. 3,188,214, 6-8-65, Cl. 99—109.
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Harris, Philip H., to American Cement Corp. Cement composition. 3,188,222, 6-8-65, Cl. 106—89.
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Harty, Harold, J. J. Regimbal, K. G. Toyoda, and R. D. Widrig, to United States of America, Atomic Energy Commission. Fuel element for a supercritical pressure power reactor. 3,188,278, 6-8-65, Cl. 176—68.
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Mukaiyama, Teruaki, and Hata. 3,188,310.
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Hayes, Frank J. Coin operated convertible gas pump and device for vending packaged gasoline. 3,187,939, 6-8-65, Cl. 221—4.
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Heininger, Samuel A., and G. H. Birum, to Monstanto Co. 3-(Arylthio)alkenenitriles. 3,188 342, 6-8-65, Cl. 260—465.
Heintz, Richard P., to International Harvester Co. Fuel injection system for internal combustion engines. 3,187,733, 6-8-65, Cl. 123—139.
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Henchert, John, to Continental Can Co., Inc. Plastic pull tab adhesively secured to metal strip. 3,187,931, 6-8-65, Cl. 220—54.
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Henry, Edwin B., Jr., and W. L. Zemberry, to United States Steel Corp. Mechanism for counting the operations of a machine. 3,188,451, 6-8-65, Cl. 235—92.
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Hergert, Wilhelm, to Glyco-Metall-Werke AG. Tape transporting device. 3,188,089, 6–8–65, Cl. 224—128.

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Hofmann, Fritz J., and W. Hess, to Beteiligungs- und Patentverwaltungsgesellschaft mit Beschrankter Haftung. Smelting-furnace, particularly for the production of steel. 3,188,065, 6–8–65, Cl. 263—33.

Hohos, Joseph A., to Scope, Inc. Organ pre-set. 3,187,618, 6–8–65, Cl. 84—341.

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Holbein, Robert D., E. B. Stanley, and H. G. Stout, to United States Steel Corp. Use of a particular coiling temperature production of electrical steel sheet. 3,188,250, 6–8–65, Cl. 148—120.

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Holler, Howard V., to Shell Oil Co. Preparation of N,N'-hydrocarbon substituted hydraines. 3,188,814, 6–8–65, Cl. 260—293.

Höller, Paul, to Firma Huttenwerk Oberhausen AG. Process for the extraction of gases from metals. 3,18,180, 6–8–65, Cl. 23—230.

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Hollycak, William H., to The Proprietors of Hay's Wharf Ltd. Dredge with nozzle means for mixing air and water before emission thereof from said nozzle. 3,187,447, 6–8–65, Cl. 37—78.

Holmes, George S., to Continental Can Co., Inc. Full depth partition bottle carrier. 3,187,938, 6–8–65, Cl. 220—118.

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Holtschmidt, Hans, to Farbenfabriken Bayer Aktiengesellschaft. Method of preparing polyesters. 3,188,801, 6–8–65, Cl. 260—615.

Honey, Robert L. Cushioning carrier for pneumatic tube systems. 3,187,896, 6–8–65, Cl. 206—1.

Honore, Etienne, E. Torcheux, and J. Tubeuf, to Societe Marecaine de Recherches, d'Etudes et de Developments "Somarede". Simultaneous linear equation computer systems. 3,188,454, 6–8–65, Cl. 235—150.

Hoppe, Peter, E. Weinbrenner, C. Muhlhausen, and K. Breer, to Farbenfabriken Bayer Aktiengesellschaft, and ½ to Mobay Chemical Co. Process for preparing polyurethane plastics. 3,188,296, 6–8–65, Cl. 260—2.5.

Hornbostel, Lloyd, Jr., to Beloit Corp. Pipe molding device. 3,188,269, 6–8–65, Cl. 162—384.

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Elmer, Thomas H., and Hoxie. 3,188,218.

Hoyt Metal Co. of Great Britain Ltd., The: *See*—
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Hrdina, Jiri, to Ceskoslovenska akademie ved. Apparatus for chromatographic analysis. 3,187,786, 6–8–65, Cl. 141—94.

Hubel, Karl W., to Union Carbide Co. Organo-metallo-carbonyl complexes prepared by the reaction of acetylene with a metal carbonyl. 3,188,335, 6–8–65, Cl. 260—439.

Huber, Franz E., and H. Neubauer, to Rohde & Schwarz. Dielectric support for the inner conductor of coaxial systems. 3,188,587, 6–8–65, Cl. 333—96.

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Huff, James W., W. H. Woodrow, and J. F. Campbell, to Dayco Corp. Method and apparatus for making endless belt bodies. 3,188,254, 6–8–65, Cl. 156—137.

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Sommer David R. 3,187,898.

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Hunt, William G. Timed fluid dispensing device. 3,187,948, 6–8–65, Cl. 222—70.

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Huron Portland Cement Co.: *See*—
Evans, Elmer H. 3,187,551.

Hueome, Robert G., and H. Trigger, to TRW Semiconductors, Inc. Fusion apparatus. 3,187,972, 6–8–65, Cl. 228—42.

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Hutchins, Thomas B., IV., J. F. Delord, W. C. Myers, to Tektronix, Inc. Method of forming PN junction in semiconductor material. 3,188,244, 6–8–65, Cl. 148—1.5.

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McCloud, James R. 3,187,563.

Ideal Toy Corp.: *See*—
Licitis, Gunars. 3,187,462.

Idea Mfg. Co., Inc.: *See*—
Charles, Max R., and Hamar. 3,187,867.

Illinois Tool Works, Inc.: *See*—
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Poupitch, Ongjisen J. 3,187,420.

Indiana Steel & Wire Co., Inc.: *See*—
Kitselman, Harry L. 3,188,278.

Indugas, Gesellschaft fur Industrielle Gasverwendung m.b.H.: *See*—
Schmidt, Theodor. 3,188,068.

Industrial Development Co., Inc.: *See*—
Schubert, Dale L., and Riley. 3,187,286.

Industrial Devices, Inc.: *See*—
Gean, Cory P. 3,188,013.

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Bradshaw, Harold A. 3,187,682.

Inglis, John C., to Autocrown Corp. Ltd. Crown caps. 3,187,919, 6–8–65, Cl. 215—39.

Ingram, Maxwell. Conductivity monitering system. 3,188,561, 6–8–65, Cl. 324—30.

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Britten, George C. 3,187,381.

Inland Steel Products Co.: *See*—
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Inoue, Kiyoshi. Electric discharge heat treatment of metals in electrolytes. 3,188,245, 6–8–65, Cl. 148—13.

Inta-Roto Machine Co., Inc., The: *See*—
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Interchemical Corp.: *See*—
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International Business Machines Corp.: *See*—
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Byrnes, Ronald J. 3,188,492.
Clapper, Genung L. 3,188,388.
Esslinger, Pierre. 3,188,555.
Greenblott, Bernard J., and Hart. 3,187,669.
Norwood, Richard E. 3,187,762.
Quick, John R., Sr. 3,188,455.
Ross, Thomas I. 3,188,474.
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Xylander, Melvin P. 3,188,499.
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International Cold Forging Corp.: *See*—
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International Latex Corp.: *See*—
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International Standard Electric Corp.: *See*—
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Henquet, André J., and Silerme. 3,188,425.
Lace, Rudolf. 3,188,527.
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Wessel, Gerhard. 3,188,426.

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Webb, Richard C., and Peterson. 3,188,627.

Irish, Donald B.: *See*—
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Ito, Kazuo, and T. Yanaka, to Kabushikikaisha Nihondenshi Kogaku Kenkyusho. Two stage electron beam magnification device comprising plural adjustable magnetic lens system. 3,188,465, 6–8–65, Cl. 250—49.5.

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Morin, Robert B., Flynn, Jackson, and Roseke. 3,188,311.

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Jackson, Wilbur. Remote station signal system. 3,188,567, 6–8–65, Cl. 325—163.

Jacob, Walter B. W., to Telefonaktiebolaget L M Ericsson. Time-multiplexing telephone system. 3,188,393, 6–8–65, Cl. 179—15.

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Jacobson, Harry. Adjustable garment closure. 3,187,346, 6–8–65, Cl. 2—234.

James, Lee F. Lubricator having valve, conduit and atomizer junction means. 3,188,010, 6–8–65, Cl. 239—412.

Jameson, Howard L., to Harry W. Dietert Co, Porous electrode for air permeable moisture probe. 3,188,563, 6–8–65, Cl. 324—61.

Janik, Anton J., to The Ridge Tool Co. Chain type pipe breaker. 3,187,969, 6–8–65, Cl. 226—103.

Janisio, Adam J. Sound reverberating device. 3,188,239, 6–8–65, Cl. 179—1.

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Brooke, William F., and Jaycox. 3,187,500.

Jeavons, Philip S.: *See*—
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Jennings, Edward J., and R. J. Tague. Portable ink-removal device for ink rolls. 3,187,670, 6–8–65, Cl. 101—425.

Jennings, Jack W. Automatic deep-fat pressure cooker. 3,187,664, 6–8–65, Cl. 99—329.

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Jeremiah, Earl E., to National Can Corp. Can depalletising machine. 3,187,909, 6–8–65, Cl. 214—8.5.

Jeromson, George, to Hughes Aircraft Co. Obstacle clearing system. 3,188,632, 6–8–65, Cl. 343—11.

Jiminez, Roberto J. Serialograph with spaced carriers for movable X-ray film cassettes in shielded trays. 3,188,456, 6–8–65, Cl. 250—66.

Job, Leonard E. Arm restraining device for golfers. 3,188,090, 6–8–65, Cl. 273—189.

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Johnson, Logan W., M. J. Straub, and T. L. Schuette, to Avnet, Inc. Armature wedger. 3,187,419, 6–8–65, Cl. 29—205.

Johnson, Louis W. Vibrating apparatus. 3,187,591, 6–8–65, Cl. 74—68.

Johnson, Richard N., and R. S. Turner, to James Walker & Co. Ltd. Deformable hydraulic seals of associated backing anti-extrusion and sealing rings. 3,188,099, 6–8–65, Cl. 277—188.

Johnson, Robert A.: *See*—
Ashley, Walter M., Jr., and Johnson. 3,187,845.

Johnson, Robert E.: *See*—
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Johnson, S. C. & Son, Inc.: *See*—
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Luedtke, Warren J. 3,187,367.

Johnson, William C., Jr.: *See*—
Odell, James A., and Johnson. 3,188,089.

Johnston, Howard T. Dry fertiliser spreader. 3,188,094, 6–8–65, Cl. 275—6.

Jones, Hartl R., to Mojonnier Bros. Co. Vacuum type milk transfer system. 3,187,719, 6–8–65, Cl. 119—14.05.

Jones & Laughlin Steel Corp.: *See*—
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Jones, Marvin R., to Cameron Iron Works, Inc. Pipe holding apparatus. 3,188,118, 6–8–65, Cl. 285—133.

Jones, Richard B.: *See*—
Jones, Robert H., Jr. and R. B. 3,187,757.

Jones, Robert H., Jr. and R. B. Plural dispensing units and toilet kit with central compartmented storage member. 3,187,757, 6–8–65, Cl. 132—79.

Jones, Robert L., and H. H. Nichols, to Hasen Engineering Co. Radiant tube heaters. 3,187,740, 6–8–65, Cl. 126—91.

Jones, Roger B., and R. B. Smith, to Specialties Development Corp. Condition responsive system with prevention of false indication. 3,188,617, 6–8–65, Cl. 340—213.

Jones, Thomas I., to Atomic Energy of Canada Ltd. Aluminum-plutonium alloys. 3,188,202, 6–8–65, Cl. 75—122.6.

Jordan, John W., 25% to C. B. Morsell, Jr. Side bearings for railroad cars. 3,188,156, 6–8–65, Cl. 308—225.

Jordan, Peter: *See*—
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Jorgensen, Arnold J., to Burroughs Corp. Pulse synchronizer. 3,188,484, 6–8–65, Cl. 307—88.5.

Joris, Pierre M. A.: *See*—
Siesewerda, Banke S., and Joris. 3,187,555.

Joy, Louis F. C.: *See*—
Fowler, Peter M., and Joy. 3,188,045.

Joy Mfg. Co.: *See*—
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K-P Mfg. Co.: *See*—
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Kalert, Ralph R., Jr., to ACF Industries Inc. Carburetor. 3,188,060, 6–8–65, Cl. 261—23.

Kalns, Rudolph W.: *See*—
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Kalopissis, Gregoire, and R. Buguet, to L'Oreal. 4-amino-3-nitro methylamino-aniline and process for the preparation thereof. 3,188,344, 6–8–65, Cl. 260—577.

Kalpakcioglu, Serope, to The Cincinnati Milling Machine Co. Spinning machine tool ring. 3,187,534, 6–8–65, Cl. 72—83.

Kamlukin, Igor, to Simplicity Mfg. Co. Tractor and power driven implement mounted thereon. 3,187,821, 6–8–65, Cl. 172—103.

Kamp, Heinrich, and H. Krichel, to Buttner-Werke Aktiengesellschaft. Elongated drum drier with drying gas distributing ducts. 3,187,441, 6–8–65, Cl. 34—57.

Kanik, Robert W., to The Bendix Corp. Nozzle ring assembly. 3,188,051, 6–8–65, Cl. 253—78.

Kapany, Narinder S., to American Optical Co. Microscope and recording optical systems utilising tapered light conducting fiber bundles. 3,187,627, 6-8-65, Cl. 88—39.

Karisch, Paul E. Lure. 3,187,457, 6-8-65, Cl. 43—42.06.

Karigaard, Wayne A., to General Motors Corp. Shock absorber with dampening fluid flow through piston rod. 3,187,-847, 6-8-65, Cl. 188—88.

Karlsson, Elof K., to International Harvester Co. Dust dispersal means. 3,187,491, 6-8-65, Cl. 56—20.

Karmigsalt, Dick, H. M. Schroder, and H. J. M. van Tol, to North American Philips Co., Inc. Photo-electric cell. 3,188,476, 6-8-65, Cl. 250—211.

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Keen, Henry S., to Cutler-Hammer, Inc. TEOL mode coaxial waveguide system and rotary joint. 3,188,588, 6-8-65, Cl. 233—26.

Kehl, William L., and M. M. Stewart, to Gulf Research & Development Co. Aluminum product and its method of preparation. 3,188,174, 6-8-65, Cl. 23—143.

Keinath Instrument Co.: *See*—
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Kelliher, Daniel W., to Sperry Rand Corp. Record medium stacking guide means. 3,188,080, 6-8-65, Cl. 270—61.

Kelly, Frederick G., and M. Holowachuk, to Servometer Corp. Resilient volume-enclosing member. 3,187,639, 6-8-65, Cl. 92—47.

Kelmore, Inc.: *See*—
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Kelsey-Hayes Co.: *See*—
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Kemnitz, Robert H., to Allis-Chalmers Mfg. Co. Alignment indicating roller type support assembly. 3,188,155, 6-8-65, Cl. 308—204.

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Kent, William C., to Western Electric Co., Inc. Assembly and staking apparatus. 3,187,418, 6-8-65, Cl. 29—203.

Kerr, Robert J. Tinting device adapter. 3,187,787, 6-8-65, Cl. 161—348.

Keyes Fibre Co.: *See*—
Pedroli, Walter E. 3,187,666.

Keystone Valve Corp.: *See*—
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Kiechle, Richard A., to Tubes & Cores, Inc. Children's closet kit. 3,187,904, 6-8-65, Cl. 211—118.

Kihara, Nobutoshi, to Sony Corp. Magnetic recording and reproducing system. 3,188,355, 6-8-65, Cl. 178—6.6.

Kihara, Shokichi. Pencil box. 3,187,725, 6-8-65, Cl. 120—23.

Kilbourn, Eugene L., to S. H. Leggitt Co. Flame shaper and luminosity control. 3,187,523, 6-8-65, Cl. 67—87.

Kimball, Perley B.: *See*—
Guild, Charles L., and Kimball. 3,187,553.

King, Gilbert M., to Seekonk Lace Co. Brassiere and fabric therefor. 3,187,754, 6-8-65, Cl. 128—464.

King, Raymond L., Jr., and R. L. Conger, to United States of America, Navy. Magnetic modulator for computing divisions and multiplications. 3,188,456, 6-8-65, Cl. 235—194.

Kingsley, Lewis A. Hinged multiple line type holder. 3,187,-665, 6-8-65, Cl. 101—28.

Kinnard, Wolcott S. Method and apparatus for measuring light. 3,187,652, 6-8-65, Cl. 95—10.

Kiper, Gerd, to Agfa Aktiengesellschaft. Retarding device for photographic shutter. 3,187,635, 6-8-65, Cl. 95—63.

Kirby, Charles A., to Allied Building Components, Inc. Folding door moanting structure. 3,187,800, 6-8-65, Cl. 160—206.

Kirkpatrick, Wylie C., to W. R. Grace & Co. Method of packaging a plurality of articles. 3,187,475, 6-8-65, Cl. 53—30.

Kitselman, Harry L., to Indiana Steel & Wire Co., Inc. Transposition fitting. 3,188,378, 6-8-65, Cl. 174—33.

Kjeldsen, Kjeld, to Danfoss ved ing. M. Clausen. Capsule for refrigerating machines. 3,187,995, 6-8-65, Cl. 230—232.

Kloppers, Heimen, to American Enka Corp. Spinneret cleaning process. 3,188,239, 6-8-65, Cl. 134—26.

Kluge, Hans: *See*—
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Klygis, Mindaugas J., to Continental Can Co., Inc. Flexible container with snip-off and reseal features. 3,187,966, 6-8-65, Cl. 222—541.

Knavish, Leonard A.: *See*—
Parobeck, Richard P., Knavish, and Murray. 3,188,192.

Kneen, Eric J. G. Fleckenstein, and L. D. Beckord, to Kurth Malting Co. Malting process using carbonyl-containing compounds. 3,188,279, 6-8-65, Cl. 195—70.

Knohl, Herbert, to The Kendall Co. Circular knit elastic garments. 3,187,522, 6-8-65, Cl. 66—196.

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Beaird, Francis M., Jr., and Kobets. 3,188,334.

Kobets, Paul, and F. M. Beaird, Jr., to Ethyl Corp. Preparation of tetramethyl lead. 3,188,332, 6-8-65, Cl. 260—437.

Koch, Bernhard, to Grob & Co. Aktiengesellschaft. Weight for a jacquard heddle. 3,187,780, 6-8-65, Cl. 139—90.

Koch, George E.: *See*—
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Koch, H., & Sons, Inc.: *See*—
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Kochaney, Eugene E.: *See*—
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Kocsuta, Michael. Pretreatment of metallic base materials to be used in photoengraving processes. 3,188,211, 6-8-65, Cl. 96—36.

Koehring Co.: *See*—
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Koeller, Paul, to Dominion Engineering Works, Ltd. Seals for turbo-machinery. 3,188,040, 6-8-65, Cl. 252—94.

Kolb, Robert H., to Shell Oil Co. Drum shaped fluid stream analysis detector having vertical flow of the fluid therein. 3,188,565, 6-8-65, Cl. 324—61.

Kollinger, Kenneth J., to International Harvester Co. Bulldozer blade tilting arrangement. 3,187,448, 6-8-65, Cl. 37—144.

Koller, Lewis R., and H. D. Coghill, to General Electric Co. Thermally sensitive resistances. 3,188,594, 6-8-65, Cl. 338—28.

Kompfner, Rudolf, to Bell Telephone Laboratories, Inc. Beam collector with auxiliary collector for repelled or secondarily-emitted electrons. 3,188,515, 6-8-65, Cl. 315—3.5.

Koncen, Raymond E., and A. Hafner, to United States of America, Navy. Solid state portable gas leak detector. 3,187,558, 6-8-65, Cl. 73—27.

Konopa, Richard L.: *See*—
Colvill, Donald E., Sprague, Clayton, Konopa, and Johnson. 3,188,543.

Kons, Paul R., to Foster Wheeler Corp. Purification of hydrogen by scrubbing with nitrogen at high pressure. 3,187,-485, 6-8-65, Cl. 55—48.

Koons, Carl H., E. J. Strandine, and I. R. Lentz, to Swift & Co. Handling of poultry. 3,188,212, 6-8-65, Cl. 99—107.

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Kordesch, Karl, S. H. S. Raub, and L. J. Uline, to Union Carbide Corp. Fuel cell battery containing flat carbon electrodes. 3,188,242, 6-8-65, Cl. 136—86.

Kornbichler, Heins, E. Fischer, and H. Kluge, to Licentia Patent-Verwaltung-G.m.b.H. Superheater reactor. 3,188,-277, 6-8-65, Cl. 176—59.

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Koss, Adrian, to Magna Driver Corp. Apparatus for cutting lemniscate races on ball bearings. 3,187,635, 6-8-65, Cl. 90—20.

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Bair, Lester E., Meyer, and Kramer. 3,187,518.

Kramer, Virgil F.: *See*—
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Kramer, Walter E., to The Pure Oil Co. Alkenyl-N-sulfo-oxyhydrocarbon-imides. 3,188,307, 6-8-65, Cl. 260—239.3.

Kramer, William E., and J. M. Hindman, to Warren Petroleum Corp. Pump apparatus. 3,187,673, 6-8-65, Cl. 103—38.

Kronsfelder, Arthur L.: *See*—
Bromer, Henry E., Jr., and Kronsfelder. 3,188,344.

Kraschinsky, Theodore, Jr.: *See*—
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Kraus, Kurt A., and F. Nelson, to United States of America, Atomic Energy Commission. Separation of metal values by cation exchange from concentrated perchloric acid solution. 3,188,169, 6-8-65, Cl. 23—14.5.

Krause, Herbert, to Chicago Forging and Mfg. Co. Self-adjusting latch structure. 3,188,126, 6-8-65, Cl. 292—11.

Kreilick, Herbert A., to Woodkor Corp. Pallet. 3,187,688, 6-8-65, Cl. 108—55.

Kreiskorte, Heinz, and H.-D. Weber, to Carl Schenck Maschinenfabrik G.m.b.H. Apparatus for measuring oscillation amplitudes, particularly in dynamic material-testing machines. 3,187,585, 6-8-65, Cl. 73—67.3.

Kreuttner, Joseph W., to Buensod-Stacey Corp. Air conditioner enclosure with removable panel. 3,187,662, 6-8-65, Cl. 98—38.

Kreuttner, Joseph W., and D. Rickelton, to Buensod-Stacey Corp. Air conditioning. 3,187,806, 6-8-65, Cl. 165—22.

Krichel, Herbert: *See*—
Kamp, Heinrich, and Krichel. 3,187,441.

Krohn, Helgo V. Garment hanger suspension. 3,188,039, 6-8-65, Cl. 248—317.

Krohs, Walter, L. Ther, G. Vogel, and H. Ott, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. N-secondary-alkyl-2-(3-hydroxyphenyl)-2-ethylalkylamines. 3,188,849, 6-8-65, Cl. 260—570.8.

Kroll, Emanuel, and H. A. Lieberman, to International Latex Corp. Composition comprising salt of 1,1'-methylene-1-bis-(2-hydroxy-3-naphthoic acid) and 1-biphenylmethyl-4-methyl-piperazine. 3,188,273, 6-8-65, Cl. 167—265.

Krummeck, Ludwig A., to E. I. du Pont de Nemours and Co. Spinneret production. 3,187,607, 6-8-65, Cl. 76—107.

Krupka, John F., to National Dairy Products Corp. Conveyor control system. 3,187,875, 6-8-65, Cl. 198—32.

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Kuhefuss, Harold J.: *See*—
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Debu, Joseph W., Jr., Kuhefuss, Maitner, and Salina. 3,188,164.

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Kuhne, Heinz A., J. W. Seebausen, and T. von Gebhardt, to The American Schack Co., Inc. High temperature recuperator. 3,187,808, 6-8-65, Cl. 165—83.

Kukla, Robert F., to General Electric Co. Magnetic core and coil assembly and terminal pad arrangement therefor. 3,188,592, 6-8-65, Cl. 336—192.

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Kunsky, George A., R. W. Wolfe, and D. Glaser, to Burroughs Corp. Cold cathode indicator tube. 3,188,511, 6-8-65, Cl. 313—109.5.

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Kneen, Eric, Fleckenstein, and Beckord. 3,188,279.

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Miller, George V., Jr. Telescope mounts for rifles. 3,187,435, 6–8–65, Cl. 33—50.
Miller, Harvey E., to The General Tire & Rubber Co. Cushioned bearing assembly. 3,188,152, 6–8–65, Cl. 308—36.1.
Miller, James C., and K. Li, to United States of America, Navy. Tunnel diode memory with nondestructive readout. 3,188,485, 6–8–65, Cl. 307—88.5.
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Cude, Richard A., and Miller. 3,188,121.
Miller, Norman A., and C. V. Di Camillo, to Sperry Rand Corp. Tape clamp. 3,187,971, 6–8–65, Cl. 226—95.
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Miller, Wendell S. Industrial truck with load supporting members for handling a plurality of stacked articles. 3,187,917, 6–8–65, Cl. 214—730.
Miller, William A., and K. H. Sandmeyer, to Harbison-Carborundum Corp. Fused refractory compositions. 3,188,-219, 6–8–65, Cl. 106—59.
Mindell, Marvin I., and K. Rudaitis, to Viewlex, Inc. Automatic audio strip film projector. 3,187,626, 6–8–65, Cl. 88—28.
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Charbonneau, Robert R., and Abere. 3,188,266.
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Miscovich, John A., to John W. Stang Corp. Variable spray nozzle. 3,188,009, 6–8–65. Cl. 239—407.
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Mitchell, Ralph I., and C. L. Paullus, to Merck and Co., Inc. Inhalation-actuated aerosol device. 3,187,748, 6–8–65, Cl. 128—173.
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Mogestad, Folke T., and E. N. A. Thysk, to Telefonaktiebolaget L M Ericsson. Block terminal. 3,188,004, 6–8–65, Cl. 339—198.
Mohr, Milton E., to Bell Telephone Laboratories, Inc. Signal transmission with secrecy. 3,188,390, 6–8–65, Cl. 179—1.5.
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Monacheci, Luigi, to Marelli Lenkurt S.p.A. Arrangement for tuning of the transmitting antenna of a data transmission system. 3,188,568, 6–8–65, Cl. 325—178.
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Monroe, Charles Z., and H. B. Egleston, to Ex-Cell-O Corp. Packaging machine for erecting, and sealing plastic coated paperboard containers. 3,187,644, 6–8–65, Cl. 93—44.1.
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Morrish, Leonard M., and W. D. Pittsley, to General Motors Corp. Flexible exhaust coupling including a boat dissipable washer. 3,188,115, 6–8–65, Cl. 285—18.
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Mueller, Frank H., to Mueller Co. By-pass for fluid meter. 3,187 570, 6–8–65, Cl. 73—201.
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Mukaiyama, Teruaki, and T. Hata, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for preparing organophosphate esters. 3,188,309, 6–8–65, Cl. 260—211.5.
Mukaiyama, Teruaki, and T. Hata, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for preparing pyrophosphate nucleotides. 3,188,310, 6–8–65, Cl. 260—211.5.

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Double, Plummer E. 3,187,796.
Double, Plummer E. 3,187,427.
Double, Plummer E., and Steward. 3,187,424.
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Murek, Josef K., to Trans Energy Corp. High energy machine. 3,187,548, 6-8-65, Cl. 72—435.
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Nemlaha, Francis X.: *See*—
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Nestierode, Clifford D., to Standard Kollsman Industries, Inc. Dual modulation communication system. 3,188,573, 6-8-65, Cl. 329—135.
Netzel, Philip C., to General Electric Co. Racking mechanism for metal enclosed electric switchgear. 3,188,412, 6-8-65, Cl. 200—50.
Netzel, Philip C., to General Electric Co. Expandable switchgear housing for drawout electric apparatus. 3,188,413, 6-8-65, Cl. 200—50.
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Nielsen, Jack N., and J. A. Burnell, to Itek Corp. Rotor blade and air vehicles embodying same. 3,188,020, 6-8-65, Cl. 244—17.25.
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Nixon, John L. Automobile seat convertible to bed. 3,188,124, 6-8-65, Cl. 296—99.
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Noll, George C.: *See*—
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North American Aviation, Inc.: *See*—
Baker, Richard S. 3,187,872.
Boutin, Charles U. 3,188,019.
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Stewart, Robert F., Larson, and McClendon. 3,188,368.
North American Philips Co., Inc.: *See*—
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Brunet, Michel, and Deyris. 3,188,373.
Dam, Reynier W., Bieyenberg, de Rooy, Gibson, and Schuensel. 3,188,290.
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Duinker, Simon, and Boa. 3,187,411.
Flinn, Ian, and Scofield. 3,188,284.
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Karmiggelt, Dick, Schroder, and van Tol. 3,188,476.
Seppen, Joan M. G. 3,188,636.
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Van den Berg, Dirk A. 3,188,509.
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Yost, Stanley A., and Toth. 3,187,907.
Norton, Frederick H., to American Optical Co. Apparatus for making fiber optical components. 3,188,188, 6-8-65, Cl. 65—11.
Norwood, Richard E., to International Business Machines Corp. Electro-fluid apparatus. 3,187,762, 6-8-65, Cl. 137—81.5.
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Fichter, Ludwig J. 3,188,404.
Oas, Richard E., C. P. Dahill, and H. B. Johnson, to International Paper Co. Container. 3,187,980, 6-8-65, Cl. 229—34.
Oatley, Arthur F. Incandescent gas fires. 3,187,741, 6-8-65, Cl. 126—92.
O'Brien, Leo J., and G. G. Bernard, to The Pure Oil Co. Fluid flow indicating method and apparatus for well bores. 3,187,567, 6-8-65, Cl. 73—155.
O'Brien, Richard J., and M. S. Thomson, to Moore Business Forms, Inc. Binder for continuous business forms. 3,188,114, 6-8-65, Cl. 281—21.
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O'Donnell, John M., R. O. Platt, and C. D. Gabor, to Harbison-Walker Refractories Co. Feeding system for a brick press. 3,187,401, 6-8-65, Cl. 25—103.
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Sowinski, Francis A., and Yale. 3,188,320.
Sowinski, Francis A., and Yale. 3,188,323.
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Yale, Harry L., Sowinski, and Bernstein. 3,188,322.
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Olt, Theodore F., F. W. Beall, deceased, by E. E. Beall, executrix, to Armco Steel Corp. Method of manufacturing drawing steel. 3,188,246, 6-8-65, Cl. 148—16.
Olts, Charles R. Rack construction. 3,187,903, 6-8-65, Cl. 211—87.
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Onsrud, Rudolph F., and O. Olsen, to Onsrud Machine Works, Inc. Router shaper. 3,187,634, 6-8-65, Cl. 90—11.
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Orner, Peter A. Fuel metering apparatus. 3,187,732, 6-8-65, Cl. 123—119.
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Orton, Samuel T., Jr., to Orton Corp. Winder shaft assembly. 3,188,017, 6-8-65, Cl. 242—72.
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Oscar, Isidore. Machinists' tool. 3,187,737, 6-8-65, Cl. 125—11.
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Owen, Cydwel A., to The Bendix Corp. Flexural pivot. 3,188,071, 6-8-65, Cl. 267—1.
Owen, Frederick C. Saturable core welding transformer. 3,188,552, 6-8-65, Cl. 323—48.
Owens, Donald G. Packaging and dispensing structure. 3,187,955, 6-8-65, Cl. 222—183.
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Oxley, Robert F. Variable capacitor with bimetallic stators. 3,188,539, 6-8-65, Cl. 317—248.
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Paldar, Emil J., Co.: *See*—
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Redfield, Charles L., and Dlouhy. 3,188,136.
Painter, Paul S. Device for pulling out dented sheet metal portions. 3,187,538, 6-8-65, Cl. 72—114.
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Pall, David B., Forman, and Alden. 3,187,895.
Pall, David B., H. L. Forman, and R. J. Alden, to Pall Corp. Fuel-water separator. 3,187,895, 6-8-65, Cl. 210—114.
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Palmer, Winslow, to Sperry Rand Corp. Analogue-to-digital-converter. 3,188,626, 6-8-65, Cl. 340—347.
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Parker, Bernard, to General Precision Inc. Two-degree of freedom gas bearing gyro. 3,187,588, 6-8-65, Cl. 74—5.12.
Parker, Marvin L. Mufflers for inboard motor boats. 3,187,836, 6-8-65, Cl. 181—52.
Parmer, Harry W. Complementary symmetry transistor amplifier having a constant common connection operating potential. 3,188,574, 6-8-65, Cl. 330—13.
Parmley, Richard T. Body-pivot golf putter. 3,188,086, 6-8-65, Cl. 272—81.3.
Parobeck, Richard P., L. A. Knavish, and D. W. Murray, to Pittsburgh Plate Glass Co. Apparatus for continuously drawing sheet glass. 3,188,192, 6-8-65, Cl. 65—163.
Parsons, John S., to The Stanley Works. Door stop. 3,187,372, 6-8-65, Cl. 16—137.
Patlakin, Seymour H., R. R. Chambers, and R. W. Walker, to Sinclair Research, Inc. Neopentyl-substituted epoxy alcohols and chlorides. 3,188,324, 6-8-65, Cl. 260—348.
Patrick, Frank D., to The Dow Chemical Co. Process for preparing a metallized explosive. 3,188,253, 6-8-65, Cl. 149—1.
Patti, Vincent J., to Thompson Ramo Wooldridge, Inc. Convergence coil assembly. 3,188,534, 6-8-65, Cl. 317—200.
Paul, Tadeusz. Handle soap sponge. 3,187,365, 6-8-65, Cl. 15—542.
Paullus, Clarence L.: *See*—
Mitchell, Ralph L., and Paullus. 3,187,748.
Payne, Otis C.: *See*—
Bryant, Clifford A., Elliott, Hackney, La Duke, and Payne. 3,187,690.
Pearsall, Howard W., to General Motors Corp. Method of coating aluminum. 3,187,717, 6-8-65, Cl. 118—64.
Peaslee, Robert L., and L. E. Oliphant, to Wall Colmonoy Corp. Brazing alloys. 3,188,203, 6-8-65, Cl. 75—170.
Peat, David W., L. A. Strommen, and E. K. Thompson, Jr.; said Peat assor. to Western Electric Co., Inc., and said Strommen and said Thompson assors. to Bell Telephone Laboratories, Inc. Coin totalizer positive index mechanism. 3,187,594, 6-8-65, Cl. 74—126.
Peavey, F. H., & Co.: *See*—
Moe, Lowell A. 3,188,638.
Pechiney-Ae de Produits Chimiques et Electrometallurgiques: *See*—
D'Ogny, Francois. 3,188,194.
Pedroli, Walter E., to Keyes Fibre Co. Special purpose press for marking relatively inclined surfaces. 3,187,668, 6-8-65, Cl. 101—44.
Pekrul, Ewald, to Westinghouse Bremsen-Gesellschaft, m.b.H. Load-adjusted relay valve device for brake control systems. 3,188,149, 6-8-65, Cl. 303—22.
Penn, Carl B.: *See*—
Trumbull, Donald E., and Penn. 3,188,056.
Penn Meter Co.: *See*—
McMullin, William A. 3,188,255.
Pennsalt Chemicals Corp.: *See*—
Goeborn, Roland H., Albert, Buchholz, and Whitton. 3,188,304.
Hauptschein, Murray, and Fainberg. 3,188,356.
Peras, Lucien, to Regie Nationale des Usines Renault. Collapsible supports for spare wheel of vehicles. 3,187,914, 6-8-65, Cl. 214—451.
Perdue, Jack, and A. C. Aitchison, to Electro-Hydraulics Ltd. Retractable undercarriages. 3,188,026, 6-8-65, Cl. 244—102.
Perfect Knit Togs, Inc.: *See*—
Sage, Philip G. 3,187,343.
Perkins, Charles H., and E. N. Caldwell, to Robertshaw Controls Co. Transparent instrument case closure. 3,187,582, 6-8-65, Cl. 73—431.
Perotto, Pier G., to Ing. C. Olivetti & C., S.p.A. Character recognition apparatus. 3,188,611, 6-8-65, Cl. 340—146.3.
Persell, Burton E.: *See*—
Costello, Robert B., and Persell. 3,187,705.
Pesch, Albert, to W. Reinert. Yarn knotter with yarn portion eliminating means. 3,188,126, 6-8-65, Cl. 280—3.
Pestka, John A., and B. R. Kuhl, to Warwick Mfg. Corp. Knob. 3,188,124, 6-8-65, Cl. 287—53.
Petering, Wilbur H., to Dextrex Chemical Industries, Inc. Stabilization of trichloroethylene. 3,188,355, 6-8-65, Cl. 260—652.5.
Petersen, Earl J., to United States of America, Army. Synthetic video generator. 3,188,628, 6-8-65, Cl. 343—5.
Peterson, Chester H. Adjustable pipe nipple. 3,188,120, 6-8-65, Cl. 285—175.
Peterson, Edward C., and W. H. Boblitz, to Birdsboro Corp. Mill layout. 3,187,541, 6-8-65, Cl. 72—230.
Peterson, Kermit M.: *See*—
Peterson, Roswald M. 3,188,078.
Peterson, Philip A., and N. M. Beitzel, to Rice Barton Corp. Coating machinery. 3,187,716, 6-8-65, Cl. 118—63.
Peterson, Roswald M.; 50% to K. M. Peterson. Micrometer workpiece guide means for die presses. 3,188,078, 6-8-65, Cl. 269—305.
Peterson, Stanley B.: *See*—
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Peterson, William A., and W. K. Crowder, to Parke, Davis & Co. Serial dilution machine. 3,188,181, 6-8-65, Cl. 23—259.
Pettibone, Raymond B., to Sperry Rand Corp. Power transmission. 3,187,678, 6-8-65, Cl. 103—136.
Peyton, John F., and R. B. Trelease, to Federal-Mogul-Bower Bearings, Inc. Duct insulation. 3,187,778, 6-8-65, Cl. 138—143.
Pferd, William, to Bell Telephone Laboratories, Inc. Printed circuit board connector. 3,188,598, 6-8-65, Cl. 339—17.
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Butler, Kenneth, Woodward, and Gordon. 3,188,348.
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Lasinski, Raymond H. 3,187,624.
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Cabbage, John T. 3,188,361.
Collins, Russell L. 3,188,557.
Loewen, Bruno F. 3,187,467.
Logan, Richard S. 3,188,183.
Young, John A. 3,188,258.
Phillips, Robert M., to General Electric Co. Undulating beam traveling wave tube focusing structure. 3,188,518, 6-8-65, Cl. 315—39.
Pietrowicz, Stanley P. Small game hanging device. 3,188,130, 6-8-65, Cl. 294—74.
Pilkington Bros. Ltd.: *See*—
Burton, Carl D. S., and Reid. 3,188,216.
Pinnell, Verdie E., to Shaffer Tool Works. Flow bean. 3,187,775, 6-8-65, Cl. 137—625.3.
Pino, Charles A. Bicycle brake switch. 3,188,418, 6-8-65, Cl. 200—61.12.
Pipe, John, to Steelcase, Inc. Identification card holding means for tray or drawer. 3,187,453, 6-8-65, Cl. 40—325.
Pirotte, Eugene, to UCB (Union Chimique-Chemische Bedrijven), S.A. Pickling inhibiting compositions. 3,188,292, 6-8-65, Cl. 252—149.

Pittsburgh Plate Glass Co.: *See*—
Deeklert, David H. 3,188,193.
Parobeck, Richard P., Knavish, and Murray. 3,188,192.
Pittsley, William D.: *See*—
Morrish, Leonard M., and Pittsley. 3,188,115.
Plamann, William H., to The Coleman Co., Inc. Self-draining faucet for a portable liquid container. 3,187,770, 6–8–65, Cl. 137—269.
Plastics, Inc.: *See*—
Dake, Burton S., Jr., and Weersing. 3,187,864.
Platt, Richard O.: *See*—
O'Donnell, John M., Platt, and Gabor. 3,187,401.
Plescia, Joseph J., to General Electric Co. Lamp basing oven. 3,188,064, 6–8–65, Cl. 263—4.
Plummer, Harland C., to Woodward Governor Co. Gas turbine fuel regulator. 3,187,505, 6–8–65, Cl. 60—39.28.
Pojawis, Paul L.: *See*—
Feeney, Joseph W., Pojawis, Allenbaugh, and McNair. 3,187,490.
Pokorny, Laszlo Z., to General Motors Corp. Radiant gas burner. 3,187,798, 6–8–65, Cl. 158—7.
Polaroid Corp.: *See*—
Green, Milton, and Solodar. 3,188,343.
Land, Edwin, and Rogers. 3,188,200.
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Dinelli, Dino, Taramasso, and Polesso. 3,187,486.
Pollard, Dale L., Rhomboid paper cutting attachment. 3,187,-614, 6–8–65, Cl. 83—207.
Pollie Dairy Products Corp.: *See*—
Cuomo, Gaetano. 3,187,482.
Pollock, Mark W.: *See*—
Hecker, Arthur C., and Pollock. 3,188,330.
Pope, Joseph A., to Mirrlees National Ltd. Pistons for internal combustion engines. 3,187,643, 6–8–65, Cl. 92—176.
Porcelle, Raphael. Unitary garment consrtuctions. 3,187,-944, 6–8–65, Cl. 2—93.
Porter, Frank, to Allied Chemical Corp. Processes and apparatus for the handling of polyethylene. 3,188,306, 6–8–65, Cl. 260—94.9.
Potter Instrument Co., Inc.: *See*—
Gabor, Andrew, and Barany. 3,188,498.
Poudres Metalliques et des Alliages Speciaux Ugine-Carbone, Societe des: *See*—
Ducot, Robert. 3,187,407.
Poupitch, Ougljesa J., to Illinois Tool Works, Inc. Nonlinear gearing and apparatus utilizing nonlinear gearing for indexing. 3,187,420, 6–8–65, Cl. 29—206.
Powder, Paul F., to General Motors Corp. Vertically adjustable shelf. 3,188,161, 6–8–65, Cl. 312—306.
Powell, John W., to Ford Motor Co. Pivoted pawl parking brake mechanism. 3,187,846, 6–8–65, Cl. 188—69.
Power Jets (Research and Development) Ltd.: *See*—
Herbert, Michael V., Lewis, and McGarry. 3,187,504.
Powers, Kenneth W., and W. P. Cain, to Esso Research and Engineering Co. Nonwoven fabric prepared from butyl rubber latex. 3,188,233, 6–8–65, Cl. 117—140.
Powers, Walter J. Combination gas burner grid and flame shield. 3,187,742, 6–8–65, Cl. 126—214.
Poynter, Vincent M.: *See*—
Lehmann, Clarence R., and Poynter. 3,187,444.
Prager, Manfred J.: *See*—
Weiss, Malcolm, Worsham, Horowitz, and Prager. 3,188,-241.
Prather, George A., to Textron Inc. Pump actuators counterbalance assemblies. 3,187,839, 6–8–65, Cl. 184—1.
Pratt, Henry, Co.: *See*—
Fawkes, Donald G. 3,187,861.
Preisinger, Max, and W. Scheerer. Electrostatic printer apparatus. 3,188,649, 6–8–65, Cl. 346—74.
Press, Irving D., and C. E. Frederickson, to Resistoflex Corp. Hose coupling having a continuous outer sheath. 3,188,-117, 6–8–65, Cl. 285—55.
Preston, Wallace M.: *See*—
Wallace, Edward M., and Preston. 3,187,430.
Price, Eugene W., to Allis-Chalmers Mfg. Co. Pellet of iron ore and flux, and method for making same. 3,188,195, 6–8–65, Cl. 75—5.
Primas, Alez L., to Thermal Research & Engineering Corp. Snow melting apparatus and method. 3,187,743, 6–8–65, Cl. 126—343.5.
Pritchard, Bernice A.: *See*—
Pritchard, Glenn F. and B. A. 3,187,712.
Pritchard, Glenn F. and B. A. Lifesaving device. 3,187,712, 6–8–65, Cl. 116—124.
Pritchett Engineering & Machine, Inc.: *See*—
Zolton, Michael W. 3,187,536.
Prisler, Paul D., to Swimquip, Inc. Filter structure and element therefor. 3,187,899, 6–8–65, Cl. 210—487.
Probst, Jack P.: *See*—
Probst, Karl K. and J. P. 3,188,142.
Probst, Karl K., deceased; J. P. Probst executor of said deceased. Seat construction. 3,188,142, 6–8–65, Cl. 297—456.
Procter & Gamble Co., The: *See*—
Cordes, Brandon M. 3,188,146.
Production Machinery Corp.: *See*—
Ranney, Neil J. 3,187,530.
Prohofsky, Le Roy A., to Sperry Rand Corp. Method of making printed circuit assemblies. 3,187,426, 6–8–65, Cl. 29—471.9.
Proprietors of Hay's Wharf Ltd., The: *See*—
Hollyoak, William H. 3,187,447.
Propulsion Research, Inc.: *See*—
Fox, Anthony. 3,187,708.
Prospect Mfg. Co., Inc.: *See*—
Harrison, Walter G., Gary, and Audet. 3,187,878.
Pryor, Jack. Universal lathe jig. 3,188,076, 6–8–65, Cl. 269—101.
Pullman Inc.: *See*—
Black, James J. 3,187,766.
Black, James J., and Roy. 3,187,425.
Lempert, Frank L., and Reid. 3,188,359.
Rice, Louis F., and Slyngstad. 3,188,184.
Skelly, Joseph F. 3,188,196.
Slyngstad, Charles E., and Lempert. 3,188,185.
Pure Oil Co., The: *See*—
Dodd, Charles G. 3,187,564.
Frank, David S., Callanan, and Walter. 3,187,765.
Kramer, Walter E. 3,188,307.
O'Brien, Leo J., and Bernard. 3,187,567.
Purex Corp., Ltd.: *See*—
Hughes, Harry J., and Evans. 3,188,291.
Pyles Industries, Inc.: *See*—
Trumbull, Donald E. 3,188,057.
Trumbull, Donald E., and Penn. 3,188,056.
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Mason, Albert C., and Baker. 3,187,574.
Quaker Maid Kitchens, Inc.: *See*—
Wenger, Arthur D., and Snyder. 3,188,159.
Quase, Harold G., to Underwater Storage, Inc. Amphibious underwater storage system. 3,187,793, 6–8–65, Cl. 150—5.
Quayle, George F., to Yale & Towne, Inc. Triple lift upright assembly. 3,187,842, 6–8–65, Cl. 187—9.
Quayle, George F., to Yale & Towne, Inc. Lift truck. 3,188,-107, 6–8–65, Cl. 280—43.23.
Quick, John R., Sr., to International Business Machines Corp. Integrating means. 3,188,455, 6–8–65, Cl. 235—183.
Quick, Robert G., Jr.: *See*—
Bander, Carl J., and Quick. 3,187,469.
Quick, Thomas E. Method of and apparatus for augmenting thrust and suppressing sound in aircraft, rockets, and the like. 3,187,501, 6–8–65, Cl. 60—35.6.
Quinlan, Joseph, J. J. Scanlon, and E. F. Van Artsdalen, to United States of America, Army. Primer for consumable round. 3,187,671, 6–8–65, Cl. 102—42.
Rabinow, Jacob, and A. W. Holt, to Control Data Corp. Machine readable characters and process of translating characters. 3,188,610, 6–8–65, Cl. 340—146.3.
Raceways, Inc.: *See*—
Hoskins, Thomas E., and O'Reilly. 3,187,922.
Radiation, Inc.: *See*—
McMillian, Lonnie S., Jr. 3,188,624.
McMillian, Lonnie S., Jr., and Searcy. 3,188,394.
Radio Corp. of America: *See*—
Dorsey, Denis P. 3,188,489.
Hudson, John L. 3,187,650.
Law, Harold B., Thomas, and Gross. 3,188,507.
Straight, Ronald A., and Alina. 3,188,251.
Thomas, John J. 3,188,508.
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Rahm, Howard E., to Midland-Ross Corp. Forming a gelatinous solution into ribbon-like bodies. 3,187,379, 6–8–65, Cl. 18—1.
Ramatein, Erich, to H. A. Schlatter, A.G. Resistance welding machine. 3,188,444, 6–8–65, Cl. 219—56.
Rand, Paul D., to Spatz Corp. Stacked dispensing containers. 3,188,157, 6–8–65, Cl. 312—202.
Randolph, Hollis L., to Robershaw Controls Co. Thermally responsive switch adapted to function as a high limit switch or as a fan switch with a fixed adjustable temperature differential. 3,188,433, 6–8–65, Cl. 200—138.
Ranney, Neil J., to Production Machinery Corp. Processing uncoiler. 3,187,530, 6–8–65, Cl. 72—29.
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Stewart, Robert E., Jr., and Rapier. 3,187,838.
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Kordesch, Karl, Raub, and Uline. 3,188,242.
Rauland Corp., The: *See*—
Fiore, Joseph P. 3,187,404.
Rausing, Hans A., to Restello, AB. Device for sorting coins. 3,187,759, 6–8–65, Cl. 133—3.
Ravese, Thomas, to Combustion Engineering, Inc. Steam generator. 3,187,727, 6–8–65, Cl. 122—406.
Ravve, Abraham, B. B. Radlove, and J. W. Brehaut, to Continental Can Co., Inc. China wood oil and amine resin compositions. 3,188,235, 6–8–65, Cl. 117—161.
Ray, William E., and G. B. Davis, to United States of America, Atomic Energy Commission. Method and apparatus for assembly of nuclear control rods and fuel tubes. 3,188,446, 6–8–65, Cl. 219—72.
Raybuck, William B., to Fred'k H. Levey Co., Inc. Folders and feeding apparatus. 3,188,084, 6–8–65, Cl. 271—82.
Rayburn, Vincent A., to Western Electric Co., Inc. Screw assembling and staking apparatus. 3,187,405, 6–8–65, Cl. 29—33.
Raymond Corp., The: *See*—
Sheheen, Shay J. 3,188,545.
Raymond, Francois H., and J. H. Lemoine, to Societe d'Electronique et d'Automatisme. Privacy device for telephone systems. 3,188,391, 6–8–65, Cl. 179—1.5.
Raytheon Co.: *See*—
Bock, Marvin J., and Rosen. 3,188,642.
Bowness, Colin. 3,188,582.
Boyd, Merle R. 3,188,583.
Miller, Solomon L. 3,188,475.
Rayve, Mary C.: *See*—
Rayve, Walter. 3,187,970.
Rayve, Walter, deceased, by Mary C. Rayve, administratrix, to United States of America, Army. Cycle timing mechanism. 3,187,970, 6–8–65, Cl. 226—43.

Readel, William C., and D. E. Flinchbaugh, to Consolidated Cigar Corp. Article conveying and distributing system. 3,187,874, 6–8–65, Cl. 198—30.
Rebeschini, Irvin C., to American Gage & Machine Co. Color television flat-field signal generator. 3,188,383, 6–8–65, Cl. 178—5.4.
Redfield, Charles L.: *See*—
Dlouhy, John A., and Redfield. 3,188,043.
Redfield, Charles L., and J. A. Dlouhy, to Emil J. Paider Co. Electro-hydraulic system for operating elevatable chairs. 3,188,126, 6–8–65, Cl. 297—71.
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Lauren, Bernard R., and Reed. 3,188,437.
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Regie Nationale des Usines Renault: *See*—
Peras, Lucien. 3,187,914.
Regimbal, James J.: *See*—
Harty, Harold, Regimbal, Toyoda, and Widrig. 3,188,-278.
Regulator A.G.: *See*—
Eurenius, Karl P. A. 3,188,553.
Reid, Albert C., to Sinclair Research, Inc. Attenuation network. 3,188,554, 6–8–65, Cl. 323—74.
Reid, Alexander M.: *See*—
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Reid, James S., and H. W. Brock, to The Standard Products Co. Carburetor. 3,188,062, 6–8–65, Cl. 261—41.
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Lempert, Frank L., and Reid. 3,188,359.
Reifschneider, Walter, to The Dow Chemical Co. Phenolic thiesthers. 3,188,352, 6–8–65, Cl. 260—609.
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Reiners, Walter: *See*—
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Reinhardt, Wilhelm L. P.: *See*—
Frinkel, Helmut J., and Reinhardt. 3,187,390.
Reitzel, Nicolas M.: *See*—
Peterson, Philip A., and Reitzel. 3,187,716.
Rendos, John J., to Air Reduction Co., Inc. Immersion freezing system. 3,187,514, 6–8–65, Cl. 62—63.
Renshaw, Robin, to Modern Hydraulics, Inc. Fork lift vehicle. 3,187,841, 6–8–65, Cl. 187—9.
Rentschler, Waldemar T., to Alfred Gauthier, G.m.b.H. Apparatus for regulating the exposure time in photographic cameras. 3,187,652, 6–8–65, Cl. 95—53.
Rents, John C., to United States of America, Army. Positive lockout control for oil and water baths. 3,188,618, 6–8–65, Cl. 340—227.
Rescanski, Joseph A., and J. G. Wallace, to Dictaphone Corp. Reproducing apparatus for use with sound records of the embossed type. 3,188,092, 6–8–65, Cl. 274—13.
Resistoflex Corp.: *See*—
Press, Irving D., and Frederickson. 3,188,117.
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Restello, AB: *See*—
Rausing, Hans A. 3,187,759.
Revits, Phil F., and R. K. Howdyshell, to Baker-Aldor-Jones Corp. Jalousie operator. 3,188,074, 6–8–65, Cl. 268—111.
Reyes, Terron. Joint arrangement with multi-positional locking means for a prosthetic surgical appliance. 3,187,347, 6–8–65, Cl. 3—26.
Reynolds Metals Co.: *See*—
Cave, Boyd D., and Reimann. 3,187,533.
Chesley, William R. 3,187,932.
Chesley, William R. 3,187,933.
De Ridder, Ernst J. 3,187,855.
English, John B. 3,187,426.
Farquhar, Meville T., and Calhoun. 3,187,981.
Glaser, Kurt F., and Crabbs. 3,187,853.
Resolin, Inc.: *See*—
Cude, Richard A., and Miller. 3,188,121.
Rhodes, Keith H., to Walker Mfg. Co. Compressor. 3,187,-993, 6–8–65, Cl. 230—152.
Ribback, Erich. Hydraulic press. 3,187,547, 6–8–65, Cl. 72—402.
Rice Barton Corp.: *See*—
Peterson, Philip A., and Reitzel. 3,187,716.
Rice, Henry T. M., to Ohlsson & Rice, Inc. Centrifugal clutch. 3,187,871, 6–8–65, Cl. 192—105.
Rice, Lee E.: *See*—
Cummings, Joseph P., and Rice. 3,187,891.
Rice, Louis F., and C. E. Slyngstad, to Pullman Inc. Fluid catalytic cracking unit. 3,188,184, 6–8–65, Cl. 23—288.
Rickelton, David: *See*—
Kreuttner, Joseph W., and Rickelton. 3,187,806.
Ricker, Charles W., A. L. Colomb, and E. R. Mam, to United States of America, Atomic Energy Commission. Method of determining the negative reactivity of neutronic multiplying systems. 3,188,470, 6–8–65, Cl. 250—83.1.
Ricketts, Charles J., to Sundstrand Corp. Hydraulic pump or motor device pistons. 3,187,644, 6–8–65, Cl. 92—248.
Ric-Wil, Inc.: *See*—
Wheeler, Charles J. 3,187,861.
Ridge Tool Co., The: *See*—
Janik, Anton J. 3,187,969.
Ridgway, L. L., Enterprises, Inc.: *See*—
Harris, Charles O. 3,188,004.
Rieppel, Perry J., G. B. Faulkner, J. W. Nelson, and H. C. Cook, to Esso Research and Engineering Co. Apparatus for forming girth welds between large tubular metal sections. 3,188,445, 6–8–65, Cl. 219—60.
Rignall, Michael W., to The Marconi Co. Ltd. Radar systems. 3,188,630, 6–8–65, Cl. 343—8.
Riley, Robert W.: *See*—
Schubert, Dale L., and Riley. 3,187,886.
Ritland, Hubert O.: *See*—
Trumpy, Jay W., Ritland, and Ovitt. 3,188,645.
Ritter, Henry: *See*—
Carman, Edward C., and Ritter. 3,187,852.
Rittmann, Albert D., to General Motors Corp. Silicon rectifier encapsulation. 3,188,536, 6–8–65, Cl. 317—234.
Robbins, Elmer A.: *See*—
Wright, George W., Robbins, and Hankel. 3,188,066.
Wright, George W., Robbins, Hankel, and Foss. 3,187,-945.
Roberts, Lincoln E., to AMP Inc. Electrical connector for printed circuit board. 3,188,599, 6–8–65, Cl. 339—17.
Roberts, Lyman R., and C. B. Coomes, to Shell Oil Co. Resin and process for its preparation. 3,188,301, 6–8–65, Cl. 260—57.
Roberts, William A., and J. P. Watkins; 25% to D. R. Woodall, and 25% to J. H. and A. Dvorovy. Yarn guiding and tensioning attachment for automatic loom shuttles having bobbins. 3,187,781, 6–8–65, Cl. 139—213.
Robertshaw Controls Co.: *See*—
Perkins, Charles H., and Caldwell. 3,187,562.
Randolph, Hollis L. 3,188,433.
Robertson, James H., to Gym Plastics Corp. Glider with flexing wing. 3,187,440, 6–8–65, Cl. 46—79.
Robertson, Jerry E., to Colgate-Palmolive Co. Diuretic antis. 3,188,329, 6–8–65, Cl. 260—397.7.
Rockford Machine Tool Co.: *See*—
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Rodenberg, Delbert H. Machine for applying washers to headed threaded fasteners. 3,187,856, 6–8–65, Cl. 10—166.
Rodgers, Thomas E.: *See*—
Lee, H. S., and Rodgers. 3,188,240.
Rodish, John, to The Mead Corp. Drum for containing liquids. 3,187,974, 6–8–65, Cl. 229—5.7.
Roehrs, Guenter W., to General Motors Corp. Method and apparatus for manufacturing spherical parts such as ball studs. 3,187,543, 6–8–65, Cl. 72—324.
Roelsgaard, Knud, to Danfoss ved ing. M. Clausen. Hermetically-enclosed refrigerating machines. 3,187,991, 6–8–65, Cl. 230—58.
Roelsgaard, Knud, to Danfoss ved ing. M. Clausen. Hermetically-enclosed refrigerating machine. 3,187,992, 6–8–65, Cl. 230—58.
Roelsgaard, Knud, to Danfoss ved ing. M. Clausen. Hermetically enclosed refrigerating machine. 3,187,996, 6–8–65, Cl. 230—232.
Roeske, Roger W.: *See*—
Morin, Robert B., Flynn, Jackson, and Roeske. 3,188,-311.
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Land, Edwin, and Rogers. 3,188,200.
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Rome, Martin, to The Machlett Laboratories, Inc. Cathode ray tube with signal plate connected to contact ring having envelope diameter. 3,188,506, 6–8–65, Cl. 313—65.
Romeo, Albert J., and C. A. Lee, to Sperry Rand Corp. Card stacker. 3,188,083, 6–8–65, Cl. 271—71.
Roming, Charles, Jr., to Esso Research and Engineering Co. Process for purifying alcohols. 3,188,354, 6–8–65, Cl. 260—643.
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Rose, Otha A., to The Mead Corp. Packing case. 3,187,975, 6–8–65, Cl. 229—14.
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Ross, John A. Boat fending, mooring and docking apparatus. 3,187,706, 6–8–65, Cl. 114—230.
Ross, Lon, to Maurice Duchin Creations, Inc. Foldable wall shelves. 3,187,692, 6–8–65, Cl. 108—134.
Rowell, Bertha E. Mirror array. 3,187,629, 6–8–65, Cl. 88—90.
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Rumpel, Charles. Incinerator spark eliminator. 3,187,697, 6–8–65, Cl. 110—119.
Ruppe, Peter P. Method of surface finishing articles. 3,187,-473, 6–8–65, Cl. 51—312.
Russell, Robert C., to Eaton Mfg. Co. Annular motor actuated drum brake mechanism. 3,187,550, 6–8–65, Cl. 188—152.
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Sage, Philip G., to Perfect Knit Togs, Inc. Child's garment. 3,187,942, 6–8–65, Cl. 2—80.

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Sandgänger, Karl, to K. and H. Gerlach. Endless track structure. 3,188,150, 6–8–65, Cl. 305—35.

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Sarett, Lewis H., to Merck & Co., Inc. 3α-acid esters of 3α-hydroxy-5β-pregnane-11,20-dione. 3,188,271, 6–8–65, Cl. 167—52.

Sarnoff, Stanley J. Hypodermic cartridge. 3,187,749, 6–8–65, Cl. 128—218.

Sarvas, Maynard C. Removable upholstery cover for furniture. 3,188,137, 6–8–65, Cl. 297—218.

Sasaki, Kanso, and J. Kawanami, to Shionogi & Co., Ltd. 12-acylaminosteroid of the pregnane series. 3,188,308, 6–8–65, Cl. 260—239.55.

Sauvage, John E.' to Swift & Co. Method of restraining animals. 3,187,378, 6–8–65, Cl. 17—45.

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Scheib, John, Jr., to Ward Leonard Electric Co. Relay armature latch with a relay disconnect. 3,188,428, 6–8–65, Cl. 200—106.

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Schmidt, Theodor, to Indugas, Gesellschaft fur Industrielle Gasverwendung m.b H. Apparatus for heat-treating metals. 3,188,068, 6–8–65, Cl. 266—5.

Schneider, Abraham, to Sun Oil Co. Preparation of methylpentalane. 3,188,358, 6–8–65, Cl. 260—666.

Schneider, Albert P. Aircraft steering and propulsion unit. 3,188,024, 6–8–65, Cl. 244—52.

Schneider, Herbert, to American Metal Products Co. Seat construction. 3,188,073, 6–8–65, Cl. 267—80.

Schneider, Herbert A., to Bell Telephone Laboratories, Inc. Modular carry generating circuits. 3,188,453, 6–8–65, Cl. 235—175.

Schneider, Willy. Apparatus for selectively displaying carpets. 3,187,900, 6–8–65, Cl. 211—47.

Scholl, Gunter. Process for manufacturing heat exchangers. 3,187,415, 6–8–65, Cl. 29—157.3.

Schotter, Richard D., to Westinghouse Electric Corp. Loudspeaker assembly. 3,188,374, 6–8–65, Cl. 181—31.

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Karmiggelt, Dick, Schroder, and Van Tol. 3,188,476.

Schroeder, Robert C., and D. D. Wood. Cargo handling apparatus. 3,187,683, 6–8–65, Cl. 104—135.

Schröter, Fritz, to Telefunken Aktiengesellschaft. Electrostatic writing. 3,188,650, 6–8–65, Cl. 346—74.

Schubert, Bernhard, to Hauni-Werke Korber & Co. K.G. Device for filling cigarette frames. 3,187,482, 6–8–65, Cl. 53—236.

Schubert, Dale L., and R. W. Riley; said Riley assor. to Industrial Development Co., Inc. Felting apparatus. 3,187,306, 6–8–65, Cl. 19—155.

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Dam, Reynier W., Bleyenberg, De Rooy, Gibson, and Schuensel. 3,188,200.

Schuette, Thomas L.: *See*—
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Schuler, Chester L., to General Instrument Corp. High voltage silicon rectifier. 3,188,549, 6–8–65, Cl. 321—27.

Schuller, Werner H. W. Apparatus for manufacturing glass fibre mats. 3,187,387, 6–8–65, Cl. 19—156.3.

Schultz, William J., to Ward Leonard Electric Co. Circuit breaker disconnector. 3,188,416, 6–8–65, Cl. 200—51.09.

Schultze, Martin, and K.-A. Hölscher, to Deutsche Solvay-Werke Gesellschaft mit beschrankter Haftung. Process of preventing blue colouration in sodium chloride treated with ferro- or ferricyanide compounds. 3,188,172, 6–8–65, Cl. 23—89.

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Schure, Alexander, and S. Littwin. Teaching and testing system for reinforced programmed learning. 3,187,443, 6–8–65, Cl. 35—9.

Schussler, Mortimer, to Union Carbide Corp. Cold workable columbium base alloy. 3,188,207, 6–8–65, Cl. 75—174.

Schweitzer Edmund O., Jr. Electric current converting means. 3,188,544, 6–8–65, Cl. 318—257.

Schwiering, Willi, W. Wolf, and H. Ostendorf, to Ford Motor Co. Motor vehicle front end structure. 3,188,132, 6–8–65, Cl. 296—28.

Scibbe, Harold R.: *See*—
Yingst, James E., and Scibbe. 3,187,734.

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Scognamillo, Frank. Rotary machine. 3,187,679, 6–8–65, Cl. 103—36.

Scope, Inc.: *See*—
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Scott, Junius D., to Link-Belt Co. Electromagnet voltage compensator control circuit. 3,188,528, 5–8–65, Cl. 317—149.

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Bergen, Jay H. 3,187,492.

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Scribner, Arthur C., to Ward Leonard Electric Co. Multiple plunger electrical switch for sequential contact operation and dynamic braking. 3,188,406, 6–8–65, Cl. 200—17.

Scully, Peter J.: *See*—
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Seehausen, Jobst W.: *See*—
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Seekonk Lace Co.: *See*—
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Seismograph Service Corp.: *See*—
McCaskell, Robert B., and Laws. 3,188,002.

Sekse, Torkjell: *See*—
Cogar, George R., Neddenriep, Sevilla, Sekse, and Masterson. 3,188,621.

Semo, Marcel S. Selective multiple switch. 3,188,403, 6–8–65, Cl. 200—5.

Seneca Falls Machine Co.: *See*—
Eisengrein, Robert H., and Blackwell. 3,188,541.
Eisengrein, Robert H., and Blackwell. 3,187,599.

Seppen, Joan M. G., to North American Philips Co., Inc. Time-dependent high-frequency intensity control in a radar receiver. 3,188,630, 6–8–65, Cl. 343—17.1.

Seppen, Joan M. G., to North American Philips Co., Inc. Tuning indicator for radar receiver-transmitters. 3,188,638, 6–8–65, Cl. 343—17.7.

Sepp, Oscar W., Jr., to M. Steinthal & Co., Inc. Parachute deployment bag. 3,188,027, 6–8–65, Cl. 244—147.

Servometer Corp.: *See*—
Kelly, Frederick G., and Holowachuk. 3,187,639.

Setzler, Paul H., to The Wheelabator Corp. Mold finishing process. 3,187,474, 6–8–65, Cl. 51—313.

Sevilla, Ernesto G.: *See*—
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Seybold, Frederick W. Mechanical movements. 3,187,600, 6–8–65, Cl. 74—393.

Seymour, Raymond E., to Sperry Rand Corp. Card punching device. 3,187,999, 6–8–65, Cl. 234—119.

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Shaft Machines Ltd.: *See*—
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Shann, William E., to Western Electric Co., Inc. Apparatus for automatically inserting electrical components. 3,187,972, 6–8–65, Cl. 227—90.

Sharp, Charles H., to Fiberglass Reinforced Products Co., Inc. Fascia strip. 3,187,464, 6–8–65, Cl. 50—66.

Shatto, Howard L., Jr., and J. R. Dosier, to Shell Oil Co. Ship control system. 3,187,704, 6–8–65, Cl. 114—144.

Shaw, Robert W., Jr., to Chemstron Corp. Unitary quick-opening closure device. 3,187,929, 6–8–65, Cl. 220—46.

Sheaffer, W. A., Pen Co.: *See*—
Zepell, Nathan A. 3,187,724.

Shearman, Wilbur E.: *See*—
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Sheffet, David, to Western Geophysical Co. of America. Automatic volume control system for seismograph amplifier system. 3,188,575, 6–8–65, Cl. 330—23.

Sheheen, Shay J., to The Raymond Corp. Motor control systems. 3,188,545, 6–8–65, Cl. 318—261.

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Jense, Willem F. 3,188,226.
Kolb, Robert H. 3,188,565.
Roberts, Lyman R., and Coenen. 3,188,301.
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Smith, Noyes D., Jr. 3,187,891.
Snyder, John L., and van der Ble. 3,188,297.
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Williamson, George R., and Wright. 3,188,298.

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Sherrard, George E., to Calgon Corp. Detergent dispensing apparatus. 3,187,767, 6–8–65, Cl. 137—268.

Shiomi, Bunsaku, to Tokuji Kikuyama. Automatic control system for headlights of motor vehicles comprising a supplementary light with filter. 3,188,519, 6–8–65, Cl. 315—83.

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Shoemaker, John H., to Western Electric Co., Inc. Thermal radiation method of measuring coating thickness. 3,188,256, 6–8–65, Cl. 156—244.

Shultz, Richard H., and R. T. Schenck, to Continental Can Co., Inc. Roll forming of sheet material. 3,187,539, 6–8–65, Cl. 72—180.

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Sieswerda, Bauke S., and P. M. A. Joris, to Stamicarbon N.V. Apparatus for determining the swelling of solid fuels. 3,187,556, 6–8–65, Cl. 73—16.

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Henquet, André J., and Silerme. 3,188,425.

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Simjian, Luther G., to Universal Match Corp. Coin dispensing means. 3,187,760, 6–8–65, Cl. 133—4.

Simjian, Luther G., to Universal Match Corp. Envelope. 3,187,985, 6–8–65, Cl. 229—68.

Simjian, Luther G., to Universal Match Corp. Envelope. 3,187,986, 6–8–65, Cl. 229—68.

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Simmons, Walter R., to Textron Industries, Inc. Pulling head for installing fasteners with stems and locking the stem therein. 3,187,546, 6–8–65, Cl. 72—391.

Simon, Jean-Claude, and V. Biggi, to C.S.F.-Compagnie Generale de Telegraphie Sans Fil. Radio link relays. 3,188,640, 6–8–65, Cl. 343—100.

Simon, Peter. Weatherproof electrical installation with pivotally attached hood means. 3,188,379, 6–8–65, Cl. 174—38.

Simon, William F., to Sperry Rand Corp. Transistor compensating circuit for magnetic recording head. 3,188,616, 6–8–65, Cl. 340—174.1.

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Skinner, Ralph L., Sr., ½ to R. T. Skinner. Flexible seal with spring biased sealing lip. 3,188,098, 6–8–65, Cl. 277—153.

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Smallman, Carl R., and A. G. Emslie, to Arthur D. Little, Inc. Multi-stable superconductive electric circuit. 3,188,488, 6–8–65, Cl. 307—96.5.

Smidt, Jürgen, and A. Sabel, to Consortium fur Elektrochemische Industrie G.m.b.H. Production of vinyl esters. 3,188,319, 6–8–65, Cl. 260—326.

Smiley, Harry J., and M. W. Worth, to James Lees and Sons Co. Variable height pile cutting apparatus in axminster looms. 3,187,779, 6–8–65, Cl. 139—7.

Smiley, Harry J., and M. W. Worth, to James Lees and Sons Co. Axminster fabric. 3,187,783, 6–8–65, Cl. 139—401.

Smith, Burks A., to Union Tank Car Co. Method for controlling the microbe and solid materials in sewage treatment equipment. 3,188,288, 6–8–65, Cl. 210—11.

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Smith, Cloyd D. Jet engine noise suppressor. 3,187,835, 6–8–65, Cl. 181—51.

Smith, John C., B. H. Miles, and L. Levine, to The Dow Chemical Co. Bis(hydrogen phosphonate)diesters of glycols and process for making same. 3,188,341, 6–8–65, Cl. 260—461.

Smith, John William, to Battle Creek Packaging Machines, Inc. Machines for sealing wrappers of polyolefin sheet material around packages. 3,187,484, 6–8–65, Cl. 53—379.

Smith, Noyes D., Jr., to Shell Oil Co. Seismic surveying system for water-covered areas. 3,187,831, 6–8–65, Cl. 181—.5.

Smith, Owen A. Coal conveyor. 3,187,882, 6–8–65, Cl. 198—214.

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Smith, Sterling M. Photo-copying devices. 3,187,657, 6–8–65, Cl. 95—77.

Smith, Telford L. Coupling device for flareless tubing. 3,188,122, 6–8–65, Cl. 285—249.

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Snell, Arthur H., Jr., Keystone Valve Corp. Flow control pipeline fitting. 3,187,776, 6–8–65, Cl. 138—94.3.

Snider, Paul H. Connector for a terminal block or the like. 3,188,603, 6–8–65, Cl. 339—198.

Snow, William T., Jr., to W. R. Grace & Co. Frozen food package and method for producing same. 3,188,215, 6–8–65, Cl. 99—192.

Snowdon, Arthur E., to The Superior Electric Co. Electrical commutating surface. 3,188,589, 6–8–65, Cl. 336—149.

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Snyder, John L., and G. J. van der Ble, to Shell Oil Co. Process of recovery of elastomers from solutions with an inorganic sulfide. 3,188,297, 6–8–65, Cl. 260—33.6.

Snyder, Robert L.: *See*—
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Somple, George L.: *See*—
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Sontheimer, Heinrich, and G. Derenk. Process for removal of zinc from blast furnace gas wash water. 3,188,201, 6–8–65, Cl. 75—108.

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Yale, Harry L., Sowinski, and Bernstein. 3,188,321.
Yale, Harry L., Sowinski, and Bernstein. 3,188,322.

Sowinski, Francis A., and H. L. Yale, to Olin Mathieson Chemical Corp. Dihydrodibenzothiazepines. 3,188,320, 6–8–65, Cl. 260—327.

Sowinski, Francis A., and H. L. Yale, to Olin Mathieson Chemical Corp. Dihydrodibenzothiazepines. 3,188,323, 6–8–65, Cl. 260—327.

Spalding, Robert V. Self-loading means for excavators, scrapers, scoops and the like. 3,187,915, 6–8–65, Cl. 214—518.

Spalding, Willard P., to Westinghouse Air Brake Co. Apparatus for checking integrity of a pneumatic seal. 3,187,561, 6–8–65, Cl. 73—46.

Spalla, Celestino: *See*—
Amidani, Alba Maria, Bianchi, Medolli, Spalla, di Marco and Gastaldi. 3,188,235.

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Speaker, Paul G., to The Late-Rote Machine Co., Inc. Heat-exchange roll and method of making. 3,187,809, 6-8-65, Cl. 165—89.

Specht, Charles A., to Minnesota & Chemicals Philipp Corp. Treatment of exhaust gases. 3,188,167, 6-8-65, Cl. 23—2.

Specialties Development Corp.: *See*—
Jones, Moses H., and Smith. 3,188,617.
Rasmussen, Ronald R., and Wendroff. 3,188,417.

Spellman, Kerry K.: *See*—
Glenner, Edward J., and Spellman. 3,188,423.

Spencer, Glenn E., to The Bendix Corp. Centrifugally released case-hardened clutch. 3,187,859, 6-8-65, Cl. 192—104.

Spence, Hamilton M., to General Electric Co. Cathodes and method of manufacture. 3,188,286, 6-8-65, Cl. 117—220.

Sperry Rand Corp.: *See*—
Hall, William W., III. 3,186,572.
Bean, Theodore H., and Eckert. 3,186,481.
Cegar, George E., Neddeariep, Seville, Sekse, and Masterson. 3,188,041.
Podell, George A. 3,186,612.
Rembaum, Sylvester D., and Byen-Tov. 3,188,619.
Kelliher, Daniel W. 3,188,060.
Miller, Norman A., and Di Camillo. 3,187,971.
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Palmer, Winslow. 3,188,626.
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Spokane, Peter P., to W. R. Grace & Co. Sealing apparatus. 3,187,481, 6-8-65, Cl. 53—135.

Spora, Stanley R., to American Bosch Arma Corp. Analog to digital conversion transducer. 3,188,625, 6-8-65, Cl. 340—347.

Sprague, William W.: *See*—
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Sprung, Lee R. Paint receptacle for use with artist's palettes. 3,188,096, 6-8-65, Cl. 248—206.

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Srybnik, Louis D.: *See*—
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Stahlus Industrie- und Handelsgesellschaft m.b.H.: *See*—
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Stanley, A. E., Mfg. Co.: *See*—
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Stamicarbon N.V.: *See*—
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Stark, Ralph, Inc.: *See*—
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Starp, Franz W. E., to Alfred Gauthier, G.m.b.H. Photograph intra-lens shutter. 3,187,654, 6-8-65, Cl. 95—63.

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Stayer, Edward F. 3,187,812.

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Steber, Wilhelm. Rotary piston pump. 3,187,677, 6-8-65, Cl. 103—120.

Steelcase, Inc.: *See*—
Pipe, John. 3,187,453.

Steele, Gerald H., and R. J. Hickin, to Packaging Corp. of America. Carton sealing apparatus. 3,187,483, 6-8-65, Cl. 53—374.

Steiger, Norbert, to Hoffmann-La Roche Inc. Thiazole formamidines. 3,188,316, 6-8-65, Cl. 260—306.8.

Steiner, Erhard, to Siemens & Halske Aktiengesellschaft. Feedback transistor modulator for frequency division and frequency multiplication. 3,188,483, 6-8-65, Cl. 307—88.5.

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Stephan, Hallis N., to The New Britain Machine Co. Command horizontal boring, drilling and milling machine. 3,187,809, 6-8-65, Cl. 77—5.

Stephan, Hallis N., to The New Britain Machine Co. Rotary worktable. 3,187,836, 6-8-65, Cl. 90—58.

Stephenson, Marshall R. Card holder. 3,187,795, 6-8-65, Cl. 150—39.

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Gorman, William G. 3,187,960.

Steven, Ray L. Bathtub construction. 3,187,350, 6-8-65, Cl. 4—177.

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McGrath, Marie J., and Stevenson. 3,187,877.

Steward, Jesse M.: *See*—
Deeble, Plemmer R., and Steward. 3,187,434.

Steward, Meredith M.: *See*—
Kohl, William L., and Stewart. 3,186,174.

Stewart, Robert E., Jr., and O. M. Baxter. Scaffolding structure. 3,187,830, 6-8-65, Cl. 182—144.

Stewart, Robert P., R. T. Larsen, and J. D. McClendon, to North American Aviation, Inc. Composition, casting and process for producing a high-temperature resistant concrete. 3,188,269, 6-8-65, Cl. 264—30.

Stewart & Stevenson Services, Inc.: *See*—
Friddell, James F. 3,187,726.

Stiff, Bernard G. E.; 25% to W. L. Ericson. Strain wave drive. 3,187,005, 6-8-65, Cl. 74—640.

Stillman, Stephen L., Jr., to United States of America, Navy. Quick-disconnect cable clamp. 3,188,281, 6-8-65, Cl. 174—92.

Stobb, Anton E. Apparatus and method for collecting flexible sheets. 3,188,062, 6-8-65, Cl. 271—68.

Stock, Arthur J. Gravimetric feeder and method of filling voids therein or in other pressure vessels. 3,187,944, 6-8-65, Cl. 222—25.

Stockman, Richard, to Combustion Engineering, Inc. Distortion control for high temperature heat exchangers. 3,187,-804, 6-8-65, Cl. 165—7.

Stoffel, Hans F., to Stoffel Seals Corp. Unitary tag. 3,187,-450, 6-8-65, Cl. 40—21.

Stoffel Seals Corp.: *See*—
Stoffel, Hans F. 3,187,450.

Stollar, Arthur P., to Bulova Watch Co., Inc. Resonant bolometer. 3,187,575, 6-8-65, Cl. 73—355.

Stoltzfus, Daniel B., to Sperry Rand Corp. Electric barrier type stock feeder access control. 3,187,720, 6-8-65, Cl. 119—63.

Stoop, Alfons, to International Standard Electric Corp. Automatic gain control circuit for an amplifier. 3,188,577, 6-8-65, Cl. 330—136.

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Stover, Edward E., to General Electric Co. Rocket nozzle. 3,187,502, 6-8-65, Cl. 60—35.6.

Strader, Don R., and R. G. Luft, to The Frank G. Hough Co. Implement position control mechanism. 3,187,913, 6-8-65, Cl. 214—140.

Straight, Ronald A., and W. P. Alina, to Radio Corp. of America. Method for making semiconductor junction devices. 3,188,251, 6-8-65, Cl. 148—179.

Strandine, Eldon J.: *See*—
Keens, Carl H., Strandine, and Lentz. 3,188,212.

Straub, Melvin J.: *See*—
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Strong, William A. Concrete mixer. 3,188,089, 6-8-65, Cl. 259—179.

Strong, William A. Concrete placement machine. 3,188,145, 6-8-65, Cl. 302—63.

Struble, Glenn E., to Diamond International Corp. Convertible container. 3,187,976, 6-8-65, Cl. 229—16.

Structural Products, Inc.: *See*—
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Stuetzer, Otmar M., to Litton Systems, Inc. Pressure responsive electric control system employing an ion drag pump. 3,188,551, 6-8-65, Cl. 322—30.

Sun Electric Corp.: *See*—
Cox, Marvin E. 3,187,559.

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Sundstrand Corp.: *See*—
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Moon, Harry C., Jr. 3,187,509.
Ricketts, Charles J. 3,187,644.

Superior Electric Co., The: *See*—
Snowden, Arthur E. 3,188,580.

Sus, Oskar: *See*—
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Sutherland, Eugene B., to Taylor Instrument Co. (Ohio) Inc. Valve having radially contained packing with axially acting follower. 3,188,048, 6-8-65, Cl. 251—62.

Sutliff, Wayne N. Deep well pump for viscous oil. 3,187,680, 6-8-65, Cl. 103—155.

Svenska Aeroplan Aktiebolaget: *See*—
Ornberg, Ejall T. 3,186,022.

Swart, Richard H., to L. D. Srybnik. Anti-bridging device for ice cube vending machines. 3,187,968, 6-8-65, Cl. 222—227.

Swearingen, Judson S., to Electronic Specialty Co. Method and apparatus for control of temperature in absorption refrigeration systems. 3,187,515, 6-8-65, Cl. 62—85.

Sweet, Corliss M. Lathe with automatic adjusting tandem tools. 3,187,611, 6-8-65, Cl. 82—35.

Swift & Co.: *See*—
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Switzer, John E., to General Electric Co. Air induction system. 3,187,506, 6-8-65, Cl. 60—39.31.

Sylvania Electric Products Inc.: *See*—
Crosby, Alton L., De Loula, Gartner, and Losey. 3,187,-795.

Syntex Corp.: *See*—
Bowers, Albert, and Crabbe. 3,188,827.
Bowers, Albert, Edwards, and Orr. 3,188,826.

TRW Semiconductors, Inc.: *See*—
Hamann, Robert G., and Trigger. 3,187,978.
Trigger, Henry, and Kosa. 3,188,262.

Tague, Robert J.: *See*—
Jennings, Edward J., and Tague. 3,187,670.

Takeuchi, Shigeo. Devices for washing the bodies of automotive vehicles. 3,187,350, 6-8-65, Cl. 15—21.

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Hojo, Teiso, and Takeya. 3,187,667.

Talbott, Boyce. Portable air saw. 3,187,628, 6-8-65, Cl. 91—290.

Taliste, Arvo: *See*—
Else, Robert K., and Taliste. 3,188,424.

Tama, Mario, and W. E. Shearman, to Ajax Magnethermic Corp. Apparatus for pouring molten metal into molds. 3,187,994, 6-8-65, Cl. 22—79.

Tanaka, David S. Contra-jet muzzle brake for firearms. 3,187,623, 6-8-65, Cl. 89—14.

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Magat, Eugene E., and Tanner. 3,188,228.

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Jacob, Walter H. W. 3,188,206.
Mogestad, Folke T., and Thyak. 3,188,004.
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Awender, Hans, and Stark. 3,188,584.
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Bretting, Jork. and Griem. 3,188,538.

Telephone Mfg. Co. Ltd.: *See*—
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Flygstad, Dean W. 3,187,833.

Tenenar, Francis J., Jr., to Baxter Laboratories, Inc. Multiple bag blood storage unit. 3,187,750, 6-8-65, Cl. 128—272.

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Thomas, John J., to Radio Corp. of America. Beam penetration color cathode ray tube. 3,188,508, 6-8-65, Cl. 313—70.

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Thompson, Eugene D. Feed mill having foreign material trap chamber. 3,187,792, 6-8-65, Cl. 146—70.1.

Thompson, H. I., Fiber Glass Co.: *See*—
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Thompson, Moody C., Jr., to United States of America, Commerce. Distance measuring system with automatic index compensation. 3,188,634, 6-8-65, Cl. 343—12.

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Thompson, Richard K., Jr.: *See*—
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Thomson, Maurice S.: *See*—
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Thorsen, Thorbjorn L., and R. W. Andreen, to Tobey Mfg. Corp. Adjustable lamp. 3,188,460, 6-8-65, Cl. 240—52.

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Tiemann, Jerome J., to General Electric Co. Method of mounting and aligning transducers on delay lines. 3,187,-412, 6-8-65, Cl. 29—155.5.

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Tobias, Philip R. Viscosimeter. 3,187,565, 6-8-65, Cl. 73—56.

Toedtman, John A., and R. H. Hernang, to Jeanne Blackburn Corp. Parallel-groove electrical connector. 3,188,092, 6-8-65, Cl. 339—108.

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Wright, George W., Robbins, and Hanbel. 3,188,005.

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Town, Frank, to W. E. & F. Dobson Ltd. Mine roof supports. 3,188,041, 6-8-65, Cl. 248—356.

Townsend, Charles L., to Teleprompter Corp. Signal distribution system including an interrogation signal channel connected serially between subscriber stations. 3,188,384, 6-8-65, Cl. 178—6.

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Traff, Thomas N. Flush floor scale. 3,187,836, 6-8-65, Cl. 177—142.

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Trumbull, Donald E., to Pyles Industries, Inc. Apparatus for mixing and dispensing multi-component material. 3,188,-057, 6-8-65, Cl. 259—37.

Trumbull, Donald E., and C. E. Penn, to Pyles Industries, Inc. Cartridge type plural component mixing and dispensing device. 3,188,056, 6-8-65, Cl. 259—37.

Trumpy, Jay W., H. O. Ritland, and M. D. Ovitt, to Douglas Aircraft Co. Stethoscopic spectrograph. 3,188,645, 6-8-65, Cl. 346—33.

Tserpes, Konstantinos M. Box forming machine. 3,187,648, 6-8-65, Cl. 93—47.

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Tuetey, Paul, and A. Simon-Vermot. Method for manufacturing spiral springs, particularly for watchmaking. 3,187,-418, 6-8-65, Cl. 29—173.

Turk, James H., to V. K. Smith. Self-aligning sleeve bearing assembly for dynamoelectric machines and the like. 3,188,-153, 6-8-65, Cl. 308—36.4.

Turner, Prescott K., to General Electric Co. Wiring device with simplified grounding and mounting means. 3,188,-596, 6-8-65, Cl. 339—14.

Turner, Prescott K., to General Electric Co. Terminal device. 3,188,597, 6-8-65, Cl. 339—14.

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Ulrich, Norval P. Tuning mechanism for a string musical instrument. 3,187,617, 6-8-65, Cl. 84—312.

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Van Horne, William E., G. W. Barnett, and M. F. Goddard, to Keinath Instrumeat Co. Holding and positioning apparatus. 3,188,652, 6–8–65, Cl. 346—134.
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Zarleng, Steve A., to The Clark Controller Co. Electric controls with transistors. 3,188,501, 6–8–65, Cl. 307—112.

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Zenith Radio Corp.: *See*—
Vergin, Leo F. 3,188,014.

Zepell, Nathan A., to W. A. Schaeffer Pen Co. Writing instrument. 3,187,724, 6–8–65, Cl. 120—48.

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CLASSIFICATION OF PATENTS

ISSUED JUNE 8, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,187,342	29– 96	3,187,407	57– 9	3,187,494	73–362	3,187,576	95– 53	3,187,653	117–161	3,188,235
80	3,187,343		3,187,408	34	3,187,495	368.3	3,187,577	63	3,187,654	220	3,188,236
93	3,187,344	148.4	3,187,409	76	3,187,496	379	3,187,578		3,187,655	118– 49	3,187,715
209.1	3,187,345	155.5	3,187,410	60– 19	3,187,497	398	3,187,579	75	3,187,656	63	3,187,716
234	3,187,346		3,187,411		3,187,498	419	3,187,580	77	3,187,657	64	3,187,717
3– 26	3,187,347		3,187,412	26.1	3,187,499	422	3,187,581	86	3,187,658	126	3,187,718
4– 57	3,187,348	155.53:	3,187,413		3,187,500	431	3,187,582	89	3,187,659	119– 14.08:	3,187,719
145	3,187,349	155.62:	3,187,414	35.6	3,187,501	432	3,187,583	96– 1	3,188,208	63	3,187,720
177	3,187,350	157.3	3,187,415		3,187,502	434	3,187,584	3	3,188,209	103	3,187,721
5– 31	3,187,351	173	3,187,416		3,187,503	490	3,187,585	33	3,188,210	157	3,187,722
99	3,187,352	183.5	3,188,186		3,187,504	74– 5	3,187,586	36	3,188,211	120– 23	3,187,723
6– 10	3,187,353	202	3,187,417	39.28:	3,187,505	5.12:	3,187,588	98– 38	3,187,662	48	3,187,724
7– 14.1	3,187,354	203	3,187,418	39.31:	3,187,506	5.7	3,187,587	40	3,187,660	122– 4	3,187,725
8– 39	3,188,163	205	3,187,419	39.36:	3,187,507	10.7	3,187,589		3,187,661	149	3,187,726
55	3,188,164	208	3,187,420	52	3,187,508	18	3,187,590	99–107	3,188,212	406	3,187,727
115.5	3,188,165	417	3,187,421	53	3,187,509	86	3,187,591		3,188,213	123– 1	3,187,728
9– 8	3,187,355	419	3,187,422	54	3,187,510	89	3,187,592	109	3,188,214	32	3,187,729
10–155	3,187,356	427	3,187,423		3,187,511	106	3,187,593	192	3,188,215	71	3,187,730
12–114.8	3,187,357	432	3,187,424		3,187,512	126	3,187,594	305	3,187,663	81	3,187,731
141	3,187,358	469	3,187,425	61– 53.5	3,187,513	156	3,187,595	329	3,187,664	119	3,187,732
13– 1	3,188,573	471.9	3,187,426	62– 63	3,187,514	229	3,187,596	101– 32	3,187,665	139	3,187,733
31	3,188,576	509	3,187,427	85	3,187,515	244	3,187,597	44	3,187,666	179	3,187,734
15– 21	3,187,359	527	3,187,428	138	3,187,516	248	3,187,598	93	3,187,667	187.5	3,187,735
22	3,187,360	564	3,187,429	344	3,187,517	288	3,187,599		3,187,668	125– 11	3,187,736
88	3,187,361	30– 252	3,187,430	372	3,187,518	393	3,187,600	114	3,187,669		3,187,737
210	3,187,362	339	3,187,431	467	3,187,519	424.8	3,187,601	425	3,187,670	13	3,187,738
229	3,187,363	31– 21	3,187,432	64– 21	3,187,520	483	3,187,602	102– 43	3,187,671	23	3,187,739
246	3,187,366	32– 1	3,187,433	23	3,187,521	501	3,187,603	103– 1	3,187,672	126– 91	3,187,740
534	3,187,364	33– 1	3,187,434	65– 11	3,188,188	574	3,187,604	38	3,187,673	92	3,187,741
542	3,187,365	50	3,187,435	104	3,188,190	640	3,187,605	57	3,187,674	214	3,187,742
543	3,187,367	52	3,187,436	113	3,188,189	75– 5	3,188,195	87	3,187,675	343.5	3,187,743
548	3,187,368	88	3,187,437		3,188,191	49	3,188,196	120	3,187,676	127– 32	3,188,237
	3,187,369	170	3,187,438	163	3,188,192	56	3,188,197		3,187,677	128– 1	3,187,744
16– 87.6	3,187,370	181	3,187,439	289	3,188,193	57	3,188,198	136	3,187,678	2.06:	3,187,745
105	3,187,371	203.13:	3,187,440	66–186	3,187,522	77	3,188,199		3,187,679	136	3,187,746
137	3,187,372	34– 57	3,187,441	67– 87	3,187,523	84	3,188,200	155	3,187,680	156	3,187,747
144	3,187,373	35– 9	3,187,442	68– 34	3,187,524	108	3,188,201	161	3,187,681	173	3,187,748
190	3,187,374		3,187,443	70– 38	3,187,525	122.5	3,188,202	278	3,187,682	218	3,187,749
17– 3	3,187,375	10	3,187,444	100	3,187,526	170	3,188,203	104–135	3,187,683	272	3,187,750
	3,187,376	48	3,187,445	252	3,187,527		3,188,204	105–248	3,187,684	330	3,187,751
21	3,187,377	36– 70	3,187,446	299	3,187,528	174	3,188,205	253	3,187,685	335.5	3,187,752
45	3,187,378	37– 78	3,187,447	71– 2.5	3,188,194		3,188,206	368	3,187,686	463	3,187,753
18– 1	3,187,379	144	3,187,448	72– 12	Re.25,795		3,188,207	106– 47	3,188,216	464	3,187,754
	3,187,380	40– 10	3,187,449	24	3,187,529	76–107	3,187,606	52	3,188,217	535	3,187,755
5	3,187,381	21	3,187,450	29	3,187,530		3,187,607		3,188,218	131– 35	3,187,756
12	3,187,382	32	3,187,451	41	3,187,531	108	3,187,608	59	3,188,219	132– 79	3,187,757
	3,187,390	202	3,187,452	56	3,187,532	77– 3	3,187,609		3,188,220	84	3,187,758
14	3,187,383	325	3,187,453	61	3,187,533	81–185	3,187,610	89	3,188,221	133– 3	3,187,759
45	3,187,384	42– 67	3,187,454	83	3,187,534	82– 25	3,187,611		3,188,222	4	3,187,760
19– 8	3,187,385	78	3,187,455	84	3,187,535	83– 5	3,187,612	139	3,188,223	134– 24	3,188,238
155	3,187,386	43– 17	3,187,456	99	3,187,536	207	3,187,613	195	3,188,224	26	3,188,239
156.3	3,187,387	42.06:	3,187,457	108	3,187,537		3,187,614	291	3,188,225	135– 5	3,187,761
20– 69	3,187,388	113	3,187,458	114	3,187,538	413	3,187,615	108– 9	3,187,687	136– 4	3,188,240
92	3,187,389	44– 69	3,188,187	180	3,187,539	462	3,187,616	55	3,187,688	86	3,188,241
21– 2.5	3,188,166	46– 14	3,187,459	197	3,187,540	84–312	3,187,617	58	3,187,689		3,188,242
22– 10	3,187,391	79	3,187,460	230	3,187,541	341	3,187,618		3,187,690	148	3,188,243
36	3,187,392	205	3,187,461	321	3,187,542	437	3,187,619		3,187,691	137– 81.5	3,187,762
41	3,187,393	230	3,187,462	324	3,187,543	85– 62	3,187,621	134	3,187,692		3,187,763
79	3,187,394	47– 34	3,187,463	364	3,187,544	83	3,187,620	153	3,187,693	114	3,187,764
23– 2	3,188,167	50– 66	3,187,464	388	3,187,545	86– 12	3,187,622	110– 99	3,187,694	253	3,187,765
14	3,188,168	127	3,187,465	391	3,187,546	88– 14	3,187,623		3,187,695	267	3,187,766
14.5	3,188,169	522	3,187,466	402	3,187,547	24	3,187,624		3,187,696	268	3,187,767
63	3,188,170	51– 34	3,187,467	435	3,187,548		3,187,625	119	3,187,697	514	3,187,768
75	3,188,171	49	3,187,468	478	3,187,549	28	3,187,626	111– 2	3,187,698	564.5	3,187,769
89	3,188,172	58	3,187,469	73– 1	3,187,550	39	3,187,627	112– 79	3,187,699	589	3,187,770
142	3,188,173	89	3,187,470	3	3,187,551	86	3,187,628	203	3,187,700	599.1	3,187,771
143	3,188,174	141	3,187,471	9	3,187,552	90	3,187,629	219	3,187,701	599.2	3,187,772
166	3,188,175	165	Re.25,794	11	3,187,553	89– 1	3,187,630		3,187,702	614.04:	3,187,773
174	3,188,176	174	3,187,472		3,187,554	1.7	3,187,631	402	3,187,703	614.11:	3,187,774
204	3,188,177	313	3,187,473	16	3,187,555	14	3,187,632	114–144	3,187,704	625.3	3,187,775
205	3,188,178		3,187,474	17	3,187,556		3,187,633	206	3,187,705	138– 94.3	3,187,776
212	3,188,179	356	3,187,475		3,187,557	90– 11	3,187,634	230	3,187,706	96	3,187,777
230	3,188,180	53– 28	3,187,476	27	3,187,558	30	3,187,635		3,187,707	143	3,187,778
259	3,188,181	29	3,187,480		3,187,559	58	3,187,636	115– 12	3,187,708	139– 7	3,187,779
273	3,188,182	30	3,187,477	37.5	3,187,560	91–167	3,187,637	41	3,187,709	90	3,187,780
285	3,188,183		3,187,478	46	3,187,561	290	3,187,638	116– 28	3,187,710	213	3,187,781
288	3,188,184	32	3,187,479	53	3,187,562	92– 47	3,187,639	70	3,187,711	395	3,187,782
	3,188,185	135	3,187,481	56	3,187,563	48	3,187,640	124	3,187,712	401	3,187,783
24–123	3,187,396	236	3,187,482	59	3,187,564	94	3,187,641	134.3	3,187,713	140– 71	3,187,784
188	3,187,397	374	3,187,483	67.3	3,187,565	128	3,187,642	133	3,187,714	71.5	3,187,785
191	3,187,398	379	3,187,484	100	3,187,566	176	3,187,643	117– 5.3	3,188,226	141– 94	3,187,786
206	3,187,399	55– 48	3,187,485	155	3,187,567	248	3,187,644	18	3,188,227	348	3,187,787
235	3,187,395	67	3,187,486	160	3,187,568	258	3,187,645	46	Re.25,792	143– 5	3,187,788
257	3,187,400	341	3,187,487	196	3,187,569	93– 44.1	3,187,646	62	3,188,228	116	3,187,789
25–103	3,187,401	493	3,187,488	201	3,187,570		3,187,647		3,188,229	145– 50	3,187,790
29– 1.3	3,187,402	499	3,187,489	230	3,187,571	47	3,187,648	107.1	3,188,230	146– 43	3,187,791
25.15:	3,187,404	56– 16	3,187,490	292	3,187,572	93	3,187,649	123	3,188,231	70.1	3,187,792
25.3	3,187,403	20	3,187,491	329	3,187,573	95– 1	3,187,650	139.4	3,188,232	148– 1.5	3,188,244
33	3,187,405	249	3,187,492	355	3,187,574	1.7	3,187,651	140	3,188,233	13	3,188,245
95	3,187,406	330	3,187,493		3,187,575	10	3,187,652	145	3,188,234	16	3,188,246

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65 : 3,188,272	202 : 3,187,881	18 : 3,187,923
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135.2 : 3,187,817	5 : 3,188,403	54 : 3,187,927
160.12: 3,187,818	14 : 3,188,404	3,187,928
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173– 69 : 3,187,823	3,188,409	63 : 3,187,934
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38 : 3,188,379	3,188,412	94 : 3,187,937
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37	3,188,159	37	3,188,463	41	3,187,852	42	3,188,364	45	3,187,981	48	3,187,789
	3,188,162		3,188,481		3,188,169		3,188,487		3,188,080		3,187,821
	3,188,174		3,188,489		3,188,470		3,188,490		3,188,081		3,187,879
	3,188,179		3,188,508	42	3,187,433		3,188,558		3,188,496		3,187,880
	3,188,192		3,188,528		3,187,435		3,188,559	46	3,187,386		3,187,912
	3,188,220		3,188,547		3,187,457		3,188,565		3,187,471		3,187,963
	3,188,231		3,188,578		3,187,463		3,188,607		3,187,597		3,187,979
	3,188,249		3,188,591		3,187,487	43	3,187,915		3,187,633		3,187,993
	3,188,250		3,188,599		3,187,536		3,187,916		3,187,712		3,188,007
	3,188,255		3,188,606		3,187,584		3,188,628		3,187,800		3,188,024
	3,188,263		3,188,613		3,187,608	44	3,188,105		3,188,021		3,188,082
	3,188,289		3,188,616		3,187,630		3,188,151		3,188,025		3,188,119
	3,188,291		3,188,619		3,187,663	45	3,187,354		3,188,108		3,188,155
	3,188,304		3,188,621		3,187,698		3,187,429		3,188,278		3,188,156
	3,188,337		3,188,631		3,187,728		3,187,607	47	3,187,810		3,188,195
	3,188,356	38	3,187,396		3,187,776		3,187,618		3,187,941		3,188,269
	3,188,358		3,187,399		3,187,815		3,187,709	48	3,187,349		3,188,279
	3,188,370		3,187,492		3,187,823		3,187,745		3,187,367		3,188,329
	3,188,371		3,187,513		3,187,831		3,187,779		3,187,398		3,188,432
	3,188,408		3,187,553		3,188,029		3,187,783		3,187,456		3,188,458
	3,188,412		3,187,754		3,188,049		3,187,899		3,187,586		3,188,525
	3,188,413	39	3,187,366		3,188,118		3,187,853		3,187,611		3,188,529
	3,188,414		3,187,522		3,188,139		3,187,855		3,187,652		3,188,550
	3,188,415		3,188,215		3,188,253		3,187,858		3,187,676	50	3,188,608
	3,188,427	40	3,187,959		3,188,341		3,187,932		3,187,735	51	3,188,466
	3,188,448	41	3,187,363		3,188,350		3,187,933		3,187,771	53	3,188,009
	3,188,451		3,187,582								

Design Patents

4	201,271	12	201,278	24	201,285	29	201,309	31	201,301	34	201,332
	201,275		201,287		201,286		201,310		201,303		201,337
	201,280		201,298		201,288		201,311		201,306	37	201,297
	201,316	13	201,274		201,299		201,312		201,314		201,305
	201,330		201,300		201,322		201,313		201,315		201,317
	201,340	16	201,272	29	201,291		201,326	32	201,342		201,318
	201,341		201,292		201,302		201,328	34	201,279	38	201,293
5	201,335	20	201,321		201,304	31	201,281		201,290	45	201,282
9	201,283	21	201,334		201,307		201,294		201,319	48	201,295
12	201,273	22	201,336		201,308		201,296		201,329		201,324
	201,276										

Plant Patents

4	2,532	4	2,534	9	2,528	9	2,529	21	2,531	31	2,530
	2,533										

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

June 8, 1965 Volume 815 Number 2

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Accession by Southern Rhodesia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by Southern Rhodesia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

International Convention for the Protection of Industrial Property

Accession by Zambia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by the Republic of Zambia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

Annual Index of Trademarks

The 1964 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.50.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 344,966 (ROTO-ROOTER), Roto-Rooter Corporation, Sewer and drain cleaning machines; Reg. No. 807,721, same, Municipal, industrial, and domestic sewer, drain, and pipe cleaning service, filed Feb. 25, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C-176, *Roto-Rooter Corporation* v. *Emergency Plumbing & Sewer Cleaning Service.*

Reg. No. 466,279 (FURACIN), The Norwich Pharmacal Company, Antiseptics and germicides; Reg. No. 441,715, same, Eaton Laboratories, Inc., Antibacterial preparations; 2,416,234, Stillman and Scott, SERIES OF NITROFURAN COMPOUNDS, filed Feb. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C74(1), *The Norwich Pharmacal Co.* v. *Blue Line*

CONDITION OF TRADEMARK APPLICATIONS AS OF APRIL 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,093
Date of oldest new application	Sept. 21, 1964
Date of oldest amended application	August 17, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-21-64	8-17-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	10-6-64	10-1-64
Renewals (All Classes)	4-12-65	4-26-65
Sec. 12 (c) Publications (All Classes)	4-14-65	-------

Applications filed during the month of April 1965—2,447

Registrations Issued	327—No. 790,530 to No. 790,856
Renewals Issued	70

Chemical Co., Inc. Final consent judgment; patent and trademarks held valid; defendant enjoined Nov. 10, 1964.

Reg. No. 441,715. (See Reg. No. 403,279.)

Reg. No. 506,392 (SYNTECH), National Motor Bearing Company, Inc., Grease and oil retainers of the friction type used to seal the space between a shaft and an engine wall, etc.; **Reg. No. 702,253** (MICRO-TORC), Federal-Mogul-Bower Bearings, Inc., Shaft seals; 2,467,210, F. A. Helfrecht, FLUID SEAL; 2,626,169, L. A. Johnson et al., same; 2,854,267, Stephens and McCandless, SHAFT SEALS, filed Mar. 2, 1962, D.C., E.D. Wis. (Milwaukee), Doc. 62–C–58, *Federal-Mogul-Bower Bearings, Inc.* v. *Albert Trostel Packings, Ltd. et al.* Reg. No. 702,253 included by notice of consent decree, holding trademarks valid and infringed; and Patent Nos. 2,467,210 and 2,626,169 held valid and infringed; issue remains as to Patent 2,854,267, Dec. 9, 1964.

Reg. No. 502,707 (HEX A GRIP AND DESIGN), American Drill Bushing Co., Drill bushings; **Reg. No. 502,973** (SERRA-GRIP AND DESIGN), same; 2,696,547, R. H. Armacost, DRILL BUSHING FOR CAST BLOCKS; 2,723,949, J. L. Stein et al., DRILL JIG; 3,015,242, R. H. Armacost, LINER BUSHINGS FOR SLIP RENEWABLE TOOL GUIDE BUSHINGS, filed Dec. 9, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1710–WM, *American Drill Bushing Company* v. *Ace Drill Bushing Co. et al.* Same, filed Apr. 12, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–573–WM, *American Drill Bushing Company* v. *West Coast Aero Tool et al.*

Reg. No. 502,973. (See Reg. No. 502,707.)

Reg. No. 697,721. (See Reg. No. 344,956.)

Reg. No. 694,609 (PRINCE IGOR), Burma-Bibas, Inc., Men's neckties, cravats, and shirts; **Reg. No. 705,656** (PRINCE IGOR (in script) AND DESIGN), same, Men's toiletries—namely, men's cologne and after-shave lotion, filed Feb. 19, 1965, D.C., S.D.N.Y., Doc. 65/524, *Burma-Bibas, Inc.* v. *Campus Sweater & Sportswear Co. (Inc.)*

Reg. No. 701,896 (MAGIC LADY), Exquisite Form Brassiere, Inc., Underwear panty, filed May 12, 1964, D.C., S.D.N.Y., Doc. 64/1466, *Exquisite Form Industries, Inc.* v. *Kiki Undies Corp.* Stipulation and order of discontinuance of complaint and counterclaim Feb. 23, 1965.

Reg. No. 700,359. (See Reg. No. 506,392.)

Reg. No. 705,656. (See Reg. No. 694,609.)

DEPARTMENT OF COMMERCE

Patent Office

[37 CFR Parts 2, 4]

RULES OF PRACTICE AND FORMS FOR TRADEMARK CASES

Miscellaneous Amendments.

Notice is hereby given that the United States Patent Office proposes to amend several of its rules, to add a new § 2.20, and to provide additional forms relating to trademarks. The amendments are proposed pursuant to the authority contained in Title 35, U.S.C. section 6.

In a variety of occasions the rules of trademark practice presently require a document supported by an oath or affidavit. The rules presently refer to verifications in many instances when requiring an oath in support of a document.

Public Law 88–292 of March 26, 1964, authorized the Commissioner of Patents to prescribe instances when documents to be filed in the Patent Office and which are required by any law, rule, or other regulation to be under oath might be accepted if, in lieu of the required document under oath, the party filing the document were to provide a written declaration in proper form setting forth the required information. Such a declaration may not be used unless it includes a warning statement that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001).

The new § 2.20 would set forth the form of the declaration and announce its acceptability in connection with the filing of documents when prescribed in individual rules. In general, the amendments of the rules are intended to prescribe the acceptability of the declaration in lieu of the oath in cases of all documents except the acknowledgment of an assignment and except in the case of the oaths or verifications presently required in testimony and contested actions described in §§ 2.128 through 2.145.

An alternative form (§ 4.1a) is provided to the present form (§ 4.1) for a *Trademark application by an individual; Principal Register.*, as illustrative of the required form of a written declaration.

Two important points must be remembered in connection with these changes: (1) The use of the declaration is an alternative to the use of the oath. Either in proper form is acceptable. (2) The declaration may only be used in those instances where the Commissioner of Patents has provided that it will be an acceptable alternative.

All persons who desire to submit written data, views, arguments, or suggestions for consideration in connection with the proposed amendments are invited to forward the same to the Commissioner of Patents, Washington, D.C., 20231, within 45 days of publication of these proposed changes in the FEDERAL REGISTER. An oral hearing is not scheduled.

The changes proposed follow:

Section 2.15 is amended by deletion from the first paragraph of the parenthetical phrase "(such as the application itself and verifications required of applicants, registrants or others)."

A new § 2.20 is added, reading as follows:

DECLARATIONS

§ 2.20 *Declarations in lieu of oaths.*

The applicant or member of the firm or an officer of the corporation or association making application for registration or filing a document in the Patent Office relating to a trademark may, in lieu of the oath, affidavit, verification or sworn statement required from him, in those instances prescribed in the individual rules, file a declaration that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true, if, and only if, the declarant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001), and may jeopardize the validity of the application or document or any registration resulting therefrom.

Section 2.32 is amended by inserting the phrase "or include a declaration" after the phrase "sworn to" in the title of the section; by inserting in paragraph (a) thereof the phrase "or include a declaration in accordance with § 2.20" after the parenthetical phrase "(sworn to)"; and by substituting in paragraph (b) thereof the phrase "statement which is verified or which includes a declaration in accordance with § 2.20," for the phrase "verified statement."

Section 2.33(b) is amended by inserting the phrase "or declaration in accordance with § 2.20," after the two occurrences of the phrase "the verification."

Section 2.41 is amended by inserting the phrase "or declarations in accordance with § 2.20," after the two occurrences of the word "affidavits"; and by substituting in paragraph (b) thereof the phrase "statements which are verified or which include declarations in accordance with § 2.20" for the phrase "verified statements."

Section 2.42(b) is amended by inserting the phrase "or declaration in accordance with § 2.20" after the word "verification."

Section 2.66 is amended by substituting the phrase "showing which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified showing."

Section 2.71 is amended in paragraphs (a) and (b) by inserting the phrase "or declaration in accordance with § 2.20" after the two occurrences of the word "affidavit"; and in paragraph (c) by inserting the phrase "or declaration" after the first occurrence of the word "verification," and by inserting the phrase "or declaration in accordance with § 2.20" after the second occurrence of the word "verification."

Section 2.72 is amended by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit."

Section 2.97 is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.101 is amended to read as follows:

§ 2.101 *Time for filing opposition.*

Any person who believes that he would be damaged by the registration of a mark upon the Principal Register may, upon payment of the required fee, oppose the same by filing an opposition, which is verified or which includes a declaration

in accordance with § 2.20, in the Patent Office within 30 days after the publication (§ 2.81) of the mark sought to be registered.

Section 2.103 is amended to read as follows:

§ 2.103 *Opposition filed by attorney or agent.*

An opposition which is unverified or not accompanied by a declaration in accordance with § 2.20 may be filed by a duly authorized attorney or agent. Such opposition and the required fee must be filed in the Patent Office within 30 days after publication (§ 2.81) of the mark sought to be registered but the opposition will be null and void unless confirmed by the opposer either by verification or declaration in proper form filed in the Patent Office within 30 days after such filing, or within such further time as may be fixed by the Commissioner upon request made before the expiration of the 30 days.

Section 2.106(b) is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.112 is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.114(b) is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.122(b) is amended by inserting the phrase "or declarations" after the two occurrences of the word "affidavits."

Section 2.145(a) is amended by substituting the phrase "an affidavit or declaration" for the phrase "and affidavit."

Section 2.146(b) is amended by inserting the phrase "or declarations in accordance with § 2.20" after the word "affidavits."

Section 2.151 is amended by inserting the phrase "or declaration" after the word "affidavit."

Section 2.153 is amended by inserting the phrase "or declaration in accordance with § 2.20" after the two occurrences of the word "affidavit."

Section 2.155 is amended by inserting the phrase "or declaration" after the word "affidavit."

Section 2.156 is amended by inserting the phrase "or declaration" after the word "affidavit."

The title preceding §§ 2.161–2.166 is amended by inserting the phrase "OR DECLARATION" after the word "AFFIDAVIT."

Section 2.161 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit."

Section 2.162 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the word "affidavit" in paragraphs (a) and (b).

Section 2.163 is amended by inserting the phrase "or declaration" after the three occurrences of the word "affidavit."

Section 2.164 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the word "affidavit."

Section 2.165 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (a), and after the two occurrences of the word "affidavit" in paragraph (b).

Section 2.166 is amended by inserting the phrase "or declaration" after the two occurrences of the word "affidavit."

The title preceding §§ 2.167 and 2.168 is amended by inserting the phrase "OR DECLARATION" after the word "AFFIDAVIT."

Section 2.167 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit" in the first paragraph thereof; and by inserting the phrase "or declaration" after the word "affidavit" in the last sentence thereof.

Section 2.168 is amended by inserting the phrase "or declarations" after the word "affidavits" in the title thereof; by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (a) thereof; and by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (b) thereof.

Section 2.173(a) is amended by substituting the phrase "by the registrant and verified or include a declaration in accordance with § 2.20" for the phrase "and verified by the registrant."

Section 2.175(b) is amended by substituting the phrase "by the applicant and verified or include a declaration in accordance with § 2.20" after the phrase "and verified by the applicant."

Section 2.183 is amended by substituting the phrase "statement which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified statement" in paragraph (a) thereof; by inserting the phrase "declaration or" before the word "verified" in paragraph (b) thereof; by inserting the phrase "declaration or" before the word "verified" in paragraph (c) thereof; and by substituting the phrase "showing which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified showing" in paragraph (d)(3) thereof.

The note in Part 4—Forms for Trademark Cases, immediately preceding § 4.1 is amended by the addition of the following paragraph:

In using these forms, the applicant or member of the firm or officer of the corporation or association making application or filing the form may, in lieu of making the oath, affirmation, or verification required, set forth in the body of the statement required his written declaration that all statements made on information and belief are believed to be true, if, and only if, the declarant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001), and may jeopardise the validity of the application or document or any registration resulting therefrom.

For illustrative purposes, § 4.1 would be modified in the use of such a declaration as an alternative to the form as used with the oath or verification as follows:

§ 4.1a *Trademark application by an individual; Principal Register.*

Mark ----------
(Identify the mark)
Class No. ----------
(If known)

• • • • • •

The mark is used by applying it to ---------- (5) and five specimens showing the mark as actually used are presented herewith.

The undersigned applicant ---------- declares: That he believes himself to be the owner of the trademark sought to be registered; that to the best of his knowledge and belief no other person, firm, corporation, or association has the right to use said mark in commerce, either in the identical form or in such near resemblance thereto as may be likely, when applied to the goods of such other person, to cause confusion, or to cause mistake, or to deceive; that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or document or any registration resulting therefrom.

(Signature of applicant)
Date ----------

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6; P.L. 88–292, 35 U.S.C. 25, 78 Stat. 171)

EDWARD J. BRENNER,
Commissioner.

Approved: May 7, 1965.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 65–5156; Filed, May 14, 1965; 8:46 a.m.]

Published in 30 F.R. 6887–6888, May 15, 1965

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 181,678. The Preservation Society of Newport County, Newport, R.I. Filed Nov. 21, 1963.

HISTORIC NEWPORT

Class 21—Electrical Apparatus, Machines, and Supplies

For Household Lighting Equipment—Namely, Electric Chandeliers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Household Lighting and Fireplace Equipment—Namely, Non-Electrical Chandeliers, Brass Candlesticks, and Andirons.

First use at least as early as June 13, 1961.

SN 183,393. Surface Coatings, Inc., Atlanta, Ga. Filed Dec. 19, 1963.

SURCO

Owner of Reg. Nos. 605,984 and 623,800.

Class 12—Construction Materials

For Concrete and Epoxy Concrete Repair, Finish, Resurfacing, Non-Slip, Sealing and Waterproofing Compositions; Plaster and Plaster Patching Compositions; and Asbestos Fiber and Other Texture Coating Compositions.

First use Aug. 20, 1953.

Class 16—Protective and Decorative Coatings

For Concrete and Masonry Paint.

First use July 9, 1954.

SN 186,919. Nordac Electronics, Incorporated, Oklahoma City, Okla. Filed Jan. 2, 1964.

NORDAC

Class 21—Electrical Apparatus, Machines, and Supplies

For Series of Unregulated and Regulated Power Supplies, Mostly in the Range From 0 to 300 Volts D.C., and 0 to 100 Milliamperes D.C., for Commercial, Industrial, and Medical Use.

Class 26—Measuring and Scientific Appliances

For Highly Accurate Frequency Meter for Use on USAF Aircraft To Indicate Frequency Deviation From the Desired Frequency of 400 Cycles Per Second on the Aircraft Alternating Current System.

Class 44—Dental, Medical, and Surgical Appliances

For Portable Battery Operated Thermistor Controlled Body Temperature Indicator, Range 90–110 Degrees Fahrenheit, for Hospital Use, Complete With Extension Probe; and Heart Rate-Meter for Hospital and Clinical Use To Indicate Pulse Rate, and If Desired, To Signal Any Rate Which Exceeds Preset Limits.

First use Jan. 15, 1963.

SN 186,898. Scholven-Chemie Aktiengesellschaft, Gelsenkirchen, Germany. Filed Feb. 10, 1964.



Priority claimed under Sec. 44(d) on German application filed Aug. 9, 1963; Reg. No. 781,185, dated Dec. 11, 1963.

Class 1—Raw or Partly Prepared Materials

For Plastics as Raw Products and Semimanufactured Goods in the Shape of Foils, Plates, Blocks, Rods, Pipes and Profiles; and Bitumen.

Class 4—Abrasives and Polishing Materials

For Floor Waxes in Liquid and Solid Form, Agents for Polishing and Preserving Leather in Solid and Liquid Form, and Agents for the Care of Automobiles in Solid and Liquid Form, Specifically Automobile Waxes and Polishes.

Class 6—Chemicals and Chemical Compositions

For Chemical Products for Industrial Purposes—Namely, Nitrogen, Compounds Containing Nitrogen, Acids, Petrochemicals, and Coating Agents for Paper, Cardboard and the Like; Organic Chemicals, Solvents, Softeners, and Catalysts.

Class 10—Fertilizers

For Fertilizers.

Class 15—Oils and Greases

For Technical Oils and Greases, Lubricants, Benzene, Diesel-Oil, Fuel Gas, and Heating Oil.

SN 193,230. Starline Music Corporation, Dallas, Tex. Filed May 11, 1964.

STARTIME

Class 36—Musical Instruments and Supplies

For Mechanically Grooved Phonograph Records, and Needles, Albums, and Envelopes Therefor.

Class 38—Prints and Publications

For Sheet Music.

First use Mar. 5, 1964.

SN 194,767. Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan. Filed June 3, 1964.

pair knit

Owner of Japanese Reg. Nos. 611,865 and 638,295, dated May 9, 1963, and Mar. 9, 1964, respectively, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags, Shopping Bags, Suitcases, Boston Bags, and Toilet Set Cases.

Class 22—Games, Toys, and Sporting Goods

For Toys and Dolls.

Class 39—Clothing

For Sport Jackets, Slacks and Shirts, Shoes, Boots, Slippers, and Overshoes.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Knitted, Textile, Lace, and Embroidered Fabrics, Bed Sheets, Blankets, Quilts, Comforters, Textile Carpets, Mats and Rugs, Curtains, Tablecloths, Covers for Blankets, Covers for Pillows, Covers for Quilts, and Covers for Chairs.

SN 195,781. Gotham Audio Corporation, New York, N.Y. Filed June 16, 1964.



The drawing is lined for red, but no claim is made to color.

Class 21—Electrical Apparatus, Machines, and Supplies

For Audio Equalizer, Tone Generator, Reverbration Unit, and Transistor Amplifier.

Class 26—Measuring and Scientific Appliances

For Light Beam Meter, Wow and Flutter Meter, and Pistonphone.

Class 36—Musical Instruments and Supplies

For Tape Recorders, Tape Erasers, Video Tape Editing Equipment, and Turntable.

First use Sept. 20, 1960.

SN 196,356. Columbia Broadcasting System, Inc., New York, N.Y. Filed June 24, 1964.



Class 21—Electrical Apparatus, Machines, and Supplies

For Radios and Combinations of Radios With Phonograph and Tape Recorders.

Class 36—Musical Instruments and Supplies

For Phonographs, Tape Recorders, and Combinations of Phonographs and Tape Recorders.

First use June 11, 1964.

SN 197,481. Ermanno Fabbri, Vignola, Modena, Italy. Filed July 9, 1964.

WEEGAL

Priority claimed under Sec. 44(d) on Italian application filed Jan. 17, 1964; Reg. No. 184,928, dated May 11, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

For Packaging Machines.

Class 37—Paper and Stationery

For Films of Thermoplastic, Heat-Shrinking Material, and Wrappers for Fruits and Vegetables.

SN 199,145. Sanford S. Wendel, d.b.a. Sanford S. Wendel Co., Los Angeles, Calif. Filed Aug. 3, 1964.

CLOUD 9

Class 17—Tobacco Products

For Smoking Tobacco.

Class 29—Brooms, Brushes, and Dusters

For Powder Puffs.

First use July 28, 1964.

SN 201,084. The Bondo Corporation, Northford, Conn. Filed Sept. 2, 1964.

VELVET ARMOR

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Plastic Coated Shackles, Chains, Fishing Rod Holders, and Chocks.

Class 14—Metals and Metal Castings and Forgings

For Plastic Coated Anchors.

First use Feb. 20, 1964.

SN 206,396. Amberg File and Index Company, Kankakee, Ill. Filed Nov. 18, 1964.

AMFILE

Owner of Reg. Nos. 383,521, 616,207, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Portfolios.

First use at least as early as 1936.

Class 32—Furniture and Upholstery

For Transfer Cases; File Boxes and Cases; Card Index Trays; and Storage Cabinets.
First use about May 10, 1944.

Class 36—Musical Instruments and Supplies

For Phonograph Record Cases.
First use about Jan. 20, 1942.

Class 37—Paper and Stationery

For Paper, Cloth and Cardboard Files, Folders, and Binders; Indexing and Filing System Guides, Windows, and Folders; Tabs for File Guides; Labels; Brief Covers; Transparent Sheet Protectors; and Hand Sorters.
First use May 6, 1940.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 176,704. Angelo & Son, San Francisco, Calif. Filed Sept. 11, 1963.

Angelwood
ANGELO & SON

For Cottonwood Excelsior.
First use Jan. 31, 1961.

SN 183,411. Hysol Corporation, Olean, N.Y. Filed Dec. 23, 1963.

AIRLIGHT

For Multi-Component Thermosetting Resins for Low Density Tooling and Structural Applications.
First use Sept. 4, 1963.

SN 188,898. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 17, 1964.

ThermaComb

For Low Density Shaped Ceramic Structures for General Use in the Industrial Arts.
First use Mar. 11, 1964.

SN 190,169. Fiberfil, Inc., Evansville, Ind. Filed Apr. 2, 1964.

PROFIL

For Synthetic Plastic Injection-Molding Materials in Pellet or Granular Form.
First use on or about Oct. 6, 1961.

SN 190,498. Celanese Corporation of America, New York, N.Y. Filed Apr. 7, 1964.

CELANE

Owner of Reg. Nos. 240,681, 385,189, and 752,286.
For Plastic Film and Sheet.
First use Mar. 23, 1964.

SN 190,499. Celanese Corporation of America, New York, N.Y. Filed Apr. 7, 1964.

CELLANE

Owner of Reg. Nos. 240,681, 385,189, and 752,286.
For Plastic Film and Sheet.
First use Mar. 23, 1964.

SN 197,436. Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy. Filed July 8, 1964.

Kevlar

Owner of Italian Reg. No. 161,070, dated Nov. 27, 1962; and U.S. Reg. Nos. 733,988, and 704,434.
For Viscose Staple.

SN 200,857. Northrup, King & Co., Minneapolis, Minn. Filed Aug. 28, 1964.

819

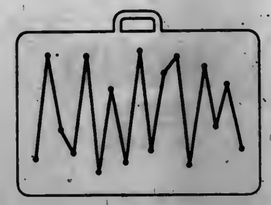
For Alfalfa Seed.
First use September 1958.

SN 204,041. Geo. J. Ball, Inc., West Chicago, Ill. Filed Oct. 15, 1964.

GARDEN STAR

The word "Garden" is disclaimed apart from the mark as shown.
For Flower Seeds.
First use on or before Oct. 6, 1964; on or before Mar. 17, 1964, as to "Garden Star."

SN 204,166. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Oct. 16, 1964.



For Synthetic Resin and Mixtures of Synthetic Resins With Filler Materials for General Use in the Industrial Arts.
First use Sept. 29, 1964.

SN 204,551. Celanese Corporation of America, New York, N.Y. Filed Oct. 22, 1964.

COLORANDOM

For Man-Made Filamentary Raw Materials.
First use Oct. 10, 1964.

SN 204,615. Synthane Corporation, Oaks, Pa. Filed Oct. 22, 1964.



For Metal-Clad Laminated Plastic Sheets.
First use in or about June 1960.

SN 205,105. Shell Oil Company, New York, N.Y. Filed Oct. 29, 1964.

ELASTOTHERM

For Elastomeric Polymer for Elastic Thread Compounds.
First use Sept. 2, 1964.

SN 205,106. Shell Oil Company, New York, N.Y. Filed Oct. 29, 1964.

CYCLOFIN

For Elastomeric Polymer for Elastic Thread Compounds.
First use Sept. 2, 1964.

SN 205,987. American-Canadian Beaver Company, Inc., Salt Lake City, Utah. Filed Nov. 12, 1964.

WB

For Live, Ranch-Grown Beaver.
First use in or about June 1950.

SN 206,807. American Cast Iron Pipe Company, Birmingham, Ala. Filed Nov. 24, 1964.

AMERICAN MAG-COKE

The word "American" is disclaimed apart from the mark as shown, but without prejudice to applicant's right to exclusive use of said word in trademarks applied to goods other than those recited herein.
For Coke in Lump Form Impregnated With Magnesium Usable as an Agent for Treating Ferrous Metals and Alloys.
First use Nov. 5, 1964.

Class 2—Receptacles

SN 182,563. Anheuser-Busch, Incorporated, St. Louis, Mo. Filed Dec. 9, 1963.

TAB TOP

For Metal Beer Cans With Tear Open Lids.
First use Nov. 15, 1962.

SN 200,978. Rose Products, Inc., New York, N.Y. Filed Aug. 31, 1964.

TAHIJI

For Woodenware—Namely, Bowls and Trays.
First use May 4, 1964.

Class 4—Abrasives and Polishing Materials

SN 176,205. Majestic Wax Company, Denver, Colo. Filed Sept. 3, 1963.

VELVA-SHEEN

Owner of Reg. No. 547,768.
For Liquid Preparations for Polishing and Cleaning Furniture and Floors and Surfaces Including Wood, Metal, Plastic or Cement Surfaces Whether Coated or Uncoated With Paints, Varnishes, Lacquer, or Other Coating Material.
First use on or about Jan. 1, 1933.

SN 202,421. A. P. de Sanno & Son, Inc., Phoenixville, Pa. Filed Sept. 23, 1964.

UNI-BUSH

For Grinding Wheels, and Bushings Used With the Grinding Wheels.
First use Aug. 3, 1964.

SN 205,405. Harri Hoffmann Co., Inc., Milwaukee, Wis. Filed Nov. 3, 1964.

"LET IT RAIN"

For Leather Conditioning, Polishing, and Protective Compound.
First use on or about Aug. 7, 1963.

SN 205,743. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Nov. 6, 1964.

SOLPREME

For Floor Wax.
First use Aug. 26, 1952.

SN 205,887. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Nov. 9, 1964.

COL-GLO

Owner of Reg. No. 683,912.
For Furniture Polish.
First use Aug. 26, 1952.

Class 6—Chemicals and Chemical Compositions

SN 148,442. Varney Chemical Co., Janesville, Wis. Filed July 5, 1962.

VARONIC

For Non-Ionic Wetting Agent.
First use Sept. 19, 1960.

SN 180,003. Etablissements Kuhlmann, Société Anonyme, Paris, France. Filed Oct. 29, 1963.

FLAMINUL

Priority claimed under Sec. 44(d) on French Reg. No. 513,886, dated June 7, 1963 (Paris); Natl. Inst. No. 206,796.
For Chemicals for Fireproofing Textile Fabrics, Curtains, Papers, Cartons, Strings, Tents, and Awnings; and Dyes.

SN 191,913. Dade Reagents, Inc., Miami, Fla. Filed Apr. 24, 1964.

QUAL-TROL

For Liquid Reagent for Laboratory Use as a Control Serum in Blood Chemistry Testing Procedures.
First use on or before Feb. 18, 1964.

SN 193,794. Kem Manufacturing Corporation, Atlanta, Ga. Filed May 19, 1964.

KEM

For Insecticide.
First use May 1, 1957.

SN 194,543. Albert Verley & Company, Linden, N.J. Filed May 28, 1964.

MALABATE

For Chemical Reodorants and Deodorants for Industrial, Institutional, Commercial, Agricultural, and Municipal Use.
First use Feb. 20, 1964.

SN 196,490. Wood Treating Chemicals Co., St. Louis, Mo. Filed June 25, 1964.

WOOD FIX

Owner of Reg. No. 408,449.
For Chemical Wood Preservatives.
First use Jan. 5, 1943.

SN 196,871. Lord, Clark and Co., Inc., Boston, Mass. Filed July 1, 1964.

AIR-AID

Owner of Reg. No. 559,214.
For Chemicals for Clearing Air of Odors and Smoke.
First use Oct. 11, 1948.

SN 197,984. Premax Laboratories, Inc., Oakland, Calif. Filed July 16, 1964.



For Enzyme Preparation in Dry Powder Form Which Liquefies Solids in Plumbing Lines, Septic Tanks, Cesspools, and Draining Systems, and Also Eliminates Odors.
First use as early as May 1, 1960.

SN 198,555. The Hubbard-Hall Chemical Company, Waterbury, Conn. Filed July 27, 1964.

AHCOLINE

For Bleach.
First use at least as early as 1939.

SN 203,408. Preston Lee Lockaby, d.b.a. Pre-Loc Company, Charlotte, N.C. Filed Oct. 6, 1964.



For Preparation Used in Automobile Radiators for Stopping Leaks in the Radiator, Head Gasket and Motor Block, Preventing Rust, and Lubricating the Water Pump.
First use Aug. 15, 1964.

SN 205,490. Coahoma Chemical Co., Inc., Clarksdale, Miss. Filed Nov. 4, 1964.



For Agricultural Chemicals—Namely, Insecticides, Herbicides, Nematocides, Seed Treating, Insect, and Bird Repellent Preparations Having Insecticidal Qualities, and Water Soluble Surface Active Agents.
First use on or about Apr. 14, 1950, on Insecticides.

SN 205,795. Emery Industries, Inc., Cincinnati, Ohio. Filed Nov. 9, 1964.

EMEEN

For Fatty Acid and Other Aliphatic Amines.
First use Aug. 4, 1964.

Class 7—Cordage

SN 205,557. American Chain & Cable Company, Bridgeport, Conn. Filed Nov. 5, 1964.

ACCOLINE

Owner of Reg. Nos. 154,861, 646,702, and others.
For Wire Rope and Cable—Namely, Aerial Tow Lines.
First use Aug. 18, 1964.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 207,720. Hokey Pokey, Inc., New York, N.Y. Filed Dec. 8, 1964.

HOKEY POKEY

For Cigarette Snuffers.
First use Nov. 23, 1964.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 171,732. Weatherby, Inc., South Gate, Calif. Filed June 24, 1963.

VARMINTMASTER

For Firearms and Ammunition.
First use on or about Jan. 15, 1963.

Class 10—Fertilizers

SN 182,876. Goldthwaite's Texas Toro Co., Forth Worth, Tex. Filed Dec. 12, 1963.

Goldthwaite's TURF SPECIAL

Owner of Reg. Nos. 581,734 and 681,627.
For Fertilizer.
First use Mar. 28, 1951.

SN 206,546. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,603, 555,557, and others.
For Fertilizers.
First use September 1959.

Class 12—Construction Materials

SN 176,156. Butler Manufacturing Company, Kansas City, Mo. Filed Sept. 3, 1963.



The words "Systems" and "Building," and the representation of the goods are disclaimed apart from the mark as shown. Owner of Reg. Nos. 528,706, 757,525, and others.
For Prefabricated Metal Buildings and Parts Thereof.
First use Sept. 15, 1962; in or about 1916 as to the word "Butler."

SN 186,218. Acme Brick Company, Forth Worth, Tex. Filed Feb. 7, 1964.

ACME

The stippling on the drawing represents shading only.
For Face Brick, Common Brick, and Conduit Tile.
First use Jan. 2, 1891.

SN 191,521. Dowman Products, Inc., Long Beach, Calif. Filed Apr. 20, 1964.

FIXALLATEX

Owner of Reg. No. 620,647.
For Two-Component Latex Underlayment for Floors and the Like.
First use June 1, 1963.

SN 191,598. Raymar, Inc., Dallas, Tex. Filed Apr. 20, 1964.



For Plastic Dome Skylights, Louvers for Skylights, and Skylight Frames.
First use Feb. 25, 1964.

SN 193,381. Johns-Manville Corporation, New York, N.Y. Filed May 13, 1964.

FLAME BAR

For Pipe Insulation Jacketing.
First use at least on or about Dec. 22, 1960.

SN 194,314. Red Cedar Shingle & Handsplit Shake Bureau, Seattle, Wash. Filed May 26, 1964. COLLECTIVE MARK.

CERTI-SPLIT

Owner of Reg. No. 670,764.
For Hand Split Shakes and Hand Split Resawn Shakes.
First use Sept. 2, 1955.

SN 196,930. Bird & Son, Inc., East Walpole, Mass. Filed July 31, 1964.

BUCA

For Asphalt Cement With Asbestos Fibres Having Adhesive Properties for Use With Cold Application Roofing Felts or Mats as a Part of a Cold Application Built-Up Roof Complex.
First use June 23, 1964.

SN 202,675. Bruynseel Suriname Houtmaatschappij N.V., Zaandam, Netherlands. Filed Sept. 25, 1964.

VIROPAN

Priority claimed under Sec. 44(d) on Dutch Reg. No. 152,609, dated July 9, 1964.
For Lacquered or Unlacquered, Pressed or Laminated Sheets Made Primarily of Wood and/or Vegetable Fibres.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 194,077. Summit Industries, Compton, Calif. Filed May 22, 1964.

MARBLEMOLD

For Shower Receptors.
First use on or about Oct. 11, 1963.

SN 196,832. Acme Industries, Inc., Jackson, Mich. Filed June 24, 1964.

HEADATROL

For Control Systems, in the Form of Pressure Actuated Valve Mechanisms, for Head Pressure in Air Cooled Condensers and Condensing Units.
First use Jan. 21, 1964.

SN 196,834. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed July 1, 1964.

PUSH-PULL

For Plumbing Fixtures.
First use Feb. 22, 1962.

SN 204,908. Sidney S. Kassler, d.b.a. Kassler Mfg. & Distr. Co., Covina, Calif. Filed Oct. 27, 1964.

SPRING-A-ROUND

For Return Master Slides for Drapery Traverse Rods.
First use Aug. 10, 1964.

SN 207,692. American Chain & Cable Company, Inc., Bridgeport, Conn. Filed Dec. 8, 1964.

DOUBL-BITE

For Metal Chain, Particularly Log Chocker Chain.
First use Sept. 25, 1962.

SN 207,734. Republic Steel Corporation, Cleveland, Ohio. Filed Dec. 8, 1964.

ANGLE-TITE

For Ball Joint Bearing Mine Roof Bolts.
First use Oct. 29, 1964.

SN 208,591. Lear Siegler, Inc., Cleveland, Ohio. Filed Dec. 21, 1964.

SAF-T-PAK

For Two Handed Manually Operated Safety Control Fluid Valves.
First use June 1, 1962.

SN 208,708. Aktiebolaget Textilkonst, Malmo, Sweden. Filed Apr. 6, 1964.

SPANSET

Owner of Swedish Reg. No. 106,997, dated Dec. 19, 1962.
For Clasps, Hooks and Like Devices for Use in Tightening and Securing Flexible Strappings Used in Loading, Transportation and Handling of Articles.

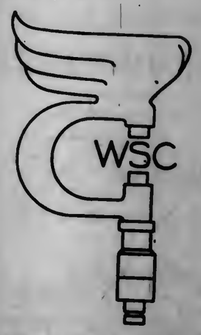
SN 208,816. Robert A. Krenn, d.b.a. Corona Manufacturing Company, Phoenix, Ariz. Filed Dec. 24, 1964.

DRAIN SURGEON

For Plumbing Tool Used for Unplugging Drains, Said Tool Is Positioned Over the Stopped Up Drain, an Aerosol Can in the Tool Is Punctured and the Propellent in the Can Goes Out Thru the Drain, Clearing the Pipe of the Stoppage, a Foam Rubber Head Makes the Seal Over the Drain.
First use Jan. 15, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 181,585. Worthington Steel Company, Worthington, Ohio. Filed Dec. 26, 1963.



For Metal Materials and Products—Namely, Strip, Coil, and Sheet Metals of Ferrous and Non-Ferrous Materials Suitable for Reworking.
First use Aug. 14, 1963.

SN 208,413. Union Carbide Corporation, New York, N.Y. Filed Dec. 17, 1964.

PEARLCHROME

For Alloy Additives.
First use on or about Oct. 8, 1964.

SN 212,107. Giannini Scientific Corporation, Amityville, N.Y. Filed Feb. 16, 1965.

PLASMALLOY

For Metal and Ceramic Powders Adapted To Be Applied to Substrates by Means of Electrical Plasma-Jet Spray Torches.
First use in or about February 1964.

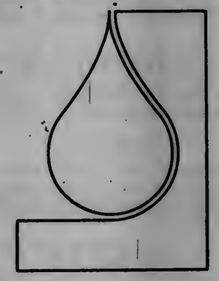
Class 15—Oils and Greases

SN 181,676. The Preservation Society of Newport County, Newport, R.I. Filed Nov. 21, 1963.

HISTORIC NEWPORT

For Candles.
First use at least as early as Nov. 3, 1961.

SN 193,027. Monsanto Company, St. Louis, Mo. Filed May 8, 1964.



For Lubricating Oil.
First use Oct. 15, 1959.

SN 198,732. Pat Griffin, Fort Collins, Colo. Filed July 29, 1964.

THE DOLLAR MAN

For Gasoline and Lubricating Oils.
First use Aug. 22, 1963.

SN 198,733. Pat Griffin, Fort Collins, Colo. Filed July 29, 1964.



For Gasoline and Lubricating Oils.
First use Jan. 5, 1962.

SN 207,770. Carl S. Zekaria, d.b.a. National American Products Co., New York, N.Y. Filed Dec. 8, 1964.

EAGLE OK BRAND

The word "Brand" is disclaimed separate and apart from the mark as shown.
For Engine Lubricating Oil.
First use about 1937.

SN 209,871. Pride Service, Inc., Glen Rock, N.J. Filed Jan. 5, 1965.

EVEN-GLOW

For Heating Oil.
First use Dec. 28, 1964.

SN 210,951. Halo Sales Corporation, San Francisco, Calif. Filed Jan. 29, 1965.



For Candles.
First use March 1964.

Class 16—Protective and Decorative Coatings

SN 178,501. Whittaker Corporation, Los Angeles, Calif., by change of name from Telecomputing Corporation, Los Angeles, Calif. Filed Oct. 7, 1963.

NARMCOAT

Owner of Reg. Nos. 692,242 and 692,243.
For Adhesive Light Flexible Plastic Penetrating and Seal Film Coating for Concrete, Asphalt and Cement Pavements.
First use May 1962.

SN 196,936. Associated Hardware Supply Co., Pittsburgh, Pa. Filed July 2, 1964.

CHAMPTONE

For Paints of the Following Types: Rust Inhibiting Spray Enamel Paint for Exterior and Interior Use on Furniture and Toys and for Touching Up Automobiles, Exterior House Paint, Sash and Trim Paint, Porch and Floor Enamel Paint, Tinner's Red Oxide Roof Paint, Interior Vinyl Flat Latex Paint, Exterior Primer, Interior Primer-Sealer, Interior Alkyd Type Semi-Gloss Enamel Paint, Interior Basement Wall Paint, Interior High Gloss Enamel Paint, Enamel Undercoater, All Purpose Varnish, and Aluminum Paint.
First use Mar. 3, 1964.

SN 205,435. Marshall Manufacturing Corporation, Roanoke, Va. Filed Nov. 3, 1964.

FOUR SEASONS

For House Paint.
First use Oct. 7, 1964.

Class 17—Tobacco Products

SN 194,841. Universal Cigar Corporation, New York, N.Y. Filed June 8, 1964.

OPTIMO

Owner of Reg. Nos. 51,393 and 219,807.
For Cigars.
First use July 1898.

SN 197,785. Societe de Financement Industriel, Commercial et Agricole—S.O.F.I.C.A.L., Paris, France. Filed July 13, 1964.

BASTOS

Owner of French Reg. No. 7,875, dated Feb. 27, 1957 (Algiers); Natl. Inst. No. 86,779.
For Dried Tobacco Leaves; Cigarette Tobacco, Cigar Tobacco, Cigars, and Cigarettes.

SN 200,057. Svenska Tobaks Aktiebolaget (Swedish Tobacco Company), Stockholm, Sweden. Filed Aug. 14, 1964.

Greve
Gilbert Hamiltons



BLANDNING

The protrait appearing on the drawing is that of Gilbert Hamilton, a Swedish count and colonel, who died in 1947, whose consent was acquired by applicant. The English translation of the word "Greve" is "count." The English translation of the word "Blandning" is "bland." Applicant disclaims the word "Blandning" apart from the mark as shown.
For Smoking Tobacco.
First use January 1923; in commerce Apr. 8, 1963.

SN 207,185. Lane Limited, New York, N.Y. Filed Nov. 30, 1964.

DEVOTION

For Smoking Tobacco.
First use August 1964.

SN 208,316. The American Tobacco Company, New York, N.Y. Filed Dec. 17, 1964.

PIMLICO

For Cigarettes.
First use Dec. 11, 1964.

SN 208,320. The American Tobacco Company, New York, N.Y. Filed Dec. 17, 1964.

SHERWOOD

For Cigarettes.
First use Dec. 11, 1964.

SN 208,322. The American Tobacco Company, New York, N.Y. Filed Dec. 17, 1964.

LONGMEADOW

For Cigarettes.
First use Dec. 11, 1964.

SN 208,323. The American Tobacco Company, New York, N.Y. Filed Dec. 17, 1964.

MARKEN

For Cigarettes.
First use Dec. 11, 1964.

SN 208,326. The American Tobacco Company, New York, N.Y. Filed Dec. 17, 1964.

DUTCH CROWN

For Cigarettes.
First use Dec. 11, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 44,445. Diva Laboratorien A.G., Zurich, Switzerland, by change of name from Diva Laboratorium Aktiengesellschaft, Zurich, Switzerland. Filed Feb. 11, 1958.

F 99

Owner of Swiss Reg. No. 134,313, dated July 17, 1950.
For Pharmaceutical Preparations Containing Vitamin F.

SN 154,997. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 11, 1962.

UDDER-TONE

For Antiseptic Preparation for Animal Use.
First use in or before May 1956.

SN 174,394. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany, assignee of Lloyd Brothers Incorporated, Cincinnati, Ohio. Filed Aug. 5, 1963.

DI-BETA

For Medicinal Preparation for Reducing the Concentration of Sugar in the Blood.
First use March 1963; in commerce March 1963.

SN 175,230. White Laboratories, Inc., Kenilworth, N.J. Filed Aug. 16, 1963.

DEMEL

For Medicinal Skin Cream To Change the Pigment of Skin.
First use on or about July 3, 1963.

SN 190,155. Cole Chemical Company (Oklahoma corporation), St. Louis, Mo., assignee of Cole Chemical Company (Delaware corporation), St. Louis, Mo. Filed Apr. 2, 1964.

Cole

Owner of Reg. No. 655,439.
For Pharmaceutical Preparation for the Treatment of Headaches and Iron Deficiency and for Use in Iodide Therapy.
First use Nov. 15, 1955.

SN 196,422. Bristol-Myers Company, New York, N.Y. Filed June 25, 1964.

TEGOPEN

For Antibiotic Preparation.
First use Apr. 14, 1964.

SN 205,636. V.M.E. Corp., Saginaw, Tex. Filed Nov. 5, 1964.

V.M.E.

For Livestock Nutrition Products.
First use Oct. 12, 1964.

SN 207,849. Youngs Drug Products Corporation, New York, N.Y. Filed Dec. 9, 1964.

steri·wipe

For Sterile Pads Impregnated With An Antiseptic Solution for Cleansing and Preparing the Skin Area Prior to Injecting.
First use Nov. 20, 1964.

SN 208,137. The Standard Oil Company, Cleveland, Ohio. Filed Dec. 14, 1964.

SOHIPET

Owner of Reg. Nos. 235,809, 667,648, and others.
For White Petroleum Jelly for Repackaging, Processing, and Manufacturing.
First use April 1961.

SN 208,438. Bristol-Myers Company, New York, N.Y. Filed Dec. 16, 1964.

PENAKAN

For Antibiotic Preparation.
First use July 20, 1964.

Class 19—Vehicles

SN 193,010. Holiday Industries, Inc., Pittsburgh, Pa. Filed May 8, 1964.

"CARBRELLA"

For Awning To Be Attached to Automobiles.
First use Jan. 15, 1964.

SN 196,530. Fred W. Kieffer, d.b.a. Miracle Spring Lift Co., Memphis, Tenn. Filed June 26, 1964.

MIRACLE

For Vehicle Spring Lifts Used To Restore Coil Springs to Original Position.
First use Apr. 26, 1961.

SN 202,298. Metal Spinners, Inc., Milwaukee, Wis. Filed Sept. 21, 1964.

MS
METAL SPINNERS

No claim is made to the words "Metal Spinners" apart from the other features of the mark.
For Metal Parts and Component Parts for Freight Car and Tank Car Ends, Cape and Covers, Such Metal Parts and Component Parts Being Made From Sheet Metal, Ferrous and Non-Ferrous, Including Steel, Aluminum, Copper, and Brass.
First use Nov. 23, 1962.

SN 203,544. Three G Corporation, Akron, Ohio. Filed Oct. 7, 1964.

3G
TAYPA-MATE

Owner of Reg. Nos. 758,734, 779,766, and 779,767.
For Tire- and Wheel-Balancing Weights.
First use Aug. 3, 1964.

SN 205,487. The Anderson Company, Gary, Ind. Filed Nov. 4, 1964.

RED DOT

Owner of Reg. Nos. 680,695 and 692,735.
For Windshield Wiper Arms and Blades.
First use Jan. 31, 1958.

SN 205,581. Fleet Engineers, Inc., Muskegon Heights, Mich. Filed Nov. 5, 1964.

ADJUST-A-BRACE

For Structural Brace Assemblies for Trailers.
First use May 9, 1964.

SN 205,747. Union Steel Products Company, Albion, Mich. Filed Nov. 6, 1964.

VISA HI-LO MATIC

Owner of Reg. Nos. 734,184 and 737,088.
For Manually Manipulated Vehicles Adapted for Use in Self-Serving Stores and the Like.
First use Oct. 1, 1964.

SN 205,871. Joseph J. Szakacs, d.b.a. Hydrocraft, San Diego, Calif. Filed Nov. 9, 1964.

HYDROCAT

For Boats and Ships.
First use Feb. 5, 1958.

SN 206,276. MGM Brakes, Inc., Cloverdale, Calif. Filed Nov. 16, 1964.

MGM

For Pressure Fluid Motors, Valves, and Parts Therefor, for Actuating Vehicular Brakes.
First use July 26, 1956.

Class 20 — Linoleum and Oiled Cloth

SN 207,114. Congoleum-Nairn Inc., Kearny, N.J. Filed Nov. 30, 1964.

PATRIOT

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Oct. 30, 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 162,642. Gould-National Batteries, Inc., St. Paul, Minn. Filed Feb. 13, 1963.

SILVER PAC

For Primary and Secondary Battery Cells and Batteries.
First use July 27, 1962.

SN 175,629. Buckeye Telephone and Supply Co., Columbus, Ohio. Filed Aug. 28, 1963.

BUTELCO

Owner of Reg. No. 648,172.
For Low Voltage Signaling Systems and Equipment Utilizing Wired Circuits, Indicator Panels and Lights in Indicating the Availability of Hospital Beds, and for Like Applications.
First use Dec. 11, 1962.

SN 181,608. Bata Shoe Company of Canada Ltd., Batawa, Ontario, Canada. Filed Nov. 21, 1963.

CLICKODEX

Priority claimed under Sec. 44(d) on Canadian application filed June 21, 1963; Reg. No. 134,742, dated Feb. 21, 1964.
For High Frequency Electronic Bonding and Cutting Presses for Use With Thermoplastic Materials.

SN 185,798. Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. Filed Jan. 31, 1964.

PANA

Owner of Japanese Reg. No. 603,916, dated Jan. 24, 1963.
For Radio Receivers.

SN 188,231. Glass-Tite Industries, Inc., Providence, R.I. Filed Mar. 9, 1964.

GLASS-TITE INDUSTRIES, INC.

The Stippling in the drawing is for the purpose of shading.
For Glass-To-Metal Semi-Conductor Packages, Glass and Metal Diode Packages, and Ceramic-To-Metal Packages for Rectifiers, Transistors, and the Like.
First use February 1962; October 1956 as to "Glass-Tite."

SN 190,209. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Apr. 2, 1964.

VARIAXIAL

For Microphones.
First use on or about Feb. 23, 1964; in commerce on or about Feb. 23, 1964.

SN 190,377. Holley Carburetor Company, Warren, Mich. Filed Apr. 6, 1964.

TPI

For Parts for Transistorized Ignition Systems for Internal Combustion Engines—Namely, Adapter Plates, Electrical Hardware, Mounting Hardware, Resistor and Bracket Assembly, Coil Brackets, and Kits for Said Parts.
First use Dec. 17, 1963.

SN 190,666. United-Greenfield Corporation, Chicago, Ill. Filed Apr. 8, 1964.

VULCAN

Owner of Reg. Nos. 34,562, 42,226, and 88,987.
For Electrical Apparatus, Machines and Supplies—Namely, Electric Drills, Electric Sanders, Battery Chargers, and Booster Cables.
First use Feb. 28, 1962, on electric drills.

SN 191,618. Frits Sennheiser, d.b.a. Sennheiser Electronic Dr.-Ing Frits Sennheiser, Bissendorf, near Hannover, Germany. Filed Apr. 20, 1964.

For Audio Transformers, Sound Amplifiers, Microphones, Earphones, and Component Parts Thereof.
First use Apr. 30, 1958; in commerce July 31, 1963.

SN 192,539. Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland. Filed May 4, 1964.

SEMICADUR

Priority claimed under Sec. 44(d) on Swiss Reg. No. 200,983, dated Nov. 9, 1963.
For Electrical Insulation Materials.

SN 192,540. Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland. Filed May 4, 1964.

MICADUR

Priority claimed under Sec. 44(d) on Swiss Reg. No. 200,982, dated Nov. 9, 1963.
For Electrical Insulation Materials.

SN 195,895. Rils Industries Inc., Berkeley Heights, N.J. Filed June 17, 1964.

RILS

For Push Button Switches.
First use May 11, 1964.

SN 197,240. American Machine & Foundry Company, New York, N.Y. Filed July 7, 1964.

P&B

Owner of Reg. No. 726,921.
For Electrical Switches, Including Mechanically, Magnetically, and Electronically Operated Switches, and Component Parts Therefor.
First use at least as early as Dec. 6, 1961.

SN 198,625. Telefonaktiebolaget L M Ericsson, Stockholm, Sweden. Filed July 2, 1964.

Cobra

Owner of Swedish Reg. No. 80,050, dated Mar. 16, 1956.
For Telephone Instruments.
First use Dec. 10, 1963; in commerce Dec. 10, 1963.

SN 198,988. Telonic Industries, Inc., Beech Grove, Ind. Filed July 31, 1964.

ACZENER

For Shunt Regulators for Power Supplies.
First use June 15, 1964.

SN 206,880. Ervin O. Rogers, d.b.a. Mutual Inventors Guild, Pecos, Tex. Filed Nov. 24, 1964.

STEAK CHARMER



For Electric Plate Warmer.
First use Nov. 16, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 135,002. Walter Lantz Productions, Inc., Hollywood, Calif. Filed Jan. 2, 1962.

OSWALD RABBIT

Owner of Reg. No. 250,300.
For Toys—Namely, Squeeze Toys, Coloring Sets, Inflatable Toys, Hand Puppets, and Equipment Sold as Units for Playing Various Type Parlor Games.
First use spring of 1940.

SN 162,554. Indoor Golf Corporation, Virginia Beach, Va. Filed Feb. 12, 1963.



For Playing Surface With Cups and Golf Balls for Playing a Golf Game.
First use January 1963.

SN 191,462. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed Apr. 17, 1964.

POKEY

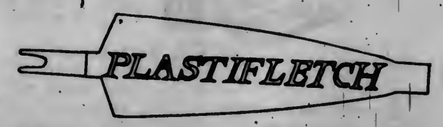
For Puppet.
First use Dec. 16, 1963.

SN 191,786. Alice C. Woster, Plattsmouth, Nebr. Filed Apr. 21, 1964.



For Equipment (or Apparatus) Sold as a Unit for Playing a Board Game.
First use Mar. 17, 1964.

SN 196,660. Max Hamilton, Flagstaff, Ariz. Filed June 29, 1964.



No claim of exclusive right is made to the butt section of an arrow for the goods recited.
For Plastic Fletching for Arrows.
First use August 1956.

SN 197,029. De Luxe Reading Corporation, Elizabeth, N.J. Filed July 8, 1964.

BONNIE BRIDE

The word "Bride" is disclaimed apart from the mark as shown.
For Dolls, Doll Clothing and Accessories for Such Dolls.
First use June 16, 1964.

SN 197,684. Donald F. Duncan, Inc., Evanston, Ill. Filed July 13, 1964.

BO-YO

Owner of Reg. Nos. 298,697 and 300,504.
For Return Tops.
First use May 18, 1964.

SN 200,731. Howard Dale King, Radford, Va. Filed Aug. 27, 1964.

REFLEX

For Equipment for Playing an Educational Card Game.
First use July 29, 1964.

SN 201,287. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Sept. 4, 1964.

FROSTY SNO-MAN

For Toy Machine for Making Ice Shavings, and Molds and Holders for Ice Shavings Sold Therewith.
First use on or about Mar. 1, 1961.

SN 201,353. American Hardware Supply Company, East Butler, Pa. Filed Sept. 8, 1964.

AMERICAN CAPTAIN

For Baseballs, Softballs, Bats, Badminton Sets, Tennis Sets, Basketballs, and Basketball Goal Set Comprising Steel Hoop and Net, and Golf Balls.
First use Jan. 12, 1963, on bats.

SN 201,765. True Temper Corporation, Cleveland, Ohio. Filed Sept. 11, 1964.



For Fishing Reels, Fishing Rods, Fishing Lines, Fishing Rod Cases, Tackle Boxes, Gaff Hooks, and Fishing Lures.
First use Aug. 1, 1946.

SN 201,946. Louis Kessler, d.b.a. Novelty Games Co., Brooklyn, N.Y. Filed Sept. 15, 1964.

PAY-ME

For Equipment Sold as a Unit for Playing a Card Game After the Manner of Bingo.
First use August 1939.

SN 202,345. Alexander Doll Company, Inc., d.b.a. Madame Alexander, New York, N.Y. Filed Sept. 22, 1964.

"ALEXANDER RAGLINE DOLLS"

Applicant disclaims the word "Dolls" apart from the mark as shown.
For Dolls.
First use Aug. 7, 1964.

SN 202,413. Campbell Manufacturing Company Limited, Willowdale, Ontario, Canada. Filed Sept. 23, 1964.



Applicant disclaims the exclusive right to the use of the word "Campbell" and the representation of a portion of a golf ball apart from the mark as shown.
For Golf Balls.
First use June 12, 1964; in commerce July 8, 1964.

SN 202,544. Milton Bradley Company, Springfield, Mass. Filed Sept. 24, 1964.

ARE YOU ON THE BALL?

For Apparatus Sold as a Unit for Playing a Game of Skill, the Object of Which Is To Place a Ball Propelled by a Manual Lever in the Center Hole of a Round Disk With Holes in It.
First use July 8, 1964.

SN 202,545. Milton Bradley Company, Springfield, Mass. Filed Sept. 24, 1964.

WOW

For Apparatus Sold as a Unit for Playing a Parlor Game.
First use July 8, 1964.

SN 202,546. Milton Bradley Company, Springfield, Mass. Filed Sept. 24, 1964.

TUSSLE

For Apparatus Sold as a Unit for Playing a Parlor Game.
First use Aug. 4, 1964.

SN 202,547. Milton Bradley Company, Springfield, Mass. Filed Sept. 24, 1964.

KOOKIE CHICKS

For Apparatus Sold as a Unit for Playing a Parlor Game.
First use June 3, 1964.

SN 202,548. Milton Bradley Company, Springfield, Mass. Filed Sept. 24, 1964.

MISSING LINKS

For Apparatus Sold as a Unit for Playing a Board Game.
First use June 23, 1964.

SN 202,549. Milton Bradley Company, Springfield, Mass. Filed Sept. 24, 1964.

GET THE MESSAGE

For Apparatus Sold as a Unit for Playing a Parlor Game.
First use June 16, 1964.

SN 202,551. Milton Bradley Company, Springfield, Mass. Filed Sept. 24, 1964.

SHENANIGANS

For Equipment Sold as a Unit for Playing a Board Game.
First use June 1, 1964.

SN 202,751. Milton Bradley Company, Springfield, Mass. Filed Sept. 28, 1964.

BOBBIN NOGGIN

For Equipment Sold as a Unit Comprising a Magnetised Sphere and a Magnetised Cap Attached to the Sphere by an Elasticised String for Playing a Game of Chance or Skill, Wherein the Cap Is Placed on the Sphere.
First use July 21, 1964.

SN 202,752. Milton Bradley Company, Springfield, Mass. Filed Sept. 28, 1964.

POW

For Apparatus Sold as a Unit for Playing a Cannon Game.
First use July 6, 1964.

SN 202,754. Milton Bradley Company, Springfield, Mass. Filed Sept. 28, 1964.

WORLD ON A STRING

For Toy in the Shape of a World Globe Which Is Suspended on a String, and Emits Sounds in the Form of Singing When the String Is Unwound.
First use Aug. 5, 1964.

SN 202,788. Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. Filed Sept. 28, 1964.

L'IL SISTER

For Dolls.
First use Aug. 3, 1964.

SN 206,187. Stowe-Woodward, Inc., Newton Upper Falls, Mass. Filed Nov. 13, 1964.

GOLD DOT

For Bowling Balls.
First use Sept. 23, 1964.

SN 207,402. Lowville-American, Inc., Lowville, N.Y. Filed Dec. 3, 1964.



For Baseball Bats.
First use Sept. 16, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 177,569. The Tait Manufacturing Company, Dayton, Ohio. Filed Sept. 23, 1963.

TAIT water tower

For the purpose of this application only and without waiver of common law rights, applicant makes no claim to the words "Water" or "Tower," or to the representation of a water tower, used apart from the mark as shown.

For Water Supply Systems for Wells Especially Adapted for Installation in Restricted Quarters and Featuring a Pre-Charged Pressure Tank.

First use May 8, 1963.

SN 179,355. Purex Corporation, Ltd., Lakewood, Calif., assignee of Pullman Vacuum Cleaner Corporation, Boston, Mass. Filed Oct. 18, 1963.

LITTER BUGGY

The word "Litter," as applied to the goods, is disclaimed apart from the mark as a whole.

For Vacuum Cleaners Powered by Gasoline Engines, and Parts Thereof.

First use Sept. 10, 1963.

SN 185,025. Dura Corporation, d.b.a. Page & Page Co., Oak Park, Mich. Filed Jan. 21, 1964.

PAGE

For Industrial Trailers, Logging Trailers, Truck and Trailer Suspension Systems, and Vehicle-Mounted Lifting Equipment Adapted To Enable the Ready Separation of Tractor and Loaded Trailer, and Parts and Accessories.

First use May 1939.

SN 189,291. Paul Hammelmann, d.b.a. Paul Hammelmann Maschinenfabrik, Oelde, Westphalia, Germany. Filed Mar. 26, 1964.

RUCK ZUCK

Owner of German Reg. No. 768,023, dated Dec. 1, 1962.

For High-Pressure Pumps; Hydrodynamic Cleaning Apparatus—Namely, High-Pressure Jet Tubes, Nozzles for Use in Cleaning of Pipes and Canals; Vehicles for Use in Cleaning of Pipes and Canals; and High Pressure Cleaning Apparatus for Containers, Tanks, and Barrels.

SN 190,438. Schick Electric Inc., Lancaster, Pa., by change of name from Schick Incorporated, Lancaster, Pa. Filed Apr. 6, 1964.

LADY SCHICK

Owner of Reg. Nos. 729,387, 744,955, and 761,310.

For Electric Shavers.

First use in about February 1940; in or about 1930 as to "Schick."

SN 194,118. B & J Manufacturing Company, Glenwood, Ill. Filed May 25, 1964.

ROCKET

For Tire Rasps, Blades and Parts for Tire Rasps.

First use October 1945.

SN 194,188. Johnson Mfg. Company, Inc., Chippewa Falls, Wis. Filed May 26, 1964.

FLEX LIP

For Extrusion Die for Plastic Film.

First use Apr. 10, 1964.

SN 195,146. Pogo Trimmer Company, Dallas, Tex. Filed June 8, 1964.

POGO TRIMMER

The word "Trimmer" is disclaimed apart from the mark as shown.

For Grass Trimmers.

First use Jan. 15, 1964.

SN 197,098. The Ducon Company, Inc., Mineola, N.Y. Filed July 6, 1964.

FLUO/veyor

For Pneumatic Conveying Apparatus for Granular, Crystalline and Fibrous Material Capable of Being Fluidised Including a Pressure Vessel Which Alternately Receives Said Material and Then Discharges Said Material in a Fluidized State Through a Pipe.

First use June 18, 1964.

SN 200,819. Carl E. Carlsen, New York, N.Y. Filed Aug. 28, 1964.

THE DENMARKER

For Hand Stamp or Printing Device Which Creates Inked Impressions When Brought in Contact With a Surface.

First use July 31, 1964.

SN 201,349. American Hardware Supply Company, East Butler, Pa. Filed Sept. 8, 1964.

VILLAGE PARK

For Spading Forks, Hoes, Rakes, Grass and Hedge Shears, Shovels, Lawn Spreader, Roller, Grass Cutter, Reel and Rotary Mowers, and Lawn Sweeper.

First use Apr. 13, 1960, on reel and rotary mowers.

SN 202,673. Clarence T. Bickner, d.b.a. Bickner Manufacturing Co., El Sobrante, Calif. Filed Sept. 25, 1964.

BOW MASTER

The word "Bow" is disclaimed apart from the mark as shown.

For Apparatus for Use in Making Ornamental Bows and Component Parts Thereof Including Bow Pins.

First use Aug. 26, 1963.

SN 202,692. Ingersoll-Rand Company, New York, N.Y. Filed Sept. 25, 1964.

PIPELINER

For Compressor for Pressurizing Fluid Pipelines.

First use Aug. 12, 1964.

SN 202,977. American Roller Company, Chicago, Ill. Filed Sept. 30, 1964.



The drawing is lined for the color red, but color is not a distinct feature of the mark.

For Component of Rollers—Namely, an Elastomeric Covering Forming the Active Surface Portion Thereof Such as Those Used for Coating, Graining, Printing, Squeesing, Traction, Conveying, and Driving Purposes.

First use May 1, 1962.

SN 203,147. American Hardware Supply Company, East Butler, Pa. Filed Oct. 2, 1964.

ALLEGHENY

For Tillers Powered by Gasoline Engines.

First use Dec. 10, 1963.

SN 203,689. Sargent & Greenleaf, Inc., Rochester, N.Y. Filed Oct. 9, 1964.

CODEMATIC

For Key Cutting Machine.

First use Aug. 18, 1964.

SN 203,835. Cap-Roc, Inc., Rochester, N.Y. Filed Oct. 12, 1964.

SPEED-CYCLE

For Hand and Foot Operated Actuating Devices for Automatic Machinery Such as Button Sewing Machines.

First use June 4, 1964.

SN 204,272. Metal Spinners, Inc., Milwaukee, Wis. Filed Oct. 19, 1964.

MS METAL SPINNERS

No claim is made to the words "Metal Spinners" apart from the other features of the mark.

For Metal Parts and Component Parts for Machine Tools, Paper Making Machines, Paper Bleaching Machines, Printing Machinery and Wrapping Machinery, Metal Parts and Component Parts for Tractors and Other Earth Moving Equipment, Such Metal Parts and Component Parts Being Made From Sheet Metal, Ferrous and Non-Ferrous, Including Steel, Aluminum, Copper, and Brass.

First use Nov. 23, 1962.

SN 204,294. Royal Industries, Inc., Pasadena, Calif. Filed Oct. 19, 1964.

TIE-MATIC

For Tying Apparatus Employing Tie Strips Comprising Wire Bonded to a Ribbon, Such as Plastic and Paper, and Capable of Being Tied by Twisting, for Tying Bags and the Like.

First use June 30, 1964.

SN 204,813. Morden Machines Company, Portland, Oreg. Filed Oct. 26, 1964.

MORDEN PRESSURIZED FIBERIZER

The words "Pressurized Fiberiser" are disclaimed by themselves apart from the composite mark. Owner of Reg. Nos. 595,494, 720,635, and others.

For Machine for Treating Pulp and Paper Stock.

First use on or about Dec. 14, 1961.

SN 204,934. Thompson Ramo Wooldridge Inc., Euclid, Ohio. Filed Oct. 27, 1964.

FLEXIGARD

For Bearing Seals.

First use June 1, 1964.

SN 205,253. The Cincinnati Gear Company, Cincinnati, Ohio. Filed Nov. 2, 1964.

Equa-Load

For Planetary Gear Devices.

First use Oct. 5, 1964.

SN 206,162. Link-Belt Company, Chicago, Ill. Filed Nov. 13, 1964.

HOP-A-FLOW

For Oscillating Conveyors.

First use Oct. 22, 1964.

SN 206,239. Club Aluminum Products Company, La Grange Park, Ill. Filed Dec. 16, 1964.



Owner of Reg. Nos. 509,002, 680,290, and others.

For Kitchen Tools—Namely, Spatulas and Spoons.

First use at least as early as Apr. 15, 1964.

SN 208,668. Burner-Hollomon Manufacturing Corp., Hyattsville, Md. Filed Dec. 22, 1964.

PANEL-RITE

For Machines for Producing Prefabricated Building Wall Panels.
First use July 26, 1963.

SN 208,673. Dempster Mill Mfg. Co., Beatrice, Nebr. Filed Dec. 22, 1964.

FLEX-O-JET

For Pumps and Pumping Equipment.
First use July 9, 1964.

SN 208,674. Dempster Mill Mfg. Co., Beatrice, Nebr. Filed Dec. 22, 1964.

PERM-O-PRIME

For Jet Pumps and Pumping Equipment.
First use July 9, 1964.

SN 208,675. Dempster Mill Mfg. Co., Beatrice, Nebr. Filed Dec. 22, 1964.

SubKing

For Pumps and Pumping Equipment.
First use July 9, 1964.

SN 208,676. Dempster Mill Mfg. Co., Beatrice, Nebr. Filed Dec. 22, 1964.

VERT-O-JET

For Pumps and Pumping Equipment.
First use July 9, 1964.

SN 208,761. R. Mueller & Associates, Santa Barbara, Calif. Filed Dec. 28, 1964.

ROLOG

For Tool for Forming Newspapers Into a Cylinder for Burning in a Fireplace.
First use Jan. 15, 1961.

SN 210,641. Borg-Warner Corporation, Chicago, Ill. Filed Jan. 26, 1965.



Owner of Reg. Nos. 184,460, 416,953, and others.
For Saws, Saw Blades, Machine Knives, Machine Knife Blades, and Saw Chain.
First use on or prior to June 1884.

Class 26—Measuring and Scientific Appliances

SN 149,274. Leesona Corporation, Warwick, R.I., assignee of Electro Devices Inc., Newton, Mass. Filed July 18, 1962.



For Electric Apparatus for Testing, Measuring and Matching Impedance.
First use Dec. 12, 1961.

SN 176,198. Jordan Marine Inc., Miami, Fla. Filed Sept. 3, 1963.



Applicant disclaims the term "Underwater" apart from the mark as shown.
For Lighting and Sound Equipment for Cameras.
First use Jan. 2, 1963.

SN 195,557. Simmon Omega, Inc., New York, N.Y. Filed June 12, 1964.

OMEGA

Owner of Reg. Nos. 414,031, 429,835, and 538,711.
For Photographic Equipment of All Kinds—Namely, Darkroom Equipment, Cameras, Camera Accessories and Tripods; and Optical Equipment—Namely, Lenses, Magnifiers, and Binoculars.
First use Feb. 15, 1937.

Class 27—Horological Instruments

SN 201,058. Sunbeam Corporation, Chicago, Ill. Filed Sept. 1, 1964.

THE SCANDIA

For Clocks.
First use June 29, 1964.

SN 208,868. A. H. Guggenheim S.A., Basel, Switzerland. Filed Sept. 21, 1964.

Adriatica
World-Champion

Owner of Swiss Reg. No. 191,868, dated May 16, 1962.
For Watches and Clocks and Parts Thereof.

SN 210,509. Alanjack, Inc., New York, N.Y. Filed Jan. 25, 1965.

LADORA

For Watches.
First use Jan. 1, 1964.

Class 28—Jewelry and Precious-Metal Ware

SN 207,870. Barth F. Dillon, Phoenix, Ariz. Filed Dec. 10, 1964.



Applicant disclaims the representation of the goods appearing in the mark.
For Novelty Jewelry Leg Band.
First use Mar. 25, 1964.

Class 29—Brooms, Brushes, and Dusters

SN 175,093. Aquariums Incorporated, Maywood, N.J. Filed Aug. 15, 1963.

QUIK-STIK

For Sponge, Attached to a Handle, for Cleaning Aquariums.
First use April 1959.

SN 208,779. Star Brush Manufacturing Co., Inc., Boston, Mass. Filed Dec. 23, 1964.

AQUA-FLO

For Paint Brushes.
First use Sept. 15, 1961.

SN 210,403. Anaplex Industrial Products Corporation, Glastonbury, Conn. Filed Jan. 22, 1965.



For Brushes for Polishing and Cleaning Floors and Baseboards and Adapters Therefor and Components Thereof.
First use on or before Aug. 18, 1964.

SN 210,061. Rubberset Company, East Newark, N.J. Filed Jan. 25, 1965.

OLD PRO

For Paint Brushes.
First use May 1958.

SN 210,720. Acme Markets, Inc., Philadelphia, Pa. Filed Jan. 27, 1965.



The drawing is lined for the color gold. Owner of Reg. No. 742,998.
For Brooms and Brushes—Namely, Hair Brushes and Clothes Brushes.
First use Jan. 2, 1965.

Class 32—Furniture and Upholstery

SN 181,681. The Preservation Society of Newport County, Newport, R.I. Filed Nov. 21, 1963.



For Mirrors.
First use at least as early as Mar. 27, 1961.

SN 193,679. The Land-O-Nod Company, Minneapolis, Minn. Filed May 18, 1964.

CHIROPRACTIC

For Mattresses.
First use May 1, 1964.

SN 207,280. Drexel Enterprises, Inc., High Point, N.C. Filed Dec. 2, 1964.

PRESENT INDICATIVE

For Living Room, Bedroom and Dining Room Furniture, Occasional Tables and Chairs for Household, Office and Public Use.
First use Sept. 18, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 203,963. International Oil Burner Co., St. Louis, Mo. Filed Oct. 14, 1964.

Gourmet by International

For Cooking Stove Units for Mobile Homes, Travel Trailers, and the Like.
First use Aug. 14, 1964.

SN 210,981. John H. Phillips, Santa Rosa, Calif. Filed Jan. 29, 1965.

JOLIP

For Aluminum Brazing Rods.
First use Aug. 13, 1964.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 203,004. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Sept. 30, 1964.

PERMACORD

Owner of Reg. Nos. 744,510 and 744,883.
For Tires.
First use July 2, 1964.

Class 36 — Musical Instruments and Supplies

SN 199,668. Grand Piano Company, Inc., Morganton, N.C. Filed Aug. 11, 1964.

Betsy Lynn

The name "Betsy Lynn" is fictitious.
For Pianos.
First use on or about Jan. 3, 1963.

SN 199,669. Grand Piano Company, Inc., Morganton, N.C. Filed Aug. 11, 1964.
The name "Nancy Hart" is fictitious.

Nancy Hart

For Pianos.
First use on or about Jan. 3, 1963.

Class 37 — Paper and Stationery

SN 192,131. The C. R. Gibson Company, Norwalk, Conn. Filed Apr. 24, 1964.

Multi-Vision

Owner of Reg. No. 607,314.
For Photo Albums.
First use May 12, 1950.

SN 198,384. Nikko Pen Kabushiki Kaisha, Chofu City, Tokyo, Japan, by change of name from Toyo Seiko Kabushiki Kaisha, Chofu City, Tokyo, Japan. Filed July 22, 1964.

NIKKO

The Japanese word "Nikko" means "sunshine." Owner of Japanese Reg. No. 421,464, dated Feb. 23, 1953.
For Stationery: Writing Brush, Paperweight, Pencil, Fountain Pen, Pen Point, Pen Holder, Ink Pot, Ink Tray, File Binder, Pencil Sharpener, Chalk, Pencil Case, and Blotter.

SN 199,573. International Paper Company, New York, N.Y Filed Aug. 10, 1964.

Green TreaTex

For Food Wrapping Paper.
First use Feb. 5, 1960.

SN 206,101. Hammermill Paper Company, Erie, Pa. Filed Nov. 12, 1964.

SUPERSETTE

For Coated Papers.
First use June 23, 1964.

Class 38 — Prints and Publications

SN 161,649. Bankers & Merchants Savings System, Inc., Chicago, Ill. Filed Jan. 29, 1963.

CASH BANK

For Trading Stamps.
First use Jan. 8, 1963.

SN 173,860. W. Wallace Orr, Inc., Philadelphia, Pa. Filed July 26, 1963.

NATIONAL FOOTBALL HIGHLIGHTS

No claim is made to the words "National Football" apart from the mark as shown.
For Motion Picture Films.
First use on or about Sept. 1, 1949.

SN 189,741. Texaco Experiment Incorporated, New York, N.Y. Filed Mar. 26, 1964.

the Cricketeer

For Technical Newsletter for Applicant's Employees and Customers.
First use Jan. 23, 1964.

SN 190,604. Fisher Scientific Company, Pittsburgh, Pa. Filed Apr. 8, 1964.

LABORATORY REPORTER

For Periodic Sales Promotional Bulletins Containing Information Regarding Applicant's Products.
First use July 8, 1963.

SN 190,709. Fisher Scientific Company, Pittsburgh, Pa. Filed Apr. 9, 1964.

CLINICAL REPORTER

For Periodic Sales Promotional Bulletins Containing Information Regarding Applicant's Products.
First use Sept. 5, 1962.

SN 191,714. Pyramid Publishing Company, Cleveland, Ohio. Filed Apr. 21, 1964.

LEISURE

For Magazine.
First use July 20, 1962.

SN 195,392. Field Enterprises Educational Corporation, Chicago, Ill. Filed June 11, 1964.

WORLD BOOK

Owner of Reg. No. 761,657.
For Books and Publications Such as Booklets, Globes, and Programmed Learning Aids Including Printed Materials for Use Therewith.
First use during 1917.

SN 195,742. Travelers Directory Service, Inc., Winston-Salem, N.C. Filed June 15, 1964.

TDS

The lining on the drawing does not represent color.
For Combination Place Mat, Map and Directory.
First use Apr. 1, 1963.

SN 200,949. McGraw-Hill, Inc., New York, N.Y. Filed Aug. 31, 1964.

COLOR-FACTOR

For Educational Aid Sets, Consisting of a Book and Blocks of Various Sizes and Colors.
First use May 11, 1964.

SN 200,950. McGraw-Hill, Inc., New York, N.Y. Filed Aug. 31, 1964.

C-F

For Educational Aid Sets, Consisting of a Book and Blocks of Various Sizes and Colors.
First use May 11, 1964.

SN 201,326. Frederick A. Eversberg, Sr., Chicago, Ill. Filed Sept. 1, 1964.

UPTALK IN VERSE

For Cards and Folders Containing Verse, for Use as Bookmarks, and as Advertising and Public Service Placards.
First use Feb. 23, 1964.

SN 202,081. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Sept. 17, 1964.

THE PARKERIZER

For House Organ Published at Regularly Recurring Intervals.
First use January 1923.

SN 202,128. Eothen Films Limited, Boreham Wood, England. Filed Sept. 16, 1964.

For Cinematographic Films Prepared for Exhibition.
First use Jan. 1, 1955; in commerce Oct. 20, 1962.

SN 202,269. Hollander Publishing Company, Inc., Minnetonka, Minn. Filed Sept. 21, 1964.

HOLLANDER

For Automotive Vehicle Parts Manuals.
First use Jan. 15, 1934.

SN 202,864. Success Motivation Institute, Inc., Waco, Tex. Filed Sept. 28, 1964.

SMI WORLD

Owner of Reg. No. 773,220.
For Newsletter.
First use at least as early as Jan. 30, 1963.

SN 206,283. The Christian Science Publishing Society, Boston, Mass. Filed Nov. 16, 1964.

El Heraldo de la Ciencia Cristiana

The Spanish words shown on the drawing mean "The Herald of Christian Science." Owner of Reg. Nos. 415,009, 679,634, and 687,264.
For Magazine Published Every Three Months in English and in Spanish.
First use Feb. 25, 1963.

SN 207,526. Putman Publishing Company, Chicago, Ill. Filed Dec. 4, 1964.

FOOD PROCESSING

The drawing is lined for green, but color is not an essential feature of the mark. Owner of Reg. No. 647,856.
For Monthly Magazine and a Biennial Catalog.
First use Dec. 10, 1957; January 1950 as to "Food Processing."

SN 207,791. Cliff's Notes, Inc., Lincoln, Nebr. Filed Dec. 9, 1964.

Cliff's Notes

Applicant hereby disclaims the word "Notes" apart from the mark as shown.
For Series of Publications Concerned With the Analysis of Plot, Characters, etc., of Well-Known Literary Classics and a Series of Publications Covering Brief Reviews of Any Subjects Needed by High School and College Students.
First use August 1958.

SN 207,935. American Geological Institute, Washington, D.C. Filed Dec. 11, 1964.

GEOTIMES

For Magazine.
First use July 1956.

SN 207,942. Buffalo Courier-Express, Inc., Buffalo, N.Y. Filed Dec. 11, 1964.

Courier-Express

Owner of Reg. No. 506,305.
For Newspaper.
First use Sept. 12, 1964.

SN 207,962. Harvey Famous Cartoons, New York, N.Y. Filed Dec. 11, 1964.

Casper
THE FRIENDLY GHOST

Owner of Reg. Nos. 722,258 and 756,109.
For Series of Illustrated Books.
First use on or about Apr. 10, 1960.

SN 208,068. General Features Corporation, New York, N.Y. Filed Dec. 14, 1964.

HEY SWINGY

For Syndicated Comic Feature Published in Daily Newspapers.
First use Oct. 26, 1964.

SN 208,403. Southern States Cooperative Incorporated, Richmond, Va. Filed Dec. 17, 1964.

PORK-OTEL

For Blue Prints and Descriptive Literature for Hog Pens.
First use Dec. 4, 1964.

Class 39—Clothing

SN 172,786. Traverse Bay Woolen Company, Traverse City, Mich. Filed July 10, 1963.

TRAVERSE BAY

For Woolen Coats, Scarves, Gloves, Skirts, Sweaters, and Jackets.
First use June 1, 1947.

SN 179,285. Western Fashions, Inc., Denver, Colo. Filed Oct. 17, 1963.

English Fashions

The words "English Fashions" are disclaimed apart from the mark as shown.
For English Riding Apparel, Such as, Ladies', Girls', Men's, and Boys' Shirts and Pants.
First use Feb. 2, 1962.

SN 190,541. Principle Business Enterprises, Incorporated, Waterville, Ohio. Filed Apr. 7, 1964.



Applicant disclaims the pictorial representation of the goods except in combination with "Doe's-Toe's" or the pictorial representation of a deer or similar animal.
For Disposable Foam Slippers.
First use Feb. 29, 1964.

SN 191,480. Armored Garments Inc., Spruce Pine, N.C. Filed Apr. 20, 1964.

LONG N LEAN

For Ranch-Style Jeans.
First use January 1964.
Subj. to Intf. with SN 198,821.

SN 191,549. H & K Fashions, Inc., Biscoe, N.C. Filed Apr. 20, 1964.

PINE STREETER

For Ladies' Skirts, Shirts, Sweaters, and Shorts.
First use Apr. 25, 1963.

SN 197,371. Del Monte Sportswear of California, Los Angeles, Calif. Filed July 8, 1964.

JALOU ORIGINALS

The word "Originals" is disclaimed apart from the mark.
For Women's and Misses' Dresses, Blouses, Skirts, Jackets, and Suits.
First use in or about June 1963.

SN 197,834. Daisy Jéhiel, née De Botton, Paris, France. Filed July 14, 1964.

Daisy Sorène

The name "Daisy Sorène" is fanciful. Priority claimed under Sec. 44(d) on French Reg. No. 521,770, dated May 6, 1964 (Seine); Natl. Inst. No. 255,238.
For Ladies' Blouses, Dresses, Separates of Knitted and Woven Material.

SN 198,641. Delightform Foundations, Inc., Easton, Pa. Filed July 28, 1964.

LIGHT-FILL

For Brassieres and Girdles.
First use May 13, 1964.

SN 198,821. Blue Bell, Inc., Greensboro, N.C. Filed July 30, 1964.

LONG 'N LEANS

For Dungarees.
First use at least as early as December 1961.
Subj. to Intf. with SN 191,480.

SN 199,035. Ben Davis, d.b.a. Ben F. Davis Manufacturing Co., San Francisco, Calif. Filed Aug. 3, 1964.

BEN'S



Applicant disclaims the words "Union Made" and "Plenty Tough" apart from the mark as shown. Owner of Reg. No. 547,970.
For Overalls, Aprons, and Smocks.
First use Feb. 1, 1964.

SN 199,344. Atlantic Thrift Centers, Inc., New York, N.Y. Filed Aug. 6, 1964.



For Men's Dress Shirts.
First use May 27, 1964.

SN 199,932. United Sheeplined Clothing Company, Inc., New York, N.Y. Filed Aug. 14, 1964.



For Coats and Jackets for Men and Young Men, and Women and Young Women.
First use May 14, 1964.

SN 200,264. Kamp Togs, Inc., St. Louis, Mo. Filed Aug. 20, 1964.

BECKY THATCHER

The name "Becky Thatcher" is fanciful.
For Girls' Blouses, Shorts, and Slacks.
First use July 22, 1964.

SN 200,934. Heideman Mfg. Co., Inc., Portland, Oreg. Filed Aug. 31, 1964.

CJ
Sir Michael

For Men's and Boys' Woolen Shirts.
First use June 1, 1964.

SN 201,313. Wembley, Inc., New Orleans, La. Filed Sept. 4, 1964.

DÉCREL

For Men's Neckwear.
First use July 15, 1964.

SN 202,805. Johnston, Inc., Dallas, Tex. Filed Sept. 28, 1964.

Fischèl

For Toddler Clothing—Namely, Aprons, Blouses, Bonnets, Caps, Coats, Dresses, Gowns, Jackets, Leggings, Nightshirts, Overalls, Pajamas, Pram Bags, Pinafores, Robes, Rompers, Shirts, Shorts, Skirts, Slacks, Suits, and Sweaters.
First use June 17, 1964, on dresses.

SN 203,036. Solomon Bros. Co., Thomasville, Ala. Filed Sept. 30, 1964.



For Shirts.
First use July 15, 1964.

SN 204,800. Louisville Manufacturing Co., Inc., Louisville, Ky. Filed Oct. 26, 1964.

Louisville

For Caps.
First use on or about June 1, 1939.

SN 205,202. S. Rudofker's Sons, Inc., Philadelphia, Pa. Filed Oct. 30, 1964.

BEFORE SIX

Owner of Reg. Nos. 362,116, 519,448, and 519,450.
For Men's Clothing—Namely, Top Coats, and Overcoats.
First use at least as early as Oct. 13, 1964.

SN 205,321. Munsingwear, Inc., Minneapolis, Minn. Filed Nov. 2, 1964.

FLIPSY-SLIP

For Lingerie.
First use Oct. 23, 1964.

SN 208,895. Delightform Foundations, Inc., Easton, Pa. Filed Dec. 28, 1964.

U PLUS

For Brassieres and Girdles.
First use June 1, 1952.

Class 40—Fancy Goods, Furnishings, and Notions

SN 202,730. Amerace Corporation, New York, N.Y. Filed Sept. 28, 1964.

WAVE DIP

For Combs for Dressing, Ornamenting, and Cleaning the Hair.
First use Aug. 19, 1964.

SN 203,348. George R. Sturino, d.b.a. Brush N' Mug. Wilmette, Ill. Filed Oct. 5, 1964.

BRUSH "N" MUG

For Barber Supplies—Namely, Combs.
First use July 26, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 181,428. Traverse Bay Woolen Company, Traverse City, Mich. Filed Nov. 18, 1963.

TRAVERSE BAY

Owner of Reg. No. 664,110.
For Blankets and Yard Goods for Making Into Men's Coats and Suits, and Ladies' Dresses, Skirts, and Suits.
First use June 1, 1947.

SN 184,035. Cooley, Incorporated, Pawtucket, R.I. Filed Jan. 6, 1964.

Armor-Last

Owner of Reg. No. 679,353.
For Coated Fabrics for Making Into Awnings, Tarpaulins or Other Water-Proof Coverings, and the Like.
First use Oct. 31, 1961.

SN 197,033. Johnson & Johnson, New Brunswick, N.J. Filed July 3, 1964.

LORESS

Owner of Reg. No. 396,420.
For Disposable Bedding—Namely, Pads To Protect Bed Linen.
First use Mar. 1, 1964.

SN 198,828. Burlington Industries, Inc., New York, N.Y. Filed July 30, 1964.

FAIR WIND

For Fabrics in the Piece Composed of Cotton and Synthetic Fibers and Blends Thereof Suitable for Use in Men's, Women's, and Children's Outer Apparel, and in Home Furnishings.
First use Sept. 8, 1952.

SN 199,169. Burlington Industries, Inc., New York, N.Y. Filed Aug. 4, 1964.

VERSA TWILL

Without prejudice to its common law rights and for the purpose of this registration only, applicant makes no claim to the notation "Twill" apart from the mark as shown.
For Fabrics in the Piece Suitable for Use in Men's, Women's, and Children's Outer Apparel, Such as Men's Shirts, Jackets, Trousers and Shorts; Women's Blouses, Skirts and Dresses; and Children's Shirts, Jackets, Trousers, Shorts, Blouses, Skirts, and Dresses; and in Home Furnishings.
First use Jan. 12, 1951.

SN 199,723. Dan River Mills, Incorporated, Danville, Va. Filed Aug. 12, 1964.

RIVERLIN

Owner of Reg. No. 695,732.
For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use June 25, 1964.

SN 204,364. Crompton Company, New York, N.Y. Filed Oct. 20, 1964.

STUART TWILL

The term "Twill" is disclaimed apart from the mark as shown.
For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Sept. 9, 1964.

SN 204,920. Piedmont Southern Co., Inc., New York, N.Y. Filed Oct. 27, 1964.

MADRALEIGH

For Cotton Piece Goods.
First use Sept. 1, 1964.

SN 208,863. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Dec. 24, 1964.

ULTIMA

For Fabrics Made of or Containing Natural, Man-Made, or Synthetic Fibers, and Adapted To Be Made Up Into Articles of Apparel for Women and Children.
First use on or about Aug. 1, 1952.

SN 208,967. L. J. Schott Company, Akron, Ohio. Filed Dec. 28, 1964.

PORTAGE BALANCED

For Water Resistant Treated Duck Fabric Material.
First use Nov. 27, 1964.

SN 209,179. Klopman Mills, Inc., Rockleigh, N.J. Filed Dec. 31, 1964.

BOOSTER

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Aug. 31, 1964.

SN 209,182. Klopman Mills, Inc., Rockleigh, N.J. Filed Dec. 31, 1964.

INSIGHT

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Aug. 31, 1964.

SN 209,183. Klopman Mills, Inc., Rockleigh, N.J. Filed Dec. 31, 1964.

CRUISER

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Aug. 31, 1964.

SN 209,184. Klopman Mills, Inc., Rockleigh, N.J. Filed Dec. 31, 1964.

VOLTAGE

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Sept. 1, 1964.

Class 43—Thread and Yarn

SN 172,785. Traverse Bay Woolen Company, Traverse City, Mich. Filed July 10, 1963.

TRAVERSE BAY

For Yarns.
First use June 1, 1947.

SN 208,907. Forté-Fairbairn Inc., Needham Heights, Mass. Filed Dec. 28, 1964.

Forté

Owner of Reg. No. 713,313.
For Yarns.
First use on or about Mar. 2, 1942.

SN 209,005. Fedelon Throwing Corp., Goldsboro, N.C. Filed Dec. 29, 1964.

FILAN

For Yarns Made of Synthetic Fibers.
First use as early as Dec. 1, 1964.

Class 44—Dental, Medical, and Surgical Appliances

SN 180,967. Acme Protection Equipment Co., South Haven, Mich., by change of name and assignment from Acme Protection Equipment Company, South Haven, Mich. Filed Nov. 13, 1963.

ACME

Owner of Reg. Nos. 624,578 and 746,726.
For Gas Masks, Gas Mask Canisters, and Gas Mask Carrying Cases.
First use during or before 1947.

SN 201,890. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed Sept. 8, 1964.

STIKEMS

For Denture Adhesive Pads.
First use Sept. 1, 1964.

SN 207,062. La Berne Manufacturing Company, Inc., Columbia, S.C. Filed Nov. 27, 1964.

LUMBARTRAK

For Therapeutic Traction Treatment Tables.
First use Feb. 12, 1964.

SN 207,524. Puritan Compressed Gas Corporation, Kansas City, Mo. Filed Dec. 4, 1964.

PMR

For Manually Operated Resuscitator.
First use Nov. 5, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 200,646. Holland House Brands, Inc., Woodside, N.Y. Filed Aug. 26, 1964.

COCKTAIL HOST

No claim is made to the word "Cocktail" apart from the mark as shown.
For Non-Alcoholic Cocktail Mix for Alcoholic and Non-Alcoholic Beverages.
First use Aug. 20, 1964.

Class 46—Foods and Ingredients of Foods

SN 167,278. Koepplinger's Bakery, Inc., Oak Park, Mich. Filed Apr. 22, 1963.

STAFF O' LIFE

For Bread.
First use early in March 1940.

SN 172,289. Cap Aktiebolag, Gothenburg, Sweden. Filed July 2, 1963.

Mintis

The word "Mintis" is disclaimed apart from the mark as shown.
For Mint Candies.
First use October 1962; in commerce October 1962.

SN 177,717. VAN MELLE N.V., Rotterdam, Netherlands. Filed Sept. 25, 1963.

FRUIT-TELLA

For Caramels.
First use Oct. 15, 1951; in commerce Mar. 23, 1956.

SN 177,896. John W. Leavitt Company, Everett, Mass. Filed Sept. 27, 1963.

PIK-NIK

For Shelled Raw Nuts, Nuts in the Shell, Salted Nuts, and Peanut Butter.
First use in or about 1940.

SN 189,176. Jancik & Hartness Produce Company, Inc., d.b.a. John Jancik Produce, Pharr, Tex. Filed Mar. 20, 1964.

CAROL KAY

The trademark "Carol Kay" is not the name of any known living individual. Owner of Reg. No. 414,558.
For Fresh Vegetables.
First use Feb. 2, 1944.

SN 191,620. J. R. Simplot Company, Boise, Idaho. Filed Apr. 20, 1964.

SPUDNICKS

Owner of Reg. No. 668,770.
For Dehydrated Potatoes.
First use at least as early as Nov. 26, 1957.

SN 192,190. Biscuits Parein, Antwerp, Belgium, by change of name from Manufacture de Biscuits Parein, Societe Anonyme, Antwerp, Belgium. Filed Apr. 28, 1964.

PRINCE FOURRE

The word "Fourre" is disclaimed apart from the mark as shown.
For Biscuits.
First use 1935; in commerce May 1963.

SN 192,695. Federal Bakers' Supplies Corp., Garfield, N.J. Filed May 5, 1964.

RETARDO

For Spoilage Retarding Base for Sweet Bakery Products.
First use Feb. 21, 1964.

SN 192,696. Federal Bakers' Supplies Corp., Garfield, N.J. Filed May 5, 1964.

VOLDO

For Emulsified Vegetable Shortening Base for Sweet Bakery Products.
First use Feb. 4, 1964.

SN 193,179. Kelco Company, San Diego, Calif. Filed May 11, 1964.

KELBET

For Food Stabilizer Particularly for Use in Frozen Desserts.
First use Mar. 17, 1964.

SN 197,333. Schneider Bros., Inc., Chicago, Ill. Filed July 7, 1964.

EGG-VANTAGE

For Hen Eggs, Whites, Yolks Plain and Yolks With Various Condiments, Both Frozen and Liquid.
First use May 20, 1964.

SN 198,084. Saltsea Packing Company, Providence, R.I. Filed July 17, 1964.

SALTY SEA

Owner of Reg. Nos. 108,188, 591,822, and others.
For Clam Chowder, Minced Clams, Clam Juice, and Corn Chowder.
First use July 16, 1964.

SN 198,245. Wiegardt Brothers, Inc., d.b.a. Wiegardt Bros., Inc., Ocean Park, Wash. Filed July 20, 1964.

TIDEPOINT

For Canned Oysters and Canned Oyster Stew.
First use 1940.

SN 200,488. Alvin C. Haakenson, d.b.a. Haakenson Company, Ardmore, Pa. Filed Aug. 24, 1964.

MIXINSOFT #1

No claim is made to "#1" apart from the mark as shown.
For Emulsifying Agent for Baked Goods.
First use 1956; Sept. 18, 1950, as to "Mixinsoft."

SN 201,676. Fort Dodge Creamery Company, d.b.a. Ice Cream Specialties Co., Fort Dodge, Iowa. Filed Sept. 11, 1964.



For Coated Ice Milk Bars, Flavored Frozen Water Ice Bars, and Flavored Frozen Fudge Bars.
First use May 4, 1964.

SN 201,697. Klarer of Kentucky, Incorporated, Louisville, Ky. Filed Sept. 11, 1964.

PATIO PUPS

The word "Pups" in the mark so far as it means "frankfurters," is disclaimed apart from the mark.
For Frankfurters.
First use June 5, 1964.

SN 201,879. Safeway Stores, Incorporated, d.b.a. Conway Oil Co., Oakland, Calif. Filed Sept. 14, 1964.

KEENTEX

Owner of Reg. No. 710,023.
For Vegetable Oil Shortening and Shortening Made From Meat Fats and Vegetable Oils.
First use September 1958.

SN 202,221. Berliner & Marx, New York, N.Y. Filed Sept. 21, 1964.

PLUME DE VEAU

The English translation of the trademark "Plume de Veau" is "feather of veal." Applicant claims exclusive right to the use of the word "Veau" as a part of its trademark but not otherwise.
For Fresh and Frozen Veal Carcasses and All Wholesale Cuts Derived Therefrom.
First use November 1963.

SN 202,562. Red Owl Stores, Inc., Minneapolis, Minn. Filed Oct. 7, 1964.

BRIMFULL

Owner of Reg. No. 756,516.
For Food Products—Namely, Unpopped Popcorn.
First use Sept. 9, 1964.

SN 203,946. Derf Mfg. Co., Inc., Columbus, Ohio. Filed Oct. 14, 1964.

DERFIE'S

For Potato Chips, Pretzel Sticks, Pretzels, Extruded Corn Meal Product Sprayed With Cheese Flavor, and Extruded Corn Meal Product Sprayed With Pizza Taste.
First use Oct. 7, 1964.

SN 204,276. G. C. Murphy Company, McKeesport, Pa. Filed Oct. 19, 1964.

KITCHEN MAID

For Candies.
First use Sept. 3, 1964.

SN 212,306. Glaser, Crandell Co., Chicago, Ill. Filed Feb. 18, 1965.

CRAZY CUKE

Applicant waives exclusive right to the word "Cuke" apart from the mark as a whole.
For Pickles.
First use Jan. 28, 1965.

Class 47 — Wines

SN 202,968. United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. Filed Sept. 29, 1964.

RHYTHM

For Wines.
First use Sept. 14, 1964.

SN 202,969. United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. Filed Sept. 29, 1964.

VINTONN

For Wines.
First use Sept. 14, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 166,885. Berg Company, Inc., Madison, Wis. Filed Apr. 17, 1963.

CARA·SELL

For Rotating Merchandising Device for Successively Displaying Items to a Purchaser.
First use Mar. 7, 1962.

SN 168,751. William A. Moore, d.b.a. Bell Rubber Company, Dallas, Tex. Filed May 13, 1963.

XCEL

For Oil Well Tubing Swab Cups.
First use Mar. 28, 1961.

SN 174,078. Floyd M. Burdick, d.b.a. Watch-Kaddy Company, Elmhurst, Ill. Filed July 31, 1963.

WATCH-KADDY

For Adjustable Sheet Metal for Securing Watches to a Golf Bag Cart.
First use June 17, 1963.

SN 191,481. Art Award Co., Inc., Brooklyn, N.Y. Filed Apr. 20, 1964.



For Paint-By-The-Numbers Painting Kits, Containing Painting Panels, Liquid Paints, Ink, Brushes, Drawing Pens, and Pen Holders.
First use on or about Mar. 10, 1964.

SN 192,249. Allen Marking Products, Inc., Kansas City, Mo. Filed Apr. 29, 1964.

ALLENITE

For Engraved Plastic Laminate Signs.
First use Jan. 1, 1960.

SN 193,998. David S. Tanner, d.b.a. Uni-Search Engineering Corporation, Los Angeles, Calif. Filed May 21, 1964.

SPACE KITE

Applicant disclaims the term "Kite" apart from the mark as shown.
For Inflatable Kites Such as for Reconnaissance Operations, Toy Applications, Land Markers, Rescue Markers, Radio Beacon Markers, Air Drop Operations of Cargo Suspended or Carried Thereby, and the Like Having Aerodynamically Lift Producing Surfaces, and for Component Parts Therefor.
First use on or about Apr. 10, 1964.

SN 200,969. Donald A. Peterson, d.b.a. Peterson Canvas Products Company, Pittsburgh, Pa. Filed Aug. 31, 1964.



The mark consists essentially of the letters "PCP" and a triangular design.
For Canvas Products—Namely, Tarpaulins and Drop Cloths.
First use May 5, 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 158,968. Corodon W. Gibson, d.b.a. Gibson Products Co., Lancaster, N.Y. Filed Dec. 12, 1962.

MISS AMERICA

For Cream Sachets and Colognes, Lipsticks, Hand, Body, and Face Lotions, Powders, Creams and Oils, Face Creams, Nail Polish, and Deodorants.
First use Dec. 8, 1962.

SN 160,326. Armour Pharmaceutical Company, Chicago, Ill., assignee, by mesne assignments, of Reheis Company, Inc., Berkeley Heights, N.J. Filed Jan. 7, 1963.



Applicant disclaims the words "Fine Chemicals," apart from the mark as shown. Owner of Reg. No. 550,093.
For Antiperspirants and Ingredients of Antiperspirant Preparations Containing Aluminum Compounds, Including Aluminum Hydroxide, Aluminum Chloride, Aluminum Chlorhydroxide and Salts, Aluminum Oxychlorides, Aluminum Chlorhydroxy Ethylate, Aluminum Lactate, Sodium Aluminum Lactate, Sodium Aluminum Chlorhydroxy Lactate, and Aluminum Citrate; Zirconium Hydroxychloride, and Zirconyl Chloride-Aluminum Chlorhydroxide Complexes, in the Form of Gels, Powders, and Solutions.
First use April 1953.

SN 179,319. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 18, 1963.

FLUORACTON

For Stannous Fluoride Ingredient Incorporated in a Dentifrice.
First use July 8, 1963.

SN 190,773. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed Apr. 10, 1964.

MOISTURE PLUS

Owner of Reg. No. 691,080.
For Skin Cream and Skin Lotion.
First use May 1, 1957.

SN 192,250. American Cosmetics Corporation, Melrose Park, Ill. Filed Apr. 29, 1964.



For Hair Spray.
First use Apr. 6, 1964.

SN 197,291. Houbigant, Inc., New York, N.Y. Filed July 7, 1964.

FAIRWAY

For Men's Toiletries—Namely, After Shave Lotion, Eau de Cologne, Body Powder, Deodorant, Hair Lotion, Pre-Shave Lotion, and Electric Shave Lotion.
First use Mar. 24, 1964.
Subj. to Intf. with SN 209,686.

SN 197,725. Lan-Lay, Inc., San Francisco, Calif. Filed July 13, 1964.

LAN-LAY

Owner of Reg. No. 444,811.
For Oil Cosmetic for the Skin, Hair and Scalp, Cream Lotion, Make-Up Remover and Skin Conditioner, Nail Base and Top Coat, Baby Oil, Sun Tan Oil, Beauty Pack Powder, and Hair Tonic.
First use Aug. 1, 1945.

SN 197,726. Lan-Lay, Inc., San Francisco, Calif. Filed July 13, 1964.



Owner of Reg. No. 444,811.
For Oil Cosmetic for the Skin, Hair and Scalp, Cream Lotion, Make-Up Remover and Skin Conditioner, Nail Base and Top Coat, Baby Oil, Sun Tan Oil, Beauty Pack Powder, and Hair Tonic.
First use Aug. 1, 1945.

SN 199,910. New York Pencil Co., Inc., d.b.a. Sue Michaels, New York, N.Y. Filed Aug. 14, 1964.

SUE MICHAELS

The name "Sue Michaels" is fictitious.
For Bubble Bath.
First use June 23, 1964.

SN 200,359. R. H. Laird Manufacturing Company, Inc., New York, N.Y. Filed Aug. 21, 1964.

Thelane "4"

For Cosmetic Skin Cream.
First use May 15, 1964.

SN 200,707. Edwin L. Drill, d.b.a. Drill Products Co., Cincinnati, Ohio. Filed Aug. 27, 1964.

FOAMWAY

For Denture Cleaner.
First use Mar. 6, 1963.

SN 201,594. Invenex Pharmaceuticals, San Francisco, Calif. Filed Sept. 10, 1964.

GLACIAL GEL

Applicant disclaims the word "Gel" apart from the mark as a whole.
For Massage Lotion.
First use July 17, 1964.

SN 205,217. Yardley of London, Inc., Totowa, N.J. Filed Oct. 30, 1964.

SOFT-PETAL

Owner of Reg. No. 509,829.
For Cleansing Cream and Hand Lotion.
First use Feb. 24, 1964.

Class 52—Detergents and Soaps

SN 191,712. Philadelphia Quarts Company, Philadelphia, Pa. Filed Apr. 21, 1964.

RUSTANOL

For Laundry Sour for Removing Rust in Textiles.
First use Mar. 19, 1964.

SN 192,244. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 29, 1964.

GREAT ZEETH'S MIGHTY GOOD

Applicant disclaims exclusive right to the term "Mighty Good" separate and apart from the mark.
For Bar Soap for Personal Use.
First use Apr. 6, 1964.

SN 192,245. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 29, 1964.

GREAT ZEETH'S MIGHTY SUDSY

Applicant disclaims exclusive right to the term "Mighty Sudsy" separate and apart from the mark.
For Bar Soap for Personal Use.
First use Apr. 6, 1964.

SN 192,246. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 29, 1964.

GREAT ZEETH'S MIGHTY BUBBLES

Applicant disclaims exclusive right to the term "Mighty Bubbles" separate and apart from the mark.
For Bar Soap for Personal Use.
First use Apr. 6, 1964.

SN 192,248. Alberto-Culver Company, Melrose Park, Ill. Filed Apr. 29, 1964.

GREAT ZEETH'S MIGHTY CLEAN

Applicant disclaims exclusive right to the term "Mighty Clean" separate and apart from the mark.
For Bar Soap for Personal Use.
First use Apr. 6, 1964.

SN 194,494. Jaime Monraba, Barcelona, Spain. Filed May 28, 1964.

MONT-KAR

Owner of Spanish Reg. No. 413,654, dated Feb. 24, 1964.
For Soaps, Especially Medicinal Soaps.

SN 199,320. St. Louis Janitor Supply Co., d.b.a. Navy Brand Manufacturing Company, St. Louis, Mo. Filed Aug. 5, 1964.

P.D.Q.

For Floor Cleaning Agent—Namely, a Wax Remover.
First use 1954.

SN 200,892. Apollo Chemical Corp., Clifton, N.J. Filed Aug. 31, 1964.

PENTRON

For Cleaner for Fuel Oil Lines and Filters, Used Either as an Additive to the Fuel Oil or Per Se.
First use Dec. 15, 1963.

SN 201,433. O. C. Hoffman, d.b.a. The Vapor-X Company, Tatamy, Pa. Filed Sept. 8, 1964.

LIQUID ZIT

The word "Liquid" is disclaimed apart from the mark as a whole.
For Chemical Preparations for Cleaning Granite and Similar Building and Monument Material.
First use July 1, 1936.

SN 205,695. Inderport Limited, Bombay, India. Filed Nov. 6, 1964.



The words "Sandal Soap" are disclaimed apart from the mark as shown. The portrait shown is fanciful.
For Sandal Soap.
First use Feb. 27, 1964; in commerce Apr. 22, 1964.

SN 206,549. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,603, 555,557, and others.
For Industrial Cleaning Compositions, Cationic Detergents and Inorganic Builder Salts Useful in Synthetic Detergents.
First use at least as early as December 1939.

SERVICE MARKS

Class 100—Miscellaneous

SN 141,726. Inn America, Inc., Ann Arbor, Mich. Filed Apr. 6, 1962.

INN AMERICA

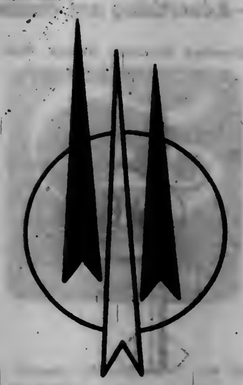
For Motel Services.
First use Apr. 25, 1961.

SN 143,562. The Oil Shale Corporation, New York, N.Y. Filed May 1, 1962.

TOSCO

For Providing Engineering Advice and Services in the Preparation, Purification, Recovery and Production of Products of a Chemical Nature by Pyrolytic Means, Chemical Means, Physical Means, and Combinations of These Means.
First use February 1962.

SN 198,318. Atlantic Research Corporation, Alexandria, Va. Filed May 13, 1964.



For Advice, Consultation, Research, Design, Development and Testing Services for Others in the Field of Pyrotechnics, Explosives, Munitions, Propellants, Chemical Compositions, Gas Generators, Ignition Systems and Testing and Production Equipment and Devices Related Thereto.
First use November 1960.

SN 193,819. Atlantic Research Corporation, Alexandria, Va. Filed May 13, 1964.

FLARE-NORTHERN

For Advice, Consultation, Research, Design, Development and Testing Services for Others in the Field of Pyrotechnics, Explosives, Munitions, Propellants, Chemical Compositions, Gas Generators, Ignition Systems and Testing and Production Equipment and Devices Related Thereto.
First use September 1962.

SN 199,211. Metronics Associates, Inc., Palo Alto, Calif. Filed Aug. 4, 1964.

METRONICS

For Engineering Services in the Field of Diffusion Meteorology.
First use May 1958.

SN 199,928. Telegraph Delivery Service, Beverly Hills, Calif. Filed Aug. 14, 1964.

FLORAGRAM

For Clearing House Service to Subscribing Florists in Connection With the Sale and Delivery of Flowers at Distant Locations.
First use July 31, 1964.

SN 199,929. Telegraph Delivery Service, Beverly Hills, Calif. Filed Aug. 14, 1964.



For Clearing House Service to Subscribing Florists in Connection With the Sale and Delivery of Flowers at Distant Locations.
First use July 31, 1964.

Class 101 — Advertising and Business

SN 146,221. Saveway Stations, Omaha, Nebr. Filed June 5, 1962.



Applicant claims use for the area comprising the States of Nebraska, Iowa, South Dakota, Kansas, and Colorado.
For Service Station Services.
First use Sept. 19, 1958.
Subj. to Concurrent Use Proceeding with SN 176,210.

SN 165,729. American Associates, Inc., Minneapolis, Minn. Filed Apr. 1, 1963.



Applicant disclaims the wording "Scientific Maintenance Engineering."
For Janitorial Services for Commercial Buildings.
First use July 15, 1962.

SN 176,210. The Meadville Corporation, Philadelphia, Pa. Filed Sept. 3, 1963.

SAVE WAY

Applicant claims use for the area comprising the States of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Michigan, and the District of Columbia.
For Service Station Services.
First use Dec. 31, 1949.
Subj. to Concurrent Use Proceeding with SN 146,221.

SN 177,926. Time-Life Broadcast, Inc., d.b.a. Television Station KOGO, San Diego, Calif. Filed Sept. 27, 1963.

TELE-SHOPPER

For Telephone Answering Service Provided to Applicant's Television Audience, Whereby the Latter Can Obtain Complete Information Regarding Goods and Services Advertised on Said Station.
First use June 16, 1963.

SN 179,214. The Eddy-Rucker-Nickels Company, Cambridge, Mass. Filed Oct. 17, 1963.

RUCKER SHARE OF PRODUCTION PLAN

No claim is made to the exclusive right to the use of the words "Share of Production Plan" separate and apart from the mark as shown.
For Services in Devising, Installing and Aiding in the Operation of Incentive Production Plans and Productivity Measuring Systems.
First use Dec. 8, 1947.

SN 187,550. Associated Franchisors, Minneapolis, Minn. Filed Feb. 27, 1964.



For Finding, Selecting and Franchising Sales Representatives for the Sale and Distribution of Various Types of Goods of Others.
First use June 13, 1963.

SN 200,789. The Sperry and Hutchinson Company, New York, N.Y. Filed Aug. 27, 1964.



No claim is made herein, apart from the mark as shown, of the notations "Discount for Cash" or "Value 1 Mill." Owner of Reg. Nos. 515,275, 518,309, and 519,780.
For Promotion and Sale of the Goods and Services of Others Through the Issuance and Redemption of Trading Stamps.
First use at least as early as July 6, 1964.

SN 200,790. The Sperry and Hutchinson Company, New York, N.Y. Filed Aug. 27, 1964.



No claim is made herein, apart from the mark as shown, of the statement "10 Stamps," or of the notations "Discount for Cash" or "Value 10 Mills" or "Green Stamps." Owner of Reg. Nos. 515,275, 518,309, and 519,780.
For Promotion and Sale of the Goods and Services of Others Through the Issuance and Redemption of Trading Stamps.
First use at least as early as July 6, 1964.

SN 200,791. The Sperry and Hutchinson Company, New York, N.Y. Filed Aug. 27, 1964.



No claim is made of "50 Stamps," or of the notations "Discount for Cash" or "Value 50 Mills" or "Green Stamps," apart from the mark as shown. No claim is made to color. Owner of Reg. Nos. 159,617, 519,780, and others.
For Promotion and Sale of the Goods and Services of Others Through the Issuance and Redemption of Trading Stamps.
First use at least as early as July 6, 1964.

Class 102 — Insurance and Financial

SN 163,457. Allfarm Sales, Inc., Gray, Ga. Filed Feb. 26, 1963.



For Real Estate Brokerage Services.
First use Sept. 15, 1962.

SN 170,531. General Reinsurance Corporation, New York, N.Y. Filed June 7, 1963.



The words "General Reinsurance" are disclaimed apart from the mark as shown.
For Underwriting Reinsurance, Treaty and Facultative, on All Classes of Insurance—viz, on All Classes of Casualty, Fidelity and Surety Insurance and All Classes of Insurance on Life, Fire, Marine and Allied Risks.
First use 1920.

SN 174,557. Academic Underwriter's of America, Inc., d.b.a. The American College Plan, Annapolis, Md. Filed Aug. 7, 1963.

THE AMERICAN COLLEGE PLAN

Applicant disclaims the words "College Plan" apart from the mark as shown.
For Insurance Services—Namely, Providing, Placing, and Servicing Convertible Term Life Insurance With One or More Life Insurance Underwriters for College Students.
First use July 15, 1963.

SN 183,543. American Republic Insurance Company, Des Moines, Iowa. Filed Dec. 26, 1963.

LifeGuarded Protection

Applicant disclaims exclusive right to use of "Protection" apart from the mark as shown.
For Underwriting of Hospital, Surgical, and Medical Insurance.
First use Dec. 10, 1963.

SN 196,986. City National Bank & Trust Co. of Rockford, Rockford, Ill. Filed May 21, 1964.

SIR GREENBACK

For Banking Services.
First use Feb. 1, 1964.

SN 200,871. Mercantile Bank & Trust Company, Kansas City, Mo. Filed Aug. 21, 1964.

For Banking Services.
First use July 1, 1964.

SN 200,909. The Central Bank and Trust Company, Denver, Colo. Filed Aug. 21, 1964.

For Banking Services.
First use Sept. 17, 1958.

SN 201,000. The Atlantic Mutual Insurance Company, New York, N.Y. Filed Sept. 1, 1964.

The Atlantic Companies

For Underwriting of Marine, Fire, and Casualty Insurance.
First use on or about Apr. 15, 1948.

Class 103 — Construction and Repair

SN 164,408. Wade, Wenger Servicemaster Co., Chicago, Ill. Filed Mar. 11, 1963.



For Cleaning Interiors of Commercial Buildings and Private Homes Including the Furnishings Thereof.
First use July 1959.

SN 175,200. Ron Mitchell Corporation, Tacoma, Wash. Filed Aug. 16, 1963.

FANTASTIC HOMES

The drawing is lined for shading purposes only.
For Construction of Homes to the Order and/or Specifications of Others.
First use Aug. 27, 1961.

SN 195,423. Marine Industrial Electronics, Inc., Savannah, Ga. Filed June 11, 1964.

MIE

For Repair, Service and Maintenance of Electronic Equipment.
First use at least as early as Aug. 6, 1963.

SN 197,238. Ajax Sewer Cleaning Corp., Glendale, N.Y. Filed July 7, 1964.

AJAX NEVER SLEEPS

For Services to Residential, Industrial, and Commercial Establishments—Namely, the Cleaning and Thawing Out of Sewer Lines and Pipes, and the Pumping Out of Flooded Cellars.
First use Apr. 1, 1964.

SN 197,441. Texaco Inc., New York, N.Y. Filed July 8, 1964.

TEXACO

Owner of Reg. Nos. 300,073, 775,231, and others.
For Gas Station Services.
First use 1911.

SN 197,442. Texaco Inc., New York, N.Y. Filed July 8, 1964.

TEXACO

Owner of Reg. Nos. 300,073, 775,231, and others.
For Gas Station Services.
First use 1911.

SN 199,827. The Hobart Manufacturing Company, Troy, Ohio. Filed Aug. 13, 1964.

HOBART

Owner of Reg. Nos. 92,217, 682,120, and others.
For Inspection, Maintenance, and Repair Service for Machines for Processing, Preparing and Otherwise Handling Food in Bakeries, Kitchens, and Other Establishments Preparing and Serving Meals; Machines for Mixing, Cutting, Slicing, Grinding, Peeling, Tenderising, Weighing, Sterilising, Preparing, Processing, and Otherwise Handling Food in Stores and Other Establishments Preparing and Selling Foodstuffs; and Machines for Washing, Cleaning, Polishing, and Otherwise Handling Dishes, Glasses, Containers, and Utensils Used in Preparing and Dispensing Foodstuffs; Food Waste Disposers; and Weighing Scales; and Components and Parts Therefor.
First use as early as the year 1889.

Class 105 — Transportation and Storage

SN 158,587. Western Airlines, Inc., Los Angeles, Calif. Filed Dec. 5, 1962.

WESTERN AIRLINES
THE O-N-L-Y WAY TO FLY

Owner of Reg. Nos. 531,594, 705,078, and others.
For Transportation of Passengers by Air.
First use October 1955.

SN 169,588. Wings and Wheels Express, Inc., Flushing, N.Y. Filed May 23, 1963.



For Air Freight Forwarding Services.
First use Jan. 19, 1947.

SN 176,163. Compass Travel Bureau, Inc., New York, N.Y. Filed Sept. 3, 1963.

SHALOM

The translation of the word "Shalom," from Hebrew, is "peace."
For Arranging for Special Tours of Israel and Europe.
First use March 1963.

SN 192,171. Nevada Fun Tours, Inc., San Francisco, Calif., assignee of Garry Enterprises, Inc., San Francisco, Calif. Filed Apr. 28, 1964.

LUCKY 21 TOUR

No claim is made to the word "Tour" except as used with the mark as a whole.
For Conducted Tours for Entertainment.
First use Dec. 26, 1963.

SN 202,664. American Express Company, New York, N.Y. Filed Sept. 25, 1964.

PRICELESS

For Travel Agency Services.
First use January 1933.

Class 106—Material Treatment

SN 161,182. The Kenyon Piece Dyeworks, Inc., Kenyon, R.I. Filed Jan. 22, 1963.

K-Kote

For Imparting a Waterproof Finish to Fabrics of Others.
First use Nov. 28, 1962.

Class 107—Education and Entertainment

SN 151,448. United Artists Corporation, New York, N.Y. Filed Aug. 17, 1962.

PREMIERE SHOWCASE

For Distribution of Motion Pictures of Others for Early Run Exhibition.
First use May 29, 1962.

SN 188,056. C. Kenneth Meeker, Louisville, Ky. Filed Mar. 2, 1964.

THAT'S THE STORY

For Radio Entertainment Services.
First use Mar. 1, 1957.

SN 196,573. Unity by the Sea, Santa Monica, Calif. Filed June 26, 1964.

A LETTER TO ADAM

For Title for a Series of Radio Programs of an Educational Nature.
First use Nov. 18, 1963.

SN 200,400. American District Telegraph Company, New York, N.Y. Filed Aug. 24, 1964.

ADT

Owner of Reg. Nos. 700,676, 719,064, and others.
For Supplying Background Music to Industrial, Commercial, Mercantile, and Other Public and Private Establishments.
First use on or about July 1, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 192,842. The National Institute of Rug Cleaning, Inc., Arlington, Va. Filed May 6, 1964.

NATIONAL INSTITUTE OF RUG CLEANING, INC. MEMBER NIRC

Owner of Reg. No. 661,168.
For Indicating Membership in an Association of Rug Cleaners.
First use about Dec. 5, 1958.

CERTIFICATION MARKS

Class A—Goods

SN 201,401. Elberton Granite Association, Inc., Elberton, Ga. Filed Sept. 8, 1964.

E.G.A.
CERTIFIED MEMORIALS

The mark certifies that the quality of the stone and workmanship and design meet the standards of the applicant. Applicant disclaims the words "Certified Memorials" from the mark shown.
For Cemetery Monuments and Grave Markers.
First use on or about July 15, 1964.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

790,530. HYDROGEL. Wyo-Ben Products, Inc., assignee of Wyo-Ben Products Company. SN 149,991. Pub. 3-23-65. Filed 7-27-62.

790,531. SHELLTAN. Geilich Tanning Company. SN 167,901. Pub. 3-23-65. Filed 5-1-63.

790,532. NAPOLI. Allied Kid Company. SN 179,096. Pub. 3-23-65. Filed 10-16-63.

790,533. NYLE. Polymers, Inc. SN 182,440. Pub. 3-23-65. Filed 12-5-63.

790,534. "LIVE" BALLAST ETC. AND DESIGN. Led Ballast, Inc. SN 187,764. Pub. 3-23-65. Filed 3-2-64.

790,535. SHORGOOD AND DESIGN. Bayshore Foods, Inc. MULTIPLE CLASS (Classes 1 and 46). SN 191,830. Pub. 3-23-65. Filed 4-23-64.

790,536. TRAC TITE. Magnet Cove Barium Corporation. SN 197,971. Pub. 3-23-65. Filed 7-16-64.

790,537. NII. Nylon Industries, Inc. SN 198,369. Pub. 3-23-65. Filed 7-22-64.

790,538. BENTOLITE. Georgia Kaolin Company. SN 200,247. Pub. 3-23-65. Filed 8-20-64.

790,539. ROYLAR. United States Rubber Company. SN 200,881. Pub. 3-23-65. Filed 8-28-64.

Class 2—Receptacles

790,540. REPRESENTATION OF A THREE POINTED STAR IN A CIRCLE. Daimler-Benz Aktiengesellschaft. SN 45,033. Pub. 3-23-65. Filed 1-31-58.

790,541. ELLISCO. Ellisco Incorporated. MULTIPLE CLASS (Classes 2, 13, 14, 26, and 50). SN 162,245. Pub. 3-23-65. Filed 2-7-63.

790,542. BUTI-KADI. Buti-Kadi, Inc. SN 182,241. Pub. 3-23-65. Filed 12-5-63.

790,543. Any-Pak. Clark C. Wormer III, d.b.a. Any-Pak. SN 184,773. Pub. 3-23-65. Filed 1-16-64.

790,544. PFAFF AND DESIGN. G. M. Pfaff A.G. SN 190,427. Pub. 3-23-65. Filed 4-6-64.

790,545. ROLL-O-SHEETS AND DESIGN. Roll-O-Sheets, Inc. SN 191,442. Pub. 3-23-65. Filed 4-17-64.

790,546. CARRY-SAFE. Diamond National Corporation. SN 192,804. Pub. 3-23-65. Filed 5-6-64.

790,547. EQUALITY AND DESIGN. Equality Plastics, Inc. SN 196,371. Pub. 3-23-65. Filed 6-24-64.

790,548. BULKAP. American Saint Gobain Corporation. SN 196,756. Pub. 3-23-65. Filed 6-30-64.

790,549. STETSON. Stetson Corporation. SN 197,437. Pub. 3-23-65. Filed 7-8-64.

790,550. RED TOP. Columbian Steel Tank Company. SN 197,674. Pub. 3-23-65. Filed 7-13-64.

790,551. GOOD-PAX. Goodren Products Corporation. SN 198,646. Pub. 3-23-65. Filed 7-28-64.

790,552. TUFF-NEK. Continental Can Company, Inc. SN 198,719. Pub. 3-23-65. Filed 7-29-64.

790,553. MUBAR. The Mubar Plastics Co. SN 200,463. Pub. 3-23-65. Filed 8-24-64.

790,554. SQUARE KEEPER. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 201,870. Pub. 3-23-65. Filed 9-14-64.

790,555. SQUARE-SEAL. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 201,871. Pub. 3-23-65. Filed 9-14-64.

790,556. ICE TUPS. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 202,627. Pub. 3-23-65. Filed 9-24-64.

790,557. R AND DESIGN. The Reddy Company, Inc. SN 202,954. Pub. 3-23-65. Filed 9-29-64.

790,558. IMA. Holiday Inns of America, Inc. SN 203,175. Pub. 3-23-65. Filed 10-2-64.

790,559. VACU MIXER. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 203,821. Pub. 3-23-65. Filed 10-12-64.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

790,560. CITATION. United States Trunk Company, Inc. SN 150,375. Pub. 3-23-65. Filed 8-2-62.

790,561. KNITILITY STOLE KARRIER. Associated Needlecrafts Corp. SN 187,235. Pub. 3-23-65. Filed 2-24-64.

790,562. DELTA. Sternco Industries, Inc. SN 203,212. Pub. 3-23-65. Filed 10-2-64.

Class 4—Abrasives and Polishing Materials

790,563. GARAGE OUT OF THE CAN. Plasticon Chemicals, Inc. SN 199,493. Pub. 3-23-65. Filed 8-7-64.

790,564. BREAD OF LIFE. Mrs. Kay Williams, d.b.a. The Bread of Life, Enterprises. SN 200,220. Pub. 3-23-65. Filed 8-19-64.

790,565. MAR-GON AND DESIGN. Mar-Gon Products. SN 200,362. Pub. 3-23-65. Filed 8-21-64.

790,566. TG. S. C. Johnson & Son, Inc. SN 200,647. Pub. 3-23-65. Filed 8-26-64.

Class 6—Chemicals and Chemical Compositions

790,567. EX-IT. Lefevre Chemical Company. SN 158,298. Pub. 2-26-63. Filed 9-17-62.

790,568. ROSE PETAL SOFT AND DESIGN. Synthron, Inc. SN 158,663. Pub. 3-23-65. Filed 12-6-62.

790,569. WIFE-SAVER. Robert M. McMath, d.b.a. Wife-saver Products Company. SN 165,940. Pub. 3-23-65. Filed 4-2-63.

790,570. SPENCER AND DESIGN. Gulf Oil Corporation, assignee of Spencer Chemical Company. MULTIPLE CLASS (Classes 6 and 10). SN 172,112. Pub. 3-23-65. Filed 6-28-63.

790,571. DUREX. Mid-States Distributing Company, Inc. SN 172,509. CONCURRENT USE. Pub. 3-3-64. Filed 7-5-63.

790,572. MULTISORB. Mallinckrodt Chemical Works. SN 174,674. Pub. 3-23-65. Filed 8-8-63.

790,573. GETTER PAK. N. T. Gates Company, d.b.a. N. T. Gates Co. SN 177,023. Pub. 3-23-65. Filed 9-16-63.

790,574. RE-PELL. American Jet Spray Industries, Inc. SN 183,359. Pub. 3-23-65. Filed 12-23-63.

790,575. OXY-DRY AND DESIGN. Oxy-Dry Sprayer Corporation. SN 194,745. Pub. 3-23-65. Filed 6-2-64.

790,576. VEIL. Drake Dunbar Corporation. SN 196,435. Pub. 3-23-65. Filed 6-25-64.

790,577. OMIT. MSL Industries, Inc., assignee of Irving B. Goldberg, d.b.a. Century Laboratories. SN 196,856. Pub. 3-23-65. Filed 7-1-64.

Class 8—Smokers' Articles, Not Including Tobacco Products

790,578. GOLDEN ARROW. H. Comoy & Co., Limited. SN 203,161. Pub. 3-23-65. Filed 10-2-64.

Class 9—Explosives, Firearms, Equipments, and Projectiles

790,579. S AND DESIGN. Cadillac Gage Company. SN 182,704. Pub. 3-23-65. Filed 12-10-63.

Class 10—Fertilizers

790,570. (See Class 6 for this trademark.)

790,580. LOVING CARE. Wonder Chemical Company, Inc. SN 148,778. Pub. 5-28-63. Filed 7-10-62.

790,581. PUTT. Excel-Mineral Company, Inc. SN 198,542. Pub. 3-23-65. Filed 7-27-64.

790,582. BASF. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 198,632. Pub. 3-23-65. Filed 7-28-64.

Class 12—Construction Materials

790,583. DECO-SHELL. Fire-Trol Corporation. SN 159,480. Pub. 4-28-64. Filed 12-20-62.

790,584. CLADKOTE. The Electric Storage Battery Company. MULTIPLE CLASS (Classes 12 and 16). SN 192,810. Pub. 3-23-65. Filed 5-6-64.

790,585. TRUSSBILT. Interoceanic Commodities Corporation. SN 196,447. Pub. 3-23-65. Filed 6-25-64.

790,586. LA1204. E. J. Lavino and Company. SN 199,681. Pub. 3-23-65. Filed 8-11-64.

790,587. EXPANKO. David W. McKee. SN 200,269. Pub. 3-23-65. Filed 8-20-64.

790,588. MULTI-SEAL. National Gypsum Company. SN 200,956. Pub. 3-23-65. Filed 8-31-64.

790,589. THYGRIP. Forges de Thy-Marcinelle, Societe Anonyme. SN 201,252. Pub. 3-23-65. Filed 9-2-64.

790,590. HPMA ETC. AND DESIGN. Hardwood Plywood Manufacturers Association. SN 201,336. COLLECTIVE MARK. Pub. 3-23-65. Filed 8-20-64.

790,591. TEMP-MATIC. Lamb Industries, Inc. SN 201,445. Pub. 3-23-65. Filed 9-8-64.

790,592. TEMP-MASTER. Lamb Industries, Inc. SN 201,446. Pub. 3-23-65. Filed 9-8-64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

790,541. (See Class 2 for this trademark.)

790,593. NAME-MASTER. Julian Holland. SN 181,236. Pub. 3-23-65. Filed 11-15-63.

790,594. PRECISION AND DESIGN. Precision Valve Corporation. SN 187,960. Pub. 3-23-65. Filed 3-4-64.

790,595. BELKNAP. Belknap Hardware and Manufacturing Company. SN 194,351. Pub. 3-23-65. Filed 5-27-64.

790,596. RASCO. Reliable Automatic Sprinkler Co., Inc. SN 200,488. Pub. 3-23-65. Filed 8-24-64.

790,597. SURE SOAK. Can-Tex Industries, Inc., d.b.a. Southwestern Plastic Pipe Division. SN 201,368. Pub. 3-23-65. Filed 9-8-64.

790,598. RESERV-A-ROLL. Reserv-A-Roll Co. SN 201,869. Pub. 3-23-65. Filed 9-14-64.

790,599. CAL/APCO. Woodward Iron Company. SN 201,905. Pub. 3-23-65. Filed 9-14-64.

Class 14—Metals and Metal Castings and Forgings

790,541. (See Class 2 for this trademark.)

790,600. CARBENDURE. Neelon Steel Limited. SN 203,021. Pub. 3-23-65. Filed 9-30-64.

790,601. MOLENDURE. Neelon Steel Limited. SN 203,022. Pub. 3-23-65. Filed 9-30-64.

Class 15—Oils and Greases

790,602. FLUORO GLIDE. Chemplast Inc. SN 113,492. Pub. 9-18-62. Filed 2-13-61.

790,603. EPEX. Kenrich Chemicals, Inc. SN 204,171. Pub. 2-2-65. Filed 10-16-64.

790,604. PEOPLES. Energy Oil Company, Inc. SN 206,248. Pub. 3-23-65. Filed 11-16-64.

Class 16—Protective and Decorative Coatings

790,584. (See Class 12 for this trademark.)

790,605. ALUMI-TOP. S. H. Leggitt Company. SN 166,203. Pub. 3-23-65. Filed 4-5-63.

790,606. GALVASEAL. The Lubrisol Corporation. SN 173,176. Pub. 3-23-65. Filed 7-17-63.

790,607. SHOPPERS WORLD AND DESIGN. Aldens Shoppers World, Inc., d.b.a. Shoppers World. SN 176,473. Pub. 3-23-65. Filed 9-9-63.

Class 17—Tobacco Products

790,608. MOHAWK. Larus & Brother Company. SN 202,698. Pub. 3-23-65. Filed 9-25-64.

Class 18—Medicines and Pharmaceutical Preparations

790,609. PERVITIN. Agnes Henriette Monika Temmler, d.b.a. Temmler-Werke Vereinigte Chemische Fabriken. SN 172,446. Pub. 3-23-65. Filed 7-5-63.

790,610. ALKA-MED. Halsey Drug Co., Inc. SN 177,883. Pub. 3-23-65. Filed 9-27-63.

790,611. SLEEPERETTS. E. L. Skoberg, d.b.a. Soule Medical Company. SN 189,954. Pub. 3-23-65. Filed 3-30-64.

790,612. RED COMB PIONEER AND DESIGN. Hales & Hunter Co. MULTIPLE CLASS (Classes 18 and 46). SN 191,287. Pub. 3-23-65. Filed 4-16-64.

790,613. STARR AND DESIGN. Franlee Distributors, Inc. MULTIPLE CLASS (Classes 18 and 51). SN 194,481. Pub. 3-23-65. Filed 5-28-64.

790,614. COLGATE 100. Colgate-Palmolive Company. SN 197,266. Pub. 3-23-65. Filed 7-7-64.

790,615. VESULONG. Ciba Limited. SN 201,098. Pub. 3-23-65. Filed 9-2-64.

790,616. MANDALAY. Beutlich, Inc. SN 202,740. Pub. 3-23-65. Filed 9-28-64.

790,617. MANIVITA. The Vitarine Co., Inc. SN 204,030. Pub. 3-23-65. Filed 10-14-64.

Class 19—Vehicles

790,618. THE 600 GROUP OF COMPANIES AND DESIGN. George Cohen Sons and Company Limited. SN 124,044. Pub. 11-13-62. Filed 7-17-61.

790,619. 600 AND DESIGN. George Cohen Sons and Company Limited. SN 124,050. Pub. 11-13-62. Filed 7-17-61.

790,620. 600. George Cohen Sons and Company Limited. SN 124,058. Pub. 11-13-62. Filed 7-17-61.

790,621. VOLKSWAGEN Volkswagenwerk Aktiengesellschaft. SN 198,510. Pub. 3-23-65. Filed 7-24-64.

790,622. LIFETIME. Ohio Body Manufacturing Company. SN 198,581. Pub. 3-23-65. Filed 7-27-64.

790,623. VISTA LINER. Vista Liner Coach & Trailer, Inc. SN 199,935. Pub. 3-23-65. Filed 8-14-64.

790,624. STAB-O-LOADER. Cambria Spring Company. SN 200,409. Pub. 3-23-65. Filed 8-24-64.

Class 21—Electrical Apparatus, Machines, and Supplies

790,625. THERMIONIC. Vulcan-Hart Corporation. SN 141,010. Pub. 10-1-63. Filed 3-28-62.

790,626. DELTA. Sterneo Industries, Inc. SN 176,972. Pub. 6-2-64. Filed 9-13-63.

790,627. ACOUSTECH. Acoustech, Inc. SN 185,342. Pub. 3-23-65. Filed 1-27-64.

790,628. LEAF. The Bendix Corporation. SN 185,353. Pub. 3-23-65. Filed 1-27-64.

790,629. REALTONE. Realtone Electronics Corp. SN 192,752. Pub. 3-23-65. Filed 5-5-64.

790,630. OXY-DRY AND DESIGN. Oxy-Dry Sprayer Corporation. SN 194,746. Pub. 3-23-65. Filed 6-2-64.

790,631. PUMPROTECTOR. Ametek, Inc. SN 197,866. Pub. 3-23-65. Filed 7-15-64.

790,632. FIVE CLAD. General Battery and Ceramic Corp. SN 197,954. Pub. 3-23-65. Filed 7-16-64.

790,633. OMMNISONIC. Acoustica Associates, Inc. SN 198,250. Pub. 3-23-65. Filed 7-21-64.

790,634. SPINCRAFT AND DESIGN. Spincraft, Inc. SN 199,633. Pub. 3-23-65. Filed 8-10-64.

790,635. TRAN-BAL. Richard H. Bodine, Jr., d.b.a. The Bodine Company. SN 203,562. Pub. 3-23-65. Filed 10-8-64.

Class 22—Games, Toys, and Sporting Goods

790,636. BIRD DESIGN. Kenner Products Company. SN 150,952. Pub. 3-23-65. Filed 3-10-62.

790,637. COACH'S SPORTING GOODS CORPORATION AND DESIGN. Coach's Sporting Goods Corporation. SN 169,217. Pub. 3-23-65. Filed 5-20-63.

790,638. METEOR. Sports Beconta Inc. SN 171,399. Pub. 3-23-65. Filed 6-19-63.

790,639. FINNY FIN BORE AND DESIGN. Nordic Enterprises, Inc. SN 181,992. Pub. 3-23-65. Filed 11-27-63.

790,640. LADOCA AND DESIGN. Ladoca Project and Publishing Foundation. SN 184,163. Pub. 3-23-65. Filed 1-7-64.

790,641. "TWISTIN MINNIE." Steffey Bros. SN 190,555. Pub. 3-23-65. Filed 4-7-64.

790,642. INFLUENCE. Washington Educational Enterprise Productions (WEEP). SN 196,574. Pub. 3-23-65. Filed 6-26-64.

790,643. ASTRONAUT. The Hettrick Manufacturing Company. SN 196,663. Pub. 3-23-65. Filed 6-29-64.

790,644. BRAVE EAGLE. The Hettrick Manufacturing Company. SN 196,664. Pub. 3-23-65. Filed 6-29-64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

790,645. THE 600 GROUP OF COMPANIES AND DESIGN. George Cohen Sons and Company Limited. SN 124,042. Pub. 11-13-62. Filed 7-17-61.

790,646. 600 AND DESIGN. George Cohen Sons and Company Limited. SN 124,048. Pub. 11-13-62. Filed 7-17-61.

790,647. 600. George Cohen Sons and Company Limited. SN 124,056. Pub. 11-13-62. Filed 7-17-61.

790,648. RO-NO-MO. Lisk Fly Manufacturing Company. SN 177,067. Pub. 3-23-65. Filed 9-16-63.

790,649. LA SALLE SYS-T-MATION AND DESIGN. La Salle Machine Tool, Inc. SN 181,650. Pub. 3-23-65. Filed 11-21-63.

790,650. SWECO. Southwestern Engineering Co. SN 183,514. Pub. 3-23-65. Filed 12-24-63.

790,651. CLINCH-LOK. American Drill Bushing Co. SN 187,715. Pub. 3-23-65. Filed 3-2-64.

790,652. JETSTREAM. California Car Wash Systems, Inc. SN 188,720. Pub. 3-23-65. Filed 3-16-64.

790,653. HYDRA-KLEEVER. Automatic Battery Breaker Co. SN 191,109. Pub. 3-23-65. Filed 4-15-64.

790,654. HERD SURE-FEED AND DESIGN. Herd Seeder Company, Inc. SN 191,288. Pub. 3-23-65. Filed 4-16-64.

790,655. UA. United Aircraft Corporation. SN 191,789. Pub. 3-23-65. Filed 4-21-64.

790,656. SUPER FLO. The A. J. Sackett & Sons Company. SN 191,956. Pub. 3-23-65. Filed 4-24-64.

790,657. OXY-DRY AND DESIGN. Oxy-Dry Sprayer Corporation. SN 194,747. Pub. 3-23-65. Filed 6-2-64.

790,658. VOLUM-AIR. Societe Robert Meyssonnier et Cie (Societe Anonyme). SN 199,927. Pub. 3-23-65. Filed 8-14-64.

790,659. DANCO. Danneer Machine Works, Inc. SN 200,082. Pub. 3-23-65. Filed 8-18-64.

790,660. ULTIMA. Aktiebolaget Gense. SN 201,261. Pub. 3-23-65. Filed 9-4-64.

790,661. SNAKE WEAVE. The Johnson Wire Works Limited. SN 201,441. Pub. 3-23-65. Filed 9-8-64.

790,662. CAPTAIN COOK. Cook Machinery Co., Inc. SN 201,524. Pub. 3-23-65. Filed 9-9-64.

790,663. DURA-T. Eveready Briksaw Company, Inc. SN 201,529. Pub. 3-23-65. Filed 9-9-64.

790,664. LYNCH. Lynch Corporation. SN 201,847. Pub. 3-23-65. Filed 9-14-64.

790,665. BELL-SIRO. James Bell Machinery Proprietary Limited. SN 201,920. Pub. 3-23-65. Filed 9-15-64.

790,666. HANDY HANK. Lawrence C. Lane. SN 202,090. Pub. 3-23-65. Filed 9-17-64.

790,667. LAB-TEST. Jerome H. Cohen, d.b.a. Excelsior Belting and Equipment Co. and Excelsior Belting Co. SN 202,130. Pub. 3-23-65. Filed 9-18-64.

790,668. LEAKY PADDLE. Edward C. Sterba. SN 204,518. Pub. 3-23-65. Filed 10-21-64.

790,669. SNO-DEVIL. Jos. Dyson & Sons, Inc. SN 204,777. Pub. 3-23-65. Filed 10-26-64.

790,670. LEVALIGN. Eugene V. Grumman. SN 205,056. Pub. 3-23-65. Filed 10-29-64.

790,671. ONEIDA STAINLESS AND DESIGN. Oneida Ltd. SN 205,090. Pub. 3-23-65. Filed 10-29-64.

790,672. MARQUESA. Riccar America Company. SN 205,247. Pub. 3-23-65. Filed 11-2-64.

790,673. UNIPLANT. The Cooper-Bessemer Corporation. SN 205,491. Pub. 3-23-65. Filed 11-4-64.

790,674. DIVERSOMATIC. Diversomatic Packaging Machinery, Inc. SN 205,785. Pub. 3-23-65. Filed 11-9-64.

790,675. GROTESQUE REPRESENTATION OF A SCOTSMAN. Walker Manufacturing Company. SN 206,394. Pub. 3-2-65. Filed 11-17-64.

Class 24 — Laundry Appliances and Machines

790,676. ALDCLEAN. ALD, Inc. SN 173,543. Pub. 3-23-65. Filed 7-23-63.

Class 26 — Measuring and Scientific Appliances

790,541. (See Class 2 for this trademark.)

790,677. BODA. New Products, Inc. SN 183,854. Pub. 3-23-65. Filed 12-31-63.

790,678. DISPO. American Hospital Supply Corporation. SN 183,871. Pub. 3-23-65. Filed 1-2-64.

790,679. DAY VUE AND DESIGN. Sodico, Inc. SN 184,402. Pub. 3-23-65. Filed 1-10-64.

790,680. ROYFAX ACE AND DESIGN. Royal McBee Corporation. SN 199,313. Pub. 3-23-65. Filed 8-5-64.

790,681. MONIREX. Universal Oil Products Company. SN 199,330. Pub. 3-23-65. Filed 8-5-64.

790,682. AN ORIGINAL "SHARPE-SHADER" BY HELEN AND DESIGN. Sharpe Originals by Helen. SN 199,402. Pub. 3-23-65. Filed 8-6-64.

790,683. ASEPTOPLAST. The Plastic Contact Lens Co. SN 199,492. Pub. 3-23-65. Filed 8-7-64.

790,684. WINSUM. Liberty Optical Manufacturing Co., Inc. SN 199,583. Pub. 3-23-65. Filed 8-10-64.

790,685. DIGI-WEIGH. Ramsey Engineering Company. SN 199,611. Pub. 3-23-65. Filed 8-10-64.

790,686. RELIATEMP. Tenney Engineering, Inc. SN 199,639. Pub. 3-23-65. Filed 8-10-64.

790,687. DIAL-AID. Dial-Aid Sales Corp. SN 200,167. Pub. 3-23-65. Filed 8-19-64.

790,688. OPTICASE AND DESIGN. Opticase, Inc. SN 200,208. Pub. 3-23-65. Filed 8-19-64.

790,689. THERM-O-JACK. Precision Scientific Company. SN 200,460. Pub. 3-23-65. Filed 8-24-64.

790,690. HOT JACK. Precision Scientific Company. SN 200,482. Pub. 3-23-65. Filed 8-24-64.

790,691. BRUNATA. Ingeniorfirmaet Constantin Brun A/S. SN 200,845. Pub. 3-23-65. Filed 8-28-64.

790,692. DIAL-O-GRAM. Ohaus Scale Corporation. SN 200,858. Pub. 3-23-65. Filed 8-28-64.

790,693. DIAL-O-GRAM AND DESIGN. Ohaus Scale Corporation. SN 200,859. Pub. 3-23-65. Filed 8-28-64.

790,694. COLORTROL. Minnesota Mining and Manufacturing Company. SN 201,041. Pub. 3-23-65. Filed 9-1-64.

790,695. AQUAVISOR. Electronic Switchgear (London) Limited. SN 201,403. Pub. 3-23-65. Filed 9-8-64.

790,696. MINI-COUNTER. Production Equipment Inc. SN 201,550. Pub. 3-23-65. Filed 9-9-64.

Class 27 — Horological Instruments

790,697. MICROTRON. Raymond J. Costigan, d.b.a. Salem Clock Company. SN 202,774. Pub. 3-23-65. Filed 9-28-64.

Class 28 — Jewelry and Precious-Metal Ware

790,698. ISLAND SWEETWATER. Sobel Brothers, Inc. SN 205,365. Pub. 3-23-65. Filed 11-2-64.

Class 31 — Filters and Refrigerators

790,699. CRYO-GUARD. Air Products and Chemicals, Inc. SN 161,135. Pub. 12-3-63. Filed 1-22-63.

Class 32 — Furniture and Upholstery

790,700. SLEEP STAR LITE AND DESIGN. Sleep Star Lite Mattress Company. SN 184,841. Pub. 3-23-65. Filed 1-17-64.

790,701. BEAUTY QUEEN. Henry H. Lovette, d.b.a. Southland Bedding Company. SN 201,952. Pub. 3-23-65. Filed 9-15-64.

790,702. PAN-L-VU. Plastow & Goepel Productions, Inc. SN 203,428. Pub. 3-23-65. Filed 10-6-64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

790,703. THERMON AND DESIGN. Thermon Manufacturing Company, assignee of Thermon Equipment Corporation. SN 142,663. Pub. 10-29-63. Filed 4-19-62.

790,704. INFINITE. General Motors Corporation. SN 195,095. Pub. 3-23-65. Filed 6-3-64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

790,705. SYMBOL. Materials Testing Company, Inc. SN 137,924. Pub. 3-23-65. Filed 2-14-62.

790,706. P PAWLING AND DESIGN. Pawling Rubber Corporation. MULTIPLE CLASS (Classes 35 and 50). SN 175,934. Pub. 3-23-65. Filed 8-28-63.

790,707. IKA. Goetzewerke Friedrich Goetze Aktiengesellschaft. SN 193,833. Pub. 3-23-65. Filed 5-12-64.

790,708. MAGIC TRAC. White Stores, Inc. SN 200,517. Pub. 3-23-65. Filed 8-24-64.

790,709. MINEFLEX. United States Rubber Company. SN 200,685. Pub. 3-23-65. Filed 8-26-64.

790,710. CUSHOMATIC. Elwood Fry, d.b.a. Superior Industrial Tire Company. SN 201,020. Pub. 3-23-65. Filed 9-1-64.

Class 36 — Musical Instruments and Supplies

790,711. JETSTAR. Jetstar Records, Inc. MULTIPLE CLASS (Classes 36 and 38). SN 187,871. Pub. 3-23-65. Filed 3-3-64.

790,712. OWL RECORDS AND DESIGN. Thorne Films, Inc. SN 191,226. Pub. 3-23-65. Filed 4-15-64.

790,713. SOFT TOUCH. Euphonics Corporation. SN 197,108. Pub. 3-23-65. Filed 7-6-64.

790,714. CHING-RING. Ralph C. Kester, Jr. SN 197,961. Pub. 3-23-65. Filed 7-16-64.

790,715. FLAT JACKS AND DESIGN. Ralph C. Kester, Jr. SN 197,962. Pub. 3-23-65. Filed 7-16-64.

790,716. PARROT. London Records, Inc. SN 197,967. Pub. 3-23-65. Filed 7-16-64.

790,717. PARROT AND DESIGN. London Records, Inc. SN 197,968. Pub. 3-23-65. Filed 7-16-64.

790,718. COPE. Cope, Inc., assignee of James Copeland, d.b.a. James Copeland & Associates. SN 198,135. Pub. 3-23-65. Filed 7-20-64.

Class 37 — Paper and Stationery

790,719. MARATHON. American Can Company. SN 188,501. Pub. 3-23-65. Filed 3-12-64.

790,720. INTERNATIONAL. International Paper Company. SN 197,719. Pub. 3-23-65. Filed 7-13-64.

790,721. TOUCH AND GO. Eberhard Faber Inc. SN 197,826. Pub. 3-23-65. Filed 7-14-64.

790,722. KRAFTBILT. Ross-Martin Company. SN 203,206. Pub. 3-23-65. Filed 10-2-64.

790,723. SLIMLINE. Eberhard Faber Inc. SN 203,384. Pub. 3-23-65. Filed 10-6-64.

790,724. GATOR BRITE. International Paper Company. SN 203,396. Pub. 3-23-65. Filed 10-6-64.

790,725. NEATACKS. Neatape Corporation. SN 203,794. Pub. 3-23-65. Filed 10-12-64.

Class 38 — Prints and Publications

790,711. (See Class 36 for this trademark.)

790,726. BE WISE FIRST NATIONALIZE AND DESIGN. Modern Business Development, Inc. SN 153,796. Pub. 3-23-65. Filed 9-24-62.

790,727. NFL HIGHLIGHTS. W. Wallace Orr, Inc. SN 167,033. Pub. 3-23-65. Filed 4-18-63.

790,728. SIDNEY. CBS Films, Inc. SN 168,286. Pub. 3-23-65. Filed 5-7-63.

790,729. HASHIMOTO. CBS Films, Inc. SN 168,293. Pub. 3-23-65. Filed 5-7-63.

790,730. AID AND DESIGN OF CROSS. Ambulance Association of America. SN 179,308. Pub. 3-23-65. Filed 10-18-63.

790,731. MIDDLE MARKET DIRECTORY. Dun & Bradstreet, Inc. SN 182,605. Pub. 3-23-65. Filed 12-9-63.

790,732. AD-TAB. Ad-Tab Publishing Corporation, assignee of Mission Publications, Inc. SN 185,700. Pub. 3-23-65. Filed 1-30-64.

790,733. CHILDCRAFT THE HOW AND WHY LIBRARY. Field Enterprises Educational Corporation. SN 186,069. Pub. 3-23-65. Filed 2-5-64.

790,734. WATER POLLUTION CONTROL FEDERATION HIGHLIGHTS. Water Pollution Control Federation. SN 196,747. Pub. 3-23-65. Filed 6-29-64.

790,735. GEMINI BOOKS AND DESIGN. Daisy Bacon, d.b.a. Gemini Books. SN 197,869. Pub. 3-23-65. Filed 7-15-64.

790,736. UNITED EVANGELICAL ACTION. National Association of Evangelicals. SN 198,289. Pub. 3-23-65. Filed 7-21-64.

Class 39 — Clothing

790,737. COWBOY KING. The Great Western Garment Company Ltd. SN 121,920. Pub. 3-3-64. Filed 6-13-61.

790,738. GALLERY WORSTED. The Joseph & Feiss Company. SN 173,923. Pub. 3-23-65. Filed 7-29-63.

790,739. UNISHIELD. Ely Lesavoy, d.b.a. Purling Mills, Inc. SN 179,906. Pub. 3-23-65. Filed 10-28-63.

790,740. THOMAS. Thomas Textile Co., Inc. SN 179,961. Pub. 3-23-65. Filed 10-28-63.

790,741. PUFF'EELS. Donald M. Tadich. SN 188,297. Pub. 3-23-65. Filed 3-9-64.

790,742. THE MAN AT EASE AND ROUND LABEL DESIGN. The Man at Ease, Inc. SN 189,601. Pub. 3-23-65. Filed 3-25-64.

790,743. MAMAN SI BELLE. Mrs. Sigmar Ouroumoff, nee Huguette Bereau. SN 190,277. Pub. 3-23-65. Filed 4-3-64.

790,744. STARLITE. Merit Clothing Company. SN 190,633. Pub. 3-23-65. Filed 4-8-64.

790,745. YOUNG SECRET. Olga Company. SN 193,569. Pub. 3-23-65. Filed 5-15-64.

790,746. SUDDENLY YOUNG. Olga Company. SN 193,570. Pub. 3-23-65. Filed 5-15-64.

790,747. MAD MATES. Merle Boller. SN 193,622. Pub. 3-23-65. Filed 5-18-64.

790,748. LORDSON. Lordson Manufacture de Chemisea. SN 193,882. Pub. 3-23-65. Filed 5-20-64.

790,749. MARK 65 BY LEE. John B. Stetson Company. SN 195,458. Pub. 3-23-65. Filed 6-11-64.

790,750. THERMO-JAC. The Grove Company. SN 196,445. Pub. 3-23-65. Filed 6-25-64.

790,751. DURANGO. Georgia Shoe Manufacturing Company, Inc. SN 198,549. Pub. 3-23-65. Filed 7-27-64.

790,752. COSY. Joseph Kestler. SN 199,073. Pub. 3-23-65. Filed 8-3-64.

790,753. WARSON MANOR. Curlee Clothing Company. SN 200,421. Pub. 3-23-65. Filed 8-24-64.

790,754. REPRESENTATION OF A WHITE LAMB. Aktiebolaget Förenade Cellvaddbruken, Celiva. SN 200,617. Pub. 3-23-65. Filed 8-26-64.

790,755. EAGLE. Eagle Clothes, Inc. SN 200,916. Pub. 3-23-65. Filed 8-31-64.

790,756. WESTERFIELD. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 201,685. Pub. 3-23-65. Filed 9-11-64.

790,757. BARBIE DEBS. Mattel, Inc. SN 201,714. Pub. 3-23-65. Filed 9-11-64.

790,758. JINNI. Wilwood, Inc. SN 202,531. Pub. 3-23-65. Filed 9-23-64.

790,759. PROGRAM 99. Hubbard Shoe Company, Inc. SN 203,011. Pub. 3-23-65. Filed 9-30-64.

790,760. HEAD OF A GIRL (DESIGN). Lawrence Children's Underwear Co., Inc. SN 207,221. Pub. 3-23-65. Filed 12-1-64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

790,761. GANTREE. Glen Raven Cotton Mills, Inc. SN 184,914. Pub. 3-23-65. Filed 1-20-64.

790,762. PANTHER (DESIGN). Lawson Products, Inc. SN 186,087. Pub. 3-23-65. Filed 2-5-64.

790,763. DROPSAN. Association pour la Diffusion, la Recherche, l'Organisation et la Promotion de Fils Textures. SN 190,491. Pub. 3-23-65. Filed 4-7-64.

790,764. BEAU-SEAL. Beaunit Corporation. SN 193,740. Pub. 3-23-65. Filed 5-19-64.

790,765. TRILON. Guilford Mills Incorporated. SN 193,867. Pub. 3-23-65. Filed 5-20-64.

790,766. TROYTUF. Troy Mills Inc. SN 196,209. Pub. 3-23-65. Filed 6-22-64.

790,767. POLYFAB. Philadelphia Felt Company. SN 196,555. Pub. 3-23-65. Filed 6-26-64.

790,768. WAUMBEC. Waumbec Mills Incorporated. SN 196,748. Pub. 3-23-65. Filed 6-29-64.

790,769. ULTRAFINISH. Albany Felt Company. SN 200,998. Pub. 3-23-65. Filed 9-1-64.

790,770. LCT. Albany Felt Company. SN 200,999. Pub. 3-23-65. Filed 9-1-64.

790,771. ALJIM. Mainser Minton Co., Inc. SN 201,294. Pub. 3-23-65. Filed 9-4-64.

790,772. AKRATON. Crompton Company. SN 201,383. Pub. 3-23-65. Filed 9-8-64.

790,773. DAVRABLEND. Henson-Kickernick, Inc. SN 201,426. Pub. 3-23-65. Filed 9-8-64.

790,774. SKI-TRAX. Hockmeyer Bros. Inc. SN 201,430. Pub. 3-23-65. Filed 9-8-64.

790,775. FILT-FAB. Huyck Corporation. SN 201,590. Pub. 3-23-65. Filed 9-10-64.

790,776. POWR-FAB. Huyck Corporation. SN 201,592. Pub. 3-23-65. Filed 9-10-64.

790,777. FORM-FAB. Huyck Corporation. SN 201,593. Pub. 3-23-65. Filed 9-10-64.

790,778. LOOMASTER. Holland Home Development Corporation. SN 201,688. Pub. 3-23-65. Filed 9-11-64.

790,779. HUYVEL. Huyck Corporation. SN 202,028. Pub. 3-23-65. Filed 9-16-64.

790,780. BEAUTICREPE. J. P. Stevens & Co., Inc. SN 202,050. Pub. 3-23-65. Filed 9-16-64.

790,781. TEX-A-BAK. Textile Rubber & Chemical Company. SN 202,110. Pub. 3-23-65. Filed 9-17-64.

790,782. GOLDEN TOUCH AND DESIGN. Roselan Fabrics, Inc. SN 202,313. Pub. 3-23-65. Filed 9-21-64.

790,783. BEAU-BUNT. Beaunit Corporation. SN 202,352. Pub. 3-23-65. Filed 9-22-64.

790,784. MISCELLANEOUS DESIGN. Bigelow-Sanford, Inc., assignee of Bigelow Custom Carpets, Inc. SN 202,541. Pub. 3-23-65. Filed 9-24-64.

790,785. DURA-GROOVE. Albany Felt Company. SN 202,976. Pub. 3-23-65. Filed 9-30-64.

Class 43 — Thread and Yarn

790,786. DROPSAN. Association pour la Diffusion, la Recherche, l'Organisation et la Promotion de Fils Textures. SN 190,492. Pub. 3-23-65. Filed 4-7-64.

790,787. CANDYTWIST. Harrap Bros. (Sirdar Wools) Limited. SN 200,932. Pub. 3-23-65. Filed 8-31-64.

790,788. MEDALLION. Harrap Bros. (Sirdar Wools) Limited. SN 202,265. Pub. 3-23-65. Filed 9-21-64.

Class 44 — Dental, Medical, and Surgical Appliances

790,789. ELECTROCARDIOSCANNER. Avionics Research Products Corporation. SN 156,551. Pub. 3-23-65. Filed 11-5-62.

790,790. PRES-ICE. Sierra Enterprises. SN 187,809. Pub. 3-23-65. Filed 3-2-64.

790,791. CRONEX. E. I. du Pont de Nemours and Company. SN 190,247. Pub. 3-23-65. Filed 4-3-64.

790,792. POLYVENT. The Kendall Company. SN 202,088. Pub. 3-23-65. Filed 9-17-64.

790,793. TEEN-TAN. Botany Industries, Inc., d.b.a. Sea & Ski Company. SN 202,409. Pub. 3-23-65. Filed 9-23-64.

790,794. NADCA. National Academy of Dental Ceramic Arts, Inc. SN 202,497. COLLECTIVE MARK. Pub. 3-23-65. Filed 9-23-64.

790,795. GROTESQUE ANIMAL AND LETTER R (DESIGN). The Reddy Company, Inc. SN 202,955. Pub. 3-23-65. Filed 9-29-64.

790,796. FLEX-AIRE. Vacudent Manufacturing Company. SN 203,041. Pub. 3-23-65. Filed 9-30-64.

790,797. STERI-VAC. Advanced Products Corp. SN 203,060. Pub. 3-23-65. Filed 10-1-64.

790,798. NERVE MASTER. Mace Warner. SN 203,132. Pub. 3-23-65. Filed 10-1-64.

790,799. AMCREST. Almcee Wholesale Corporation. SN 208,021. Pub. 3-23-65. Filed 12-14-64.

Class 46 — Foods and Ingredients of Foods

790,535. (See Class 1 for this trademark.)

790,612. (See Class 18 for this trademark.)

790,800. "NO BONES ABOUT IT." National Tea Co. SN 112,754. Pub. 3-23-65, Filed 1-30-61.

790,801. GOLD COAST. Golden Dipt Corporation, by merger and change of name from Golden Dipt-Meletio Corporation. SN 165,512. Pub. 3-23-65. Filed 3-27-63.

790,802. BANQUET. Nelson-Ricks Creamery Company, d.b.a. Banquet Better Foods. SN 168,753. CONCURRENT USE. Pub. 4-7-64. Filed 5-13-63.

790,803. PARISIAN. Renon Parisian Fontain Bakeries, Inc., d.b.a. Parisian Bakeries and/or Parisian Baking Company. SN 170,492. Pub. 3-23-65. Filed 6-6-63.

790,804. PUD 'N' PIE. Gay's Cookies, Inc. SN 175,654. Pub. 3-23-65. Filed 8-23-63.

790,805. ROYAL K AND DESIGN. John J. Kovacevich. SN 177,058. Pub. 3-23-65. Filed 9-16-63.

790,806. THREE STAR ESSENCE ETC. AND DESIGN. Virginia Dare Extract Co., Inc. SN 177,390. Pub. 3-23-65. Filed 9-19-63.

790,807. WHIZ BEST CANDY BAR THERE IZ-Z. Paul F. Beich Company. SN 185,484. Pub. 3-23-65. Filed 1-28-64.

790,808. PABLO. The James G. Gill Company, Inc. SN 197,695. Pub. 3-23-65. Filed 7-13-64.

790,809. IDEAL GIVES US PETS APPEAL. Wilson & Co., Inc. SN 197,926. Pub. 3-23-65. Filed 7-15-64.

790,810. SUPER 2. General Mills, Inc. SN 200,433. Pub. 3-23-65. Filed 8-24-64.

790,811. PRIDE O'MERIT AND DESIGN. Merit Packing Co. SN 204,271. Pub. 3-23-65. Filed 10-19-64.

790,812. CULROSE AND DESIGN. Culrose Foods Limited. SN 204,369. Pub. 3-23-65. Filed 10-20-64.

790,813. MULTI-MENU. General Foods Corporation. SN 204,379. Pub. 3-23-65. Filed 10-20-64.

Class 47 — Wines

790,814. GRAND MOUSSEUX ETC. AND DESIGN. The Stellenbosch Farmers' Winery Limited. SN 188,288. Pub. 3-23-65. Filed 3-9-64.

Class 48 — Malt Beverages and Liquors

790,815. ISOLONE. Kalamazoo Spice Extraction Company. SN 185,215. Pub. 3-23-65. Filed 1-23-64.

Class 49 — Distilled Alcoholic Liquors

790,816. MAVISBANK. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited. SN 196,849. Pub. 3-23-65. Filed 7-2-64.

790,817. GLEN FLAGLER. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited. SN 196,406. Pub. 3-23-65. Filed 7-23-64.

Class 50 — Merchandise Not Otherwise Classified

790,541. (See Class 2 for this trademark.)

790,706. (See Class 35 for this trademark.)

790,818. QUAD-DECOR AND DESIGN. Quad Decor, Inc. SN 148,077. Pub. 3-23-65. Filed 6-29-62.

790,819. BIRD BANQUET AND DESIGN. Frederic Andreae, d.b.a. Bird Banquet Co. SN 169,684. Pub. 3-23-65. Filed 5-27-63.

790,820. PLAS-DE-JOUR. Louis A. Labe, d.b.a. Labe Enterprises. SN 200,761. Pub. 3-23-65. Filed 8-27-64.

790,821. ROLL-N-COVER. L. Marino, Inc. SN 201,039. Pub. 3-23-65. Filed 9-1-64.

790,822. CROCODILE. C. H. H. Stacy and Co., Inc. SN 201,571. Pub. 3-23-65. Filed 9-10-64.

790,823. MR. LOONIE'S AND DESIGN. Dimensional Research Corporation. SN 206,331. Pub. 3-23-65. Filed 10-29-64.

Class 51 — Cosmetics and Toilet Preparations

790,613. (See Class 18 for this trademark.)

790,824. DU LUNDI. County Laboratories Limited, d.b.a. Du Lundi. SN 152,210. Pub. 3-23-65. Filed 8-30-62.

790,825. SALLY HANSEN. Maradel Products, Inc. SN 166,822. Pub. 3-23-65. Filed 4-16-63.

790,826. IMPERIAL DEL ORO FOR MEN AND DESIGN. Cosmetics Manufacturing Company. SN 172,808. Pub. 3-23-65. Filed 7-11-63.

790,827. HUNZA. Paul Benonin Boyer de Belvefer. SN 183,662. Pub. 3-23-65. Filed 12-27-63.

790,828. AQUA TINT. Rayette, Inc. SN 184,750. Pub. 3-23-65. Filed 1-16-64.

790,829. OUR BABY'S. Colgate, Culp & Co., Inc. MULTIPLE CLASS (Classes 51 and 52). SN 185,269. Pub. 3-23-65. Filed 1-24-64.

790,830. 1ST STEP. Dusharme Products, Inc. SN 186,519. Pub. 3-23-65. Filed 2-12-64.

790,831. TREASURE ISLAND. The House for Men, Inc., d.b.a. Treasure Island Co. SN 187,283. Pub. 3-23-65. Filed 2-24-64.

790,832. INCREDA. The Beautex Corporation. SN 197,258. Pub. 3-23-65. Filed 7-7-64.

790,833. SHIBUI. House of Shibui, Ltd., d.b.a. House of Shibui. SN 198,049. Pub. 3-23-65. Filed 7-17-64.

790,834. COBBLESTONE. Ceejay Toiletries, Inc., d.b.a. Ceejay. SN 198,180. Pub. 3-23-65. Filed 7-20-64.

Class 52 — Detergents and Soaps

790,829. (See Class 51 for this trademark.)

790,835. ROEBIC. Roebic Laboratories, Inc. SN 174,122. Pub. 3-23-65. Filed 7-31-63.

790,836. SPEEN. Prismo Safety Corporation. SN 175,792. Pub. 3-23-65. Filed 8-26-63.

790,837. R REMOVE. Deft, Incorporated. SN 196,257. Pub. 3-23-65. Filed 6-23-64.

790,838. KARTEK. Marion C. Travis, d.b.a. Karcco Technical Products. SN 198,596. Pub. 3-23-65. Filed 7-27-64.

790,839. PORENAC. Wyandotte Chemicals Corporation. SN 200,056. Pub. 3-23-65. Filed 8-17-64.

790,840. UNLOCKS. Wyandotte Chemicals Corporation. SN 200,130. Pub. 3-23-65. Filed 8-18-64.

Service Marks

Class 100 — Miscellaneous

790,841. W WESCO. Washington Engineering Services Company, Inc. MULTIPLE CLASS (Classes 100 and 107). SN 151,548. Pub. 3-23-65. Filed 8-20-62.

790,842. CITADEL RECORD CLUB AND DESIGN. Citadel Record Club, Inc. SN 153,736. Pub. 3-23-65. Filed 9-24-62.

790,843. LEASCO. Ideal Leasing Corporation. SN 159,238. Pub. 3-10-64. Filed 12-17-62.

790,844. AEI AND CHEVRON DESIGN. The American Electronics, Inc. SN 166,429. Pub. 3-23-65. Filed 4-10-63.

Class 101 — Advertising and Business

790,845. BSI KEY TO METHODS FOR MODERN MANAGEMENT. Business Systems Incorporated. SN 174,258. Pub. 3-23-65. Filed 8-2-63.

790,846. IQ AND DESIGN. Independent Office Service Institute. SN 186,251. Pub. 3-23-65. Filed 2-7-64.

790,847. FUN-PAX. Navarro Enterprises, Inc. SN 189,721. Pub. 3-23-65. Filed 3-26-64.

Class 103 — Construction and Repair

790,848. NYLONCRAFT. Nyloncraft, Inc. SN 145,582 Pub. 3-23-65. Filed 5-28-62.

790,849. HEATING FILTERING SPRINKLING ETC. AND DESIGN. R. E. Layton, Jr., d.b.a. Layton Engineering Company. SN 189,906. Pub. 3-23-65. Filed 3-30-64.

Class 105 — Transportation and Storage

790,850. NORTH ON THE RIVER AND DESIGN. Velsicol Chemical Corporation. SN 182,911. Pub. 3-23-65. Filed 12-12-63.

Class 106 — Material Treatment

790,851. TEMP-LOK. The Turner & Seymour Mfg. Company, assignee of Connecticut Special Machine, Inc. SN 181,333. Pub. 3-9-65. Filed 11-18-63.

Class 107 — Education and Entertainment

790,841. (See Class 100 for this trademark.)

Certification Mark

Class B — Services

790,852. OFFICIAL PORT O CALL AND DESIGN.. Sportsman's Handbook, Inc., assignee of Houston Branch, d.b.a. The Sportsman's Handbook. SN 151,717. Pub. 3-16-65. Filed 8-23-62.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 12—Construction Materials

790,853. Paul R. Kubly, d.b.a. Color Putty Co., Monroe, Wis. SN 191,563. Filed P.R. 4-20-64; Am. S.R. 4-16-65.

COLOR PUTTY

For Hole and Crack Filling Material, Similar to Putty, but Colored to Match the Background Wherever It Is Used. First use Feb. 15, 1962.

Class 16—Protective and Decorative Coatings

790,854. Roma-Kote Paint Manufacturing Company, Norristown, Pa. SN 171,457. Filed P.R. 6-20-63; Am. S.R. 4-22-65.

TEEN TONES

For Interior Wall Paints.
First use Jan. 18, 1963.

790,855. Roma-Kote Paint Manufacturing Company, Norristown, Pa. SN 171,488. Filed P.R. 6-20-63; Am. S.R. 4-22-65.

TOT TONES

For Interior Wall Paints.
First use Jan. 18, 1963.

Class 39—Clothing

790,856. Springfoot, Inc., Charleston, W. Va. SN 169,884. Filed P.R. 5-28-63; Am. S.R. 4-21-65.

LADY VANDERBILT

For Women's Sweaters.
First use May 3, 1963.

TRADEMARK REGISTRATIONS RENEWED

25,770. REPRESENTATION OF A TIGER (DESIGN). Cl. 15. 1-1-1905.
44,372. VESPER. Cl. 46. 7-4-05.
44,378. PIEDMONT. Cl. 46. 7-4-05.
44,396. THE LADIES HOME JOURNAL. Cl. 38. 7-4-05.
44,432. BUST OF BENJAMIN FRANKLIN (DESIGN). Cl. 38. 7-4-05.
44,433. THE SATURDAY EVENING POST. Cl. 38. 7-4-05.
45,068. B AND DESIGN. Cl. 14. 8-8-05.
45,125. LORD CALVERT. Cl. 46. 8-8-05.
45,142. REPRESENTATION OF GENERAL PUTMAN RIDING DOWN HISTORICAL STAIRS (DESIGN). Cl. 6. 8-8-05.
45,289. HARTSHORN. Cl. 32 and 13. 8-8-05.
46,022. GOLD COIN. Cl. 46. 9-5-05.
46,028. GOOD HOUSEKEEPING. Cl. 38. 9-5-05.
46,043. DIAMOND BRAND. Cl. 39. 9-5-05.
46,050. STEWART HARTSHORN. Cl. 32. 9-5-05.
46,066. KITCHEN BOUQUET. Cl. 46. 9-5-05.
185,440. VIKING. Cl. 26. 6-17-24.
189,216. ROLYAT. Cl. 51. 9-16-24.
193,835. GLOIRE DE PARIS AND DESIGN. Cl. 51. 1-6-25.
194,839. COEUR DE PARIS. Cl. 51. 2-10-25.
194,917. ROYAL CAPRICE. Cl. 51. 2-10-25.
194,955. WHAT SHEER. Cl. 46. 2-10-25.
196,366. AUTELCO. Cl. 21. 3-17-25.
196,448. O-C AND DESIGN. Cl. 45. 3-17-25.
196,716. EXO. Cl. 52. 3-24-25.
196,725. NEVERDUST. Cl. 52. 3-24-25.
197,041. CELCO AND DESIGN. Cl. 22. 4-7-25.
197,093. MEADOWBROOK AND DESIGN. Cl. 39. 4-7-25.
197,190. IVANHOE. Cl. 37. 4-14-25.
197,216. CELCO. Cl. 40. 4-14-25.
197,313. PILLSBURY'S OVEN PRIDE. Cl. 46. 4-14-25.
197,426. CELCO AND DESIGN. Cl. 37. 4-14-25.
197,658. RELEASALL. Cl. 52. 4-21-25.
197,924. PREMIER. Cl. 15. 4-28-25.
198,156. ROCKHAM AND DESIGN. Cl. 39. 5-5-25.
198,491. VICTAULIC. Cl. 18. 5-19-25.
198,886. NO-KOLOR BLEACH. Cl. 6. 5-26-25.
200,425. COLORANTES PONEY DE PUTNAM AND DESIGN. Cl. 6. 6-30-25.
200,830. "MAKE THIRST A JOY." Cl. 45. 7-14-25.
200,930. COLOMBO. Cl. 46. 7-14-25.
202,965. FAIRWAY. Cl. 22. 8-8-25.
202,977. THREE POINT AND DESIGN. Cl. 46. 9-8-25.
203,170. COLORANTES DE PUTNAM POLVOS DE BLANQUEAR NO-KOLOR AND DESIGN. Cl. 6. 9-15-25.
411,285. DISPATCH. Cl. 37. 1-9-45.
411,290. PRONTO. Cl. 27. 1-9-45.
411,871. SUPERMAN SUPERHOMBRE AND DESIGN. Cl. 38. 2-6-45.
412,244. SKYRITER. Cl. 23. 2-27-45.
412,277. FIRST IN THE LAND AND DESIGN. Cl. 23. 2-27-45.
413,015. VAN DUAL. Cl. 39. 4-3-45.
413,031. DASH. Cl. 46. 4-3-45.
413,104. HI TOSE. Cl. 46. 4-10-45.
413,258. BAYTOL. Cl. 18. 4-17-45.
413,286. COMMODORE. Cl. 8. 4-17-45.
413,685. NORMANS AND DESIGN. Cl. 16. 5-8-45.
413,833. OLYMPIC RADIO TELEVISION AND DESIGN. Cl. 21. 5-15-45.
414,623. SUPERGIRL. Cl. 38. 6-19-45.
414,672. WORLD WEEK. Cl. 38. 6-19-45.
415,328. BRIZA. Cl. 51. 8-7-45.
415,659. HYDROBREAK. Cl. 52. 8-14-45.
415,660. SESQUILATE. Cl. 52. 8-14-45.
415,677. DESIGN OF GREEN CROSS WITHIN A CIRCLE. Cl. 44. 8-14-45.
415,858. NIPS. Cl. 51. 8-21-45.
415,875. AXTAM. Cl. 18. 8-21-45.
415,958. CARBO-SOUR. Cl. 6. 8-21-45.
415,959. DOUBLE-DUTY SOUR. Cl. 6. 8-21-45.
415,960. ECONO SOUR. Cl. 6. 8-21-45.
415,962. SEPTO-SOUR. Cl. 8. 8-21-45.
416,005. ENZIFLUR. Cl. 18. 8-21-45.
416,388. VICTAULIC. Cl. 35. 9-4-45.
416,514. BLUE ISLE. Cl. 46. 9-18-45.
416,665. CHILDREN'S HOUR. Cl. 22. 10-2-45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Apr. 21, 1959

677,133. STERLING. Cl. 1.
677,141. LIVORNO. Cl. 1.
677,142. FLOROMATIC. Cl. 1.
677,143. FUR-BELLO. Cl. 1.
677,146. ME-SC. Cl. 1.
677,147. NC COLORWARE AND DESIGN. Cl. 2.
677,148. FOLD-TOTE. Cl. 2.
677,151. MISTY-CRISPER. Cl. 2.
677,170. KOHINUR. Cl. 4.
677,172. WAX-SCENT. Cl. 4.
677,177. CYZAC. Cl. 6.
677,178. GRAPH-O-MAT. Cl. 6.
677,179. ANTIODOR AND DESIGN. Cl. 6.
677,182. ADR. Cl. 6.
677,186. DEBIE. Cl. 6.
677,193. PANTHER. Cl. 7.
677,202. "SAN JUAN." Cl. 12.
677,215. BITULADECK. Cl. 12.
677,219. JEEP. Cl. 13.
677,220. KASSWAY AND DESIGN. Cl. 13.
677,221. KASSWAY AND DESIGN. Cl. 13.
677,231. K MONEL. Cl. 14.
677,232. INCO-HARD. Cl. 14.
677,237. SILVER SHIELD. Cl. 16.
677,241. WALUGA-CORROLESS. Cl. 16.
677,246. TIP TOP. Cl. 18.
677,261. KEESON. Cl. 19.
677,264. NIVETRON AND DESIGN. Cl. 21.
677,265. KELMAN SINCE 1908 AND DESIGN. Cl. 21.
677,267. COLORLITER. Cl. 21.
677,270. REACTODYNE. Cl. 21.
677,271. BEAU-T-LITES. Cl. 21.
677,278. STEREOFLUID. Cl. 21.
677,274. AQUA-BELL. Cl. 22.
677,275. GAY-NOSES. Cl. 22.
677,277. EGGBERT'S. Cl. 22.
677,281. L'AMSCO. Cl. 22.
677,283. HERMES REGENT. Cl. 23.
677,285. STEPMATIC. Cl. 23.
677,289. ACCU RAIL. Cl. 23.
677,290. FORAMATIC. Cl. 23.
677,293. A. Cl. 24.
677,294. DUREFLEX. Cl. 24.
677,295. NEL ETC. AND DESIGN. Cl. 26.
677,298. PICTO-SCOPE. Cl. 26.
677,305. C.A.R.L. ETC. AND DESIGN. Cl. 26.
677,315. MICRO 6 WAY. Cl. 26
677,320. FLOOR-WONDER. Cl. 29.
677,325. BUDGETMASTER. Cl. 31.
677,328. BEAUTY-TRIM. Cl. 32.
677,329. OCCU-PAT AND DESIGN. Cl. 32.
677,330. KITCHEN FAIR. Cl. 32.
677,333. COMPATA. Cl. 32.
677,336. SKETCHBOOK SERILS. Cl. 32.
677,341. GENERAL. Cl. 34.
677,351. STA-SEAL. Cl. 37.
677,353. TODAY'S LIVING. Cl. 38.
677,355. ROUND ROBIN GREETING CARD AND DESIGN. Cl. 38.
677,358. MODERN POOL LIVING. Cl. 38.
677,360. POSTFOLIO. Cl. 38.
677,364. NESSI. Cl. 39.
677,370. BEDETTES BY ADRIENNE. Cl. 39.
677,371. MAGICAIRE. Cl. 39.
677,379. SIMPSON'S SHAHPUR. Cl. 42.
677,380. GANNEX KT ETC. AND DESIGN. Cl. 42.
677,381. MINIT PRESS. Cl. 42.
677,383. STEVETEEN. Cl. 42.
677,384. SETA ROYALE. Cl. 42.
677,385. SETA FRESCO. Cl. 42.
677,387. MANITIPS. Cl. 44.
677,391. ARTCO CYCLETEMP. Cl. 44.
677,393. ULTRA-FLEX. Cl. 44.
677,394. GILCO. Cl. 44.
677,395. MIST-O-MATIC. Cl. 44.
677,398. TULIP BELL PRODUCTS AND DESIGN. Cl. 46.
677,399. YUMMY. Cl. 46.
677,403. BLACK DIAMOND AND DESIGN. Cl. 46.
677,405. GOLD LEAF AND DESIGN. Cl. 46.
677,408. STONY BROOK. Cl. 46.
677,411. COMET RELEASE. Cl. 46.
677,412. LA VICTDIRE. Cl. 46.
677,413. PROTECTOSEALED. Cl. 46.
677,417. PAUL BUNYAN. Cl. 46.
677,420. DR. PRICE'S. Cl. 46.
677,421. SPACE RIDER. Cl. 46.
677,429. THE GO GO STICK. Cl. 46.
677,435. PREMIUM PLUS. Cl. 46.
677,439. IRIS'. Cl. 46.
677,450. CART-A-CASE. Cl. 46.
677,451. HAVE A STERLING TIME. Cl. 48.
677,455. COV-R-GRO. Cl. 50.
677,459. GLO-RENT. Cl. 50.
677,460. STAIR MASTER. Cl. 50.
677,462. MANORLUX. Cl. 50.
677,463. GLITREX. Cl. 50.
677,464. MIRA-TEX. Cl. 51.
677,474. LILY PAT. Cl. 51.
677,476. SPEAK UP. Cl. 51.
677,492. DURA-SEALED. Cl. 106.
677,494. LEE. Cl. 16.
677,495. PRAGA. Cl. 19.
677,497. TILT N' VIEW. Cl. 32.
677,499. COL-R-CODE. Cl. 44.
677,501. HAWAIIAN ISLAND. Cl. 46.
677,502. SAV-WEAR KARPET MAT. Cl. 50.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

247,315. LADY WEST. Cl. 27. Savoy Watch Co. Inc. 9-25-28. New Cert. Sec. 7(c) to Winton Watch Co. Inc., New York, N.Y.

335,160. MILOS AND DESIGN. Cl. 27. Savoy Watch Co. Inc. 5-26-36. New Cert. Sec. 7(c) to Winton Watch Co. Inc., New York, N.Y.

344,657. WEST POINTER AND DESIGN. Cl. 27. Savoy Watch Co. Inc. 2-30-37. New Cert. Sec. 7(c) to Winton Watch Co. Inc., New York, N.Y.

439,247. THER-MONIC. Cl. 21. Induction Heating Corp. 6-8-48. New Cert. Sec. 7(c) to The Taylor-Winfield Corporation, Warren, Ohio.

518,149. NAMACO SERENE. Cl. 32. National Mattress Company. 11-29-49. New Cert. Sec. 7(c) to Fiber Industries, Inc., New York, N.Y.

554,742. MILOMATIC. Cl. 27. Savoy Watch Co. Inc. 2-12-52. New Cert. Sec. 7(c) to Winton Watch Co. Inc., New York, N.Y.

569,172. INFO. Cl. 38. The Colony Broadcasting Corporation. 1-13-53. New Cert. Sec. 7(c) to General Advertising & Publishing, Inc., New Haven, Conn.

652,397. SURFSIDE. Cl. 27. Savoy Watch Co. Inc. 10-1-57. New Cert. Sec. 7(c) to Winton Watch Co. Inc., New York, N.Y.

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JUNE 8, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

Aceline Products Corp., Rochester, N.Y. 677,182, canc. Cl. 6.
Acoustech, Inc., Cambridge, Mass. 790,627, pub. 3–23–65. Cl. 21.
Acoustica Associates, Inc., Los Angeles, Calif. 790,633, pub. 3–23–65. Cl. 21.
Ad-Tab Publishing Corp., from Mission Publications, Inc., San Fernando, Calif. 790,732, pub. 3–23–65. Cl. 38.
Advanced Products Corp., Framingham, Mass. 790,797, pub. 3–23–65. Cl. 44.
Aimcee Wholesale Corp., New York, N.Y. 790,799, pub. 3–23–65. Cl. 44.
Air Master Mfg. Co., Inc., Philadelphia, Pa. 677,460, canc. Cl. 50.
Air Products and Chemicals, Inc., Trexlertown, Pa. 790,699, pub. 12–3–63. Cl. 31.
Air Products, Inc., Emmaus, Pa. 677,219, canc. Cl. 13.
Aktiebolaget Forenade Cellvaddbruken, Cellva, Stockholm, Sweden. 790,754, pub. 3–23–65. Cl. 39.
Aktiebolaget Gense, Eskilstuna, Sweden. 790,660, pub. 3–23–65. Cl. 23.
Aktiebolaget Inventing, Stockholm, Sweden. 677,264, canc. Cl. 21.
Albany Felt Co., Albany, N.Y. 790,769, pub. 3–23–65. Cl. 42.
Albany Felt Co., Albany, N.Y. 790,770, pub. 3–23–65. Cl. 42.
Albany Felt Co., Albany, N.Y. 790,785, pub. 3–23–65. Cl. 42.
Ald, Inc., Chicago, Ill. 790,676, pub. 3–23–65. Cl. 24.
Aldens Shoppers World, Inc., d.b.a. Shoppers World, Chicago, Ill. 790,607, pub. 3–23–65. Cl. 16.
Allied Kid Co., Boston, Mass. 790,532, pub. 3–23–65. Cl. 1.
Altman, B., & Co. : *See*—
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Ambulance Association of America, Los Angeles, Calif. 790,730, pub. 3–23–65. Cl. 38.
Amer, William, Co., Philadelphia, Pa. 677,143, canc. Cl. 1.
American Can Co., New York, N.Y. 790,719, pub. 3–23–65. Cl. 37.
American Cyanamid Co., New York, N.Y. 677,177, canc. Cl. 6.
American Drill Bushing Co., Los Angeles, Calif. 790,651, pub. 3–23–65. Cl. 23.
American Electronics, Inc., Fullerton, Calif. 790,844, pub. 3–23–65. Cl. 100.
American Home Products Corp. : *See*—
Ayerst, McKenna & Harrison Ltd.
S.M.A. Corp.
American Hospital Supply Corp., Evanston, Ill. 790,678, pub. 3–23–65. Cl. 26.
American Jet Spray Industries, Inc., Denver, Colo. 790,574, pub. 3–23–65. Cl. 6.
American Metal Specialties Corp., Hatboro, Pa. 677,281, canc. Cl. 22.
American Oil Co., The : *See*—
Standard Oil Co. of New York, N.Y.
American Saint Gobain Corp., Kingsport, Tenn. 790,548, pub. 3–23–65. Cl. 2.
American Stamping Co., Battle Creek, Mich. 412,277, ren. 6–8–65. Cl. 23.
Ametek, Inc., New York, N.Y. 790,631, pub. 3–23–65. Cl. 21.
Andreae, Frederic, d.b.a. Bird Banquet Co., Seattle, Wash. 790,819, pub. 3–23–65. Cl. 50.
Any Pak : *See*—
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Armour and Co., Chicago, Ill. 677,141, canc. Cl. 1.
Arvesen Thermometer Corp., Brooklyn, N.Y. 677,391, canc. Cl. 44.
Arvin Industries, Inc., Columbus, Ind. 677,293, canc. Cl. 24.
Associated Needlecrafts Corp., New York, N.Y. 790,561, pub. 3–23–65. Cl. 3.
Association pour la Diffusion, la Recherche, L'Organisation et la Promotion de Fils Textures, Paris, France. 790,763, pub. 3–23–65. Cl. 42.
Association pour la Diffusion, la Recherche, l'Organisation et la Promotion de Fils Textures, Paris, France. 790,786, pub. 3–23–65. Cl. 43.
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Automatic Battery Breaker Co., Detroit, Mich. 790,653, pub. 3–23–65. Cl. 23.
Automatic Electric Co., Chicago, Ill., to Automatic Electric Co., Northlake, Ill. 196,366, ren. 6–8–65. Cl. 21.
Automobilove Zavody Klementa Gottwalda, Narodni Podnik, Prague-Vysocany, Czechoslovakia. 677,495, canc. Cl. 19.
Avionics Research Products Corp., Los Angeles, Calif. 790,789, pub. 3–23–65. Cl. 44.
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Bacon, Daisy, d.b.a. Gemini Books, Port Washington, N.Y. 790,735, pub. 3–23–65. Cl. 38.
Badische Anilin & Soda-Fabrik Aktiengesellschaft, Ludwigshafen on-Rhine, Germany. 790,582, pub. 3–23–65. Cl. 10.
Banquet Better Foods : *See*—
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Bayshore Foods, Inc., Easton, Md. 790,585, pub. 3–23–65. Multiple Class (Classes 1 and 46).
Bay State Milling Co., Winona, Minn. 677,417, canc. Cl. 46.
Beaunit Corp., New York, N.Y. 790,764, pub. 3–23–65. Cl. 42.
Beaunit Corp., New York, N.Y. 790,783, pub. 3–23–65. Cl. 42.
Beautex Corp., The, Saginaw, Mich. 790,832, pub. 3–23–65. Cl. 51.
Belch, Paul F., Co., Bloomington, Ill. 790,807, pub. 3–23–65. Cl. 46.
Belknap Hardware and Mfg. Co., Louisville, Ky. 790,595, pub. 3–23–65. Cl. 13.
Bell, James, Machinery Proprietary Ltd., Kensington, Victoria, Australia. 790,665, pub. 3–23–65. Cl. 23.
Bendix Corp., The, Holmdel, N.J. 790,628, pub. 3–23–65. Cl. 21.
Bentlich, Inc., Chicago, Ill. 790,616, pub. 3–23–65. Cl. 18.
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Bigelow-Sanford, Inc., New York, N.Y., from Bigelow Custom Carpets, Inc., Hawthorne, Calif. 790,784, pub. 3–23–65. Cl. 42.
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Bird Banquet Co. : *See*—
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Bodine Co., The : *See*—
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Bodine, Richard H., Jr., d.b.a. The Bodine Co., Germantown, Tenn. 790,635, pub. 3–23–65. Cl. 21.
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Botany Industries, Inc., d.b.a. Sea & Ski Co., Reno, Nev. 790,793, pub. 3–23–65. Cl. 44.
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CBS Films, Inc., New York, N.Y. 790,729, pub. 3–23–65. Cl. 38.
Cadillac Gage Co., Warren, Mich. 790,579, pub. 3–23–65. Cl. 9.
California Car Wash Systems, Inc., Sun Valley, Calif. 790,652, pub. 3–23–65. Cl. 23.
Cambria Spring Co., Los Angeles, Calif. 790,624, pub. 3–23–65. Cl. 19.
Canadian Applied Research Ltd., Toronto, Ontario, Canada. 677,305, canc. Cl. 26.
Can-Tex Industries, Inc., d.b.a. Southwestern Plastic Pipe Division, Mineral Wells, Tex. 790,597, pub. 3–23–65. Cl. 13.
Case Mfg. Co., High Point, N.C. 677,497, canc. Cl. 32.
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Ceejay Tolletries, Inc., d.b.a. Ceejay, New York, N.Y. 790,834, pub. 3–23–65. Cl. 51.
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Celluloid Co., The, Newark, N.J., and New York, N.Y., to Celanese Corp. of America, New York, N.Y. 197,041, ren. 6–8–65. Cl. 22.
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Clopay Corp., Cincinnati, Ohio. 677,387, canc. Cl. 44.
Coach's Sporting Goods Corp., Marion, Ind. 790,637, pub. 3–23–65. Cl. 22.
Cohen, George, Sons and Co. Ltd., London, England. 790,618–20, pub. 11–13–62. Cl. 19.
Cohen, George, Sons and Co., Ltd., London, England. 790,645–7, pub. 11–13–62. Cl. 22.
Cohen, Jerome H., d.b.a. Excelsior Belting and Equipment Co., and Excelsior Belting Co., New York, N.Y. 790,667, pub. 3–23–65. Cl. 23.
Colgate, Culp & Co., Inc., New York, N.Y. 790,829, pub. 3–23–65. Multiple Class (Classes 51 and 52).

Colgate-Palmolive Co., New York, N.Y. 677,474, canc. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 790,614, pub. 3-23-65. Cl. 18.
Colony Broadcasting Corp., The, to General Advertising & Publishing, Inc., New Haven, Conn. 569,172, new cert. Cl. 38.
Color Putty Co.: *See*—
Kubly, Paul R.
Columbian Steel Tank Co., Kansas City, Mo. 790,550, pub. 3-23-65. Cl. 2.
Comet Rice Mills, Houston, Tex. 677,411, canc. Cl. 46.
Comoy, H., & Co., Ltd., London, England. 790,578, pub. 3-23-65. Cl. 8.
Connecticut Special Machine, Inc.: *See*—
Turner & Seymour Mfg., The.
Continental Can Co., Inc., New York, N.Y. 790,552, pub. 3-23-65. Cl. 2.
Continental Distilling Corp., d.b.a. Inver House Distillers, Ltd., Philadelphia, Pa. 790,816, pub. 3-23-65. Cl. 49.
Continental Distilling Corp., d.b.a. Inver House Distillers, Ltd., Philadelphia, Pa. 790,817, pub. 3-23-65. Cl. 49.
Continental Machine Co., Newtonville, Mass. 677,289, canc. Cl. 23.
Cook Machinery Co., Inc., Dallas, Tex. 790,662, pub. 3-23-65. Cl. 23.
Cooper-Bessemer Corp., The, Mt. Vernon, Ohio. 790,673, pub. 3-23-65. Cl. 26.
Cope, Inc., from James Copeland, d.b.a. James Copeland & Associates, Wyoming, Mich. 790,718, pub. 3-23-65. Cl. 36.
Copeland, James: *See*—
Cope, Inc.
Copeland, James, & Associates: *See*—
Cope, Inc.
Corna, Cremer & Co., Hamburg, Germany. 677,241, canc. Cl. 16.
Cosmetics Mfg. Co., Los Angeles, Calif. 790,826, pub. 3-23-65. Cl. 51.
Costigan, Raymond J., d.b.a. Salem Clock Co., Hartford, Conn. 790,607, pub. 3-23-65. Cl. 27.
County Laboratories, Ltd., d.b.a. Du Lundi, Brentford, Middlesex, England. 790,824, pub. 3-23-65. Cl. 51.
Crescent Niagara Corp.: *See*—
Billings & Spencer Co.
Crompton Co., New York, N.Y. 790,772, pub. 3-23-65. Cl. 42.
Crush International, Inc.: *See*—
Orange Crush Co.
Culrose Foods Ltd., London, England. 790,812, pub. 3-23-65. Cl. 46.
Curlee Clothing Co., St. Louis, Mo. 790,758, pub. 3-23-65. Cl. 39.
Curtis, Helene, Industries, Inc.: *See*—
Leatheric, Inc.
Curtis, Helene, Industries, Inc., Chicago, Ill. 677,395, canc. Cl. 44.
Curtis Publishing Co., The, Camden, N.J., and Philadelphia, Pa., to The Curtis Publishing Co., Philadelphia, Pa. 44,895, ren. 6-8-65. Cl. 38.
Curtis Publishing Co., The, Camden, N.J., and Philadelphia, Pa., to The Curtis Publishing Co., Philadelphia, Pa. 44,-462-3, ren. 6-8-65. Cl. 38.
Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. 790,540, pub. 3-23-65. Cl. 2.
Danuser Machine Works, Inc., Tulsa, Okla. 790,659, pub. 3-23-65. Cl. 28.
Deft, Inc., Torrance, Calif. 790,827, pub. 3-23-65. Cl. 52.
Detective Comics, Inc., to National Periodical Publications, Inc., New York, N.Y. 412,671, ren. 6-8-65. Cl. 38.
Detective Comics, Inc., to National Periodical Publications, Inc., New York, N.Y. 414,628, ren. 6-8-65. Cl. 38.
Dial-Aid Sales Corp., Rochester, N.Y. 790,687, pub. 3-23-65. Cl. 26.
Diamond Alkali Co., Cleveland, Ohio. 416,959-60, ren. 6-8-65. Cl. 52.
Diamond Alkali Co., Cleveland, Ohio. 416,958-60, ren. 6-8-65. Cl. 6.
Diamond Alkali Co., Cleveland, Ohio. 416,962, ren. 6-8-65. Cl. 6.
Diamond National Corp., New York, N.Y. 790,546, pub. 3-23-65. Cl. 2.
Dimensional Research Corp., Burlingame, Calif. 790,823, pub. 3-23-65. Cl. 50.
Dipt-Meletio Corp.: *See*—
Golden Dipt Corp.
Diversomatic Packaging Machinery, Inc., Roslyn Heights, N.Y. 790,674, pub. 3-23-65. Cl. 23.
Doble Drug Co.: *See*—
Howard, Thomas J.
Drake Dunbar Corp., Farmingdale, N.Y. 790,576, pub. 3-23-65. Cl. 6.
Du Lundi: *See*—
County Laboratories, Ltd.
Dun & Bradstreet, Inc., New York, N.Y. 790,731, pub. 3-23-65. Cl. 38.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 790,791, pub. 3-23-65. Cl. 44.
Dusharme Products, Inc., Minneapolis, Minn. 790,830, pub. 3-23-65. Cl. 51.
Dyson, Jos., & Sons, Inc., Painesville, Ohio. 790,669, pub. 3-23-65. Cl. 23.
Eagle Clothes, Inc., New York, N.Y. 790,755, pub. 3-23-65. Cl. 39.
Eagle Roller Mill Co., New Ulm, Minn., to International Milling Co. Inc., Minneapolis, Minn. 460,022, ren. 6-8-65. Cl. 46.
Eastern Tablet Co.: *See*—
Rexall Drug Co.
Edge-Craft Process Co., New York, N.Y. 677,492, canc. Cl. 100.
Eklind Tool and Mfg. Co., Chicago, Ill. 677,320, canc. Cl. 20.
Electric Storage Battery Co., The, Philadelphia, Pa. 790,564, pub. 3-23-65. Multiple Class (Classes 12 and 16).
Electronic Switchgear (London) Ltd., London, England. 790,695, pub. 3-23-65. Cl. 26.
Ellisco Inc., Philadelphia, Pa. 790,541, pub. 3-23-65. Multiple Class (Classes 2, 13, 14, 26, and 50).
Ellison, John B., & Sons Co., Ltd., Los Angeles, Calif. 677,-284-5, canc. Cl. 42.
Energy Oil Co., Inc., Baltimore, Md. 790,604, pub. 3-23-65. Cl. 16.
Enro Shirt Co., Inc., The, Louisville, Ky. 677,371, canc. Cl. 39.
Equality Plastics, Inc., New York, N.Y. 790,547, pub. 3-23-65. Cl. 2.
Etablissements Neyrpic, Societe Anonyme, and Societe Anonyme des Anciens Etablissements de Halster Faible & Cie, Paris, France. 677,290, canc. Cl. 23.
Euphonics Corp., Guaynabo, Puerto Rico. 790,713, pub. 3-23-65. Cl. 36.
Evans Milling Co., Inc., Indianapolis, Ind. 677,146, canc. Cl. 1.
Eveready Briksaw Co., Inc., Kansas City, Mo. 790,666, pub. 3-23-65. Cl. 23.
Excel-Mineral Co., Inc., Los Angeles, Calif. 790,581, pub. 3-23-65. Cl. 10.
Excelsior Belting Co.: *See*—
Cohen, Jerome H.
Excelsior Belting and Equipment Co.: *See*—
Cohen, Jerome H.
Exo Products Co.: *See*—
Winsburgh, Abraham.
Faber-Castell, A. W., Pencil Co., Inc.: *See*—
Von Faber-Castell, Alexander Count, Sole Surviving Member of the Firm of A. W. Faber.
Faber, Eberhard, Inc., Wilkes-Barre, Pa. 790,721, pub. 3-23-65. Cl. 37.
Faber, Eberhard, Inc., Wilkes-Barre, Pa. 790,728, pub. 3-23-65. Cl. 37.
Falls City Brewing Co., Louisville, Ky. 677,450, canc. Cl. 48.
Federal Mill & Elevator Co., Inc., to International Milling Co., Inc., Lockport, N.Y. 202,977, ren. 6-8-65. Cl. 46.
Fiber Industries, Inc.: *See*—
National Mattress Co.
Field Enterprises Educational Corp., Chicago, Ill. 790,733, pub 3-23-65. Cl. 38.
Fire-Trol Coro., Chicago, Ill. 790,583, pub. 4-28-64. Cl. 12.
Fishery Products Inc., Boston, Mass., and Cleveland, Ohio, to Blue Water Seafoods, Inc., Cleveland, Ohio. 416,514, ren. 6-8-65. Cl. 46.
Food Mfg., Inc., Hackettstown, N.J. 677,435, canc. Cl. 46.
Forges de Thy-Marcinelle, Societe Anonyme, Marcinelle, Belgium. 790,589, pub. 3-23-65. Cl. 12.
Fraulee Distributors, Inc., Bronx, N.Y. 790,613, pub. 3-23-65. Multiple Class (Classes 18 and 51).
Fruchter, Adolph, & Sons, Inc., Philadelphia, Pa. 677,330, canc. Cl. 32.
Fry, Elwood, d.b.a. Superior Industrial Tire Co., Warren, Pa. 790,710, pub. 3-23-65. Cl. 35.
Furnette, Inc., New York, N.Y. 677,336, canc. Cl. 32.
Gates, N. T., Co., d.b.a. N. T. Gates Co., Camden, N.J. 790,573, pub. 3-23-65. Cl. 6.
Gay's Cookies, Inc., Shreveport, La. 790,804, pub. 3-23-65. Cl. 46.
Geilich Tanning Co., Taunton, Mass. 790,531, pub. 3-23-65. Cl. 3.
Gemini Books: *See*—
Bacon, Daisy.
General Advertising & Publishing, Inc.: *See*—
Colony Broadcasting Corp., The.
General Battery and Ceramic Corp., Reading, Pa. 790,632, pub. 3-23-65. Cl. 21.
General Blower Co., Morton Grove, Ill. 677,341, canc. Cl. 34.
General Foods Corp., White Plains, N.Y. 790,813, pub. 3-23-65. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 790,810, pub. 3-23-65. Cl. 46.
General Motors Corp., Detroit, Mich. 790,704, pub. 3-23-65. Cl. 34.
Georgia Shoe Mfg. Co., Inc., Flowery Branch, Ga. 790,751, pub. 3-23-65. Cl. 39.
Gilbert Paper Co., Menasha, Wis., to The Mead Corp., d.b.a. Gilbert Paper Co., Dayton, Ohio. 411,285, ren. 6-8-65. Cl. 37.
Gill, James G., Co., Inc., The, Norfolk, Va. 790,808, pub. 3-23-65. Cl. 46.
Glaser, Harry, d.b.a. State Products Co., Boston, Mass. 677,405, canc. Cl. 46.
Glen Raven Cotton Mills, Inc., Glen Raven, N.Y. 790,761, pub. 3-23-65. Cl. 42.
Goetzewerke Friedrich Goetze Aktiengesellschaft, Bez. Dusseldorf, Germany. 790,707, pub. 3-23-65. Cl. 35.
Golden Dipt Corp., from Golden Dipt-Meletio Corp., Millstadt, Ill. 790,801, pub. 3-23-65. Cl 46.
Good Housekeeping Co., to The Hearst Corp., New York, N.Y. 46 028, ren. 6-8-65. Cl. 38.
Goodren Products Corp., Englewood, N.J. 790,551, pub. 3-23-65. Cl. 2.
Goodridge-Hoyt Research Co., Cleveland, Ohio. 677,179, canc. Cl. 6.
Gourmet Meat Co., Inc., New York, N.Y. 677,418, canc. Cl. 46.
Great Western Garment Co., Ltd., The, Edmonton, Alberta, Canada. 790,737, pub. 3-3-64. Cl. 39.
Grocery Store Products Co.: *See*—
Palisade Mfg. Co., The.
Grove Co., The, St. Louis, Mo. 790,750, pub. 3-23-65. Cl. 39.

Grumman, Eugene V., Fairfield, Conn. 790,670, pub. 3-23-65. Cl. 23.
Guilford Mills Inc., Greensboro, N.C. 790,785, pub. 3-23-65. Cl. 42.
Gulf Oil Corp., Pittsburgh, Pa., from Spencer Chemical Co., Kansas City, Mo. 790,570, pub. 3-23-65. Multiple Class (Classes 6 and 10).
Hales & Hunter Co., Chicago, Ill. 790,612, pub. 3-23-65. Multiple Class (Classes 18 and 46).
Hall, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 790,756, pub. 3-23-65. Cl. 39.
Halsey Drug Co., Inc., Brooklyn, N.Y. 790,610, pub. 3-23-65. Cl. 18.
Hamilton Radio Corp., New York, to Lear Siegler, Inc., Long Island City, N.Y. 413,833, ren. 6-8-65. Cl. 21.
Harbin, Clyde A., d.b.a. J. C. Harbin's Freeze Mix Co., Memphis, Tenn. 677,429, canc. Cl. 46.
Harbin's Freeze Mix Co.: *See*—
Harbin, Clyde A.
Harbin's, J. C., Freeze Mix Co.: *See*—
Harbin, Clyde A.
Hardwood Plywood Manufacturers Association, Arlington, Va. 790,590, pub. 3-23-65. Cl. 12.
Harrap Bros. (Sirdar Wools) Ltd., Alverthorpe, Wakefield, England. 790,787, pub. 3-23-65. Cl. 42.
Harrap Bros. (Sirdar Wools) Ltd., Alverthorpe, Wakefield, England. 790,788, pub. 3-23-65. Cl. 43.
Hartford Textile Corp., New York, N.Y. 677,455, canc. Cl. 50.
Hartshorn, Stewart, Co., East Newark, N.J., to Breneman-Hartshorn, Inc., Cincinnati, Ohio. 46,050, ren. 6-8-65. Cl. 32.
Hays, Harold E., d.b.a. United Swimming Pool Equipment Co., Los Angeles, Calif. 677,358, canc. Cl. 38.
Heard Seeder Co., Inc., Lucerne, Ind. 790,654, pub. 3-23-65. Cl. 23.
Hearst Corp., The: *See*—
Good Housekeeping Co.
Henson-Kickernick, Inc., Greenville, Tex. 790,773, pub. 3-23-65. Cl. 42.
Hettrick Mfg. Co., The, Statesville, N.C. 790,643-4, pub. 3-23-65. Cl. 22.
Hockmeyer Bros. Inc., New York, N.Y. 790,774, pub. 3-23-65. Cl. 42.
Holiday Inns of America, Inc., Memphis, Tenn. 790,658, pub. 3-23-65. Cl. 2.
Holland Home Development Corp., Ann Arbor, Mich. 790,778, pub. 3-23-65. Cl. 42.
Holland, Julian, Cranston, R.I. 790,593, pub. 3-23-65. Cl. 13.
Hospitaline, Inc., New York, N.Y. 677,394, canc. Cl. 44.
House for Men, Inc., The, d.b.a. Treasure Island Co., Chicago, Ill. 790,831, pub. 3-23-65. Cl. 51.
House of Herbs, Inc., Salisbury, Conn. 413,031, ren. 6-8-65. Cl. 46.
House of Shibui: *See*—
House of Shibui, Ltd.
House of Shibui, Ltd., d.b.a. House of Shibui, New York, N.Y. 790,833, pub. 3-23-65. Cl. 51.
Houston Branch: *See*—
Sportsman's Handbook, Inc.
Howard, Thomas J., d.b.a. Doble Drug Co., Memphis, Tenn. 677,186, canc. Cl. 6.
Hubbard Shoe Co., Inc., Rochester, N.H. 790,759, pub. 3-23-65. Cl. 39.
Hudson, J. L., Co., The, Detroit, Mich. 198,156, ren. 6-8-65. Cl. 39.
Hunt, Philip A., Co., Palisades Park, N.J. 677,178, canc. Cl. 6.
Huyck Corp., Rensselaer, N.Y. 790,775-7, pub. 3-23-65. Cl. 42.
Huyck Corp., Rensselaer, N.Y. 790,779, pub. 3-23-65. Cl. 42.
Hy-Plane Products Co., Philadelphia, Pa. 677,328, canc. Cl. 32.
I-T-E Circuit Breaker Co., Philadelphia, Pa., from Kelman Electric and Mfg. Co., Los Angeles, Calif. 677,265, canc. Cl. 21.
Ideal Leasing Corp., Brooklyn, N.Y. 790,842, pub. 3-10-64. Cl. 100.
Independent Office Service Institute, Baltimore, Md. 790,-846, pub. 3-23-65. Cl. 101.
Induction Heating Corp., to The Taylor-Winfield Corp., Warren, Ohio. 439,247, new cert. Cl. 21.
Ingeniorfirmaet Constantin Brun A/S, Copenhagen, Denmark. 790,691, pub. 3-23-65. Cl. 26.
Inter-Continental Trading Corp., New York, N.Y., to Pronto Watch Co.-L. Maitre & Fils S.A., Le Noirmont, Switzerland. 411,290, ren. 6-8-65. Cl. 27.
Interior Cleaning Service, Inc., Bronx, N.Y. 677,502, canc. Cl. 50.
International Milling Co. Inc.: *See*—
Eagle Roller Mill Co.
International Milling Co., Inc.: *See*—
Federal Mill & Elevator Co., Inc.
International Nickel Co., Inc., The, New York, N.Y. 677,-231-2, canc. Cl. 14.
International Paper Co., New York, N.Y. 790,720, pub. 3-23-65. Cl. 37.
International Paper Co., New York, N.Y. 790,724, pub. 3-23-65. Cl. 37.
International Shoe Co.: *See*—
Peters Shoe Co.
Interoceanic Commodities Corp., Minneapolis, Minn. 790,-585, pub. 3-23-65. Cl. 12.
Inver House Distillers, Ltd.: *See*—
Continental Distilling Corp.
Jaxon, Richard C.: *See*—
Otterstrom, Charles F., and Richard C. Jaxon.
Jetstar Records, Inc., Dallas, Tex. 790,711, pub. 3-23-65. Multiple Class (Classes 36 and 38).
Johnson, S. C., & Son, Inc., Racine, Wis. 790,566, pub. 3-23-65. Cl. 4.
Johnson Wire Works Ltd., The, Montreal, Quebec, Canada. 790,661, pub. 3-23-65. Cl. 23.
Joseph & Feiss Co., The, Cleveland, Ohio. 790,738, pub. 3-23-65. Cl. 39.
Kagan Textiles Ltd., Elland, England. 677,390, canc. Cl. 42.
Kalamazoo Spice Extraction Co., Kalamazoo, Mich. 790,615, pub. 3-23-65. Cl. 46.
Kaolin, Georgia, Co., Elizabeth, N.J. 790,588, pub. 3-23-65. Cl. 1.
Karcco Technical Products: *See*—
Travis, Marion C.
Kass, Samuel M., Philadelphia, Pa. 677,220-1, canc. Cl. 13.
Keenan, L. W., & Co., Los Angeles, Calif. 677,261, canc. Cl. 19.
Kelman Electric and Mfg. Co.: *See*—
I-T-E Circuit Breaker Co.
Kendall Co., The, Boston, Mass. 790,782, pub. 3-23-65. Cl. 44.
Kenner Products Co., Cincinnati, Ohio. 790,636, pub. 3-23-65. Cl. 22.
Kenrich Chemicals, Inc., Bayonne, N.J. 790,603, pub. 3-23-65. Cl. 16.
Kester, Ralph C., Jr., South Bend, Ind. 790,714-15, pub. 3-23-65. Cl. 36.
Kestler, Joseph, New York, N.Y. 790,732, pub. 3-23-65. Cl. 39.
Kovacevich, John J., Arvin, Calif. 790,805, pub. 3-23-65. Cl. 46.
Kubly, Paul R., d.b.a. Color Putty Co., Monroe, Wis. 790,853. Cl. 12.
Labe Enterprises: *See*—
Labe, Louis A.
Labe, Louis A., d.b.a. Labe Enterprises, Denver, Colo. 790,-620, pub. 3-23-65. Cl. 50.
Ladoca Project and Publishing Foundation, Denver, Colo. 790,640, pub. 3-23-65. Cl. 22.
Lamb Industries, Inc., Toledo, Ohio. 790,591-2, pub. 3-23-65. Cl. 12.
Lane, Lawrence C., Lafayette, Ind. 790,666, pub. 3-23-65. Cl. 23.
Lane Ltd.: *See*—
Lane Tobacco, Ltd.
Lane Tobacco, Ltd., to Lane Ltd., New York, N.Y. 413,286, ren. 6-8-65. Cl. 3.
Larus & Brother Co., Richmond, Va. 790,606, pub. 3-23-65. Cl. 17.
La Salle Machine Tool, Inc., Warren, Mich. 790,649, pub. 3-23-65. Cl. 23.
Lavino, E. J., and Co., Philadelphia, Pa. 790,586, pub. 3-23-65. Cl. 12.
Lawrence Children's Underwear Co., Inc., New York, N.Y. 790,760, pub. 3-23-65. Cl. 39.
Lawson Products, Inc., Pawtucket, R.I. 790,762, pub. 3-23-65. Cl. 42.
Layton Engineering Co.: *See*—
Layton, R. E., Jr.
Layton, R. E., Jr., d.b.a. Layton Engineering Co., Tyler, Tex. 790,849, pub. 3-23-65. Cl. 103.
Lear Siegler, Inc.: *See*—
Hamilton Radio Corp.
Led Ballast, Inc., Boulder, Colo. 790,534, pub. 3-23-65. Cl. 1.
Lefevre Chemical Co., Oklahoma City, Okla. 790,567, pub. 2-26-63. Cl. 6.
Leggitt, S. H., Co., Marshall, Mich. 790,605, pub. 3-23-65. Cl. 16.
Leatheric: *See*—
Leatheric, Inc.
Leatheric, Inc., New York, N.Y., to Helene Curtis Industries, Inc., d.b.a. Leatheric, Chicago, Ill. 184,839, ren. 6-8-65. Cl. 51.
Leatheric, Inc., New York, N.Y., to Helene Curtis Industries, Inc., d.b.a. Leatheric, Chicago, Ill. 194,017, ren. 6-8-65. Cl. 51.
Leavoy, Ely, d.b.a. Purling Mills, Inc., Reading, Pa. 790,739, pub. 3-23-65. Cl. 39.
Lesnick, Lew, Brooklyn, N.Y. 677,476, canc. Cl. 51.
Levering Coffee Co., The: *See*—
Levering Coffee Co.
Levering Coffee Co., to The Levering Coffee Co., Baltimore, Md. 44,372, ren. 6-8-65. Cl. 46.
Levering Coffee Co., to The Levering Coffee Co., Baltimore, Md. 45,125, ren. 6-8-65. Cl. 46.
Liberty Optical Mfg. Co., Inc., Newark, N.J. 790,684, pub. 3-23-65. Cl. 26.
Linen Thread Co., Inc., The, New York, N.Y. 677,196, canc. Cl. 7.
Lick Fly Mfg. Co., Greensboro, N.C. 790,648, pub. 3-23-65. Cl. 23.
London Records, Inc., New York, N.Y. 790,716-17, pub. 3-23-65. Cl. 36.
Lordson Manufacture de Chemises, Haut-Rhin, France. 790,748, pub. 3-23-65. Cl. 39.
Lovette, Henry H., d.b.a. Southland Bedding Co., High Point, N.C. 790,701, pub. 3-23-65. Cl. 32.
Lubrisol Corp., The, Cleveland, Ohio. 790,606, pub. 3-23-65. Cl. 16.
Lurie, Alvin, d.b.a. Nyval Laboratories, Chicago, Ill. 677,464, canc. Cl. 51.
Lynch Corp., Detroit, Mich. 790,664, pub. 3-23-65. Cl. 23.
MSL Industries, Inc., from I. B. Goldberg, d.b.a. Century Laboratories, Chicago, Ill. 790,577, pub. 3-23-65. Cl. 6.

Magnet Cove Barium Corp., Houston, Tex. 790,536, pub. 3–23–65. Cl. 1.
Mahady, E. F., Co., Cambridge, Mass. 415,677, ren. 6–8–65. Cl. 44.
Mainser Minton Co., Inc., New York, N.Y. 790,771, pub. 3–23–65. Cl. 42.
Mallinckrodt Chemical Works, St. Louis, Mo. 790,572, pub. 3–23–65. Cl. 6.
Man At Ease, Inc., The, Chicago, Ill. 790,742, pub. 3–23–65. Cl. 39.
Maradel Products, Inc., New York, N.Y. 790,825, pub. 3–23–65. Cl. 51.
Mar-Gon Products, Riverside, Calif. 790,565, pub. 3–23–65. Cl. 4.
Marino, L., Inc., Brooklyn, N.Y. 790,821, pub. 3–23–65. Cl. 50.
Materials Testing Co., Inc., Bethesda, Md. 790,705, pub. 3–23–65. Cl. 35.
Mattel, Inc., Hawthorne, Calif. 790,757, pub. 3–23–65. Cl. 39.
McKee, David W., Westtown, Pa. 790,587, pub. 3–23–65. Cl. 12.
McMath, Robert M., d.b.a. Wifesaver Products Co., New York, N.Y. 790,569, pub. 3–23–65. Cl. 6.
Mead Corp., The: *See*—
Gilbert Paper Co.
Meridian Brick Co., Seattle, Wash. 677,202, canc. Cl. 12.
Merit Clothing Co., Mayfield, Ky. 790,744, pub. 3–23–65. Cl. 39.
Merit Packing Co., Salinas, Calif. 790,811, pub. 3–23–65. Cl. 46.
Mid-States Distributing Co., Inc., St. Paul, Minn. 790,571, pub. 3–3–64. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 790,694, pub. 3–23–65. Cl. 26.
Mission Publications, Inc.: *See*—
Ad-Tab Publishing Corp.
Modern Business Development, Inc., New Richmond, Wis. 790,726, pub. 3–23–65. Cl. 38.
Monroe Chemical Co.: *See*—
Monroe Drug Co.
Monroe Drug Co., to Monroe Chemical Co., Quincy, Ill. 194,886, ren. 6–8–65. Cl. 6.
Monroe Drug Co., to Monroe Chemical Co., Quincy, Ill. 200,425, ren. 6–8–65. Cl. 6.
Monroe Drug Co., to Monroe Chemical Co., Quincy, Ill. 203,170, ren. 6–8–65. Cl. 6.
Monroe Drug Co., Unionville, Mo., to Monroe Chemical Co., Quincy, Ill. 45,142, ren. 6–8–65. Cl. 6.
Moore, Curtis, Forest City, Iowa. 677,246, canc. Cl. 18.
Moore, Edwin R., New York, N.Y. 677,829, canc. Cl. 32.
Mousley, George E., Inc., New York, N.Y. 677,463, canc. Cl. 50.
Mubar Plastics Co., The, Chicago, Ill. 790,553, pub. 3–23–65. Cl. 2.
N.V. Bloembollenhandel en Export Mij. L. Stassen, Jr., Hillegom, Netherlands. 677,142, canc. Cl. 1.
Nash, Adrienne P., Mathews, Va. 677,370, canc. Cl. 39.
National Academy of Dental Ceramic Arts, Inc., Beverly Hills, Calif. 790,794, pub. 3–23–65. Cl. 44.
National Association of Evangelicals, Washington, D.C. 790,736, pub. 3–23–65. Cl. 38.
National Can Corp., Chicago, Ill. 677,147, canc. Cl. 2.
National Electronics Laboratories, Inc., Washington, D.C. 677,295, canc. Cl. 26.
National Gypsum Co., Buffalo, N.Y. 790,586, pub. 3–23–65. Cl. 19.
National Mattress Co., to Fiber Industries, Inc., New York, N.Y. 518,149, new cert. Cl. 32.
National Periodical Publications, Inc.: *See*—
Detective Comics, Inc.
National Tea Co., Chicago, Ill. 790,800, pub. 3–23–65. Cl. 46.
Navarro Enterprises, Inc., New York, N.Y. 790,847, pub. 3–23–65. Cl. 101.
Neatape Corp., New York, N.Y. 790,725, pub. 3–23–65. Cl. 37.
Neelon Steel Ltd., Sudbury, Ontario, Canada. 790,600–1, pub. 3–23–65. Cl. 14.
Nelson-Ricks Creamery Co., d.b.a. Banquet Better Foods, Lake City, Utah. 790,802, pub. 4–7–64. Cl. 46.
New Products, Inc., La Habra, Calif. 790,677, pub. 3–23–65. Cl. 26.
Nessel Creations, Inc., New York, N.Y. 677,364, canc. Cl. 39.
New York Herald Tribune Inc., New York, N.Y. 677,353, canc. Cl. 38.
New York Merchandise Co., Inc., New York, N.Y. 677,371, canc. Cl. 21.
Nicholson, Louis G., d.b.a. The Releasall Co., Montreal, Canada, to The Releasall Co. Reg'd, St. Lambert, Quebec, Canada. 197,653, ren. 6–8–65. Cl. 52.
Nips, Inc., New York, N.Y. 415,858, ren. 6–8–65. Cl. 51.
Nordic Enterprises, Inc., Minneapolis, Minn. 790,639, pub. 3–23–65. Cl. 22.
Norman Paint Co., Inc.: *See*—
Norman Paint Co.
Norman Paint Co., to Norman Paint Co., Inc., Washington, D.C. 413,685, ren. 6–8–65. Cl. 16.
Nylon Industries, Inc., Charlotte, N.C. 790,537, pub. 3–23–65. Cl. 1.
Nyloncraft, Inc., Mishawaka, Ind. 790,848, pub. 3–23–65. Cl. 108.
Ohaus Scale Corp., Union, N.J. 790,692–3, pub. 3–23–65. Cl. 26.
Ohio Body Mfg. Co., New London, Ohio. 790,632, pub. 3–23–65. Cl. 19.
Olafson Vitamins, Inc., to Walgreen Laboratories, Inc., Chicago, Ill. 413,956, ren. 6–8–65. Cl. 18.
Olga Co., Van Nuys, Calif. 790,745–6, pub. 3–23–65. Cl. 39.
Oneida Ltd., Oneida, N.Y. 790,671, pub. 3–23–65. Cl. 23.
Opticase, Inc., Newark, N.J. 690,633, pub. 3–23–65. Cl. 26.
Orange Crush Co., Chicago, Ill., to Crush International, Inc., Evanston, Ill. 196,444, ren. 6–8–65. Cl. 45.
Orr, W. Wallace, Inc., Philadelphia, Pa. 790,727, pub. 3–23–65. Cl. 38.
Otterstrom, Charles F. and Richard C. Jaxon, Burbank, Calif. 677,375, canc. Cl. 22.
Ouroumoff, Sigmar, nee Huguette Bereau, Paris, France. 790,743, pub. 3–23–65. Cl. 39.
Oxy-Dry Sprayer Corp., New York, N.Y. 790,575, pub. 3–23–65. Cl. 6.
Oxy-Dry Sprayer Corp., New York, N.Y. 790,630, pub. 3–23–65. Cl. 21.
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Paillard Products, Inc., New York, N.Y. 677,283, canc. Cl. 26.
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Parisian Bakeries and/or Parisian Baking Co.: *See*—
Renon Parisian Fountain Bakeries, Inc.
Parker Brothers, Inc., Salem, Mass. 416,865, ren. 6–8–65. Cl. 22.
Pawling Rubber Corp., Pawling, N.Y. 790,706, pub. 3–23–65. Multiple Class (Classes 35 and 50).
Pet Food Co., Portland, Oreg. 677,421, canc. Cl. 46.
Peters Shoe Co., to International Shoe Co., St. Louis, Mo. 46,048, ren. 6–8–65. Cl. 39.
Pfaff, G. M., A.G., Kaiserslauterin, Pfalz, Germany. 790,544, pub. 3–23–65. Cl. 2.
Philadelphia Felt Co., Philadelphia, Pa. 790,707, pub. 3–23–65. Cl. 42.
Philco Corp., Philadelphia, Pa. 677,151, canc. Cl. 2.
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Phillips-Jones Corp., to Phillips-Van Heusen Corp., New York, N.Y. 413,015, ren. 6–8–65. Cl. 39.
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Phillips-Jones Corp.
Piedmont Mills, Inc., Lynchburg, Va. 44,378, ren. 6–8–65. Cl. 46.
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Pillsbury Flour Mills Co., to The Pillsbury Co., Minneapolis, Minn. 197,513, ren. 6–8–65. Cl. 46.
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Placentia Orange Growers Association.
Placentia Orange Growers Association, Fullerton, Calif., to Placentia Mutual Orange Association, Placentia, Calif. 200,980, ren. 6–8–65. Cl. 46.
Plastic Contact Lens Co., The, Chicago, Ill. 790,683, pub. 3–23–65. Cl. 26.
Plasticon Chemicals, Inc., Long Island City, N.Y. 790,563, pub. 3–23–65. Cl. 4.
Plastow & Goepel Productions, Inc., Alexandria, Va. 790,702, pub. 3–23–65. Cl. 32.
Polymers, Inc., Middlebury, Vt. 790,533, pub. 3–23–65. Cl. 1.
Poole, Isma A., d.b.a. Round Robin Greeting Card Co., Grants Pass, Oreg. 677,355, canc. Cl. 38.
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Precision Valve Corp., Yonkers, N.Y. 790,594, pub. 3–23–65. Cl. 13.
Pride of Virginia Poultry Corp., New Market, Va. 677,408, canc. Cl. 46.
Prismo Safety Corp., Huntingdon, Pa. 790,836, pub. 3–23–65. Cl. 52.
Production Equipment Inc., Rochelle Park, N.J. 790,696, pub. 3–23–65. Cl. 26.
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Realtone Electronics Corp., New York, N.Y. 790,629, pub. 3–23–65. Cl. 21.
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Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 790,558, pub. 3–23–65. Cl. 2.
Rhode Island Wholesale Grocery Co., to Rhode Island Wholesale Grocery Co., d.b.a. What Cheer Foods Co., Providence, R.I. 194,958, ren. 6–8–65. Cl. 46.
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Sierra Enterprises, Nevada City, Calif. 790,790, pub. 3–23–65. Cl. 44.
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Sportsman's Handbook, Inc., Cambridge, Mass., from Houston Branch, d.b.a. The Sportsman's, Beverly Hills, Calif. 790,852, pub. 3–16–65. Cl. B.
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Steffey Bros., Irwin, Pa. 790,641, pub. 3–23–65. Cl. 22.
Stellenbosch Farmers' Winery Ltd., The, Cape Province, South Africa. 790,814, pub. 3–23–65. Cl. 47.
Sterba, Edward C., Western Springs, Ill. 790,668, pub. 3–23–65. Cl. 23.
Sterling Brewers, Inc., Evansville, Ind. 677,451, canc. Cl. 46.
Sterling, Joseph S., Lake Placid, N.Y. 677,133, canc. Cl. 1.
Sterneo Industries, Inc., Allendale, N.J. 790,562, pub. 3–23–65. Cl. 3.
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Stetson Corp., Lincoln, Ill. 790,549, pub. 3–23–65. Cl. 2.
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Virginia Dare Extract Co., Inc., Brooklyn, N.Y. 790,806, pub. 3–23–65. Cl. 46.
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Vitarine Co., Inc., The, Springfield Gardens, N.Y. 790,617, pub. 3–23–65. Cl. 18.
Volkswagenwerk Aktiengesellschaft, Wolfsburg, Germany. 790,621, pub. 3–23–65. Cl. 19.
Von Faber-Castell, Alexander C., sole surviving member of the firm of A. W. Faber, Stein, near Nuremberg, Germany, to A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. 197,169, ren. 6–8–65. Cl. 37.
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Water Pollution Control Federation, Washington, D.C. 790,734, pub. 3–23–65. Cl. 38.
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PATENTS

NOTICES

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Examiner affirmed	261
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Expediting Papers Relating to Appeals

In order to expedite the handling and processing of all papers relating to appeals, it is essential that all such documents include the Group Number to which the application is assigned, as well as the Appeal Number and Serial Number.

EDWIN L. REYNOLDS,
May 8, 1965. *First Assistant Commissioner.*

Annual Index of Trademarks

The 1964 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.50.

Adjudicated Patents

(D.C. Ga.) Fletcher and Dickison Patent No. 2,639,192 (239—358), for SPRAYER. Claims 2, 3, 5 to 7 and 9 *Held* invalid and not infringed. *Root-Lowell Manufacturing Co.* v. *Standard Container Company*, 238 F. Supp. 711; 144 USPQ 297.

(D.C. Ill.) Minto Design Patent No. 190,009 (83—1), for COMBINED MASSAGER AND INFRA-RED HEAT LAMP, *Held* valid but not infringed. *International Biotical Corp.* v. *Associated Mills, Inc.*, 239 F. Supp. 511; 144 USPQ 577.

International Convention for the Protection of Industrial Property

Adherence of U.S.S.R. to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective July 1, 1965, of the Union of Soviet Socialist Republics to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
May 17, 1965. *Commissioner of Patents.*

Disclaimers

2,953,603.—*Donald M. Coyne*, Ponca City, Okla. MANUFACTURE OF ALKYL SUBSTITUTED BORANES. Patent dated Sept. 20, 1960. Disclaimer filed Mar. 18, 1965, by the assignee, *Continental Oil Company*.

Hereby enters this disclaimer to claim 1 of said patent.

2,999,441.—*Miller R. Hutchison, Jr.*, *Robert F. O'Brien*, and *Edgar S. Marvin*, Rochester, N.Y. AUTOMATIC EXPOSURE CONTROL SYSTEM FOR PHOTOGRAPHIC CAMERAS. Patent dated Sept. 12, 1961. Disclaimer filed Feb. 5, 1965, by the assignee, *Eastman Kodak Company*.

Hereby enters this disclaimer to claims 1, 2, 4, 7, 8 and 10 of said patent.

3,040,299.—*James S. Crosby, Jr.*, and *Francis Stern-Montagny*, Poughkeepsie, N.Y. DATA STORAGE SYSTEM. Patent dated June 19, 1962. Disclaimer filed Mar. 18, 1965, by the assignee, *International Business Machines Corporation*.

Hereby enters this disclaimer to claim 13 of said patent.

3,055,632.—*Domer Scaramucci*, Oklahoma City, Okla. LUBRICANT RECYCLING SYSTEM FOR VALVE OPERATING MECHANISM. Patent dated Sept. 25, 1962. Disclaimer filed Mar. 3, 1965, by the inventor.

Hereby enters this disclaimer to claim 4 of said patent.

3,119,525. *Francis W. Flynn*, West Boylston, Mass. CARD-FEEDER. Patent dated Jan. 28, 1964. Disclaimer filed Mar. 4, 1965, by the assignee, *Geo. S. Harwood & Son, Inc.*

Hereby enters this disclaimer to claims 1, 2, 3, 6, 7, 8, 9, 13 and 14 of said patent.

3,148,146.—*Karl G. Reed*, Wayne, Pa. SOLIDS DISCHARGE CENTRIFUGE. Patent dated Sept. 8, 1964. Disclaimer filed Mar. 5, 1965, by the assignee, *Pennsalt Chemicals Corporation*.

Hereby enters this disclaimer to claim 3 of said patent.

New Applications Received During April 1965

Patents	7918
Designs	504
Plant Patents	9
Reissues	18
Total	8449

Issue—June 15, 1965

Patents	1263	No. 3,188,654 to No.	3,189,916, incl.
Designs	83	No. 201,343 to No.	201,425, incl.
Plant Patents	4	No. 2,535 to No.	2,538, incl.
Reissues	6	No. 25,797 to No.	25,802, incl.
Total	1356		

Patents Available for Licensing

ACCUMULATIVE NASA PATENT LIST NO. 9

In accordance with the provisions of 14 C.F.R. § 1245.200 et seq., and 42 U.S.C. 2457(g) (1958), the National Aeronautics and Space Administration is prepared to grant royalty-free licenses, of the types specified, under the following patents.

Applications for licenses should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, D.C., 20546.

Patents available for exclusive, revocable, royalty-free licensing (67)

2,996,889. MECHANICALLY-LIMITED ELECTRICALLY OPERATED HYDRAULIC VALVE SYSTEM FOR AIRCRAFT CONTROLS.
2,996,307. TWO COMPONENT BEARING.
2,996,133. TEMPERATURE REDUCING COATING FOR METALS SUBJECT TO FLAME EXPOSURE.
2,994,861. APPARATUS FOR MAKING A METAL SLURRY PRODUCT.
2,940,259. ROCKET PROPELLANT INJECTOR.
2,944,316. PROCESS OF CASTING HEAVY SLIPS.
2,945,667. FLEXIBLE SEAL FOR VALVES.
2,966,772. LIQUID-SPRAY COOLING METHOD.
2,971,837. HIGH TEMPERATURE NICKEL-BASE ALLOY.
2,974,065. EXTERNAL LIQUID-SPRAY COOLING OF TURBINE BLADES.
2,964,735. RUNWAY LIGHT.
2,991,071. WIRE GRID FORMING APPARATUS.
2,991,961. JET AIRCRAFT CONFIGURATION.
2,996,212. SELF SUPPORTING SPACE VEHICLE.
2,997,274. TURBO-MACHINE BLADE VIBRATION DAMPER.
3,001,368. SPHERICAL SOLID-PROPELLANT ROCKET MOTOR.
3,001,395. AIR FRAME DRAG BALANCE.
3,001,739. AERIAL CAPSULE EMERGENCY SEPARATION DEVICE.
3,004,735. PARTICLE DETECTION APPARATUS.
3,005,061. HIGH INTENSITY HEAT AND LIGHT UNIT.
3,005,339. WIND TUNNEL AIRSTREAM OSCILLATING APPARATUS.
3,008,239. PROCESS FOR APPLYING A PROTECTIVE COATING FOR SALT BATH BRAZING.
3,010,372. FOLDING APPARATUS.
3,011,760. TRANSPIRATION COOLED TURBINE BLADE MANUFACTURED FROM WIRES.
3,012,400. NOZZLE.
3,012,407. INSULATING STRUCTURE.
3,016,698. ELECTRO-THERMAL ROCKET.
3,016,863. HYDROFOIL.
3,023,672. DIFFERENTIAL PRESSURE CELL.
3,024,659. MAGNETICALLY CENTERED LIQUID COLUMN FLOAT.
3,026,122. LANDING ARRANGEMENT FOR AERIAL VEHICLES.
3,026,126. THREE AXIS CONTROLLER.
3,026,128. REENTRY VEHICLE LEADING EDGE.
3,026,077. INFRARED SCANNER.
3,026,175. SURVIVAL COUCH.
3,041,587. ANGULAR MEASUREMENT SYSTEM.
3,041,924. MOTION PICTURE CAMERA FOR OPTICAL PYROMETRY.
3,045,424. METHOD FOR CONTINUOUS VARIATION OF PROPELLANT FLOW AND THRUST IN PROPULSIVE DEVICES.
3,049,876. ANNULAR ROCKET MOTOR AND NOZZLE CONFIGURATION.
3,053,484. VARIABLE SWEEP WING CONFIGURATION.
3,057,567. MODIFICATION AND IMPROVEMENTS TO COOLED BLADES.
3,059,230. APPARATUS FOR COUPLING A PLURALITY OF UNGROUNDED CIRCUITS TO A GROUNDED CIRCUIT.
3,062,291. HIGH VACUUM CONDENSER TANK FOR ION ROCKET ENGINES.
3,064,926. VARIABLE SWEEP WING AIRCRAFT.
3,067,573. TELESCOPING-SPIKE SUPERSONIC INLET FOR AIRCRAFT ENGINES.
3,068,656. VENTING VAPOR APPARATUS.
3,069,128. INSTRUMENT SUPPORT WITH PRECISE LATERAL ADJUSTMENT.
3,070,330. ATTITUDE AND PROPELLANT FLOW CONTROL SYSTEM AND METHOD.
3,070,349. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,070,407. AIR BEARING.
3,072,574. GAS LUBRICANT COMPOSITIONS.
3,076,065. HIGH-SPEED LOW-LEVEL ELECTRICAL STEPPING SWITCH.
3,077,599. COLLAPSIBLE LOOP ANTENNA FOR SPACE VEHICLE.
3,079,113. VEHICLE PARACHUTE AND EQUIPMENT JETTISON SYSTEM.
3,080,711. PENSHAPE EXHAUST NOZZLE FOR SUPERSONIC ENGINE.
3,083,611. MULTI-LOBAR SCAN HORIZON SENSOR.
3,084,421. REINFORCED METALLIC COMPOSITES.
3,085,165. ULTRA-LONG MONOSTABLE MULTIVIBRATOR EMPLOYING BISTABLE SEMICONDUCTOR SWITCH TO ALLOW CHARGING OR TIMING CIRCUIT.
3,087,692. VARIABLE-SPAN AIRCRAFT.
3,088,441. VALVE ACTUATOR.
3,090,212. SANDWICH PANEL CONSTRUCTION.
3,090,580. SPACE AND ATMOSPHERIC REENTRY VEHICLE.
D187,350. AIRCRAFT.
D187,351. AIRCRAFT.
D187,352. AIRCRAFT.
D187,353. AIRCRAFT.
D192,454. AIRCRAFT.

Patents available for nonexclusive, revocable, royalty-free licenses (99)

3,093,000. CHECK VALVE ASSEMBLY FOR A PROBE.
3,093,246. SPACE CAPSULE.
3,096,630. ANNULAR SUPERSONIC DECELERATOR OR DROGUE.
3,100,294. TIME-DIVISION MULTIPLEXER.
3,100,990. TWO-PLANE BALANCE.
3,102,948. ELECTRIC ARC WELDING.
3,104,079. VARIABLE-GEOMETRY WINGED REENTRY VEHICLE.
3,104,082. VARIABLE SWEEP AIRCRAFT WING.
3,105,515. PRESSURE REGULATING SYSTEM.
3,106,603. HIGH VOLTAGE CABLE.
3,106,171. RADIANT HEATER HAVING FORMED FILAMENTS.
3,110,318. SLOSH SUPPRESSING DEVICE AND METHOD.
3,112,672. UMBILICAL SEPARATOR FOR ROCKETS.
3,115,630. REFLECTOR SPACE SATELLITE.
3,118,100. ELECTRIC BATTERY AND METHOD OF OPERATING THE SAME.
3,119,232. ROCKET ENGINE.
3,120,101. CHANNEL TYPE SHELL CONSTRUCTION FOR ROCKET ENGINE AND THE LIKE.
3,120,361. LANDING ARRANGEMENT FOR AEROSPACE VEHICLE.
3,120,738. IGNITION SYSTEM FOR MONOPROPELLANT COMBUSTION DEVICES.
3,121,309. SPHERICALLY SHAPED ROCKET MOTOR.
3,122,000. APPARATUS FOR TRANSFERRING CRYOGENIC LIQUIDS.
3,122,096. APPARATUS AND METHOD FOR CONTROL OF A SOLID FUELED ROCKET VEHICLE.
3,122,885. INJECTOR FOR BIPROPELLANT ROCKET ENGINES.
3,123,248. EXPULSION BLADDER EQUIPPED STORAGE TANK STRUCTURE.
3,127,157. MULTIPLE BELLEVILLE SPRING ASSEMBLY.
3,128,380. VARIABLE FREQUENCY MAGNETIC MULTIVIBRATOR.
3,128,845. DESPIN WEIGHT RELEASE.
3,130,940. HEAT SHIELD.
3,132,342. ANTENNA SYSTEM USING PARASITIC ELEMENTS AND TWO DRIVEN ELEMENTS AT 90° ANGLE FED 180° OUT OF PHASE.

3,132,476. THRUST VECTOR CONTROL APPARATUS.
3,132,479. UNIVERSAL RESTRAINER AND JOINT.
3,132,903. SLIT REGULATED GAS JOURNAL BEARING.
3,135,089. DECOMPOSITION UNIT.
3,135,090. ROCKET MOTOR SYSTEM.
3,136,123. ROCKET ENGINE INJECTOR.
3,137,082. CHARACTER INDICATING DISPLAY DEVICE.
3,136,637. METHOD OF MAKING FIBER REINFORCED METALLIC COMPOSITES.
3,139,725. STEERABLE SOLID PROPELLANT ROCKET MOTOR.
3,140,728. HIGH PRESSURE FOURWAY VALVE.
3,141,340. GRAVITY DEVICE.
3,141,769. METHOD OF PRODUCING POROUS TUNGSTEN IONIZERS FOR ION ROCKET ENGINES.
3,141,932. SWITCHING MECHANISM WITH ENERGY STORAGE MEANS.
3,143,321. FRANGIBLE TUBE ENERGY DISSIPATION.
3,144,219. MANNED SPACE STATION.
3,144,999. PROPELLANT BLADE LOADING CONTROL.
3,147,422. ELECTRONIC MOTOR CONTROL SYSTEM.
3,149,897. PRINTED CABLE CONNECTOR.
3,150,329. VARIABLE FREQUENCY MAGNETIC COUPLED MULTIVIBRATOR.
3,150,357. FOAM GENERATOR.
3,153,244. LIFE PRESERVER.
3,155,992. LIFE RAFT.
3,156,090. ION ROCKET.
3,157,529. BONDED SOLID LUBRICANT COATING.
3,158,172. HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE.
3,158,336. ASSEMBLY FOR RECOVERING A CAPSULE.
3,158,764. TWO-FLUID MAGNETHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRIC POWER CONVERSION.
3,159,967. VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL.
3,160,825. TEMPERATURE COMPENSATING MEANS FOR CURITY RESONATOR OF AMPLIFIER.
3,160,950. METHOD AND APPARATUS FOR SHOCK PROTECTION.
3,162,012. FORMED METAL RIBBON WRAP.
3,163,935. MECHANICAL COORDINATE CONVERTER.
3,164,222. NON-REUSABLE KINETIC ENERGY ABSORBER.
3,164,369. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,165,356. SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS.
3,166,834. CATALYST BED REMOVING TOOL.
3,167,426. NICKEL-BASE ALLOY.
3,168,827. AIRPLANE TAKE-OFF PERFORMANCE INDICATOR.
3,169,001. AIRCRAFT WHEEL SPRAY DRAG ALLEVIATOR.
3,169,613. ELASTIC UNIVERSAL JOINT.
3,169,725. ERECTABLE MODULAR SPACE STATION.
3,170,286. INJECTOR VALVE DEVICE.
3,170,290. LIQUID ROCKET SYSTEM.
3,170,295. PROPELLANT TANK PRESSURIZATION SYSTEM.
3,170,324. AERODYNAMIC MEASURING DEVICE.
3,170,471. INFLATABLE HONEYCOMB.
3,170,486. TWO-COMPONENT VALVE ASSEMBLY.
3,170,605. EJECTION VALVE.
3,170,657. LANDING ARRANGEMENT FOR AERIAL VEHICLE.
3,170,660. PARACHUTE GLIDER.
3,170,772. REINFORCED METALLIC COMPOSITES.
3,171,060. PLASMA ACCELERATOR.
3,171,081. IONIZATION VACUUM GAUGE.
3,172,097. BINARY TO BINARY-CODED-DECIMAL CONVERTER.
3,173,246. COLLOID PROPULSION METHOD AND APPARATUS.
3,173,251. APPARATUS FOR IGNITING SOLID PROPELLANTS.
3,174,278. CONTINUOUSLY OPERATING INDUCTION PLASMA.
3,174,279. ROCKET THRUST CHAMBER.
3,174,827. PRODUCTION OF HIGH PURITY SILICON CARBIDE.
3,175,789. LANDING PAD ASSEMBLY FOR AEROSPACE VEHICLES.
3,176,222. APPARATUS HAVING COAXIAL CAPACITOR STRUCTURE FOR MEASURING FLUID DENSITY.
3,176,499. HIGH TEMPERATURE TESTING APPARATUS.
3,176,933. THERMAL CONTROL OF SPACE VEHICLES.
3,177,933. THERMAL SWITCH.
3,178,883. ATTITUDE CONTROL FOR SPACECRAFT.
3,180,264. COUPLING FOR LINEAR SHAPED CHARGE.
3,180,587. ATTITUDE ORIENTATION OF SPIN-STABILIZED SPACE VEHICLES.
3,181,621. SPACECRAFT SOFT LANDING SYSTEM.
D198,249. SWEPT WING ASSEMBLY.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Fees and Charges

The following amendments are made to take effect thirty days after publication in the Federal Register. Notice and public procedure are deemed unnecessary as the changes relate to minor adjustment of fee items.

1. In § 1.21 amend paragraphs (a), (g), (h), (l), (n), and (q), as follows:

§ 1.21 *Patent and miscellaneous fees and charges.*

* * * * * * *

(a) For typewritten copies of records, for each page produced (double-spaced) or fraction thereof.... $1.50

* * * * * * *

(g) For translations from foreign languages into English, made only of references cited in applications or of papers filed in the Patent Office insofar as facilities may be available: Written translations, for every 100 words of the original language, or fraction thereof 5.00

(h) For registration of an attorney, agent or firm:
For admission to examination for registration to practice, fee payable upon application $15.00
On registration to practice 10.00
On application for registration of a firm 5.00

* * * * * * *

(l) For the mounting of unmounted drawings and photoprints received with patent applications, provided they are of approved permanency 2.00

* * * * * * *

(n) Search of Patent Office records for purposes not otherwise specified in this rule, per half-hour of search or fraction thereof 3.00

* * * * * * *

(q) List of U.S. Patents:
All patents in a subclass, per sheet (containing 100 patent numbers or less) ..... .50
Minimum charge per order 1.00
Patents in a subclass, limited by date or patent number, per sheet (containing 50 patent numbers or less) ..... .50
Minimum charge per order 1.00

* * * * * * *

2. In § 1.341 amend paragraphs (c) and (d) by inserting sentences so that the amended paragraphs read as follows:

§ 1.341 *Registration of attorneys and agents.*

* * * * * * *

(c) *Requirements for registration.* No person will be admitted to practice and registered unless he shall apply to the

Commissioner of Patents in writing on a prescribed form supplied by the Commissioner and furnish all requested information and material; and shall establish to the satisfaction of the Commissioner that he is of good moral character and of good repute and possessed of the legal and scientific and technical qualifications necessary to enable him to render applicants for patents valuable service, and is otherwise competent to advise and assist them in the presentation and prosecution of their applications before the Patent Office. In order that the Commissioner may determine whether a person seeking to have his name placed upon either of the registers has the qualifications specified, satisfactory proof of good moral character and repute, and of sufficient basic training in scientific and technical matters must be submitted and an examination which is held from time to time must be taken and passed. Each application for admission to the examination for registration must be accompanied by the prescribed fee (see § 1.21). The taking of an examination may be waived in the case of any person who has actively served for four years in the examining corps of the Patent Office.

(d) *Registration of firms.* Any firm, the individual members of which are each registered on the register of attorneys, may have its name entered upon the register of attorneys. Any firm, one of the individual members of which is registered on the register of agents and each of the remaining individual members are registered either on the register of attorneys or the register of agents, may have its name entered on the register of agents. If the membership of the firm is changed, application must be made for registration of the firm as changed. Every application must be acompanied by the prescribed fee for registration of a firm (see § 1.21).

* * * * * *

(Sec. 1, 66 Stat. 793; 35 U.S.C. 6, 31. Interprets or applies sec. 1, 66 Stat. 796; 35 U.S.C. 41)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: May 3, 1965.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 65-4815; Filed, May 6, 1965; 8:46 a.m.]

Published in 30 F.R. 6391, May 7, 1965

Foreign Patents Received in the Scientific Library as of April 30, 1965

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Apr. 26, 1965	54,693
(*Patents*)	Apr. 27, 1965	252,365
Austria	Apr. 14, 1965	228,800
Belgium	Apr. 19, 1965	623,500
Canada	Apr. 26, 1965	708,310
Czechoslovakia	Apr. 22, 1965	113,650
Denmark	Dec. 18, 1964	100,000
East Germany	Apr. 19, 1965	37,406
Egypt	Mar. 23, 1965	4,968
Finland	Apr. 9, 1965	34,174
France:		
(*Patents*)	Apr. 27, 1965	1,383,000
(*Additions*)	Apr. 19, 1965	84,200
(*Medicaments*)	Apr. 19, 1965	2,100 M
(*Additions*)	May 4, 1964	25 CAM
Germany:		
(*Auslegeschriften*)	Apr. 15, 1965	1,187,200
(*Patents*)	Apr. 15, 1965	1,175,614
Great Britain	Apr. 26, 1965	988,621
India	Oct. 15, 1964	86,939
Ireland	Feb. 9, 1965	22,946
Italy	Jan. 4, 1965	621,000
Japan	Apr. 26, 1965	6,820/65
Netherlands:		
(*Octrooiaanvragen*)	Mar. 8, 1965	14,071/64
(*Patents*)	Apr. 26, 1965	120,058
Norway	Apr. 14, 1965	105,702
Pakistan	Feb. 23, 1965	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Apr. 5, 1965	49,160
Rumania	Mar. 29, 1965	42,843
Sweden	Mar. 11, 1965	194,131
Switzerland	Apr. 26, 1965	386,291
U.S.S.R.	Apr. 27, 1965	167,731

Australia: First 2,000 incomplete
Belgium: First printed 498,079/1950
Canada: First printed 445,921/1948
Czechoslovakia: Not received between 81,800/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

TITLE 37—PATENTS, TRADEMARKS AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Accessibility of Assignment Records

Notice is hereby given that the United States Patent Office proposes to amend one of its rules relating to records and files of the Patent Office. The amendment is proposed pursuant to the authority contained in Title 35, United States Code, section 6.

All persons who desire to present their views, objections, recommendations or suggestions are invited to do so on or before June 29, 1965, on which date a hearing will be held at 10:00 a.m. in Room 3886B of the Department of Commerce Building. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

The proposed amendment is for the purpose of limiting public accessibility to the assignment records of the Patent Office relating to patents only, and to keep confidential the assignment records relating to pending and abandoned applications. The proposed amendment will apply only to assignments recorded after the date the amendment becomes effective. Assignments recorded prior to that date together with the indexes and digests relating to them will continue to be open to public inspection as provided for by Rules 12 prior to amendment.

Section 1.12 of Title 37 C.F.R. (Patent Rule 12) is proposed to be amended by adding the words *relating to original or reissue patents* after "records" in the first sentence thereof, and by adding the following as the second and third sentences: Assignment records, digests and indexes, relating to any pending or abandoned application are not available to the public. Copies of any such assignment records and information with respect thereto shall be obtainable only upon written authority of the applicant or his assignee or attorney or agent or upon a showing that the person seeking such information is a bona fide prospective or actual purchaser, mortgagee or licensee of such application, unless it shall be necessary to the proper conduct of business before the Office or as provided by these rules of this part.

The text of the proposed rule, as amended, reads as follows:

§ 1.12 *Assignment records open to public inspection.*—The assignment records, relating to original or reissue patents, including digests and indexes, are open to public inspection and copies of any instrument recorded may be obtained upon payment of the fee therefor. Assignment records, digests and indexes, relating to any pending or abandoned application are not available to the public. Copies of any such assignment records and information with respect thereto shall be obtainable only upon written authority of the applicant or his assignee or attorney or agent or upon a showing that the person seeking such information is a bona fide prospective or actual purchaser, mortgagee or licensee of such application, unless it shall be necessary to the proper conduct of business before the Office or as provided by these rules. An order for a copy of an assignment should give the identification of the record. If identified only by the name of the patentee and number of the patent, or in the case of a trademark registration by the name of the registrant and number of the registration, or by name of the applicant and serial number of the application, an extra charge will be made for the time consumed in making a search for such assignment.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

Approved: May 26, 1965

Published in 30 F.R. 7195, May 28, 1965

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF MAY 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-65
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager. Heterocyclic; Amides; Alkaloids; Aso; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 3-62	9-15-65
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	5-14-60
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Sepa'ation; Special Utility; Molding Processes.	9-18-62	1-22-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-20-62	8- 7-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Process; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	7- 1-60
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	5- 2-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	4-15-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	1-19-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	5-26-65
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	1- 5-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-10-62	2-11-60
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	1-18-63	7- 6-60

Total number of pending applications (excluding Designs)	198,013
Total number of Design applications pending	5,327
Total number of applications awaiting action (excluding Designs)	143,033
Total number of Design applications awaiting action	1,913
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during June 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,442,220 to 2,444,411, inclusive

Plant Patents ..... None

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-10-63	12- 1-60
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Founding; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	7-27-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	9-29-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	3-24-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 1-63	8-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	3-25-63	7-18-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-27-62	11-19-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-13-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	5-14-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-58
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	8- 7-64	4- 9-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

AMERICAN GREASE STICK COMPANY *v.* CHEMPLAST, INC.

No. 7329. Decided March 11, 1965

[52 CCPA —; 341 F.2d 942; 144 USPQ 676]

1. TRADEMARK—CONFUSING SIMILARITY—"RUGLYDE," "SIL-GLYDE" AND "FLUORO GLIDE" FOR LUBRICANTS.

In determining the issue of likelihood of confusion between applicant's mark "FLUORO GLIDE," for a dry film lubricant and anti-stick agent, and opposer's registered marks "RUGLYDE" and "SIL-GLYDE," for, respectively, penetrating rubber lubricant and lubricating grease, *Held* that "In our opinion the dissimilarities of the competing marks heavily outweigh the similarities, especially in sound and appearance."

2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—TRADEMARKS—COSTS.

"We do not agree that, on the record before us, the appellant was not justified in prosecuting its appeal. The record presents a clear-cut issue of likelihood of confusion based upon the registered marks. Appellee's position is not, therefore, well taken and the request for costs and attorney's fees is denied."

APPEAL from the Patent Office. Opposition No. 42,253.

AFFIRMED.

Robert G. McMorrow (*James Atkins*, *Russell L. Law*, of counsel) for appellant.

Daniel H. Bobis (*Norman N. Popper*, of counsel) for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Appellee, Chemplast, Inc., filed application [1] for registration of its trademark "FLUORO GLIDE" for use on a dry film lubricant and anti-stick agent.

Appellant, American Grease Stick Company, filed notice of opposition [2] alleging registration and prior use of trademarks "RU-GLYDE" [3] for penetrating rubber lubricant and "SIL-GLYDE" [4] for lubricating grease. The notice of opposition further alleged that for many years prior to July 13, 1960, appellee's alleged date of first use, appellant had been "engaged in the manufacture, distribution and sale of lubricants of various types"; that by extensive advertising and sales thereunder its above-named marks had become well and favorably known in trade and thus had become well known as valuable symbols of appellant's business and goodwill and that the registration of "FLUORO GLIDE" as a trademark for a lubricant would damage it by reason of the fact that purchasers and others would be confused as to the source or origin of the goods involved.

Appellee's answer, filed December 5, 1962, put in issue material allegations of the notice of opposition and in further answer alleged that the phonetic counterpart of the word "GLIDE" in appellee's mark was to be found in more than 200 United States trademark registrations, many of which covered goods identical or substantially

[1] Serial No. 113,492, filed February 13, 1961.
[2] Opposition No. 42,253, filed October 16, 1962.
[3] Reg. 366,882, registered May 2, 1939.
[4] Reg. No. 681,697, registered July 14, 1959.

similar to appellant's goods; that the word could be found in any standard dictionary; that it was being currently used by others to advertise the same or similar products as those of appellee; that common use of "glyde" or "glide," either alone or in combination with other words, is concurrent with appellant's use on similar or identical goods; that no confusion had resulted; that the phrase or word could not be exclusively appropriated by appellant and that "such concurrent use has so conditioned the purchasing public that they do not associate or identify the phrase * * *" as indicating the source of the goods as those of appellant.

Appellee in answer further alleged the existence of special circumstances, attending sale and distribution of the goods of the parties, relating to method of soliciting business; purpose and nature of the goods; channels of delivery; methods of distribution and the specific purchases of each, and that such circumstances would militate against confusion in trade.

On May 27, 1963, taking cognizance of the fact that the time had expired for opposer to take testimony-in-chief or file further documentary proof in support of its opposition, appellee moved for judgment against opposer dismissing the opposition, submitting the matter on the sole issue of likelihood of confusion "where registered marks are alleged by the opposer."

The Board granted the motion for dismissal under Rule 2.132(b) on the ground that appellant, "having submitted no evidence other than its aforesaid registration, has failed to sustain its burden of proof herein." The Board stated:

> Since opposer has filed no evidence herein other than copies of its registrations, the question of likelihood of confusion in trade turns *solely* upon a consideration of the marks and goods, *as shown in* the respective application and registrations. [Emphasis added.]

From the decision of the Board, thus limited, holding that there is no likelihood of purchaser confusion, appellant prosecutes this appeal. The Board found and held that:

> The goods of both parties involved lubricants which, if sold under the same or similar marks, might be attributed to a single manufacturer. However, applicant's mark "FLUORO GLYDE" [GLIDE] and opposer's marks "RU-GLYDE" and "SIL-GLYDE" resemble one another only in that they share suffixes which are phonetically the same. This portion, however, is highly suggestive of a product which serves primarily to cause parts of structure to move smoothly and effortlessly.
>
> In view thereof and considering that the respective marks in their entireties are otherwise different in sound, appearance and in connotation, it is concluded that there is no likelihood of purchaser confusion as to the source of the goods upon which they are applied.

Appellant advances the theory of "arguable doubt" as to the existence of likelihood of confusion. Where such doubt is found, the issue should be resolved against the newcomer. On the basis of the record before us, we find no basis to justify the application of this rule.

Appellant admits that the word "glide" is suggestive in a trademark sense when used in association with a lubricant. The Board so found, and we agree.

[1] In our opinion the dissimilarities of the competing marks heavily outweigh the similarities, especially in sound and appearance.

Appellee takes the position that the record herein discloses an "aggravated" case of appeal and that therefore this court should exercise its discretion and award "costs, disbursements and reasonable attorney's fees" to the appellee. In short, appellee's position is that the appeal is devoid of merit and is, therefore, frivolous.

[2] We do not agree that, on the record before us, the appellant was not justified in prosecuting its appeal. The record presents a clear-cut issue of likelihood of confusion based upon the registered marks. Appellee's position is not, therefore, well taken and the request for costs and attorney's fees is denied.

On the basis of the record here presented, we find no reversible error in the decision of the Trademark Trial and Appeal Board in granting appellee's motion and dismissing the opposition. The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

THE PROCTER & GAMBLE COMPANY *v.* A. E. STALEY MANUFACTURING COMPANY

No. 7314. Decided March 18, 1965

[52 CCPA —; 342 F.2d 476; 144 USPQ 759]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JURISDICTION—TRADEMARKS—PRECEDENTS.

   "* * * unlike courts of more general jurisdiction, we are not at liberty to consider what appellant has termed 'the equities,' except as they are pertinent to the statutory issues under which applicant's right to register must be judged. Thus general principles of trademark law drawn from the context of opinions rendered in trademark infringement and unfair competition causes generally are of relatively little assistance."

2. TRADEMARK—CONFUSING SIMILARITY—CUMULATIVE DIFFERENCES.

   On the matter of the dismissal of appellant's opposition to an application by appellee for registration of "OXYTROL" for industrial starches, based on appellant's registered trademark "OXYDOL" for soap, and for sudsing cleaner, cleanser, and detergent, *Held*: "* * * we have reviewed the decision of the Trademark Trial and Appeal Board and agree with it that the cumulative differences of the marks, and the differences in the goods to which they are applied and in the classes of purchasers to which the goods of the respective parties are sold are sufficient to support the Board's finding of no likelihood of confusion."

3. SAME—SAME—SAME.

   "There is a difference, slight though it may be, between the marks in issue as to sound and meaning. There is without question a similarity in the appearance of the words which comprise the respective marks. There is a substantial difference in the goods to which the marks are applied. While difference in goods alone is not controlling, *Hollywood Water Heater Co.* v. *Hollymatic Corp.*, 47 CCPA 782, 274 F.2d 679, 124 USPQ 452, where the difference is such that the goods will move in different channels of trade to different classes of purchasers it becomes a further cumulative factor."

4. SAME—SAME—SAME.

   "While there may well be many purchasers of applicant's 'OXYTROL' starch who also are familiar with opposer's 'OXYDOL' product, the substantial differences in the technical markets in which the respective goods are sold are such that the trademarks as applied to such goods would not be likely to be relied upon by the purchasers to indicate that the goods in issue emanate from the same source. Thus, the slight differences in the marks combined with the very substantial differences in the technical nature of the goods to which the marks are applied and the markets in which these goods are sold makes it unlikely that a purchaser would consider that opposer was the source of the 'OXYTROL' industrial starches of applicant and hence make it unlikely that registration of applicant's mark as applied to its goods would cause confusion, mistake or deception within the meaning of 15 U.S.C. 1052(d)."

APPEAL from the Patent Office. Opposition No. 40,985.

AFFIRMED.

John W. Melville, Bernard Edward Shlesinger, Jr., for appellant.
C. C. Jensch for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

SMITH, *J.*, delivered the the opinion of the court.

This is an appeal by The Procter & Gamble Company, as appellant-opposer, from a 2–1 decision by the Trademark Trial and Appeal Board (138 USPQ 534) dismissing appellant's opposition to an application [1] for registration of the mark "OXYTROL" by appellee, A. E. Staley Manufacturing Company, as a trademark for industrial starches. The opposition is based on appellant's well known trademark "OXYDOL" for soap,[2] and for sudsing cleaner, cleanser and detergent.[3]

The question before this court is whether the Trademark Trial and Appeal Board erred in dismissing the opposition. This, in turn, depends upon whether the Board was correct in finding that the trademark "OXYTROL," when applied to industrial starches, is not likely to cause confusion, or to cause mistake, or to deceive within the meaning of 15 U.S.C. 1052(d).

[1] The problem with which we are here confronted is a difficult one for this court, for unlike courts of more general jurisdiction, we are not at liberty to consider what appellant has termed "the equities," except as they are pertinent to the statutory issues under which applicant's right to register must be judged. Thus general principles of trademark law drawn from the context of opinions rendered in trademark infringement and unfair competition causes generally are of relatively little assistance. We do, however, find understanding in the decision of the Court of Appeals for the Second Circuit in *Polaroid Corp.*, v. *Polarad Electronics Corp.*, 287 F.2d 492, 128 USPQ 411 (2d Cir. 1961), where, in affirming a lower court decision dismissing a complaint charging trademark infringement and unfair competition, the court set forth tests which we find helpful in resolving the issue here. The court there stated (at 495):

> The problem of determining how far a valid trademark shall be protected with respect to goods other than those to which its owner has applied it, has long been vexing and does not become easier of solution with the years. * * * Where the products are different, the prior owner's chance of success is a function of many variables: the strength of his mark, the degree of similarity between the two marks, the proximity of the products, the likelihood that the prior owner will bridge the gap, actual confusion, and the reciprocal of defendant's good faith in adopting its own mark, the quality of defendant's product, and the sophistication of the buyers. * * *

The majority opinion of the Board in the present case contains specific statements of fact for which we find ample support in the record. In summary form, those statements are:

> (1) Opposer has clearly established prior use of its mark, "OXYDOL," a well-known mark.
>
> (2) The mark "OXYDOL" is well-known to people in the textile trade; however, the goods opposer sells to the textile industry are not sold under the trademark "OXYDOL."
>
> (3) The mark "OXYDOL" is an arbitrary, technical mark which has been in long use and has been extensively advertised, and opposer has enjoyed substantial sales thereunder.
>
> (4) The starch sold by applicant under the mark "OXYTROL" is sold only as warp sizing.
>
> (5) Neither opposer nor its subsidiary sells a warp sizing.
>
> (6) There is a specific difference in the goods of applicant and opposer: "OXYDOL" detergent being a mass market product, the principal purchasers being housewives, whereas "OXYTROL" starch is a specialty product sold for industrial use only.
>
> (7) Each of the parties operates in the field of the other but not under the marks in issue.
>
> (8) The fact that applicant's product is a highly technical product clearly distinguishes it from the household detergent to which opposer applies its mark.
>
> (9) Applicant's product is purchased and used only by discriminating technical purchasers.
>
> (10) There are differences that exist between the marks.
>
> (11) Applicant's mark would have a suggestive meaning to purchasers of the specific goods, i.e., hydroxyethylated industrial starch, in connection with which it is used.

Resolution of the issue here, i.e., the right of applicant to registration of its mark "OXYTROL" in view of the foregoing facts, requires us first to consider the similarities of the marks in issue and then to balance a combination of those factors listed above which bear on the issues within our limited jurisdiction. In other words, we are not a tribunal in which the issues of unfair competition can be litigated except as comparable issues are relevant to the right to register a trademark.

In *In re General Electric Co.*, 49 CCPA 1186, 1188, 304 F.2d 688, 134 USPQ 190, we stated the principle as follows:

> Section 2(d) does not require only that when goods are identical we consider merely how much two marks resemble each other in the abstract. It requires that we consider whether, *when the marks are applied to the goods* of the prior registrant and the applicant, respectively, the marks *so* resemble each other that such use would be likely to cause confusion, mistake or deception of purchasers. In view of the overlap in the present case in the description of goods, the marks not being identical, we believe that our concern here is only with the goods in that area of overlap, which goods are building wires. Our problem then becomes one of deciding whether those who buy those goods would be likely to be confused, mistaken or deceived by concurrent use of VULKENE and VULCAN on them as trademarks. Abstract similarity of the marks, or the converse, does not supply us with the answer, as it has not supplied it in many cases in which we have held, notwithstanding obvious similarity, that there would not be likelihood of confusion. * * *

[2][3] Applying these general principles to the issues in the present appeal we have reviewed the decision of the Trademark Trial and Appeal Board and agree with it that the cumulative differences of the marks, and the differences in the goods to which they are applied and in the classes of purchasers to which the goods of the respective parties are sold are sufficient to support the Board's finding of no likelihood of confusion. There is a difference, slight though it may be, between the marks in issue as to sound and meaning. There is without question a similarity in the appearance of the words which comprise the respective marks. There is a substantial difference in the goods to which the marks are applied. While difference in goods alone is not controlling, *Hollywood Water Heater Co.* v. *Hollymatic Corp.*, 47 CCPA 782, 274 F.2d 679, 124 USPQ 452, where the difference is such that the goods will move in different channels of trade to different classes of purchasers it becomes a further cumulative factor.

[1] Serial No. 98,161, filed May 31, 1960.
[2] Reg. No. 100,664, issued Oct. 20, 1914 to a predecessor, twice renewed; and Reg. No. 409,355, issued Oct. 3, 1944.
[3] Reg. No. 565,552, issued Oct. 21, 1952.

[4] While there may well be many purchasers of applicant's "OXYTROL" starch who also are familiar with opposer's "OXYDOL" product, the substantial differences in the technical markets in which the respective goods are sold are such that the trademarks as applied to such goods would not be likely to be relied upon by the purchasers to indicate that the goods in issue emanate from the same source. Thus, the slight differences in the marks combined with the very substantial differences in the technical nature of the goods to which the marks are applied and the markets in which these goods are sold makes it unlikely that a purchaser would consider that opposer was the source of the "OXYTROL" industrial starches of applicant and hence make it unlikely that registration of applicant's mark as applied to its goods would cause confusion, mistake or deception within the meaning of 15 U.S.C. 1052(d).

It is to be noted in the foregoing analysis that we find an important difference in the technical nature of the goods involved. Appellee throughout its brief has emphasized this difference and refers to its "OXYTROL" starch as hydroxyethylated starch. As pointed out in appellee's brief:

> • • • Applicant's organization have a specific way of pronouncing the mark "OXYTROL." There is evidence that purchasers pronounce the mark "OXYTROL" with the last syllable rhyming with the word "control" (R. 245). Applicant's employees pronounce it in this fashion. This is a logical result of the way in which the word was coined. The word is meant to suggest the control of oxygen, which in turn reminds the prospective purchaser that the product is not as damaging to marine life as other types of warp sizing agents might be. There is virtually no dispute about the fact that the product on which the mark appears has this quality, that such a quality is specifically advertised (see Exhibits at R. 23, 25), that purchasers consider the control of oxygen and resulting lesser damage to fish important, and, what is more, that the man who dreamed up the name intended that the name do all of these things. Therefore, when we say that the trademark "OXYTROL" is pronounced differently from the mark "Oxydol," it is for a very logical reason and well supported by the evidence in this case.

Despite the importance which appellee attaches to its use of "OXYTROL" on a specific starch in seeking to prevail in this proceeding, we note, as did the majority of the Trademark Trial and Appeal Board, that the application for registration is broadly stated to be for "Industrial Starches." As stated by the Board in a footnote to its opinion:

> It is apparent that the recitation of goods in the application comprehends more than starches used for warp sizing and on the basis of the record here must be construed as being an indefinite description of applicant's goods. Since the starch sold by applicant under the mark "OXYTROL" is sold only as warp sizing, it is suggested that should applicant ultimately prevail herein, appropriate amendment to the identification of goods be required by the Examiner of Trademarks.

We agree, and on this basis affirm the appealed decision.

AFFIRMED.

WORLEY, *Chief Judge*, dissenting.

On this record [4] I am of the opinion there would be a likelihood of confusion. At least, I feel obliged to resolve doubt on that score in favor of the first registrant and against the newcomer.

[4] "The court shall hear and determine such appeal on the evidence produced before the Patent Office • • •" Lanham Act, section 21 (15 U.S.C. 1071).

U.S. Court of Customs and Patent Appeals

EDWIN H. LAND AND MERGE M. MORSE *v.* FRANCIS A. REGAN, JR., SEAMON A. LINCOLN AND DONALD E. HANSON

No. 7288. Decided March 11, 1965

[52 CCPA —; 342 F.2d 92; 144 USPQ 661]

1. INTERFERENCE—REDUCTION TO PRACTICE—ACTUAL—COMMERCIALLY ACCEPTABLE EMBODIMENT NOT REQUIRED.

"This court has said many times that a commercially acceptable embodiment of the invention is not necessary to proof of actual reduction to practice. • • • We do not consider the fact that the witnesses stated the process to be 'potentially commercial' or 'commercially promising' to be any justification for applying the test of whether the process results were *in fact* commercially acceptable in determining the success of the process. • • • Simply because the ultimate goal—a process of commercial quality—has not been achieved is no reason to conclude that the practicality of the process has not otherwise been demonstrated or that it does not perform the function for which it was designed."

2. SAME—SAME—SAME—RESULTS NEED NOT BE PERFECT OR INCAPABLE OF IMPROVEMENT.

"A successful reduction to practice does not require perfection or incapability of improvement."

3. SAME—SAME—SAME—TESTS—SUCCESSFUL RESULTS WITH MAJORITY OF TESTS.

"We think Regan and the Board have placed undue emphasis on that minority of exhibits showing poor results and have neglected to accord proper weight to the good results shown in the exhibits. • • • Land's experiments were directed to testing the process using a wide variety of materials under different conditions. The mere fact that Exhibits 4D1–4D9 illustrate that tests using some materials under some conditions were not successful does not mitigate the fact that the successful tests do establish with a reasonable certainty or probability that the process will operate in the intended manner."

4. SAME—EVIDENCE—REFUSAL OF WITNESSES TO ANSWER QUESTIONS ON CROSS-EXAMINATION.

"It is apparent • • • that the witnesses did not withhold information directly material and relevant to the issues defined by the count. The witnesses had already testified specifically as to all the actual ingredients and properties called for by the count when Regan, on cross-examination, collaterally asked, for example, 'What else did • • • [the composition] contain?' and the witnesses refused to answer. We think those refusals insufficient grounds to warrant striking the testimony of the witnesses, recalling that a motion to strike, if granted, renders the evidence *inadmissible*. • • • Our further consideration of Land's testimony directed to establishing reduction to practice of the remaining steps of the count will be on the basis that all of the testimony is admissible in evidence because of its obvious material and relevant nature. The refusal of the witnesses to answer Regan's questions will be accorded appropriate significance in our determination of its probative value, credibility and weight."

APPEAL from the Patent Office. Interference No. 90,976.

REVERSED.

Donald L. Brown for appellants.

Herman Hersh, James H. Littlepage, for appellees.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Land and Morse, junior party [1] in Interference No. 90,976, appeal from the decision of the Board of Patent Interferences awarding priority of invention to Regan, Lincoln and Hanson, the senior party.[2]

The invention relates to a photomechanical reproduction process for producing a master copy of an original document for use in printing further copies, as defined in the single count:

[1] Land and Morse are involved on the basis of their application Serial No. 523,792, filed July 22, 1955.

[2] Regan, Lincoln and Hanson are involved on the basis of their application Serial No. 498,192, filed March 31, 1955.

2. A process comprising the steps of applying to a photoexposed silver halide stratum and a superposed hydrophilic, water-receptive, silver-receptive stratum which contains nuclei for precipitation of silver from a water-soluble silver complex, an aqueous alkaline solution of a silver halide developer and a silver halide solvent, reducing the exposed silver halide in the silver halide stratum to silver, forming from unreduced silver halide in the silver halide stratum a water-soluble silver complex, diffusing the complex to the silver-receptive stratum, producing from the complex in conjunction with said nuclei a visible image on the silver-receptive stratum, said image having first areas that contain silver concentrated primarily at the surface of said silver-receptive stratum in thin but substantially continuous, oleophilic dense masses and second areas that are substantially silver-free, thereafter stripping the silver halide stratum from the silver-receptive stratum, coating said silver-receptive stratum with an ink which will preferentially wet said first areas, and pressing the image onto a copy sheet in order to transfer said ink thereto.

We find the following portion of Regan's brief which describes both the photomechanical reproduction process known as lithography and the process of the count to be helpful toward understanding the issues and subject matter involved in this appeal:

In lithographic reproduction, use is made of a lithographic master or plate having a hydrophilic,[3] water receptive, ink repellent surface that is imaged with an ink receptive, water repellent material. In the copy process, the imaged plate is first wet with an aqueous medium followed by application of a greasy ink composition. The aqueous medium only wets out the non-imaged portions of the master which are hydrophilic or water receptive. When the imaged master is subsequently treated with the greasy ink composition, the ink is repelled by the wet, non-imaged portions of the plate and received only by the unwetted ink receptive, imaged portions of the plate.

When the plate thereafter is brought into contact with an offset blanket (in offset printing) or copy sheets (in direct printing), ink composition transfers from the inked portions of the plate and not from the uninked, non-imaged portions of the plate thereby to produce inked reproductions or copy of the image that is formed on the plate. The wetting and inking operations can be repeated any number of times for multiple copy reproduction.

The critical relationship for the production of copy by lithography is the maintenance of a high contrast between the ink receptivity and water repellency of the imaged portions as compared to the hydrophilic, water receptivity and ink repellency of the non-imaged portions of the plate whereby the aqueous medium goes only to the non-imaged portions while the ink goes only to the imaged portions of the plate.

In the practice of the invention covered by the count in interference, a negative having a silver halide in a colloid coating is exposed to an original. The exposed negative is then brought into surface contact with a master, defined as a receiving sheet having a *hydrophilic, water receptive* stratum which contains nuclei for precipitation of silver. The exposed negative is wet with a developing solution containing a silver halide developer and a silver halide solvent which operates to convert the exposed silver halide in the negative to silver while the unreacted silver halide in the unexposed portions of the negative are dissolved and formed into a complex which then transfers by diffusion from the negative to the silver receptive stratum of the master wherein the nuclei functions to reduce the complex to a silver image on the master.

The important discovery that is represented by the count is that, when the diffusion transfer process is carried out on a receiving sheet in which the silver receptive stratum has a *hydrophilic water receptive* surface, the silver image that is formed by diffusion transfer of silver halide from the unexposed portions of the negative is highly ink receptive and water repellent, while the unsilvered non-imaged portions of the plate remain hydrophilic and water receptive thereby to provide the necessary contrast between the water repellent, ink receptive silver image and the hydrophilic, water receptive, and ink repellent non-imaged or non-silvered portions of the plate. To achieve the desired contrast, it is desirable that the silver in the imaged portions be concentrated primarily at the surface

[3] Hackh's Chemical Dictionary (3rd edition, 1944) defines "hydrophilic" as "describing a substance which absorbs or adsorbs water," and "hydrophile" as "A substance, usually in the colloidal state or an emulsion, which is wetted by water, that is: attracts water or water adheres to it."

in thin but substantially continuous oleophilic dense masses while the non-imaged portions of the plate are substantially free of silver.

Regan took no testimony and is accordingly restricted to his filing date of March 31, 1955, for conception and constructive reduction to practice. Land makes no claim of diligence from a date prior to Regan's filing date until his own filing date. The principal issue before us, therefore, is whether Land has proved by a preponderance of the evidence that he reduced the invention to practice prior to Regan's filing date. Land stipulated the direct testimony of his witnesses and introduced several exhibits to show actual reduction to practice in September-October 1954. Five of those witnesses were cross-examined on Regan's behalf:

Miss Meroe Morse, co-applicant and manager of black-and-white photographic research, Polaroid Corp.
Miss Elisabeth Yankowski,[4] laboratory technician.
Eugene Emerson, physicist.
Frederick Binda, laboratory assistant.
Frank Martin, asst. manager of black-and-white photographic research.

The Board, in considering the testimony of those witnesses in its relation to each of the process steps and results which must be proved to establish Land's contention that the invention was reduced to practice in September and October 1954, regarded the last step of the count, viz, pressing the image onto a copy sheet in order to transfer ink thereto, "as important as all the remainder combined, for it is necessary for Land to prove * * * that the result was a useful one and satisfied the goals laid out by or for Land in performing the experiments." It devoted a large portion of its opinion to a summary of the testimony it considered on that aspect of the case, saying:

* * * Miss Morse identified as Exhibit 3 * * * a notebook containing work performed by Mrs. Johnson, as Exhibit 4 a notebook containing a great deal of other work * * * and testified that

"she was particularly pleased with the work of Mrs. Johnson and considered her experiments completely indicative of the commercial applicability of the process in photomechanical reproduction."

Mrs. Johnson * * * did not confirm or corroborate her satisfaction or that of Miss Morse concerning the results * * *. She * * * did not testify that reasonably good results were attained with any degree of consistency or that any knowledge of how to attain such results * * * accrued from her experiments. The failure to follow through with other work between the date of the experiments (September and October 1954) and the patent application (July 22, 1955) gives credence to Regan's theory that the opposite was the case. * * *

Miss Elizabeth Yankowski was a laboratory technician of longer experience than Mrs. Johnson and was assigned by Miss Morse as an advisor to Mrs. Johnson in this work, which she closely observed. * * * she gave no positive testimony on direct examination that the results of Mrs. Johnson's work were those desired. She did, however, refer * * * to "the good clear images of excellent contrast" and * * * "the good ink reproductions affixed in the notebook."

On cross examination, Miss Morse referred to a problem called "silvering," involving packing of the silver in too dense form * * *, and indicated that this phenomenon could prevent satisfactory performance of the process * * *. She did not say whether Mrs. Johnson ran into this problem or fairly solved it in relation to her work on this invention. In referring to the fact that Mrs. Johnson obtained only four copies in her work, Miss Morse testified * * *:

"I think we were looking for a high quality, * * *."

and that "four seemed adequate to demonstrate the quality." In referring to the ink in the background of Exhibit 3, * * * "the most successful copies," she admitted that this problem existed and that it might have been caused by

[4] A sixth witness, Mrs. Ann Johnson, a laboratory technician assigned by Miss Morse to perform the experimental work relied upon here, also testified on direct. The parties stipulated that the testimony on cross-examination given by Miss Yankowski would be that given by Mrs. Johnson were she available.

"a trace of silver in the background," and stated that this was "one of the things we were studying." * * *

In response to a question as to whether the copy of Exhibit 3 was "really satisfactory copy as a commercial operation" she testified * * *:

> "This is a fine point because as far as the experiment and something *potentially commercially interesting*, I thought it was very exciting. It was exciting *as an experiment* and exciting from the *possibility of being potentially commercial*. If you ask me would I recommend to our sales department that they put on the market something that looked like that—I don't think you would ask such a question." * * * [Board's emphasis.]

* * * Miss Yankowski, in responding to a question as to why on some of the exhibits "the non-imaged portions took ink and the imaged portions did not, ["] answered * * *:

> "I think it was done under very crude conditions."

* * * * * * *

When we refer to the exhibits themselves and relate them to this testimony we conclude that Land's case, viewed in its most favorable light, does not prove that he demonstrated the usefulness of the process prior to Regan's filing date and priority will accordingly be awarded to Regan.

We have quoted almost the entire portion of the Board's opinion directed to Land's efforts to establish usefulness of the claimed process in order to present a clear picture of the Board's reasoning. We shall now set forth our reasons for concluding the Board erred in holding that Land failed to demonstrate the usefulness of the process which was practiced prior to Regan's filing date.

Miss Morse, Mrs. Johnson and Miss Yankowski each testified to the effect that the primary object of the experiments carried out in September and October 1954 and represented in Exhibits 3 and 4 was "to determine what specific materials would give the greatest deposit of silver on the surface of the silver-receptive stratum" to be used as the printing master. It was observed by each that the transfer of ink from a dense silver image deposit resulted in copy of the greatest contrast and clarity. Miss Morse testified:

> * * * We had observed that the kind of * * * silver halides influenced the denseness or the compactness with which we could form a silver deposit. I asked her [Mrs. Johnson] to try a variety of the commercially available negatives. * * * I also asked her to take photomicrographs and see if we could characterize for ourselves the kind of negatives we would like * * *. We wanted to make the most desirable difference between the areas which would accept the ink and those which would not accept the ink. The more dense the silver deposit, the more effective it was. * * *
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> * * * * * * *
>
> we made other modifications and changes in [developer solution] concentration, such as alkali, or changes in the hypo.[6] Those would be dictated really by the negative we were going to use. For instance, we used Industrial X-Ray negative because it was what I call silver rich * * *.

The broad experimental program discussed above was further outlined by Miss Morse in memoranda identified as Exhibits 4A and 4B, dated September 13 and September 27, 1954, which served as guides for Mrs. Johnson in her work. Land's Exhibits 3 and 4 show the results of that program to provide a photomechanical master having an image in terms of hydrophilic silver-free areas and ink-receptive silver areas which would be used in a printing process. In general, the exhibits represent about 35 separate experiments, employing different silver halide emulsions, developer compositions, silver-receptive strata, exposure times and development times. The results are in terms of series of copies, obtained by wetting the unsilvered areas of the master with an aqueous solution, rolling an inked rubber roller over the master to deposit ink on the silver image, and pressing a copy

[6] "Hypo" is sodium thiosulfate, a silver halide solvent.

sheet against the master with a heavy steel roller. Approximately four copies were obtained from each inking of the master; further copies were attained by reinking the master.

Land relies most heavily on experiments performed September 16, 1954, yielding the copies constituting Exhibit 3,[6] as embodying a successful reduction to practice. We have examined those copies, and agree with the characterization of them by Miss Morse:

> XQ188. It shows * * * [ink] in the background, does it not, Miss Morse? A. It does show ink. *Nevertheless, it also clearly shows that the experiment was effective and operative.* We transferred from a silver image made by our technique—we transferred a legible *dense* ink image. [Emphasis supplied.]

That testimony, coupled with her statements that she "was particularly pleased with the work of Mrs. Johnson" and that she thought the experiments were "very exciting" and "potentially commercial" convince us that Miss Morse was satisfied with the results of the work.

The other witnesses similarly indicated their satisfaction with the results of those tests. Martin, in response to a question whether the copy of Exhibit 3 "is an acceptable product as far as copies are concerned," answered "I would say so. * * * It is a good copy." Miss Yankowski testified:

> XQ58. When did you get to the point where you decided that it was no longer experimentation, that you had a workable process? A. *We thought it was workable after the first experiment. We were just improving the quality.*
>
> XQ59. The quality you produced on the very first test would be *commercially acceptable*? A. No; we thought the first few experiments were exciting and they worked. [Emphasis supplied.]

When asked "would you consider this [Exhibit 3] acceptable copy for the trade?", she replied "No, but I think it is good copy. * * * As a matter of fact, we have copying machines that did not do it as well. * * * I don't mean Polaroid; I mean others." Adding those statements to her earlier references to the "good ink reproductions" obtained with the "dense deposits of silver," and considering all of the testimony as a whole, we believe that the dense ink images appearing in Exhibits 3 and 4 satisfied the goals of those conducting the research and were of a quality sufficient to indicate utility in the contemplated environment.

[1] This court has said many times that a commercially acceptable embodiment of the invention is not necessary to proof of actual reduction to practice. *Tansel* v. *Higonnet et al.*, 42 CCPA 732, 215 F.2d 457, 103 USPQ 58; *Schnick* v. *Fenn*, 47 CCPA 1174, 277 F.2d 935, 125 USPQ 567; *Creamer* v. *Kirkwood and Torre*, 50 CCPA 715, 305 F.2d 486, 134 USPQ 330. While the Board recognized that performance of a commercially acceptable quality is not necessarily required, its emphasis on Miss Morse's answer to the question whether Exhibit 3 "was really satisfactory as a commercial operation" we think demonstrates, in final analysis, that it did not apply the standard of those cases in analyzing the testimony and exhibits before it. We do not consider the fact that the witnesses stated the process to be "potentially commercial" or "commercially promising" to be any justification for applying the test of whether the process results were *in fact* commercially acceptable in determining the success of the process.

[6] Exhibit 3 includes a memorandum dated September 16, 1954, from Mrs. Johnson to a Polaroid patent attorney describing how "*the most successful copies were made.*" [Emphasis added.] The record establishes that the negative silver halide emulsion utilized was a commercially available Du Pont X-ray film known as Fine Grain Industrial-Type 506. The aqueous developer solution was coded "0180"; Martin identified that solution as containing hydroquinone as developing agent, sodium hydroxide as alkali, and sodium thiosulfate as silver halide solvent. The silver receptive stratum was coded "RC-2350" and, according to Martin, contained silver sulfide as a silver precipitating agent.

We daresay it is the ultimate goal of every inventor to develop a process which is successful in a competitive commercial market. Simply because the ultimate goal—a process of commercial quality—has not been achieved is no reason to conclude that the practicality of the process has not otherwise been demonstrated or that it does not perform the function for which it was designed.

Other evidence which convinces us that Land and Miss Morse were satisfied with the results obtained by Mrs. Johnson is the following statement in their patent application that

> * * * Commercially available, gelatino silver halide emulsions which have been found to produce good results are sold by Du Pont under the trade designations "X-Ray Fine Grain Industrial 506 * * *."

That emulsion is the same as used in Exhibit 3 and many of the examples in Exhibit 4. We do not have here the situation of the embodiments relied on for reduction to practice being different from those specifically disclosed in the application, as was the case in *Walkup* v. *Grieg*, 52 CCPA 701, 332 F.2d 800, 141 USPQ 777.

The Board concerned itself with the testimony of Miss Morse on cross examination that a problem called "silvering," involving packing of the silver in "too dense" form on the silver-receptive stratum, could prevent satisfactory performance of the process. We believe the Board misinterpreted Miss Morse's testimony in that regard. As Land points out in his brief, the "problem" of "silvering" or "mirroring" was nonexistent so far as the process recited in the count is concerned. The record shows the testimony in question was instead directed to a problem which had undesirably affected the appearance of a positive print obtained in the use of the *commercial* Polaroid Land camera in 1954. The obtention of "silvering" is desired in the process of the interference count, as is clearly evident from the words "thin but substantially continuous, * * * dense masses," appearing therein, and also from Mrs. Johnson's testimony with reference to masters obtained by the process of the count that "the great *density* of the silver image is readily observable by the amount of *reflection of light or 'mirroring,'* as opposed to the usual black as seen by the eye when viewing an ordinary photograph." [Emphasis added.] We again note Miss Morse's testimony, earlier quoted, that "The more *dense* the silver deposit, the more effective it was." [Emphasis added.]

The Board referred to the fact that Mrs. Johnson obtained *only* four copies in some of her work. We must assume the Board regarded that fact as further indication that the results achieved by Land were not successful. If, indeed, the Board would require a showing that *many* copies could be obtained from the process, it went far beyond the terms of the count and Land's specification to glean Land's intended purpose. The count requires but one transfer of ink, and Land's specification, in describing the preferred embodiment of his invention, says "In this way, four good copies * * * were produced without reinking." Cf. *Conner* v. *Joris*, 44 CCPA 772, 241 F.2d 944, 113 USPQ 56.

In referring to the ink in the background of Exhibit 3, which Mrs. Johnson termed "the most successful copies," both the Board and Regan apparently regarded Miss Morse's testimony that "There may be a trace of silver in the background here which was retaining a trace of ink" and that "This is one of the things we were studying" as further evidence that the process had not been successfully reduced to practice.

We do not agree. [2] A successful reduction to practice does not require perfection or incapability of improvement. Furthermore, the interference count calls for "second areas [background] that are *substantially* silver-free," and coating "with an ink which will *preferentially* wet said first areas [which contain silver in dense masses]." [Emphasis added.] That the process of the count was not intended to exclude a trace of silver in the background is evident from the decision of the Primary Examiner who granted motions by both Land and Regan to dissolve the interference as to an earlier count reading "second areas that are silver-free." The Examiner said:

> *Both* parties are in accord that the present count embodies certain language which is inappropriate to a proper description of the invention. The language of the instant count pertaining to the second areas produced in the silver receptive layer as being silver-free is objectionable since apparently *some small amount of silver halide may transfer over from exposed areas of the silver halide stratum.* Moreover, since both parties disclose the use of colloidal silver as silver precipitating nuclei, *manifestly, the second areas are not entirely silver-free.* * * *
>
> * * * * * * * * there is a more acceptable term * * * [in the expression] "substantially." [Emphasis added.]

We believe the results achieved are clearly within the purview of the count.

One further point reserves comment before leaving this aspect of the case. In his brief, Regan places great emphasis on nine of Land's 35 experiments identified as Exhibits 4D1–4D9, all of which show *negative* copies obtained when the ink adhered to the *nonimaged* portions of the master rather than to the silvered portions. Relying on *Sherwood* v. *Drewsen*, 29 App.D.C. 161; *E. I. du Pont de Nemours & Co.* v. *American Cyanamid Co.*, 102 F. Supp. 697; and *Harding* v. *Steingiser et al.*, 51 CCPA 701, 318 F.2d 748, 138 USPQ 32, Regan's position is that Land's experiments as a whole only indicated promise or future fulfillment and that they had not attained a certainty demonstrating the capacity of the invention to produce the desired result.

[3] We think Regan and the Board have placed undue emphasis on that minority of exhibits showing poor results and have neglected to accord proper weight to the good results shown in the exhibits. As we noted earlier, Land's experiments were directed to testing the process using a wide variety of materials under different conditions. The mere fact that Exhibits 4D1–4D9 illustrate that tests using some materials under some conditions were not successful does not mitigate the fact that the successful tests do establish with a reasonable certainty or probability that the process will operate in the intended manner.

Regan's argument might have merit if reproducible results with a given combination of negative, processing composition and silver-receptive stratum had not been achieved by Land. See *Connor* v. *Joris*, supra. But distributed throughout Land's Exhibit 4 are copies obtained using the same materials employed in producing the copies of Exhibit 3. We find those copies to be equal in quality to Exhibit 3, and note that they were obtained on various dates throughout September and October of 1954. Copies obtained by employing other commercial negatives, e.g. Kodak Fine Grain Positive and Du Pont Fine Grain Pan, are equally as good. The record does not support the Board's finding that reasonably good results were not obtained with any degree of consistency, or that Mrs. Johnson was unable to learn how to repeat her better results.

In short, we regard the pattern of results as a whole to be positive in nature, not negative and erratic, and believe Land has proved by a preponderance of the evidence that the tested process operated satisfactory.

For the purpose of that portion of its opinion evaluating the results as set forth above, the Board assumed that the individual steps performed by Mrs. Johnson conformed to the details recited in the remaining steps of the count. Upon consideration of the testimony on the latter point, it found such conformity had not been proved. In reaching that conclusion, the Board granted Regan's motions to strike the testimony of Miss Morse, Mrs. Johnson, Mr. Martin, and Miss Yankowski, directed to establishing certain details of the process, "to the extent that we have refused to consider the testimony of these witnesses on these points."

The record shows that 22 times during cross-examination of the above witnesses, Regan's counsel moved to strike their testimony. Those motions were occasioned by instructions to the witnesses from Land's counsel to refuse to answer certain questions on the grounds that (1) the questions were directed to subject matter not relevant and not material to the invention as defined in the count, and (2) answers to the questions would reveal trade secrets and confidential information.

We consider the following colloquy which took place during cross-examination of the witnesses to be exemplary of the proceedings:

XQ82, 83. In your testimony as to the preparation of Exhibits 3 and 4 * * * what compositions are those? A. [Miss Yankowski] They contain the necessary ingredients, the alkali, the silver halide solvent and the developing agent.

XQ84. Is that all that was present in those compositions? A. I don't remember. There were probably others *but those were the necessary ones.*

XQ85. *What are the other ingredients present in those compositions?* [Emphasis added.]

Mr. Isaacs: I am going to object to this question as immaterial, beyond the scope of the direct and as involving secret and confidential information as to the specific other ingredients, and I therefore instruct the witness not to answer.

XQ86. Will you answer the question Miss Yankowski? A. No.

Mr. Hersh: In the light of the witness' refusal to answer the question, and in the light of her disclosure of only part of the compositions which were employed by her as a basis of her testimony and in the production of Exhibits 3 and 4, and through the experimentation on the subject matter of the application in interference and the count in interference, the senior party is unable to either prove or disprove the testimony of this witness and therefore, is incapable of conducting proper cross examination, and is also incapable of taking rebuttal testimony to prove or disprove the statements of this witness. In the light of our inability to cross examine fully and completely, I move to strike the testimony of this witness, and particularly her testimony with respect to the essential description of the compositions employed by her or by Mrs. Johnson or by Miss Morse in the experimentation. This is withholding critical and essential evidence.

* * * * * * *

XQ123. In paragraph 22 of your stipulated testimony you state that the developing compositions were formulated to contain hydroquinone, sodium hydroxide, and sodium thiosulfate; do you know this of your own knowledge? A. [Miss Yankowski] Yes.

XQ124. *What else did they contain?* [Emphasis added.]

Mr. Isaacs: * * * [Objection.]

* * * * * * *

Mr. Hersh: * * * [Motion to strike.]

Similar objections and motions to strike were made when Martin, after explaining that the silver-receptive stratum RC–2350 contained silver sulfide as silver precipitating nuclei, was questioned as to "what other materials were present" in addition to the silver sulfide.

The Board stated:

> * * * the refusal to answer questions directly related to the process details, which might have enabled Regan to disprove Land's contentions by rebuttal or further cross-examination or might have enabled Regan and this Board to judge whether the conclusions of Land's witnesses were in fact well founded, leaves us no alternative except to ignore the testimony * * * on these points (See *Kelly* v. *Park et al.*, 1897 C.D. 182; *Miller* v. *Kelley*, 1901 C.D. 405; *Reinhert* v. *Gibson*, 1912 C.D. 587 [sic: 387]; *Rogers* v. *Willoughby and Lowell*, 55 App. D.C. 65, 1924 C.D. 342; and 98 Corpus Juris Secundum, paragraph 381, page 141) * * *. * * * refusal to answer questions as to composition pertinent to the direct examination effectively vitiates the examination process. * * * the testimony withheld was necessary to fill out critical information, and might well have confirmed or refuted Land's contentions in support of the counts. * * *

The testimony sought by Regan was, in the Board's judgment, "both relevant and material."

We have examined all of the testimony, as the Board must necessarily have done in reaching its conclusion. In relating that testimony to the count, we observe initially that the process steps set forth in the count are recited in broad terms. The negative utilized is a "silver halide stratum"; the developer solution is recited as "an aqueous alkaline solution of a silver halide developer and a silver halide solvent"; and the "silver-receptive stratum" is defined in terms of its "hydrophilic, water-receptive, silver-receptive" properties and as containing "nuclei for precipitation of silver." It is only those materials and properties which the count requires in the operation of the process.

[4] It is apparent from the foregoing that the witnesses did not withhold information directly material and relevant to the issues defined by the count. The witnesses had already testified specifically as to all the actual ingredients and properties called for by the count when Regan, on cross-examination, collaterally asked, for example, "What else did * * * [the composition] contain?", and the witnesses refused to answer. We think those refusals insufficient grounds to warrant striking the testimony of the witnesses, recalling that a motion to strike, if granted, renders the evidence *inadmissible*. The four cases cited by the Board in support of granting the motions to strike are hardly authority for the action taken. Rather, those cases appear to stand for the proposition that refusal of a witness to answer *pertinent* questions affects the *weight* to be accorded the testimony of the witness.[7] Our further consideration of Land's testimony directed to establishing reduction to practice of the remaining steps of the count will be on the basis that all of the testimony is admissible in evidence because of its obvious material and relevant nature. The refusal of the witnesses to answer Regan's questions will be accorded appropriate significance in our determination of its probative value, credibility and weight.[8]

To establish a reduction to practice of the process steps of the count, Land has the burden of establishing by sufficient credible testimony that the limitations as to materials, properties, steps, and results required by the count were present in the work performed by Mrs. Johnson and Miss Yankowski in September and October of 1954.

[7] See also *Bordenkircher* v. *Sola Electrical y Cia., S.A.*, 100 USPQ 268 (Com. Pat. 1953) for a review of Patent Office practice in this regard.

[8] The view we take of this case renders it unnecessary to consider whether the questions propounded by Regan on cross-examination were directed to material and relevant subject matter. It should also be readily apparent that this court is not capable, on this record, to determine the validity of Land's second ground for refusal to answer Regan's allegedly material questions, that of privilege arising from trade secrets.

Unlike the Board, we are satisfied that Land has proven by a preponderance of the evidence the hydrophilic character of the silver-receptive stratum, the presence of nuclei for precipitation of silver, the recited constituents of the developer composition, the specific mechanism of silver diffusion and precipitation, the concentration of the silver at the surface of the master, the substantial freedom from silver of the non-imaged areas, and the preferential wetting of the imaged (silvered) areas by the ink.

In his brief, Regan again draws attention to Exhibits 4D1–4D9 as "indicative of the fact that the non-silvered non-imaged portions [of the master] were less hydrophilic and water receptive than the silvered imaged portions," and as showing that the ink did not preferentially wet the silvered areas. While we agree with Regan's arguments as to those nine exhibits, we think the converse of the argument is equally true, and that the remaining 25–30 test results in Exhibits 3 and 4 show the non-silvered areas were hydrophilic and the ink preferentially wetted the silver image. Mrs. Johnson's memorandum in Exhibit 3, describing the technique used to make the copies therein, states that the master was "swabbed" with "Platex" [a commercially available aqueous solution used to wet non-imaged, hydrophilic areas of lithographic plates] before being inked. In paragraph 3 of the memorandum, she observed that "the ink adhered only to the black lettering and not to the * * * background."

We have considered Regan's additional assertions in his brief and at oral argument that complete information as to the materials present in the developer solution and silver receptive stratum was necessary because

> It is well known by those skilled in the art that any *resinous material, oil or other oleophilic ingredients in the developing solution or in the silver receptive stratum* will function as an imaging material to interfere with the balance between the ink receptive, water repellent image portion and the hydrophilic, water receptive, ink repellent non-imaged portion of the silver receptive stratum so that the plate would no longer be *suitable* for a copy process. [Emphasis added.]

We do not find those speculations to weaken the positive force of either the testimony or the exhibits. The exhibits as a whole illustrate better than words the improbability of the presence of foreign materials which affect the process.

As for the recited constituents of the developer solution, we noted earlier that Martin's stipulated testimony states that he knew "of his own personal knowledge that the 0180 processing solution [utilized in Exhibit 3 and also many times in Exhibit 4] was an aqueous alkaline solution which contained hydroquinone [developing agent], sodium thiosulfate [silver halide solvent] and sodium hydroxide." That testimony stands uncontradicted, and was subject to no motion to strike.

It would unduly lengthen this opinion to analyze in detail all the testimony of the witnesses relating to the remaining features of the count. We have considered Regan's further contentions that Land has not proven the non-imaged areas to be substantially free of silver. Our study of the entire record in light of Regan's arguments convinces us that the process practiced by Land and his associates in September and October of 1954 conformed to the limitations of the count.

The decision is reversed.

REVERSED.

United States Court of Appeals
District of Columbia Circuit

SHELDON L. POLLACK, ET AL. *v.* DAVID L. LADD, COMMISSIONER OF PATENTS

No. 18,801. Decided April 8, 1965

[— U.S.App.D.C. —; — F.2d —; — USPQ —]

1. PATENTABILITY—EVIDENCE—COMMERCIAL SUCCESS.
"There is no question that the appellants taught an improved method of erecting a highly useful grout-filled monolithic building wall. The results in actual use were seen to be excellent, indeed the evidence showed a high degree of commercial success. Important though such factors may be in a close case, of themselves they do not establish patentability. The trial judge reasonably could have concluded that there simply was an inadequate showing of invention."

2. SAME—PARTICULAR SUBJECT MATTER—REINFORCED BRICK WALL AND METHOD FOR ITS ERECTION
The judgment of the District Court, dismissing the complaint in a suit under 35 U.S.C. 145 to authorize the issuance of a patent with claims to a reinforced brick wall and a method for its erection, is affirmed.

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Elwood S. Kendrick (*E. H. Mosher* and *A. Donald Stolzy* of counsel) for appellants.

Clarence W. Moore (*George C. Roeming* of counsel) for appellee.

Before WILBUR K. MILLER, *Senior Circuit Judge*, and DANAHER and McGOWAN, *Circuit Judges*

DANAHER, *Circuit Judge:*

After adverse rulings by the tribunals of the Patent Office, the appellants here asked the District Court to authorize the Commissioner to issue a patent on their application, Serial No. 825,124. Particularly involved were the appellants' claim 17 respecting a method of erection of a high-strength grout-filled metal-reinforced brick wall and claim 18 describing a relatively inexpensive wall constructed in accordance with the method of claim 17. After the *de novo* trial authorized by 35 U.S.C. § 145 (1958), the District Judge rendered an opinion pursuant to which judgment was entered for the Commissioner.

The experienced and able trial judge concluded that each of the claims at issue was directly readable upon prior art. Our examination of the entire record has persuaded us that we are bound to affirm.

[1] There is no question that the appellants taught an improved method of erecting a highly useful grout-filled monolithic building wall. The results in actual use were seen to be excellent, indeed the evidence showed a high degree of commercial success. Important though such factors may be in a close case, of themselves they do not establish patentability. The trial judge reasonably could have concluded that there simply was an inadequate showing of invention.

[2] We are bound to affirm.[1]

[1] *Standard Oil Development Co. v. Marzall*, 86 U.S.App.D.C. 210, 214, 181 F.2d 280, 284 (1950); cf. *L-O-F Glass Fibers Company v. Watson*, 97 U.S.App.D.C. 69, 76, 228 F.2d 40, 47 (1955).

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,494,239, J. G. Collison, BONE SURGERY, filed Sept. 15, 1961, D.C. Md. (Baltimore), Doc. 13/303, *Collison Surgical Engineering Company* v. *Murray-Baumgartner Surgical Instrument Co., Inc.* Complaint dismissed; claims 1 to 3 held invalid June 22, 1964. Appealed Nov. 5, 1964, C.C.A., 4th Cir., Doc. 9722, *The Collison Surgical Engineering Company* v. *Murray-Baumgartner Surgical Instrument Co., Inc.* Decree of District Court affirmed Mar. 4, 1965.

2,702,686, Basile and Terry, APPARATUS FOR STRIPPING INSULATION FROM WIRE; 2,985,726, C. L. Basile et al., METHOD OF STRIPPING INSULATION FROM WIRE; 3,000,405, same, APPARATUS FOR STRIPPING INSULATION FROM WIRE, filed Nov. 1, 1960, D.C., N.D. Ill. (Chicago), Doc. 60c1698, *Taylor Spring and Manufacturing Co.* v. *Lewis Spring and Manufacturing Co.* Patent No. 3,000,405 included by supplemental complaint Sept. 25, 1961. Final judgment—claims 1, 2, 3, and 4 of Pat. 2,702,036; claims 1 and 2 of Pat. 2,985,726; and claims 1, 2, 3, and 4 of Pat. 3,000,405 held valid and infringed. Defendant's counterclaim dismissed Dec. 8, 1964.

2,714,008, Jewett and Case, PLANOGRAPHIC PRINTING PLATE, filed Aug. 6, 1953, D.C., N.D. Ohio (Cleveland), Doc. 54709, *Minnesota Mining and Manufacturing Co.* v. *The Carpenter Printing Co. et al.* Final judgment; action dismissed as to defendants Ellison B. Carpenter and Paul F. Carpenter; further order terminating and canceling preliminary injunction originally granted; no injunction granted; patent held valid and infringed by corporate defendants Dec. 17, 1964.

2,724,967, G. R. Churchill, BUFFING WHEEL, filed Nov. 22, 1950, D.C., N.D. Ill. (Chicago), Doc. 59c1859, *George E. Churchill Co., Inc.* v. *American Buff Co. et al.* Judgment that plaintiff take nothing; action dismissed on the merits Dec. 21, 1964.

2,726,670, J. J. J. Staunton, FLOW CONTROL APPARATUS; 2,760,604, H. A. Frediani, METHOD AND APPARATUS FOR CONTROL OF TITRATIONS AND OTHER PHENOMENA; 2,976,966, Malloy and Braymer, SELF-ZEROING AMPLIFIER; 2,976,850, M. C. Sans, PIPETTE; 3,050,239, F. G. Williams, Jr., CENTRIFUGE APPARATUS, filed July 10, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1340, *Beckman Instruments, Inc.* v. *Coleman Instruments, Inc.* Patent 2,740,604 held invalid; portions of complaint relating to said patent dismissed; judgment for defendant with respect to said patent Oct. 24, 1963. Patent Nos. 2,970,266 and 2,974,528 held valid and infringed by defendant. Defendant has not infringed 3,050,239; no ruling made as to validity; action dismissed with prejudice as to said Patent 3,050,239. Plaintiff nor counter-claimant, Harold A. Frediani, has infringed Pat. 2,726,670; no ruling made as to validity; action dismissed with prejudice as to said Pat. 2,726,670 Oct. 21, 1963. Mandate of U.S.C.A. judgment affirmed Dec. 3, 1964.

2,727,977, L. R. Fean, CIGAR LIGHTER, filed Dec. 31, 1964, D.C. Conn. (New Haven), Doc. 10781, *The Cusco Products Corp.* v. *Cusco Engineering Corp.*

2,760,604. (See 2,726,670.)

2,741,690, O. Junker, ELECTRIC INDUCTION HEATING PLANT AND A METHOD OF CONNECTING IT TO A THREE-PHASE NETWORK, filed Dec. 29, 1964, D.C.N.J. (Newark), Doc. 1164–64, *Inductotherm Corporation et al.* v. *Brown Boveri Corporation.*

2,754,949, W. B. Kinney, CASEIN ADHESIVE COMPOSITION AND LAMINATED STRUCTURE UTILIZING THE SAME, filed Dec. 7, 1961, D.C., N.D. Ohio (Cleveland), Doc. 37401, *The Borden Co.* v. *General Latex & Chemical Corp. et al.* Final consent judgment; patent held valid and infringed; defendant restrained Dec. 28, 1964.

2,762,479, L. Zwaig et al., ABRADING MACHINE, filed Dec. 7, 1964, D.C., S.D.N.Y., Doc. 64/3753, *Zwaig Bros.* v. *Samuel Aaron, Inc. et ano.* Consent judgment; defendants enjoined Feb. 10, 1965.

2,762,694, M. Shannon, METHOD OF PERMANENTLY PLEATING FABRIC, filed Oct. 2, 1963, D.C., S.D.N.Y., Doc. 63/2880, *J.E.S. Textiles Corp.* v. *Ernest J. Michel Co., Inc. et ano.* Order of dismissal Dec. 9, 1964.

2,769,965, J. N. Frey, NYLON-JACKETED CONNECTOR, filed Aug. 17, 1962, D.C., N.D. Ohio (Cleveland), Doc. C62–635, *The Thomas & Betts Co.* v. *ETC Incorporated.* Consent judgment; patent held valid; action dismissed Dec. 7, 1964.

2,785,487, P. Hopp, DISPLAY DEVICE, filed Sept. 16, 1963, D.C., S.D.N.Y., Doc. 63/2721, *The Hopp Press, Inc.* v. *E. J. Korvette, Inc. et ano.* Consent order discontinuing action Dec 1, 1964.

2,786,288, H. Kanter, NECKTIE FORM, filed Nov. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C612(2), *France Neckwear Co., Inc.* v. *Frank & Meyer Neckwear Co., Inc.*

2,810,549, W. A. Morrison, FLUID ACTUATING PERCUSSIVE TOOL; 2,967,519, E. H. Kurt, HOLE CLEANING DEVICE, filed Oct. 10, 1963, D.C., S.D. Tex. (Houston), Doc. 63–H–563, *Ingersoll-Rand Company* v. *Mission Manufacturing Company.* Case dismissed Dec. 23, 1964.

2,817,392, M. I. Thomas, WEB FASTENING, filed Mar. 27, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–307, *Morton I. Thomas* v. *Living Aluminum, Inc.* Order of discontinuance Oct. 29, 1964.

2,822,670, R. E. Page, UNDERWATER BREATHING APPARATUS, filed Feb. 20, 1962, D.C., S.D. Calif. (Los Angeles), Doc. 62–304–WM, *Rory Everett Page et al.* v. *U.S. Divers Co., Inc.* Action dismissed with prejudice Dec. 1, 1964.

2,825,073, C. Harris, LEGS FOR HOLLYWOOD BEDS, filed Dec. 24, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2149, *Harris Hub Company, Inc.* v. *Nechman Metal Products Co.*

2,832,627, C. T. Link et al., STREET SWEEPER DIRT BOX ASSEMBLY, filed Sept. 21, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1592, *Elgin Sweeper Company* v. *Wayne Manufacturing Co.* Stipulation dismissing cause with prejudice Dec. 2, 1964.

2,836,455, N. Anton, POWER TOOLS, filed Mar. 7, 1960, D.C., N.D. Ill. (Chicago), Doc. 60c956, *Wen Products, Inc.* v. *Portable Electric Tools, Inc.* Claims 4, 5, 6, and 7 of Patent 2,866,485 held valid but not infringed; complaint dismissed with prejudice (notice Jan. 18, 1965).

2,839,468, E. W. Worthington, ROTARY LETTERPRESS INK FOUNTAIN, filed Dec. 22, 1964, D.C.N.J. (Camden), Doc. 1146–64, *Emery W. Worthington* v. *Southern New Jersey Newspapers, Inc.*

2,877,520, J. C. Jurelt, CONNECTOR, filed May 11, 1961, D.C., E.D. Mo. (St. Louis), Doc. 61C160(3), *Automated Building Components, Inc.* v. *Hydro-Air Engineering, Inc.* Memo opinion and order—claims 1, 3 and 4 of Pat. 2,877,520 held invalid; complaint and counterclaim dismissed Dec. 14, 1964. Same, filed Feb. 15, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c962, *Gang-Nails, Inc.* v. *Truss-O-Matic, Inc.* Claims 1, 3 and 4 of Pat 2,877,520 held invalid; complaint dismissed; defendant's counterclaim for violation of anti-trust laws dismissed Mar. 26, 1965.

2,882,940, C. Zellweger, FILLING VALVES FOR LIQUEFIED GAS LIGHTER; Re. 24,168, same, VALVES FOR FILLING PYROPHORIC LIGHTERS FOR LIQUIFIED GAS, filed July 5, 1962, D.C., S.D.N.Y., Doc. 62/2388, *Ronson Corp. et ano.* v. *Mark 69 Ltd. et ano.* Final consent decree; injunction granted; defendants' counterclaim dismissed Dec. 1, 1964.

2,884,841, H. B. Dickinson, HOT BITUMINOUS CONCRETE SURFACE TREATMENT AND PROCESS, filed Oct. 12, 1960, D.C. Conn. (New Haven), Doc. 8505, *The Dia-Seal Corporation* v. *The New Haven Trap Rock Co. et al.* Complaint dismissed; issues are found for defendants on their counterclaim; patent held invalid Dec. 15, 1964.

2,888,797, J. A. Van Horn et al., ELECTRIC WATCH; 2,964,664, Biemiller and Reese, MAGNETIC CIRCUIT FOR AN ELECTRIC WRIST WATCH; 2,972,745, same, ELECTRIC WRIST WATCH, filed Jan. 21, 1965, D.C. Md. (Baltimore), Doc. 16102, *Hamilton Watch Company* v. *United States Time Corporation.* Same, filed Apr. 17, 1963, D.C. Md. (Baltimore), Doc. 14586, *Hamilton Watch Company* v. *The Read Drug & Chemical Company of Baltimore City.* Order of dismissal (notice Feb. 15, 1965).

2,896,262, A. Strauss, ARTIFICIAL ARTICLES IMITATING NATURAL ARTICLES, filed Mar. 20, 1964, D.C., Dist. of Col., Doc. 675–64, *Arvid Morie* v. *S. S. Kresge Company.* Case dismissed with prejudice Jan. 15, 1965. Same, filed Mar. 6, 1964, D.C., Dist. of Col., Doc. 573–64, *Arvid Morie* v. *Sears, Roebuck & Co.* Case dismissed Apr. 8, 1965.

2,897,822, M. M. Scheinberg, FOUNDATION GARMENT, filed June 25, 1962, D.C., S.D.N.Y., Doc. 62/1894, *De Luxe Girdlecraft Co., Inc.* v. *J. C. Penney Co., Inc.* Stipulation and order of discontinuance Jan. 18, 1965.

2,900,696, Dempster and Herpich, FRONT END LOADERS, filed Dec. 4, 1959, D.C., W.D.N.Y. (Buffalo), Doc. 5528, *Dempster Bros., Inc. et al.* v. *Buffalo Metal Container Corp. et al.* Order dismissing complaint (notice Dec. 23, 1964).

2,917,204, W. W. Davis, CONTROL FOR A ROOM AIR CONDITIONER, filed May 15, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1005, *William W. Davis* v. *Montgomery Ward and Co., Incorporated.* Complaint and counterclaim dismissed with prejudice Dec. 16, 1964.

2,927,626, Corwin and Bennett, INSULATING BLANKET FOR CONCRETE, filed Dec. 21, 1964, D.C. Minn. (St. Paul), Doc. 3–64–359, *Robert G. Bennett et al.* v. *North Central Supply Co.*

2,935,766. (See 2,703,026.)

2,937,619. (See 2,810,549.)

2,942,924, M. Goldenberg, TELEVISION VIEWING SCREEN, filed Dec. 30, 1964, D.C., S.D. Ind. (Evansville), Doc. EV64–C–111, *Max Goldenberg* v. *Radio Corporation of America.*

2,954,994. (See 2,893,797.)

2,962,345, Seglin and Winnicki, METHOD FOR PREPARING DENSE SODIUM CARBONATE FROM CRUDE TRONA, filed Apr. 18, 1963, D.C. Wyo. (Cheyenne), Doc. 4704, *F.M.C. Corporation* v. *Stauffer Chemical Company et al.* Stipulation and order of dismissal Dec. 23, 1964.

2,970,266. (See 2,726,670.)

2,972,745. (See 2,893,797.)

2,974,528. C. W. Harris, OPTICAL DETECTOR, filed Jan. 13, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–49–WM, *Aerojet-General Corporation* v. *Lockheed Aircraft Corporation.*

2,974,528. (See 2,726,670.)

2,981,086, S. Ludwig, SHAPED KNITTED COLLARS AND METHODS OF MANUFACTURE THEREOF, filed June 8, 1962, D.C., S.D.N.Y., Doc. 62/2048, *Celanit, Inc.* v. *Hilton Knitting Ltd.* Stipulation and order discontinuing action without prejudice Jan. 12, 1965.

2,984,090, S. L. Bennett, SHIELD FOR DRIVE SHAFT, filed Dec. 21, 1964, D.C., N.D. Tex. (Lubbock), Doc. 5–204, *Irrigation Service Company* v. *Homesteader Corporation.*

2,987,727, Gibbons and Schnell, AUTOMATIC APPARATUS FOR ASSEMBLING A POCKET CLIP WITH A CAP, filed Sept. 21, 1963, D.C., S.D.N.Y., Doc. 63/2218, *Solomon H. Schnell* v. *Shetsky Metal Stamping Co., Inc. et ano.* Order of discontinuance Jan. 7, 1965.

2,994,430, A. A. Tobias, CUP GUIDING AND POSITIONING MEANS, filed Oct. 16, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1857, *The Seeburg Corporation* v. *Rock-Ola Ivi Corporation.* Consent judgment; patent held valid and infringed; counterclaim dismissed Jan. 14, 1965.

2,999,289. (See 2,726,670.)

3,007,442, Bialy and Klebech, LAST BLOCKS AND SHOE LASTS MANUFACTURED THEREFROM, filed May 20, 1963, D.C., S.D. Ohio (Cincinnati), Doc. 5843, *Lesiyna Products Corporation* v. *Vulcan Corporation.* Complaint dismissed; patent held invalid Apr. 8, 1965.

Re. 24,162. (See 2,882,940.)

Re. 25,269, E. G. Rice, COMBINATION STOCKINGS AND PANTY, filed Dec. 3, 1962, D.C., M.D.N.C. (Greensboro), Doc. C–217–G–62, *Morpul, Inc.* v. *Glen Raven Knitting Mill, Inc.* Release patent held not infringed; defendant's motion for summary judgment granted and counterclaim of defendant as to non-infringement is sustained; plaintiff's complaint dismissed Mar. 1, 1965. Same, appealed Apr. 19, 1965, C.C.A., 4th Cir., Doc. 10,000, *Morpul, Inc.* v. *Glen Raven Knitting Mill, Inc.*

REISSUES

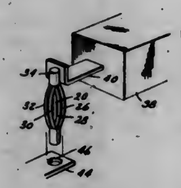
JUNE 15, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,797
PREPARATION OF STRAIGHT CHAIN ACIDS
Stanley B. Mirviss, Westfield, and Elroy J. Inchalik, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Original No. 2,827,458, dated Mar. 18, 1958, Ser. No. 592,242, June 19, 1956. Application for reissue Feb. 23, 1960, Ser. No. 10,523
5 Claims. (Cl. 260—540)

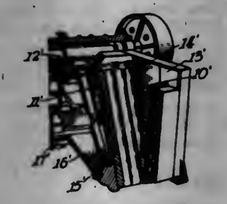
8. A method of preparing monocarboxylic acids which comprises reacting aluminum trialkyl having an average of over 4 and at most 20 carbon atoms per alkyl radical, with carbon dioxide at —20 to 180° C. and 0 to 3000 p.s.i.g. pressure in the presence of 0.5 to 20 volumes of an inert diluent per volume of aluminum trialkyl for a period of time sufficient to form an aluminum salt of the desired acid in a carbonation stage, treating the product mixture from the carbonation stage with a gas selected from the group consisting of air and oxygen at 20° to 100° C. and 0 to 1000 p.s.i.g. pressure to convert unreacted aluminum alkyl therein to the corresponding aluminum alcoholate, hydrolyzing the mixture containing said alcoholate and said aluminum salt to yield an alcohol derived from the alcoholate and an acid derived from the aluminum salt and separating said acid from said alcohol.

25,798
PLUG-IN CONNECTOR
Elwood T. Platz, Grosse Pointe Farms, and William H. Frank, Detroit, Mich., assignors, by mesne assignments, to New Twist Connector Corporation, Santa Monica, Calif., a corporation
Original No. 3,017,605, dated Jan. 16, 1962, Ser. No. 631,090, Dec. 28, 1956. Application for reissue June 14, 1963, Ser. No. 288,065
8 Claims. (Cl. 339—252)



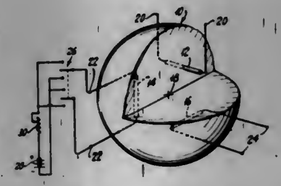
1. A male plug-in connector adapted to be constructed from wire having a plurality of outer conducting stands helically wound about a central strand, said connector comprising a plurality of conducting strands encompassing a central strand; said plurality of conducting strands being fixedly secured directly to said central strand at a first and a second point along the axis of said connector; said central strand being of shorter length than said encompassing strands, said encompassing strands being bowed outwardly to form a cage about said central strand; the outer periphery of said cage formed about said central strand being frictionally engageable with at least a portion of the inner surface of a cooperating female type connector with said central strand comprising a reference for biasing forces urging the encompassing strands outward.

25,799
ROCK CRUSHER
Benton L. Perdue, Portland, Oreg., assignor to Esco Corporation, Portland, Oreg., a corporation of Oregon
Original No. 3,144,214, dated Aug. 11, 1964, Ser. No. 178,361, Mar. 8, 1962. Application for reissue Sept. 24, 1964, Ser. No. 410,341
9 Claims. (Cl. 241—291)



8. In a crusher jaw for rock, and the like, the improved replaceable jaw die comprising a plate-like body having a vertically corrugated working face, said face being characterized by elongated, vertically-extending, spaced-apart, substantially identical valleys defining respectively adjacent crowns and roots with the spacing between corresponding points on adjacent teeth constituting the pitch dimension, each of said teeth at the point of greatest tooth height having upstanding side walls includable within an angle of from about 30° to about 40° and a root-to-crown dimension from about 50% to about 85% of said pitch dimension.

25,800
WEIGHT BALANCING ARRANGEMENT
Edward J. Mullarkey, 141 Boulevard, Scarsdale, N.Y.
Original No. 2,945,398, dated July 19, 1960, Ser. No. 687,833, Oct. 2, 1957. Application for reissue Mar. 29, 1961, Ser. No. 101,036
6 Claims. (Cl. 74—573)



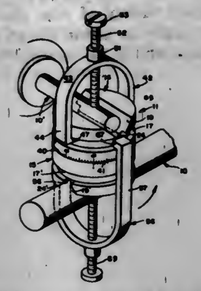
1. An arrangement for precisely balancing a body comprising in combination: a body having a center of gravity, and means carried by said body to shift said center of gravity comprising a totally enclosed chamber having walls which are electrically insulating and liquid proof, a quantity of liquid electrolyte within said chamber, two spaced metal electrodes in said chamber in intimate contact with said electrolyte, said electrolyte being free of voids between said electrodes, means including conductive members for applying an electric current through said electrolyte to alter the relative weights of said electrodes and thereby shift the center of gravity of said body, and resilient means to permit said electrolyte and said housing to expand and contract without creating voids in the electrolyte.

25,801
HYDRAULIC ROTARY ENGINE
Sven A. Noren, Valhallavagen 79, Stockholm 70, Sweden
Original No. 2,979,036, dated Apr. 11, 1961, Ser. No. 811,375, May 6, 1959. Application for reissue June 12, 1963, Ser. No. 287,744
Claims priority, application Sweden, May 9, 1958, 4,487/58
4 Claims. (Cl. 103—126)



6. A hydraulic rotary engine comprising in combination a cylindrical working chamber, a cylindrical hub portion coaxial with said chamber so as to form an annular working space therein, said hub portion including two parts defining therebetween an arcuate groove having two coaxial cylindrical walls and opening at both ends into said space within the outer circumference thereof, a first rotor coaxial with said hub portion and having axial teeth having flat flanks received in said annular working space and making a sealing fit therewith, and a second rotor coaxial with said cylindrical walls and having axial teeth received in said arcuate groove and in the annular working space to cooperate with the tooth spaces of said first rotor while making a sealing fit with said arcuate groove only, the teeth of the second rotor having cylindrical faces engaging the flat flanks of the teeth of the first rotor, the axes of said faces being parallel with the rotor axes and their rotary path passing through the axis of the first rotor.

25,802
WORK HOLDER
Arnold M. Steffen, Woodland Hills, Calif. (P.O. Box 33, Tarzana, Calif.)
Original No. 3,103,352, dated Sept. 10, 1963, Ser. No. 89,309, Feb. 14, 1961. Application for reissue Apr. 17, 1964, Ser. No. 373,118
14 Claims. (Cl. 269—45)



14. A holding appliance adapted to clamp a first workpiece in any angular position in a first plane and a second workpiece in any angular position in a second plane comprising:
(a) a first member having circumferential engaging means about its side surface adjacent to its first end surface;
(b) a second member rotatably mounted on said first member and having its first end surface remote from said first member and having circumferential engaging means about its side surface adjacent to its first end surface, said first and second members having a common longitudinal axis and abutting end surfaces;
(c) a first yoke rotatably mounted over said first end surface of said first member, said first yoke having legs slidably received by one of said circumferential engaging means and having means for clamping a first workpiece to said first end surface of said first member; and
(d) a second yoke rotatably mounted over said first end surface of said second member, said second yoke having legs slidably received by the other of said circumferential engaging means and having means for clamping a second workpiece to said first end surface of said second member.

PLANT PATENTS

GRANTED JUNE 15, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,535
CARNATION
Osamu Honda, Redwood City, Calif., assignor to Woodside Nurseries Co., Redwood City, Calif., a corporation of California
Filed Nov. 6, 1963, Ser. No. 321,988
1 Claim. (Cl. Plt.—70)

The new and distinct variety of carnation substantially as herein described and illustrated.

2,536
CARNATION
Osamu Honda, Redwood City, Calif., assignor to Woodside Nurseries Co., Redwood City, Calif., a corporation of California
Filed Nov. 6, 1963, Ser. No. 321,989
1 Claim. (Cl. Plt.—70)

The new and distinct variety of carnation substantially as herein described and illustrated.

2,537
***VERBENA PERUVIANA* PLANT**
George H. Fujii, 16711 S. Berendo, Gardena, Calif.
Filed Nov. 1, 1963, Ser. No. 320,974
1 Claim. (Cl. Plt.—87)

A new and distinct variety of Verbena plant substantially as illustrated and described, characterized by its violet-purple individual flowers with the outer portion of the flower Petunia Purple and with the central portion of the flower that merges into Beetroot Purple surrounding the central yellow-green eye, by its cluster of many flowers borne on stiff erect stems, by its bright green leaves that are opposite each other on the stems, and by its vigorous growth.

2,538
ROSE PLANT
Herbert C. Swim, Ontario, and O. L. Weeks, Chino, Calif., assignors to said O. L. Weeks, doing business as Weeks Wholesale Rose Grower, Chino, Calif.
Filed Mar. 13, 1964, Ser. No. 351,878
1 Claim. (Cl. Plt.—28)

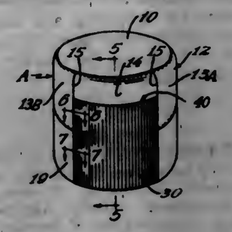
A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a relatively low-growing and compact habit of growth, flower buds of long-pointed to urn-shaped form, flowers ranging from small to medium size, with semi-double petalage, a habit of bearing the flowers in clusters composed of a relatively large number of flowers in each cluster, said flowers being borne in profusion, with consequent creation of an attractive mass effect which substantially covers the plant, a distinctive and attractive Bright Red general color tonality of the flowers, long-lasting flower qualities, and better than average resistance to powdery mildew.

PATENTS

GRANTED JUNE 15, 1965

GENERAL AND MECHANICAL

3,188,654
CAP
Samuel Rafowitz, 1922 Morgan Ave., and Chaim Book, 1916 Morgan Ave., both of St. Paul, Minn.
Filed Dec. 23, 1963, Ser. No. 332,352
3 Claims. (Cl. 2—172)



1. A cap including,
a cap body including a crown and front and side portions terminating at their lower edges along a substantially common plane, and a rear portion terminating intermediate the crown and said common plane to define a generally rectangular notch at the rear of the body,
a visor secured to the lower edge of said cap body opposite to said notch,
side flaps foldably secured to the lower edges of said cap body between said visor and said notch and terminating in substantial alignment with the sides of said notch,
a cap liner substantially coextensive with said cap body and secured thereto along the lower edges of the front and sides of said cap body,
a resilient insert including a pair of generally rectangular panels foldably connected along their lower edges to form inner and outer resilient panels,
means connecting the outer panel to the rear edges of the side portions and the rear portion of the cap body but free of connection with said liner,
means connecting the inner panel to the liner and free of direct connection with said cap body,
said resilient insert terminating on substantially a common plane with the lower edges of said side flaps, and
means connecting the sides of said resilient insert to the rear edges of said side flaps.

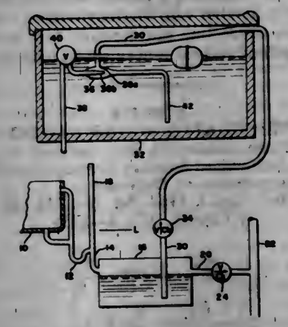
3,188,655
HARNESS FOR CONTROL OF UPPER EXTREMITY PROSTHESIS
Carl Martin Cooper, 3434 Millbrook; William B. Salmon-ott, 895 Alamos Ave.; and Clarence A. Renfro, 5738 N. Palm Ave., all of Fresno, Calif.
Filed Apr. 5, 1962, Ser. No. 185,419
2 Claims. (Cl. 3—12.1)

2. A harness for control of an upper extremity prosthesis comprising a suspension loop, a suspension strap, and a pair of control straps; said suspension loop comprising a generally L-shaped rigid member having a vertically extending anterior leg and an underarm portion with a posterior extremity; said suspension strap comprising a shoudler strap having a posterior end attached to said posterior extremity and an anterior end adapted for attachment to the prosthesis; one of said control straps comprising a shoulder strap having one end attached to the upper end of said anterior leg, the other control strap



being attached at one end to said posterior extremity, the opposite ends of said control straps being connected together; and a connection for a control cable for the prosthesis on the connected ends of said straps.

3,188,656
APPARATUS FOR THE COLLECTION AND UTILIZATION OF WASTE WATER
Wayne A. Dreger, P.O. Box 410, Ben Lomond, Calif.
Filed Apr. 2, 1963, Ser. No. 270,910
3 Claims. (Cl. 4—3)



1. Apparatus for utilization of waste water which comprises a primary water utilization unit from which waste water is discharged, a secondary water utilization unit, means for delivering fresh water to said secondary water utilization unit, and means for delivering waste water discharged from said primary water utilization unit to said secondary water utilization unit, said waste water delivering means being operative in response to delivery of fresh water to said secondary water utilization unit.

3,188,657
LIFT FOR SITZ BATH
John C. Cotner, 117 E. Rosslawn Drive, Logansport, Ind.
Filed Nov. 29, 1962, Ser. No. 240,576
18 Claims. (Cl. 4—185)

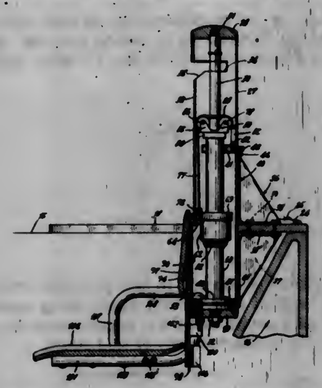
1. A lift for a sitz bath, comprising
(a) supporting means mountable on a tub rim and constituting the sole means of mounting the lift in operative position,
(b) a vertically extending housing carried from said supporting means within the longitudinal extent of

the tub cavity and having a slot formed therein consisting of a first vertical stretch continuous at its upper end with a second horizontal stretch,

(c) a vertically movable piston carried in said housing,

(d) a chair having a seat and back rest and slidably carried against the outer face of said housing,

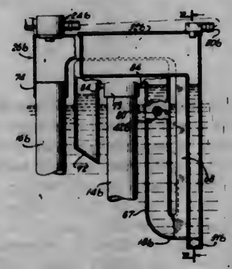
(e) means extending through said slot operatively interconnecting said chair and piston for vertical move-



ment of said chair relative to the housing along said first stretch upon vertical movement of said piston and rotational movement of said chair relative to the housing along said second stretch between a loading and unloading position generally normal to the longitudinal tub axis and a raising and lowering position generally parallel with the longitudinal tub axis, and

(f) means connecting said housing to a power source for effecting vertical movement of said piston.

3,188,658
VENTILATED WATER CLOSET
Farris E. Dixon, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,588
7 Claims. (Cl. 4—215)



1. In a water closet having a bowl, a flush tank, and an overflow tube providing communication between the flush tank and the bowl, the improvement comprising, a discharge tube in said flush tank, a U-shaped ventilator water seal providing communication between said overflow tube and said discharge tube, an upright U-shaped overflow seal trap for preventing the passage of air from inside said flush tank into said overflow tube, said overflow seal trap having one leg in communication with the interior of said flush tank said overflow seal trap and discharge tube being on one side of said overflow tube and said U-shaped ventilator water seal being on an opposite side, a first crossover conduit between one leg of said U-shaped ventilator water seal and said discharge tube, a second crossover conduit between the other leg of said U-shaped water ventilator seal and the other leg of said overflow seal trap, said second crossover conduit being in communication with the mouth of said overflow tube and having conducting means at a lower elevation than the mouth of said overflow tube such that when said U-shaped water ventilator seal is filled, water will flow through said conducting means to fill said upright U-shaped overflow seal trap and thereafter flow to the mouth of said overflow tube, and aspirator means communicating with said discharge tube and operable upon activation to simultaneously withdraw water from said U-shaped water ventilator seal and to produce a reduced pressure in said discharge tube to withdraw air from said bowl, and means for activating and deactivating said aspirator means whereby upon deactivation the U-shaped water ventilator seal between the overflow tube and discharge tube is established.

3,188,659
MEDICAL TREATING TABLE EQUIPMENT
Nils Viktor Georg Lundgren, Stockholm, and Stig Börje Sixten Pettersson, Bandhagen, Sweden, assignors to Kirurgiska Instrument Fabriks Aktiebolaget KIFA, Solna, Sweden, a corporation of Sweden
Filed July 11, 1962, Ser. No. 209,207
Claims priority, application Sweden, July 20, 1961, 7,495/61; Germany, Apr. 18, 1962, A 39,989
12 Claims. (Cl. 5—86)



1. A medical treating-table equipment comprising a treating-table substructure, a carriage, plate-supporting means provided on said carriage and vertically reciprocable plate-supporting means provided on said table substructure, and a treating-table lying plate adapted to be selectively supported on said supporting means, said carriage having a wheel-supported frame continuously open on the top and on one side, said table substructure and said frame being dimensioned to enable the latter to be moved horizontally with said one side leading to a predetermined plate-transferring position in which said table substructure is disposed within said frame with said supporting means of the carriage positioned substantially in vertical alignment with said plate-supporting means of the table substructure, said table substructure being provided with means for elevating said supporting means of the table substructure when said frame is in said transferring position, so as to perform a transfer function by vertically lifting said plate from said carriage and by alternately lowering the same for being verically deposited onto said carriage.

3,188,660
HOSPITAL BED MATTRESS
Yolan R. Guttman, Box 304, Radio City Station, New York, N.Y.
Filed Feb. 10, 1964, Ser. No. 343,653
4 Claims. (Cl. 5—91)

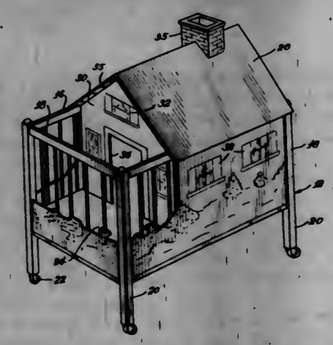
1. A mattress for a hospital bed having an upwardly moving articulated head portion, said mattress comprising, in combination, a main mattress section, a head mattress section substantially covering the head portion of said bed, fastening means each being fixed to said mattress sections near one of the four corners of each

side of each of said mattress sections, and two elastic strips extending across abutting edges of said main mattress section and said head mattress section and engag-



ing corresponding adjoining fastening means on the undersides of said mattress sections urging said sections together.

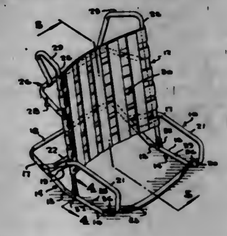
3,188,661
KNOCKDOWN STRUCTURE FOR USE WITH A CHILD'S ENCLOSURE, SUCH AS A CRIB
Stephen J. Rudy, Evanston, Ill.
(107 Overlook Drive, Greenwich, Conn.)
Filed Feb. 7, 1963, Ser. No. 257,043
15 Claims. (Cl. 5—97)



1. A knockdown house structure for use with a crib including side and end walls, said house structure having a pair of side walls arranged to be in juxtaposition with the side walls of said crib and substantially of the same vertical dimension as said crib side walls, said house structure side walls being of less longitudinal horizontal dimension than said crib side walls, and a roof supported above said house structure side walls by means of an abutment which is arranged to rest upon the top edge of said crib side walls, said roof being of less horizontal longitudinal dimension than said crib side walls and being spaced from one of said crib end walls to provide means allowing passage of a child in or out of said crib.

3,188,662
MULTI-WAY CONVALESCENT PILLOW
Talmage E. Watson, 816 Willaford Ave., Ruston, La.
Filed Dec. 20, 1963, Ser. No. 332,026
5 Claims. (Cl. 5—327)

1. A multi-way pillow comprising a unitary frame construction including a first open frame consisting of a pair of enlongated side members arranged in lateral spaced relation, each of said side members being crooked to a like extent to thereby divide said member into a first portion and a second portion, a bight extending between and secured to the free ends of the second portions of said side members, a first brace extending between and attached to the second portions of said side members, a sloping extension projecting from the free end of each of the first portions of said side members, an arm rest extending between each of said extensions and the adjacent second portion and attached thereto, and a second brace extending between and attached to the portions of said rests adjacent the second portions of said side members, a second open frame consisting of a pair of elongated standards arranged in lateral spaced relation, a U-shaped member disposed on one side of said standards with the bight extending crosswise and spaced from said standards and the legs substantially perpendicular to and fixedly attached to said standards adjacent to and spaced from one of the complemental ends of said standards, an inwardly-bowed support rest projecing from each of said one ends of said standards and having the free end fixedly attached to the bight of said member, and an apron extending between and covering substantially the entire length of said standards, said second frame being arranged so that the portions of said standards adjacent the other ends thereof overlie the first portions of said side members with the other ends adjacent to and spaced from the crooking of said side members, means pivotally connecting the other ends of said standards to the first portions of said side members for movement of said second frame from the position in which the aforesaid portions of its standards overlie the first portions of said side members to a position in which the standards extend to a vertical sloping



direction leaning toward the second portions of said side members of said first frame, and stop means on the arm rests of said first frame and engageable with the standards of said second frame when the standards extend in the vertical sloping direction leaning toward the second portions of said side members for holding the second frame in the sloping direction position, said construction being positionable so that the first or second portions of said side members rest upon a supporting surface with the standards and apron carried thereby extending in an upwardly-sloping direction and the standards engaging said stop means to thereby support the body of a patient in a reclining position in either of two different angles and rest his arms upon the arm rests when in said reclining position, and said construction being swingable backwardly from the position in which the first portions rest upon a supporting surface with the standards and apron carried thereby extending in an upwardly-sloping direction leaning toward the second portions and the standards engaging said stop means to a position in which the support rests of said second frame and the bight connecting the second portions to said first frame rests upon a supporting surface to thereby support the body of a patient in a reposing position.

3,188,663
UPHOLSTERY CONSTRUCTION
William Arthur Conrad, 1451 Edgewood SE., Grand Rapids 6, Mich.
Filed Nov. 13, 1962, Ser. No. 237,233
1 Claim. (Cl. 5—353.2)

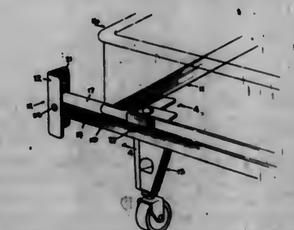
In combination with an article which includes a frame, and also includes cover material with an edge portion, a fastening structure comprising: means forming a groove on said frame for reception of said edge portion, said groove having a bottom wall and side walls diverging therefrom; securing means retaining said edge portion in said groove; strip material comprising parallel multiple

welts having an aggregate width exceeding that of said bottom wall secured to said frame with fastenings driven between said welts and into the bottom wall of said groove whereby the welts of said strip material are dis-



posed adjacent the side walls of said groove, and resulting movement of said strip material into said groove by said fastenings against said side walls moves said welts towards one another to cover said fastenings.

3,188,664
BED FRAME HAVING HEADBOARD BRACKET AND LEG SUPPORTING BRACKET
Nathan C. Goldberg, 600 W. 264th St., New York, N.Y.
Filed Jan. 16, 1963, Ser. No. 251,971
5 Claims. (Cl. 5—282)



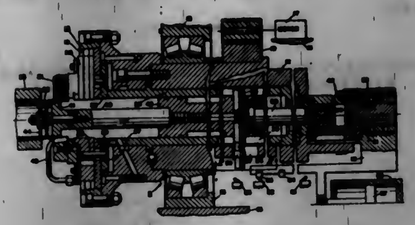
1. In a bed frame having a pair of parallel longitudinal rails, a leg-supporting bracket rigidly secured to one of said rails and having a cross-section defining (*a*) a C-shaped channel with upper and lower flanges and a vertical connecting flange and (*b*) a panel projecting upward from the free edge of the upper flange, a leg rigidly secured to said connecting flange and extending downwardly therefrom, said rail having in the region of said bracket a C-shaped cross-section also defining upper and lower flanges, the rail flanges extending inward toward the opposite bed frame rail, the bracket flanges extending outward and being secured flat against the upper and lower rail flanges respectively, said upwardly projecting bracket panel defining a positioning abutment for a box spring.

3,188,665
CUSHION STRUCTURE
Harry M. Snyder, Hickory, N.C., assignor to Snyder Paper Corporation, Hickory, N.C., a corporation of North Carolina
Filed Aug. 31, 1964, Ser. No. 393,195
7 Claims. (Cl. 5—355)



1. A composite cushion structure for use in furniture comprising a relatively firm resilient base element having a thickness and opposed faces proportioned in relation to the cushion structure to be formed, a filler layer of fibrous material of substantial thickness disposed at each of said opposite faces of said base element, and a relatively thin cover layer consisting of a relatively soft open cellular elastomeric material disposed over each of said fibrous filler layers and secured directly and continuously to said base element adjacent the perimeter of each of said opposite faces thereof to contain said fibrous filler layer thereat against disarrangement.

3,188,666
TAPER THREADING DEVICE
Harry W. Brown, Sr., Willowick, and George Markevich, Seven Hills, Ohio, assignors to The National Acme Company, a corporation of Ohio
Filed Jan. 15, 1962, Ser. No. 166,266
7 Claims. (Cl. 10—96)

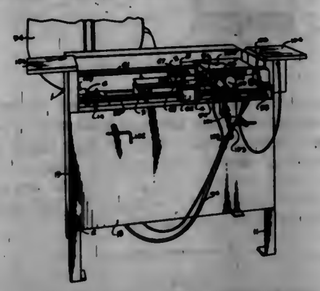


1. A taper threading device for threading a workpiece comprising, in combination, a housing having an axis, a threading tool movably carried on said housing for movement toward and from said axis and for non-rotation on said housing relative to said axis, a rotatable member journalled coaxially relative to said housing, linkage means interconnecting said rotatable member and said threading tool to effect inward and outward movement of said threading tool upon relative rotative movements of said rotatable member and said housing, cam and follower means coacting to effect relative rotation between said rotatable member and said housing upon relative axial movement therebetween, means during a threading operation to move said cam follower axially relative to said housing in accordance with relative axial movement of any said workpiece and said threading device with said cam follower coacting with a first portion of said cam means to effect relative rotation between said rotatable member and said housing to effect gradual movement of said threading tool relative to said axis to produce a taper thread on any said workpiece, a second portion on said cam means extending in the same general direction as said first portion, and power means to rapidly move said cam follower axially relative to said housing in cooperation with said second portion of said cam means to provide a collapsing action to said threading tool.

3,188,667
REBINDING GRINDER
Boyd C. Blair, Topeka, Kans., assignor to Brackett Stripping Machine Co., Inc., a corporation of Kansas
Filed June 10, 1963, Ser. No. 286,621
7 Claims. (Cl. 11—1)

7. In a book grinding machine, opposed clamping plates, means for effecting relative movement of said plates toward and away from each other to selectively clamp and release a plurality of book pages therebetween in face-to-face relation, a book support adjacent to corresponding edges of said clamping plates adapted to be engaged by a portion of said book pages extending from said edges of the clamping plates to position said pages as they are clamped between the clamping plates, means for adjusting the spacing between said support and said clamping plate edges to vary the amount of the pages extending from between said clamping plates, opposed ribs on said page-engaging faces of the clamping plates

along said edges thereof for concentration of clamping force adjacent the said clamping plate edges, a rotating cutter operable to cut in a plane between said book support and said clamping plate edge and substantially parallel to the plane of said edges of the clamping plates, said cutter being spaced from said support in a direction longitudinally of the clamping plates, means moving the clamping plates relative to said cutter for cutting the extending book pages to form a planar edge thereto, said rotating cutter consisting of a cylindrical disc member having an end face and a V-shaped groove in the periphery



adjacent said end face, a plurality of clamp plates circumferentially spaced around the periphery of the disc with portions extending in overlying relation to a portion of the peripheral groove spaced from said end face, said overlying portions of each clamp plate having a groove therein facing said V-shaped groove and extending transversely thereof, and a triangular cutter member for each clamp plate positioned in said peripheral groove and the respective clamp plate groove with a corner edge extending beyond said end face, and means securing the respective clamp plates to the disc to clamp the cutter members therebetween.

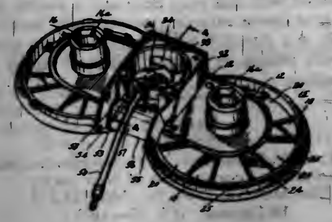
3,188,668
SWIMMING POOL CLEANING DEVICES
Thomas A. Backelew, 21 Milburn Court, San Ramon Village, Calif.
Filed Nov. 12, 1963, Ser. No. 322,996
5 Claims. (Cl. 15—1.7)



1. A swimming pool cleaning device comprising a frame having a front end, a screen mounted within said frame, rolling means mounted on said frame at the front end thereof, and scraping means pivotally mounted at the front end of said frame and extending forwardly therefrom.

3,188,669
RUG CLEANING ATTACHMENT FOR POLISHERS
Robert M. Bourdales, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 8, 1963, Ser. No. 314,788
8 Claims. (Cl. 15—98)

1. A rug cleaning device for operative attachment to a motor driven rotary floor polisher comprising: a horizontally disposed elongated base plate having a pair of spaced apertures extending therethrough; a pair of disk shaped applicators for applying foam cleaner to a rug to be cleaned; each of said applicators having a hub extending upwardly through a respective one of said plate apertures, said hubs being rotatably mounted in the plate and connectable to the floor polisher motor; a receptacle mounted on the upper side of said base plate between



said applicator hubs; means for introducing cleaning fluid into said receptacle; an agitator rotatably mounted in said receptacle for producing foam from said fluid; a shaft driving said agitator extending through the bottom wall of the receptacle and through said base plate and positioned in driven relation with one of said applicators; and means for ducting foam cleaner from the receptacle to the rug at a point between the two applicators.

3,188,670
PISTON GROOVE CLEANER
William J. Babb, 419 S. Paul St., Pauls Valley, Okla.
Filed Jan. 18, 1963, Ser. No. 252,424
7 Claims. (Cl. 15—104.01)



1. A piston groove cleaner comprising a pair of jaw members mounted for movement toward and away from each other in the same plane, one of said jaw members including readily removable and replaceable insert means defining an arcuate plate-like member disposed in said plane and whose concave edge portion opens toward the other jaw member and includes teeth-like scraping elements closely spaced longitudinally therealong and adapted to be snugly received in a piston ring groove, said jaw members being adapted to receive a piston therebetween.

3,188,671
CONVERTIBLE DUST AND FLOOR MOP
Robert D. Kane, Lyndhurst, Ohio, assignor to Brahma Laboratories, Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 26, 1962, Ser. No. 175,850
12 Claims. (Cl. 15—147)



11. In a floor or dust mop comprising a mop head, a handle, and a swivel connection interconnecting said han-

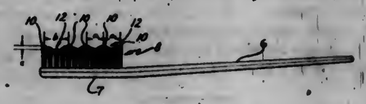
dle and mop head, the improvement of brace means for detachably holding said mop head and handle in fixed relative relationship, said brace means comprising strut means having an upper portion and a lower portion, means pivotally mounting said upper portion of said strut means on said handle, means detachably interconnecting said lower portion of said strut means and said mop head, said strut means having a first position with said strut means interconnected with said mop head and a second position with said strut means extending substantially parallel with said handle in a direction away from said mop head, and spring means releasably holding said strut means in said second position.

3,188,672
BRUSH
Timothy F. Gary, Rensselaer, N.Y., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Dec. 18, 1963, Ser. No. 331,579
18 Claims. (Cl. 15—167)



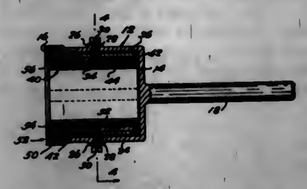
1. A brush comprising an articulated head and an elongated handle connected thereto at one end, said brush head being made in one piece of flexible plastic material and comprising a plurality of bristle-carrying sections spaced apart in the longitudinal direction of said brush by integral, flexible webs which are relatively variably dimensioned by being of a length substantially equal to the adjacent bristle-carrying sections which they connect while being of increasing thickness progressively from the outer end of the brush head to the handle.

3,188,673
TOOTHBRUSH
Joel Edward Newman, Northampton, Mass., assignor to Pro-Phy-Lac-Tic Brush Company, Florence, Mass., a corporation of Ohio
Filed Mar. 4, 1964, Ser. No. 349,316
2 Claims. (Cl. 15—167)



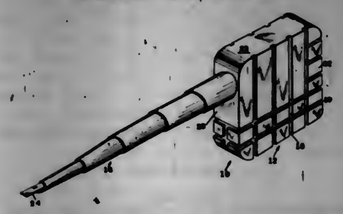
1. Toothbrush comprising a brush back with a handle extending therefrom, a bristle block in the form of a plurality of tufts extending from the bristle block and arranged in parallel rows of different length extending transversely of the handle forming an undulate surface of alternate ridges and concave surfaces, the outer ends of the filaments of the ridge forming tufts lying in substantially the same plane and the concave surfaces between each of said ridge forming tufts being provided by a plurality of rows of tufts, having their outer ends lying in a concave curvature essentially the inverse of the human dental contour, the ridge forming tufts being composed of filaments of sufficiently greater diameter than the filaments of the remaining tufts of the bristle block so that the bristle block is characterized by a substantially uniform flexure.

3,188,674
ROTARY TUBE END CLEANER
Riley L. Hobbs, Box 171, 616 W. College, Apt. 5, Griffin, Ga.
Filed Oct. 18, 1963, Ser. No. 317,206
6 Claims. (Cl. 15—179)



1. A device of the character described, comprising a hollow cylindrical housing having a back wall, a side wall and an open forward end, a resilient split sleeve engaged in the housing, sleeve compressing screws threaded through said side wall and engaged with the sleeve, and a resilient tubular split brush engaged in the sleeve and having frictional contact therewith.

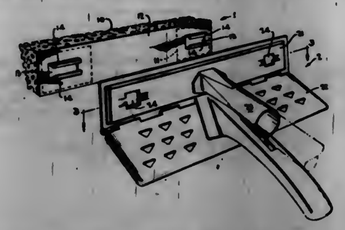
3,188,675
CLEANING TOOL OR THE LIKE
Lawrence J. Bock, 653 Valley Road, Upper Montclair, N.J.
Filed Sept. 7, 1962, Ser. No. 222,011
5 Claims. (Cl. 15—244)



2. A cleaning tool comprising a cleaning body member, a recess in said body member, an extensible handle member positioned in said recess in said body member, said handle member comprising an elongated strip of material wound on itself in a plurality of radially superposed spiral turns to form a spiral coil of generally cylindrical shape, and means extending from the innermost spiral turn of said coil whereby the inner spiral turns of said coil may be withdrawn axially outwardly from the radially outermost turn of said coil to an axially extended position to form an elongated tapered tubular handle member for said cleaning tool, said handle member being secured in said recess.

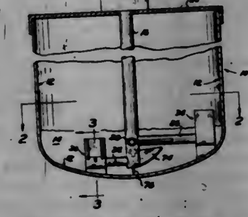
3,188,676
SPONGE MOP
Edward D. Zelinski, Worth, and Stanley Stoumbay, Hazel Crest, Ill., assignors to The Drackett Company, a corporation of Ohio
Filed Feb. 20, 1963, Ser. No. 259,831
1 Claim. (Cl. 15—244)

A mop comprising an elongated flexible absorbent pad having a normally flat upper surface co-extensive in length therewith, rigid adapter plates affixed on said surface in relatively longitudinally spaced relation, a rigid elongated backing plate having a pair of relatively longitudinally spaced and aligned slide means carried thereby adjacent the opposite ends of said plate, each said slide means comprising laterally projecting ledges spaced below and in a common plane parallel to the plate, means on said backing plate defining stops adjacent the relatively remote outer ends of said slide means and in longitudinal alignment therewith, a pair of similarly spaced slide means affixed to the respective adapter plates, each such last-mentioned slide means including laterally projecting ledges in a common plane spaced above and parallel to the said surface of the pad and longitudinally slidably supported beneath said backing plate on the respective ledges of said first-mentioned slide means, the mid-portion of said pad between said adapter plates being free for flexing toward



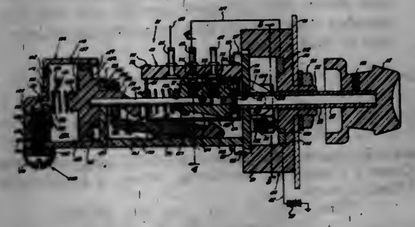
and away from said backing plate whereby to permit withdrawal of the last-mentioned slide means through the relatively adjacent inner ends of said first-mentioned slide means, said slide means of both the adapter plates and the backing plate being formed integrally with said plates by tabs struck out from the respective plates, said ledges of one pair of slide means being laterally outwardly directed, and said ledges of the other said pair of slide means being laterally inwardly directed.

3,188,677
ROTARY SCRAPER BLADE
John C. Jamison, Jr., Detroit, Mich., assignor to Nelson Chemical Company, Detroit, Mich., a company of Michigan
Filed Feb. 7, 1963, Ser. No. 256,983
2 Claims. (Cl. 15—246.5)



1. A scraper system for a vessel having a substantially circular side wall and a floor at the lower edge thereof, comprising:
(a) a central column rotatable about its axis and extending along the axis of said vessel;
(b) power means operable to rotate said column;
(c) a plurality of arms of different lengths fixed along the length of said column and projecting outwardly therefrom;
(d) at least one first blade rotatably mounted on one of said arms, to rotate about an axis substantially parallel to the axis of the column;
(e) second blades rotatably mounted on others of said arms, respectively, to rotate about axes substantially parallel to radii extending from the column;
(f) each of said first and second blades having a scraper portion extending between its rotational axis and the adjacent substantially parallel vessel inner surface, the edge of said scraper portion contacting said inner surface having the same contours as said surface, and a tail portion extending from said blade axis in the direction opposite to said vessel surface;
(g) the respective areas of said scraper and tail portions being such as to permit rotary motion of the blade relative to the tank on encountering an abnormal accumulation or other obstruction;
(h) the lengths of said arms and the spacing of said arms along said column being chosen to permit the scraping of the entire inner surface of said side walls and said floor.

3,188,678
CONTROL ASSEMBLY FOR WINDSHIELD CLEARING SYSTEM
Robert R. Mandy and Ernest E. Lovell, Detroit, Mich., assignors to The Delman Company, Cookeville, Tenn., a corporation of Tennessee
Filed Nov. 15, 1963, Ser. No. 324,124
8 Claims. (Cl. 15—250.02)



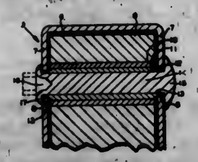
1. A windshield clearing system for a vehicle having a windshield and a wiper element positioned on said windshield comprising:
(a) a washer unit including first motor means operable to dispense fluid against the windshield,
(b) second motor means for oscillating the wiper over the windshield,
(c) circuit means including a first switch for energizing said first motor means and a second switch for energizing said second motor means,
(d) said second switch having a contact carrier biased toward a first position wherein said second switch is open and movable to a second position wherein said second switch is closed,
(e) latch means engageable with said carrier to hold said carrier in the second position and movable from said carrier whereby said carrier is biased toward the first position, and
(f) control means operatively connected to said first switch and said latch means, said control means movable to a first position to close said first switch and to hold said latch means in engagement with said carrier, and movable from the first position to the second position to open said first switch and subsequently move said latch means from said carrier thereby permitting said carrier to be biased to the first position to open said second switch after the cessation of the dispensing of fluid onto the windshield.

3,188,679
WIPER ARM PIVOT
Leo J. Wubbe, Beverly Shores, Ind., assignor to The Anderson Company, a corporation of Indiana
Filed Oct. 22, 1962, Ser. No. 231,950
4 Claims. (Cl. 15—250.35)

2. A windshield wiper arm comprising a fitting for attachment to driving means and an outer blade carrying unit having a channel portion provided with side walls having aligned apertures therein,
said fitting having at least a portion thereof disposed in said channel between said walls and provided with a cylindrical bore aligned with said apertures,
a sleeve disposed in said bore and provided with re-

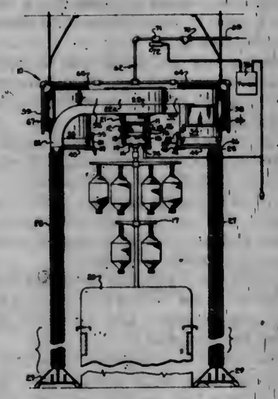
duced diameter portions tapered inwardly toward their extremity and disposed within said apertures,

and an elongate member extending through said bore, said sleeve and said apertures and having abutments arranged in pressure engagement with outer surfaces



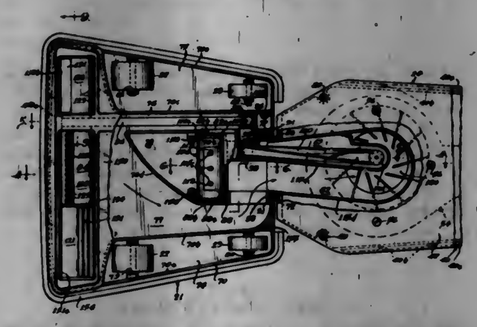
of said walls for effecting intimate engagement between said tapered portions and the material defining said apertures and said elongate member for locking said sleeve, said elongate member and said channel member together as a unit for pivotal movement relative to said fitting.

3,188,680
TRAVELING SUCTION CLEANER FOR TEXTILE MILLS
Robert L. Black, Jr., Charlotte, N.C., assignor to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Apr. 24, 1961, Ser. No. 105,073
11 Claims. (Cl. 15—312)



1. A traveling suction cleaner for textile mills comprising a suction blower fan, means for causing said fan to travel over textile machines, a casing surrounding said fan and having a suction inlet and a blower outlet, a suction duct communicating with the suction inlet of the fan casing and having a suction nozzle adapted to pick up lint generated by the textile machines, an enclosed internally unobstructed lint collection chamber movable with the fan casing and comprising a substantially cylindrical wall substantially vertically disposed and access door means for gaining entry into the interior of the chamber for removal of accumulated lint therefrom, communicative means between the blower outlet of the fan casing and the collection chamber for directing lint laden air from the blower outlet into the collection chamber against the inner surface of the cylindrical wall of the collection chamber and in a path tangent to said wall to cause the air to move around the inner surface of said wall in a helical path and to continuously wipe the same while creating a low pressure area in the central portion of the collection chamber, and a portion of said cylindrical wall being foraminated and serving as an exhaust filter for the air flowing through said suction duct, the fan casing and the collection chamber, whereby the circulatory wiping action of the air on the inner surface of said cylindrical wall serves to prevent said exhaust filter from clogging up with lint and from restricting the air flow into the suction duct and whereby said low pressure area causes the collected lint directed into said chamber to be bunched in the central portion of the collection chamber.

3,188,681
VACUUM CLEANER
Ivar Jepson, Oak Park, Gilbert R. Wolter, Elmhurst, and Alfred F. Ernstberger, Broadview, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 24, 1962, Ser. No. 168,400
10 Claims. (Cl. 15—337)

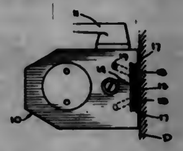


1. A suction cleaner comprising, an upper housing, a handle member connected to said upper housing, a lower housing defining a section nozzle therein, pivot means pivotally relating said lower and upper housings at the portion of said upper housing remote from said handle member, suction producing means mounted in said upper housing, suction passageway means in said housings interconnecting said suction producing means and said suction nozzle, counterbalancing means including a torsion spring coiled about an axis displaced from the pivotal axis of said housings and having one end thereof fixed relative to one of said housings, and a ribbon spring effectively relating the other end of said torsion spring with the other of said housings to counterbalance the weight of the suction producing means in said upper housing.

8. In a vacuum cleaner of the type adapted to receive an attachment having a suction passageway portion and a projection adjacent said portion, a housing defining a suction nozzle therein, suction-producing means carried by said housing and including a fan and an electric motor having a motor shaft, a rotatable brush mounted in said housing, suction passageway means interconnecting said suction-producing means and said suction nozzle and provided with an attachment opening, means drivingly interrelating said motor and said rotatable brush and including a normally engaged clutch disposed at one end of said motor shaft, said clutch including a drive pulley concentrically positioned on said motor shaft rotatably mounted thereon and including slots in the hub thereof, said motor shaft being provided with an axial recess at said one end, a clutch actuating push pin positioned in said axial recess, said housing being provided with an opening aligned with said push pin, said last-mentioned opening being adjacent said one end of said motor shaft, a drive pin disposed in an elongated transverse slot in said motor shaft and extending through an opening in said push pin, a compression spring biasing said drive pin into driving engagement with said slots in said pulley whereby depression of said push pin is

effective to disable said clutch, and a removable covering normally closing said attachment opening and the housing opening wherein the removal of said cover and mere insertion of the attachment into the vacuum opening is effective at the same time to engage the push pin with the projection of the attachment thereby to disable the driving connection between the motor and the brush means.

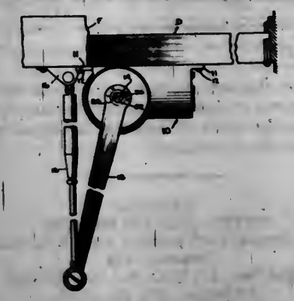
3,188,682
MOUNTING FOR DOOR CLOSER
Mathias M. Check, Strafford, and Raymond W. Schmid, Havertown, Pa., assignors, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Feb. 27, 1961, Ser. No. 91,970
3 Claims. (Cl. 16—49)



1. A door closer assembly comprising, a closer mechanism including an operating arm assembly through which a closing torque may be applied to a door by said closer mechanism, a mounting bracket, a cooperative dovetail groove and dovetail rib on said closer mechanism and mounting bracket providing two sets of tapered surfaces on said closer mechanism and mounting bracket which overlap to hold said closer mechanism on said mounting bracket when said closer mechanism is slipped endwise on said mounting bracket so that the dovetail rib is received in the dovetail groove with the tapered surfaces of the closer mechanism behind the tapered surfaces of the mounting bracket, a threaded hole extending inwardly in an angular direction from one side of said closer mechanism with the inner end portion of said hole being formed partly in the surface of said dovetail groove and partly in the adjacent surface of said dovetail rib, one part of said inner end portion of said hole including a surface against which a screw will act when threaded into said hole to force said closer mechanism in a direction away from said mounting bracket, and a screw adapted to be threaded into said hole for coacting with said surface of the hole whereby to wedge both sets of said tapered surfaces tightly together and to also prevent endwise movement of said closer mechanism on said mounting bracket by reason of the engagement thereof in the part of said hole formed both in said surface of said dovetail rib and said dovetail groove.

3,188,683
SPIRAL SPRING DOOR CLOSER
Mathias M. Check, Strafford, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Aug. 30, 1961, Ser. No. 134,886
3 Claims. (Cl. 16—59)

1. In a door closer of the class described, a closer casing formed with a checking fluid cylinder and a communicating spring chamber, a closer shaft mounted to rotate in bearings at each end of the spring chamber, said casing having at one end of said chamber an opening and a removable cover plate on which the corresponding bearing is mounted, a crank portion formed on the closer shaft in juxtaposed relation to the cover plate in said chamber, a closer spring secured to the casing and to a part of the shaft in the opposed end portion of the chamber, said spring acting to rotate the shaft in a predetermined direction relatively to the casing, each end of the closer shaft extending past the shaft bearings and formed outwardly of the casing with means for the attachment of a closer arm, so as to enable the action of the spring to be reversed in effect so as to reverse the hand of the closer, a piston in the fluid cylinder, a connecting rod extending in offset relation to the fluid cylinder axis between the pis-



ton and crank portion of the shaft and leaving available for said spring a major part of the spring chamber, and means readily accessible for manipulation through the casing opening for assembling the connecting rod to the crank portion of the shaft when the cover plate is removed.

3,188,684
ARTICLE GRIPPING AND HANDLING DEVICE
Orlando J. Colaguro, Cliffside Park, N.J.
(24 Haring Lane, Tenafly, N.J.)
Filed Apr. 16, 1962, Ser. No. 187,648
3 Claims. (Cl. 16—114)

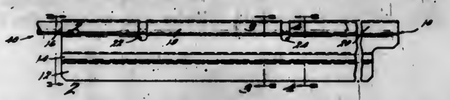


1. In a device for gripping and holding articles, a first, generally elongated member comprising handle means at one end thereof and bent-over side edge portions at the opposite end thereof, said bent-over portions forming an open, generally U-shaped support assembly at said opposite end, a support shaft extending between and supported by said bent-over portions across said open, generally U-shaped support assembly, first article gripping means rotatably supported on said support shaft, a second generally elongated member of generally complementary shape slidably positioned atop said first member, said second member including a portion thereof which fits within said open, generally U-shaped support assembly, said portion including one end of said second member which is bent over to form second article gripping means for cooperation with said first article gripping means within said support assembly, the other end of said second member being likewise bent over to form actuating means for slidably moving said second member relative to said first member to move said second gripping means toward said first gripping means to grip articles therebetween within said open, generally U-shaped support assembly, and guide means on said first and second members for guiding the sliding movement of the latter relative to the former.

3,188,685
WINDSHIELD VISOR HINGE
William N. Fletcher, Ledgrup Village, Mich., assignor to Torsus Steel Company, Roseville, Mich., a corporation of Michigan
Filed Oct. 27, 1961, Ser. No. 148,229
10 Claims. (Cl. 16—140)

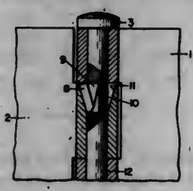
1. A one-piece hinge element formed from a single piece of sheet metal and having a flange portion and a hinge por-

tion, said piece of sheet metal having a series of parallel slots providing a series of slotted sections along said hinge portion, a series of tubular portions formed by said slotted



sections, and alternate tubular portions extending in opposite directions so that each of said tubular portions extends circumferentially in opposite directions relative to the adjacent tubular portions.

3,188,686
BUTTS AND/OR HINGES
Paul C. Orcutt, 1029 Patricia Ave., P.O. Box 194, Dunedin, Fla.
Filed Nov. 14, 1962, Ser. No. 237,763
3 Claims. (Cl. 16—169)



1. A hinge comprising a plurality of leaves having interfitting knuckles provided with aligned passageways, a pintle having removable locking means positioned within the said passageways to pivotally secure the said leaves together, said pintle being freely removable when so positioned with the locking means removed therefrom and being rigidly retained in place by the locking means when so positioned with the locking means positioned within a longitudinal recess formed in the said pintle, said locking means having means normally biasing a portion thereof laterally out of the recess, said recess being so positioned and the locking means being so formed that the laterally biased portion will retract completely within the said recess to allow the recess and locking means to be passed through one of said knuckles and will thereafter project laterally outwardly into abutting contact with an inner lateral edge of said one knuckle to prevent removal of the pintle from the knuckles, a knuckle immediately adjacent the said one knuckle having means dimensioned so as to abut the said edge and provided with a tapered counterbore facing the said edge and dimensioned to be abuttingly engaged by said laterally projecting portion to support and surround the same and thus prevent application of inwardly directed forces to the said laterally projecting portion to release the pintle from the knuckles when so secured thereby.

3,188,687
VIBRATORY IMPRESSION PRODUCING APPARATUS AND FILM HOLDER THEREFOR
Boyd C. Blair, Topeka, Kans., assignor to Brackett Stripping Machine Co., Inc., a corporation of Kansas
Filed Sept. 27, 1962, Ser. No. 226,573
8 Claims. (Cl. 18—1)

3. In a reproduction impression producing apparatus wherein an impression is made on a sheet overlying a character and design carrying surface of a form by vibratory impacting said sheet by a plurality of impact objects comprising,

(a) a horizontal table having an upper face adapted to have a form positioned thereon with the upper surface of the form having characters and design in relief thereon and an impression sheet positioned thereover,

(b) said table having an exhaust connection for withdrawing air from above said table,

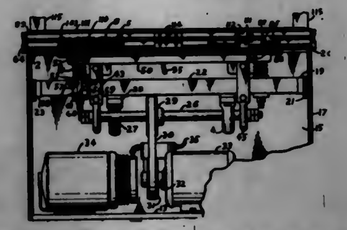
(c) means operatively connected to said table to impart substantially uniform vertical vibratory movement thereto,

(d) a frame removably mounted on said table in surrounding relation to said character and design carrying form positioned on said table, said frame having sealing engagement with the upper face of said table,

(e) said frame having a continuous upwardly opening groove therearound,

(f) a flexible seal member in said groove for the length thereof,

(g) an impervious flexible film extending across said form in overlying relation to the impression sheet



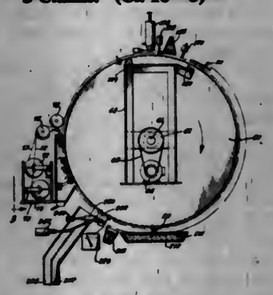
thereon and having marginal portions in said continuous groove engaged with the flexible seal member therein,

(h) a rigid bar held in said groove to tightly engage the film margins to hold same in sealing engagement with the flexible seal member whereby in response to exhaust of air from above the table within the frame said film is drawn toward said table to hold the impression sheet in overlying engagement with said form,

(i) a cell having a flexible bottom wall and a multiplicity of balls loose therein,

(j) and means positioning said cell on said frame with said bottom wall overlying the film of the frame whereby vibration of said table effects vertical movement of said balls to apply multiple impacts transmitted through said bottom wall and film to said impression sheet overlying said form.

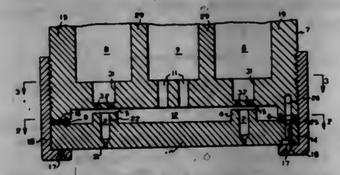
3,188,688
METHOD AND APPARATUS FOR MAKING AN ELECTRICAL RESISTOR
Harold F. Rieth, Pasadena, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed June 24, 1960, Ser. No. 38,639
8 Claims. (Cl. 18—5)



1. Apparatus for producing composition type resistors, including, a rotatable wheel having a peripheral surface

and defining a plurality of spaced depressions in said peripheral surface, means mechanically coupled to said wheel for rotating said wheel, means positioned adjacent the peripheral surface of the rotating wheel for extending two spaced wires through the spaced depressions in the peripheral surface, means synchronized with said rotating means and positioned adjacent the peripheral surface of said rotating means for depositing a particular amount of a plastic resistive composition into each of the depressions to enclose a portion of each of the two spaced wires and to establish an electrical resistive connection therebetween, means positioned adjacent the peripheral surface of said wheel and synchronized with said rotating means for cutting the two spaced wires between each pair of depressions in the peripheral surface, means positioned adjacent the peripheral surface of said wheel and synchronized with said rotating means for aligning and supporting the pieces of wires cut by said cutting means to extend radially with respect to said rotatable wheel, and an insulator tank positioned adjacent the peripheral surface of said wheel in the path of portions of the radially aligned pieces of wires whereby the deposited composition enclosing the radially aligned pieces is coated with insulating material.

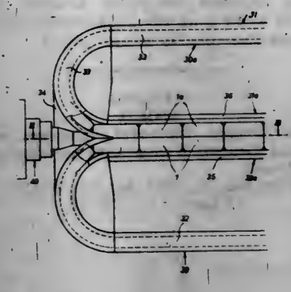
3,188,689
SPINNERET ASSEMBLY
Alvin Leonard Breen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application May 27, 1958, Ser. No. 738,166. Divided and this application June 7, 1962, Ser. No. 200,758
1 Claim. (Cl. 18—8)



In a spinneret assembly, a first and second fluid supply means, an upper plate common to said fluid supply means, at least one distribution orifice from each of said fluid supply means defined by said upper plate, a lower plate having an extrusion orifice defined thereby, the lower plate spaced from said upper plate, a fluid carrying chamber defined by the upper and lower plates, at least one boss integral with said lower plate about the extrusion orifice and extending into said fluid carrying chamber, said boss containing a channel leading from the top surface of the boss to the extrusion orifice, the boss being positioned beneath said first fluid supply means and with the channel therein eccentrically located with respect to said distribution orifice of the first fluid supply means thereby permitting fluid issuing therefrom to impinge on isolated points of its shoulder, the distribution orifice from said second fluid supply means emptying into the fluid carrying chamber surrounding the boss.

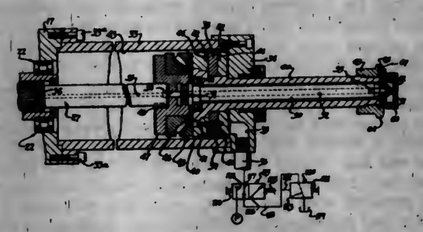
3,188,690
APPARATUS FOR THE PRODUCTION OF CORRUGATED TUBES
Wilhelm Zieg, Koenigsberg, Bavaria, Germany, assignor to Frankische Isolierrohr- und Metallwaren-Werke Gebrueder Kirchner, Koenigsberg, Bavaria, Germany
Filed Aug. 26, 1964, Ser. No. 392,096
Claims priority, application Germany, Feb. 21, 1959, F 27,771; Aug. 26, 1963, F 40,586
26 Claims. (Cl. 18—14)

1. In an apparatus for producing tubes of hardenable plastic material, guide means defining an elongated molding zone; pairs of cooperating substantially semitubular mold sections arranged to move through said molding zone, each of said sections having substantially semicircular transverse internal ribs whereby the ribs of one section of each pair cooperate with the ribs of the other section of the same pair to form annular ribs while the sections advance in said molding zone; advancing means for moving said pairs of sections at identical speeds in a direction from one end toward the other end of said molding zone; an extruding machine having a nozzle comprising a tubular mantle adjacent to said one end of the molding zone and a core including a first portion surrounded by and defining with said mantle an annular



orifice through which the plastic material issues into said zone to form a tube, said core including an elongated extension extending through said molding zone and said core having a bore arranged to admit a compressed fluid into the tube issuing from said orifice; means for admitting compressed fluid into said bore so that the tube is expanded against and follows the outlines of said annular ribs; and a plunger reciprocably supported by said extension and normally adjacent to said orifice so that the leading end of the tube is supported internally by sliding onto said plunger when the machine begins to extrude plastic material, said plunger being advanced by the tube in a direction away from said orifice in response to continued extrusion of plastic material.

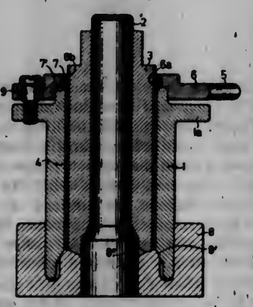
3,188,691
INJECTION MOLDING MACHINE
Hans G. Stenger, Lambertville, Mich., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Apr. 6, 1962, Ser. No. 185,756
7 Claims. (Cl. 18—30)



1. In an injection molding machine of the type wherein a rotatable plasticizer screw is displaced axially toward an injection mold to fill the mold and retracted axially to accumulate the next successive mold filling charge, the improvements of means supporting the screw for both rotation and axial displacement comprising a drive gear having an axial bore provided with axially extending splines, means for driving said gear, said screw having an

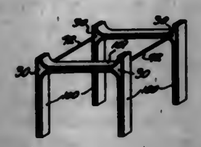
extension thereon coaxial with the plasticizing portion thereof and including a first splined portion projecting into said gear bore in intermeshing relation therewith so that rotation of said gear drives said screw and a second non-splined portion projecting beyond the first portion, a fluid pressure actuated cylinder peripherally surrounding said second portion of said screw extension, a non-rotatable longitudinally displaceable piston disposed interiorly of said cylinder, and bearing means disposed interiorly of said cylinder and interconnecting said second screw extension portion and said piston and including a first bearing race fixed to said piston for non-rotatable longitudinal displacement therewith, a second bearing race fixed to said shaft extension for rotation therewith and non-friction elements interposed between said races, whereby said screw is axially displaceable relative to said gear and rotatable relative to said piston.

3,188,692
MOLD
Franz Felix Traeger, Hannover, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Jan. 25, 1963, Ser. No. 253,950
3 Claims. (Cl. 18—42)



1. A mold for casting a hollow cylindrical thin walled body which comprises: bottom wall means, outer wall means having an axial cylindrical bore and being supported by said bottom wall means, inner wall means arranged within and in radially spaced relationship to said outer wall means and supported by said bottom wall means, said inner wall means being withdrawable from said outer wall means and together with said outer wall means and said bottom wall means confining an annular chamber for receiving castable material, said outer wall means comprising a first member forming the major portion of said outer wall means and being provided with radially outwardly extending flange means, bolt means mounted in said flange means and provided with a head spaced from said flange means in a direction away from said bottom wall means, said outer wall means also comprising a second wall member detachably mounted on that end face of said first wall member which is remote from said bottom wall means, said second member being provided with slot means registering with said bolt means and having a first portion larger in diameter than the head of said bolt means, and also having a second portion narrower than the head of said bolt means whereby said second member when rotated into a first position is lockable to said first member and when rotated into a second position is detachable from said first member, said second member having cutout means confining with the adjacent end face of said first member recess means communicating with the annular chamber between said first member and said inner wall means.

3,188,693
JOINT STRUCTURE FOR CONNECTING RELATED PARTS
Fernando de Terán Troyano, General Orgaz 11-4°B, Madrid 20, Spain
Filed Mar. 14, 1962, Ser. No. 179,619
2 Claims. (Cl. 20—5)



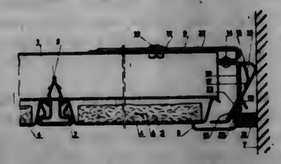
1. A self-supporting structure comprising a frame formed of two sub-assemblies, each sub-assembly having a plurality of elongated laminated structural members defining at least a pair of supporting parts and a connecting part and said laminated structural members extending in angular relation at joints therebetween, the angle between at least two adjacent laminated structural members at any joint being less than 180 degrees, and a plurality of blocks each interposed between parts of adjacent laminated structural members at said joints, at least one lamination of each structural member of each sub-assembly forming a part of another laminated structural member connected thereto and being in face to face engagement with one face of said block, means securing each said one lamination part to said one face of said block, and selected blocks of each sub-assembly each confronting a similar block of the other sub-assembly, and a plurality of rigid elongated members secured to and interconnecting said confronting blocks defining a rigid structure with multiple pairs of supporting parts.

3,188,694
MOBILE HOME FRAME
Herbert G. Hammar, Dallas, Tex., assignor to Redman Industries, Inc., a corporation of Delaware
Filed Jan. 4, 1962, Ser. No. 164,342
1 Claim. (Cl. 20—2)



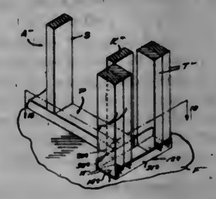
A chassis frame for trailer and mobile home coaches, which frame comprises a pair of generally parallel structural beams extending lengthwise of the coach, a plurality of structural cross-members of a height substantially less than the height of said structural beams, said cross-members extending between and connected to lower portions of said beams to provide a base frame skeleton wherein there is provided a longitudinal cavity, utility conduits disposed in said cavity, a plurality of struts extending outwardly from said beams, a plurality of braces extending downwardly and inwardly from the upper portions of said beams to said cross-members, a weatherproof sheathing disposed upon and coextensive with the base frame whereby a weatherproof bottom is formed, a plurality of longitudinal stringers supported by said base frame and disposed upon said sheathing, said stringers which are supported upon said cross-members being of a height greater than said stringers which are supported upon said struts, and a plurality of flooring members mounted above and supported by said stringers, said flooring members and said sheathing providing a closed cavity therebetween suitably housing said conduits.

3,188,695
CEILING PANEL SUPPORT AND EDGE CLOSURE ASSEMBLY
Robbert Ernst Spangenberg, The Hague, Netherlands, assignor to Hunter Douglas International (Quebec) Ltd., Montreal, Quebec, Canada, a corporation of the Province of Quebec
Filed June 29, 1962, Ser. No. 206,511
Claims priority, application Netherlands, June 30, 1961, 266,550
4 Claims. (Cl. 20—4)



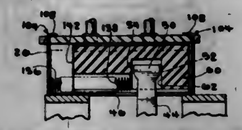
1. For use in a wall, ceiling or covering construction comprising panels carried by carrier members, a securing arrangement comprising a substantially L-shaped fastening member and an elongated support strip which is substantially L-shaped in cross-section, said fastening member having a horizontal leg portion and a vertical leg portion pointing downwards, a curved spring extending substantially normal to the vertical planar face of the vertical leg portion of said fastening member, said vertical leg portion and one of the ends of said spring being pivotally secured to the horizontal leg portion of the fastening member, the other end of said spring pointing downwards and biased towards the vertical planar face of the vertical leg portion of the fastening member, one of the leg portions of the support strip being horizontal and adapted to support the rim portion of at least one panel, the other leg portion of said support strip being vertical and pointing upwards and being clamped between the spring and the vertcial leg portion of the fastening member.

3,188,696
COMBINATION ANCHORS AND BRACES
William W. Earhart, 14632 Leibacher Ave., Norwalk, Calif.
Filed Aug. 24, 1962, Ser. No. 219,288
2 Claims. (Cl. 20—4)



1. A wall assembly comprising a floor, a floor plate superimposed upon and secured to the floor, said floor plate having a free end, an upstanding king stud bearing upon said floor plate and having a surface flush with said free end, a pair of engaged and registered trimmers located at each of the opposite sides of the floor plate outwardly of the free end of the floor plate and adjacent said stud, a combination anchor and brace comprising a transversely elongated bottom wall longer than the width of the floor plate and extending to opposite sides of the floor plate, upstanding first and second end walls on and extending along the bottom wall, said pairs of trimmers received between said end walls and resting on said bottom wall, first fastener means securing the end walls to the edges of pairs of trimmers, said second end wall comprising longitudinally spaced wall sections having inner ends, and lateral flanges on said inner ends engaged with opposite sides of the floor plate, and third fastener means securing the flanges to the floor plate.

3,188,697
LEVER ACTION SWITCH WITH EMBEDDED COMPRESSION COIL SPRING AND STAGGERED CONTACT MEANS
William N. Schlak, Crystal Lake, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Aug. 5, 1963, Ser. No. 299,890
10 Claims. (Cl. 200—16)

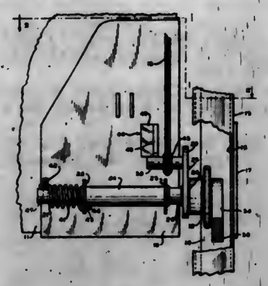


1. In an electrical switch,
the combination comprising a generally rectangular casing,
a generally rectangular slider in said casing, said slider being made of insulating material and being slidable longitudinally in said casing,
a bracket mounted on said casing,
an L-shaped lever pivotally mounted on said bracket,
said casing having a slot therein,
said lever having an arm extending into said casing through said slot,
said slider having a recess receiving said arm,
a coil spring compressed between one end of said casing and one end of said slider,
said slider having a generally circular seat in said one end thereof for receiving said spring,
said seat having an opening in one side thereof toward one side of said slider,
a contactor bar mounted on said slider,
a contact mounting plate attached to said casing and opposite said contact bar,
a plurality of contatcs mounted on said contact mounting plate and engageable by said contactor bar,
said slider having recess means for receiving said contactor bar,
and a coil spring compressed between said slider and said contactor bar and biasing said contactor bar toward said contacts,
said contactor bar having first and second longitudinally spaced contactor segments with an intermediate portion therebetween,
said intermediate portion being offset from said contactor segments away from said contacts,
said first contactor segment being longer than said second segment,
said contacts including a first contact which is slidably engaged by said first contactor segment at all times,
said contacts including second and third contacts engageable by said second contactor segment,
said second contactor segment being movable between said second and third contacts.

3,188,698
SAFETY DEVICE FOR VERTICALLY MOVABLE DOORS
Maurice B. Zell, Lynnwood, Lynnhaven, and Ervin R. Stallings, South Fairview, Va., assignors to The J. G. Wilson Corporation, Norfolk, Va., a corporation of Delaware
Filed Dec. 1, 1960, Ser. No. 72,967
3 Claims. (Cl. 20—19)

1. A lever and hub assembly comprising a flat sheet of metal elongated in shape and with one end portion hav-

ing an aperture on its longitudinal axis, the other end portion being wider than said axis-apertured end portion, an aperture laterally offset from said axis and formed in said wider end portion, a hollow cylindrical hub fitting



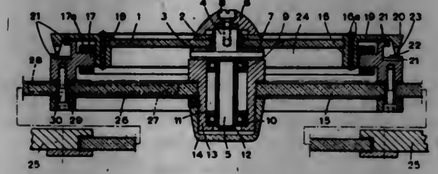
the laterally offset aperture, a non-circular bushing fitted into the hollow of said hub and with corners engaging the inner surface thereof, and metal integrating the parts by solidification from the molten state while disposed between said bushing, hollow cylindrical hub and flat sheet.

3,188,699
PIVOTING BATHTUB ENCLOSURE
Herbert J. Walters, 213 Fitzwater St., Philadelphia, Pa.
Filed May 13, 1963, Ser. No. 279,873
1 Claim. (Cl. 20—19)



In a bathtub enclosure of the horizontal sliding door type,
a master frame secured to the periphery of the opening to be enclosed,
the said frame including a pair of horizontally juxtaposed ceiling tracks and a pair of horizontally juxtaposed floor tracks,
the floor tracks being immediately below and in the same vertical plane as the ceiling tracks;
a pair of doors respectively sliding horizontally within said ceiling and floor tracks,
each door having a central, longitudinal axis;
pivoting means secured to each door whereby each door may be pivoted about the said axis,
said pivoting means including a horizontally disposed door hanger,
said door hanger being of substantially channel cross section and hung with the web of said channel vertical,
said door hanger rotatively carrying a plurality of rollers contacting said ceiling tracks,
said door hanger provided with vertical holes drilled through the flanges of said channel along said central, longitudinal axis, and the bottom of said hanger being milled to provide a horizontal, vertically indented groove;
having means supporting the said door from said door hanger,
said hanging means including a vertical pivot pin having its head pivotally secured to the door with the shank thereof vertically extending through said holes and spring means securing said pivot pin to said door hanger;
and a horizontal ridge rising above the top of said door,
said ridge being sized to fit within said indented groove at the bottom of said door hanger,
said ridge being biased within said groove by said spring means whereby said door is separably aligned with said door hanger.

3,188,700
CLEAR-VIEW WINDOW
Gustav Herrmann, Bremen-Oberneuland, and Bernhard Koch, Bremen-Grambke, Germany, assignors to Atlas-Werke Aktiengesellschaft, Bremen, Germany
Filed Oct. 24, 1961, Ser. No. 147,299
Claims priority, application Germany, Nov. 2, 1960, A 35,926, A 35,927
8 Claims. (Cl. 20—40.5)



8. A clear view window construction comprising a rotatable transparent window having an outer rim and being spaced substantially parallel to a fixed transparent window mounted in gas-tight relationship on an outer side of a wall,
said rotatable window and said transparent fixed window defining a space therebetween and having gas-tight means sealing all portions of a space defined between the fixed and rotatable windows with the exception of a portion of said space at said outer rim and ducting means communicating with said space and with the surrounding atmosphere on the outer side of said wall for allowing air flow through said space, and said outer rim comprising fan means for drawing air from said space to said outside atmosphere.

3,188,701
CORE BOX VENT
Kenneth R. McIntyre, Los Angeles, Calif. (8628 Lavela Ave., Whittier, Calif.)
Filed Dec. 18, 1962, Ser. No. 245,503
1 Claim. (Cl. 22—13)

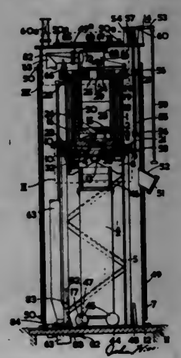
A core box vent, comprising:
a circular, tubular, cylindrical plug body of high temperature material, said plug body presenting a forward face and a rear face, said faces being disposed at right angles to the longitudinal axis of said cylindrical body;
an end wall adjacent to and flush with said forward face of said plug body;
a central, polygonal, coaxial wrench socket extending into said plug body from said rear face and terminating adjacent said end wall;

an external, peripheral flange having a uniform thickness and being integral with said plug body, said flange having a surface lying flush with said forward face of said plug body and said end wall;
a helical thread cast upon the external cylindrical surface of said plug body between the rear face of said peripheral flange and said rear face of said plug body, said thread being continuous to a point where it intersects said flange; and



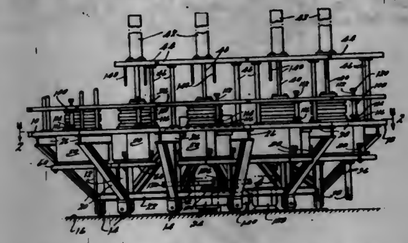
a plurality of spaced, parallel slots defined by longitudinal ribs in said end wall, the side surfaces of said ribs tapering to provide progressively widening, reverse funnel openings proceeding into said plug body away from said forward face; and a reinforcing rib extending transverse to and intersecting said ribs in said end wall.

3,188,702
APPARATUS FOR VACUUM MELTING AND CASTING METALS
John William Saxonthwaite, Lea, Preston, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Sept. 7, 1960, Ser. No. 54,401
Claims priority, application Great Britain, Sept. 21, 1959, 32,046/59
3 Claims. (Cl. 22—73)



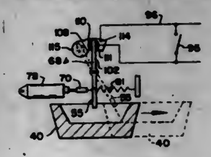
1. Apparatus for vacuum melting and casting of metals, said apparatus comprising means defining a cavity having an access port in the base thereof, heating means surrounding said cavity, a melting crucible assembly insertable into and withdrawable from said cavity through said access port and having a pouring opening in the base thereof, closure means for said pouring opening, a support structure for said means defining a cavity and for said heating means, carrier means for supporting said crucible assembly, releasable securing means for securing said carrier means to said support structure so that said crucible assembly is in operative position in said cavity, said carrier means being movable when released from said support structure for insertion of said crucible assembly into and withdrawal thereof from said cavity, a mould assembly disposable beneath said crucible assembly and movable transversely into and out of operable position beneath said crucible assembly, a removable vacuum sealing envelope for enclosing all of said means for defining a cavity, said heating means, said crucible assembly, said support structure, said carrier means, and said mould assembly, and means for operating said pouring opening closure means from outside said sealing envelope and extending sealingly through an aperture in said sealing envelope.

3,188,703
APPARATUS FOR LOW PRESSURE PERMANENT MOLD CASTING
Frank H. Le Jeune, Jackson, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Aug. 8, 1962, Ser. No. 215,604
8 Claims. (Cl. 22—77)



1. Casting apparatus including a rotary table, a plurality of furnaces carried by said table in angularly spaced relation, a crucible in each of said furnaces, a plurality of molds carried by said table in paired relation to said furnaces, means connecting each of said molds to the crucible in the furnace to which it is paired, a stationary holding furnace, means for successively filling the furnaces on said table with molten metal from said holding furnace as said table is indexed, and means for pressurizing said furnaces.

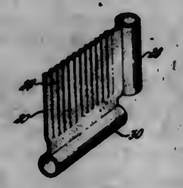
3,188,704
AUTOMATIC MOLD CASTING MACHINE CONTROL APPARATUS
Armas J. Sukava, 111 Edgar Drive, London, Ontario, Canada
Filed Sept. 11, 1961, Ser. No. 137,205
6 Claims. (Cl. 22—79)



3. In an automatic mold casting machine having means for directing molten material to a flow valve and means for moving molds in succession along a path beneath the valve; control apparatus comprising electrical actuating means connected to the valve operable when electrical current is supplied thereto to open said valve, closing means connected to the valve for closing the latter when the actuating means is inoperative, a contact finger mounted adjacent the flow valve and normally hanging in the path of the molds and extending into each mold when it is beneath the valve as the latter mold passes beneath the finger, said finger being spaced from the bottom of the mold and normally being engaged by an end of each mold as said mold moves from beneath the finger to slide over said end and into the next succeeding mold, electrical means in circuit with the finger for cutting off the flow of current to the actuating means for rendering said actuating means inoperative when the finger engages a mold or the molten material in the mold reaches said

finger thereby allowing the closing means to close the valve, a bar engaging the finger when the molds are not moving and keeping it out of the path of the molds, said electrical means rendering the actuating means inoperative when the finger is engaged by the bar, and electrical means connected to the bar operable when the molds are moving to disengage the bar from the finger to allow said finger to extend into the mold path, said electrical means being inoperative when the molds stop moving.

3,188,705
MOLD CORE
Fred J. Webbere, Commerce, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Dec. 29, 1958, Ser. No. 783,370, now Patent No. 3,045,301, dated July 24, 1962. Divided and this application Dec. 18, 1961, Ser. No. 159,848
3 Claims. (Cl. 22—165)



1. In a mold, a mold core located in a mold cavity, a coating on said mold core of a mixture comprising, by weight, approximately about 20% to 40% of a powdered metal from the group consisting of aluminum and aluminum base alloys, about 5% to 20% powdered alumina and about 40% to 75% of a binder.

3,188,706
FASTENERLESS SPLICE AND METHOD OF FORMING SAME
Donald E. Partridge, Los Angeles, Calif., assignor to Universal Steel Strapping, Inc., Los Angeles, Calif., a corporation of California
Filed June 29, 1962, Ser. No. 206,424
4 Claims. (Cl. 24—20)



1. A permanently interlocked joint for use between the overlapped ends of a band tie of the type made from high-strength stiff deformable material, said joint comprising a plurality of pairs of slits located between the lateral edges of said overlapped ends and shaped to interlock with one another with a portion of one band end displaced from the plane of one surface of the band sufficiently to interlock with a portion of the other band end in an area closely associated with the slits in the latter band end, and means located between said adjacent pairs of said slots for positively locking the band ends interlocked comprising internested complementally deformed portions of said band ends located closely between adjacent pairs of said slits and cooperating therewith in holding said band ends against relative displacement lengthwise of said band ends.

3,188,707
REMOTELY RELEASABLE SAFETY BELT BUCKLE
Benjamin F. Schmidt, 450 Fairview St., Sierra Madre, Calif.
Filed June 24, 1963, Ser. No. 289,984
14 Claims. (Cl. 24—75)



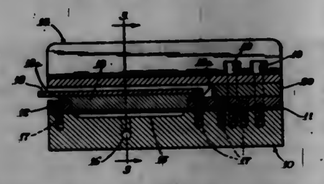
3. A safety buckle comprising: a pair of separable coupling members each adapted to be connected to a belt; a locking plate movably carried by one of said coupling members; a projection on the other coupling member engageable by said locking plate to releasably lock said coupling members together; spring means biasing said locking plate to engage said projection; a releasing member movably carried by said other coupling members for engaging and moving said locking plate so as to release said projection; a lanyard connected to said releasing member and operable to move said releasing member for releasing said locking plate; releasing means movable on said one coupling member to engage and move said releasing member for releasing said locking plate; and a lanyard connected with said last named releasing means.

3,188,708
SLIP ASSEMBLY FOR PARALLEL TUBING STRINGS
Homer W. O'Haver, Box 5073, Beaumont, Tex.
Filed Mar. 12, 1962, Ser. No. 178,830
6 Claims. (Cl. 24—263)



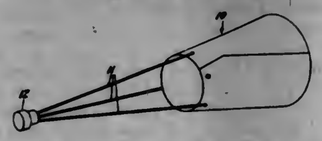
1. A slip assembly for supporting two parallel strings of tubing comprising:
open-topped bowl means forming a circular tapered bowl having a vertically disposed axis and a larger diameter at the top than at the bottom,
a pair of complementary slip halves forming a frusto conical body having an axis corresponding to the axis of the tapered bore, the body having a larger diameter at the top and a smaller diameter at the bottom, the larger diameter of the body being greater than the smaller diameter of the tapered bore,
the pair of complementary slip halves forming a pair of passageways therebetween, the axes of the passageways being generally parallel to the axis of the tapered body;
means connected to the slip halves and disposed in each of the passageways for gripping a joint of tubing positioned in the respective passageways and,
a pair of pivotally interconnected lever members, one lever member being loosely connected to the upper end of each of the complementary slip halves,
whereby when the bowl means is supported around a pair of vertically disposed tubing strings and the slip halves are placed in the tapered bowl on opposite sides of the tubing strings with the tubing strings received in the passageways, the weight of the tubing strings will pull the slip halves downwardly in the tapered bore and the bowl means will force the slip halves tightly against the opposite sides of the tubing strings to grip and support the tubing strings.

3,188,709
STRIP FEED MECHANISM
Raymond G. Olson, Niles, Ill., assignor to Power Control Products, Inc., a corporation of Illinois
Filed Apr. 5, 1963, Ser. No. 270,873
4 Claims. (Cl. 24—263)



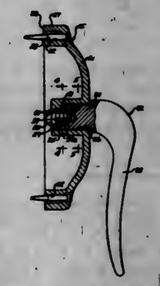
1. A pneumatic jaw construction for passing a strip stock horizontally therethrough and for clamping said strip stock comprising a base member having a cavity formed in the upper surface thereof, air conduit means extending into said cavity, an elastomer diaphragm member positioned over said upper surface of said base member to cover said cavity, a plate secured to said upper surface of said base member to seal said diaphragm about the marginal edges of said cavity, said plate having an opening therethrough exposing the portion of said diaphragm covering said cavity, a free piston member disposed in said opening in said plate above said diaphragm, said piston member having extending flange portions on opposite sides thereof, said flange portions of said piston member extending over the surface of said plate to engage said surface of said plate under the force of gravity, and a jaw member fixedly carried in a spaced relationship to said piston member, whereby a strip material in insertable between said jaw member and said piston member to extend outwardly from opposite sides thereof and whereby the permitted range of upward movement of said piston member is determined solely by said jaw member and any strip material therebetween.

3,188,710
TROWEL FOR PIPE LINING MATERIAL
Warren E. Perkins, Grand Island, N.Y., assignor to Perkins Pipe Linings Inc., Grand Island, N.Y.
Filed Feb. 3, 1964, Ser. No. 342,031
4 Claims. (Cl. 25—38)



2. Trowel means for smoothing a layer of plastic lining material in an interior generally cylindrical surface, said trowel means comprising a plurality of longitudinally extending overlapping plate members which combine to form a generally frusto-conical trowel body, said plate members having mounting means at the small end of the trowel body constraining said plate members to a relatively fixed diameter at such small end but permitting inward and outward movement of the plate members at the large end of the trowel body whereby the large end may expand and contract, and expansion means at the large end of said trowel body at overlapping portions of adjacent plate members, said expansion means comprising means projecting inwardly from the inner overlapping plate portion, means projecting inwardly from the outer overlapping plate portion, said inner overlapping portion being slotted to permit circumferential movement of said last mentioned means relative to said inner overlapping portion, and a tension spring acting between said two inwardly projecting means to urge the edges of said inner and outer overlapping portions circumferentially toward each other to reduce the overlap and thus expand the large end of the trowel body.

3,188,711
CASKET AND HANDLE THEREFOR
Bernard H. Koppen, 509 E. Lincoln St., Belvidere, Ill.
Filed Nov. 23, 1962, Ser. No. 239,490
7 Claims. (Cl. 27—2)



1. In combination with a casket having opposed sides and ends, at least two independent handle assemblies mounted on each side of the casket intermediate the ends, said handle assemblies each including a mounting plate attached to the side of the casket and a carrying handle individual to each mounting plate, said handles having a generally L-shaped configuration and having a hand-grip portion and a pintle portion extending generally perpendicular to one end of the hand-grip portion, means non-slidably and rotatably mounting the pintle portion of each handle on a respective mounting plate for swinging movement about an axis generally perpendicular to the side of the casket with the hand-grip portion of the handle laterally spaced from the mounting plate and the side of the casket to allow gripping of the handle, said pintle mounting means supporting said handles for swinging movement between a normal downwardly extending position selectively in either direction to first and second relatively opposite horizontal positions for carrying the casket in either direction, and first and second stop means for limiting upward swinging movement of the handle to said first and second horizontal positions.

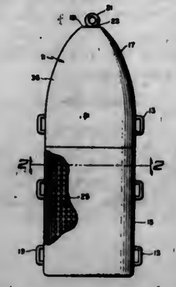
3,188,712
VERTICAL CASKET
Ernest E. Bonnemeister, 4307 Paulding Road, Fort Wayne, Ind.
Filed July 27, 1962, Ser. No. 212,790
1 Claim. (Cl. 27—6)

A casket adapted for vertical burial comprising, in combination:
(a) a cylindrical aluminum casing having one end provided with a curved surface tapering evenly to an apex,
(b) a ring mounted at the apex of the casing for raising and lowering said casing into an opening in the ground,
(c) said casing having an elongated opening for the insertion and viewing of the remains,

(d) said casing having removable handles on opposite sides of the casing,

(e) a cover hermetically sealing the elongated opening,

(f) a flat vertical support for the remains disposed longitudinally within the casing and spaced off center with respect to the axis of said casing, and



(g) an adjustable strap adapted to surround the remains and secured to the flat vertical support to maintain the remains in a vertical position within the casing when the casing is disposed into an opening in the ground.

3,188,713
APPARATUS FOR PROCESSING CROSS-SECTION YARN
Richard F. Dyer and James F. Caines, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 6, 1963, Ser. No. 278,210
10 Claims. (Cl. 28—1)

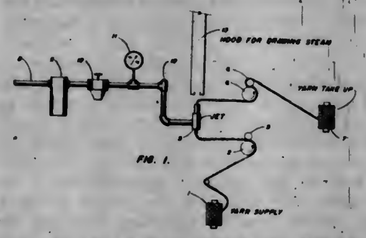
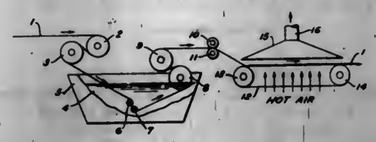


FIG. 1.

2. An apparatus for jet-processing multifilament multilobal cross-section yarn comprising a jet, means for feeding said multilobal multifilament cross-section yarn to the jet and means for taking up said yarn from the jet, the jet having a venturi section in its make-up and being positioned between the yarn feeding means and the yarn take-up means, an orifice plate, and a yarn feeding tube centered on the same axis as the orifice plate, a supply line for steam leading to said jet and adapted to supply said steam into the jet, said supply line being provided with a superheater and a pressure reducing means, and a hood means positioned above and clearing the exit of the jet for taking up the exhaust hot steam associated with the exit of the jet.

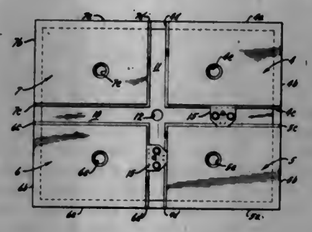
3,188,714
PROCESS OF PRODUCING SELF-CRIMPING FIBERS
Gordon W. Spangler, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 22, 1963, Ser. No. 267,268
5 Claims. (Cl. 28—72)

1. The process of producing a synthetic textile fiber having a three-dimensional, random crimp which comprises drafting a pre-spun, unoriented fiber composed of a linear, high molecular weight polyester fiber-forming polymer in a liquid which is a nonsolvent for the polymer and maintained at a temperature below the critical draft



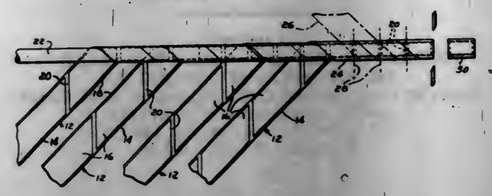
temperature of the polymer and thereafter heating the fiber in the absence of tension, whereby built-in stresses, resulting from the drafting of the polymeric material in said liquid are released and three-dimensional, random crimping of the fiber occurs.

3,188,715
LOCATOR TOOL
Roy H. Michalsen, Des Plaines, Ill., assignor to Par Engineering Company, Des Plaines, Ill., a corporation of Illinois
Filed Dec. 3, 1962, Ser. No. 241,665
2 Claims. (Cl. 29—1)



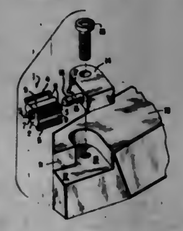
1. In a tool, a base, a flat upper surface on said base, a set of intersecting grooves formed in said upper surface and intersecting at the precise central axis of said base, each of said grooves having its opposed side walls outwardly offset at their upper edges to provide an upwardly open track, one of said groove side walls lying in a plane substantially perpendicular to the bottom surface of said track, the opposite groove side wall lying in a plane inclined outwardly, downwardly from said offset portion, a unitary positioner element slidable in said track, said positioner element having outwardly extending upper flanges formed and positioned to seat within and for slidable movement along said track, said positioner element having a rectilinear portion depending from the area of said flanges and extending into said groove a distance less than the depth of said groove, said depending portion having opposite side walls paralleling said first-named groove wall, said positioner element being supported by said flanges on said track and having a flat upper surface lying in the precise plane of said base upper surface, a laterally disposed passage in said positioner element, means movable laterally of said positioner element for locking said positioner element at a variety of points along its associated groove, including a pin slidable in said passage and having an outer end surface inclined at the angle of said inclined grooved wall and opposed thereto, said positioner element having an opening perpendicularly positioned therein and upwardly open for reception of positioner pins.

3,188,716
METHODS OF MAKING CAPACITORS
George P. McGraw, Jr., Downers Grove, Ill., assignor to Western Electric Company, Incorporated, a corporation of New York
Filed Nov. 10, 1961, Ser. No. 151,574
12 Claims. (Cl. 29—25.42)



1. A method of fabricating capacitors which comprises forming a plurality of webs of dielectric material of indefinite length with a row of electrodes on each of at least two of the sides of the several sides of the webs and with the electrodes in each row disposed parallel to one another and obliquely to the edges of the web, simultaneously winding the plurality of webs helically about an axis in predetermined overlapping relation to one another to form a composite member of interconnected capacitors of progressively increasing length with the electrodes disposed in layers in the composite member and between layers of dielectric web in insulated relation to one another and with the ends of the electrodes in planes perpendicular to the axis and with the electrodes in staggered and overlapping relation to one another, and successively shearing the composite member transversely thereof along planes passing through the spaces between the ends of the electrodes and through the intermediate portions of the electrodes aligned with the spaces to form individual capacitors.

3,188,717
CUTTING HEAD FOR LATHES
Hans Heinlein, 13–15 Bahnhofstrasse, Zirndorf, near Nuremberg, Germany
Filed Mar. 15, 1963, Ser. No. 265,503
Claims priority, application Germany, Mar. 20, 1962, H 45,206
5 Claims. (Cl. 29—96)



1. A machine tool cutting head comprising a tool holder having a pair of seating surfaces set at an angle to each other, a cutting element having a cutting edge thereon and a bore extending through the element parallel to the cutting edge, a pair of surface areas on the perimeter of said cutting element opposite said cutting edge engaging said pair of seating surfaces, a clamp having a side surface disposed in side-by-side relation with said cutting element with said side surface disposed in abutment with one end of said cutting element, a pin extending from said side surface into the bore of said cutting element, and a clamping bolt extending through said clamp into engagement with said tool holder for drawing said pin laterally into engagement with the cutting element bore and said pair of surface areas into engagement with said pair of seating surfaces.

3,188,718
PRECISION MILLING CUTTER WITH INSERTED TEETH
Hansgeorg Wezel, Maulbronn, Wurttemberg, Germany, assignor to Wetzel International, Bloomfield, Conn.
Filed Apr. 8, 1963, Ser. No. 271,322
Claims priority, application Germany, Apr. 10, 1962, B 66,749
13 Claims. (Cl. 29—105)



1. A milling cutter comprising, in combination:

(a) a cutter body member having an axis and formed with a plurality of recesses circumferentially spaced about said axis, said cutter body member having a wall in each recess;

(b) a plurality of cutter teeth mounted on said body member, each cutter tooth being partly received in a coordinated one of said recesses in contact with said wall, and partly projecting from said body member in a first direction substantially parallel to said wall;

(c) clamping means on said body member, said clamping means engaging said tooth for exerting clamping pressure on the same in a second direction transverse of said first direction toward said wall, and for thereby securing said tooth against movement relative to said body member;

(d) an abutment member slidable in said one recess in a third direction transverse of said first and second directions, said abutment member having an abutment face extending in said second direction and obliquely inclined relative to said first and third directions, said abutment face defining a smaller acute angle with said third direction than with said first direction and abuttingly engaging a portion of said tooth; and

(e) securing means for selectively securing said abutment member against sliding movement in said recess in a plurality of positions spaced in said third direction.

3,188,719
PROCESS FOR MANUFACTURING ROLLER BEARINGS
Daniel J. Howles, Jamestown, N.Y., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Euclid, Ohio, a corporation of Ohio
Filed Mar. 1, 1963, Ser. No. 262,127
6 Claims. (Cl. 29—148.4)



1. A method for assembling roller bearings having inner and outer races with a retainer having roller receiving openings separated by bars with retaining lugs comprising mounting of a race and a retainer in generally concentric relation on a jig, incrementally moving the retainer to successive positions, placing rollers in the openings, moving a ground electrode into engagement with the retainer and a deforming electrode into engagement with the lugs, passing of current through the ground electrode retainer and lugs to heat the engaged lugs to a malle-

able condition without causing sparking between the retainer and the rollers, and then further pressing the deforming electrode to bend the engaged malleable lugs over an adjacent roller into spaced roller retaining position.

3,188,720
METHOD OF SEALING AND JOINING AND ARTICLES MADE THEREBY
Saloom Y. Hanni, Jr., Westwood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 13, 1960, Ser. No. 35,730
19 Claims. (Cl. 29—155.5)

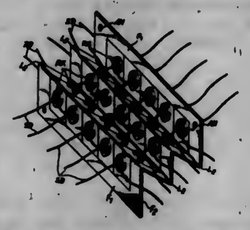


1. The method of forming a brazed connection between a conductor of molybdenum and a member having a metal surface of some other material comprising the steps of coating said conductor with iron to the thickness of a few atoms to 0.1 mil, bringing said conductor and said member into brazing relationship, applying a brazing material containing copper to said coated conductor and subjecting said member, said coated conductor and said brazing material to a brazing temperature for sufficient time to cause said copper to melt and flow over said conductor and between said conductor and member to braze said conductor to said member.

6. A conductor adapted to be sealed through a ceramic member having a metalized surface to which said surface the conductor is to be sealed by a copper braze, said conductor comprising a molybdenum core having an outer coating of iron flashed thereon, said coating of iron being adapted to be sealed directly to said metalized surface.

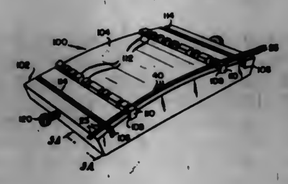
7. A conductor adapted to be sealed through a ceramic member having metalized surface to which said surface the conductor is to be sealed by a copper braze, said conductor comprising a molybdenum core having successive coatings of iron flashed thereon and copper thereon.

3,188,721
MAGNETIC CORE MEMORIES
Heinz Ringler, Bad Homburg vor der Hohe, Germany, assignor to Telefunken und Normalzeit G.m.b.H., Frankfurt am Main, Germany, a firm
Filed Apr. 14, 1961, Ser. No. 102,986
6 Claims. (Cl. 29—155.5)



1. A process for manufacturing magnetic core memories comprising the steps of securing a plurality of toroidal magnetic cores arranged along a straight line to a pliable sheet support in such a way as to preclude relative movement between said plurality of cores and said support, of folding said support substantially in zig-zag fashion along fold lines each at right angles to said straight line and each equi-distantly spaced from a pair of contiguous cores forming part of said plurality of cores and thereby effecting registration of said plurality of cores, of threading conductors through the center regions of said plurality of cores, and of thereafter unfolding said support and thereby relocating said plurality of cores substantially in a common plane.

3,188,722
METHOD OF AND APPARATUS FOR MAKING BRUSH CONTACT ASSEMBLIES
James R. Lerch, Pinole, Calif., assignor to SCM Corporation, a corporation of New York
Filed June 19, 1961, Ser. No. 118,177
5 Claims. (Cl. 29—155.5)



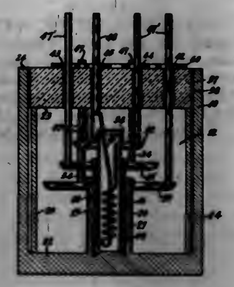
1. A method of manufacturing a contact brush assembly having a plurality of brushes, each composed of a plurality of individual wires connected electrically together and secured to spaced support members of insulating material comprising the steps of: providing a pair of spaced parallel post members having an upper solderable metal surface; placing lengths of wires across the upper surfaces of said post members in a predetermined pattern; soldering the wires to said post members and the individual wires of each contact brush to each other while in said predetermined pattern to form a sub-assembly, the solder being applied along the wires from the position on the post member toward the center of the contact brush a predetermined distance; bending the wires to form V shaped contact portions at a central position of each contact brush; placing said sub-assembly over said spaced support members of insulating material; securing opposite ends of each individual contact brush to said support members at positions approximately where the individual wires of each brush are secured together; and finally cutting the wires on an end at a position between said support members and said post members to remove a post member from the contact brush assembly, said cutting occurring within said predetermined distance, whereby a substantial portion of the bonded connection is left intact at least at one end of each group of wires.

3,188,723
METHOD OF ASSEMBLING ELECTRON DISCHARGE TUBES
Charles W. Lindsley, Cresskill, and Ernst R. Larsen, Ferdinand, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,271
3 Claims. (Cl. 29—155.5)

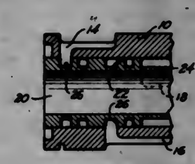
1. In the art of manufacturing an electron-tube of the kind in which a plurality of parallelly arranged wire-like elements extend from a base and in the manufacture of which an apertured structure is to surround individual ones of said parallel elements, a method of establishing and maintaining said parallel arrangement of said elements with the aid of a comb-like structure having teeth spaced to receive therebetween individual ones of said elements, said method comprising:

moving said lead-containing base relative to said comb into a position whereat individual ones of said wire-like elements are received between adjacent ones of said teeth,

establishing a vacuum adjacent to the proximal ends of said adjacent teeth to draw and to hold said wire-like elements in the desired parallel relationship, and maintaining said vacuum while placing said apertured structure about said wire-like elements in a position whereat individual ones of said elements extend into individual ones of the apertures in said apertured structure.



3,188,724
METHOD OF CONSTRUCTION
Max H. Bates, Dorr W. Miller, and Joseph Woveris, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,127
2 Claims. (Cl. 29—157.1)



1. A method of construction comprising the following steps:

forming an outer sleeve with an open ended chamber and locating radial ports through said sleeve into said chamber at the same time on predetermined points;

machining an inner sleeve to have spaced radially projecting portions connected by a tubular wall which portions are located with reference to the predetermined points of said ports formed in said sleeve;

coating the exterior of said inner sleeve with a bonding substance;

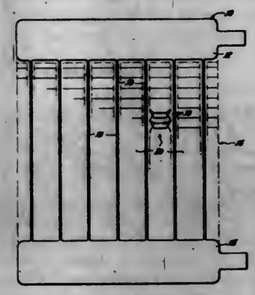
machining said radially projecting portions to a diameter substantially the same as the internal diameter of the chamber of said outer sleeve which machining removes the peripheral coating of the bonding substance to provide a predictable peripheral dimension for said inner sleeve;

press fitting said inner sleeve in said chamber of said outer sleeve such that said portions and said ports are operatively aligned;

heating the assembled inner and outer sleeves to cause said bonding substance to flow outwardly of said radially projecting portions and by capillary attraction into the area between the chamber wall and an exterior surface of said radially projecting portions; and

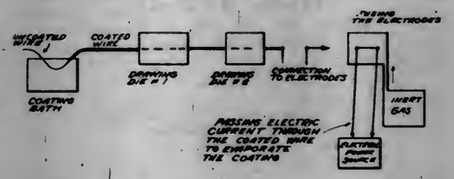
removing said tubular wall of said inner sleeve to leave spaced depending projections in the chamber of said outer housing.

3,188,725
METHOD OF MAKING A HEAT EXCHANGER
Carl L. Bailys, Detroit, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application July 26, 1957, Ser. No. 674,516, now Patent No. 2,991,047, dated July 4, 1961. Divided and this application May 18, 1961, Ser. No. 110,935
4 Claims. (Cl. 29—157.3)



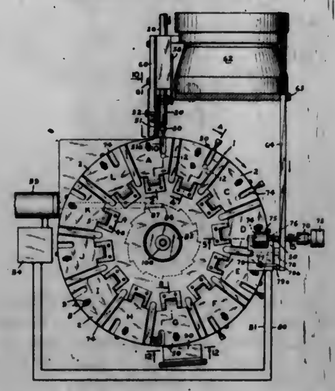
1. A method for making a heat exchanger of the tube sheet type comprising the steps of integrally bonding two sheets of metal each to the other along parallel lines to form therebetween unbonded zones, expanding certain of said unbonded zones to form fluid passages, transversely slitting others of said unbonded zones between said fluid passages to form a series of strips, bending said strips to form a series of fins extending angularly to the plane of said sheets, such that each of said fins extend from both sides of the plane of said sheets, and separating the plies of said fins to form a plurality of multi-ply fins.

3,188,726
DEVICE FOR EVAPORATING COATINGS FROM EXTREMELY THIN METAL ELEMENTS
Hans Lauke, Lurupar Chaussee 73, Hamburg-Altona, Germany
Filed May 16, 1962, Ser. No. 195,280
4 Claims. (Cl. 29—200)



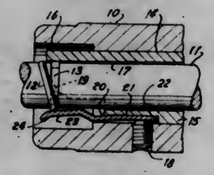
1. Apparatus for producing very thin and bright metal wires comprising a winding-off device for supplying a continuous strand of coated extremely thin metal wire having a predetermined melting point substantially higher than the evaporation point of the coating material, a winding-up device opposite to said winding-off device for taking-up said continuous strand of wire, a closed chamber between said winding-off device and said winding-up device with small inlet and outlet openings positioned opposite each other for allowing the continuous strand of wire to pass from said winding-off device through said chamber to said winding-up device, an independent heating device within said chamber in the immediate vicinity of the strand passing through for heating said continuous strand beyond the evaporation point of said coating material; cooling surfaces in said chamber adjacent to its walls for condensing the evaporated coating material and removable condensation plates mounted adjacent said walls, for recovering the evaporated coating material.

3,188,727
NEEDLE-FERRULE CANNULA COVER ASSEMBLY APPARATUS
Thomas E. Davis, Newtown Square, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,852
10 Claims. (Cl. 29—208)



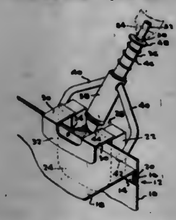
1. An apparatus for assembling a needle-ferrule in a cannula cover which comprises an index wheel hub, drive means associated with said hub to rotate said hub, means associated with said hub to radially support in a peripheral manner a plurality of hinged jaws, said jaws adapted to receive and hold a needle-ferrule cannula cover assembly delivered thereto, means at the periphery of the jaws to seat the needle in the cannula cover, and a jaw opening cam positioned at the periphery of said jaws in the path of hub rotation to unload the needle-ferrule cannula cover from the jaws after seating.

3,188,728
RETAINER RING REMOVING TOOL
Joe F. Perrin, 219 E. 3rd St., Taylor, Tex.
Filed Mar. 18, 1963, Ser. No. 265,835
6 Claims. (Cl. 29—229)



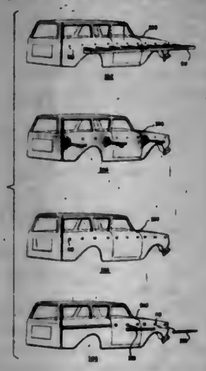
1. A tool for removing a split ring from the annular groove of a cylindrical member including a body having a bore of greater diameter than the cylindrical member and of less diameter than the split ring for telescoping over the member, a cam face at one end of the bore of the body and inclined relative to the longitudinal axis of said bore for engagement with the ring, and an elongate resilient element extending longitudinally outward of said one end of said bore of said body in opposed spaced relation to the cam face and terminating in an outer extremity facing in the same direction as said cam face for bearing against the ring when said cam face engages the ring, the resilient element having an outer end portion adjacent its outer extremity and contiguous said bore for engaging the member and for movement into overlying frictional engagement with the ring to confine a portion only of the ring against displacement from the groove of the member when the outer extremity of said element rides over the ring upon continued telescoping of said body over the member and thereby cause pivoting and spreading of the ring by the inclination of said cam face in co-action with the curvature of the member to disengage the ring from the groove of the member.

3,188,729
IMPACT HAMMER CRIMPING ATTACHMENT
Barney E. Pogue, Jr., and O. C. Wilson, Jr., Shreveport, La., assignors, by direct and mesne assignments, of one-half to O. C. Wilson, Jr., Caddo Parish, and one-half to William E. Dowden, Natchitoches Parish, La.
Filed Oct. 16, 1962, Ser. No. 230,918
4 Claims. (Cl. 29—243.58)



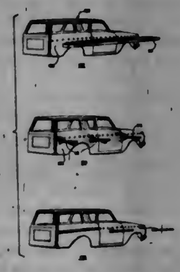
4. A tool for folding edges of sheet metal comprising a block having a plane face and a notch in one edge, a hook member carried by said one edge, on opposite sides of said notch and having a skirt portion parallel to, and spaced from, said plane face, with a free edge terminating substantially opposite the innermost portion of said notch, and a sleeve carried by said block and having a reciprocable, inner rod, said sleeve mounted with its axis in a plane transverse to said plane face and passing through said notch, and the innermost end of said sleeve spaced from said innermost portion of said notch, said rod being pivotally mounted for sliding movement in said sleeve and longitudinally-extending in alignment with the notch in said block, and having inner and outer end portions extending beyond the respective ends of said sleeve.

3,188,730
METHOD OF FINISHING AUTOMOBILE PANEL AND SECURING TRIM THERETO
Engelbert A. Meyer, Union Lake, Mich., assignor to Chicago United Products Company, Inc., Detroit, Mich., a corporation of Michigan
Filed Jan. 15, 1964, Ser. No. 337,868
10 Claims. (Cl. 29—430)



1. The method of finishing an automobile panel including the attachment of a hollow automobile trim part having opposed flanges to an automobile panel by means of an adapter comprising the steps of moving the automobile panel in an unfinished state to successive work stations, welding a series of BB-shot size headed buttons with contour characteristics smoothly blending with the panel surface to the automobile panel throughout the entire extent of contact of the buttons with the panel at predetermined locations coordinated with the predetermined desired position of said trim part on said panel and coordinated with the shape of said trim part, said welding being accomplished at the surface of the automobile panel and without perforation thereof and producing a completely exposed continuous peripheral joint between each of the buttons and the panel surface, moving the panel to a painting work station, finishing the surface of the automobile panel including applying a coating of paint thereto and over the buttons to provide a continuous film which seals the continuous peripheral joints between the panel surface and the buttons against corrosion, moving the panel to a subsequent work station, mounting a plastic adapter on each of said headed buttons by moving said adapter inwardly to receive said headed button through a hole in the adapter, then sliding the adapter along the automobile panel to seat the bottom inner surface of the headed button on a top outer surface of the adapter which forms a button seat by camming distortion of a resilient runner of the adapter during sliding movement thereof, said runner springing back to lock the button at the button seat, bringing the hollow trim part into ordered association with a series of the adapters mounted on said automobile panel including interlockingly engaging one flange thereof with sides of such series of adapters and then inwardly pivoting the trim part thereabout and forcing the other flange of the trim part over the other sides of the series of adapters to distort the trim part within its elastic limit and then allowing said other flange thereof to spring into interlocking engagement with said other sides of said adapters in overlying substantially completely housing and concealing relationship thereto.

3,188,731
METHOD OF FINISHING AN AUTOMOBILE BODY INCLUDING SECUREMENT OF TRIM THERETO
Theodore J. Sweeney, Grosse Pointe, Mich., assignor to Chicago United Products Company, Inc., Detroit, Mich., a corporation of Michigan
Filed Jan. 15, 1964, Ser. No. 337,930
7 Claims. (Cl. 29—430)

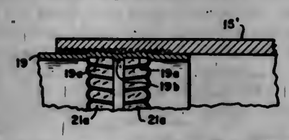


1. The method of finishing a metal automobile body panel including the painting thereof and attachment thereto of trim comprising: moving the body panel through successive finishing stations, at one station welding to the body panel while in an unfinished state a plurality of metal buttons of BB-shot size and smooth uniform shape with contour characteristics smoothly blending with the surface of the body panel at predetermined locations coordinated with the predetermined desired position of the trim, accomplishing said welding at the surface of the body panel and throughout the entire extent of contact of the buttons with the body panel and without perforation of the body panel and producing a completely exposed continuous peripheral joint between each of the buttons and the surface of the body panel, at a subsequent finishing station painting the panel, said painting including the application to the body panel and to the buttons of at least one paint coat providing a continuous paint film which seals the continuous peripheral joints between each of the buttons and the body panel against corrosion, and after drying the paint and at a further subsequent finishing station bringing the trim into ordered association with the buttons and resiliently connecting the trim to the buttons in overlying substantially completely housing and concealing relationship thereto.

3,188,732
DIFFUSION-BONDING OF METAL MEMBERS
William Feduska, Emsworth, and Walter L. Horigan, Jr., Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 14, 1960, Ser. No. 2,358
4 Claims. (Cl. 29—471.1)

1. In a diffusion-bonding process for joining alloy members into structures suitable for use at elevated temperatures, the steps comprising, positioning a thin beryllium-containing alloy sheet between and in intimate contact with the alloy members at the surfaces to be joined, heating the assembled members and the sheet in contact with each other in a protective environment at a temperature of from 900° C. to 1250° C. so that said members and sheet remain substantially in the solid state for a period of from about one minute to five hours, whereby the beryllium diffuses into the adjacent contacting surfaces of the members and thereby metallurgically bonds the alloy members in a strong joint, the beryllium-containing alloy sheet being of a thickness of up to 0.025 inch and comprising, by weight, from 0.25% to 3.75% beryllium, and the balance at least 95% total of at least one element selected from the group consisting of nickel, chromium, and iron, with small amounts of incidental impurities.

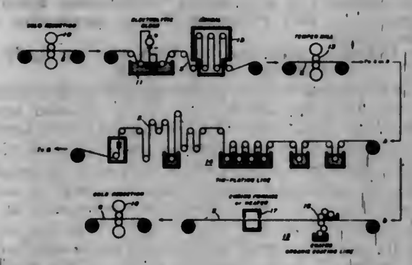
3,188,733
TORQUE JOINT
Clyde E. Rickard, Pittsburgh, Pa., assignor to McDowell Manufacturing Company, Millvale, Pa., a corporation of Pennsylvania
Filed July 28, 1961, Ser. No. 127,700
1 Claim. (Cl. 29—523)



A method of securing a sleeve-like thin-wall tubular supported metal member of smooth-wall configuration within and about the inner peripheral wall of a thicker-wall tubular metal support member to provide a mechanical joint which comprises, forming serrations within and about the inner peripheral wall of the support member, assembling the tubular members by telescopically-inserting the tubular supported member in a slide-fitting telescopic relation within the tubular support member and fully over the serrations of its inner peripheral wall, and simultaneously radially-outwardly peening a pair of banding portions in a spaced relation axially of the tubular member assembly and rotatably about the inner peripheral wall of the supported member, while plastically expansion-deforming the pair of banding portions radially-outwardly in a complementary manner into radially-aligned serration bands of the inner peripheral wall of the support member that are in radial alignment with the pair of banding portions of the supported member, and while

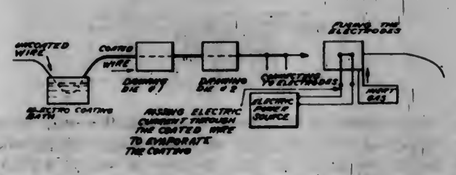
maintaining an intermediate banding wall portion of the supported member representing the spacing between the pair of banding portions, discontinuous with the pair of banding portions and in its smooth-wall form and substantially undeformed about and in engagement with ridges of a radially-aligned serration band of the support member.

3,188,734
METHOD OF MAKING CONTAINER STOCK
Raymond T. Davis, Jr., Monroeville, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Oct. 30, 1961, Ser. No. 148,514
5 Claims. (Cl. 29—528)



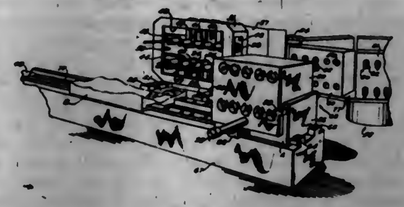
1. A method of making container stock comprising cold-rolling low-carbon steel strip to a thickness greater than that desired in the finished product, applying a lacquer coating to the strip, thermally curing the lacquer coating, and cold-rolling the lacquer-coated strip thereby reducing its thickness to final gage.

3,188,735
METHOD FOR PRODUCING VERY THIN AND BRIGHT METAL WIRES AND PROFILES
Hans Laske, Lurupor Chaussee 73, Hamburg-Bahrenfeld, Germany
Filed June 2, 1961, Ser. No. 114,555
Claims priority, application Germany, June 27, 1960, L 36,437
2 Claims. (Cl. 29—529)



1. Apparatus for vaporizing a protective coating from very thin and bright metal wires comprising an airtight container which is provided with a pair of spaced electrodes adapted to be connected to the respective ends of a wire, for vaporizing a protective coating previously applied, a low frequency electric current supply connected to said electrodes, the portion of the container enclosing said electrodes being of a reduced cross-section, said apparatus comprising at least one high frequency coil for enclosing said portion, a high frequency generator connected to said coil, said generator being adapted to generate a high temperature in said end portion to thereby prevent condensation of the vaporized coating material on the walls of said container.

3,188,736
MULTIPLE SPINDLE TOOL CHANGER
Wallace E. Brainard, Milwaukee, and Hans J. Baechle, West Allis, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Mar. 14, 1961, Ser. No. 95,642
15 Claims. (Cl. 29—568)



14. In a machine tool, a frame, a spindle head, a plurality of tool spindles rotatably journalled in said spindle head, a tool storage magazine movably carried in spaced relationship to said spindle head and adapted to carry a plurality of tools in sets with each set comprising several tools for simultaneous use in said several spindles, a tool changer supported by said frame for rectilinear movement in two directions of travel with the movement in one direction serving to shift said changer from said tool storage magazine to said spindle head and return while the second direction of travel serves to move said changer selectively toward and away from said spindle head and said magazine, and means for actuating said changer in its rectilinear directions of travel for interchanging tools in sets between said tool storage magazine and said spindle head.

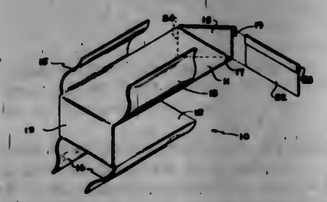
3,188,737
NAIL CLIPPER ATTACHMENT TO RECEIVE THE CUT CLIPPINGS
Perry J. Chase, Columbus, Ohio
(1815 Blake Blvd. SE., Cedar Rapids, Iowa)
Filed Feb. 26, 1964, Ser. No. 347,557
1 Claim. (Cl. 30—124)



In combination with a nail clipper having a pair of elongated arms secured together at one of their ends and with their other ends normally resiliently held apart so that the arms are normally in diverging relationship, a a cam lever carried by a pin extending between the diverging ends of said arms for moving the diverging ends relatively toward each other, said arms having at their diverging ends transversely extending but inwardly curved cutting flanges directed toward each other which are normally spaced apart but which are movable into cooperation when said diverging ends are moved toward each other, a nail clipping receptacle of generally wedge-shaped hollow form positioned between said arms and being of closed transverse cross section with a pair of divergent opposed top and bottom walls adjacent the arms and a pair of opposed side walls joining the top and bottom walls, said receptacle having a closed, tapered bottom end where all of said walls meet and an open mouth end adjacent the diverging ends of the arms and the cutting flanges thereon, said receptacle being formed

from a resilient material to permit flexing of the side walls as the arms are moved relatively toward and away from each other, each of said top and bottom walls being normally bowed outwardly in a transverse direction so as to frictionally engage the adjacent arm and having an outer edge which is curved inwardly and located inwardly of the corresponding inwardly curved cutting flange, each of said opposed top and bottom walls having an aperture formed therein to receive said pin with the apertures in the opposed walls being in alignment and each being of keyhole form with an inner circular portion of greater diameter than said pin spaced from said outer edge and an outer communicating slot portion extending to said edge and being of less width than the diameter of said pin, said side walls having at said mouth end of the receptacle lips which extend outwardly beyond said curved edges of the opposed top and bottom walls and said curved cutting flanges to prevent the nail clippings from being propelled out of the mouth end of said receptacle as they are produced by cooperation of said cutting flanges.

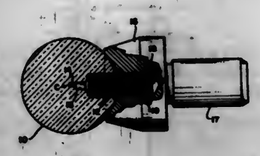
3,188,738
CUTTING TOOL
Leon E. McDuff, Corona, Calif., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 7, 1962, Ser. No. 243,090
1 Claim. (Cl. 30—289)



A cutting tool comprising, a one piece U-shaped body having two generally flat and substantially parallel legs and a generally flat base joining opposed ends of said legs, whereby the relative position of said legs is fixed said legs having spaced apart outturned fixed flanges extended for at least a portion of the edges of said legs and defining finger retaining means, one of said legs additionally having a stationary outturned flange at the open end of said leg, the top edge of said flange being inclined from one lengthwise edge of said leg to the other, said inclined end being inturned away from the closed end of said body and providing a holding recess for a cutting blade, and a cutting blade maintained in said recess with its cutting edge partially extending inwardly of said leg toward the open end of said U-shaped body.

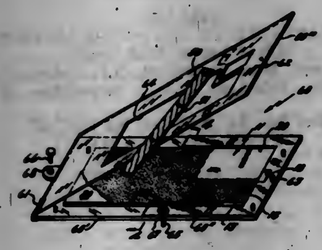
3,188,739
MULTI-DIRECTIONAL OPTICAL TARGET
Joseph C. Olsen, Sunnyvale, and Orrin K. Percy, Milpitas, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 5, 1962, Ser. No. 228,634
1 Claim. (Cl. 33—74)

An optical target for determining optical and physical measurements through the center thereof comprising a spherical member, said spherical member being substantially optically transparent and including an outer surface which is a lens to prevent distortion of light through the center thereof, said spherical member further including the tip of a hole sunk along a radius of said spherical member defining a sighting point, said hole sunk in said spherical member adapted to receive a light therein to illuminate the tip of said hole, said spherical member further including a base member connected thereto, said base member comprising a concave portion at one end and a post extending from the other end thereof, and stud means con-



nected to the concave portion of said base member concentric with said post, said stud means adapted to receive said spherical member thereon.

3,188,740
ENGINEERS' PATENT PREPARATION KIT
Francis D. Brewer, 47 Mokema Ave., Waltham, Mass.
Filed Mar. 31, 1960, Ser. No. 18,919
1 Claim. (Cl. 33—76)

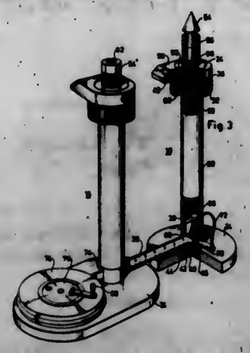


Apparatus for use in executing graphic compositions, said apparatus comprising a frame having opposed peripheral surfaces in one plane and a depressed work-receiving central surface in a second plane parallel with, and below, said first plane, a pen-supporting blade spanning said opposed peripheral surfaces, pedestal means extending downward from said blade to engage the surface of the work-sheet over-lying said central surface, and recessed means integral with said frame for facilitating removal of the work-sheet from said central surface without disturbing the frame, said depressed central surface being constituted by a pad or mat adapted to hold the work-sheet by adhesive inter-engagement of the interfacial surfaces of said pad and work-sheet.

3,188,741
APPARATUS FOR MEASURING THE DISTANCE BETWEEN FIXED POINTS
Rudolf Martin Fabian Jonsson, Kerbervagen 14, Stockholm, and Ulf Otto Lennart Thomée, Ynnervagen 3, Johanneshov, Sweden
Filed Apr. 19, 1962, Ser. No. 188,723
Claims priority, application Sweden, Oct. 23, 1961, 10,489/61
2 Claims. (Cl. 33—138)

1. A device to be used in connection with apparatus for checking the distance between two fixed points on frames for motor vehicles, comprising a plate, an upright carried by and angularly adjustable on said plate, said upright including a tubular member and a screw having an axial end bore and extending in said tubular member coaxially therein, a nut fitting to said screw and engaging one end of said tubular member, a spring mounted in said bore and a locating means engaging said spring in said end bore and extending at the top of the upright to be engaged with one

fixed point on the frame of the motor vehicle, the device also comprising a water-level instrument for turning

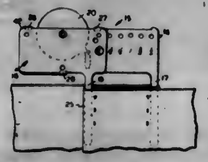


around said upright to facilitate adjustment of the latter to a vertical position below said fixed point.

3,188,742
TOOL ADAPTABLE TO AID IN THE MAKING OF PLEATS AND THE LIKE

Curtis F. Pearl, West Englewood, N.J., assignor to Pentapco, Inc., Elizabeth, N.J., a corporation of New Jersey

Filed Dec. 26, 1962, Ser. No. 246,922
1 Claim. (Cl. 33—143)



In a caliper-type tool adapted to aid in the making of pleats and the like, a body member having a jaw extending therefrom, a slide member slidably mounted on said body member and having a jaw extending therefrom; said jaws extending laterally with respect to the line along which said slide member is movable; said jaws being opposite one another whereby on movement of said slide member, the distance between said jaws is altered; each of said jaws being an elongated finger; the edges of said fingers which are farthest apart when said fingers are apart, being straight and parallel; said body member having a track transverse the direction of movement of said slide member, an operating member rotatably mounted to and positioned between said body and slide member, said operating member having a portion accessible for manual manipulation and another portion confined between the body member and slide member and said last mentioned portion having an element extending therefrom, engaged by said track for sliding movement therealong, the distance between the axis of rotation of the operating member and the track-engaging element is less than the lateral width of the body member whereupon turning said operating member in one direction, said slide member will be shifted so that said jaws will move away from each other and upon turning said operating member in the opposite direction, said slide member will be shifted whereby said jaws will move towards each other and cooperative stop means on both said body and slide members, determining the limits of travel of said slide member along said body member; said track being substantially midway between said stop means which are spaced on said body member so that when the slide is at the mid-point of its travel along the body member, the radial line on said operating member from the axis of rotation of said operating member to said track-engaging element, is substantially parallel to said parallel edges of said fingers.

3,188,743
GAUGING APPARATUS

Kazimer A. Strzala, Oakland, Calif., assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Mar. 2, 1962, Ser. No. 176,997
10 Claims. (Cl. 33—174)



5. In a container gauging apparatus for inspecting the upper surface of the annular finish on the upper end of an open mouth container for refects such as warp, dip, cocked finish and height,

the combination comprising a support on which a container is adapted to be positioned for inspection,

means for rotating said support about a vertical axis,

a pair of arms,

means for pivotally supporting said arms for independent movement about common horizontal axes adjacent said support and spaced laterally from the axes of said container when on said support with the arms extending into overlying relationship with said support,

means on each said arm overlying said support and adapted to contact spaced points on the upper surface of the finish of a container positioned on said support,

said means engaging said finish at diametrically spaced points,

and means associated with at least one of said arms for producing a signal in accordance with the vertical position of said contact member.

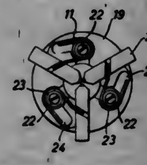
3,188,744
MICROMETER GAUGES

Eric Bowers, Cottingley, Bingley, and Gordon Bowers and John F. Bennett, Bradford, England, assignors to Bowers Internal Gauge Company Limited, Bradford, England, a British company

Filed Feb. 12, 1962, Ser. No. 172,661
1 Claim. (Cl. 33—178)

In a micrometer gauge for internal measurements, the combination comprising a measuring head including a plurality of radially disposed anvils therein, each said anvil having a groove in its upper edge receiving one leg of a coiled anvil-returning spring, the other leg of each spring being located in a recess in said head, a spring retaining screw passing through the coiled portion of each spring into said head, said head being comprised of two parts held together by said screws, one of said head parts serving as a cover plate the face of which is

provided with a clearance recess for each said anvil enabling the legs of said springs to ride up over said anvils and then drop into the respective grooves in said anvils, an inner barrel, an axial datum line on said inner barrel, an anvil adjusting screw spindle passing axially through said barrel and including a nose portion engaged with said anvils for moving said anvils in a radially outward direction, a rotary control thimble on said screw spindle for giving the latter axial movement, said thimble being provided with a graduated rim portion and a datum line in the form of a ring extending around said thimble, an outer fixed barrel embracing said inner barrel and

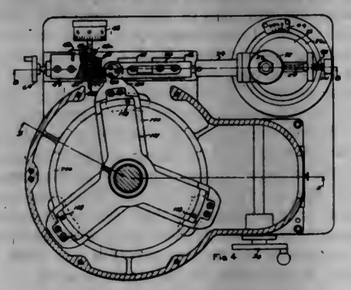


part of said thimble, said outer barrel including axial graduations to establish a longitudinal scale and being gapped to reveal said graduations on said rim portion of said thimble, said graduations on said thimble being settable to said axial datum line on said inner barrel and said ring datum line on said thimble being settable to said axial graduations on said outer barrel thereby to facilitate setting and reading of said gauge, and a cylindrical cover extending at least over the graduated parts and which is provided with a transparent window portion in which to view said graduations, said cylindrical cover also serving as a means by which said gauge may be gripped.

3,188,745
TOOTH SPACE MEASURING MACHINE

Hessler H. Gates, Charlestown, N.H., and Arthur I. Bean, Springfield, Vt., assignors to The Fellows Gear Shaper Company, Springfield, Vt., a corporation of Vermont

Filed Apr. 14, 1961, Ser. No. 103,107
5 Claims. (Cl. 33—179.5)

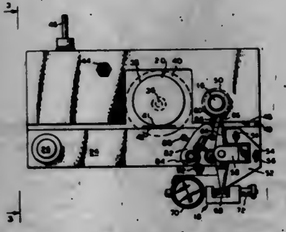


2. In a gear testing machine of the character described, a base, a work holding spindle rotatably mounted in said base, an indicator stylus mounted on said base adjacent to said spindle in such a position as to be adapted to engage the teeth of a work gear mounted on said work holding spindle, means to intermittently rotate said work holding spindle, said last named means including a driving motor, a crank adjustably connected to and driven by said motor, a member mounted on said spindle and adapted to be clamped thereto, means to clamp said member to said spindle, and a connecting rod joining said crank to said member, whereby said work spindle is urged to rotate when said member is clamped to said spindle, adjustable stop means carried by said base, and a bearing member fixed to said connecting rod adapted to be limited in its motion by said stop means, said connecting rod being resiliently coupled to said crank so that said crank may have continued movement in a given direction while said connecting rod is held against movement by the engagement of said bearing member with said stop means.

3,188,746
GEAR TESTING APPARATUS

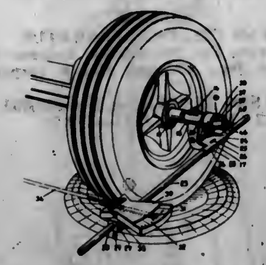
Horace F. Travis, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Sept. 25, 1962, Ser. No. 226,003
2 Claims. (Cl. 33—179.5)



1. An apparatus for testing gears or the like comprising a base, an arbor mounted on said base adapted to accept a workpiece gear having circumferentially spaced teeth, a shaft mounted on said base with said shaft having its axis parallel to the axis of said arbor but spaced therefrom, an arm pivotally mounted on said shaft adjacent one end of said arm, rotatable cam means mounted on said base, said cam means being positioned to engage said arm intermediate its ends, means acting on said arm at a point remote from said pivot shaft and adapted to normally maintain said arm in contact with said cam means, said cam means having one or more lobes which upon rotation is adapted in cooperation with said last mentioned means to move the end of said arm remote from said pivot towards and away from said arbor means in an oscillating movement about said pivot shaft, checking means mounted on said arm adjacent the end remote from said pivot shaft, said checking means including three contact members extending toward said arbor and each contact member being independently adjustable to engage interdental spaces of a workpiece gear mounted on said arbor, the first contact member being an adjustable rigid element normally fixed relative to said arm to serve as a reference point, the second contact member being spaced from said first contact member a distance at least equal to one interdental tooth spacing of the workpiece gear, said second contact member being spring loaded to aggressively urge a tooth of the workpiece gear into engagement with said reference point first contact member, said third contact member being laterally movable and mounted in spaced relation to said first contact member a distance related to surfaces to be contacted, indicating means mounted on said arm and connected to said third contact member for indicating the measurement of movement of said member, index means mounted on said arm and extending towards said arbor and having means for engaging successive wall portions defining the interdental spaces on the peripbery of the workpiece gear as said arm moves toward and away from said arbor thereby indexing said gear workpiece about said arbor with each movement of said arm and measurement of the gear workpiece, said checking means and at least two of the three contact members having means to permit individual adjustment relative to said arm and relative to a master reference gear mounted on said arbor whereby deviations of workpiece gears mounted on said arbor can be indicated relative to said master gear.

3,188,747
TRUCK ALIGNER
William Frank Race, 116 Laird Drive, Toronto 17, Ontario, Canada
Filed Sept. 12, 1963, Ser. No. 308,504
3 Claims. (Cl. 33—203.18)



1. In an apparatus for measuring the alignment characteristics of front wheels of an automotive vehicle, the combination comprising, a support member including a mandrel having a tapped end for connection to a wheel spindle and terminating at the other end in an instrument supporting member; a split sleeve operable to clamp around an intermediate portion of said mandrel and including downwardly depending arm means, said arm means terminating in a horizontal extension; a horizontal tubular sleeve element carried by said extension and operable to receive and support an elongated datum shaft therein, said tubular sleeve being normal to the spindle axis, and level-indicating means on said tubular sleeve to indicate the orientation of the sleeve axis about the horizontal; measuring instrument means comprising a housing having magnetic clamping means at one end thereof for releasably connecting the measuring instrument means to said instrument supporting member; a spirit level carrier pivotally mounted on said housing and including a downwardly depending stem portion; cam means mounted for rotation with a shaft element rotatably mounted in the other end of said housing, said stem portion being biased into contact with said cam means; dial means freely rotatable on said shaft element and registerable with an index mark on said housing and locking means operable to selectively lock said dial means on said shaft.

3,188,748
BRICKLAYER'S LEVEL
Willard Bruce Moody, 1711 Hillcrest Drive, Durham, N.C.
Filed Jan. 28, 1963, Ser. No. 254,117
3 Claims. (Cl. 33—207)



1. In a bricklayer's tool, the combination including a spirit level with a transparent upper surface, said upper surface being slightly arched as viewed in elevation on intersecting vertical planes,

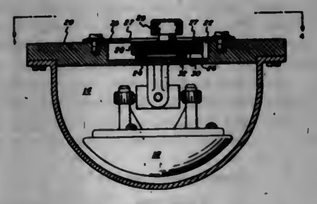
(1) an endless circular band supporting said level on the top periphery, the support including an upper margin about and above the transparent surface, thus forming a recess within said margin,

(2) a horizontal planer base member of cruciform shape in plan disposed contiguous to and integral with said band in 180° opposed relation with respect to said spirit level,

(3) a longer pair of the legs of said base member with lower coplanar surfaces which latter surfaces are disposed tangentially with respect to the outer diametrical surface of said band and with a total length approximately equal to the outside diameter of said band,

(4) and a shorter pair of the legs of said base member with lower surfaces which latter surfaces are coplanar with said lower surfaces of said longer pair of legs and which latter surfaces are perpendicular with respect to a vertical central plane of said band, the total length of said latter lower faces being approximately one half the length of the surfaces of the longer legs.

3,188,749
FLUX VALVE COMPENSATOR
Donald H. Baker, Phoenix, Ariz., John W. Colton, Santa Barbara, Calif., and Donald R. Kuelbs, Phoenix, Ariz., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Aug. 10, 1962, Ser. No. 216,255
11 Claims. (Cl. 33—224)

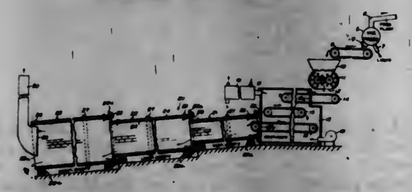


11. A compensator adapted to be secured to a flux valve compass to cancel substantially one cycle heading deviation error thereof comprising housing means having a recess therein, permeable shield means secured within said housing recess, two magnets, and means positionable within said recess fixedly holding said magnets in spaced apart relationship with the axes of their respectively fields parallel, said shield means being positioned between said means holding said magnets and a compass when said compensator is secured to a compass, said magnets having their fields oriented in substantially opposite directions and being of different strengths, the weaker magnet producing a field at a compass to which said compensator is secured which is at least as strong as the field there produced by the stronger magnet when the stronger magnet is positioned for maximum shielding from the compass, and means for indicating the direction of orientation of said magnet fields, whereby the axes of those fields may be aligned perpendicular to the direction at which a one cycle error is maximum to cancel such error.

3,188,750
COMBINED AIR DRYING-FREEZE DRYING PROCESS
Julius M. Davis, Bronx, and Richard A. Pfluger, Pearl River, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 25, 1960, Ser. No. 71,395
4 Claims. (Cl. 34—5)

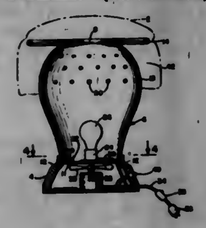
1. The method of dehydrating a material to obtain a dehydrated organic material characterized by a high degree of biological integrity, extended storage life, and ease of reconstitution on rehydration yielding a product which closely approaches the material prior to dehydration comprising air drying the material to a water content approaching its higher critical water content, freeze drying the air-dried material at least to its lower critical water content, and air drying said material to a desired terminal water content lower than said lower critical water content, thereby obtaining a dehydrated material characterized by its high degree of biological integrity, extended storage life, and ease of reconstitution on rehydration to yield a product which closely approaches the material prior to dehydration.

3,188,751
METHOD OF PRODUCING BUILDING AGGREGATE UTILIZING SLUDGE RESIDUE FROM PAPER DE-INKING PROCESS
Robert W. Sutton, Falls Church, Va., assignor, by direct and mesne assignments, to The Hydraad Corporation, a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,549
6 Claims. (Cl. 34—12)



1. A method of producing a building aggregate including as ingredients, carbon, hydrogen, sulfur, oxygen, nitrogen, ash and cellulose from the sludge residue of a conventional de-inking process employed in paper manufacture and including as ingredients, moisture, volatile materials, fixed carbon, ash and sulfur, said method, comprising removing the major portion of liquid from said sludge, breaking the resultant material into particles, conveying said particles through an initial drying zone to reduce the moisture content thereof to from 18–35%, agitating said particles while conducting the same through a plurality of heating zones, respectively maintaining at progressively increased temperatures within the range of from 700° F.–2750° F., and discharging the dried and heated product from the final heating zone.

3,188,752
WIG DRYING LAMP
Florence Skinner, 309 Lafayette Ave., Brooklyn, N.Y.
Filed Dec. 5, 1962, Ser. No. 242,546
3 Claims. (Cl. 34—104)



3. A wig drying lamp comprised of a base portion and an upright portion, said upright portion having an open upper end and a lower end removably seated with respect to said base portion, said upper end having an annular flange disposed peripherally thereof, said flange having radially disposed elongate parallel perforations therethrough, said upright portion having an annularly flared region positioned adjacently of said upper end, said region being slightly smaller in diametrical cross-section than said annular flange, a plurality of apertures within said annularly flared region, a socket-supporting-plate within said lamp and a socket mounted upon said plate, an illuminating electric light bulb within said socket and an electric motor having fan blades operatively associated therewith mounted within said lamp, said fan blades being arranged to direct a forced flow of air contiguously with respect to said light bulb.

3,188,753
ANATOMICAL DEVICE
Cerrie L. Lovercheck, Denver, Wyo., assignor to Superior Plastics Inc., Chicago, Ill., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,614
1 Claim. (Cl. 35—17)



An anatomical model composed of a plurality of assembled components of rigid synthetic resinous material comprising a simulated human hand skeleton, including simulated metacarpals rigidly secured to a unitary simulated palm section, and separate simulated phalanges in articulated engagement with said metacarpals simulating the fingers of said hand skeleton, a mounting bracket for said hand skeleton comprising a platform secured to its said palm section, and means anchored and adjacent to said platform for animating said articulated phalanges in a manually controlled manner, comprising digitally extending elastic means anchored at one end adjacent to said platform and at the opposed end to each finger tip phalange, and slidably retained therebetween on the dorsal side of each of said articulated finger components to normally urge said fingers to extended open hand position, and digitally extending lanyards slidably engaged to said finger components on their palm sides and anchored at one end to their finger tip phalanges, said lanyards, at their opposed ends, extending through apertures formed in said platform and secured thereat to manual manipulating means whereby said fingers can be individually flexed against the tension of said elastic means.

3,188,754
TESTING AND TEACHING METHOD AND APPARATUS THEREFOR
John M. Loving, 1605 Bonnie St., Austin, Tex.
Filed July 5, 1963, Ser. No. 292,934
4 Claims. (Cl. 35—48)

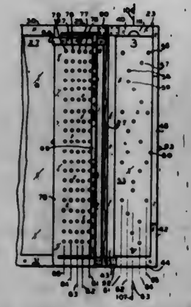
1. Apparatus for indicating, recording, and observing answers which comprises a base board, a key, and a key cover;

said base board being flat on one side thereof, and having a slot at the other side thereof, said key fitting in said slot;

said cover being permanently and hingedly attached to said board, said cover means being opaque and provided with a flat upper surface having therein a plurality of rows of holes, said holes being arranged in vertical columns and horizontal rows, each said column being equally spaced from its neighboring

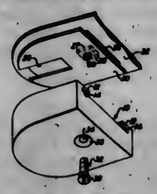
column and extending along the length of said cover for a major portion thereof, and each horizontal row being equally spaced from its neighboring row and extending across the width of said cover for the major portion thereof, said holes each passing through said cover means;

said key formed of substantially non-puncturable opaque material and located on said board between said board and said cover, said key means being provided with a series of holes, said holes being located in columns which are located below the columns of holes in said cover means and in rows which are below the holes in said cover means, the top surface



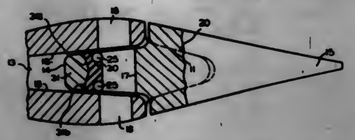
of said key having an outline which is symmetrical about its longitudinal axis and equatorial axis, the holes in said key means being located in a pattern which is asymmetric about said longitudinal axis and about said equatorial axis; and guide means firmly attached on said base board and engaging said key means, and locating said key means in fixed relation on said base board and in fixed relations to said cover, wherein the key has a dark colored upper upwardly facing surface and the top surface of the floor of the slot has a light colored upwardly facing surface, whereby to readily determine for any row which hole in the cover coincides with a hole in the key.

3,188,755
REPLACEABLE HEEL FOR SHOES
Anthony Cortina, 56 Huntington St., New London, Conn.
Filed Aug. 21, 1963, Ser. No. 303,962
7 Claims. (Cl. 36—42)



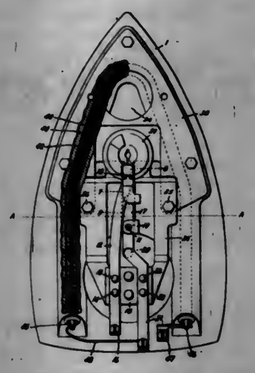
1. A readily removable heel structure comprising a heel shaped retaining plate having plane sides rounded at the rear, spacing means for mounting said plate below the heel area of a shoe body, said retaining plate having side and rear edges extending outwardly of said spacing means for support of a heel thereon, a slot formed a substantial radial distance inward toward the center from the rear edge of said plate, a heel having a flange extending inward around its upper edge and separated from the upper heel surface by a groove cooperative with the spaced edges of said retaining plate for slidably mounting the heel upon said plate and a core element on said heel extending radially inward from said flange and positioned to lie in sliding fit within the slot in said plate on sliding engagement of the heel thereon, and ready fastening means on said heel securing it to said plate against sliding disengagement of the heel and plate.

3,188,756
DIGGING TOOTH WITH RESILIENT PLUG IN REARWARDLY EXTENDING SHANK
Josef Baer, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,111
2 Claims. (Cl. 37—142)



2. In an excavator tooth for use with a tooth receiving base, the combination comprising: a wedge shaped cutting portion; a seating abutment at the rear of said wedge shaped portion; a shank at the rear of said tooth and having a keyway extending transversely therethrough; and a resilient member positioned in said keyway along one side thereof which is of a material softer than the other parts of said tooth and which has exposed ends at the openings of the keyway; said resilient member also being thicker at its ends than at its center, and said keyway being contoured to match said member.

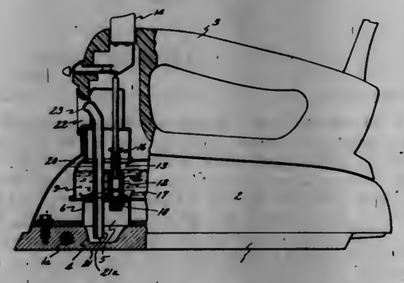
3,188,757
STEAM AND DRY FLATIRON
Bryce A. Denton, Ontario, Calif., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 78,942, Dec. 28, 1960. This application June 17, 1963, Ser. No. 290,273
2 Claims. (Cl. 38—77)



1. A steam and dry iron soleplate of high heat conductivity metal comprising a nose portion including a steam generating cavity into which liquid may be deposited for substantially instantaneous conversion into steam, a heel portion, said heel and nose portions being of generally comparable areas, a single elongated heating element for both steam and dry ironing extending integrally within the soleplate and following the external contour thereof, a thermostatic switch mechanism controlling power input to said heating element including a heat sensing member mounted centrally on said soleplate at a portion thereof

which defines a wall of said steam generating cavity to sense predominantly the temperature of said steam generating cavity and secondarily the temperature of said heel portion, said heating element being constructed to provide greater heat output per unit length in the nose portion so that the total heat generated in that portion of the heating element in the nose portion of the soleplate exceeds by a factor in the order of four or five to one the heat output of the portions of the heating element in the heel portion of the soleplate.

3,188,758
LIQUID SPRAY IRON
Bryce A. Denton, Ontario, Calif., assignor to General Electric Company, a corporation of New York
Filed Nov. 20, 1962, Ser. No. 239,873
8 Claims. (Cl. 38—78)



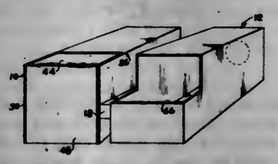
1. In a liquid spray iron, a liquid reservoir, a steam generating chamber, a positive displacement liquid metering pump chamber, a one-way valve providing liquid flow from said reservoir into said pump chamber, a second one-way valve providing liquid discharge from said pump chamber into said steam generating chamber, a pump piston positioned in said pump chamber, means for causing movement of said piston in said liquid chamber to inject a measured quantity of liquid into said steam generating chamber, heating means for said steam generating chamber, a continuously open steam discharge conduit for producing a flow of generated steam from said steam generating chamber extending from an inlet end positioned in said steam generating chamber to a discharge end, and means for introducing liquid from said reservoir by aspiration into the path of the steam, whereby said liquid will be sprayed from the vicinity of the discharge end of said conduit in a measured quantity proportional to the quantity of liquid injected into said generating chamber.

3,188,759
PIVOTED VERTICAL GATE
C D Lowrey, Quitman, La., assignor to C. D. Lowrey & Company, Inc.
Filed Dec. 6, 1962, Ser. No. 242,716
6 Claims. (Cl. 39—82)



1. In combination with first and second upstanding sides disposed alongside each other and terminating at corresponding rear ends in first and second posts, respectively, including confronting inner sides, an upstanding gate member including a pair of normally upstanding opposite edge portions, means pivotally securing said gate member, at a lower portion of one of said upstanding edge portions, to said first post for swinging movement of the other upstanding edge portion of said gate member about a generally horizontally disposed axis disposed transversely of said gate member between a lower closed position and an upper open position, said means being pivotally supported from said first post for rotation about an upstanding axis spaced forwardly of the vertical plane in which said gate member is swingable about said horizontal axis when said gate member is in said closed position.

3,188,760
VIEWER FOR FLOOR AND CEILING TILE OR OTHER COVERING
Morrow C. Miller, Martinsville, Walter T. Landell, Somerville, and Donald M. MacKay, Plainfield, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Mar. 20, 1962, Ser. No. 181,067
2 Claims. (Cl. 40—63)



1. A slide viewer comprising a first-enclosed chamber, a lens in one end of the chamber, a slot in the chamber for receiving a film slide, a film slide bearing a representation disposed in the chamber, a second chamber connected to the first chamber, an eyehole in the end of the second chamber adjacent the lens of the first chamber, the other end of the second chamber being partially masked by a wall terminating in an edge extending substantially horizontally when the viewer is held in operating position by an operator, said representation having a substantially horizontal upper edge, the second chamber being open above the edge of the wall and the first chamber being closed to the view above the upper edge of the representation, said edge of the wall and the upper edge of the representation being substantially horizontally aligned so that the view seen through the eyehole of the second chamber appears to be vertically adjacent the slide representation seen through the lens of the first chamber.

3,188,761
ILLUMINATED SIGN
Willis L. Harrold, 4305 Lincolnway E., Mishawaka, Ind.
Filed Feb. 27, 1961, Ser. No. 91,829
4 Claims. (Cl. 40—130)



4. An illuminated sign, comprising a front section having a transparent panel, a frame supporting said panel, a

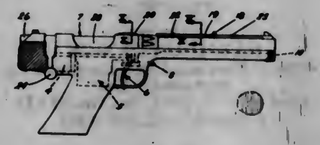
first rib on the inner surface of said panel near the top thereof, a second rib on the inner surface of said panel near the bottom thereof, two spaced inner ribs of transparent material on the inner surface of said panel disposed between and spaced from and being smaller than said first and second ribs, an illuminating plate seated on said first two mentioned ribs, cut-out indicia of opaque material disposed between said second mentioned ribs and said plate and being clamped therebetween, a rear section, means retaining said sections firmly together, and an electrical connection for said plate.

3,188,762
EMBELLISHED PHOTO-MOUNTS
Philip Morrill, Baltimore, Md.
(704 Marumsco Drive, Woodbridge, Va.)
Filed Mar. 1, 1962, Ser. No. 176,548
4 Claims. (Cl. 40—158)



1. A photo-mount assembly comprising, a pair of symmetrical backings of opaque material and relatively thin, adapted to fasten to each other; each of said backings including a window opening in its central area, and one having a step formed along the peripheral edge portion of its opening; a translucent insert placeable and fitting on said step and across the opening and including a frame-like imprint thereon inside the opening area, and a recessed indent surrounded thereby; a picture cut-out insertable in the indent and surrounded by said imprint; means for fastening the backings together whereby the light from a projector in which the assembly is placed will be transmitted to a screen surface showing the picture encompassed by said imprint.

3,188,763
BOLT ACTION PISTOL
Roy C. Duncan, 522 Leeson Ave., Cadillac, Mich.
Filed June 10, 1963, Ser. No. 286,768
6 Claims. (Cl. 42—16)



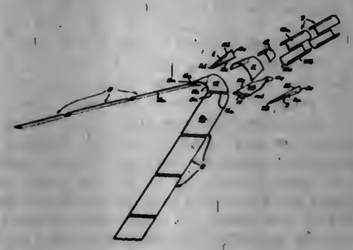
1. A bolt action pistol comprising: an integral barrel and bolt chamber assembly having a barrel located at the forward end of the assembly and a bolt chamber at the rearward end; a bolt head and body assembly in said chamber; a trigger mechanism located below said bolt chamber and having a sear for causing the actuation of a firing pin within said bolt head and body assembly; a magazine located forwardly of said trigger mechanism and also below said bolt chamber; a trigger mounted on said assembly forwardly of said magazine; a connecting link between said trigger and trigger mechanism; and a housing extending the entire length of said barrel and bolt assembly and resembling the shape of a pistol, said housing having an open top for partially receiving and for seating said assembly therein, said housing having a pistol handle extending downwardly therefrom.

3,188,764
TRIGGER PULL CONTROL FOR DOUBLE ACTION FIREARMS
Oscar E. Harding, Blue River, Oreg.
(P.O. Box 1094, Springfield, Oreg.)
Filed Mar. 7, 1963, Ser. No. 263,517
11 Claims. (Cl. 42—69)



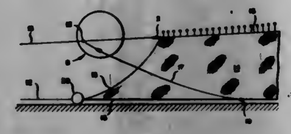
1. In combination, a firearm comprising a double acting trigger and a frame, a disc mounted for rotary adjustment on said trigger, and a spring actuated plunger slidably mounted in said frame adjacent said trigger and engageable with said disc for yieldingly arresting said trigger at a point between the actions thereof, said disc having an off-center socket defined therein for the reception of said plunger for rendering said disc inoperative.

3,188,765
TRAWL NET CONSTRUCTION
Frank J. Luketa, 5567 Greenwood Ave., Seattle, Wash.
Filed Feb. 18, 1963, Ser. No. 259,230
10 Claims. (Cl. 43—9)



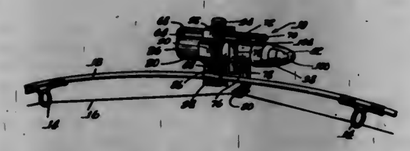
3. A trawl net construction comprising, in combination, a codend, a funnel of mesh secured to and extending forwardly of the codend, and sweep lines diverging forwardly from the funnel, said funnel including a top of approximately diamond shape, truncated at its forward edge to define the upper bosom, the portion forward of its line of greatest width constituting an overhang and the portion to the rear of that line constituting the top of the funnel proper, the funnel further including a bottom formed with generally fore-and-aft side edges, and a transverse forward edge defining the lower bosom, and said funnel further including suspender elements of mesh panels which are generally rectangular shape, when unstressed, the side edges of the mesh thereof being secured to corresponding forwardly divergent side edges of the top and to side edges of the bottom, to complete the round of the funnel, and the rear edge of the suspender elements being joined to the forward portion of the codend, the sweep lines being connected to the forward ends of the respective suspenders.

3,188,766
TRAWL GEAR
John Nicholls, Wootton, Isle of Wight, England, assignor, by mesne assignments, to White Fish Authority, London, England, a British statutory body of Lincoln's Inn Chambers
Filed Aug. 1, 1963, Ser. No. 299,296
Claims priority, application Great Britain, Aug. 4, 1962, 30,893/62
4 Claims. (Cl. 43—9)



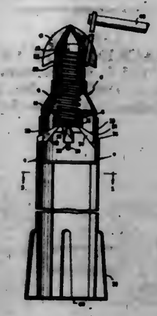
1. A trawl gear comprising:
a headline;
headline legs for attachment to the ends of the headline;
a ground rope;
groundline legs for attachment to the ends of the ground rope; and
a link cable attached at a point intermediate the ends of each headline leg and extending directly to the ground rope and attached thereto;
the arrangement being that during trawling, the link cables are slack, while during shooting and hauling the cables are tensioned by forward movement of the headline legs relatively to the groundline legs with the result that the headline legs are tensioned and restrained from fouling the groundline legs.

3,188,767
SIGNALLING DEVICE FOR FISHING RODS
Kenneth F. Finefield, 1511 Eunice Ave., Joliet, Ill.
Filed Feb. 11, 1964, Ser. No. 344,036
7 Claims. (Cl. 43—17)



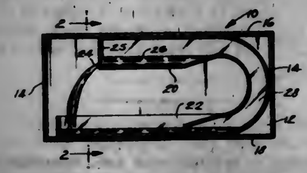
1. A device for attachment to a fishing rod, said device being capable of producing a signal to indicate the presence of a fish on a line associated with the fishing rod, comprising an insulative housing, a battery carried within said housing, an electrically conductive closure member for said housing, said closure member carrying in electrically conductive relation signal means in electrical contact with said battery, and resilient signal actuating means attached to said housing for engaging said line, a portion of said signal actuating means extending substantially longitudinally of the housing on the exterior thereof for making electrical contact with said closure member to complete an electrical circuit to said signal means in response to stresses placed on said line, another portion of said signal actuating means providing a shoulder for directly engaging the rod to prevent abnormal stresses placed on said line from being transmitted to said first mentioned portion of said signal actuating means.

3,188,768
TOY PROJECTILE WHICH CONVERTS TO SPACE PLATFORM DURING FLIGHT
George T. Boswell, 6710 Kenmont Place, Springfield, Va.
Filed May 6, 1963, Ser. No. 278,032
3 Claims. (Cl. 46—75)



3. A toy projectile capable of being launched skyward simulating a nose-coned missile which converts automatically upon reaching its flight apogee into a helicopter which descends to earth with its nose-cone pointing skyward which comprises a nose cone having a longitudinal axis therethrough, a plurality of substantially identical vanes hingedly connected to said nose cone for pivoting between a closed condition parallel to said axis forming a tubular body coaxial with said nose cone extending rearwardly of the nose cone and a deployed condition radially extended perpendicular to said axis forming a gyro-rotational blade-wheel helicopter, piston means to simultaneously move all said vanes from said closed condition into said deployed condition and resilient means biasing said piston means toward the vane deploying position with a biasing force insufficient to radially extend the vanes against the air stream passing over the vanes immediately subsequent to launching of the toy projectile and sufficient to radially extend the vanes as the toy projectile approaches is flight apogee.

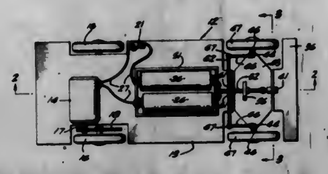
3,188,769
NIAGARA FALLS TOY
Oresto J. Parco, 518 Edmond St., Pittsburgh, Pa.
Filed Oct. 25, 1963, Ser. No. 318,922
3 Claims. (Cl. 46—91)



1. A waterfall toy comprising, in combination, a hollow rectangular container, said container having transparent property to permit view thereinto, a pair of parallel, vertically spaced apart tanks carried within said container providing a space between said tanks, the upper of said tanks being substantially enclosed, the lower of said tanks being open, each of said tanks having a front wall, the front wall of said upper tank having an elongated slot along the lower edge thereof providing a metered escape means for water contained within said upper tank, said lower tank front wall being located in a relatively more forward position than said front wall of said upper tank, a quantity of water carried by said tanks, said water carried by said upper tank being dispensed through said elongated slot by gravitational means, said water providing a waterfall effect as it cascades unsupported down-

wardly across said space to said lower tank and an interconnecting water tow shed of arcuate configuration between said tanks, said water shed communicating with the rear ends of each of said tanks and providing a return means for the water which has cascaded downwardly.

3,188,770
SELF-TRACKING TOY VEHICLE
Wladimir Nyc, 3125 U St., Sacramento 17, Calif.
Filed Dec. 3, 1962, Ser. No. 241,656
5 Claims. (Cl. 46—243)



2. A toy vehicle for use on an elongated track having a generally triangular cross section including an apex and a pair of downwardly and laterally inclined sides, said vehicle comprising:

(a) a frame having its after end supported on track engaging wheels,

(b) a propelling member on said frame for driving said wheels;

(c) a truck pivotally mounted on the forward end of said frame for laterally inclined movement about a fore and aft axis;

(d) a pair of steering wheels rotatably mounted on the lateral ends of said truck and supporting said truck, said wheels being laterally angularly movable in unison with said truck about said fore and aft axis;

(e) a gravitationally responsive member pivotally mounted and supported on said truck for lateral movement toward and away from said fore and aft axis in response to the lateral angular movement of said truck and said steering wheels with respect to said fore and aft axis; and

(f) means connected to said gravitationally responsive member and said steering wheels for turning said steering wheels in a direction opposed to the downward lateral inclination of said truck whereby said forward end of said frame is guided toward said apex of said track.

3,188,771
PLANT SUPPORT
Ruth J. Ballai, 287 Highland Ave., Somerset, N.J.
Filed Sept. 9, 1963, Ser. No. 307,664
1 Claim. (Cl. 47—47)

A colligate plant support for use in supporting a growing plant, the plant support comprising:

(A) a plurality of contiguous elongated tubular members of synthetic resign material, each member having a relatively thin axially extending wall with a sleek external surface, an internal surface and first and second ends;

(B) a socket integral with each first end;

(C) a plug integral with each second end, the plugs and sockets being complementary for engagement of the plugs and sockets of contiguous members in self-sustaining relationship to retain each member colligated with a contiguous member and allow the support to be selectively extended to any desired length by the colligation of additional members to accommodate the plant as it grows along the external surface of the support;

(D) perforations extending radially through the wall of each member for allowing the growing plant to be positively secured against the external surface of the support; and



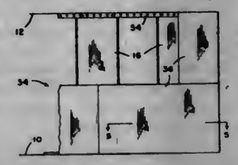
(E) a body of fibrous material having a configuration complementary to the internal surface of a member and received within the wall of the member such that the plant may be irrigated along its length through the perforations and become rooted in the fibrous material to positively secure the plant against the external surface of the support.

3,188,772
LOCK BALL ROOF EDGING
Alfred A. Tenaleon, Jr., P.O. Box 7, Texarkana, Ark.
Filed Nov. 3, 1961, Ser. No. 149,901
4 Claims. (Cl. 50—66)



1. Finishing trim for a roof or other structure having generally flat upper and lower surfaces with a connecting edge surface, said trim being of a configuration to fit around the upper, lower, and edge surfaces of the structure to which it is applied and including a flat portion designed to overlie the upper surface, an angular portion for overlying the edge and with a resilient generally cylindrical underlying portion to provide a clamping action and with such underlying portion having at least one angular extremity whereby a length of such trim can be applied and secured in place and thereafter a second length can be located in overlapping relation to the first and can be fitted together with the first and installed in final position by rotating it about the axis of its generally cylindrical portion causing the second length to be locked to the first length, part of said cylindrical underlying portion of the first length being in alignment with part of the underlying portion of the second length, and said angular extremities being in engagement and providing a drainage opening.

3,188,773
WALL CONSTRUCTION
Joseph W. Schneller, Eggertsville, David A. Harris, Kenmore, and Rodney G. Boergin, Tonawanda, N.Y., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Aug. 24, 1960, Ser. No. 51,620
5 Claims. (Cl. 50—146)



3. A wall structure comprising a plurality of horizontally aligned, vertically disposed, elongate, open-ended unitary hollow wall supporting core structures, disposed centrally along the extent of said wall structure, said hollow wall supporting core structures consisting of four parallel, rectangular, elongate sections of flat gypsum board, each having two parallel, elongate side edges, paper liner bonded to the gypsum core on each of the two opposed faces of each section forming on each section an inner face liner and an outer face liner, exposed gypsum core on both the elongate side edges of two sections and on at least one side edge of each of the other two sections, the said four sections being adjoined along the elongate side edges to form a unitary hollow tube foldable to an open rectangular cross section with said inner face paper liner on the four sections forming the inner surface of said tube, the side edges of said inner face paper liners of each section each adjoined to an adjacent section inner face paper liner side edge, the remaining to elongate side edges of said other two sections being adjacent one another and adjoined solely by an elongate flexible sheet material affixed to the edge portions of the respective inner face liners of said other two sections and spanning the junction therebetween, the said section side edges havsubstantially solely by means of said inner face liner on said sections being a single continuous paper common to all said four sections and forming flexible joints therebetween, said gypsum core of each section having a substantially uniform thickness throughout the extent of each section to provide uniform rigidity and strength throughout each section and the maximum ability of each section to transfer stresses to and from adjacent sections, said wall core structures being rigidly affixed at the bottom and top edges thereof to a building structure, said wall core structure being self-supporting intermediate of said botttom and top edges and providing the sole supporting means of said wall structure, and wall surface material disposed on the faces of said wall core structure and adjoining said plurality of wall supporting core structures into a unitary wall structure.

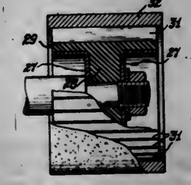
3,188,774
METAL SIDING STRUCTURE
Carl McCorkle, 16 Hemlock St., Bairdford, Pa.
Filed Aug. 29, 1962, Ser. No. 220,166
4 Claims. (Cl. 50—221)

1. A metal siding structure comprising spaced base members fastened to a frame structure, a plurality of overlapping siding members transverse to said base members and resilient interengaging male and female portions on said siding and base members, said interengaging portions including elongated generally cylindrical female portions and mating generally cylindrical male portions on the respective members whose axes extend longitudinally of the siding members, the interengaging portions on said siding members comprising on one edge a portion female on one side and male on the other and a



mating portion on the opposite edge, said edges being engaged one with the other and the corresponding portion on the base member.

3,188,775
ONE PIECE INDUSTRIAL WHEEL
William J. Cosmos, Mundelein, Ill.
Filed Sept. 25, 1961, Ser. No. 140,535
4 Claims. (Cl. 51—141)



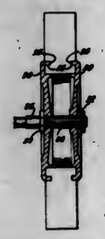
1. A high speed contact wheel comprised of a resiliently yieldable stress absorbing layer of material having the same size as and arranged between and bonded to a pair of concentric planular discs and a peripheral band of resiliently yieldable material integral with said layer and bonded to the periphery of said discs, said discs having opposed peripheral flanges bonded to said peripheral band.

3,188,776
SURFACE TREATMENT OF STEEL
Gilbert D. Dill, Mishawaka, Ind., assignor, by mesne assignments, to The Wheelabrator Corporation, Mishawaka, Ind., a corporation of Delaware
No Drawing. Filed Aug. 20, 1962, Ser. No. 218,166
5 Claims. (Cl. 51—320)

1. A process for treating hot worked steel in preparation for cold working comprising projecting hardened steel shot, having smooth surfaces, at high velocity onto the surface of the steel to disintegrate scale and remove surface scale, and then projecting hardened steel grit, having sharp edges, onto the previously treated surface of the steel to remove substantially all of the remaining scale and other smut forming conditions remaining in the surface of the steel, and in which the steel grit is of variable dimension with the average diameter of the steel shot exceeding the average of the large dimensions of the steel grit, and moving one of the elements including the surface of the hot worked steel and the source of the

projection of the steel shot and grit in relative linear movement during projection of the steel shot and grit onto the surface.

3,188,777
ABRASIVE DEVICE
Aleck Block, Los Angeles, Calif., assignor to Merit Products, Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 27, 1962, Ser. No. 190,639
9 Claims. (Cl. 51—337)



1. In an abrasive device, the combination of:
a rotary hub structure;
an annular array of leaves free at one end and anchored at the other end to the hub structure to act on a workpiece by a slapping action and a wiping action, each of said leaves having a non-abrasive face on one side and an abrasive face on the other side covered with abrasive particles, said leaves of the array being arranged in successive pairs with the abrasive faces of the leaves facing in a direction of rotation with the leaves of each pair confronting each other for abrasive action at the free end of the leaves in both of the opposite directions of rotation of the hub structure and to resist relative sliding action between the leaves of each pair.

3,188,778
METHOD AND APPARATUS FOR DOSING DISCHARGE DEVICES
Charles Wiener, Bloomfield, and Frank J. Camarata, Montclair, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 16, 1962, Ser. No. 187,843
9 Claims. (Cl. 53—12)



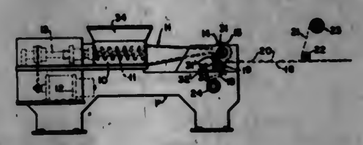
1. In the manufacture of an electrical device, the method of introducing a predetermined quantity of material into said device before it is sealed, which method comprises, placing the material in a tubulation that is attached to and extends downwardly from said device, connecting the free end of said tubulation to a flexible conduit that is connected to an exhaust system, exhausting said device through said tubulation and conduit, temporarily deforming said flexible conduit and swinging said device and the attached tubulation about a predetermined axis that is spaced from and is so oriented with respect to said device that the device and the portion of said tubulation containing said material are inverted and said material is transferred by gravity into said device while it is still connected to the exhaust system, and then hermetically sealing off and severing said tubulation while said device is in such inverted position thereby to retain the transferred material in said device and disconnect the latter from the exhaust system.

3,188,779
UNIFORMLY HUMIDIFIED PAPER TAPE
Howard S. Elden, Clarence Center, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,451
5 Claims. (Cl. 53—21)



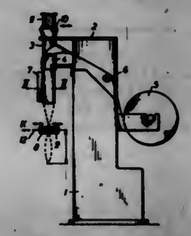
1. The method of packaging rolls of paper joint tape of the type for use in drywall construction, comprising the steps of disposing a tightly wound roll of surface abraded paper joint tape, having a moisture content of less than about 7%, in an unsealed impermeable container, also disposing in said container free water in sufficient quantity to increase said moisture content by the complete absorption of said water to about 9% to 15%, immediately thereafter sealing said impermeable container containing said roll and water, and retaining said container in a sealed impermeable form during a uniform absorption of said water by said paper.

3,188,780
METHOD OF AND APPARATUS FOR FORMING ITEMS OF DEFORMABLE MATERIAL
Harry A. Mead, Lakewood, Colo., assignor to Butter-Pak, Inc., Denver, Colo., a corporation of Colorado
Filed Dec. 19, 1961, Ser. No. 162,307
29 Claims. (Cl. 53—25)



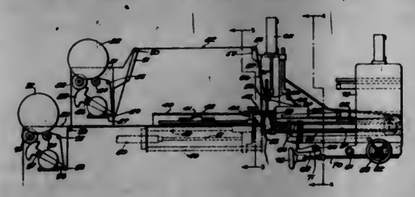
26. A method of forming individual items of a deformable material, which comprises pushing such material into a series of confined spaces, including spaces disposed in lateral and longitudinal spaced relation, in longitudinal succession; removing the items so formed from said spaces while contacting such items with a strip adapted to receive such items; supplying heat to at least a portion of each said item during at least removal from said spaces; chilling said strip prior to contact thereof with said items; and simultaneously moving said strip and the location of said spaces so that said items will be placed on said strip in both longitudinal and laterally spaced relation.

3,188,781
PACKAGING MACHINE
Theodorus Hubertus Aquarius and Joannes Franciscus Aquarius, Victor de Stuerstraat 36, and Johannes van den Eijnden, Graaf Jacob Straat 24, all of Weert, Netherlands
Filed Aug. 21, 1962, Ser. No. 218,258
10 Claims. (Cl. 53—180)



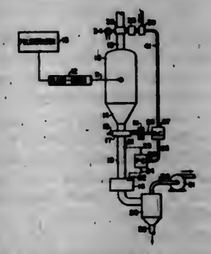
1. In a packaging machine, means for guiding a tube of heat-sealable packaging material along a vertical downward direction, means for filling the tube from above with a product to be packaged, a pair of transverse sealing jaws movable toward and away from each other to produce transverse heat seals in the tube, said jaws being also movable back and forth in a vertical direction to advance the tube downwardly while they are together and to rise while they are separated, and a hydraulic piston-cylinder system for controlling the up-and-down movements of said jaws, said system comprising:
a piston element and a cylinder element one of which is positionally fixed and the other movable up and down,
means connecting said jaws to the movable element for actuation thereby,
yieldable means constantly urging said movable element in jaw-advancing direction,
means for limiting the movement of the movable element in jaw-raising direction, and
an adjustable pumping means for introducing and withdrawing pressure fluid into said cylinder, said pumping means being adjustable without interruption of machine operation for varying the amount of fluid withdrawn from said cylinder to control the extent of jaw-advancing movement of said movable element.

3,188,782
FILM PACKAGING MACHINE
Ezra Lapides, New York, N.Y., assignor to Versapak Film and Packaging Machinery Corporation, New York, N.Y., a corporation of New York
Filed Aug. 3, 1961, Ser. No. 129,124
11 Claims. (Cl. 53—229)



8. A machine for wrapping articles in heat sealable film comprising a support, a table mounted on said support, means on said support for dispensing a continous length of film above said table, means on said support for dispensing a second continuous length of film below said table, the free ends of said films being initially joined to form a curtain of film extending vertically in front of said table, means for pushing an article from said table against said curtain of film whereby the article will drag sufficient film with it to wrap the article, and means mounted transversely on said support for simultaneously heat sealing said films to form a sleeve wrapper around the article, severing said sleeve wrapper from said films, and heat sealing the severed ends of said films to reconstitute the curtain of film, and means for heat sealing the side edges of said sleeve to form a perimeter seal around the article, spaced parallel strips for supporting the article from in front of said table to the front of said support, and means for transversely adjusting said strips and said side edge sealing means, and means for adjusting the height of said supporting strips.

3,188,783
DISCHARGING POWDER FROM HIGH-PRESSURE VESSELS
William E. Savage, Castro Valley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,976
8 Claims. (Cl. 55—20)

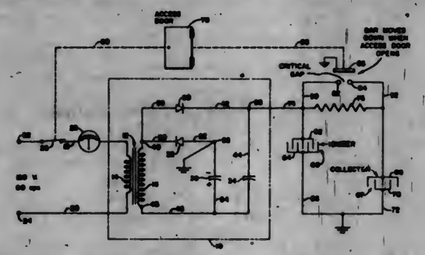


1. A high-pressure letdown method for discharging pulverulent solids from a high-pressure zone which contains said solids and gas into a low-pressure zone, said method comprising:
(a) flowing said pulverulent solids and gas from said high-pressure zone into said low-pressure zone through a slit having a length longer than several times its width,
(b) discharging gas from said high-pressure zone separately from said flow through the slit,
(c) monitoring the gas discharged in (b) to detect the presence of solids therein and emitting an overriding signal when solids are detected therein, and
(d) controlling the width of said slit between said zones by
(1) measuring a thermodynamic property in said stream, said property being related to a pressure or temperature change in said stream transmitting a signal relative thereto,
(2) adjusting the width of the slit responsively to said signal, and
(3) increasing the width of said slit independent of said first signal in response to said overriding signal.

3,188,784
ELECTROSTATIC PRECIPITATORS
Keith M. Nodolf, Bloomington, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 243,167
11 Claims. (Cl. 55—105)

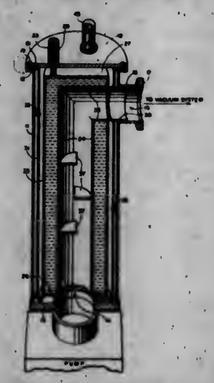
1. In an electronic gas purifying system, the combination comprising: a housing for the purifying system and including an access door; power supply means having low

voltage input means, a high voltage output terminal, and a grounded terminal; gas particle ionizing means having first and second sets of electrodes interleaved and spaced apart from one another; gas particle collecting means having first and second sets of plates interleaved and spaced apart from one another; means connecting said first set of electrodes in common with the high voltage terminal of said power supply means; means connecting said second set of electrodes in common with the grounded terminal of said power supply; current limiting means; means including said current limiting means connecting said first set of plates to said high voltage terminal of said power supply means, means connecting said second set of plates in common with said grounded terminal of



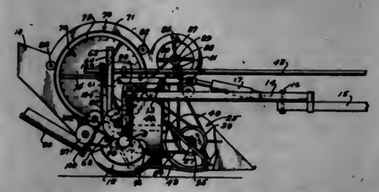
said power supply; first and second shorting terminal means; means connecting said first terminal means in common with said first set of electrodes; means connecting said second terminal means in common with said first set of plates; a grounded shorting bar; means operable by said access door to bridge said shorting bar across said first and second terminal means upon the opening of the access door, said terminal means being spaced from one another such that a short circuit between said first and second set of plates causes voltage breakdown and currents flow between said first and second terminal means; and current measuring means connected in the low voltage circuit of said power supply for indicating the presence of said short circuit between said first and second set of plates.

3,188,785
VACUUM COLD TRAP
James W. Butler, 201 Elmira St. SW., Washington 24, D.C.
Filed Apr. 29, 1960, Ser. No. 25,802
13 Claims. (Cl. 55—269)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A vacuum cold trap adapted to be connected in a vacuum pump system which comprises a housing comprising top and bottom plates, standpipes connected with said top plate and extending outwardly therefrom, an inlet and an outlet in said housing, a reservoir adapted to contain a coolant therein, said reservoir comprising three filler tubes connected to the top thereof, said filler tubes connected to the standpipes connected with the top plate of said housing to suspend said reservoir within said housing in a spaced relationship on all sides, a passage through said reservoir forming a cold trap surface with at least two cold collision surfaces, said cold trap surface being surrounded entirely by the space in said reservoir, said passage aligning with said inlet and said outlet in said housing, and at least one baffle secured at said inlet and said outlet and spaced from said reservoir.

3,188,786
AGRICULTURAL IMPLEMENT
Aaron F. Sammet, P.O. Box 163, Princeville, Ill.
Filed Nov. 28, 1961, Ser. No. 155,370
14 Claims. (Cl. 56—21)

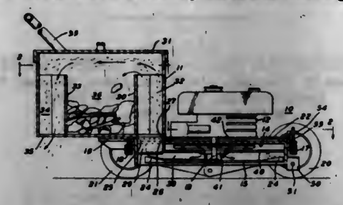


1. In an agricultural implement including a wheeled frame and a driving mechanism, a transverse sickle cutter supported on said frame for engaging and cutting grain and the like, a transverse screw conveyor supported on the frame in juxtaposition to the sickle cutter, beater rods eccentrically mounted on said screw conveyor and rotatable therewith and being axially and circumferentially spaced relative to said screw conveyor for beating the grain received from the sickle cutter into the screw conveyor, a rotating paddle and chopper bar structure mounted on the frame adjacent a discharge end of the screw conveyor for receiving material therefrom, a rotating sifter drum supported on the frame in communication with a discharge outlet in the paddle structure, blower means supported on the frame for blowing the chaff out of the sifter drum, conveyor means operatively connected with the sifter drum for delivering the material from the sifter drum to a remote point, said transverse screw conveyor having a drive shaft and including a tubular screw conveyor housing and a screw on the housing and extending outwardly thereof, a fixedly mounted beater rod support shaft eccentrically disposed interiorly of said tubular screw conveyor housing, said beater rods being pivotally connected to said beater rod support shaft and extended radially through and rotatable in unison with the screw conveyor housing, said rods being extended radially beyond said screw when being rotated over said sickle cutter and being disposed radially inwardly thereof after being rotated past the sickle cutter, and bearings between said fixedly mounted beater rod support shaft and said rods permitting said rods to be rotated 360°.

3,188,787
ROTARY DISK LAWN MOWER
Alfred Welland, 200 Haven St., Clearwater, Fla.
Filed Jan. 15, 1962, Ser. No. 166,314
2 Claims. (Cl. 56—25.4)

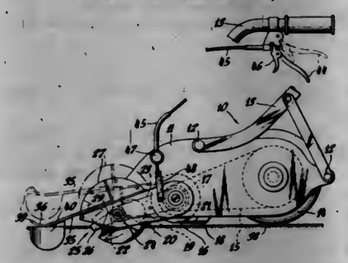
1. A lawn care unit comprising a rotary power mower including a vertically disposed shaft, a cutting blade attached to said shaft, impelling means on said blade, an open bottom cylindrical housing for said blade, said housing being formed by a top wall and an annular rim, a plate transversely disposed in said housing in spaced parallel fixed relation to the top thereof to form an air

plenum having an air entrance formed in the rim of the housing above said plate, said plate having an aperture therein coaxial with the cutting blade shaft through which



air is drawn into the housing by the rotating blade, said housing having an air discharge outlet at the rear end thereof, and means communicating with said outlet to collect cuttings discharged from said housing.

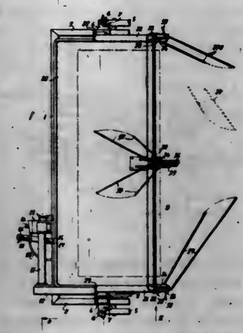
3,188,788
LAWN MOWERS
Victor Taylor Legge, 3 Blandford Road, St. Albans, Hertfordshire, England
Filed July 8, 1963, Ser. No. 293,522
Claims priority, application Great Britain, July 9, 1962, 26,302/62; Jan. 11, 1963, 1,426/63; Mar. 5, 1963, 8,720/63
9 Claims. (Cl. 56—26)



1. A lawn mower comprising a main cutter shaft, a main driving shaft, an auxiliary cutting assembly, driving means for said cutting assembly coupled with said main cutting shaft for actuation thereby, a casing for said auxiliary cutting assembly, said casing being rotatably mounted about the axis of one of said shafts for movement from a raised inoperative position to a lowered operative position of the edge trimming device, a device for controlling the movement of the said casing about the axis of said shaft, and a support member attached to the casing of said auxiliary cutting assembly for engaging along and over the edge of the lawn for determining the position of the auxiliary cutting assembly in relation to the lawn edge irrespective of variations in movement of the lawn mower, said support member comprising a plate extending forwardly from the casing of the auxiliary cutting assembly and formed with a horizontal guiding and support portion extending over the edge of the lawn and a vertical positioning plate fitting against the edge of the lawn.

3,188,789
TEDDERS
Cornelis van der Lely, Zug, Switzerland, assignor to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed Aug. 8, 1962, Ser. No. 215,590
Claims priority, application Netherlands, Sept. 1, 1961, 268,897; July 18, 1962, 281,131
21 Claims. (Cl. 56—372)

1. A tedder comprising a tined body rotatable in a direction opposite to the intended direction of travel, a baffle extending over said body and guide means mounted to the rear of said baffle, said guide means comprising adjustable guide members which define crop deflector surfaces mounted adjacent the sides of said baffle for varying the effective crop-working surfaces of said guide members and further guide members mounted between

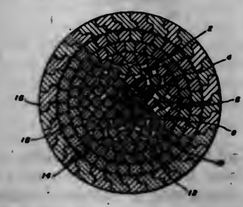


said adjustable guide members, said further guide members being displaceable from an operative to an inoperative position whereby said members are arrangeable to form a single swath of crop in a first setting and two separate swaths of crop in a second setting, the width of the single swath being less than the total width of the separate swaths.

3,188,790
NYLON FIBER BLENDS
Harold H. Hebeler, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 12, 1963, Ser. No. 287,195
9 Claims. (Cl. 57—140)

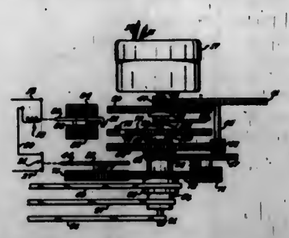
6. A yarn composed of a blend of cotton and a mixture of 50% to 90% of uncrimped nylon staple fiber characterized by a load-bearing capacity of at least 2.1 grams per denier at 7% elongation and a boil-off shrinkage of not over 6%, both properties measured after 9 days slack ageing, and 50% to 10% of crimped nylon staple fiber having a crimp index of at least 8%.

3,188,791
LOCKED COIL CABLE AND METHOD OF MAKING SAME
John J. Grimes, Jr., Hamden, Wilbert A. Lucht, Orange, and Richard T. Woodbury, Hamden, Conn., assignors to United States Steel Corporation, a corporation of New Jersey
Filed Apr. 22, 1963, Ser. No. 274,488
8 Claims. (Cl. 57—145)



1. A lock coil cable comprising a core, outer stress relieved steel lock wires surrounding said core, a base coating of a wire drawing aid on said lock wires, and an outer coating of a wire rope lubricating mixture capable of resisting temperatures of at least 600° F. over said base coating, said wire rope lubricating mixture including a wire rope lubricant and a wire drawing lubricant.

3,188,792
TIME KEEPING APPARATUS
Ronald E. Dupuy, Wabash, Ind., assignor to Honeywell Inc., a corporation of Delaware
Filed July 31, 1963, Ser. No. 298,941
8 Claims. (Cl. 58—35)



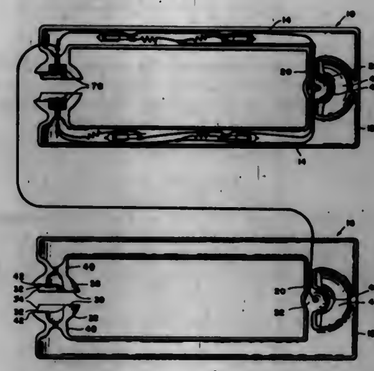
1. A secondary clock comprising: motor means; a rotatable time member; drive means operably connecting said motor means and said time member for driving said time member at a normal time keeping rate; a first correction gear operably connected to said time member and normally rotating at a predetermined rate; a second correction gear operably connected to said motor means and normally rotating at a relatively higher rate, said first and second correction gears having generally parallel axes of rotation; normally stationary rotatable pinion means selectively movable in a direction generally transverse to the axis of rotation of said correction gears between an inactive position wherein said pinion means is disconnected from said drive means and is not rotated by said drive means, and a correcting position wherein said pinion means operably connects said first and second correction gears so that said first correction gear is driven at an accelerated rate; means normally maintaining said pinion means in said inactive position; signal responsive means adapted upon receipt of a corrective signal to move said pinion means to said correcting position; and means for interrupting the accelerated drive of said first correction gear when said time member is in a predetermined angular position.

3,188,793
SEALING DEVICE FOR A CONTROL PUSHER PASSAGE THROUGH A CASING WALL
Ernest Merf, Vaudijon, Colombier, Switzerland
Filed Feb. 10, 1964, Ser. No. 343,822
Claims priority, application Switzerland, Feb. 12, 1963, 1,722/63
9 Claims. (Cl. 58—90)



1. A control pusher unit for controlling a mechanism enclosed in a casing from outside the casing by pressing impulses only, comprising a tubular housing provided both with an outer fitting surface adapted for setting with force fit said tubular housing in a boring provided through the wall of a casing, and with an inner surface surrounding an inner passageway, a pusher member carried by said tubular housing and shiftable with respect thereto along the axis thereof, and a lid member extending across the inner passageway of said tubular housing and having a peripheral portion, said peripheral portion being tightly anchored to said tubular housing so as to completely obturate the inner passageway thereof.

3,188,794
ILLUMINATED CHAIN AND LINKS THEREOF
Raymond D. Johnson, 11624 SE. 184th, Renton, Wash.
Filed Mar. 28, 1961, Ser. No. 98,818
9 Claims. (Cl. 59—78.1)



1. An illuminated chain in which an individual link comprises:
(a) a translucent, plastic, generally U-shaped body formed by a base portion and two side portions;
(b) a web connecting said side portions adjacent said base portion;
(c) a depressed surface area in said base portion and centered between said side portions;
(d) a ball formed on said web and centered between the two side portions;
(e) the free ends of said side portions having inwardly turned extensions enlarged at their ends to form a jaw, the opposed faces of said enlarged ends of said extensions having depressions therein to match and clamp onto the ball of an adjoining link, said depressed surface area being adapted to receive said enlarged ends in the manner of a ball and socket joint;
(f) illuminating means within said U-shaped body; and
(g) electrical contacts on said ball and in said depressions so that as individual links are joined said electrical contacts convey electrical power from one link to another.

3,188,795
JACK CHAIN
Russell K. Ulm, Butler, Ind., assignor to Universal Tool & Stamping Company, Inc., Butler, Ind., a corporation of Indiana
Original application Nov. 13, 1962, Ser. No. 236,918. Divided and this application Jan. 23, 1964, Ser. No. 339,698
5 Claims. (Cl. 59—91)

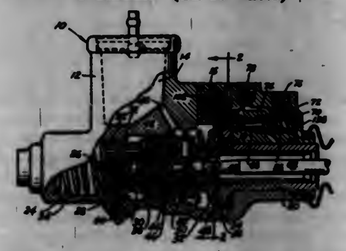
1. As an article of manufacture a vehicle lifting chain comprising a plurality of pivotally connected links each having a pair of spaced side walls and a bridging wall connected to the outer margins of the side walls at the front part of the chain, said side walls being being apertured at each end, and pins extending through said apertures crosswise of the length of the chain and pivotally

connecting the links together, said side walls of each link being relatively divergent from end to end to such a



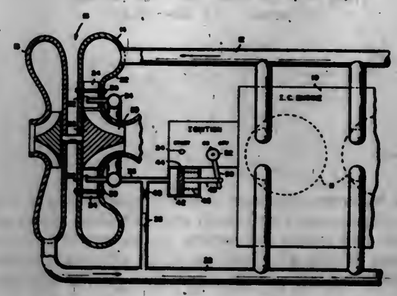
degree that the side walls of the link at the closest end spacing of its walls will fit into and between the walls of an adjacent link at its widest spacing of said side walls.

3,188,796
BRAKE MECHANISM
Charlie N. French and Harold B. Schultz, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 255,807
8 Claims. (Cl. 60—10.5)



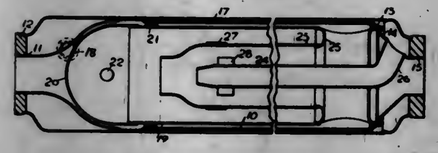
1. For use with a manually actuatable control adapted to operate a pressure producing apparatus having a fluid pressure source, a fluid pressure motor in communication with the fluid pressure source, the motor including a pressure responsive device dividing a portion of the fluid pressure motor into opposing fluid pressure chambers with the pressure responsive device connected to the manually actuatable control to move the control between a normal low position and an emergency high position, and means communicating a pressurized fluid to one of the opposing chambers and automatically controlling the differential pressure between the opposing chambers in such manner as to hold the manually actuatable control in the low position when the pressurized fluid is being supplied and to raise the manually actuatable control to the high position when said pressurized fluid supply falls off, a means to sense the falling off of the fluid pressure source and control the fluid pressure source's communication with said fluid pressure motor which means comprises:
a slide valve responsive to said pressure responsive device;
a means communicating the fluid pressure source to said slide valve; and
a resilient member operatively arranged to normally bias said slide valve to normally communicate said fluid pressure source to said fluid pressure motor which resilient means is adapted to oppose said pressure responsive device when said pressure responsive device moves in a direction to cause said slide valve to terminate such communication.

3,188,797
PROTECTION SYSTEM FOR TURBOCHARGERS
Michael Toth, Jr., Fallsington, Pa., assignor to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,719
4 Claims. (Cl. 60—13)



1. In combination, a turbine having inlet guide vanes, means mounting each of said vanes for pivotal movement, frangible means normally securing each of said vanes against pivotal movement, said frangible means being adapted to rupture upon impact of the associated vane by a foreign particle, means supplying motive power fluid to said turbine, and means responsive to the rupturing of any one of said frangible means for terminating the supply of motive fluid to said turbine.

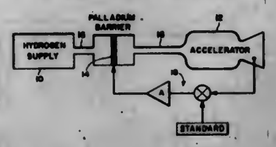
3,188,798
EXHAUST GAS SYSTEMS FOR INTERNAL COMBUSTION ENGINES
Squire R. Jackson, Burnley, and John Smith, Accrington, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Feb. 20, 1964, Ser. No. 346,294
1 Claim. (Cl. 60—30)



A device for use in an exhaust system for an internal combustion engine which comprises an elongated casing having an exhaust gas inlet at an upstream end, an elongated air jacket surrounding the casing in spaced relationship having an air inlet adjacent to the exhaust inlet of the casing, an elongated combustion chamber mounted in the casing in spaced relationship having an outlet opening at a downstream end of the casing and closed at its upstream end, a first tubular part mounted in the combustion chamber in spaced relationship extending from the downstream end of the casing towards the upstream end thereof, at least one laterally extending passage forming portion affording communication between the interior of the downstream end of the first tubular part and the space defined between the casing and the combustion chamber, said space being closed at its downstream end, a second tubular part mounted in the first tubular part in spaced relation, extending from the downstream end of the casing to a position adjacent the upstream end of the first tubular part, a further laterally extending passage forming portion affording communication be-

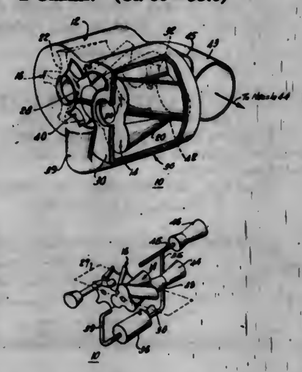
tween the interior of the downstream end of the second tubular part and the space between the casing and the air jacket, said space being closed at its downstream end.

3,188,799
HYDROGEN POWERED ENGINES AND HYDROGEN FLOW CONTROLS
Thomas M. Flynn, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Oct. 23, 1961, Ser. No. 146,689
3 Claims. (Cl. 60—35.5)



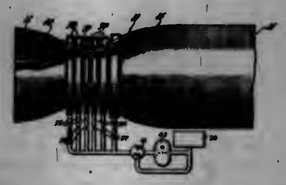
3. A hydrogen flow rate controller comprising a flowpath for hydrogen, a palladium wall extending across said flowpath, and means for varying the temperature of said palladium directly as a function of the difference between a selected flow rate and the actual flow rate of hydrogen.

3,188,800
HELICAL-TYPE TURBOJET ENGINE
Alexander H. Bohr, Sparta, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed May 12, 1960, Ser. No. 28,667
2 Claims. (Cl. 60—35.6)



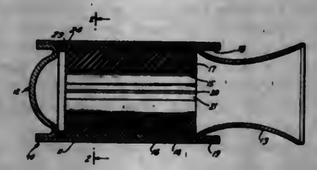
1. An improved thrust gas-jet engine comprising a housing, two rotors mounted in bearings in said housing, said rotors having mating screw-pitch shoulders and grooves and being mounted with their axes parallel so that said shoulders and grooves mesh upon rotation of said rotors, said grooves and shoulders separating said rotors into a first compressor portion and a second expander portion, said compressor and expander portions lying on opposite sides of a longitudinal plane generally common to the axes of said rotors, said portions being in gas-tight separation, an inlet port and an outlet port through said housing for said compressor portion, an inlet port and an outlet port through said housing for said expander portion, a combustion chamber, means to divert at least part of the gas from the outlet port of the compressor through said chamber and into the inlet port of said expander, and gas-jet nozzle means connected to the outlet ports of said compressor and expander portions, said means to divert including a throttle valve by means of which a substantial flow of the gas from the compressor portion is directed to said chamber and the remaining gas from said compressor portion is exhausted through said jet nozzle means, each rotor being formed by a shell with a hollow portion, one rotor containing a self-starting mechanism, the other rotor containing a speed control governor and control means for said throttle valve.

3,188,801
COOLED NOZZLE CONSTRUCTION
Joe Calvin Prosser, Ladoga, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 29, 1961, Ser. No. 141,762
6 Claims. (Cl. 60—35.6)



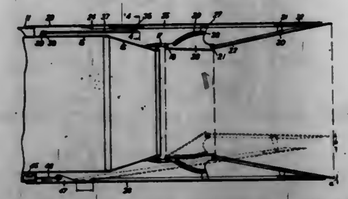
1. A cooled reaction motor exhaust duct comprising:
a plurality of adjacent porous channel members extending longitudinally of said duct, said porous members being attached to each other to define a convergent-divergent flow passage with a throat portion of minimum area;
and a plurality of axially aligned coolant manifolds circumferentially surrounding said exhaust duct and containing a coolant substance under pressure, said coolant manifolds being located adjacent to the radially outer portions of said porous members for the effusion of said coolant substance radially inwardly through said porous members onto the inner surface of said porous members to cool said inner surface and said exhaust duct formed thereby, said coolant substance being vaporized by the heat from the exhaust fluid as it passes through said flow passage so that the pressure of said coolant substance becomes greater than that of said exhaust fluid thereby inducing said coolant substance to flow through said porous members to cool said exhaust duct, the pressures in each individual coolant manifold being different from the other coolant manifolds.

3,188,802
SOLID PROPELLANT GRAIN
Harold Davies, Morris Plains, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 29, 1961, Ser. No. 155,686
4 Claims. (Cl. 60—35.6)



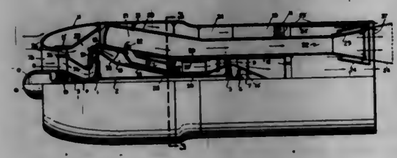
1. In a gas generator, a casing, a grain of a solid combustible material freely movable in said casing, said grain having an exposed surface for burning at a controlled rate, an outer shell of a flame inhibiting material surrounding the grain and to which the grain is bonded, and said shell having a slot extending longitudinally of the grain to permit it to move relative to the casing to reduce the stress in the grain during thermal cycling.

3,188,803
JET ENGINES
Addison Charles Maguire, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed July 27, 1962, Ser. No. 212,813
Claims priority, application Great Britain, July 28, 1961, 27,553/61
7 Claims. (Cl. 60—35.6)



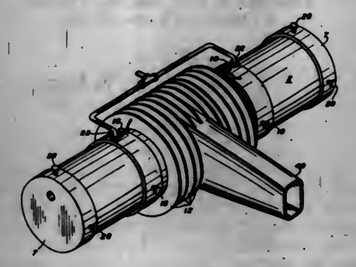
1. A jet engine provided with a convergent-divergent nozzle, said nozzle comprising an assembly of longitudinally extending nozzle members, each being formed by member sections hinged together intermediate the length thereof and which may be moved in overlapping relationship to vary the size of the throat of the nozzle, such movement of the nozzle members involving radial movement of the downstream ends of each section, an assembly of radially movable casing members pivotally mounted at their upstream ends and within which the said nozzle members are mounted, linkage means connecting the assemblies of nozzle members and casing members together, whereby radially inward and outward movement of the downstream ends of the casing members is respectively accompanied by radially inward and outward movement of the nozzle members, power means for effecting axial movement of the casing members, and cam means for moving said casing members towards and away from each other on axial movement of the casing members in an upstream and in a downstream direction respectively.

3,188,804
TURBO SUPERCHARGED VALVELESS PULSE JET ENGINE
John Alden Meleuric, 409 East Lane, Kerrville, Tex.
Filed Oct. 19, 1962, Ser. No. 231,784
19 Claims. (Cl. 60—35.6)



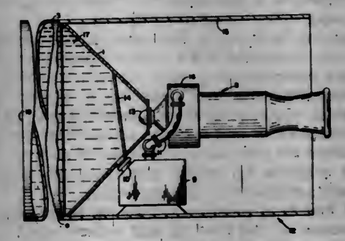
1. A turbo-supercharged valveless pulse jet engine including
an air compressor 1 and a turbine 3,
an air inlet 38 to the air compressor,
a duct 15 for compressed air between the air compressor and the turbine,
and an exhaust duct 9 from the turbine, one or more pulse jet engines 20 in juxtaposition to the air compressor and turbine,
an air inlet duct 27 to each pulse jet engine from the compressed air duct 15,
each pulse jet engine having an exhaust duct 22 independent of the exhaust duct 16 from the turbine,
a fuel injection nozzle 28 for each pulse jet engine,
and ignition means 31 for each pulse jet engine, the products of combustion from each pulse jet engine discharging from its exhaust duct 22 and simultaneously discharging through its air inlet duct 27 to mix products of combustion with compressed air at the juncture of air inlet duct 27 and duct 15 and to discharge through and increase the efficiency of the turbine.

3,188,805
INTERNAL COMBUSTION ENGINE
Charles L. Gahagan, 122 Talbot Ave., Greensburg, Pa.
Filed Feb. 14, 1963, Ser. No. 258,393
10 Claims. (Cl. 60—35.6)



7. An internal combustion engine comprising a cylinder having a cylinder head at each end and an exhaust port midway between the two heads, a piston slidably fitted in said cylinder, means for supplying combustion air under pressure into each end of the cylinder, continuously open means for injecting fuel into each end of the cylinder, means in each end of the cylinder for igniting the fuel, and a tapered exhaust nozzle extending radially from the cylinder into which the exhaust port opens.

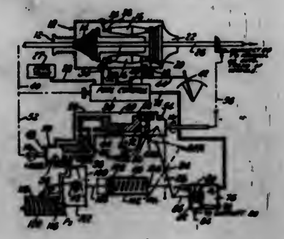
3,188,806
SUPPORT FOR REACTION MOTOR
Janvier F. O'Hara, Sierra Madre, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Mar. 6, 1963, Ser. No. 263,684
3 Claims. (Cl. 60—35.6)



1. In a rocket propulsion system including a motor, a propellant tank including a mounting assembly for said motor, said propellant tank having a generally conoidal wall at one end thereof, a flat plate forming a wall at the other end of said propellant tank, a cylindrical body portion connecting said walls and forming the outer shell of the rocket, said motor being connected to the apex of said conoidal wall for distributing motor thrust loads therethrough to said cylindrical walls, passage means disposed in communication with said propellant tank and said motor for directing propellant flow thereto, said passage means connected to the side of said conoidal wall intermediate the apex thereof and said cylindrical body portion, a plate mounted in said conoidal wall and extending across said tank in a plane inclined to the axis of said cylindrical portion of said tank, the lower most portion of said inclined plate being secured to said

conoidal wall at a point beneath said passage means for directing propellant flow thereto and said plate further disposed for reinforcing said conoidal wall.

3,188,807
VARIABLE TORQUE TRANSMITTING MECHANISM FOR A RE-EXPANSION GAS TURBINE
Francis R. Rogers, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,641
8 Claims. (Cl. 60—39.16)



1. Control apparatus for a gas turbine engine having a combustion chamber, an air compressor for supplying pressurized air to the combustion chamber, an output torque producing shaft, a pair of independently rotating turbines operatively connected to the air compressor and output shaft, respectively, for driving the same, and a control lever for controlling the operation of the engine, said control apparatus comprising:

a fuel conduit connected to supply pressurized fuel to the combustion chamber;

means responsive to the speed of the compressor;

first valve means operatively connected to said fuel conduit, said compressor speed responsive means and the control lever for controlling fuel flow through said conduit to the combustion chamber as a function of the position of the control lever and compressor speed;

first variable stroke fluid pump-motor means operatively connected to the compressor turbine and communicating with a source of fluid;

second variable stroke fluid pump-motor means operatively connected to the output torque producing shift and communicating with said source of fluid;

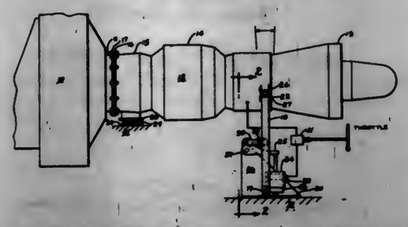
means responsive to a condition of engine operation which varies with engine power output operatively connected to said first and second fluid pump-motor means for controlling the stroke of each of the same in response to certain predetermined variations in said condition of engine operation;

said first fluid pump-motor means being operative to pressurize the fluid at said source which, in turn, drives said second fluid pump-motor means to thereby effect a controlled transfer of energy from said compressor driving turbine to said output torque producing shaft under substantially steady state operation of the compressor as indicated by said condition of engine operation;

said second fluid pump-motor means being operative to pressurize the fluid at said source which, in turn, drives said first fluid pump-motor means to thereby effect a controlled transfer of energy from the torque producing shaft to the compressor turbine under a decelerating condition of the compressor as indicated by said condition of engine operation; and

said first fluid pump-motor means being rendered inoperative as a pump to thereby unload the compressor driving turbine under an accelerating condition of said compressor as indicated by said condition of engine operation.

3,188,808
GAS TURBINE THRUST COMPENSATING DEVICE
William R. Crooks, Mount Vernon, Ohio, assignor to The Cooper-Bessemer Corporation, Mount Vernon, Ohio, a corporation of Ohio
Filed Dec. 3, 1962, Ser. No. 241,838
6 Claims. (Cl. 60—39.16)



1. In a power plant having a hot gas producer comprising a compressor and turbine connected by a driving shaft, said hot gas producer discharging gases in a predetermined direction to produce thrust in an opposite direction, and a power turbine having a shaft separate from the shaft of said hot gas producer and which is fixed in the path of said discharge gases for providing external shaft work: a substantially gas tight connection between said gas producer and power turbine, support means for said gas producer which accommodates movement of said hot gas producer in said predetermined and opposite directions, and means to establish a sustained force on said gas producer in a direction to oppose said thrust that exists during operation in an amount to remove substantially all force from said connection between said gas producer and power turbine during normal operation.

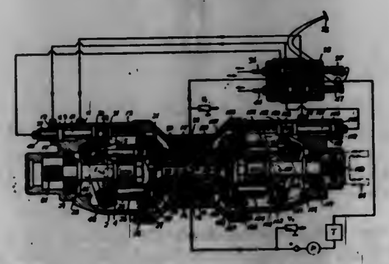
3,188,809
ROTARY INTERNAL COMBUSTION ENGINES
Lester E. Summer, Rte. 1, Box 79, Arnold, Mo.
Filed Aug. 19, 1963, Ser. No. 302,876
12 Claims. (Cl. 60—39.61)



1. A rotary internal combustion engine comprising a cylinder block, an intermediate element operatively mounted in the block for rotary movement therein, said intermediate element having an eccentric chamber adapted for orbital movement around the axis of rotation of the intermediate element, said intermediate element also having a combustion chamber formed therein in laterally spaced relation to the eccentric chamber, a drive shaft journaled in and extending axial y through the block, said drive shaft further having an offset crank-portion which extends through the eccentric chamber, means for mechanically coupling the drive shaft and the intermediate element so that as the drive shaft rotates in one direction the intermediate element rotates in the opposite direction, a rotor mounted on and carried by the crank-portion, said rotor having means for effecting sealed sliding engagement with the walls of the eccentric chamber, means for

charging the combustion chamber with an explosive fuel mixture, means for igniting said explosive fuel mixture to produce explosive combustion thereof, means for transmitting the force generated by said explosive combustion to the rotor, and means for exhausting the gaseous products of said explosive combustion at low pressure to the exterior of the block.

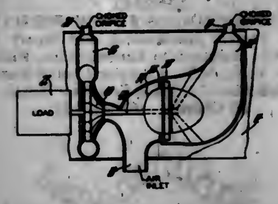
3,188,810
HYDROSTATIC TRANSMISSION
Yoshikazu Kuze, 64 Chideri-cho, Chofu, Ota-ku, Tokyo, Japan
Filed Sept. 4, 1962, Ser. No. 221,036
Claims priority, application Japan, Sept. 16, 1961, 36/33,653
17 Claims. (Cl. 60—53)



9. A hydrostatic transmission, comprising a first and a second rotary shaft co-axially mounted within a casing, each shaft being rotatably mounted at an outer end thereof in said casing, each inner end of said shaft rigidly mounting a block assembly thereon, each said assembly comprising a plunger housing and a distributor block rigidly connected together, said assemblies being axially spaced from each other, said plunger housing comprising a plurality of plungers slidably mounted in bores which are parallel to said shafts, a tilt assembly mounted on each of said shafts axially outwardly of said plunger housing, said tilt assembly comprising an abutment surface abutting an end of each of said plungers, at least one of said tilt assemblies being pivotable about an axis which perpendicularly intersects the rotational axis of said shaft, an oil distribution unit mounted in said casing between said block assemblies, each of said shafts being rotatably supported at their inner ends by virtue of said block assemblies being rotatably journalled upon said oil distribution unit, a valve plate rotatably supported at each end of said unit about an axis eccentric to the rotary axis of said shafts, a first oil conduit leading from exteriorly of said casing, through said oil distribution unit, and to apertures in said valve plates, said apertures in said plates connecting said first conduit only with certain ones of said bores and said valve plate closing off all other of said bores from said first conduit, said other of said bores opening to a second conduit, said second conduit leading to exteriorly of said casing.

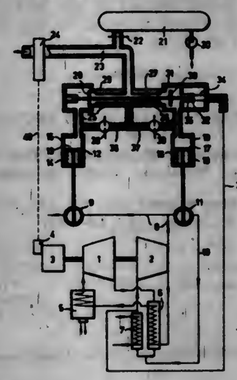
3,188,811
SELF GOVERNING POWER PLANT
Howard G. Leaders, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,381
5 Claims. (Cl. 60—57)

1. A fluid motor having a substantially constant speed over an appreciable range of power output comprising, in combination, a first turbomachine adapted to convert fluid pressure energy into mechanical energy, a second turbomachine adapted to convert mechanical energy into fluid pressure energy, means connecting the first turbomachine to drive the second turbomachine, a power absorbing useful work device driven by the first turbomachine and having an energy demand relatively low compared to the second turbomachine, the second turbomachine being adapted to absorb the major part of the energy output of the first turbomachine at a speed of the turbomachines affording the maximum energy output



of the first turbomachine, a common source of fluid under substantial pressure connected to supply fluid directly to the inlets of both turbomachines, and means to exhaust both turbomachines through outlets of fixed resistance to flow to a low pressure exhaust level substantially below that of the source so that the ratio of the flows through the two turbomachines is not significantly affected by variations in the exhaust level.

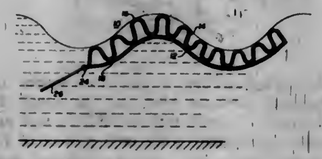
3,188,812
EMERGENCY SHUT-DOWN DEVICE FOR GAS-TURBINE POWER PLANT
Hermann Kalrsch, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Apr. 16, 1962, Ser. No. 187,746
Claims priority, application Switzerland, Apr. 24, 1961, 4,768/61
5 Claims. (Cl. 60—59)



1. In a closed-circuit gas turbine power plant of the type including turbine means, compressing means, a high pressure part providing a flow communication between the inlet of the turbine means and the outlet of the compressing means and a low pressure part providing a flow communication between the outlet of the turbine means and the inlet of the compressing means, the improvement which comprises emergency shut-down means comprising an escape valve which, though normally closed, is capable of connecting said high pressure part with a space outside said circuit; a by-pass connecting said high pressure part with said low pressure part; a normally closed by-pass valve in said by-pass; actuating means operatively connected with the escape valve and the by-pass valve and effective when energized to open said valves sequentially in timed relation, changeover means effective when

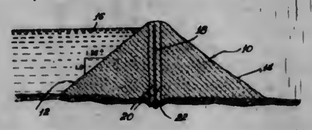
said plant is operating at high power to cause said actuating means to open said escape valve first, and effective when said plant is operating at low power to cause said actuating means to open said by-pass valve first; and means operable to energize said actuating means.

3,188,813
ARTICLE AND PROCESS FOR WAVE DAMPING
Boutwell H. Foster, Maplewood, and Henry F. Miller, Clifton, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 23, 1961, Ser. No. 97,923
15 Claims. (Cl. 61—5)



1. A device for damping liquid waves, comprising a flexible, liquid-permeable flat base sheet, an upper, flexible, liquid-permeable sheet of corrugated configuration having peaks and valleys, said upper sheet contacting and being secured along the valleys thereof to said flat base sheet, the distance from the said peaks to the bottom of said base sheet being from about 4 to about 10 inches and the distance between adjacent said valleys being from about 6 to about 12 inches, both of said sheets being made of a buoyant, multi-ply, flexible, liquid-permeable fabric including a corrugated fabric ply, and both of said sheets being equal in length at least to the wave length of the wave to be attenuated, stiffening means for an edge of the fabric secured to the device along one edge thereof, and means attached thereto to moor the device in a body of liquid.

3,188,814
EMBANKMENT DAM WITH INTERIOR MEMBRANE
Erik Rettig, Belvedere, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,373
3 Claims. (Cl. 61—31)



1. An embankment dam, a foundation coextensive therewith, an impervious water barrier within said dam consisting of a continuous pliant plastic-elastic sheet across the extent of said dam, a cushion and transition zone made up of fine flowable particulate material contacting and completely covering both faces of said sheet thereby providing a cushion and transition zone shielding said sheet, said sheet being located within said dam and sealed to and coextensive with the length of said foundation and extending substantially to the top of said dam, said sheet being substantially water impermeable, of high resilence and joinable to similar plastic-elastic sheets whereby a continuous sheet extending over the entire area of the dam in an unbroken manner can be easily formed at the situs of the dam.

3,188,815
ANCHOR BOLT ASSEMBLY
Fritz Schuermann, 20 Daimlerstrasse, Essen-Bredeney, Germany, and Rudolf Novotny, 22 Ostpreussenstrasse, Essen-Heisingen, Germany
Filed Mar. 27, 1961, Ser. No. 98,625
Claims priority, application Germany, Apr. 7, 1960, B 57,385
2 Claims. (Cl. 61—45)

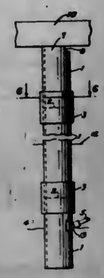


1. An anchor bolt assembly for insertion into a drill hole which has been partially sealed with a cement material to support mine workings and the like comprising:
an elongate bolt member having an externally threaded portion extending from one end toward the other end thereof;
a radially extending annular sealing disk threadedly engaged on the threaded portion of said bolt member intermediate the ends thereof and having its peripheral edge adapted to be in close proximity to the inner surface of the associated drill hole to maintain the cementing material in the region of the one end of said bolt member;
a flange fixedly secured to said bolt member intermediate said sealing disk and the other end of said bolt member;
wedge means disposed about said bolt member between and engageable with said sealing disk and said flange whereby when relative rotational movement is effected between the threaded portion of said bolt member and said sealing disk, said wedge means is compressed between said disk and said flange, causing the same to expand radially into intimate contact with the inner surface of the associated drill hole;
and means for abutting the outer surface surrounding the drill hole affixed to the other end of said bolt member.

3,188,816
PILE FORMING METHOD
William L. Koch, San Francisco, Calif. (% H. Koch & Sons, Corte Madera, Calif.)
Filed Sept. 17, 1962, Ser. No. 224,130
2 Claims. (Cl. 61—46)

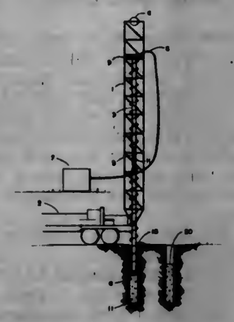
1. A method of constructing a pile in a body of water under a deck of a wharf or the like, including the steps of
(a) anchoring a tube in the bottom of the body of water below the deck,
(b) erecting said tube up the underside of said deck,
(c) providing a by-pass outlet at the end of the tube at said deck,
(d) providing a filler intake into said tube under water,
(e) forcing a filler capable of solidification through said filler intake until said tube is filled,
(f) the providing of sections of glass fiber reinforced plastic,

(g) said anchoring step consisting of the anchoring of the lowermost tube under water,
(h) placing a coupling sleeve slidably over said tube section,
(i) positioning another section above the lowest section,
(j) applying cementing medium on the surfaces of said



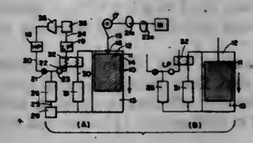
tube sections around their meeting ends and about the area to be covered by said coupling sleeve,
(k) moving said sleeve over the meeting ends of said tube sections to be cemented on the tube sections about the meeting ends of the tubes,
(l) and erecting further tube section end to end and uniting them by coupling sleeves until the tube is erected to the deck of the wharf.

3,188,817
MANUFACTURE OF CONCRETE PILING
Birdie L. Myers, 1612 22nd St., Galveston, Tex.
Filed Apr. 13, 1962, Ser. No. 187,275
1 Claim. (Cl. 61—53.64)



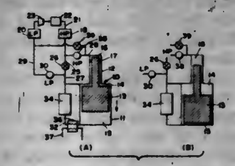
In a method for manufacturing concrete piling in-place by drilling a bole in the ground with a tubular auger having flights to remove the earth and thereafter filling the hole with concrete passing through said tubular auger as said auger is removed from said hole, the improvement which consists of drilling said hole with a tubular auger having a bit on its lower end with at least two rows of multiple teeth set at about a 45° angle with the vertical to drill a hole at least as large as the diameter of said auger, said bit having an opening into said tubular auger and flights to direct drilled material away from said opening and onto flights on said auger, and thereafter forming said concrete piling in place by air pumping through said auger into said hole concrete containing therein from 0.1% to 1.0% by weight of the concrete of a retarding densifier containing major proportions of carbon, hydrogen, glucose and silica and minor proportions of nitrogen, sulfur, lignin and sulfonic acid, said pumping of said concrete through said auger being carried out by pouring said concrete over a rotating and vibrating chain suspended inside the entire length of said auger, said vibrations being caused by the withdrawal of said auger from said hole.

3,188,818
REFRIGERATION METHOD AND APPARATUS EMBODYING FLUID EXPANSION
Walter H. Hogan, Wayland, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 12, 1963, Ser. No. 322,781
16 Claims. (Cl. 62—6)



1. A fluid expansion refrigeration method, comprising the steps of
(a) supplying high-pressure fluid indirectly in heat exchange with a heat storage matrix to one end of an enclosed space of constant volume thereby compressing residual fluid contained therein and generating heat to raise the temperature of said high-pressure fluid supplied and providing a first quantity of hot high-pressure fluid;
(b) transferring said first quantity of hot high-pressure fluid to the other end of said enclosed space and during said transfer cooling said high-pressure fluid to provide a quantity of initially cooled high-pressure fluid;
(c) supplying directly to said other end of said enclosed space a further quantity of initially cooled high-pressure fluid to form with the other quantity a total charge of initially cooled high-pressure fluid in said other end; and
(d) exhausting said total charge of initially cooled high-pressure fluid to a low-pressure region and to said one end at low pressure thereby to expand it and further cool it whereby said other end of said enclosed space is capable of delivering refrigeration externally thereof.

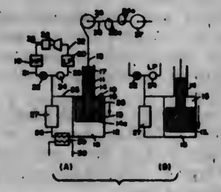
3,188,819
REFRIGERATION METHOD AND APPARATUS
Walter H. Hogan, Wayland, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 12, 1963, Ser. No. 322,782
17 Claims. (Cl. 62—6)



1. A method of producing refrigeration with an enclosed space divided into first and second refrigerating chambers and a third driving chamber, each of variable volume, comprising the steps of
(a) supplying high-pressure fluid from a high-pressure fluid source into said third chamber while simultaneously increasing the volume of said first and said third chambers and decreasing the volume of said second chamber, said first and second chambers being connected by a fluid path;

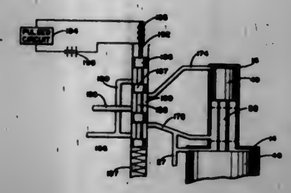
(b) supplying high-pressure fluid to said first chamber from said high-pressure fluid source while continuing to supply high-pressure fluid to said third chamber and compressing said fluid in said first chamber thereby causing residual fluid in said first chamber to increase in temperature;
(c) withdrawing high-pressure fluid from said third chamber into a low-pressure reservoir while simultaneously decreasing the volumes of said first and third chambers, increasing the volume of said second chamber, continuing to supply high-pressure fluid for mixing with the high-pressure fluid of increased temperature from said first chamber, and transferring the resulting fluid mixture of intermediate temperature through said fluid path into said second chamber; and
(d) withdrawing fluid from said second chamber through said fluid path into said low-pressure reservoir thereby effecting expansion and cooling of said fluid in said second chamber and said fluid path.

3,188,820
FLUID EXPANSION REFRIGERATION APPARATUS
Walter H. Hogan, Wayland, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 12, 1963, Ser. No. 322,790
4 Claims. (Cl. 62—6)



1. A fluid expansion refrigeration apparatus, comprising in combination
(a) a fluid-tight enclosure;
(b) a sliding body, including a displacer portion and a piston portion, movable within said enclosure thereby to define therein first and second chambers of different and variable volumes;
(c) a fluid path communicating between said chambers;
(d) thermal storage means associated with said fluid path;
(e) a high-pressure fluid supply reservoir in communication with said fluid path;
(f) a low-pressure fluid exhaust reservoir in communication with said fluid path;
(g) valve means associated with said high-pressure and low-pressure reservoirs and adapted to admit high-pressure fluid to and release fluid to low-pressure from said chambers; and
(h) control means, including energy storing and energy supplying means and valve actuating means, adapted to coordinate the movement of said sliding body and the operation of said valve means, whereby high-pressure fluid is supplied to said first chamber during those steps of the refrigeration operation when said sliding body is moving to bring said first chamber from its maximum volume to its minimum volume and fluid is exhausted from said second chamber during those steps of the refrigeration operation when said sliding body is moving to bring said second chamber from its maximum volume to its minimum volume;
said piston portion of said sliding body delivering work external of said enclosure thereby furnishing at least part of the energy required to drive said control means.

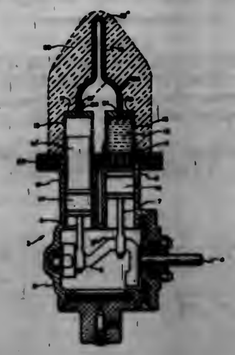
3,188,821
PNEUMATICALLY-OPERATED REFRIGERATOR WITH SELF-REGULATING VALVE
Fred F. Chellis, Manchester, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 13, 1964, Ser. No. 359,800
8 Claims. (Cl. 62—6)



1. Refrigeration apparatus operating on a compressed expansible fluid comprising in combination
(a) cylinder means;
(b) chamber-volume defining means movable within said cylinder means and comprising a displacer mechanically joined to a piston;
(c) first and second refrigerating chambers and a third driving chamber, the volumes of which are defined by the movement of said chamber-volume defining means such that when the volumes of said first and third chambers increase the volume of said second chamber decreases and when the volumes of said first and third chambers decrease the volume of said second chamber increases;
(d) a fluid path connecting said first and second chambers;
(e) thermal storage means associated with said fluid path; and
(f) valve means, comprising in combination
(1) high-pressure fluid conduit means communicating with said first and second refrigerating chambers and with said third driving chamber,
(2) low-pressure fluid exhaust means communicating with said third driving chamber,
(3) a pilot spool valve channel in fluid communication with said high-pressure fluid conduit means and with said low-pressure fluid exhaust means,
(4) a pilot spool valve translationally movable within said channel;
(5) actuating means adapted to move said pilot spool valve in a manner to control the flow of fluid into and out of said chambers through said high-pressure fluid conduit means and said low-pressure fluid conduit means thereby to impart to said chamber-volume defining means a predetermined motion, said motion being defined in four steps and consisting of said chamber-volume defining means dwelling in an uppermost position moving downwardly, dwelling in a lowermost position, and moving upwardly, respectively.

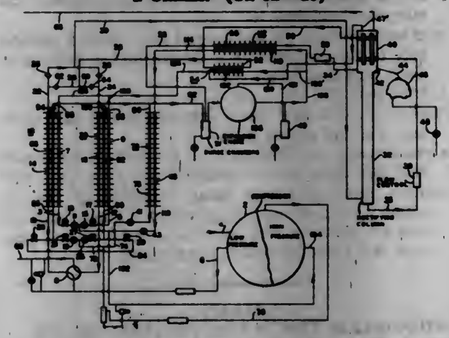
3,188,822
REMOTELY-LOCATED COLD HEAD FOR STIRLING CYCLE ENGINE
John G. Daunt, Columbus, Ohio, assignor to Mainker Laboratories, Inc., High Bridge, N.J., a corporation of New Jersey
Filed Apr. 7, 1964, Ser. No. 357,954
4 Claims. (Cl. 62—6)

1. In a cryogenic engine operating on the Stirling type cycle, and having a compressor cylinder head and an expander cylinder head, between which heads a working gas is cycled and cooled, the improvement, comprising,



a small diameter tube connected to and extending outwardly beyond said heads, and serving as the refrigeration-transmitting means for such engine.

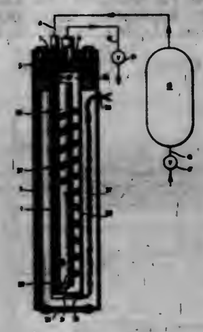
3,188,823
CRYOGENIC METHOD
Samuel C. Collins, Belmont, Mass., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 19, 1961, Ser. No. 83,700
2 Claims. (Cl. 62—13)



1. A method of reducing the temperature of a cryogenic fluid to a predetermined temperature by means of a gaseous stream, derived from a rectification column, having a temperature below such predetermined temperature comprising the steps of; effecting a first reduction of temperature of said cryogenic fluid by passage thereof through an expansion engine, effecting a second reduction of temperature of said cryogenic fluid by passage thereof through a heat exchanger, and effecting a third reduction of temperature of said cryogenic fluid by mixing said cryogenic fluid with said gaseous stream after passing through said heat exchanger.

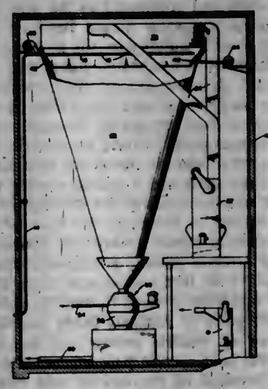
3,188,824
REFRIGERATION METHOD AND APPARATUS EMPLOYING THE JOULE-THOMSON EFFECT
Jacob M. Geist and Kenneth Zeitz, Allentown, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,348
13 Claims. (Cl. 62—86)

1. A method of rapidly decreasing the temperature of a member at a desired time, comprising:
(a) maintaining a state of readiness by maintaining a body of compressed fluid in heat exchange relationship with the member to be cooled;
(b) at a desired time, abruptly establishing free fluid communication between said body of fluid and a region of lower pressure;
(c) passing cold fluid obtained by the abruptly established free communication, in heat exchange relationship with said member to be cooled for a relatively short period and at a high rate of cooling to lower the temperature of said member rapidly;



(d) performing a Joule-Thomson expansion of additional compressed fluid into a low pressure zone created by said abruptly established free communication;
(e) passing the resultant Joule-Thomson cooled fluid in heat exchange relationship with said member to be cooled for a relatively long period, but at a lower rate of cooling said member than the rate for said short period of cooling, to at least maintain said member at the low temperature levels achieved by said relatively short period of cooling.

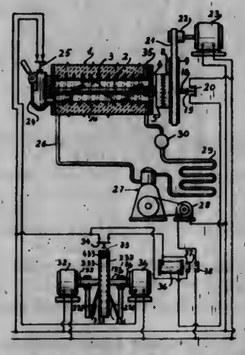
3,188,825
APPARATUS FOR FREEZE CONCENTRATION
George C. W. van Olphen, 3151 Santa Maria, Santa Clara, Calif.
Filed May 19, 1959, Ser. No. 814,316
2 Claims. (Cl. 62—123)



1. Apparatus for concentrating solutions which comprises a generally vertically disposed conduit composed of flexible, liquid-impervious plastic material, means for continuously vibrating said plastic conduit, means for spraying the solution into the upper portion of said conduit, means for blowing cold air downwardly through said

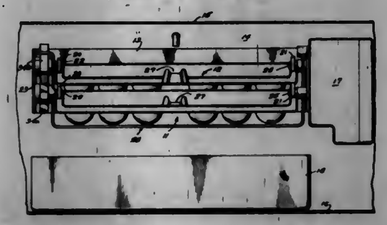
conduit to intermix with the sprayed solution and freeze portions thereof, and means for collecting and separating the liquid and solid portions of the solution.

3,188,826
APPARATUS FOR AUTOMATICALLY CONTROLLING THE HARDNESS OF ICE CREAM IN CONTINUOUS ICE CREAM MACHINES
Pocrio Carpigiani, Bologna, Italy, assignor to A.P.A.W., S.A., Fribourg-Switzerland, a corporation of Switzerland
Filed Oct. 23, 1962, Ser. No. 232,359
Claims priority, application Italy, Oct. 27, 1961, 19,519/61; June 27, 1962, 13,126/62; Sept. 8, 1962, 18,315/62
4 Claims. (Cl. 62—136)



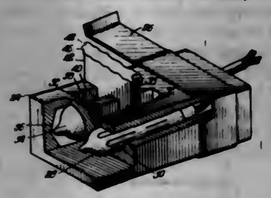
1. In a continuous ice cream machine of the type having an ice cream freezing cylinder, a refrigerating unit including an evaporator surrounding said cylinder, a condenser and a compressor for compressing and circulating a refrigerant through said evaporator and condenser, a rotatable mixer in said cylinder provided with a shaft projecting outwardly from one end of said cylinder, power means and transmissions for driving said compressor and said mixer shaft, a duct for feeding a liquid mix to be frozen into said one end of the cylinder and a delivery cock at the opposite cylinder end, the improvements comprising a clutch in one of said transmissions which drives said shaft, said clutch having a first part fixed to said mixer shaft, a second part axially shiftable with respect to the mixer shaft and connected to the said mixer shaft driving transmission, spring means between said mixer shaft and said second clutch part for pushing the second part into engagement with said first clutch part, and means operated by said shiftable second clutch part when it is shifted axially away from said first coupling part to interrupt the flow of said refrigerant through said evaporator, said power means comprising an electric motor connected to a source of electric power for continuously driving the said mixer shaft and a second electric motor connected to said source of power for driving the said compressor, said means to interrupt the flow of refrigerant including an electromagnetic relay coil connected across said source of electric power, a magnetic plunger movable within said coil, first and second pairs of normally open contacts operable to close by said movable plunger, one of the said pairs of contacts being inserted between the said source of electric power and the compressor motor, while the said second pair of contacts is inserted between one terminal of the coil of said relay and one terminal of the source of electric power, a normally closed third pair of contacts inserted between the second terminal of the said source of electric power and the other terminal of said relay coil, said third pair of contacts being operable to open by shifting movement of said second clutch part, a normally open fourth pair of contacts connected in parallel with the said second pair of contacts, and a timer mechanism for periodically closing said fourth pair of contacts.

3,188,827
AUTOMATIC ICE MAKER HAVING A THERMALLY SENSITIVE POWER UNIT
Carl C. Bauerlein, Clearwater, Fla., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed June 17, 1963, Ser. No. 288,360
7 Claims. (Cl. 62—137)



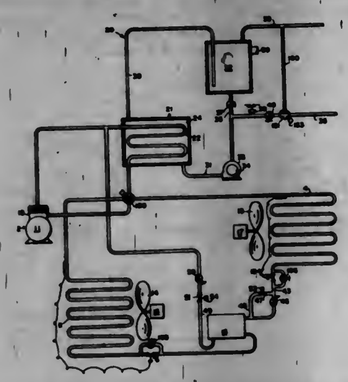
6. An ice making apparatus comprising:
a support,
an ice tray mounted for rotatable movement on said support and within a freezing compartment, wherein ejection of ice blocks from said tray is effected by rotating said tray through a predetermined arc,
a sector gear connected to and co-rotatable with said tray,
a second gear rotatably mounted on said support and movable through a 360° arc,
gear teeth formed on said second gear about a portion only of the circumference thereof and positioned in mesh with said sector gear,
a drive gear,
oscillatable one-way clutch interconnecting said drive gear and said second gear,
a rectilinearly movable gear rack drivingly connected with said drive gear to oscillate said drive gear, and
thermal sensitive power means sensitive to the air within said freezing compartment ambient said ice tray for effecting rectilinear movement of said gear rack as a function of such temperature.

3,188,828
PHOTO-ELECTRIC ICE DETECTING DEVICE
Harry A. Wayne, Skokie, Ill., assignor to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,767
6 Claims. (Cl. 62—140)



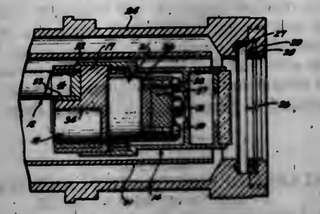
1. A control device employing a source of electrical power for maintaining within preselected limits, the buiku-up on a surface of a foreign material having light transmission characteristics comprising:
a source of radiant energy connected to said power source,
sensor means connected to said power source, said sensor means being adapted to detect the presence of radiant energy emanating from said source and provide a control signal proportional to the amount of radiant energy detected,
barrier means disposed between said source and said sensor for preventing direct irradiance of said sensor by radiant energy emanating from said source,
means for accumulating said foreign material, said foreign material increasing the transfer of radiant energy from said source to said sensor in proportion to the amount of said foreign material accumulated,
relay means connected to said power source,
switching means connected to said sensor means and said relay means for energizing said relay means in response to said control signal,
means responsive to electric power to increase the buildup of said foreign material on said surface,
means responsive to electric power to decrease the buildup of foreign material on said surface,
and contact means actuatable by said relay means for alternately connecting said electrical power source to said means for increasing the buildup of said foreign material or to said means for decreasing the buildup of said foreign material.

3,188,829
CONDITIONING APPARATUS
Herbert G. Siewert, Manlius, and Stanley F. Gilman, Fayetteville, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,387
16 Claims. (Cl. 62—160)



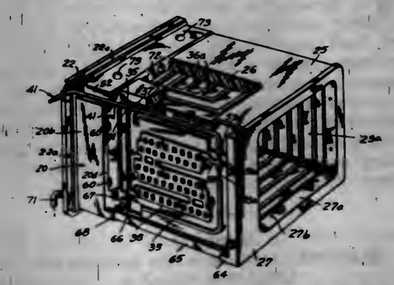
12. A control arrangement for a reverse cycle refrigeration-water heating apparatus including a compressor having a drive motor, reversing means, an outdoor coil, pressure regulating means for said outdoor coil, expansion means, and an indoor coil connected to form a circuit for refrigerant flow during cooling operation, the reversing means serving to direct the flow of refrigerant through the indoor coil, expansion means, and outdoor coil during heating operation, first bypass means to bypass the pressure regulating means, second bypass means including pressure regulating means to bypass the outdoor coil, and means for placing water in heat exchange relation with refrigerant between the compressor and the reversing means, the combination of first switch means to complete an energizing circuit to said compressor drive motor and said first bypass means, control means for actuating said first switch means in response to a predetermined demand for cooling, second switch means to complete an energizing circuit to said second bypass means, third switch means to interrupt the energizing circuit to said first bypass means, and means operable in response to a predetermined condition of said water to actuate said second and third switch means.

3,188,830
THERMAL OSCILLATION FILTER
Kenneth W. Cowans, Playa del Rey, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,906
12 Claims. (Cl. 62—259)



1. In combination with a cyclic refrigerator and a heat load, a thermal oscillation filter comprising: a heat conductor means connected to conduct cold from the cyclic refrigerator; a thermal capacitor means having the characteristics of a higher thermal capacity than said heat conductor, said thermal capacitor being connected in thermal contact with said heat conductor to smooth temperature excursions therein; and a thermal length filter having the characteristics of a higher thermal capacity, and a longer thermal time constant than those characteristics of said heat conductor, said thermal length filter being connected between and in contact with said heat conductor and the heat load to conduct cold to and virtually eliminate temperature excursions at the heat load.

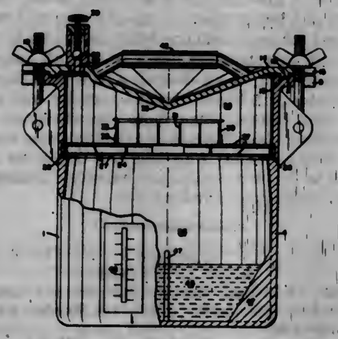
3,188,831
REFRIGERATION
Axel Gosta Hellstrom, Johanneshov, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 4, 1963, Ser. No. 327,913
Claims priority, application Sweden, Dec. 4, 1962, 13,053/62
12 Claims. (Cl. 62—288)



1. A refrigerator comprising a cabinet having a storage space defined by thermally insulated walls including a rear wall and spaced lateral side walls, a compression refrigerating system including a cooling unit disposed in said space which is formed from a pair of metal sheets in intimate physical contact with one another and having passage means therebetween, said metal sheets including a first cooling unit section of annular form having spaced vertically extending side walls and top and bottom connecting walls and a second cooling unit section comprising a plate-like member vertically disposed alongside said first cooling unit section and a relatively narrow connecting strip therebetween, said strip providing a relatively poor heat conductive path between said first and second cooling unit sections, said passage means between said sheets providing a path of flow for refrigerant having por-

tions in said first and second cooling unit sections and said connecting strip and in which refrigerant flows serially therethrough, structure including said first cooling unit section of annular form providing a frozen food compartment from which said first cooling unit section is arranged to abstract heat, said last-mentioned structure comprising an outer shell disposed about the first cooling unit section in spaced relation therewith and insulation therebetween, said first and second cooling unit sections extending forward from said rear wall and said connecting strip being nearer to said rear wall than to the front portions of said first and second cooling unit sections, and said outer shell being notched to receive said connecting strip.

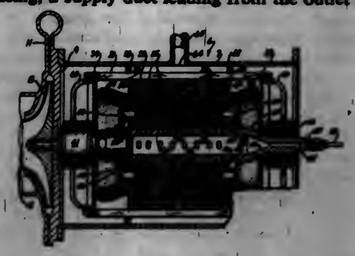
3,188,832
PORTABLE REFRIGERATION AND WATER PURIFYING APPARATUS
Louis H. Leonard, Jr., De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,392
7 Claims. (Cl. 62—478)



1. In portable refrigeration apparatus, the combination of a vessel adapted to contain a water-absorbent solution, a portion of said water being adapted to vaporize upon heating of the solution, means adapted to condense the water vapor, condensate collecting means in said vessel spaced from said solution, said condensate collecting means being capable of being removed from said vessel, and means for removing noncondensibles from said vessel, a portion of the condensate in said collecting means in response to a reduction in pressure in said vessel caused by cooling of said vessel vaporizing to form ice in said collecting means from the remaining condensate, said absorbent absorbing said last-mentioned vapor.

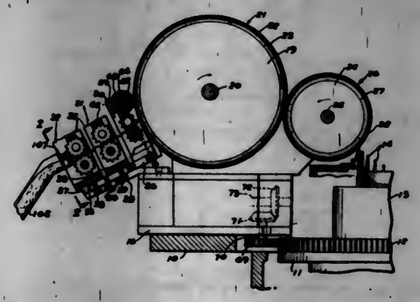
3,188,833
ELECTRIC MOTOR WITH IMPROVED COOLING MEANS
Russell I. Robinson, Thiensville, Wis., assignor to The Louis Allis Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 23, 1959, Ser. No. 854,787
2 Claims. (Cl. 62—505)

1. In combination
a totally enclosed electric motor having a housing, a stator, and a rotor;
a closed circuit refrigeration system having a compressor driven by said electric motor to compress the refrigerant in the system, a condenser for condensing said compressed refrigerant from a gas to a liquid, having an inlet connected to said compressor and an outlet, and an evaporator connected to the outlet of said condenser for evaporating said liquid refrigerant and supplying the evaporated refrigerant to the compressor,
means utilizing the refrigerant of said system to cool the motor comprising an expansion chamber in the interior of the rotor means providing passages leading from the expansion chamber radially out through the rotor and stator and opening to the interior of the housing, a supply duct leading from the outlet of the



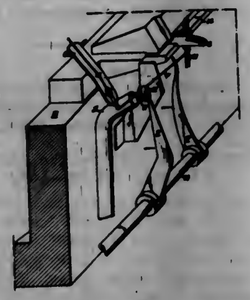
condenser to the expansion chamber inside the rotor, and an exhaust duct leading from the motor housing to the compressor, so that refrigerant is fed into the expansion chamber as a liquid, there flashes into a gas, and then after abstracting heat from the rotor and stator leaves the motor as a gas.

3,188,834
MEANS FOR FEEDING FIBERS TO A PILE FABRIC KNITTING MACHINE
Otto T. Radtke, Tarboro, N.C., assignor to Glenolt Mills, Inc., Tarboro, N.C., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 247,430
3 Claims. (Cl. 66—9)



1. A carding head for a knitting machine having a set of needles, said carding head being operative to convert sliver in rope form and composed of discrete fibers into an attenuated, flattened and widened sheet suitable for reception by the needles to knit a pile fabric comprising, in combination with a transfer roll and doffer:
(a) a plurality of successive pairs of spaced feed rolls, driven at progressively increasing rates of speed, for feeding sliver to the transfer roll,
(b) a support for the feed rolls, including means to adjust the feed rolls as a unit toward and away from the transfer roll,
(c) adjusting means on the support for selectively adjusting the spaced pairs of feed rolls relatively toward or away from each other,
(d) a rotary brush mounted on the support and disposed in touching relationship to both the last successive pair of feed rolls and the transfer roll and
(e) adjustment means on the support to position the brush in touching relationship to the last successive pair of feed rolls and the transfer roll regardless of the position of the support relative to the transfer roll.

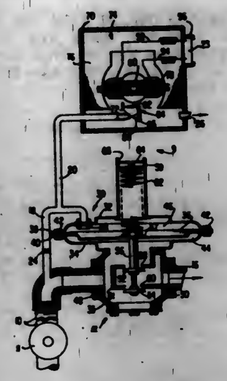
3,188,835
THREAD CLAMPING DEVICE
Werner Mayer and Ewald Hänel, Ingolstadt, Germany, assignors to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt (Danube), Germany, a corporation of Germany
Filed Mar. 6, 1961, Ser. No. 93,803
Claims priority, application Germany, Mar. 9, 1960, 27,541
3 Claims. (Cl. 66—145)



1. In a straight bar knitting machine having knitting elements, yarn feeding means movable from an active yarn feeding position wherein yarn is fed to said knitting elements for knitting thereby to an inactive yarn feeding position wherein the yarn is in non-knitting position, and means for clamping and cutting said yarn when said yarn feeding means is inactive yarn feeding position and for releasing said yarn when said yarn feeding means is moved to active yarn feeding position, the improvement which comprises a combined yarn clamping and suction device including suction nozzle means and yarn engaging surface means arranged for relative movement from a position out of yarn clamping contact to a position into yarn clamping contact with one another when said yarn feeding means is moved to inactive yarn feeding position, said surface means being provided with yarn engaging projection means insertable into said suction nozzle means during the yarn clamping contact, said projection means being adapted to engage the yarn to be clamped and carry a portion thereof into said suction nozzle means therewith upon yarn clamping contact whereby to form a loop portion in the yarn.

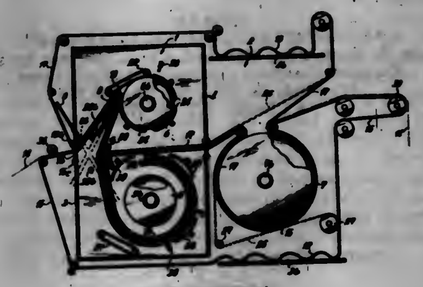
3,188,836
GAS CONTROL MECHANISM
Duane V. Kniebes, Hinsdale, Ill., assignor to Institute of Gas Technology, a corporation of Illinois
Filed Oct. 15, 1962, Ser. No. 230,499
9 Claims. (Cl. 67—119)

4. Gas control mechanism for controlling the flow of gas comprising a pressure operated valve having a flexible diaphragm therein defining a first chamber and a second chamber, said first chamber having a gas inlet adapted to communicate with a source of gas, and a gas outlet adapted to communicate with a gas lamp, valve means in said first chamber for controlling the gas flow from said gas inlet to said gas outlet, means for operatively connecting said diaphragm to said valve means, spring means in the pressure operated valve for biasing the valve means toward open position, an enclosure communicating with said second chamber and adapted to communicate with said source of gas through an orifice means, photoelectric means disposed in position to respond to daylight, a galvanometer in said enclosure having a pivoted spring-biased coil in circuit with said photoelectric means, orifice-regulating means in said enclosure mounted for movement with said coil and having a portion thereof disposed adjacent said orifice means in said enclosure for controlling the orifice opening, whereby control of the orifice opening controls the pressure in



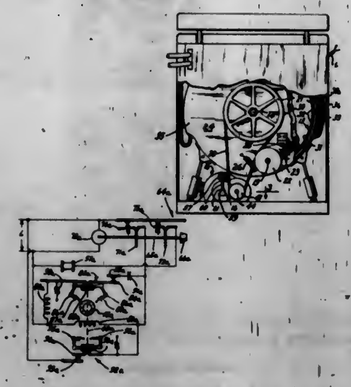
the second chamber, thereby controlling movement of the diaphragm to actuate the valve means.

3,188,837
MACHINE FOR CONTINUOUS FINISHING OF TEXTILE MATERIAL
Leon-Herbert von Ondarza, Monchen-Gladbach, and Gustav Beckers, Rheydt, Germany, assignors to A. Monforts Maschinenfabrik, Monchen-Gladbach, Germany, a German firm
Filed Aug. 15, 1963, Ser. No. 302,235
10 Claims. (Cl. 68—8)



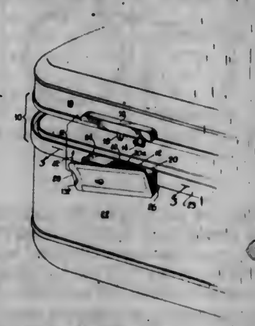
1. A machine for finishing textile materials, comprising two cylinders spaced from each other and rotatable about respective stationary axes, said cylinders being perforated on the cylindrical surface and having means for passing processing medium through the perforations, drive means connected to said respective cylinders and adapted for alternately rotating one and then the other of said respective cylinders in the winding-up sense while each time the remaining cylinder is rotatable in the unwinding sense, means defining a feed path for textile material to be processed, two devices for attaching the material to the one of said cylinders that rotates in the winding-up sense at a time, said devices comprising two pusher members having respective fold-forming edges parallel to said respective cylinder axes and normally located on opposite sides respectively of said path, said members being alternately movable toward said path and toward said respective cylinders for passing each time a fold of the material onto said one cylinder.

3,188,838
LAUNDRY APPARATUS
James R. Hubbard, Moorestown, N.J., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Original application Dec. 10, 1958, Ser. No. 779,351, now Patent No. 3,100,387, dated Aug. 13, 1963. Divided and this application Feb. 9, 1962, Ser. No. 172,345
12 Claims. (Cl. 68—12)



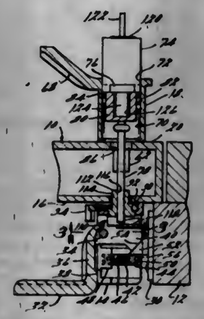
3. In laundry apparatus, a rotatable clothes drum, a motor, means defining a driving connection between said drum and said motor including a transmission adapted to be conditioned for rotating said drum at either a higher or a lower speed, and means for alternately energizing and deenergizing said motor, in response to rotational speeds of the same, when said transmission is conditioned for rotating said drum at said higher speed.

3,188,839
LATCH FOR LUGGAGE AND LIKE CASES
John B. Humphries, Stamford, Conn., assignor to The Excelsior Hardware Company, Stamford, Conn.
Filed Feb. 18, 1963, Ser. No. 258,984
6 Claims. (Cl. 70—70)



1. A catch for latching a prong member movable with respect to said catch, said catch comprising in combination
(A) a base member,
(B) a latch member pivotally supported on said base member for rotation between an unlatched position where it allows said prong member to be withdrawn from said catch and a latched position where it positively engages said prong member and draws it fully into said catch,
(1) means forming a slot in said latch member,
(C) an actuator pivotally joined at a first point to said base member,
(1) a remote end of said actuator spaced from said first point,
(2) a post extending from said actuator to engage said latch member slot at a second point along said actuator intermediate said first point and said remote end
(a) so that a small latch operating pressure applied to said actuator at said remote end pivots said latch member between said unlatched and latched positions with a lever action having a mechanical advantage.

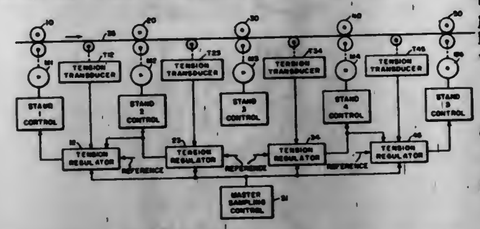
3,188,840
DOOR LATCH AND LOCK
George Wartian, East Detroit, Mich., assignor to Wartian Lock Company, St. Clair Shores, Mich., a corporation of Michigan
Filed Nov. 4, 1963, Ser. No. 321,176
4 Claims. (Cl. 70—146)



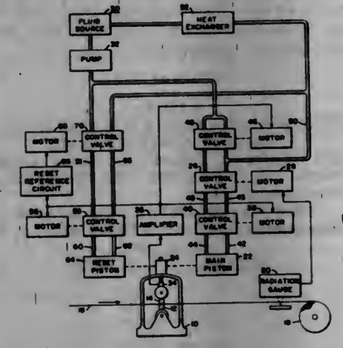
1. In a door latch cooperable with a strike plate having a projecting keeper portion, a casing having an opening in one wall thereof and adapted to be secured to one side of a door with said opening opposed to said strike plate, a pair of guide slots in the top and bottom walls of said casing terminating at said opening in said one wall of said casing, a latch pin having its opposite ends slidable within said slots for movement toward and away from said opening, a spring within each of said guide slots and engaging one end of said latch pin for urging said latch pin outwardly along said slots, a handle pivotally mounted in said casing and having an inner end extending through said opening in said one wall, said inner end of said handle having spaced cam portions engageable with the outer surface of said latch pin adjacent each end thereof for retaining said latch pin within said slots and retracting said latch pin into said casing upon pivoting of said handle, said keeper portion of said strike plate projecting into said opening in said one wall of said casing and said cam portions of said handle being adapted to straddle and pass above and below said projecting keeper portion in the closed position of the door, the central portion of said latch pin being engageable with said keeper portion of said strike plate so as to be retracted into said casing independently of movement of said handle upon closing of the door and engageable with said keeper to latch the door in closed position.

3,188,841
MULTISTAND SAMPLING TENSION REGULATING SYSTEM
John W. Wallace, Pitcairn, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1962, Ser. No. 180,205
5 Claims. (Cl. 72—9)

1. In a system for controlling the tension between pairs of stands of a multistand strip rolling mill, the combination of tension sensing means each being operative with the strip between a differing pair of said stands to sense and supply respective signals proportional to the deviation from a desired tension on the strip between each pair of stands, tension control means each including a signal integrating device and being responsive to a different one of said signals, with each of said tension control means being operative to control at least one stand of a different pair of stands for each of said tension deviation signals, and time control means operative to simultaneously control all of said tension control means to make operative and to make inoperative at periodic time intervals the respective tension sensing means and their associated tension control means relative to the controlled stands of the mill.

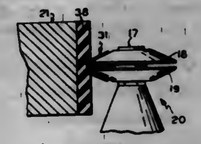


3,188,842
STRIP THICKNESS CONTROL APPARATUS
Chester L. Bryan and Bernard P. McDonnell, Cheektowaga, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1962, Ser. No. 183,790
3 Claims. (Cl. 72—12)



1. In strip thickness control apparatus operative with a source of hydraulic fluid for controlling a rolling mill having two roller members between which a strip of material is moved to determine the thickness of that strip, the combination of strip position sensing means for providing a first control signal when said strip is positioned between said roller members, strip thickness measuring means for providing a second control signal in accordance with any thickness error between the actual thickness of said strip and a reference thickness for said strip, hydraulic position control means operative with said source of fluid and responsive to said second control signal for positioning at least one of said roller members to reduce said thickness error, hydraulic reset control means operative with said source of fluid and having a smaller capacity than said position control means and being operative for providing a predetermined reset position for one of said roller members, first operation control means operative with said position control means and being responsive to said first control signal for enabling said position control means to respond to said second control signal, and second operation control means operative with said reset control means and being responsive to said first control signal for enabling said reset control means to provide said predetermined reset position for one of said roller members when said strip is not positioned between said roller members, and fluid accumulator means operative to supply fluid to said reset means when providing said predetermined reset position.

3,188,843
CHANNEL SPREADING APPARATUS ADAPTABLE FOR USE IN THE MANUFACTURE OF POCKET-BOOKS
Salvatore Romano, Glen Cove, N.Y., assignor to Metgal Novelty Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 10, 1962, Ser. No. 165,359
3 Claims. (Cl. 72—22)

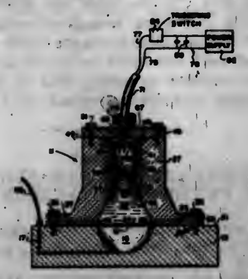


1. In a channel spreading apparatus of the character described, a frame, a spreading wheel rotatably mounted on the frame; said spreading wheel being one whose thickness increases from its periphery towards its center, a member slidably mounted on the frame for movement towards and away from said spreading wheel, a pusher wheel rotatably mounted on said member; the axes of rotation of said wheels being parallel, a tire carried on the pusher wheel for contacting and pushing the channel; said tire having the nature of half-hard rubber substantially whereby any projections on the exterior of the channel being worked on may become imbedded therein without hinderance to the channel spreading function of the apparatus, a cylinder apparatus operable by a gaseous medium, fixed on the frame and having its piston rod connected to said slidable member and means for turning one of said wheels while a channel is set on the said spreading wheel so that the faces of said spreading wheel are respectively adjacent the inner opposite walls of such channel and said cylinder apparatus is operated whereby said pusher wheel is moved towards said spreading wheel to push said channel onto said spreading wheel.

3,188,844
ELECTRICAL DISCHARGE APPARATUS FOR FORMING
Robert J. Schwinghamer, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 17, 1962, Ser. No. 166,969
2 Claims. (Cl. 72—56)
(Granted under Title 35, U.S. Code (1952), sec. 266)

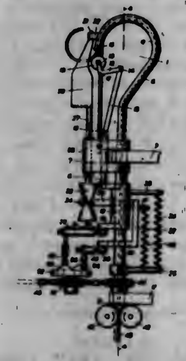
1. In combination with a die having a forming cavity adapted to be covered by a restrained blank:
(a) means for directing a shock wave having a substantially V-shaped front toward the center of said forming cavity whereby the point of said shock wave will strike the middle portion of said blank to form said blank from its center outwardly;
(b) said means including:
(1) a blast head having an inner cone-shaped chamber converging from an opening in the peripheral surface thereof;

(2) said blast head joining said die with said opening being aligned with said cavity;
(3) two spaced electrodes supported by said blast head and extending into said chamber adjacent the apex thereof;



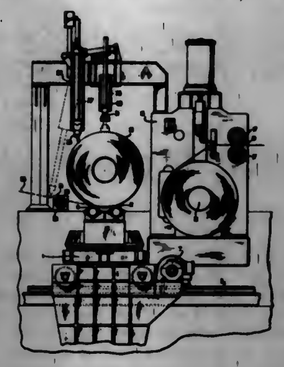
(4) a wire having a V-shaped portion substantially aligned with the center of said cavity and fixed to and extending between said electrodes, and
(5) said V-shaped portion converging away from said apex of said chamber.

3,188,845
MACHINE FOR THE MANUFACTURE OF COMPRESSION SPRING STRIPS
Wilhelm G. Gerstorfer, 20 Peter Mayrstrasse, Innsbruck, Austria
Filed Mar. 22, 1962, Ser. No. 181,728
Claims priority, application Austria, Mar. 23, 1961, A 2,377/61
10 Claims. (Cl. 72—138)



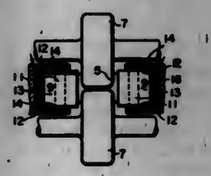
10. An apparatus for the production of spring strips composed of a continuous wire formed with convolute springs wound in opposite senses, said apparatus comprising:
support means;
shaping-head means pivotally mounted on said support means for angular displacement about a pivotal axis;
feed means on said support means for passing a continuous wire through said shaping-head means;
shaping-tool means co-operating with said shaping-head means and selectively displaceable relatively thereto for forming wire emerging from said shaping-head means into springs wound alternately in opposite senses; and
drive means connected to said shaping-head means and said shaping-tool means for synchronously operating same.

3,188,846
STRIP STRAIGHTENING
Lucien A. Fugassi, Pittsburgh, Pa., assignor to National Steel Corporation, a corporation of Delaware
Filed July 11, 1962, Ser. No. 209,128
10 Claims. (Cl. 72—183)



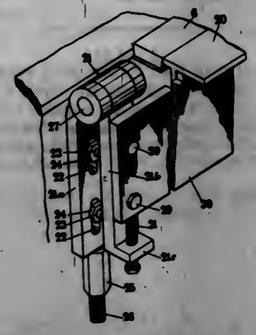
6. Apparatus for straightening an end of a coiled strip comprising means for moving a coil along a predetermined path, a bending bar, means for moving the bending bar back and forth between a first position in which the bending bar overlies said path and is horizontally disposed in a plane perpendicular to the path and a second position in which the bending bar is disposed to one side of the path, and means movable independently of the bar for bending an end of a coiled strip away from the coiled strip and down over the bar thereby at least partially to straighten the end of the strip.

3,188,847
METHOD AND APPARATUS FOR ROLLING WIDE FLANGED BEAMS
Kanichi Kishikawa, Tobata City, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed May 10, 1962, Ser. No. 193,826
Claims priority, application Japan, May 15, 1961, 36/17,369
1 Claim. (Cl. 72—225)



An apparatus for rolling wide flanged beams by means of a continuous universal rolling mill, in which vertical rolls reside in the plane formed by upper and lower horizontal rolls, comprising a vertical roll housing with high pressure holes, through which holes high pressure water may be jetted immediately onto the surface of the vertical rolls, the vertical rolls having a number of high pressure water receiving grooves, thereby to preliminarily rotate the vertical rolls by means of the jets of high pressure water.

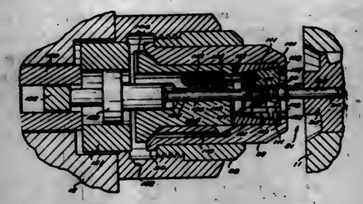
3,188,848
FOLDER BRAKES FOR FORMING CORNERS IN SHEET MATERIAL
Herbert Barrett, Manchester, England, assignor to The Oliver Machinery Company Limited, Manchester, England, a British company
Filed Jan. 29, 1963, Ser. No. 254,740
Claims priority, application Great Britain, Jan. 30, 1962, 3,413/62
4 Claims. (Cl. 72—320)



1. A folder brake comprising a surface against which a sheet of material can be clamped, a former for location on the sheet material and selected from a plurality of formers shaped to allow the formation of sharp and radiussed corners, a pivotal bending means for bending the sheet material about the former, a mounting disposed below the clamping surface and providing a fulcrum about which the bending means can pivot comprising at least one hinge having two arms, first connecting means adjustably securing the bending means to one arm of the hinge whereby the distance of the bending means from the fulcrum of the hinge can be varied to enable the bending means to be aligned with the clamping surface before commencement of the bending operation, second connecting means adjustably securing the other arm of the hinge to a fixed part of the folder brake whereby the distance of the fulcrum of the hinge from the clamping surface can be varied in accordance with dimensions and shape of the corner to be produced on the sheet, said first and second connecting means each comprising at least one through slot in each arm of the hinge, a bolt passing through each slot and a lock nut for each bolt so that upon loosening of the lock nut the arm can be moved within the extent of the slot, and a screw-mechanism associated with each arm and adjustable to move the hinge arms within the extent of each slot.

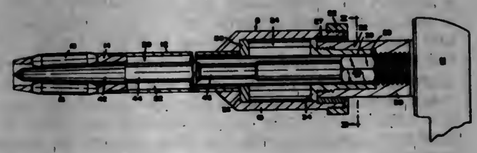
3,188,849
METHOD AND APPARATUS FOR MULTIPLE UPSETTING
Robert E. Wiesbeker and Gerald R. Eakin, Tiffin, Ohio, assignors to The National Machinery Co., Tiffin, Ohio, a corporation of Ohio
Filed Sept. 12, 1961, Ser. No. 137,699
11 Claims. (Cl. 72—346)

1. In a machine of the character described a frame, a solid die mounted on said frame operable to position a blank with an end protruding therefrom, a slide reciprocable forward and rearward from said solid die, and a tool assembly carried by said slide operable to upset said protruded end, said tool assembly including a carrier, die elements on said carrier, cams on said carrier and die elements operable to move said elements between expanded and closed positions, said die elements cooperating to define a die cavity when closed, said carrier closing said die elements around said protruding end after a blank is positioned in said solid die in response to movement of said slide toward said solid die before said slide reaches its forwardmost position, and an upsetting tool on said slide



upsetting the protruding end in said cavity when said slide reaches its forwardmost position.

3,188,850
TUBE EXPANDER TOOL
Harley E. Linthicum and William A. Linthicum, Springfield, Ohio, assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 21, 1963, Ser. No. 260,174
5 Claims. (Cl. 72—393)

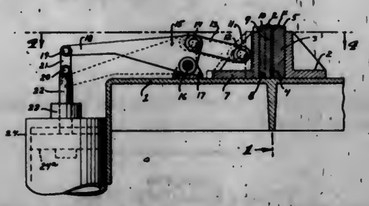


1. A tool for uniting the ends of a tube with an apertured support member by radially expanding at least a portion of the tube into tight contact with the walls defining the tube receiving aperture comprising:
(a) a plurality of roller elements;
(b) hollow cage means retaining said elements circumferentially spaced and axially skewed about the longitudinal axis thereof;
(c) cage extension means coextensive with said cage means;
(d) a hollow body member affixed to said cage extension means to form with said cage means and said cage extension means a continuous passage with the portion defined by said body member being larger in diameter to form a shoulder therein;
(e) a rotatable head mounted within the portion of the passage disposed in said body member;
(f) a hollow piston threadably connected to said rotatable head to form an extension thereof, said piston being provided with a passage, non-circular in cross-section;
(g) a drive tube having a cross-section complementary to the cross-section of said piston passage secured to said piston and depending therefrom, said drive tube being dimensioned so as to extend into the portion of the passage having the reduced diameter; and
(h) tapered mandrel means received within said tube for rotation therewith and axial movement relative thereto, the parts being constructed and arranged so that movement of said head relative to said body member positions the tapered mandrel in engagement with the rollers sufficient to radially displace them into contact with a tube positioned in the walls of the opening in the support member whereby motion imparted to the cage by the body member will accomplish axial movement of said mandrel through the roller elements.

ERRATUM

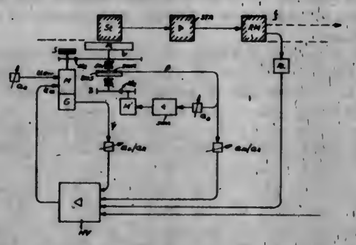
For Class 72—409 see:
Patent No. 3,189,916

3,188,851
BRAKE SHOE TRUING MACHINE
Frank A. Canada, 1401½ S. Montebello Blvd., Montebello, Calif.
Filed Sept. 11, 1961, Ser. No. 137,394
2 Claims. (Cl. 72—415)



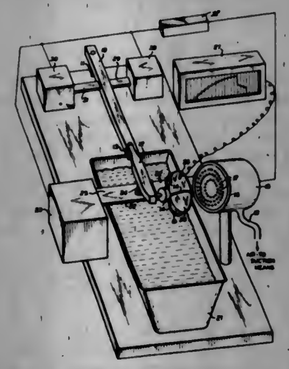
1. A truing machine for a brake shoe having a semicircular rim and an internal flange secured to the rim along its median line, said machine, comprising: a bed structure; a frame structure disposed above said bed structure; a guide sleeve carried by said frame structure and defining an axis perpendicular to said bed structure; a tubular arm reciprocably and non-rotatably mounted in said guide sleeve; a piston and cylinder means within said sleeve and ram for driving said ram toward said bed structure; a concave die carried by said ram for engagement with the radially outer side of the rim of said brake shoe; a fixed convex die secured to said bed structure under said concave die and having a curved die surface for engagement with the inner side of the rim of said brake shoe at one side of said flange, and a flat die surface for engagement with said one side of the flange; a movable convex die slidable on said bed structure at right angles to said concave die and having a curved die surface for engagement with the inner side of the rim of said brake shoe at the other side of said flange and a flat die surface for engaging said other side of the flange; and means for forcing said movable convex die against the fixed convex die to engage and flatten said flange, said concave die movable by said ram to cooperate with said convex dies to reform the rim of said brake shoe.

3,188,852
TEST DEVICE FOR FLIGHT CONTROLS
Waldemar Möller, Überlingen (Bodensee), Germany, assignor to Bodenseewerk Perkin-Elmer & Co., G.m.b.H., Überlingen (Bodensee), Germany
Filed Nov. 18, 1959, Ser. No. 853,797
10 Claims. (Cl. 73—1)



1. Apparatus for the testing of autopilots which comprises turntable means adapted to support a unit under test; variable speed electric motor means having a manually variable field adjustment means which can be set in accordance with the characteristics of an object ordinarily controlled by the autopilot, said motor means being in driving relationship to said turntable means; first signal generating means having a first output proportional to a simulated skidding angle; second signal generating means having a second output proportional to control surface deflection; third signal generating means having a third output proportional to the rotational velocity of said turntable means; and control means responsive to said first, second, and third outputs to control said variable speed electric motor means.

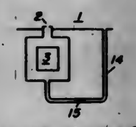
3,188,853
APPARATUS FOR DETERMINING THE TEMPERATURE OF A COATING DURING CURING
Prisco Ross, New York, N.Y., Edward C. Haskell, Cincinnati, Ohio, John A. Mascaro, Bronx, N.Y., and Alfred M. Tringali, Middlesex, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Feb. 1, 1963, Ser. No. 255,525
4 Claims. (Cl. 73—15)



1. Apparatus for determining the variation in temperature of a coating being cured over a short time interval comprising a source of heat, a pivotally mounted arm, a detachable plate mounted on said arm, one surface of said plate being coated with the uncured coating to be tested, a thermocouple attached to the coated surface of the plate and imbedded in said uncured coating, said plate being normally out of heat transferring relationship with said source of heat, driving means for rapidly pivoting said arm to bring said plate into instantaneous heat transferring relationship with said heat source to cure the coating on the plate and retracting means for pivoting said arm to bring said plate out of heat transferring relationship with said heat source, timing means for activating said retracting means at a preselected time interval after the activation of said driving means and temperature recording means connected to said thermocouple for recording the temperature of said coating during the period of contact with said heat source and thereafter.

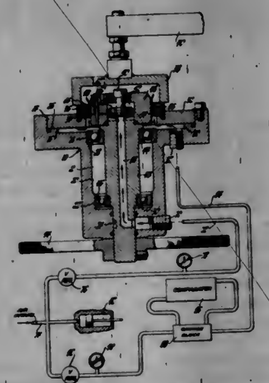
3,188,854
GAS SAMPLING MEANS
Paul A. Hersch, 406 W. Valencia Drive, Fullerton, Calif.
Filed Mar. 1, 1961, Ser. No. 92,690
Claims priority, application Great Britain, Mar. 7, 1960, 8,016/60
13 Claims. (Cl. 73—23)

1. The method of diluting a sample gas for analysis which comprises diffusing a portion of said gas into a diluent carrier gas through a bleed, said bleed comprising at least one channel no wider than about 0.01 square millimeter in cross section and being from about 0.01



to about 5 mm. in length, the total pressures of said sample gas and said carrier gas being substantially equal.

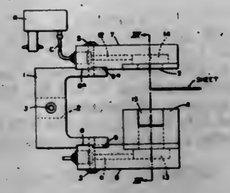
3,188,855
SEAL LIP FORCE GAUGE AND METHOD
Robert L. Dega, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 134,013
6 Claims. (Cl. 73—37)



3. Apparatus for measuring lip force in a flexible lip type seal comprising, a base, a test shaft mounted on said base, means mounted on said base to support a flexible lip type seal with the flexible lip in peripheral sealing engagement with said test shaft, radially displaceable means slidably mounted on said test shaft and forming a portion of the peripheral surface thereof in engagement with the seal lip, means actuating said radially displaceable means to produce a localized flexure of said lip and disengage a portion thereof from said test shaft, means adapted to direct a flow of pressure fluid at a measurable flow rate between the lip and the shaft at the region of disengagement, means measuring the force required to cause radial outward displacement of the seal lip, and means measuring the flow rate of said pressure fluid.

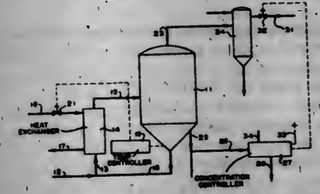
3,188,856
SHEET POSITIONING DEVICE
Charles F. Schneider, Manor Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1961, Ser. No. 89,820
2 Claims. (Cl. 73—37.7)

1. A non-contact apparatus for controlling lateral movement of a forwardly moving, vertically fluctuating, continuous sheet comprising an air discharge assembly and an air receiving assembly mounted in spaced opposing relationship to allow continuous vertically variable translatory movement of a sheet therebetween with a substantial reduction in receiver pressure variations due to said vertical movement. said air discharge assembly comprising an air chamber adapted to be connected to a source of air under constant pressure, a nozzle mounted on said air discharge assembly having beveled outer surfaces on the longitudinal sides thereof and a narrow elongated slot therein for discharging a constricted high velocity stream of air past the edge of a sheet partially intercepting said air stream, a beveled substantially rectangular opening in said oppositely mounted air receiver assembly, said opening being widened at its outer portion and having at least two sides inclined inwardly from said outer portion and terminating in an elongated slot of slightly greater dimensions than the slot in the discharge nozzle, said en-



larged outer portion and inwardly inclined sides of said receiver opening all adapted to receive and channel said high velocity air stream from said oppositely mounted discharge nozzle into the receiver chamber with a minimum of turbulence to obtain maximum measurable pressures therein, said pressures being substantially unaffected by vertical movement of the sheet edge in a range of from 0–75% of the space between the air discharge and air receiving members.

3,188,857
METHOD AND APPARATUS FOR CONCENTRATION MEASUREMENT AND CONTROL
Daniel M. Vesper and Dale E. Lupfer, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,607
4 Claims. (Cl. 73—53)



1. In a method for controlling the concentration of a solution which comprises continuously introducing a solution into an evaporation zone, regulating the heat supplied to said evaporation zone to provide a substantially constant temperature therein, continuously withdrawing a concentrated solution from said evaporation zone, producing an output impulse representative of the concentration of said concentrated solution, and automatically controlling the absolute pressure in said evaporation zone in response to variations in said output impulse to maintain said output impulse at a predetermined value and produce a solution of a predetermined concentration, the improvement which comprises,

producing said output impulse representative of the concentration of said concentrated solution by:

catching a sample of said concentrated solution;

measuring the temperature of said sample while cooling said sample and producing a pneumatic signal having a pressure which is a function of said temperature;

applying said pneumatic signal to a volume chamber to bring the pressure in said chamber to the value of the pressure of said pneumatic signal;

passing a beam of light through said sample;

producing an electrical signal which is a function of the light transmission of said sample; and

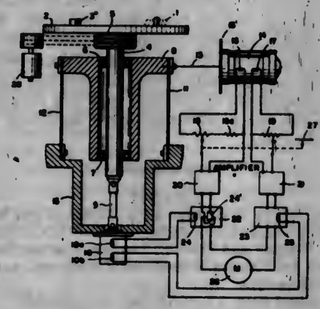
discontinuing the application of said pneumatic signal to said chamber, applying the pressure of said chamber to pressure-detecting means to produce said output impulse, and dumping said sample, responsive to a value of said electrical signal representative of cloud point.

3,188,858

METHOD AND APPARATUS FOR DETERMINING STATIC MOMENTS OF WORKPIECES

Heinrich Hack, Darmstadt, Germany, assignor to Carl Schenck Maschinenfabrik G.m.b.H., Darmstadt, Germany, a corporation of Germany

Filed July 5, 1961, Ser. No. 121,911
Claims priority, application Germany, July 6, 1960, Sch 28,120
6 Claims. (Cl. 73—65)



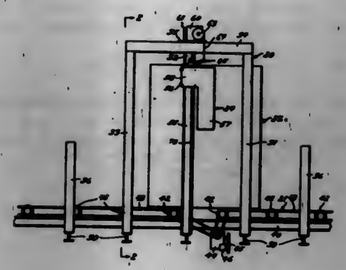
4. Apparatus for testing workpieces, constituting eccentric structural units of a rotor, as to their respective moments defined by the product of the mass of an individual workpiece times the distance of its mass center from the rotor axis, comprising oscillatingly mounted journal means, a support rotatable in said journal means, said support being adapted for mounting a workpiece in eccentric mass relation to the axis of rotation, two counterpoises eccentrically mounted on said support for jointly compensating the desired value of the workpiece moment, said two counterpoises having respective mass centers on two radii spaced a given angle from each other and having a common mass center substantially opposite diametrically to that of the workpiece when the latter is mounted on said support, means for imparting rotation of constant speed to said support, means for constraining said support to vibrate in one plane when excited by the rotation of said support, an oscillation pickup for providing pickup voltage responsive to vibration of said support in said one plane, a reference voltage generator controlled in synchronism with said support rotation and having two reference voltages phase-displaced from each other in accordance with the angle between said two radii, two electric multiplier devices each having two input circuits connected to said pickup voltage and to one of said respective reference voltages, each of said devices having an output circuit whose output voltage is proportional to the product of the voltages in the two input circuits respectively, and measuring means to which said two output circuits are connected in additive relation of said two output voltages, whereby the response of said measuring means is indicative of the departure of the workpiece moment from the desired value.

3,188,859

APPARATUS FOR SCANNING TEST HEADS OVER LARGE OBJECTS

Elmer H. Greenberg, 2500 Belmont Ave., Philadelphia 31, Pa., and William B. Greenberg, 1510 Brinton Park Drive, Wynnewood, Pa.

Filed July 5, 1961, Ser. No. 121,921
6 Claims. (Cl. 73—71.5)



1. Test apparatus comprising support means for supporting a plate in upstanding position to be tested, a carriage, means mounting said carriage alongside of said support means for movement relative to said plate along a face thereof, test means carried by said carriage for movement with the latter in testing relation with said plate, mounting means mounting said test means for movement relative to said carriage, said mounting means comprising a track extending longitudinally of carriage movement and mounted on said carriage for movement toward and away from said one plate face, a subcarriage carrying said testing means and mounted on said track for back-and-forth movement therealong, and means on said carriage for moving said track toward and away from said plate to releasably frictionally engage said test means firmly against said plate, whereby said test means is adapted to be held stationary against said plate during movement of said carriage.

3,188,860

ANGULAR POSITION INDICATING DEVICE

Charles W. Roberts, Inglewood, Calif., assignor to Ormond Inc., a corporation of California

Filed Aug. 30, 1962, Ser. No. 220,492
13 Claims. (Cl. 73—88.5)



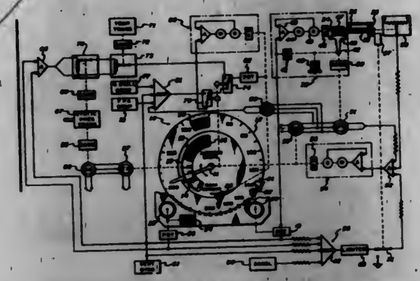
2. An angular position indicating device comprising: an elongated member; at least two bearing means having their axes at an angle to each other journalling spaced portions of said member, said bearing means being fixedly mounted relative to each other so that said member is constrained to a bent configuration in a given bending plane; strain gauge means secured to said member and responsive to bending thereof whereby rotation of said member to bend portions when in said bending plane establishes stress changes in said strain gauge means; and means providing an electrical signal in response to said stress changes in said strain gauge means.

3,188,861

AIRCRAFT PERFORMANCE INDICATING APPARATUS

Harry Miller, Scottsdale, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed May 24, 1961, Ser. No. 121,277
3 Claims. (Cl. 73—178)



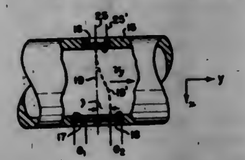
1. In an aircraft performance indicating apparatus, a fixed dial having a distinctively marked area thereon over a first portion of said dial for monitoring the take-off of said aircraft and air speed designations thereon over a second portion of said dial, a common pointer cooperative with said first and second portions of said dial, means responsive to the performance of said aircraft for providing a signal representative of the difference between the acceleration required to become airborne and the actual acceleration of said craft, means responsive to the air speed of said craft for providing a signal representative thereof, and means including switching means for rendering said pointer responsive to said difference signal for positioning said pointer in accordance with the time integral thereof with respect to said first portion of said dial during at least a portion of the take-off and for rendering said pointer responsive to said air speed signal for positioning said pointer in accordance therewith with respect to said second portion of said dial thereafter.

3,188,862

FLOWMETERS

Wilfred Roth, % Roth Laboratory for Physical Research, 1240 Main St., West Hartford, Conn.

Filed Jan. 14, 1958, Ser. No. 708,827
6 Claims. (Cl. 73—194)



1. A flowmeter for indicating flow of a fluid stream which comprises a transmitting transducer for transmitting a beam of sonic energy across said stream, a power source connected to energize said transmitting transducer, receiving transducer means positioned to receive said sonic beam after traversal thereof across said stream, said receiving transducer means including at least two receiving transducers spaced in the direction of fluid flow whereby the relative outputs thereof vary with beam displacement, means connected to receive the outputs of said two receiving transducers and produce a first response proportional to the difference between said outputs, means connected to said receiving transducer means for obtaining a second response proportional to the received beam intensity, means responsive to said second response for controlling the power supplied to said transmitting transducer to maintain the received beam intensity substantially constant, and indicating means responsive to said first response for indicating fluid flow.

3,188,863

ROTARY METERS FOR FLUIDS

Waldemar Büchler, Bad Durkeim, in der Seebach, Germany, assignor to Bopp & Reuther G.m.b.H., Mannheim-Waldhof, Germany

Filed Jan. 8, 1962, Ser. No. 164,919
Claims priority, application France, Feb. 24, 1961, 7,095
3 Claims. (Cl. 73—261)



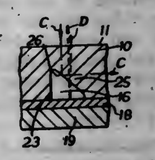
1. A fluid meter comprising a measuring chamber, a pair of spindles fixedly secured to opposite walls of the chamber, a rotor rotatably mounted on each of said spindles, means for passing a fluid through said chamber to drive the rotors, means for indicating the volume of fluid passing through the chamber, and driving means connecting the indicating means to the rotors, said driving means comprising a gear on one end of each rotor, a pair of gears mounted in engagement with the gears of the rotors, means mounting one of said pair of gears to drive a sun gear of an epicyclic gear train, means mounting the other of said pair of gears to drive a planet gear of said gear train, a second sun gear mounted in meshing engagement with the planet gear, and a shaft connecting said second sun gear to the indicator.

3,188,864

WATER DEPTH GAUGES

Derek John Dunn, Enfield, Middlesex, England, assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed Jan. 29, 1962, Ser. No. 169,377
Claims priority, application Great Britain, Feb. 10, 1961, 5,079/61
4 Claims. (Cl. 73—300)



1. A device for indicating the depth of water in which it is immersed, said device comprising a transparent front plate having a groove in one surface thereof, and a gasket held in sealing contact with the grooved surface of said plate whereby said groove is closed and forms a capillary tube, one end of said capillary tube being closed and the other end being arranged for liquid communication by way of a suitable port with an exterior surface of said device exposed to water when immersed, said groove having a cross section such that the bottom of the groove is constituted by at least one surface inclined at substantially 45° to the plane of the surface in which it is formed.

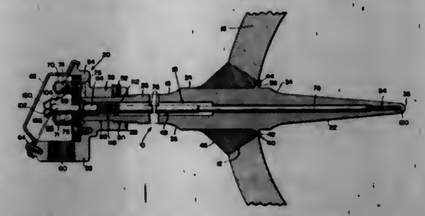
3,188,865
INTEGRATED APPARATUS FOR MEASURING THE LEVEL OF LIQUIDS
Gerard C. Frost, Mohegan Lake, and John P. Grynkiewicz, Croton-on-Hudson, N.Y., assignors, by mesne assignments, to Pyrofax Gas Corporation, a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,927
6 Claims. (Cl. 73—304)



1. Apparatus for indicating the level of a dielectric non-conducting liquid stored in a container comprising a metal valve body that fits over an opening in one side of a container with one side of the valve body communicating with the interior of said container and another side communicating with the atmosphere outside of the container; a first elongated electrically conductive element forming one "plate" of a capacitor and attached to the side of said valve body communicating with the interior of the container and extending into the liquid the level of which is to be indicated; a second elongated electrically conductive element forming the other "plate" of the capacitor and having a first portion extending into liquid the level of which is to be indicated and having such portion supported from the valve body adjacently disposed to said first electrically conductive element to define a space therebetween wherein the nonconducting liquid constitutes part of the dielectric material between said electrically conductive elements, and having a second portion extending through said valve body from the side communicating with the interior of the container to the side communicating with the atmosphere, the extremity of said second portion extending beyond said valve body, and the second portion being surrounded with a flexible electrically insulating material where it passes through the valve body to insulate said second portion from the metal of the valve body, electrical connection means provided at said extremity, and electrical indicating means adapted to be connected to said electrical connection means and with the value body for establishing a circuit including the first and second electrically conductive elements with the dielectric fluid therebetween as a variable capacitor whereby the variation in capacitance is read on said indicating means as a measure of the quantity of liquid in said container.

3,188,866
HIGH SPEED TEMPERATURE SENSING DEVICE
Robert Mayer, Ardmore, Pa., assignor to Honeywell Inc., a corporation of Delaware
Continuation of abandoned application Ser. No. 672,328, July 16, 1957. This application Mar. 13, 1961, Ser. No. 96,067
8 Claims. (Cl. 73—362)

1. A high strength temperature sensing element useful for measuring the temperature of fluids flowing through a conduit at rates tending to induce resonance in the temperature sensing element, comprising an elongated unitary well of a solid-one-piece construction having a natural mechanical frequency of vibration sufficiently high to prevent said element from resonating as a result of the flow of fluid, said well having a longitudinal cavity therein formed by the inner wall thereof and having a substantially cylindrical outer-wall central portion adapted to be inserted in pressure tight relation through a wall portion of said conduit, said well having a tapered wall of a diminishing thickness along an axis that extends into the conduit, the outer-wall portion of the portion being of diameter substantially smaller than said central portion, comprising the temperature sensing end of said element, the junction of said tapered and central outer-wall portions comprising a fillet thereby effecting a reduction in the stress concentrations at said junction, the other end



of said tapered portion terminating in a temperature sensing tip of hemispherical-shape configuration and having high thermal conductivity, the inner wall portion of the other end of the tapered portion being of a cone-shaped configuration, the cone-shaped inner wall being positioned to extend axially to an apex immediately adjacent the extreme outer end of the hemispherical tip to thereby form an end portion of the inner wall cavity, a member having high thermal conductivity positioned within the apex formed in the hemispherical tip, said member having a conical end in mating engagement with the said inner conical wall portion, and a temperature sensitive element in heat transmitting engagement with said member.

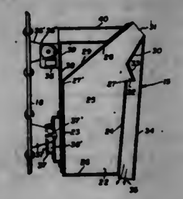
3,188,867
POWER ELEMENT
John S. Freismuth, Arlington Heights, Ill., assignor to Sterling Automotive Manufacturing Company, Elk Grove Village, Ill., a corporation of Illinois
Filed Oct. 15, 1962, Ser. No. 230,647
8 Claims. (Cl. 73—368.3)



1. A thermal element comprising: a heat conductive casing having an axial chamber with an open end, the transverse end wall surface of the casing adjacent the open end of the chamber having a sealing groove therein formed inwardly of the outer marginal edge of said end wall surface, a guide member having an axial bore of lesser diameter than the diameter of the chamber and having a transverse end wall surface overlying and extending radially inwardly toward the longitudinal axis of the casing a distance greater than the said end wall of the casing, said end wall surface of the guide member having a counterbore recess formed therein radially inwardly of the outer marginal edges of each of said end wall surfaces, said end wall surface of the guide member having a sealing groove formed in the counterbore recess thereof which is in axial alignment with said sealing groove of

the casing; an elastic diaphragm spanning the open end of the chamber and extending between said end wall surfaces of said casing and guide member, said diaphragm including a pre-formed body portion disposed in the counterbore recess of the guide member, said body portion being of uniform cross-sectional dimension which is greater than the depth dimension of said counterbore, and an elastic bead carried at the outer marginal edge of said diaphragm body in both of said sealing grooves, a plunger in the bore of the guide member movably responsive to movement of said diaphragm, and means for clamping said casing and guide member to assemble the thermal element by contacting said end wall surfaces of the casing and guide member outwardly of the bead, whereby said bead is squeezed in said grooves and a portion of the diaphragm body located inwardly of the bead is squeezed between the counterbore portion of the guide member and the end wall surface of the casing to thereby seal the open end of the chamber of the casing.

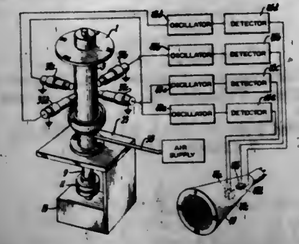
3,188,868
BUCKETS FOR GRAIN SAMPLING
Fred Arthur Bowell, 1112 9th St. SE., Calgary, Alberta, Canada
Filed Mar. 1, 1963, Ser. No. 261,969
4 Claims. (Cl. 73—421)



1. A grain sampling bucket adapted to be attached to an endless chain sample bucket conveyor; said bucket comprising a main grain sample receiving and storing portion, an intake and discharge spout formed with and inclining upwardly and outwardly from the upper end of said portion, means to mount said bucket on said conveyor chain, and air intake and discharge means in said main portion, said main portion comprising a rear plate and a front plate, a base plate and a pair of side plates, said rear and front plates converging slightly from the upper ends thereof towards the lower ends thereof, said air intake and discharge means being formed on said front plate adjacent the upper end thereof and comprises a vent through said front plate, and an outwardly and downwardly extending shroud formed in said front plate overlying said vent.

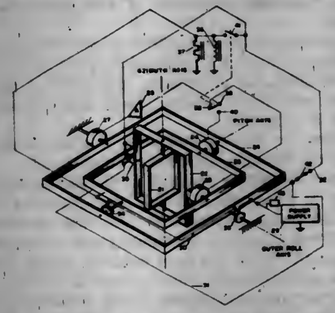
3,188,869
UNBALANCE INDICATION SYSTEM
Joseph F. Lash, Ferndale, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,801
4 Claims. (Cl. 73—483)

1. An unbalance indication system for visually indicating the amount and position of the static unbalance in a workpiece having an axis of rotation, the combination including vertically disposed support means for supporting the workpiece with its axis in a vertical position, means pivotally suspending said support means for inclination from its vertical position, four relatively fixed proximity pickup members circumferentially spaced 90° apart around and adjacent to said support and located substantially in a horizontal plane, said pickup members being equally spaced from said suport means when in its vertical position, a cathode ray tube including electron beam means and vertical and horizontal deflection means for deflecting the direction of said electron beam, circuit means connecting one opposed pair of said pickup members to said vertical deflection means for control of the same in accordance with changes in the spacing between said one pair of pickup members and said support means, and circuit means connecting the other opposed pair of pickup members to said horizontal deflection means for control thereof in accordance with changes in the spacing between said other pair of pickup members and said



support means, inclination of said support means relative to its vertical position by the workpiece while non-rotating and resulting movement of the same relative to said pickup members causing said beam to deflect vertically and horizontally from a normal centered position to a position indicative of the magnitude and direction of inclination of the support means and accordingly the amount and the position of the static unbalance in the workpiece.

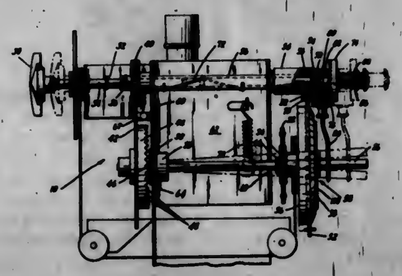
3,188,870
ARRANGEMENT FOR IMPROVING MANEUVERABILITY OF A STABLE PLATFORM
Harold Lerman, Paramus, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,496
3 Claims. (Cl. 74—5.2)



1. In a stable platform having inner roll, pitch and outer roll gimbals, inner roll and pitch synchro means sensing the roll and pitch angles, including sine and cosine windings, and an outer roll torquer controlling the outer roll gimbal, coupled and responsive to a signal from said inner roll synchro means sine winding, the improvement therein comprising; an outer roll and pitch axis circuit including an outer roll axis cam switch, the cam of which is so disposed that said switch closes at a roll angle of about −10° to about+10°, a pitch axis double cam switch, the two cams of which each cover a narrow arc disposed about 160° apart so as to close at a pitch angle of about +80° and about −80°, a two pole relay switch, one switch of said two pole relay switch being in said coupling between said outer roll torquer and said inner roll synchro sine winding disposed so as to switch said coupling from said outer roll torquer to the pitch synchro cosine winding; and, an inner roll axis

circuit including therein, an inner roll axis cam switch with a cam arc disposed so as to close the inner roll axis circuit for a roll angle between about −8° and 0°, the second switch of said two pole relay switch, and said relay of the two pole relay so that said relay acts to close said inner roll axis circuit when said coupling to said outer roll torquer is switched, the inner roll axis circuit then acting on said relay while said cam switch is closed in the range of between about −8° and 0° of roll angle.

3,188,871
TUNING DEVICE
Robert E. Mentzer, Southampton, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,426
7 Claims. (Cl. 74—10)



1. In combination with rotationally adjustable shaft means, mechanism comprising:
(a) control shaft means mounted for independent tilting and rotational movements;
(b) means coupling said control shaft means to said adjustable shaft means in such manner that tilting and rotational movements of said control shaft means cause rotational movement of said adjustable shaft means;
(c) detent means connected to said control shaft means defining a plurality of individual detent stations each corresponding to an angular increment of the total arc of revolution through which said control shaft means is rotatable;
(d) means for driving said control shaft means progressively through said detent stations; and
(e) means selectively operable to tilt said control shaft means to effect, through the intermediation of said coupling means, micrometric rotational movement of said device through a positional range corresponding to a small arc of the total rotative motion through which said adjustable shaft means is rotatable, said selectively operable means being presettable to insure the establishment of a predetermined tilt attitude of said control shaft means on return thereof to a particular detent station and consequent return of said adjustable shaft means to a predetermined angular position.

3,188,872
FINE-COARSE TUNING DRIVE UTILIZING BALL BEARING TYPE GEARING TO COUPLE SHAFTS
Albert P. Weiser, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 22, 1963, Ser. No. 267,185
5 Claims. (Cl. 74—10.52)

1. A means for providing continuous coarse and fine tuning for a converter comprising: a converter having an enclosure, said enclosure having an aperture therein; a rotor shaft rotatably mounted in the enclosure; a gear mounted on said rotor shaft for rotation therewith; a tubular bushing having an inner surface including a tapered ball bearing surface segment and a shaft bearing surface segment; resilient clip means for mounting said bushing in said enclosure aperture; a tubular cylindrical coarse tuning drive shaft having an aperture located in a wall thereof; a drive gear mounted on a segment of said shaft; said drive shaft positioned in said bushing for providing axial alignment of said shaft aperture and ball bearing surface and extension into said enclosure for engagement of said drive and rotor shaft gears; a cylindrical fine tuning shaft having a neck segment thereof of relatively less circumference than a circumference of a main



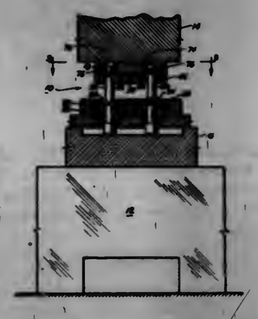
body portion; said fine tuning shaft positioned in a tubular portion of said coarse tuning drive shaft for providing axial alignment between said neck segment and said shaft aperture; said resilient clip means also providing thrust loading for said coarse and said fine tuning shafts; a ball bearing disposed between said neck segment and shaft aperture and partially extending through said shaft aperture for making frictional contact with said ball bearing surface; means for coupling a coarse tuning force to said coarse tuning drive shaft; and means for coupling a fine tuning force to said fine tuning shaft.

3,188,873
ADJUSTABLE OSCILLATING MEANS
Kennison L. Vowell, Los Angeles, and Martin E. O'Dor, Downey, Calif., assignors to North American Aviation, Inc.
Filed Nov. 24, 1961, Ser. No. 154,643
9 Claims. (Cl. 74—50)



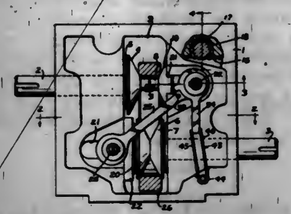
1. Converter mechanism for converting rotary motion into oscillating linear motion comprising drive means for causing rotational movement of a shaft, off-center connection means on said shaft adapted to describe a circle during said shaft rotation, first sliding block means operatively engaging said connection means for corresponding circular movement of said first sliding block means, second sliding block means having a groove therein for guiding contact with opposite sides of said first sliding block means so that said first sliding block means is slidably movable relative to said second block means within said groove, guide means having a groove therein for guiding contact with said second sliding block means so that said second sliding block means is slidably movable with respect to said guide means, said groove in said guide means being situated at an angle with respect to said grooved in said second sliding block means so that oscillating linear movement of said first sliding block means occurs with respect to said second sliding block means and oscillating linear movement of said second sliding block means occurs with respect to said guide means during circular movement of said connection means, and shaft means operatively connected to said second sliding block means for transmitting said motion of said second sliding block means to movable structure for causing oscillating movement of said movable structure.

3,188,874
ACTUATING MECHANISM
Clyde G. Isham, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,324
4 Claims. (Cl. 74—110)



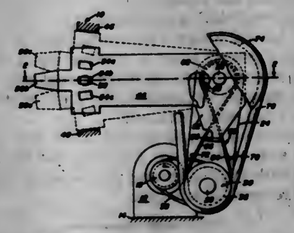
1. A mechanical actuating mechanism responsive to one or more of a plurality of mechanical input motions and having a mechanical output motion comprising:
a casing having a first bore formed therein,
a first shaft slidably carried in said first bore and provided with a first beveled end portion,
a second bore in said casing and extending transversely to and intersecting said first bore,
second and third shafts slidably carried in said second bore on opposite sides of said first bore and provided with second and third beveled end portions, respectively, which mate with said first beveled end portion,
third and fourth bores in said casing extending substantially perpendicular to said second bore,
first and second condition responsive means slidably carried in said third and fourth bores, respectively, and movable in response to associated conditions sensed thereby,
a recess formed in each of said first and second condition responsive means for receiving a curved end portion of said second and third shafts, respectively,
resilient means operatively connected to said first shaft for imposing a preload thereagainst to thereby maintain said first beveled end portion in contact with said second and third beveled end portions and establish a preload against said second and third shafts which forces said curved end portions thereof into said recesses provided therefor,
said first and second condition responsive means being operative independently of one another in response to the conditions sensed thereby and movable in said third and fourth bores to force said curved end portions out of said recesses causing said second and third beveled end portions to ride against said first beveled end portion thereby actuating said first shaft against the resistance of said resilient means to a predetermined output position indicating the occurrence of said conditions.

3,188,875
VARIABLE SPEED TRANSMISSION
Ortwin Stieber, Mooncher Str. 51, Munich, Germany, and Hugo Wutz, Munich, Germany; said Wutz assignor to said Stieber
Filed July 23, 1963, Ser. No. 296,964
Claims priority, application Germany, Aug. 7, 1962, St 19,575
12 Claims. (Cl. 74—192)



1. In an infinitely variable speed transmission; a frame, a pair of parallel shafts in the frame having co-extensive portions, a set of two cone discs keyed to said co-extensive portion of each shaft, a rigid drive ring entrained about the two sets of cone discs, a diagonally located pair of said discs consisting of one disc on each shaft being axially non-movable in the frame, bushing members rotatably supporting the other diagonally located pair of discs and reciprocable in the frame axially of the shafts, rigid link means extending diagonally between said bushing members and directly pivotally connected thereto, means for adjusting said bushing members in the frame axially of said shafts to change the transmission ratio of the transmission, and control means operable in response to said movement of said bushing members for adjusting the effective length of said link means to maintain the pressure between said ring and said discs substantially constant.

3,188,876
DRIVE MECHANISM
John D. Mitchell and Raymond F. Fixmer, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 29, 1962, Ser. No. 206,330
4 Claims. (Cl. 74—203)



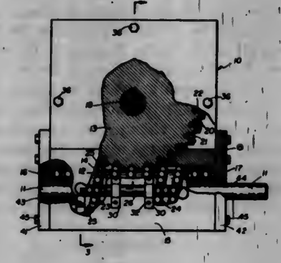
1. In a reversible drive mechanism comprising:
(a) a unidirectional drive means including a first friction roller and a first pulley wheel coaxially arranged for rotation in the same predetermined direction;
(b) a driven means including a second friction roller and a second pulley wheel coaxially arranged for rotation so that said first and second friction rollers and said first and second pulley wheels lie in common planes of rotation;
(1) means for mounting said driven means to move between a first position wherein said first and said second friction rollers are in rolling engagement, and a second position wherein said first and said second friction rollers are disengaged;

(c) a drive belt embracing said first and second pulley wheels and of such length that in said second position of said driven means it drivingly couples said first and second pulley wheels, and in said first position of said driven means it uncouples said first and second pulley wheels;

(d) control means for selectively moving said mounting means for said driven means between said two positions; the improvement which comprises:

(1) means for resiliently connecting said mounting means for said driven means to said control means whereby there is an overtravel between the two which biases said driven means past said first and second positions when said control means is moved into corresponding ones of said two locations.

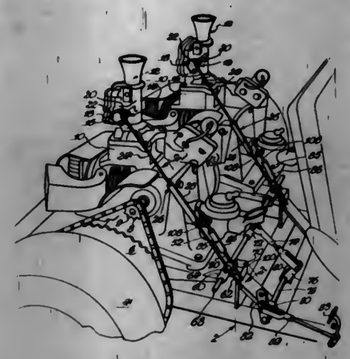
3,188,877
ANTIFRICTION BEARING WORM AND GEAR MECHANISM
Paul E. Schmidt, Wichita, Kans., assignor to The Boeing Company, Wichita, Kans., a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,304
7 Claims. (Cl. 74—425)



1. An antifriction gearing mechanism comprising,
a worm having at least one helical groove formed in the periphery thereof,
ball retaining means connected to said worm, said groove and said retaining means cooperating to define an helical ball channel,
a plurality of balls in said channel,
a gear having helical recesses formed in the periphery thereof spaced apart a distance equal to the lead of said worm groove, said balls engaging said gear in said recesses for transmitting rotative motion to said gear from said worm, and
slack adjusting means carried in the bottom of each of said gear recesses for engaging said balls and urging said balls into said worm groove when said balls enter said recesses of said gear.

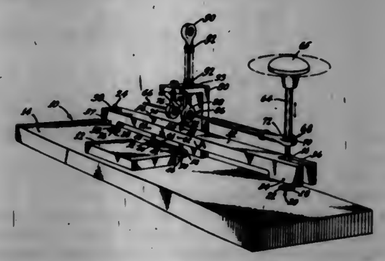
3,188,878
CARBURETOR CONTROL SAFETY LINKAGE
Zygmunt R. Cholmiecki, 416 S. Mason, Bensenville, Ill., and Edward H. Wagner, 408 Elmhurst Road, Elmhurst, Ill.
Filed Apr. 9, 1962, Ser. No. 186,246
2 Claims. (Cl. 74—470)

1. For use in a vehicle having a plurality of wheel-driving engines each including throttle means, a throttle operating rockshaft pivotally supported on the vehicle a pair of arms for each engine connected to the rockshaft, control and operating linkages disposed in parallel for each engine, the improvement comprising: said control and operating linkages each including input and output rods coaxially disposed and having inner ends, spring means over the inner end of one rod, abutment means on the inner ends of the rods, a reaction element having abutments outwardly of said abutment means, said spring means disposed between one of the abutments and one of the abutment means, one rod of each control linkage and operating linkage having means for connection to an



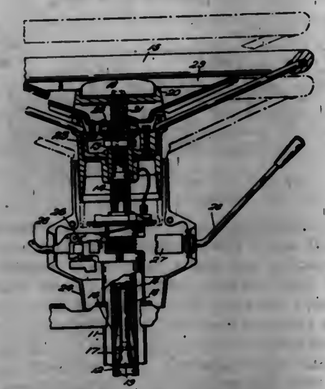
arm of the associated pair and the other rod of each control linkage having means for connection to a fixed anchor, and the other rod of each operating linkage having means for connection to the throttle means of the associated engine.

3,188,879
MICROMANIPULATOR
Eugene Walter Conley, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 3, 1961, Ser. No. 121,561
6 Claims. (Cl. 74—471)



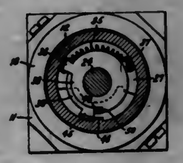
1. A micromanipulator comprising a base plate having a flat, upper surface, a specimen plate mounted directly on said base plate upper surface for movement along said base plate, first, second, third, and fourth ball and socket joints, a rod, said first ball and socket joint supporting one end of said rod on said base plate for pivotal movement with respect thereto, a control lever, said second ball and socket joint supporting one end of said lever on said base plate for pivotal movement with respect thereto, a bar, means pivotally connecting said rod to said bar, means pivotally connecting said lever to said bar in a spaced relationship to said rod, and a pair of pins fixed to said bar in a spaced-apart, parallel relationship and extending from said bar, said third and said fourth ball and socket joints respectively pivotally connecting a different pin of said pair of pins to said specimen plate whereby a movement of said pins along a direction having a component parallel to the plane of said base plate upper surface causes a movement of said specimen plate along said base plate.

3,188,880
STEERING COLUMNS FOR MOTOR VEHICLES
Frank Alexander Caine, Stoke, Coventry, England, assignor to Humber Limited, Coventry, England, a British company
Filed Nov. 20, 1963, Ser. No. 325,103
4 Claims. (Cl. 74—493)



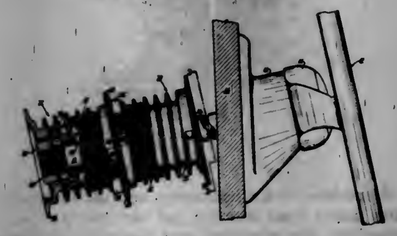
1. A steering column for a motor vehicle comprising a rotatable steering shaft comprised of two telescoping tubes, splines interlocking the tubes against relative rotation while permitting telescoping movement thereof, a steering wheel attached to an outer end of one of the tubes, a wedge member movable axially of the tubes to lock the tubes together against relative axial telescopic movement, said wedge member having its smaller end towards the steering wheel, a rotatable member of large diameter for hand rotation at the centre of the steering wheel, resilient means partially compressed between the rotatable member and the said outer end, the rotatable member being in thrust transmitting relation through the resilient means with the outer end aforesaid and an elongated tension member passing through the said one of the tubes and interconnecting the wedge member with the rotatable member, said tension member having screw-threaded engagement with one of the wedge and rotatable members and being fixed to the other of these two members.

3,188,881
ROTARY SWITCH ACTUATOR
Robert A. Pasch, Le Roy, Ill., assignor to General Electric Company, a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,274
10 Claims. (Cl. 74—504)



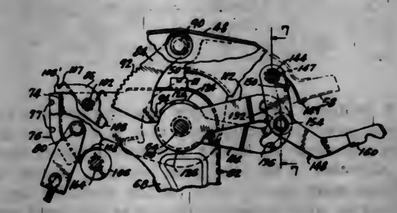
1. In a rotary switch actuator, a hollow base, a shaft having a cam portion at one end for actuating a switch, means on said base including an apertured plate spaced axially of the cam portion for mounting the shaft for rotation from a neutral position in opposite directions to first and second operating positions, restoring means on one side of said plate and effective in response to rotation of said shaft to said first position only and release of said shaft at said first position to return the shaft to said neutral position, said restoring means including a spring, and means for stressing said spring in response to rotation of said shaft to said first position and for preventing stressing of said spring in response to rotation of said shaft to said second position, and detent means on the other side of said plate including parts on said plate and on said cam portion in the space therebetween engageable to latch the shaft in said second position in response to rotation thereof to said second position.

3,188,882
STEERING DRUM
John H. Whitehouse, Suffield, Conn., assignor to North & Judd Manufacturing Company, New Britain, Conn., a corporation of Connecticut
Filed Feb. 11, 1963, Ser. No. 257,601
5 Claims. (Cl. 74—506)



1. A steering drum and driving shaft assembly for controlling a steering cable, comprising a driving shaft, a pair of drums in adjacent end-to-end relationship having a drum surface adapted for receiving a steering cable, said drums at their adjacent ends defining a cavity and first and second slot portions communicating with the cavity and the drum surface to enable the cable to be rigged upon the drum surface and through the first and second slot portions and cavity without the necessity of having a free cable end, and means for securing the drums to the driving shaft in said end-to-end relationship and with the drums coaxial with the shaft.

3,188,883
MECHANISM CONTROL
Norman N. Fender, Erie, Mich., assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,782
13 Claims. (Cl. 74—534)



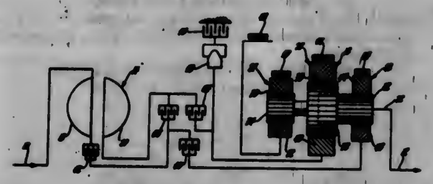
1. Mechanism control of the character disclosed, in combination, a support, a main foot-operated lever fulcrumed on the support, a member formed with ratchet teeth, a pawl member, one of said members being articulately mounted on the support and the other articulately mounted on the lever, a pair of arms journally mounted on the support for rotative movement relative to each other and having abutment surfaces arranged to engage and support one of said members in position to be engaged by the other of said members, and means engaging said arms arranged to effect rotative movement of said arms in opposite directions and relative to said members to move the abutment surfaces away from member-supporting position to effect disengagement of said members.

3,188,884
HELICOPTER MECHANISM
Charles Bancroft, Ferris Hill Road, New Canaan, Conn.
Filed Apr. 29, 1963, Ser. No. 277,872
16 Claims. (Cl. 74—665)



1. A mechanism for helicopters and the like including a rotary power input member and two rotary power output members, first planetary gear means for intergearing said output members for contrarotation and second planetary gear means for intergearing said input member to different portions of said first planetary gear means so that the rotative speeds of the latter are free to vary relative to said input member without affecting their speed ratio relative to each other.

3,188,885
TRANSMISSION
Hugh L. Fisher, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 28, 1962, Ser. No. 219,907
8 Claims. (Cl. 74—688)



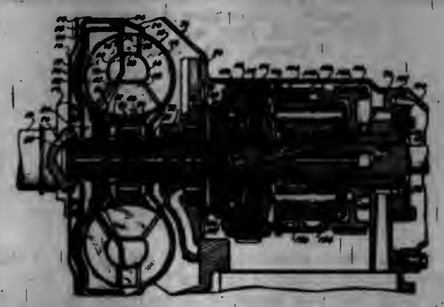
7. A multistep ratio planetary gear transmission comprising a power source; a load; first, second, and third planetary gearsets all having a common planet carrier drive connected to the load; each planetary gearset having plural gears and a planet pinion journaled on the planet carrier so as to mesh with each of the plural gears; the first and second gearset planet pinions being drive connected together; the second and third gearset planet pinions being in intermeshing relation; means selectively and individually connecting one of the gears of each of the second and the third gearsets to the power source so that said one gear serves as an input gear for the associated gearset; and a series of brakes each operative to hold one of the gears, the series of brakes being operative in a certain sequence to hold successively corresponding ones of the gears in the planetary gearsets while said input gears for the second and the third gearsets are selectively connected to the power source by the connecting means so as to provide a plurality of both forward and reverse drive ratios.

3,188,886
TRANSMISSION
Vladimir J. Jandasek, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 237,137
11 Claims. (Cl. 74—688)



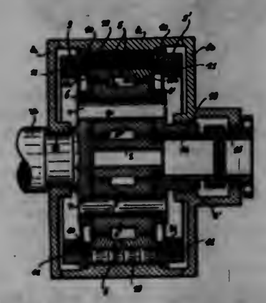
1. A transmission having a forwardly rotating power input shaft and a power output shaft, and means operably connecting said shafts, said means including a plurality of fluid pressure controlled torque transmitting means and a planetary gear set having drive and driven and other rotatable members, means operably connecting one of said torque transmitting means to said input shaft and to said drive member, and selectively controlled direction reversing means connecting said driven member and said output shaft and being operable to condition said output shaft for rotation in opposite directions by said driven member, a plurality of said gear members having one-way braking means operably associated therewith for preventing rotation of said members in one direction and being individually activated at different times to condition said gear set for a plurality of different reduction drives, another of said torque transmitting means operably connecting said input shaft to another of said gear members, the selective combination and operation of said one-way brake means and said fluid pressure controlled means and said direction reversing means conditioning said transmission for a plurality of forward and reverse drives from said input to said output shafts.

3,188,887
HYDROKINETIC POWER TRANSMISSION MECHANISM
Martin G. Gabriel, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 26, 1962, Ser. No. 247,222
10 Claims. (Cl. 74—688)



1. In a power transmission mechanism, a hydrokinetic member comprising a bladed main impeller, a bladed auxiliary impeller and a turbine disposed in toroidal fluid flow relationship, a driving member connected to said main impeller, a driven member, a gear unit, said gear unit comprising two power input elements, a reaction element and a driven element, selectively engageable brake means for anchoring said reaction element to produce an underdrive speed ratio, means for connecting said driven member to said driven element, first selectively engageable clutch means for connecting together said impellers, means for drivingly connecting said turbine to one of said power input elements and second selectively engageable clutch means for connecting said auxiliary impeller to the other of said power input elements when said first clutch means is engaged to establish high speed ratio operation.

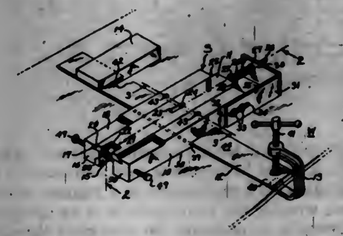
3,188,888
EPICYCLIC TRANSMISSION
Heinrich Zink, Goggingen, and Erich John and Paul Büttner, Augsburg, Germany, assignors to Zahnradfabrik Renk Aktiengesellschaft, Augsburg, Germany, a corporation of Germany
Filed Mar. 18, 1963, Ser. No. 265,950
Claims priority, application Germany, Jan. 31, 1958, Z 6,484
10 Claims. (Cl. 74—801)



1. A system for the transmission of torque from a drive shaft to a driven shaft, comprising an epicyclic gear train including a sun gear, a ring gear coaxially surrounding said sun gear with annular clearance and a plurality of peripherally spaced planetary gears in said annular clearance meshing with said ring and sun gears, each of said gears being axially subdivided into at least one pair of rotatively interconnected helically toothed portions of opposite pitch and equal diameter respectively engaging corresponding portions of each gear in mesh therewith; first, second and third support means for said sun, planet and ring gears, respectively; a housing for said gears; retaining means on said housing holding one of said support means against major angular displacement, the other two support means being freely rotatable in said housing about a common axis; coupling means operatively connecting said other two support means with said drive and driven shafts, respectively; and means on one of said support means positively holding one of said gears against axial displacement, the remaining gears being axially shiftable within the limits set by the interengagement of said toothed portions in a manner compensating for irregularities of the latter, said housing being provided with resilient annular abutments alongside said support means yieldably opposing axial displacement of said ring gear.

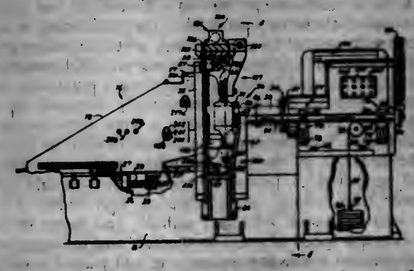
3,188,889
CIRCULAR SAW HOLDING JIG
Walter L. Burkhardt, 1215 Georgia Ave., Sheboygan, Wis.
Filed Sept. 30, 1963, Ser. No. 312,588
6 Claims. (Cl. 76—78)

1. A device to be supported on the work surface of a circular blade saw machine for holding the saw blade while the blade is in position on its shaft to facilitate the filing and sharpening of the teeth in a uniform manner, comprising a substantially rectangular shaped base having front, rear, top, bottom and side walls, said front, top and bottom walls having formed therein a base slot opening out on said front wall, said slot extending for a substantial longitudinal distance into said base and having a thickness substantially greater than the thickness of said blade, a longitudinally extending slide slidably received in said top wall and having one end overlying said base slot, said end of said slide having a correspondingly formed open ended slide slot therein above said base slot, said slide slot being of lesser over-all dimensions than said base slot and having a thickness greater than the thickness of said blade, the inner wall of said slide slot extending rearwardly and downwardly at an angle to form a beveled upper edge, means limiting the sliding movement of said slide in relation to said base, means continually urging said slide forwardly, means



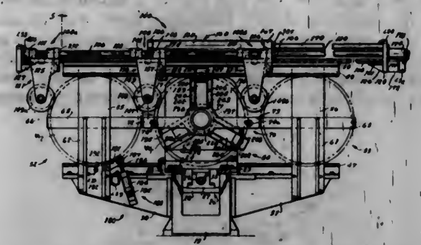
associated with said base slot for holding said blade against rotation when said base is positioned adjacent said blade with the outer toothed peripheral edge of said blade being received within said slots, the beveled wall of said slide slot normally being in engagement with a tooth of said blade, means for retracting said slide rearwardly and moving said inner beveled wall out of engagement with a tooth of said circular blade, a transversely extending cross-bar slidably received in dovetail relation with the bottom wall of said base, means for holding said cross-bar firmly to the work surface, and means adjustably holding said base to said cross-bar in any desired position, whereby said base can be aligned adjacent said circular saw blade as indicated regardless of the position of the blade in relation to its work surface.

3,188,890
CAR WHEEL BORER WITH TRANSFER MECHANISM
Arthur H. Fetsch, Wauwatosa, John R. Finley, West Allis, Gilbert W. Rose, Brookfield, and Richard F. Fischer, Milwaukee, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Feb. 6, 1958, Ser. No. 713,573
22 Claims. (Cl. 77—3)



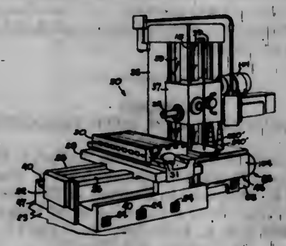
1. In a machine tool for performing a work operation upon a circular workpiece; a base; a tool head supported on said base; a cutter rotatably supported in said tool head; a work fixture mounted on said base; said tool head and said work fixture being constructed and arranged so as to provide for relative movement therebetween; a workpiece guide secured to said base and disposed between said tool head and said work fixture transversely of said base

in position to rotatably guide a workpiece into a predetermined work position between said tool head and said work fixture; a transfer mechanism carried by said base and operable to roll a workpiece into the work position and a finished workpiece out of the work position simultaneously; a chuck mechanism carried by said work fixture and operable to receive and clamp a workpiece in the work position to said work fixture; a backing plate yieldably



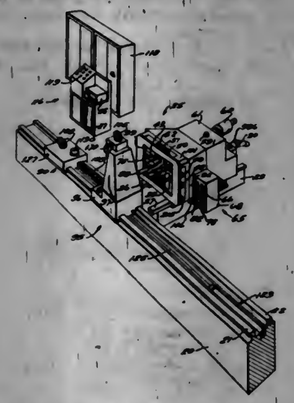
carried by said tool head forwardly thereof and being operatively disposed to cooperate with said transfer mechanism and said chuck mechanism in a manner to support a workpiece when in the work position in an upright position and operable to maintain the workpiece therein; and power means operably connected to effect relative movement between said tool head and said work fixture to effect a work operation on said workpiece.

3,188,891
MACHINE TOOL
Edgar L. McFerren, Walter L. McCann, and Gordon H. Jones, Fond du Lac, Wis., assignors to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Jan. 8, 1963, Ser. No. 250,138
5 Claims. (Cl. 77—3)



1. In a machine tool having a horizontal bed adapted to support elements translatable for positioning a workpiece with respect to a work tool, a vertical column supported adjacent said bed, a headstock movably mounted on said column, said headstock including a rotatable, translatable spindle element telescopingly disposed in said headstock and adapted to carry a work tool, means for providing a predetermined movement to each of the movable elements of the tool, including a motor carried by said headstock, a second motor disposed on said bed, a power transmission interconnecting said motor carried by said headstock with said spindle, and being shiftable to vary the speed of rotation thereof, and separate power transmission means interconnecting said second motor and each of said translatable elements on said bed and on said headstock, said separate power transmission means providing a plurality of selectable drive speeds to said elements, and means selectively interconnecting the two transmissions such that the elements normally powered by one transmission may be selectively powered by the other so that the input of said separate power transmission means is selectively varied, whereby the elements driven by said separate power transmission are driven at a rate in inches of travel per revolution of said spindle or in inches of travel per unit time.

3,188,892
APPARATUS FOR AUTOMATICALLY SETTING UP A PROGRAM IN A MULTIPLE SPINDLE MACHINE TOOL
Wallace E. Brainard, Milwaukee, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Oct. 31, 1960, Ser. No. 66,867
14 Claims. (Cl. 77—24)

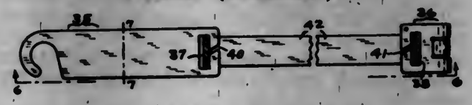


6. In a multiple spindle machine tool; a frame; a plurality of power driven spindles; means mounting said spindles in said frame and providing for their individual lateral adjustment in all directions to effect a group pattern of machining; power means for laterally adjusting said spindles individually relative to each other and including control means to regulate said power means for coordinating all of said individual lateral adjustments to create a desired group pattern.

ERRATUM

For Class 81—15 see:
Patent No. 3,189,916

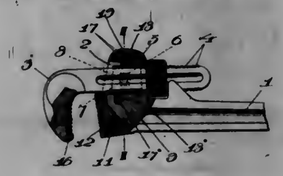
3,188,893
TIRE CHAIN APPLYING DEVICES
John E. Webb, 4747 46th Ave. SW., and Elmer M. Scott, 7061 7th Ave. NW., both of Seattle, Wash.
Filed May 27, 1963, Ser. No. 283,201
3 Claims. (Cl. 81—15.8)



1. A tire chain applying device comprising a connector member of thin flat pliable elestic material; and two metal hook members connected with the respective end portions of said elastic connector member, one of said hook members being substantially flat throughout its entire area, whereby it can be passed through a narrow opening in the rim portion of a wheel, and terminating at its outer end in a hook which lies in substantially the same place as the outer end portion of said hook member and the other hook member having a plane flat inner end portion and terminating at its outer end in at least one transversely extending curved hook capable of

being used as a hand hold and adapted to be engaged with a tire chain.

3,188,894
PIPE WRENCH HAVING A HOLDING PLATE FOR A ROCKABLY MOUNTED TRAVELING OUTER JAW
Yoshinori Matsuoka, Osaka, Japan, assignor to Toho Koki Kabushiki Kaisha, Osaka, Japan
Filed Dec. 27, 1963, Ser. No. 333,805
Claims priority, application Japan, Aug. 30, 1963, 38/64,822; Sept. 7, 1963, 38/68,119; Sept. 14, 1963, 38/69,491, 38/69,492
1 Claim. (Cl. 81—101)



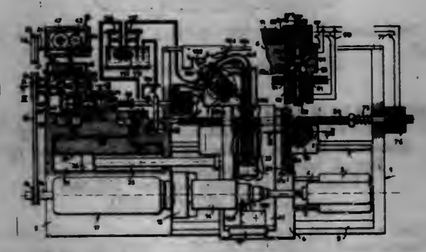
A pipe wrench comprising a stationary jaw member having a guide channel defined by upper, lower and side walls and provided with bores extending into said stationary jaw through said upper and lower walls, a guide screw secured to one of said side walls and extending inwardly of said channel, a holding plate in said channel, said holding plate being formed with inbent flanges and an idling slot, said screw being loosely received in said idling slot, a movable jaw having a threaded shank displaceable in said holding plate between said inbent portions, a pair of spiral springs received in each of said bores respectively, for biasing the respective flanges of said holding plate, an adjusting screw in one of said bores for adjusting the tension of one of said springs and a pair of toothed grasping members secured to each of said jaws respectively for engaging the outer surface of a pipe.

3,188,895
FLEXIBLE CHAIN EXTENSION OR SHANK FOR TOOLS WITH LOCK LINK FEATURES
Hobert B. Jones, 829 Kenmore Blvd., Akron, Ohio
Filed Jan. 21, 1964, Ser. No. 339,193
2 Claims. (Cl. 81—177)



1. An extension for a set of socket wrenches or the like including a pivoted link chain comprising a plurality of links freely bendable in one plane, but not bendable in any other,
a socket secured at one end of the chain and adapted to removably receive in plug-in fashion the polygonal post of a handle,
a polygonal post secured to the other end of the chain and adapted to removably receive in plug-on fashion the socket of a tool,
a plurality of sleeves split their full longitudinal length along a single line connecting the links of the chain together and connecting the socket and the polygonal post to their respective ends of the chain,
an internally threaded spacer member slidably received inside each sleeve, and
tapered bolt means removably screwed into each end of said spacer members and engaging the inner surface of said sleeves effecting spreading thereof equally along the full length of the single line split to selectively lock the links, socket, and polygonal post into fixed relationship to each other.

3,188,896
TRACER MACHINE-TOOL
Armand Marcel Le Lan, Vanves, France, assignor to H. Ernault-Batignolles, Paris, France, a company of France
Filed July 3, 1962, Ser. No. 207,361
Claims priority, application France, Oct. 27, 1961, 877,180; Apr. 25, 1962, 895,492
5 Claims. (Cl. 82—14)

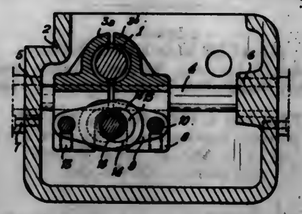


5. In a templet controlled machine tool including a hydraulically reciprocable carriage and a hydraulically reciprocable cross slide, a rotatable lead screw, a rack member slidably mounted on said cross slide and extending transversely of said lead screw, a worm-wheel in meshing engagement with said lead screw, a pinion in meshing engagement with said rack, said worm-wheel and said pinion being translatable with said carriage relative to said lead screw, a drive connection between said worm-wheel and said pinion effective to rotate said pinion from said worm-wheel as said lead screw is rotated and said carriage remains stationary, a first valve control system for said carriage comprising a valve member positioned in a valve casing formed in said cross slide, said valve member and said valve casing being movable relative to each other from a neutral position in opposite directions, means for connecting said rack member to said movable valve member, means for rotating said lead screw in a selected direction at a selected substantially constant speed whereby to move said valve member longitudinally relative to said pinion until said worm-wheel is translated in such a direction and at such a speed as to stop said longitudinal movement of the valve member, and a feeler member carried by said cross slide and adapted to trace a templet, said feeler member controlling the movements of said cross slide relative to said carriage whereby to adjust the position of said valve casing relative to the position of said valve member in accordance with the control action of said feeler member.

3,188,897
SPLIT NUT FOR USE ON A MACHINE TOOL SLIDE REST CONTROLLED BY A SCREW AND TO AN OPERATING DEVICE FOR THE SAME
Pierre François de Vallière, 14 Ave. de Bretteville, Neuilly-sur-Seine, France
Filed Mar. 1, 1962, Ser. No. 176,525
Claims priority, application France, Mar. 7, 1961, 854,813, Patent 1,290,935
12 Claims. (Cl. 82—23)

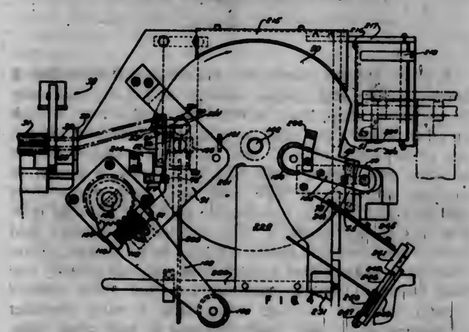
1. In combination, a movable slide rest, a screw for moving the slide rest and a control device comprising a split nut supported on said slide rest and including two half nuts which may be opened and closed for being respectively disengaged and engaged with said screw, a pair of column supports passing through said half nuts each secured to a respective half nut while being slidable in

the other half nut, eccentric bearing means adjustably supported in said slide rest and supporting the columns there-



in and control means for opening and closing the half nuts.

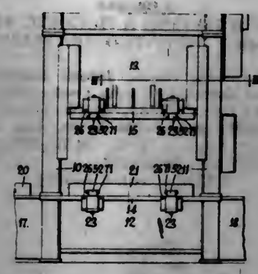
3,188,898
LACE MANUFACTURING AND FEEDING MECHANISM FOR LACE PACKAGING MACHINE
Robert B. Parker, North Scituate, R.I., assignor to Bured, Inc., a corporation of Rhode Island
Filed Apr. 25, 1963, Ser. No. 275,569
9 Claims. (Cl. 83—267)



1. A lace handling apparatus for association with a means for feeding and folding a plurality of laces into a package including means to grip the laces, a source of supply for continuous lengths of lace strands, mechanism between the source of supply and said means for folding to guide the strands into said gripping means, means to sever the strands after engaged by the gripping means whereby the feed of the folding means draws the severed laces from said mechanism.

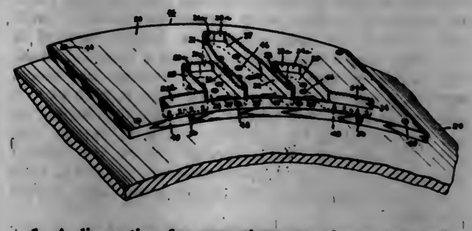
3,188,899
AUTOMATIC DIE CLAMPING MECHANISM FOR POWER PRESSES
Robert H. Cederleaf, Tonawanda, N.Y., assignor to Niagara Machine & Tool Works, Buffalo, N.Y.
Original application Sept. 28, 1959, Ser. No. 842,736, now Patent No. 3,101,639, dated Aug. 7, 1963. Divided and this application Dec. 6, 1962, Ser. No. 247,786
2 Claims. (Cl. 83—399)

1. In a power press, a platen and means for securing a die member thereagainst, said means including a clamp member and means supporting the same for rotative movement about an axis substantially at right angles to said platen for swinging said clamp member between clamping and non-clamping positions, said clamp member being movable along said axis for clamping a die member to said platen or releasing the same, an operating circuit for said press and switch means therein operable from said clamp member and adapted to be closed when the clamp member is swung to clamping position and open when the clamp member is swung to released position, power means for shifting dies to and from operating position in said press and an operating circuit therefor, and switch means in said power means operating circuit adapted to be closed when the clamp member is



in released position and open when the clamp member is in clamping position.

3,188,900
ROLLER TYPE DIE CUTTER
Richard G. Munro, 8628 Alicia St., Philadelphia, Pa.
Filed Dec. 4, 1962, Ser. No. 242,137
4 Claims. (Cl. 83—663)



1. A die section for mounting upon the curved surface of a roller to form with the latter a rotary die cutting device, comprising in combination, a base assembly having an undersurface contoured to the shape of the roller surface upon which it is to be mounted, said base assembly including a base element and a plurality of separate forming blocks cut therefrom in such manner that when the forming blocks are placed in their originally integral positions at least some of the edges thereof define with the facing edges of the base element a channel in the shape of the pattern which it is desired to cut with the die section, a plurality of separate cutting elements fixedly detachably secured individually to the pattern channel forming edges of said forming blocks and so shaped that they fit snugly into the pattern channel when the forming blocks are placed in their originally integral positions with the cutting edges of the cutting elements extending above the upper surface of the base assembly, said cutting elements being aligned in continuation of one another to form the complete die pattern, means extending between said forming blocks and base element effective to lock said forming blocks and cutting elements to said base element to form a unitary base assembly, and means for securing said base assembly as a unit to the roller upon which it is to be mounted.

3,188,901
VIOLIN TEACHING AID
Seymour Baderak, 15 Belmont Lane, Levittown, N.J.
Filed Dec. 30, 1963, Ser. No. 334,539
8 Claims. (Cl. 84—283)

1. A violin teaching aid comprising a long slender rod of relatively small diameter having violin engaging end and a free end, and violin string engaging means extending from said violin engaging end of said rod and



finger grasping means slidably arranged on said rod intermediate the said ends.

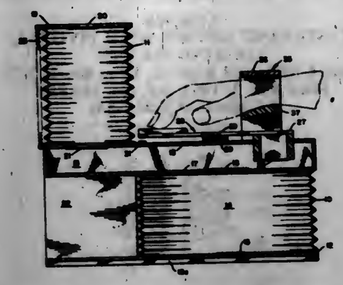
3,188,902
INSTRUMENT WITH TRIPLE-BOUT ACOUSTICAL BODY
Zalina Alerie Levasseur, 349 Ste. Cecile, Trois-Rivieres, Quebec, Canada
Filed Nov. 6, 1964, Ser. No. 409,537
5 Claims. (Cl. 84—291)



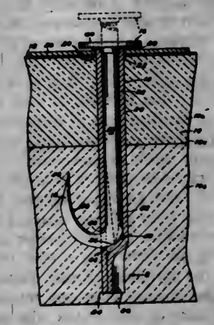
1. A stringed musical instrument of the class described comprising: a hollow acoustical body, a neck having a complemental fingerboard, an integral head at the outer end of said neck provided with key-operated string-anchoring and tuning pegs, said neck being provided at its inner end with a stabilizing and reinforcing button abutting and secured to a median forward portion of said body, said body embodying three coordinating symmetrical hollow bouts oriented and providing a triple compartmental tone amplifying chamber, each compartment provided with a sound post, the top of said body being provided with a tone hole common to the compartments of said chamber.

3,188,903
BELLOWS OPERATED MUSICAL INSTRUMENTS
Donald J. Winch, 255 W. 34th St., New York, N.Y.
Filed May 14, 1964, Ser. No. 367,388
7 Claims. (Cl. 84—375)

1. In an air operated musical instrument having a series of tuned reeds, an air flow system, said system comprising a first bellows, a bodily movable keyboard mounted over said first bellows whereby a player may manually compress or expand said first bellows while he is playing a tune on said keyboard, a second bellows spaced from said first bellows and connected thereto whereby said manual operation of said first bellows will effect contrary operation of said second bellows, and a reed box fed alternately by each of said bellows.



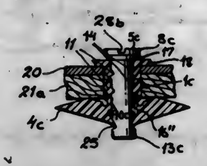
3,188,904
ANCHOR NAIL FASTENER
Charles Owen, Americus, Ga., assignor, by mesne assignments, of one-half to Stauffer Nail & Manufacturing Corporation, Americus, Ga., a corporation of Michigan
Filed Aug. 22, 1960, Ser. No. 50,935
1 Claim. (Cl. 85—23)



An anchor nail fastener comprising, in combination: an elongate tubular member of resistingly deformable metal having upper and lower ends to be driven lower end first into a workpiece, means adjacent the upper end of the member for limiting penetration of a workpiece, the wall of said tubular member provided with a side opening aperture spaced upwardly from the lower end with a portion of the wall extending inwardly and upwardly from the lower edge of the aperture across the interior of the tubular member to the opposite interior wall face thereof to provide an upwardly facing surface for deflecting the point of a nail driven downwardly through the tubular member laterally outwardly through said aperture, the wall of said tubular member at that side of the member opposite the aperture and throughout the distance between said inwardly and upwardly extending tubular wall portion and the lower end of the tube being radially inwardly displaced toward and against the apertured side of the tube to substantially close the lower end of the tubular member with the upper end of said radially inwardly displaced wall abutting substantially the entire underside of the wall portion defining the nail point deflecting surface to reinforce such wall portion against downward collapse during deflection of a nail laterally outwardly through said aperture, and a nail having a laterally deflecting lower end to be driven lower end first axially into the tubular member and against the nail deflecting surface thereof for laterally deflecting the lower end of

the nail outwardly through said aperture and into the workpiece.

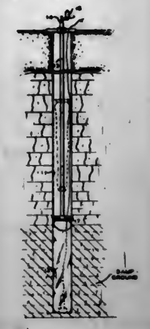
3,188,905
FASTENING DEVICE WITH PIVOTAL LOCKING MEANS
David I. Millet, 58 Boyd St., Long Beach, N.Y.
Filed Apr. 3, 1962, Ser. No. 184,850
2 Claims. (Cl. 85—84)



1. A fastener for insertion within an aperture provided in a support and engageable with a remote surface thereof opposite a side of said support at which said fastener is inserted, said fastener comprising a generally tubular body having a head engageable with said side of said support, a shank and a lever member integral with said shank, and an axially displaceable pusher element shiftable relatively to said body and received therein inwardly of said shank, said pusher element having a face generally transverse to the axis of said body, said lever member having a first lever portion extending from said shank inwardly into the path of said pusher element and engageable by said face thereof, said first lever portion having an oblique surface cooperating with said face and extending linearly from said shank into contact with said face while lying in a plane inclined to said axis and outwardly therefrom in the direction of displacement of said pusher element, said lever member being swingable with respect to said shank upon engagement of said pusher element with said first lever portion through an angle upwardly of about 90° and having a second lever portion remote from said first lever portion adapted to be forced against said remote surface by said pusher element, said pusher element being provided with at least one peripheral recess interrupting the periphery of said element, and said shank being provided with at least one retaining element extending into the bore of said shank, the uninterrupted portion of the periphery of said pusher element being of greater circumferential extent than the circumferential extent of said retaining element, whereby the free end of said retaining element is engageable in said recess in one relative angular position of said body and said element and disengageable in another relative angular position for releasably securing said pusher element against axial displacement within said body.

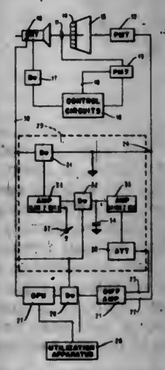
3,188,906
EXPANSIBLE MEANS FOR LOADING A SHOT HOLE
Frank J. Beck, Fort Stockton, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 16, 1963, Ser. No. 280,986
3 Claims. (Cl. 86—20)

2. Means for loading a shot hole having a substantially circular cross-section wall with a solid, water-sensitive explosive; comprising:
a section of flexible water-tight tubing, sealed at its lower end to retain said explosive and exclude water, said tubing having a diameter when fully open to circular cross-section without stretching larger than the nominal diameter of the hole, said tubing having a length sufficient to extend without stretching from the bottom of the hole to a point in said hole above any water inlet point;
a weight in the lower end of said tubing;
an expansible means attached to the upper end of said tubing adapted to grip the wall of said hole by contact therewith for support of said tubing;
means to lower said tubing into the hole while maintaining said expansible means in retracted condition to clear the wall of the hole; and
means to release said expansible means to permit it to



contact the wall of the hole to suspend said tubing at a point below the surface of the ground, said means to lower said tubing and said means to release said expansible means being removable from said hole, leaving said tubing suspended in position below the surface of the ground to retain said explosive for protection against water.

3,188,907
OPTO-ELECTRICAL SCANNING SYSTEM FOR GRAY LEVEL DETECTION
Kurt M. Trampel and Hans H. Jensen, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 27, 1962, Ser. No. 240,226
7 Claims. (Cl. 88—14)



1. Opto-electrical apparatus for scanning and correlating information contained on a transparency in the form of areas of different light transmissivity, comprising
light means for scanning the transparency,
an opti-electrical transducer positioned to respond to the light modulations obtained from the transparency to produce electrical signals in accordance with the information contained on the transparency,
a standard scale of known light transmissivity areas, said transducer producing an electrical signal indicative of a particular reference area of light transmissivity when one of said areas of the scale is scanned by said light means,
means for storing the signal indicative of a reference area, and
means for comparing the signal indicative of a reference area and signals indicative of the transparency information to provide an indication of the relationship between them.

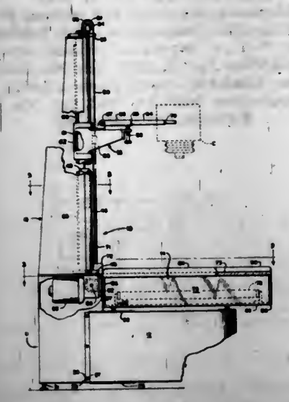
3,188,908
COLOR ENLARGER
Nicholas W. Matison, Los Angeles, Calif., assignor to Continental Color Corporation, Santa Monica, Calif., a corporation of California
Filed June 12, 1961, Ser. No. 116,613
12 Claims. (Cl. 88—24)



1. An appartaus for producing a colored positive opaque copy from a master colored opaque positive print by light reflected from the master print, comprising: a housing having a closed chamber portion adapted for holding a master colored opaque positive print; means inside the chamber to project light onto said portion for illumination of a master print thereon; an easel in exposed position outside the housing for holding a light-sensitive sheet of color reversal material; lens means in the wall of the housing project an image of the illuminated caster print onto said easel to permit the image to be analyzed with respect to color balance; a plurality of colored filter elements; and means to support a selected color filter element in position to intercept and modify the light projected onto the master print for printing color correction to achieve color balance.

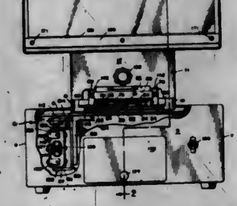
3,188,909
SUBJECT HOLDER UTILIZING CONTINUOUS GROOVE AND VACUUM MEANS FOR USE WITH AN OVERHEAD CAMERA
Joseph H. Wally, Jr., Shawnee Missions, and Louis J. Grunwald, Prairie Village, Kans., assignors to Western Blue Print Company, Kansas City, Mo., a corporation of Missouri
Original application May 22, 1958, Ser. No. 737,047, now Patent No. 3,062,093, dated Nov. 6, 1962. Divided and this application Jan. 23, 1962, Ser. No. 168,107
3 Claims. (Cl. 88—24)

3. A subject holder for use with an overhead camera comprising a table-like structure having a flat topside and containing illuminating means disposed below said top side for illuminating said top side from beneath, said top side including a centrally disposed work supporting translucent portion having a smooth uninterrupted planar surface on which to rest sheet material to be photographed from above and a narrow, relatively shallow continuous groove extending about and outside said work supporting portion, said work supporting portion accommodating diffused back lighting of sheet material when positioned thereon, and said groove being connected to an air evacuating device whereby sheet material rested on said work supporting portion may be conformed to the planar shape of its surface by use of a transparent flexible sheet member positioned thereover and so as to cover the



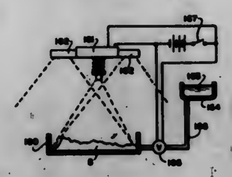
work supporting portion and the groove which surrounds it.

3,188,910
PROJECTOR VIEWER AND IMAGE SCANNING ASSEMBLY THEREFOR
Philip J. Brownscombe, Millington, N.J., and Manuel Delgado, New York, N.Y., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed June 25, 1962, Ser. No. 204,769
9 Claims. (Cl. 88—24)



9. A projector viewer comprising a cabinet, a viewing screen mounted on said cabinet, light projection means in said cabinet, holding means for holding an image-containing sheet in the light projection path of said light projection means, supporting means in said cabinet supporting said holding means for movement in all directions in a horizontal plane, linking means coacting with said supporting means to preclude rotation of said holding means during said movement in said horizontal plane, means to project the image in said holding means onto said screen, a handle mounted on and extending outwardly from the same side of said cabinet as the side on which said screen is mounted, means pivotally supporting said handle for universal pivotal movement thereof, and means connecting said last-mentioned means and said supporting means and coordinated with said means to project the image so that the image projected on said screen moves in the same direction as the direction of movement of said handle.

3,188,911
METHOD OF PREPARING A SIMULATED GROUND CONTOUR MAP
Robert M. Eisenberg, Rockville, and William P. Jameson, Silver Spring, Md., assignors to ACF Industries, Inc., New York, N.Y., a corporation of New Jersey
Original application Apr. 7, 1959, Ser. No. 804,733, now Patent No. 3,066,424, dated Dec. 4, 1962. Divided and this application Nov. 14, 1962, Ser. No. 237,468
4 Claims. (Cl. 88—24)



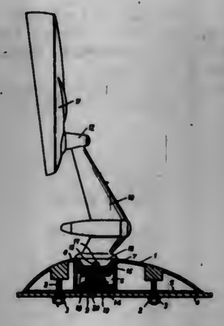
1. The method of manufacturing a photographic print for simulating variations in a surface contour comprising preparing a terrain model mold having the general contours of the terrain to be simulated, directing light rays so that they impinge upon the surface of the terrain model, opening simultaneously the shutter of a camera focussed on the mold and the outlet of a black opaque fluid source so that a photographic film in the camera is exposed as fluid gradually covers the mold, the outlet of the fluid source being closely adjacent the top of the terrain model, the lower portions of the mold being exposed a shorter period than the higher portions of the mold which are covered last by the fluid.

3,188,912
OPTICAL PANEL
Edwin H. Wrench, San Diego, Calif. (411 Archer St., La Jolla, Calif.)
Filed June 6, 1960, Ser. No. 34,119
1 Claim. (Cl. 88—60)



An optical panel comprising a plurality of edge-connected, longitudinally extending, hollow, transparent tubular chambers and a transparent plate having a like plurality of reflective stripe thereon, said plate being parallel and coextensive with said panel of tubular chambers, each of said chambers having a wall formed into convex configuration; a pair of means at opposite ends of said chambers forming a pair of manifolds, respectively; means for introducing a light refractive liquid into at least one of said manifolds to supply said chambers with said liquid whereby said chambers focus light rays, the focus line being parallel to the longitudinal axes of the chambers, said transparent plate being located on the focal side of the tubes, and the plurality of stripe of light reflecting material extending longitudinally of said chambers coincident with the focus lines, each of said strips being longitudinally aligned, respectively, with a focus of sun's direct rays emanating from a chamber when the chamber contains said liquid, said stripe being spaced laterally of one another.

3,188,913
REAR VIEWING MIRRORS
William Edward O'Shel, Harlington, England; John Risdon Amphlett and George Crooks Bell, executors of said William Edward O'Shel, deceased
Filed Aug. 15, 1960, Ser. No. 49,769
Claims priority, application Great Britain, Aug. 25, 1959, 29,056/59
1 Claim. (Cl. 88—98)



A rear viewing mirror for vehicles comprising a base part having a top surface and a bottom surface, securing means extending below said bottom surface for securing said base part to a vehicle body, a cavity formed within said base part and extending between said top and bottom surface, the upper end of said cavity having a wall constituting a part of said top surface and having its lower end open, a stanchion supporting a mirror and abutting against said wall, said wall having an aperture through which a coupling member projecting from the stanchion passes into the cavity, and the abutting surfaces of said wall and stanchion being provided with inter-engaging means for indexing the stanchion in a predetermined angular position with respect to the base part, and a helical wire compression spring disposed entirely in said cavity surrounding said coupling member and compressed between the underside of said wall and a washer adjacent the end of the coupling member, the turns of said helical spring being of varying diameter so that the spring is of double-tapering shape and so that adjacent turns nest within one another when the spring is fully compressed, whereby the spring can be compressed to a length equal to only twice the thickness of the spring wire.

3,188,914
EXPLOSIVE RELEASE IGNITION ASSEMBLY
Walter L. Dahl, Greenfields Village, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 30, 1963, Ser. No. 305,633
6 Claims. (Cl. 89—1)

2. An explosively releasable fastener which is characterized by the absence of shrapnel, explosive gases and ejected lead wire, and by its sealed condition after functioning, comprising an elongated housing member adapted to engage with an associated element, said elongated housing having an axial bore closed at one end and containing in sequence from said end

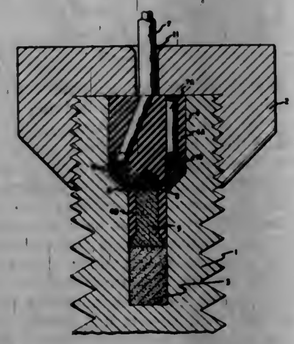
(a) a base charge of high velocity detonating explosive;

(b) a priming charge contiguous to and in propagating relationship to said base charge;

(c) an ignition assembly in propagating relationship to said priming charge, said ignition assembly being sealed in said bore by a water-and pressure-resistant sealant and comprising

(1) a plug of an electrical insulating material comprising (a') a body element of essentially cylindrical cross-section having a head portion and a smaller diameter portion, a cavity having an essentially cylindrical wall being formed in the smaller diameter portion, said cavity being concentric with the longitudinal axis of said body element, (b') a washer element of essentially truncated conical longitudinal cross-section contiguous to the base of said head portion and in peripheral engagement with the smaller diameter portion of said body element, and (c') an internal electrode-receiving zone bounded by said base, the periphery of said smaller diameter portion, and the bore of said washer,

(2) a first electrode extending into the head portion of the body element, the axis of said electrode at its point of entry into the plug being coincident with the longitudinal axis of said plug, said electrode having an inclined portion formed integrally therewith extending radially from said axis thereby defining an angle of declination with the portion of said electrode extending into the plug, said inclined portion beginning within the head portion of the body element and terminating in said electrode-receiving zone,



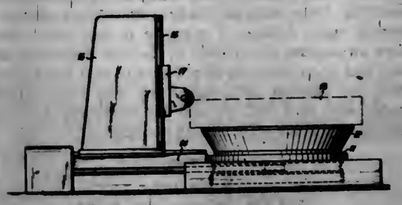
(3) a ground-contact electrode extending from said zone through the head portion of the body element essentially parallel to but radially displaced from the longitudinal axis of the plug, the extremity of said ground contact electrode within said zone being spaced from said cavity and spaced from the end of the first electrode in said zone by a distance at least equal to the radius of the smaller diameter portion of the body element,

(4) an electrical element of high resistance bridging the extremities of said electrodes within said zone and passing through said cavity and the smaller diameter portion of the body element, and

(5) a heat-sensitive ignition composition within said cavity and in contact with said bridgewire; and

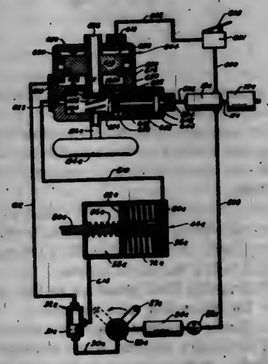
(d) a rigid member secured to the extremity of said housing contiguous to said ignition assembly and reducing the diameter of the axial bore in said elongated housing, said first electrode of the ignition assembly extending through said member.

3,188,915
MACHINE FOR HOBBING AND SHAVING GEARWHEELS
Fritz Hurth, Munich-Solln, Germany, assignor to Schiess Aktiengesellschaft, Duesseldorf-Oberkassel, Germany, a company of Germany
Filed June 4, 1962, Ser. No. 199,844
Claims priority, application Germany, June 9, 1961, H 42,811
6 Claims. (Cl. 90—1.6)



1. A device for shaving large gears in a gear hobbing and milling machine having a support and a milling carriage guided thereon in a first plane and comprising; a shaving head having a base detachably mounted on said carriage, a member having planar guide means thereon, means tiltably mounting said member on said base, shaving tool means displaceable along said guide means, means for tilting said member on said base to vary the angle between said guiding means and said first plane, and means for locking said member in its tilted positions on said base.

3,188,916
ACTUATOR AND CONTROL SYSTEMS THEREFOR
Eugene F. Beatty, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,391
5 Claims. (Cl. 91—165)



1. In a fluid actuating system: an actuator comprising a housing having a chamber therein, an expandible unit slidable in said chamber along the axis thereof and separating said chamber into a front pressure chamber and a rear pressure chamber, said housing having separate port means for communicating fluid pressure to said pressure chambers, force transmitting means extending into said front pressure chamber and operatively connected to said unit, means carried by said unit exerting a longitudinal expanding force on said unit, means for maintaining a given pressure in said rear pressure chamber, means normally maintaining a given pressure in said front pressure chamber, stop means located for engagement by said unit, said given pressures being so proportioned and said unit

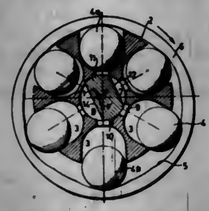
being so constructed that the resultant of axial forces normally acting on said unit will bias said unit rearwardly and maintain said unit against said stop means and act against said unit expanding means to maintain said unit at a normal length, means for lowering the pressure in said front chamber a sufficient amount whereby the resultant of axial forces acting on said unit will act against said unit expanding means to maintain said unit at a normal length and move said unit forwardly away from said stop means imparting force to said force transmitting means and whereby upon failure of pressure in said rear chamber below an amount determined by the unit expanding means force and upon lowering of pressure in said front chamber below an amount determined by said unit expanding means, said unit will expand longitudinally to transfer force to said force transmitting member.

3,188,917
TELESCOPING LIFT RAM
George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Aug. 10, 1962, Ser. No. 216,162
7 Claims. (Cl. 91—168)



1. In an industrial truck of the class described,
a lift ram having a cylinder,
a relatively large ram piston and a relatively small ram piston in telescoping relation in the ram cylinder and adapted for upward lifting movement relatively to the cylinder,
said relatively large ram piston having a lower end portion formed with an opening through which the small ram piston will be exposed to fluid pressure that may be applied below the large piston,
means for directing fluid pressure to the pistons in the cylinder for extending said pistons,
said ram cylinder and said large ram piston being constructed to form a circular space between that piston and cylinder, with an upper surface on the lower end portion of the large piston acting against the fluid in said circular space,
fluid passage means communicating with an upper part of said circular space in the cylinder,
a check valve controlling said passage means and allowing fluid to move to the circular space while normally in position retaining the fluid in said space whereby to hold the large ram piston in lowered position,
means through which the small ram piston when lifting places said check valve in position allowing a discharge of fluid from the circular space in the cylinder so that the large ram piston will lift due to the lifting pressure acting against its end portion,
a further check valve controlling the opening in the lower end portion of the large ram piston and effective for retaining fluid pressure relatively to the small piston when the large piston is relieved of lifting pressure,
and an inner surface on the ram cylinder actuating said further check valve to release the fluid pressure relatively to the small ram piston when the large piston moves to lowered position.

3,188,918
ROTARY MACHINE HAVING A FLUID-WORKING MEDIUM
Gustaf Erik Björklund, Stockholm, Sweden, assignor to Rederi AB Soya, Hagersten, Sweden, a corporation of Sweden
Filed Mar. 14, 1963, Ser. No. 265,188
Claims priority, application Sweden, Apr. 4, 1962, 3,763/62
2 Claims. (Cl. 91—204)



1. In a rotary machine having a fluid-working medium, a pintle having opposite surfaces defining inlet and outlet openings for said medium, a rotor rotatably mounted on the pintle and having cylinder spaces and ports, a said port communicating with each of said cylinder spaces, the pintle comprising a valve to connect and disconnect said inlet and outlet openings with the cylinder spaces successively by way of said ports during rotation of the rotor on the pintle, a ring encompassing the rotor, pistons mounted in the cylinder spaces for reciprocation radially therein, the ring retaining the pistons in said piston spaces, means for mounting the rotor and the ring so that their centers are spaced apart in one direction, and means for moving the axes of the rotor and the ring relative to each other between first and second positions such that the axes of the rotor and the ring in said first position lie in a first plane and the axes of the rotor and the ring in said second position lie in a second plane and said first and second planes are disposed at a substantial angle to each other.

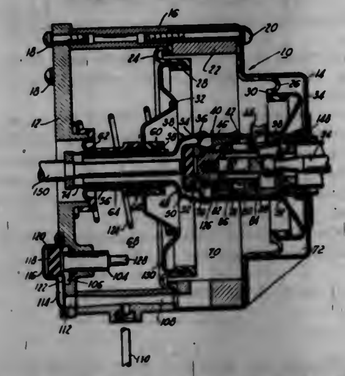
3,188,919
WINDSHIELD WIPER
Joseph M. Sills, 2759 Ridge Ave., Evanston, Ill.
Filed May 1, 1961, Ser. No. 106,641
5 Claims. (Cl. 91—264)



1. An oscillatory windshield wiper motor comprising a housing forming a torus-shaped chamber, a fixed divider in said chamber dividing said chamber into first and second arcuate-shaped cylinders each having one end

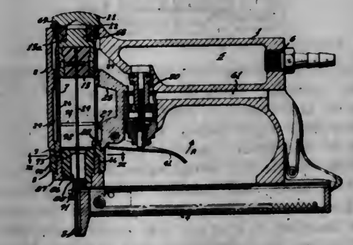
closed by said divider and the other ends communicating with each other, a pair of pistons positioned in respective ones of said cylinders, an oscillatory drive shaft concentric with said chamber, connecting means interconnecting said pistons and operatively associated with said shaft, first fluid means for sequentially admitting fluid under pressure first into said first cylinder and then into said second cylinder to oscillate said pistons, second fluid means for exhausting fluid sequentially with said first fluid means first from said second cylinder and then from said first cylinder, quick-throw means operatively controlling said fluid means, and means for modulating fluid flow in said second fluid means to decelerate movement of said pistons.

3,188,920
BRAKE SERVOMOTOR MEANS
Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Apr. 1, 1963, Ser. No. 269,240
4 Claims. (Cl. 91—391)



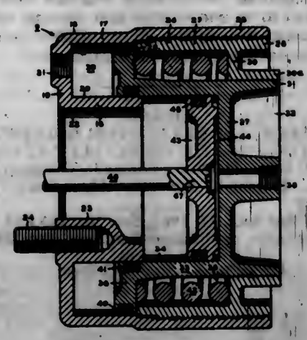
1. In a pressure suspended servomotor including a control rod and a force transmitting rod, a mechanism indicating abnormal travel of said force transmitting rod, which mechanism comprises:
a housing having a pressure inlet with a first fluid passage connected thereto, a second fluid passage therein, a third fluid passage therein, said first and second passages extending through one end of the housing, and axially aligned openings in said housing adapted to sealingly receive, at respective ends, said control rod and said force transmitting rod;
a first movable wall in said housing dividing said housing into a first variable volume chamber and a second variable volume chamber having flow communication with said first and second fluid passages, respectively;
a second movable wall in said second variable volume chamber dividing a third variable volume chamber from said second chamber such that said second chamber is connected to said first fluid passage and said third chamber is in flow communication with said second passage;
a valve housing operatively connected to said first and second movable walls, said valve housing having an axial passage leading to a low pressure port at one end, a radial passage communicating said second chamber to the interior of said valve housing and an outlet port in said housing;
a means for communicating said valve housing outlet port to said third fluid passage which third passage is open to said first chamber;
a valve operatively mounted in said valve housing, which valve is adapted to be controlled by said control rod to open and close communication between said radial passage and said low pressure port via said axial passage and between said radial passage and said outlet port, whereby said first chamber is communicated to a low pressure and to a pressure in said second chamber, respectively;
a means sensing the travel of said first movable wall attached to an end wall of said housing, said means adapted to control flow communication between said first, second and third fluid passages.

3,188,921
PNEUMATIC APPARATUS FOR DRIVING CONNECTING MEANS, ESPECIALLY STAPLES
Heinz Emil Bade, Hamburg-Garstedt, Germany, assignor to Joh. Friedrich Behrens, Ahrensburg, Holstein, Germany
Filed June 28, 1962, Ser. No. 206,093
Claims priority, application Germany, June 29, 1961, B. 63,090
3 Claims. (Cl. 91—399)



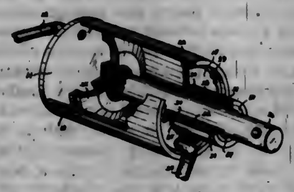
1. In a pneumatic driving apparatus, especially for staples, a cylinder, a double acting piston reciprocable in said cylinder from a first position representing the start of a driving stroke to a second position representing the end of a driving stroke, and vice versa, said piston having a first area actuatable by air under pressure for moving said piston from said first position to said second position, said piston also having a second area arranged opposite said first area and actuatable by air under pressure for moving said piston from said second position to said first position, a driver connected to said piston for movement therewith and for driving a connecting element into a work piece, first passage means leading into one end portion of said cylinder for conveying air under pressure to said first piston area to effect a driving stroke of said piston, abutment means arranged in the other end portion of said cylinder for resiliently stopping said piston at said second position, said abutment means comprising a first member with a bore therethrough and an outlet opening communicating with the atmosphere, said outlet opening having a diameter relatively small with regard to the diameter of said last-mentioned bore, said abutment means also comprising a second member in the form of a plate adapted to rest on said first member and also to be lifted off said first member in response to the air pressure in the bore of said first member exceeding the air pressure prevailing between said piston and said plate, said second member having a passage permitting the movement of said driver therethrough and additionally permitting air between said piston and said plate to escape through said bore and said outlet opening into the atmosphere, said piston being adapted to close said last mentioned passage in response to said piston impacting upon said plate, and second passage means controlled by said piston during its driving stroke for conveying air under pressure to said second piston area when said second piston is in its second position to thereby return said piston to its first position.

3,188,922
FRICTION DEVICE OPERATING MECHANISM
Oliver B. Cruse, Florissant, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Oct. 12, 1962, Ser. No. 230,860
29 Claims. (Cl. 92—52)



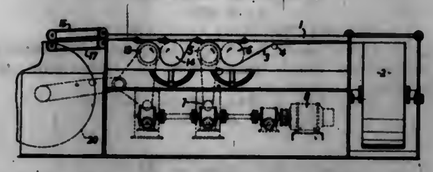
1. A friction device operating mechanism comprising an expansible chamber, resiliently urged means opposing expansion of said chamber, another expansible chamber in said resiliently urged means, actuator means opposing expansion of said other chamber and having a working end thereon, means for introducing fluid pressure into said other chamber, said actuator means being movable in a working direction in response to fluid pressure in said other chamber to energize the working end thereof, and other means for introducing fluid pressure into said first named chamber, said resiliently urged means urging said actuator means in a working direction to energize the working end thereof when the fluid pressure in said first named chamber is less than a predetermined amount.

3,188,923
PNEUMATIC CYLINDER STRUCTURE
Melvin A. Mandelko, 1231 6th Ave. S., Fort Dodge, Iowa
Filed Feb. 26, 1962, Ser. No. 175,427
1 Claim. (Cl. 92—155)



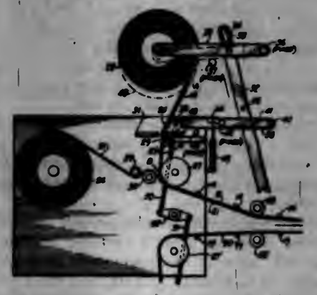
In a power cylinder, comprising, in combination,
(a) a cylindrical tubular housing closed at its rear end,
(b) an end member closing the forward end of said cylindrical tubular housing and having a centrally located hole,
(c) a hollow cylindrical bearing extending outwardly from said end member and having one of its ends secured into the hole of said end member,
(d) a ring-type sealing means in said bearing,
(e) at least one bearing sleeve in said bearing and having one of its ends adjacent said ring-type sealing means,
(f) a piston slidably mounted in said cylindrical tubular housing,
(g) a piston shaft secured to said piston and slidably extending through said ring-type sealing means and said sleeve,
(h) a conduit communicating with the inside rear of said housing, and
(i) a conduit communicating with the inside front of said housing.

3,188,924
METHOD AND APPARATUS FOR THE MANUFACTURE OF SMOKE FILTERS
Frederick Peter Davey and Brian Smith, London, England, assignors to Cigarette Components Limited, London, England, a British company
Filed May 16, 1961, Ser. No. 110,577
Claims priority, application Great Britain, Jan. 12, 1960, 1,151/60
11 Claims. (Cl. 93—1)



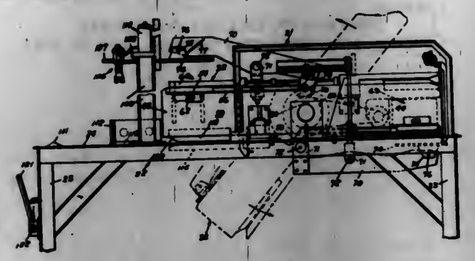
1. A method of producing a smoke filter from a sheet or strip of thin highly flexible material, said method comprising:
forming an array of elongated slits in the material, said slits being arranged in substantially parallel rows with the slits in adjacent rows in staggered relationship, the ends of a slit in one row overlapping adjacent ends of two adjacent slits in an adjacent row;
thereafter stretching the thus slit material in a direction transverse to the rows of slits;
and finally gathering and compressing the thus slit and stretched material into rod form.

3,188,925
METHOD OF MAKING BAG STRUCTURE
Albert B. Mojonnier, 5357 N. East River Road, Chicago, Ill.
Original application Nov. 8, 1961, Ser. No. 151,060. Divided and this application Oct. 24, 1962, Ser. No. 232,907
3 Claims. (Cl. 93—35)



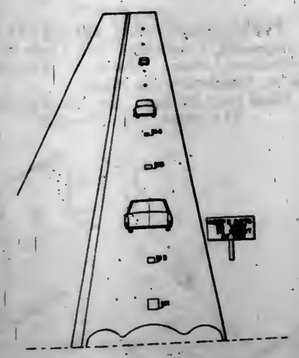
1. A method of making a bag having opening and closing means of the tin-tie type, including passing an adhesive tape to a tab-forming station having open tab-forming jaws, the strip having an adhesive side and a non-adhesive side, causing a slack in the tape at said station, means acting against the adhesive side of the tape to deflect a portion of the tape into the area between said jaws with the non-adhesive side against the jaws, closing the jaws to press together into adhesive contact said deflected portion of the tape, thereby forming a pull tab extending from the non-adhesive side of the tape, moving the tape to position its tab portion at an assembly station with the adhesive side of the tape facing a bag positioned at said assembly station in parallel relation with said tab portion of the tape, and causing said tab portion of the tape to be pressed into adhesive contact with the bag at said assembly station.

3,188,926
CARTON ASSEMBLING MACHINE
Charles J. Fortriede, Cold Springs, Ky., assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Dec. 7, 1962, Ser. No. 243,033
9 Claims. (Cl. 93—44.1)



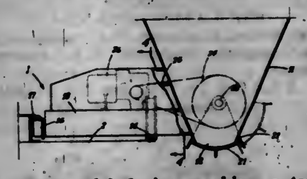
1. A machine for folding flat blanks into erected cartons, comprising:
a table-like base structure,
means defining a horizontally disposed work surface at the front of said machine,
a boom having a pair of diametrically oppositely disposed arms,
means mounting said boom for swinging about a horizontally disposed axis perpendicular to said boom adjacent its midpoint and extending transversely of said machine,
means defining a pair of rectangular mandrels, one fixed to the free end of each arm and having vertically and horizontally disposed surfaces substantially parallel to the longitudinal center line of said arms,
power-operated means for intermittently swinging said boom through half-circle arcs,
stop means for arresting movements of said boom so as to position first one and then the other of said mandrels adjacent the rear portion of said work surface whereby a partially erected carton can be slid endwise over said mandrel surfaces,
fluid actuated plunger means for respectively engaging and disengaging said stop means at the end and beginning of each half-circle movement of said boom,
means connected to and movable with each of said mandrels for applying pressure to overlapped carton portions whereby adhesive material applied between said portions can be maintained under setting and bonding pressures during the time the carton-holding mandrel is moving through said half-circle arc to bring said carton to the opposite end of said machine, and
means for removing the thus formed carton from said mandrel at said opposite end of said machine,
said carton removing means comprising a pair of pusher members mounted on said boom, one on each side of the midpoint thereof and alternately engageable with the inner bottom panel of an erected carton being removed, and means rigidly interconnecting said pusher members, and
slide means engaging said rod means for guiding said pusher members for longitudinal movement relative to said boom.

3,188,927
TRAFFIC CONTROL MEANS
Allan M. Woods, 7 Hamilton Place, Garden City, N.Y.
Filed Aug. 28, 1958, Ser. No. 757,827
1 Claim. (Cl. 94—1.5)



Traffic control means comprising a roadway, a line of markers on the road surface substantially in the center of a traffic lane and equally spaced a distance according to the formula, desired car spacing=$2S+K$, where S=spacing between markers and K=a constant of substantially 21 feet, where desired car spacing is related to the maximum legal speed, whereby drivers keeping two markers in view at all times will maintain the desired car spacing.

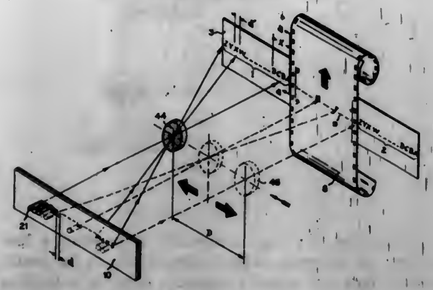
3,188,928
CONCRETE SUPPLY RECEPTACLE AND HOPPER COMBINATION
Ronald M. Guntert and Wilbur F. Earley, Stockton, Calif., assignors to Guntert & Zimmerman Const. Div., Inc., Stockton, Calif., a corporation of California
Original application Mar. 18, 1960, Ser. No. 15,871, now Patent No. 3,135,178, dated June 2, 1964. Divided and this application Mar. 31, 1964, Ser. No. 356,322
2 Claims. (Cl. 94—46)



1. In a concrete slab laying machine, a transversely extending elongated hopper mounted on the machine adjacent its forward end, the hopper being open at the bottom to discharge onto the ground, a concrete supply receptacle disposed above the hopper to discharge into the same, a carriage rigid with the receptacle, means mounting the carriage on the machine for movement of the receptacle lengthwise of the hopper over the same, the receptacle having a bottom discharge opening, a closure gate for said opening, means including a pivot element rigid with the gate mounting the same on the receptacle for opening and closing movement, a remote-controlled motor and reduction gear unit mounted on the carriage, and an operative connection between said unit and the pivot to rotate the latter and thus swing the gate between open and closed positions; the carriage mounting means comprising a pair of rails on the machine spaced lengthwise thereof and disposed parallel to and extending the full length of the hopper in adjacent relationship to said hopper, wheels on the carriage, the wheels nearest the receptacle riding on the foremost rail and the wheels furthest from the receptacle riding against the underside of

the rearmost rail, a remote controlled reversible motor mounted on the carriage, and drive means between the motor and certain ones of the wheels.

3,188,929
TYPE COMPOSING APPARATUS
Renè A. Higonnet, Cambridge, and Louis M. Moyroud, West Medford, Mass. (Both % Photon, Inc., 58 Charles St., Cambridge 38, Mass.)
Filed June 28, 1961, Ser. No. 120,313
31 Claims. (Cl. 95—4.5)



1. In type composing apparatus, the combination of a stationary support bearing the characters to be projected, a support for a sensitized sheet, optical means to form images of the characters upon the sheet, means to cause the image of each character to move along a line on said sheet corresponding to a line of type to be composed and between the extremities thereof, illuminating means uniquely associated with each character on said support and operative to project its image to any selected position in said line, and means for operating said illuminating means to produce a flash of light of short duration to project each selected character in said line at the precise instants when its image lies in the positions of said character in said line.

3,188,930
SIMULATED LENS MOUNT
Harvey F. Roller, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 29, 1962, Ser. No. 233,819
2 Claims. (Cl. 95—11)

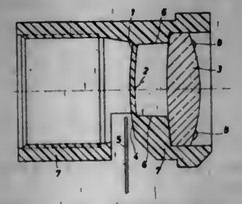


1. A retainer and insert assembly to form a simulated lens mount for photographic apparatus having an optical lens, and a front wall provided with an aperture therethrough for transmitting light to said lens, said assembly comprising:

(a) an insert located on the front side of said wall and including a cylindrical skirt extending forwardly from said wall in concentric relation with said aperture and having its outer cylindrical surface distinctively colored, a circular shoulder forming the forward end of said insert, and an inner surface tapered rearwardly and inwardly from said shoulder towards said optical lens and terminating at its rearward end in a central opening aligned with and of the same size as said aperture; and

(b) a retainer including a generally cylindrical openwork portion adapted to overlie said skirt of said insert, an apertured circular front end portion overlying and engaging said shoulder of said insert, and an outwardly extending flange at the rear end of said cylindrical portion secured to said front side of said front wall, whereby said retainer holds said insert in fixed position relative to said aperture, and said distinctively colored surface of said insert is visible through said open work portion of said retainer.

3,188,931
VIEWFINDER STRUCTURES
Franz Koehler, Munich, and Georg Koenigl, Munich-Pasing, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany, a corporation of Germany
Filed July 19, 1962, Ser. No. 210,954
Claims priority, application Germany, July 25, 1961, A 17,072
1 Claim. (Cl. 95—44)

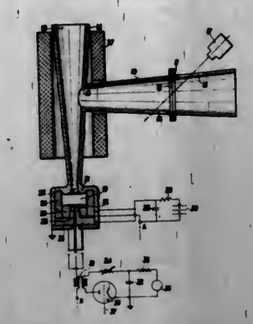


In a viewfinder, in combination, a transparent disc having on one face a series of small ridges of prismatic cross section, said disc being located in the focal plane of the viewfinder and said ridges being invisible only when the objective of the camera which carries the viewfinder is sharply focused on a subject to be photographed, said disc being integrally connected at its outer periphery with a transparent flange extending from said disc beyond the face thereof which carries said ridges and surrounding the face which carries said ridges and said flange terminating in an end face located to one side of said disc, said flange having a lens portion forming part of said flange; a field lens having a diameter greater than the diameter of said transparent disc and fixed to said end face of said flange superimposed also on said lens portion of said flange and defining with said disc a completely enclosed space in which said ridges are located; and indicia for indicating information pertinent to the operation of the camera located adjacent said lens portion of said flange at the side thereof opposite from said field lens so that said lens portion of said flange together with the corresponding portion of said field lens provides in the viewfinder a sharp image of said indicia simultaneously with the viewing of an image of the subject in the viewfinder.

3,188,932
SHUTTER OPENING AT HIGH SPEED
Richard Geller, 13 Ave. de Sceaux, Antony, and Jean Leroy, 48 Rue du Bel-Air, Le Perreux-sur-Marne, France
Filed Jan. 11, 1963, Ser. No. 250,889
Claims priority, application France, Jan. 15, 1962, 884,884
6 Claims. (Cl. 95—53)

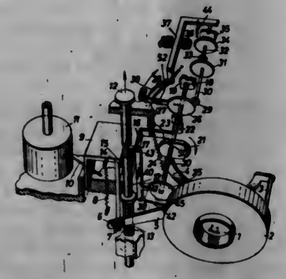
1. A high-speed shutter for use in a high-speed camera or the like, comprising a first tube opening into the atmosphere and provided with an opaque transverse diaphragm interposed in a light beam to be intercepted, and a second tube into which said first tube opens transversely, provided at one end with a discharge device to

set up a shock wave having an ionized environment in said second tube, the movement of the said shock wave at



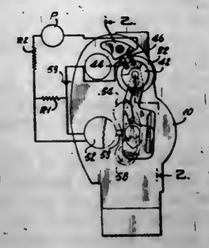
right angles to said first tube setting up a shock wave having a neutral environment in the latter.

3,188,933
AUTOMATIC CAMERA WITH SELF-TIMER
Franz Jakob, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Apr. 30, 1962, Ser. No. 191,363
Claims priority, application Germany, Apr. 29, 1961, A 37,317
12 Claims. (Cl. 95—53.6)



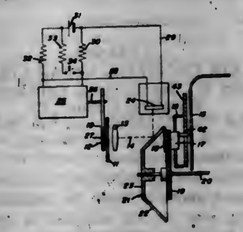
12. In a camera, in combination, automatic means for automatically setting the camera to make an exposure in accordance with the lighting conditions; release means for releasing a shutter of the camera to make an exposure; manually operable means cooperating with said automatic setting means and with said release means for actuating said automatic setting means to automatically set the camera in accordance with the lighting conditions and for actuating said release means to release the shutter to make an exposure after the camera has been automatically set according to the lighting conditions by said automatic setting means; self-timer means movable, at the option of the operator, between an inoperative position where it has no influence on the operation of the camera and an operative position where said self-timer means cooperates with said release means to delay actuation of said release means by said manually operable means for a predetermined period of time; and means for holding the setting of the camera, made by said automatic setting means, during the time when said self-timer means delays actuation of said release means.

3,188,934
CAMERA DIAPHRAGM MECHANISM
Takesi Ataka, Sumiyosiku, Osaka, and Isamu Kubota, Hirakata, Osaka, Japan, assignors to Chiyoda Kogaku Seiko Kabushiki Kaisha, Minami-Ku, Osaka, Japan, a corporation of Japan
Filed July 18, 1962, Ser. No. 210,753
11 Claims. (Cl. 95—64)



1. A camera diaphragm mechanism comprising a plurality of relatively movable first diaphragm blades having cooperating edges delineating a variable aperture, a tongue member movable into and out of registry with said aperture, common means for manually adjusting the relative position of said blades and said tongue member continuously from an aperture minimum opening to an aperture maximum opening unimpeded by said tongue member to an aperture maximum opening with said tongue member registering therewith, a second movable diaphragm blade having an elongated slot registering with and movable longitudinally across said aperture and varying in width along the length thereof, light sensitive means controlling the position of said second diaphragm blade, and means responsive to the movement of said first diaphragm blades from their open position to position said second diaphragm blade with the wide section of said slot registering with said aperture.

3,188,935
CAMERA WITH AUTOMATIC DIAPHRAGM CONTROL
Ernst Lieser, Stuttgart-Vaihingen, and Edwin Mueller, Stuttgart-Hedelfingen, Germany, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 20, 1962, Ser. No. 217,875
Claims priority, application Germany, Nov. 11, 1961, K 45,179
7 Claims. (Cl. 95—64)



1. In a camera having an automatic exposure control system for regulating the exposure of film in said camera, said control system comprising an electric measuring instrument, a photocell energizable by scene light for energizing said measuring instrument, and a movable diaphragm member responsive to energization of said measuring instrument for establishing an exposure opening as a function of scene brightness, the combination comprising:

means for transmitting scene light from the exterior of said camera through a predetermined path to said film;

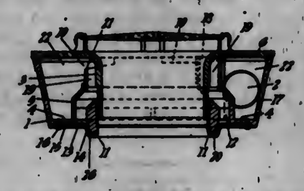
a rotatable shutter member having respective cut-out and opaque portions disposed for sequential cyclic movement across said path for cyclically interrupting said light when said camera is operating, said opaque portion being positioned in said path when said camera is idle;

means disposed on the opaque portion of said shutter member for directing said scene light to said photocell when it is in said path;

manually operable means movable between an initial position in which it maintains said camera idle and a release position in which it operates said camera; and

means responsive to movement of said manually operable means into its initial position for varying the sensitivity of said measuring instrument so that the exposure opening established by said diaphragm member is smaller than the exposure opening that would be established by the same scene light conditions when said camera is operating.

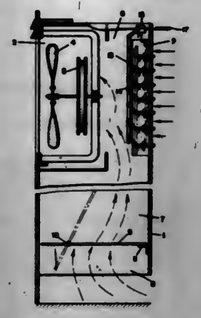
3,188,936
PRODUCTION OF AN AIR CURTAIN
Karl Tage Nordstrom and Rosa Aurora Nordstrom, both of Generalsgatan 55, Norrkoping, Sweden
Filed Apr. 2, 1963, Ser. No. 270,077
Claims priority, application Sweden, Aug. 6, 1962, 8,582/62
10 Claims. (Cl. 98—36)



1. An arrangement for producing an annular laminar air curtain comprising an annular air receptacle, a partition dividing said annular air receptacle into an outer and an inner concentric part defining with the wall of the air receptacle an at least part-annular connecting aperture connecting the two said concentric parts, the width of the partition varying at different parts thereof so that the width of the said connecting aperture varies at different parts thereof, a tangential air entry pipe joining the outer concentric part and an annular outlet aperture provided in the said inner concentric part.

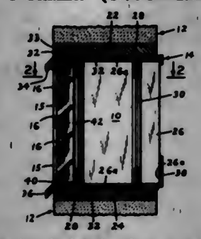
3,188,937
AIR CONTROL APPARATUS
Robert W. Mleczkowski, Tunkhannock, Wyoming County, Pa.
Filed Mar. 13, 1963, Ser. No. 264,930
4 Claims. (Cl. 98—43)

1. A ventilator comprising a conduit adapted to be mounted upright, having at its lower end an air-inlet opening to be spaced above a floor, the conduit having an air outlet opening near its top adapted to connect with an opening in a building wall, and an air eductor fan connected to said air outlet opening, and to supply inlet air to the fan directly, a second upper opening in the conduit wall near the fan, providing less resistance to air travel to the fan from said upper air inlet opening than from said lower opening, control means to open and to close the said upper air inlet opening near the fan, one-way damper means in the conduit below the upper air inlet and above said lower end opening constructed to be held open by air drawn to the fan from said lower opening, the damper being biased to close under relatively diminished air flow through the lower conduit opening when air supply is drawn directly to the fan from said upper air inlet opening



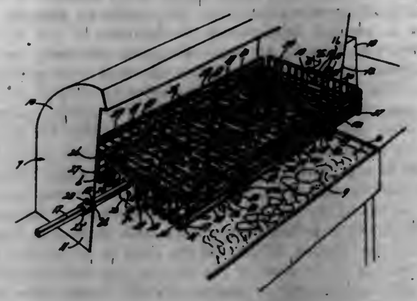
near the fan, whereby an open or a closed condition of the said upper air inlet controls operation of the biased one-way damper means and of air flow through the lower end of the conduit.

3,188,938
VENTILATING DEVICE
Edward C. Hallock, 86 Woodland Ave., Summit, N.J.
Filed June 12, 1963, Ser. No. 287,252
6 Claims. (Cl. 98—121)



1. The method of fabricating a ventilating device, comprising the steps of extruding an elongated channel member of predetermined length having a web, an upper flange extending laterally from one edge of said web at a substantially right angle thereto, a lower flange extending from the opposite edge of said web and lying substantially parallel to said upper flange, said upper and lower flanges extending longitudinally with said web, a short upstanding flange extending along and perpendicular to the edge of said lower flange opposite the edge where said lower flange joins said web, projecting drip moldings extending longitudinally along and outwardly from the corners of said channel member formed by the joinders of said web and said flanges, and a plurality of ribs extending longitudinally along the outer surfaces of said upper and lower flanges; forming a plurality of elongated slats in said web of said channel member; pressing said slats into the space between said upper and lower flanges and at an angle and in louvered relation to said web; forming at least one drain port in said web adjacent said lower flange; extruding a member having at least one longitudinal hook-like boss projecting from one side thereof; severing said extruded member in predetermined lengths to form a plurality of transverse plates; inserting a respective one of said transverse plates into the space between said upper and lower flanges and adjacent each end of said channel member and in contact with said upper and lower flanges and said web to form the end walls of said ventilating device; and securing said transverse plates to said channel member by inserting fasteners through said upper and lower flanges into said longitudinal hook-like bosses.

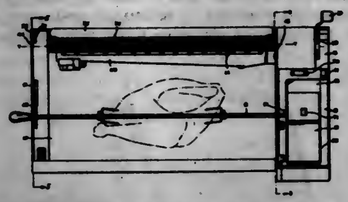
3,188,939
SPIT BASKET
Mahlon J. Smith, Niles, Mich., assignor to The Washburn Company, Worcester, Mass., a corporation of Massachusetts
Filed Dec. 26, 1962, Ser. No. 246,975
3 Claims. (Cl. 99—393)



1. A spit basket comprising a generally rectangular open top basket of wire construction having a bottom wall, and parallel opposed side walls with vertically spaced horizontal wires provided therein in parallel relationship to the bottom wall, a generally rectangular closure panel fitting loosely in said basket and adapted to be set at different elevations in substantially parallel relationship to the bottom wall by entry of one longitudinal edge portion in one side wall in a selected space between any two of the aforesaid vertically spaced wires, the other side wall having the vertically spaced horizontal wires made of flexible resilient wire, said side wall including means blocking passage of the other longitudinal edge portion of said panel therethrough, and a turn-type fastener mounted on the last named longitudinal edge portion of said panel for rotation on an axis substantially parallel to the plane thereof and substantially at right angles to said longitudinal edge portion, said fastener being extensible through any one of the spaces between the wires on the last named side wall and having a cross-head of flexible resilient wire loop construction which when extended from the basket and turned in transverse relationship to the last mentioned wires serves to retain the panel against displacement from its selected position spaced relative to the bottom wall, said cross-head having oppositely inclined surfaces defined by the flexible resilient wire on the inner side thereof on opposite sides of the axis thereof, said cross-head having wedging engagement between two flexible resilient horizontal wires on the wall of the basket above and below the level of the panel causing the wires on the basket and on the cross-head to flex relative to one another for more secure fastening of the panel.

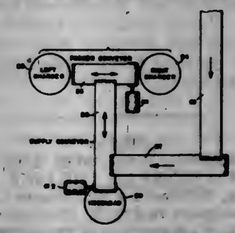
3,188,940
GRILLING APPLIANCE
Arthur Frederick Oatley, Wilton Lodge, Werge Road, Tettenhall, Wolverhampton, Staffordshire, England
Filed Aug. 14, 1959, Ser. No. 833,834
4 Claims. (Cl. 99—421)

1. A grilling appliance comprising in combination a supporting structure; a radiant mounted on the supporting structure; a power unit having a drive coupling, being pivotally mounted in the supporting structure for movement between a stored position in the supporting structure and a plurality of adjusted operative positions and urged by spring force towards the operative position furthest from the stored position; escapement means including a manually actuable member for permitting step-by-step movement of the power unit under the influence of the spring on successive operations of the manually actuable member; and an arm pivotally mounted in the supporting structure and angularly movable between stored and active positions, the power unit and arm being mounted in the supporting structure on opposite sides of the radiant



and adapted to support rotatably a spit in any of a variety of operative positions spaced from the radiant surface and normal to it, one end of the spit being supported by the arm and the other end being supported and driven by the drive coupling.

3,188,941
ELECTRICAL MEANS FOR CONTROLLING HYDRAULIC PRESSES
Francis B. Fishburne, P.O. Box 927, Asheville, N.C.
Original application July 10, 1961, Ser. No. 123,008, now Patent No. 3,118,512, dated Jan. 21, 1964. Divided and this application Mar. 19, 1963, Ser. No. 266,288
14 Claims. (Cl. 100—49)

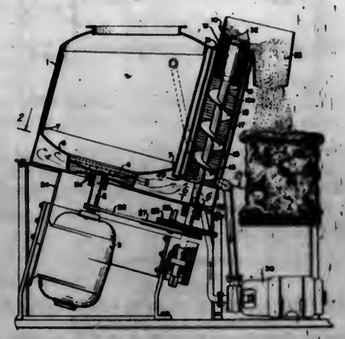


14. In a twin press for packing loose compressible material in containers, the combination with a pair of laterally spaced, vertically moving, power operated rams, of an upright, open-ended charger located beneath each ram, a container disposed beneath each charger, a reversible packer conveyor extending between and above the upper ends of said chargers and serving to deliver material into one or the other of them dependent upon its direction of movement, a supply conveyor for feeding a stream of material onto said reversible conveyor at a point between said chargers, means for reversing said packer conveyor, automatic means, operating simultaneously with the reversal of said packer conveyor for initiating the downward movement of the ram toward which said packer conveyor had been delivering, means including a limit switch for automatically continuing such movement through its full downward stroke and return, and manually controlled, electrically actuated means for interrupting the automatic operation and stopping the movement of said ram at any desired point in its travel and for further operating the ram selectively under manual control.

3,188,942
APPARATUS FOR DISINTEGRATING AND DEWATERING FIBROUS MATERIAL
Kurt Wendel, Downingtown, Pa., assignor to Sonnet Corporation, Coatesville, Pa., a corporation of Delaware
Continuation of application Ser. No. 417,729, Mar. 22, 1954. This application Dec. 5, 1962, Ser. No. 244,561
9 Claims. (Cl. 100—72)

1. Apparatus for the continuous disintegration and dewatering of fibrous material comprising a disintegrating

vessel, a distintegrating impeller in the bottom of said vessel, an outlet passage in a wall of said vessel at the bottom thereof, a dewatering chamber adjacent said vessel having an inlet opening in a wall thereof forming the end of said outlet passage, said chamber containing means for moving said material therethrough and compressing the same, including an elevating screw mounted for rotation in said chamber, a cylinder of foraminous material surrounding said screw, a solid wall of said chamber surrounding said cylinder and spaced therefrom, a watertight partition between said cylinder and said wall at the bottom of said cylinder, means for continuously rotating said impeller and said elevating screw and means for returning water collected between said cylinder and said solid wall to said vessel.

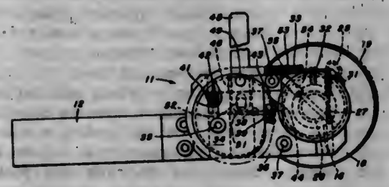


3,188,943

ROTARY MARKING TOOL FOR USE IN SCREW MACHINES OR THE LIKE

William R. King, Wilkinsburg, and Joseph C. Lang, Pittsburgh, Pa., assignors to Jas. H. Mathews & Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 9, 1962, Ser. No. 215,843
6 Claims. (Cl. 101—7)



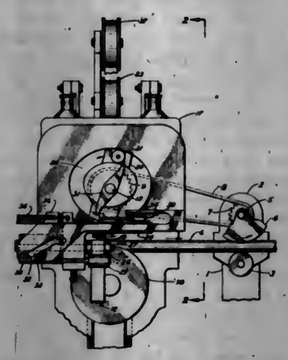
1. A rotary marker comprising a bifurcated head with spaced parallel arms having aligned bearings, a shaft journaled in the bearings and bridging the spacing between the arms, a marking wheel having type on the periphery thereof mounted on the shaft between the arms for rotation with the shaft, the shaft extending laterally beyond one of the arms and having a circumferential braking surface beyond the arm, a circular member with a grooved periphery fixed to the end of the shaft adjacent the braking surface for simultaneous rotation with the shaft and wheel, a frame secured to the head, an arcuate support with a grooved periphery mounted fixedly on the frame with the groove in alignment with the grooved periphery of the circular member, the frame having a horizontally extending guideway, a brake slidably mounted within the guideway with a nose formed for line contact with the braking surface, resilient means within the guideway for biasing the brake nose into line contact with the braking surface of the shaft, the brake having a vertically extending slot, the frame having a vertically extending passageway in alignment with the slot in the brake, a brake release lever pivoted within the passageway and pinned to the brake within the slot for moving the brake slidably within the guideway, a spring fixed at one end to the periphery of the circular member and extending around the grooved periphery of the arcuate support, the other end of the spring being attached to the brake portion extending from the guideway whereby a force is exerted downwardly on the nose of the brake against the braking surface, the guideway being of a dimension whereby the nose of the brake rocks from below the axis of the circular member to a point above the axis of the circular member, a stop member extending from the periphery of the circular member for limiting its rotation and being in abutting contact with the frame at a position of rest from which the wheel rotates in a marking operation, the rotation of the circular member increasing the tension on the spring whereby the nose of the brake is pulled downwardly with increasing force against the braking surface of the shaft in proportion to the amount of rotation of the circular member whereby the circular member is stopped by the brake after the type on the wheel have marked an article, the release of the brake by the lever actuating a retrograde rotation of the circular member by the action of the spring.

3,188,944

SEQUENTIAL WIRE MARKER

William A. Heine, Jr., Mountainside, N.J., assignor to The Acromark Company, Elizabeth, N.J.

Filed Mar. 21, 1963, Ser. No. 267,023
1 Claim. (Cl. 101—8)



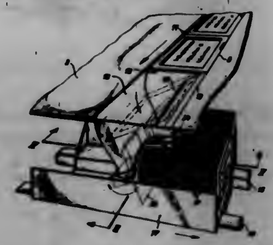
A device for marking a cable as it is being laid with footage numbers indicating the footage that has been laid, said device comprising a frame, support wheels mounted thereon over which the cable is linearly fed, a measuring wheel mounted for rotation on said frame and in peripheral contact with said cable so as to be driven thereby, a rotary marking wheel mounted on said frame and driven by a non-slip drive means from said measuring wheel, a consecutive numbering machine on the periphery of said marking wheel having settable numbering dies positioned to intermittently roll onto said cable with every revolution of the marking wheel at intervals fixed by the measuring wheel, means for advancing the numbering wheels one unit upon each revolution of the marking wheel, a strip frame mounting a pigmented strip extending perpendicularly across the cable between the marking wheel and the cable so as to be in position to be pressed against said cable by the numbering dies as they roll onto said cable, means mounting said strip frame for reciprocating movement parallel to the direction of movement of said cable, drive means for moving said strip frame and pigmented strip in one direction at a velocity substantially equal to that of the cable during the marking operation and spring means for moving said strip frame in an opposite direction to restore same to its original position after termination of the marking operation so as to complete the cycle of operation.

3,188,945

PLATE FEED AND STORAGE MEANS IN AN ADDRESSING MACHINE

Anton Rennner, Deisenhofen, near Munich, Germany, assignor to Rena Buromaschinen-Fabrik G.m.b.H. & Co., Deisenhofen, near Munich, Bavaria, Germany

Filed July 30, 1962, Ser. No. 213,437
Claims priority, application Germany, Aug. 4, 1961, R 30,878
2 Claims. (Cl. 101—47)



1. In an addressing machine which includes a casing, an introduction chute for step-wise feeding of generally rectangular printing plates into a horizontal guide path, a printing station disposed along the guide path, a horizontally disposed laying off chute located at the terminal end of and beneath the guide path to receive said printing plates dropped one at a time from an enlarged opening in the terminal end of the guide path, said laying off chute communicating to the exterior of the casing, horizontal guide rail means in said laying off chute, and an open-topped plate receiving drawer frictionally engaged upon said guide rail means within said laying off chute, the herein invention comprising, means for effecting step-wise displacement of the drawer with the entry thereinto of each printing plate from the terminal end of the guide path, said step-wise displacement being equal to the thickness of said printing plate, said means comprising stationary guide plate means within said laying off chute beneath the terminal end of the guide path for directing the printing plates one at a time from the guide path to a tilted position upon one edge thereof in the drawer, reciprocating pressure plate means arranged to engage a face of said printing plate immediately upon entry thereof into the drawer to move said plate to a vertical position and to then displace the drawer along the guide rail means a distance equal to the thickness of the printing plate, and spring biased hook means arranged centrally and above said laying off chute to engage the face of the printing plate to retain the plate in a vertical position when the pressure plate is caused to retract, the drawer thereby being automatically shifted step-by-step by each successive printing plate for the entire length thereof.

3,188,946

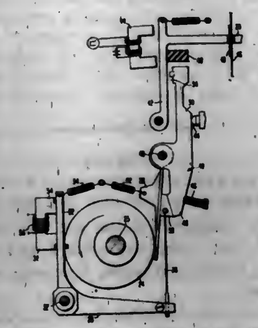
HAMMER CONTROL MECHANISM FOR RECORD MARKING MACHINE

Gunter Heinz Schacht, Boblingen, Germany, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,540
6 Claims. (Cl. 101—93)

1. In a machine for marking a record, the combination of:

a member movable to a record marking position and a restore position;
rotating cam means;
an actuating member for moving said movable member;
control means coupling said cam means and said actuating member, said control means comprising first and second pivoted cam following members movable between a first and a second position and a wedge member coupled to said first cam following member, said wedge member being slidably interposed between said second cam following member and said actuating member in a motion transmitting position when said first cam following member is in said first position and in an idling position when said first cam following member is in said second position; and
electromagnetic holding means for selectively holding said first cam following member from following said cam while in said first position so that said actuating member moves said movable member to said restore position when said second cam following member is moved by said cam means to its second position.

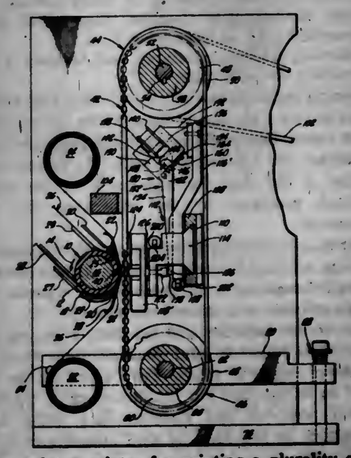


3,188,947

PLATEN ACTUATING MEANS IN HIGH SPEED BELT PRINTER

Walter Griffin Paige, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Jan. 11, 1963, Ser. No. 250,945
11 Claims. (Cl. 101—93)



1. In a platen printer for printing a plurality of characters in a plurality of aligned character spaces on a print medium adjacent a platen,

a plurality of continuous belts each carrying an array of type characters on a surface facing the platen, one belt being aligned with each character space,

means for moving all the belts in a direction to transport the type characters of each belt in succession adjacent the platen to face an associated character space,

a print member for striking a surface of any of said belts on the side remote from the platen to press a type character against the print medium within a character space,

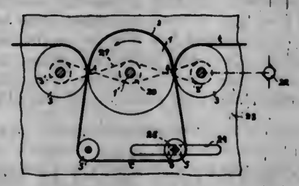
and means for imparting movement to the print member in a direction substantially orthogonal to the direction of longitudinal movement of the belts and parallel to the platen such that successive actuation of the print member may produce a printing by different belts in different character spaces.

3,188,948

APPARATUS FOR CONTINUOUSLY PROCESSING WEBS OF FLEXIBLE MATERIAL

Kurt Fischer, Stuttgart-Wangen, and Karl Marbach, Heilbronn (Neckar), Germany, assignors to Firma Heinrich Hermann, Stuttgart-Wangen, Germany, a corporation of Germany

Filed Apr. 10, 1963, Ser. No. 272,162
Claims priority, application Germany, Apr. 11, 1962, H 45,431/62
1 Claim. (Cl. 101—178)



An apparatus for the continuous imprinting of a continuously moving web of flexible material, comprising:

a rotatable cylinder having an outer surface;

a thin, flexible plate stamped from a flat sheet and provided with an imprinting face;

cushioning means underlying and forming a resilient backing for said plate;

fastening means removably positioning said plate along an arc on a portion of the cylinder outer surface;

shim means interposed between the plate and the outer surface for selectively altering the radius of curvature of the plate for adjustment of the imprinting depth produced by the imprinting face on the material;

at least two counterrollers at angularly spaced positions adjacent the cylinder outer surface for supporting the material upon imprinting as it passes between the cylinder and the counterrollers;

guide rollers between said positions engaging the material to deflect it from these positions along a path whose length is substantially equal to the product of an integer and the circumference of the cylinder, said positions and counterrollers being equal in number to the ratio of said circumference to said arc; and

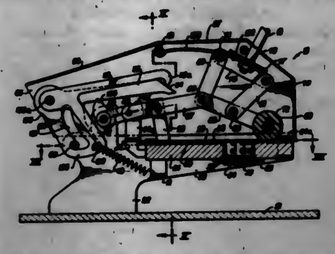
adjustment means for altering the location of the guide rollers with respect to said plate.

3,188,949

SQUEEZE DOWN IMPRINTER RELEASABLE PRINT HEAD MEANS IN TRAVELING ROLLER PRINTING MACHINE

George H. Hill, Torrance, Calif., assignor to Dashew Business Machines, Inc., Los Angeles, Calif., a corporation of Delaware

Filed Dec. 12, 1961, Ser. No. 158,728
13 Claims. (Cl. 101—269)



1. In a manual imprinting device, the combination of: a base means provided with a surface to support in superposed predetermined relation a data bearing card and an invoice form, said base means including a pivotal mounting; an imprinting head means including a head frame supported from said pivotal mounting and movable to covered and uncovered position with respect to such surface; an imprinting roller carried on said head frame; actuating means for said roller comprising an actuating handle extending from said head frame and having a pivotal connection therewith, linkage means interconnecting said handle pivotal connection, said roller, and said base pivotal mounting whereby movement of said actuating handle in one direction causes said roller to move across said surface for an imprinting stroke, spring means carried by said head frame normally biasing said actuating handle to one position; an angle shaped lever member pivotally connected to said head frame and provided with a selectively contoured slot, a pin on said base means cooperably received within said slot for locking said head frame in covered position, and lever member having a cam surface at one end adapted to be engaged by said roller linkage means for moving said lever member into unlocked position; a securement lever pivotally connected to said head frame and having a forwardly extending hook arm adapted to engage said actuating linkage means at the end of the imprinting stroke of the roller to immovably associate said actuating handle and head frame; said pin being engageable with said securement lever for releasing said lever when said head frame is moved to uncovered position whereby said actuating handle may be returned to its initial position and said imprinting roller moved to its initial position while said head frame is in uncovered position.

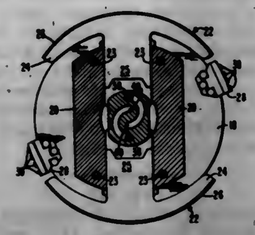
3,188,950

PRINTING APPARATUS WITH RETRACTABLE PRINTING MEMBER

Robert Kelly, Clawson, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed June 22, 1962, Ser. No. 204,406
9 Claims. (Cl. 101—375)

1. In a printer, a rotatable print wheel including a pair of spaced apart rotatably driven plates, a printing plate interposed between said pair of plates and connected for rotation therewith, said printing plate movable radially of said pair of plates between an outer printing position and an inner ineffective retracted position, a hollow shaft carried by one of said plates, a second shaft within said hollow shaft coaxially thereof and having one end proximate said printing plate, said second mentioned shaft being rotatable relative to said hollow shaft and also axially movable toward and away from said printing plate, cam means on said printing plate having a sliding connection with cam means on said second mentioned shaft and cooperable to retract said printing plate upon rotation of said second mentioned shaft in one direction, a cam on the other end of said hollow shaft, a cam follower carried by said second-mentioned shaft and cooperable with said cam to axially move said second mentioned shaft upon rotation thereof in said one direction, and a spring interposed axially between said shafts and compressible by and upon axial movement of said second-mentioned shaft to restrain rotation of the latter in a direction opposite said one direction.

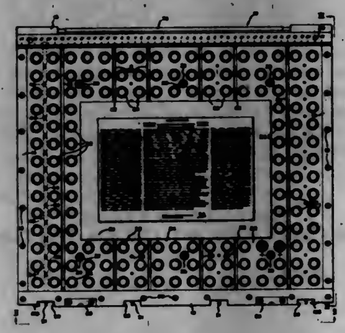


3,188,951

MAGNETIC CHASE WITH RELATIVE MOVEMENT BETWEEN MAGNETS AND PLATE SUPPORTING SURFACE

Charles Hollerith, Jackson, Mich., assignor to Magnachase Corporation, Jackson, Mich., a corporation of Michigan

Filed Aug. 29, 1961, Ser. No. 134,635
10 Claims. (Cl. 101—382)



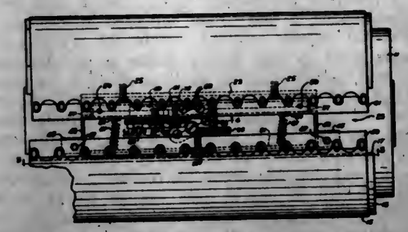
1. A chase for use with printing apparatus employing a magnetic type mounting element comprising, in combination, a frame member adapted to be clamped to the printing apparatus, a support surface plate mounted upon said frame member having a support surface for the type mounting element supported thereon, magnet members mounted within said plate having pole surfaces defined thereon selectively disposed adjacent said support surface and means operatively interposed between said surface plate and magnet members permitting relatively rectilinear displacement therebetween in a direction perpendicular to said support surface.

3,188,952

HOLDING AND ADJUSTING MEANS FOR PRINTING MEMBERS

Donald J. Miller, Lakewood, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Filed May 8, 1962, Ser. No. 193,225
9 Claims. (Cl. 101—415.1)



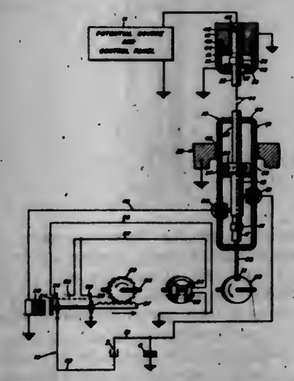
1. Means for attaching a sheet to the periphery of a rotary printing cylinder comprising a carriage; means rockably mounting said carriage on the cylinder; a first anchoring element rigidly mounted on the carriage; a second anchoring element; means mounting said second anchoring element on the carriage for shifting movement lengthwise of and parallel to the first element, and for lateral movement towards and away from said first element; and a manually actuable means acting on said second element to shift the same lengthwise relative to said first element.

3,188,953

ARMING DEVICE FOR A FIRE BOMB FUZE

Renato Bianchi, Beltsville, Albert S. Will, College Park, and Norman C. Butler, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 28, 1955, Ser. No. 543,636
9 Claims. (Cl. 102—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a system for arming an airborne fire bomb in time delayed relation with respect to the release of the bomb from an aircraft, in combination, a source of electrical energy in the aircraft, a bomb, a switch mechanism mounted in said bomb, means for releasably connecting the switch mechanism to said source, a normally locked switching element arranged for movement within said switch mechanism and movable therein, means for moving said element as the bomb is released from the aircraft and falls away therefrom a predetermined amount, means including a shear pin carried by said element and attached to said switch mechanism and in a manner to be sheared as the bomb falls away from said aircraft said predetermined amount, normally locked arming means rotatably

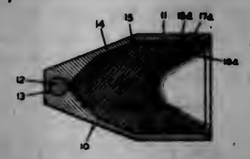
supported within said bomb and movable from an initial safe position to an armed position when released, means on said element for releasing said arming means when the element is moved said predetermined amount, driving means connected to said arming means and actuated by an explosive force applied thereto for moving the arming means from said initial safe position to said armed position, a normally interrupted control circuit, time delay explosive means in said circuit and fired in response to an electrical impulse received thereby for applying said explosive force to said driving means as said normally interrupted control circuit is rendered effective, means included in said circuit for rendering said circuit effective as the switching element is moved said predetermined amount, electrical energy storage means, a normally interrupted charging circuit for said storage means, means included in said charging circuit for rendering the charging circuit effective to charge said storage means as the switching element is moved an amount, greater than said predetermined amount and means including a frangible element for thereafter disconnecting said switch mechanism from said source.

3,188,954
GAS EJECTION BOMB FOR DISPERSING SOLID PARTICULATES
Paul G. Roach, Dover, N.J., and Harold C. Weingartner, Marblehead, Mass., assignors to the United States of America as represented by the Secretary of the Army
Filed May 14, 1958, Ser. No. 735,345
1 Claim. (Cl. 102—6)



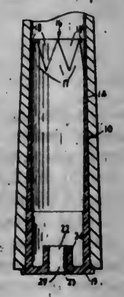
A gas ejection bomb for dispersing solid particulates comprising an elongated casing having a first end and a second end, a nose base at said first end of said casing, a fuze mounted within said casing adjacent said nose base, said fuze defining at least one orifice communicating with the interior of said casing, a closed cylinder mounted within said casing and having an opening adjacent said fuze means, a heater tube within said cylinder, a heater primer, in a first end of said heater tube, a heater support mounted at said first end of said heater tube and within said opening, said opening having walls surrounding and contacting the exterior of said heater support, said heater support having a plurality of longitudinal flutes on its exterior, defining with the walls of said opening a series of passages from the interior to the exterior of said cylinder, a first shear disk mounted between said fuze and said opening and closing said passages, said fuze comprising a firing pin aligned with said heater primer, liquified carbon dioxide in said cylinder surrounding said heater tube, a conical tail section at said second end of said casing having its larger end joined to said casing and having a discharge opening at its smaller end, a tail shear disk closing said discharge opening, diffuser vanes mounted over the exterior of said discharge opening, stabilizing vanes mounted on said bomb adjacent said second end of said casing, the interior of said casing being unobstructed between said orifice and said shear disk, a charge of finely divided solid material within said casing and outside said cylinder; said fuze being impact sensitive, whereby on impact said firing pin penetrates said first shear disk and ignites said primer which thereupon ignites said heater tube, vaporizing said carbon dioxide and rupturing said first shear disk, thus permitting said carbon dioxide to flow out through said passages and said orifice into the space between said casing and said cylinder and burst said second shear disk, whereupon said carbon dioxide will flow out through said discharge opening and said diffuser vanes, carrying said solids in suspension.

3,188,955
EXPLOSIVE CHARGE ASSEMBLIES
William E. Brown, Richardson, Tex., assignor to The Western Company of North America, Fort Worth, Tex., a corporation of Delaware
Filed Mar. 31, 1961, Ser. No. 99,819
The portion of the term of the patent subsequent to Dec. 22, 1981, has been disclaimed
22 Claims. (Cl. 102—24)



1. An explosive charge assembly comprising a container housing having an open end and containing a detonatable explosive charge having a substantially planar surface oriented toward the open end of said container housing, a lens member of a non-explosive substance having a substantially planar surface adjacent to and in contact with said substantially planar surface of said explosive charge and having a concave cavity oriented toward the open end of said container housing, said non-explosive substance being undecomposed by the heat of detonation of the explosion and being reactive when propelled into the object to be penetrated by the explosive charge assembly, and a metallic liner superimposed over the concave cavity of the lens element.

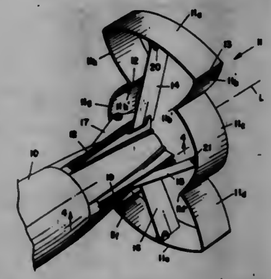
3,188,956
SHOT GUN CARTRIDGE
Stuart Clifford Hellis, 602 17th Ave. SW., Calgary, Alberta, Canada
Filed Oct. 9, 1961, Ser. No. 143,690
14 Claims. (Cl. 102—42)



1. A cartridge including a casing having a substantially cylindrical casing wall closed at one end by a base, a

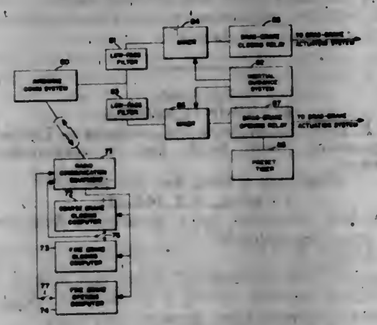
primer pocket in said base, a battery cup primer disposed in said primer pocket, a plurality of alternating thick and thin mating triangular portions in said casing wall at the mouth end thereof, said portions forming a closure surface across said casing and a wad, a propellant and a shot charge disposed within the casing.

3,188,957
RING STABILIZER
Philip C. Petre, Santa Barbara, Calif., assignor, by mesne assignments, to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Apr. 3, 1962, Ser. No. 184,703
2 Claims. (Cl. 102—50)



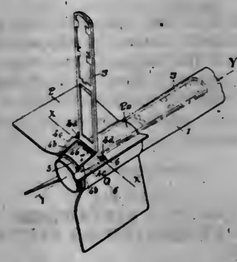
1. A ring stabilizer for a missile body comprising, in combination: four major arcuate sections in the form of resilient bands; four minor sections alternately hinged between said major sections so that all of said sections are hinged together end to end to form a closed ring when in an expanded condition and whereby said minor sections may have first ends urged radially inwardly to fold between said major sections to provide a compact configuration; movable members interconnecting said major sections with the rear portion of said missile body; and means for moving said movable members to expand said major sections radially outwardly with respect to a central longitudinal axis of said missile body.

3,188,958
RANGE CONTROL FOR A BALLISTIC MISSILE
James D. Burke, Altadena, Robert J. Parks, La Canada, and Robert M. Stewart, Encino, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Mar. 11, 1963, Ser. No. 265,589
8 Claims. (Cl. 102—50)



1. In a missile having an airframe, a range control system comprising:
(a) a dragbrake assembly positioned within said airframe near the central portion of said missile,
(b) said dragbrake assembly including a plurality of individual dragbrakes rotatably attached to said airframe;
(c) said airframe having a plurality of spaced openings in the periphery thereof, said openings being disposed radially outwardly of and adjacent to said dragbrakes;
(d) means for initially extending said dragbrakes through said openings in a direction normal to the longitudinal axis of said missile at a predetermined time;
(e) first means for retracting said dragbrakes within said airframe to complete a coarse dragbrake period of operation which improves range accuracy by eliminating major trajectory disturbances;
(f) second means for again extending said dragbrakes through said openings;
(g) third means for finally retracting said dragbrakes within said airframe to complete a fine dragbrake period of operation which further improves range accuracy by eliminating minor trajectory disturbances; and,
(h) means for sequential actuation of each of said first, second, and third extending and retracting means.

3,188,959
RIFLE GRENADES AND THE LIKE
Giulio Wyser, Geneva, Switzerland, assignor to Brevets Aero Mecaniques S.A., Geneva, Switzerland, a society of Switzerland
Filed Apr. 6, 1964, Ser. No. 357,647
Claims priority, application Luxembourg, Apr. 9, 1963, 43,525
4 Claims. (Cl. 102—65.2)

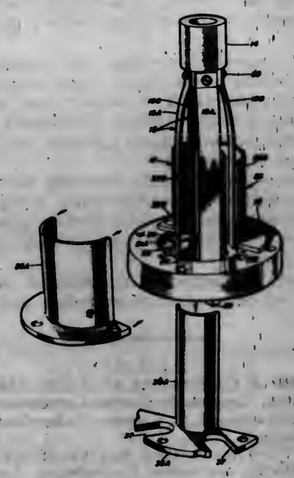


1. For use in a firearm having a barrel, a grenade to be fitted on said barrel which comprises, in combination, a launching sleeve adapted to be mounted on said barrel, a plurality of radial fins secured to said sleeve, a U-shaped clip including a base extending across said sleeve transversely to the longitudinal axis thereof and between two of said fins consecutive to each other and two side branches extending rearwardly from the ends of said base substantially parallelly to said axis, said two side branches being bent back to form two extensions extending frontwardly and substantially parallel to said axis, each of said side branches and the corresponding extension being caught and releasably held by the rear edge of one of said two fins and a sight plate pivoted to said base and extending in a plane passing through said base.

3,188,960
IMPACT SWITCH FOR MISSILE WARHEAD
Serge N. Samburoff, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 11, 1958, Ser. No. 728,625
7 Claims. (Cl. 102—70.2)

3. A contact switch for the firing circuit of an electrically detonated projectile warhead, comprising, fixed arcuate contact elements in radially spaced relationship

with one another, means for supporting said elements in the rearward portion of the warhead in insulated relationship with one another and with the warhead, a plurality of movable contact elements extending between said fixed contact elements in spaced relationship with one another and with said fixed contact elements, means for



supporting said movable contact elements within the warhead in insulated relationship with said fixed contact elements and with the warhead, and means electrically connecting said contact elements to the firing mechanism of the warhead whereby the firing circuit is closed upon impact deformation resulting in radial displacement of said movable contacts.

3,188,961

MEANS FOR COOLING STRUCTURES THAT ARE PERIODICALLY HEATED TO ELEVATED TEMPERATURES

David M. Scruggs and Gordon D. Pfeifer, both of South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed May 25, 1961, Ser. No. 112,676
13 Claims. (Cl. 102—92.5)



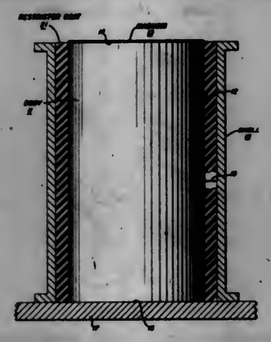
1. In heat dissipating structure: a first body which receives heat at a maximum rate for a short interval of time and whose temperature must be kept below a first predetermined temperature, and a second body spaced and positioned to receive heat energy from said first body substantially entirely by radiation at said maximum rate when said second body is at an elevated second predetermined temperature, said second body including a solid which changes state at an elevated temperature corresponding generally to said second predetermined temperature.

3,188,962

RESTRICTED PROPELLANT BODY

Robert A. Mosher, Seymour, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Mar. 26, 1958, Ser. No. 724,200
6 Claims. (Cl. 102—98)



1. A process of preparing a restricted ammonium nitrate solid propellant which comprises masking the surface area which are not to be restrictor coated of a shaped ammonium nitrate propellant body, positioning the body in a shell spaced therefrom a distance essentially equal to the desired thickness of the restrictor coating, adding to said void space a restrictor coating producing mixture consisting essentially of an aromatic diisocyanate and a saturated polyster having terminal hydroxyl groups and a molecular weight between about 600 and 3000, wherein between about 1 and 1.5 isocyanate groups are present per hydroxyl group, and a catalyst from the class consisting of N-cocomorpholines, pyridines, quinolines, isoquinolines, and ethoxylated amines, said catalyst being characterized by an activity such that said reaction mixture flows into all the void space before the set point of the mixture is reached, maintaining the shell, body and reaction mixture for a time needed to form a substantially solid polyurethane restrictor coating on the exposed surface of said body and then removing said shell and said masking to obtain a restricted propellant grain.

2. A restricted ammonium nitrate solid propellant obtained by the process of claim 1.

3,188,963

FLUID INTENSIFIER

Henry P. Tyler, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed June 4, 1962, Ser. No. 199,677
5 Claims. (Cl. 103—2)

1. A fluid intensifier for a pressurized fluid system which intensifier includes:

a housing;

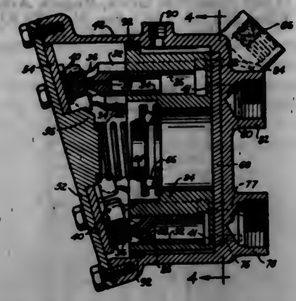
a rotating member mounted within said housing, said rotating member having a plurality of inner and outer concentric bores therein;

a plurality of pressure responsive members operatively mounted in said bores;

a means to control said pressure responsive members, which means is carried by said housing;

a plate mounted to and within said housing, which

plate has an inlet means common to all pressure responsive members and an outlet means that separates



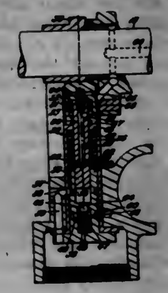
the discharge of said pressure responsive members in said outer bores from that of said pressure responsive members in said inner bores.

3,188,964

CHANGE SPEED GEAR MECHANISM AND PUMPS THEREFOR

James Dennis Batten, Coventry, England, assignor to Humber Limited, Coventry, England, a British company

Filed Apr. 16, 1962, Ser. No. 187,766
Claims priority, application Great Britain, Apr. 17, 1961, 13,803
1 Claim. (Cl. 103—4)



A piston type pump having a pump piston working in a pump cylinder which is axially movable under the pump output pressure acting axially on the cylinder, increase in the pressure moving the cylinder to cover an inlet port to the cylinder to reduce the amount of fluid input to the cylinder during the suction stroke, a stationary abutment, a spring acting between the cylinder and the cylinder and the stationary abutment resiliently to resist only such axial movement of the cylinder, a second spring acting between said piston and said stationary abutment to urge the piston in a direction to uncover said inlet port, and a low-pressure piston pump arranged in tandem therewith comprising said pump piston.

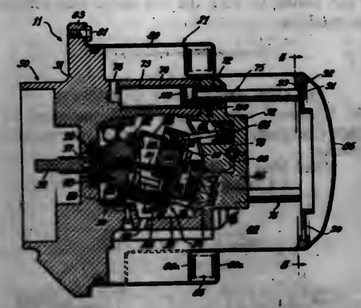
3,188,965

PUMP WITH PRESSURE ACTUATED RESERVOIR

Fred C. Haberland, Cleveland, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed July 17, 1963, Ser. No. 295,714
3 Claims. (Cl. 103—39)

1. A hydraulic apparatus comprising a pump having a casing, an inlet and an outlet; a first shell connected to said casing; a second shell connected to said first shell and telescopically received therein, said shells and said casing defining a variable volume fluid reservoir which is in fluid communication with said pump inlet; means defining a plurality of spaced cylinder bores within said casing; a lock ring member removably connected to said second shell; a plurality of piston elements each having one end secured to said lock ring member and the other



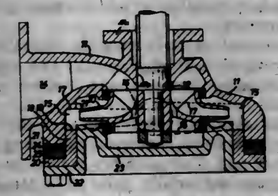
end received within said cylinder bores; and fluid passage means interconnecting said pump outlet to said cylinders such that said piston elements are withdrawn into said casing and collapse said second shell into said first shell to increase fluid inlet pressure upon increasing fluid outlet pressure as applied through said fluid passage means.

3,188,966

ROTODYNAMIC VOLUTE MACHINES

Norman Tetlow, "Windlehurst Cottage," High Lane, near Stockport, England

Filed Jan. 31, 1962, Ser. No. 170,105
Claims priority, application Great Britain, Feb. 2, 1961, 3,960/61; Apr. 6, 1961, 12,352/61; June 15, 1961, 21,577/61; Sept. 9, 1961, 32,438/61
11 Claims. (Cl. 103—103)



1. A rotodynamic volute machine comprising in combination:

a rotor casing having a substantially cylindrical longitudinal bore therein of circular cross-section and open at one end thereof, the surface of said bore bounding an impeller chamber and a circumferentially extending volute passage;

an impeller in said impeller chamber and journalled for rotation about an axis concentric with the axis of said bore, said impeller having an outer periphery and said bore surface having a portion spaced radially outwardly of said impeller periphery;

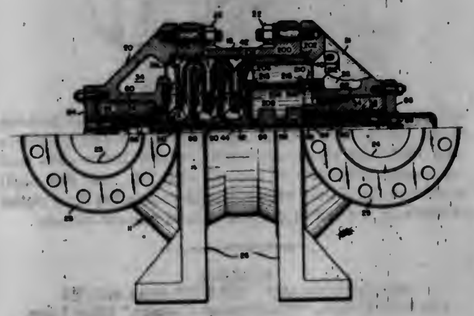
an insert located in said bore;

a contoured surface on said insert, bounding a side of said volute passage and imparting to said volute passage a circumferentially increasing cross-sectional area, a major portion of said contoured surface being spaced axially from said impeller periphery in a direction toward said open end of said bore; and

means defining a portion of said volute and having a circular periphery of diameter at least as great as that of said impeller periphery, said circular periphery of said means being located co-axially with said rotary axis and axially between said impeller periphery

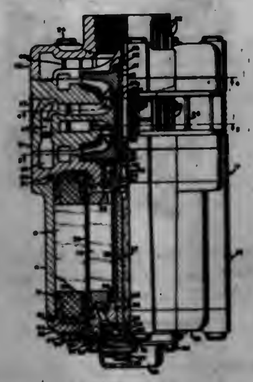
and a major portion of said contoured surface on said insert, and said circular periphery of said means and said bore surface defining a restricted annular gap concentric with said rotary axis for the flow of fluid from said impeller periphery to said volute passage, said insert being adapted to be removed and replaced by other inserts to change the cross section of the volute to vary the discharge characteristics of the machine.

3,188,967
FLUID PRESSURE BOOSTER
John W. Gleasner, San Diego, Calif., assignor to Solar Aircraft Company, San Diego, Calif., a corporation of California
Filed May 26, 1961, Ser. No. 112,986
2 Claims. (Cl. 103—166)



1. A fluid pumping device comprising:
(a) an inlet member,
(b) an outlet member,
(c) a hollow intermediate member,
(d) means rigidly but detachably interconnecting said intermediate member to and between said inlet and outlet members,
(e) a multi-section shaft assembly journalled at its opposite ends on said inlet member and outlet member and extending through said hollow intermediate member,
(f) a rotor assembly comprising a plurality of axially slidably interfitting sections surrounding the central portion of said shaft assembly in radially spaced relation thereto and axially clamped in detachably fixed relation thereto between opposed portions of relatively axially movable sections of said multi-section shaft assembly whereby said shaft assembly functions as a tie-bolt for holding the sections of said rotor assembly in place without material direct radial restraint of such sections so that said rotor sections can be readily removed upon disassembly of said shaft assembly,
(g) a stator assembly comprising a plurality of axially slidably interfitting sections disposed within said hollow intermediate member and detachably, axially clamped in fixed position therein between said inlet and outlet members,
(h) at least one of said rotor sections comprising an impeller stage and at least one of said stator sections comprising an inlet guide vane and diaphragm cooperating with said impeller stage to guide fluid into the inlet of said impeller stage,
(i) at least one of said rotor sections at the end of said rotor assembly adjacent said outlet member comprising an annular spacer ring, and
(j) at least one of said stator sections at the end of said stator assembly adjacent said outlet member comprising a pair of concentric fluid guide rings extending coaxially with said spacer ring.

3,188,968
CENTRIFUGAL PUMPS
Kenton D. McMahan, Scotia, N.Y. (3 Sky Mountain Drive, Rogers, Ark.)
Filed Feb. 12, 1963, Ser. No. 258,033
6 Claims. (Cl. 103—109)

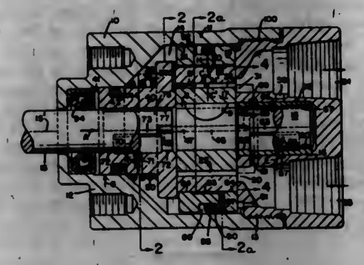


1. A centrifugal liquid submersible pump comprising a peripheral casing, two coaxial pump stages in said casing, each having an inlet eye and an impeller, the first stage having a plurality of inlet radial passageways extending through and from said casing for directing the liquid to be pumped in a plurality of radial streams inwardly towards the eye of the first stage, said inlet passageways being circumferentially distributed so that the resultant of the radial jet momentum on one side of any selected radial plane passing through the impeller axis is substantially equal to and in substantial radial alignment with the resultant of the radial jet momentum on the other side of said plane, and means for discharging the pumped liquid from said first stage into a plurality of discharge streams, said second stage having inlet passageways for directing said discharge streams in a plurality of radial streams towards the eye of said second stage, the latter inlet passageways being circumferentially distributed so that the resultant of the radial jet momentum on one side of any selected radial plane passing through the impeller axis is substantially equal to and in substantial radial alignment with the resultant of the radial jet momentum on the other side of said plane.

3,188,969
HYDRAULIC PUMP OR MOTOR
Robert W. Brundage, 2809 Wakonda Drive, Belnor, St. Louis 21, Mo.
Original application Sept. 6, 1957, Ser. No. 682,501, now Patent No. 3,034,446, dated May 15, 1962. Divided and this application Feb. 26, 1962, Ser. No. 175,722
2 Claims. (Cl. 103—126)

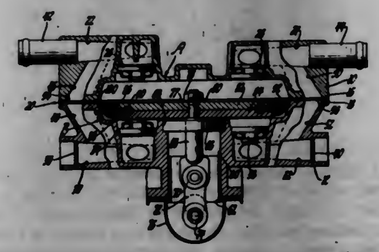
1. A hydraulic device comprised of a housing, a single shaft rotatably supported in said housing in a pair of spaced bearings, carried by said housing, a plurality of members rotatable with said single shaft and positioned between said bearings, said members defining a plurality of chambers which increase and decrease in volume as the shaft rotates, some of said chambers containing hydraulic fluid at a high pressure thereby creating an unsymmetrical radial force which is transmitted to said shaft and from said shaft to said bearings and then from said bearings to said housing, the improvement which comprises said bearings being in the form of a sleeve having a shaft facing inner surface, portions of said inner surface being in sealing engagement with said shaft and other portions of said inner surface being radially

spaced therefrom to define, with the inner surface of the sleeve, a high pressure recess and a low pressure recess circumferentially spaced from each other around the sleeve and sealed from each other by the sealing portions on the sleeve, means communicating said high and low pressure recesses respectively to high and low pressure areas of the device, said high pressure recess being located on the side of said shaft diametrically opposite from said chambers containing high pressure fluid thereby creating a hydraulic force on said shaft opposite to said first-mentioned hydraulic force, said low pressure recess extend-



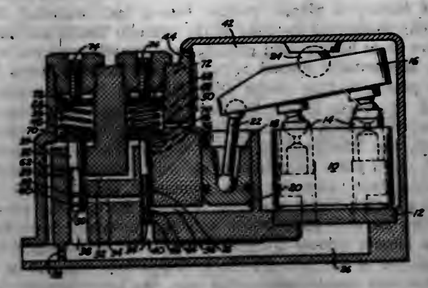
ing arcuately for at least 180° and being positioned on the diametrically opposite side of said shaft from said chambers containing low pressure fluid, said high pressure recess having an arcuate extent less than 180° whereby the sealing portions engaging said shaft on each circumferential end of said high pressure recess are located on the side of the shaft remote from the high pressure chambers, said high pressure recess having an area such as to create a hydraulic force on said shaft slightly less than said first-mentioned hydraulic force whereby said shaft is held in slight pressure engagement with the last mentioned sealing portions.

3,188,970
PUMPING DIAPHRAGM AND PUMP ASSEMBLY
Gordon W. Harry, Flushing, and Willard T. Nickel, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 11, 1962, Ser. No. 222,874
8 Claims. (Cl. 103—150)



1. A pump assembly comprising a casing, pumping structure within said casing and including a flexible diaphragm having marginal membranes enclosing an annular space and cooperating with said casing in defining a pumping chamber, inner and outer toroids constituting parts of said diaphragm, backing plates engaging opposite sides of said diaphragm with said inner toroid interposed, said outer toroid being interposed between said membranes partially to define said annular space and surrounding the peripheries of said backing plates, and said outer toroid being spaced from the wall of said casing.

3,188,971
CONTROL SYSTEM FOR A PUMP
David B. Puryear, St. Joseph, Mich., assignor to The Bendix Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,593
5 Claims. (Cl. 103—162)



1. The combination of a variable displacement pump and a control system therefor, comprising: fluid operated control means for varying the output of said pump; said pump having an outlet port; first passage means communicating with said outlet port; a flow restriction in said first passage means separating said first passage means into two portions; first valve means communicated with both portions of said first passage means; second passage means communicating said first valve means with said fluid operated control means; second valve means located in said second passage means and communicated with said first passage means; third passage means communicating a low pressure source to said first valve means; said first valve means being so arranged and constructed that it communicates with said third passage means with said second passage means in one operating position, communicates said first passage means with said second passage means in a second operating position, and cuts off said second passage means from said first passage means and said third passage means in a third operating position; said second valve means being so arranged and constructed that it communicates said first valve means with said fluid operated control means in a normal position and cuts off communication between said first valve means and said fluid operated control means while communicating said first passage means to said fluid operated control means in an override position, said first valve means being responsive to the pressure differential across said flow restriction; said second valve means being responsive to pressure beyond a predetermined limit in one of said portions of said first passage means; whereby said fluid operated control means will be controlled by said first valve means when the pressure in said one portion of said first passage means is below said predetermined limit and said fluid actuated control means will be controlled by said second valve means when the pressure in said one portion of said first passage means is beyond said predetermined limit.

3,188,972
AXIAL PISTON HYDRAULIC UNIT
Jean Ulrich Thoma, Bellevueweg 23, Zug, Switzerland
Filed Mar. 4, 1963, Ser. No. 262,782
3 Claims. (Cl. 103—162)

1. In an hydraulic unit of the type including a casing, a cylinder block mounted for rotation within the casing, said cylinder block having a plurality of axially extending bores therein each defining a working cylinder, a working piston within each bore, a driving flange mounted for rotation about an axis disposed at an angle to the axis of the cylinder block, a piston rod for each piston,

means connecting the piston rods to the driving flange whereby rotation of the flange reciprocates said pistons in the working cylinders and rotates said cylinder block within the casing, said cylinder block including a base having ports therein in communication with the respective working cylinders, said base having a planar outer surface, a valve plate fixedly mounted within the casing and having a planar surface facing and engaging the planar surface of the base of the cylinder block, and said valve plate having inlet passageways therethrough including segmentally shaped admission and delivery ports in the planar surface of the valve plate adapted to register with the ports in the base of the cylinder block upon relative rotation between the cylinder block and valve plate, the improvement comprising said cylinder block and valve plate each having an axial bore therethrough having their respective axes coincident with the axis of said cylinder block, the bore through the cylinder block having an enlarged portion disposed inwardly from the face thereof remote from the valve plate and defined by a portion of the cylinder block shaped as a segment of a sphere and constituting a first seat, the bore through the valve plate including an enlarged portion remote from said cylinder block and defined by a portion of the valve plate shaped as a segment of a sphere and constituting a second seat, a pin including a portion extending through the bores in the cylinder block and valve plate, said portion of the pin having less external diameter than the



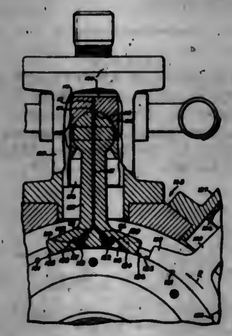
diameters of said bores, means connecting the end of the pin remote from the valve plate to said driving flange to constitute a ball joint connection between the driving flange and the pin, said pin having a portion of increased diameter externally of said cylinder block and positioned between the cylinder block and the driving flange, a cup-shaped balancing cylinder including a base and a wall portion in sliding engagement with said last-mentioned portion of the pin, the base of said balancing cylinder having an external surface defined by a segment of a sphere corresponding to and engaging with said first seat, a bushing surrounding the central pin and positioned between the and the enlarged portion of the bore through the valve plate, at least a portion of said bushing having an external surface defined by a segment of a sphere corresponding to and engaging with said second seat, said last-mentioned portion of said bushing having at least one transverse bore therethrough, a thrust washer carried by said pin and having a bearing surface in facing engagement with at least another portion of said bushing, said pin having a longitudinal oil-accommodating bore therein and ports extending from said bore and in communication with the space between the pin and the wall portion of the balancing cylinder, said valve plate, the pin also having bores therethrough providing communication between at least one of the ports in the valve plate and the longitudinal oil-accommodating bore in the pin via said at least one transverse bore through the bushing whereby oil under pressure can flow from said at least one port in the valve plate to and through the longitudinal bore in the pin to the interior of the balancing cylinder to apply axial thrust against the cylinder block to urge the base thereof into intimate planar contact with the valve plate, the reaction of said thrust being absorbed by said thrust washer, the cooperating spherical surfaces of said first seat on the cylinder block and the base of said balancing cylinder and of said first-mentioned portion of said bushing and said second seat in said valve plate respectively accommodating minute angular deviations between said pin and said cylinder block and between said pin and said valve plate without disturbing the intimate planar contact between the planar outer surface of the base of the cylinder block and the facing planar surface of the valve plate, said pin having an annular groove in the external surface thereof providing constant communication with the bore through said pin and the longitudinal bore in the pin and said bushing having an annular groove in the spherical surface thereof communicating with the transverse bore through the bushing and providing constant communication with at least one of the bores in the valve plate regardless of the relative rotary positions of pin, bushing and valve plate.

3,188,973

HYDRAULIC PUMPS AND MOTORS

Donald Firth and James D. Hamilton, Glasgow, Scotland, assignors to Council for Scientific and Industrial Research, London, England, a body corporate of the United Kingdom

Original application Apr. 14, 1960, Ser. No. 22,335, now Patent No. 3,120,816, dated Feb. 11, 1964. Divided and this application Oct. 24, 1963, Ser. No. 318,679
Claims priority, application Great Britain, May 1, 1959, 14,990/59
1 Claim. (Cl. 103—174)



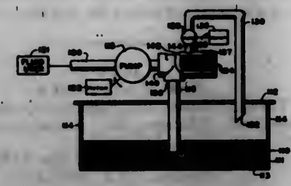
In a positive displacement hydraulic machine, in combination; a radial cylinder; a piston reciprocable in said cylinder; a slipper articulated to said piston; a piston thrust reaction member on which said slipper is slidable; said piston thrust reaction member comprising an eccentric; at least two separate oil retaining recesses symmetrically disposed with respect to the midpoint of the sliding face of said slipper; each of said recesses extending from a point adjacent the center of said sliding face towards the periphery thereof and bounded on all sides by a continuous land; separate ducts communicating between the pressure side of said piston and said recesses; and a metering constriction in each duct for controlling the supply of working fluid to said recess whereby said slipper is restored to its normal operating position by at least one of said recesses when said slipper is moved from said reaction member.

3,188,974

FLUID SYSTEMS

Borje Rossen, Ann Arbor, Mich., assignor to The Rossen Filter Company, Hazel Park, Mich., a corporation of Michigan

Filed June 21, 1963, Ser. No. 289,622
7 Claims. (Cl. 103—203)



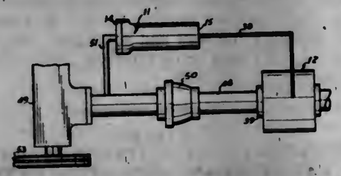
1. A fluid system comprising
(a) a fluid reservoir and a fluid user,
(b) a selectively operable primary pump and conduit means connecting the intake side of said primary pump with said fluid reservoir and the discharge side of said primary pump with said fluid user,
(c) an auxiliary pumping means of a smaller capacity than said primary pump and having an intake side connected to said conduit means intermediate said primary pump and said fluid reservoir and a discharge side connected with said fluid reservoir whereby said auxiliary pumping means is operable to maintain fluid in said conduit means intermediate said primary pump and said fluid reservoir during periods of deactivation of said primary pumping means, and
(d) a filter device carried in said conduit means intermediate said primary pump and said fluid reservoir and said auxiliary pump being connected with said filter device.

3,188,975

HYDRAULIC PULSATION ABSORPTION SYSTEM

Bryce I. Sprayberry, Atlanta, and Charles W. Brown, Decatur, Ga., assignors to Southeastern Elevator Company, a Division of Turnbull Elevator, Inc., Atlanta, Ga., a corporation of Georgia

Filed Mar. 25, 1963, Ser. No. 267,533
13 Claims. (Cl. 103—224)



1. A pulsation absorption system for absorbing pulsations of hydraulic pressure in a hydraulic line with a particular hydraulic pressure, said pulsation absorption device comprising, in combination, a closed cylindrical shell having two ends, a bottom, a centerline, and a top through which an air inlet hole passes; a pipe section extending through the cylindrical shell between the centerline of the cylindrical shell and the bottom of the cylindrical shell, said pipe section having its centerline parallel to and in the same vertical plane as the centerline of the cylindrical shell, having its ends extending outside the cylindrical shell and inserted into the hydraulic line, and having a slot extending through that portion of its length within the cylindrical shell and along that side nearest the bottom of the cylindrical shell; two baffle plates positioned within the cylindrical shell above the centerline of the cylindrical shell, the said two baffle plates extending from opposite sides of the cylindrical shell, lying in the same horizontal plane, and defining with the two ends of the cylindrical shell a rectangular opening and with the two ends and the top of the cylindrical shell a volume; and means responsive to the particular hydraulic pressure in the hydraulic line for injecting through the air inlet hole that volume of air necessary to fill the volume defined by the two baffle plates and the two ends and the top of the cylindrical shell each time the particular hydraulic pressure is developed within the hydraulic line.

3,188,976

JET PUMP

Adiel Y. Dodge, 206 S. Main St., Rockford, Ill.

Filed Sept. 23, 1963, Ser. No. 310,632
13 Claims. (Cl. 103—262)



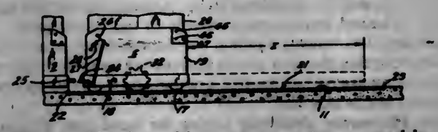
1. A jet pump comprising coaxial conduits flaring radially outwardly at one end to define outwardly flaring passages, one of the passages receiving at its smaller end a propellant fluid under relatively high pressure and the other being connected at its smaller end to a source of fluid to be aspirated, means defining a vortex mixing chamber communicating with the larger ends of the passages to receive fluids discharged therefrom, means forming a tangential outlet from the vortex chamber, and means in each of the passages upstream from its larger end to cause the fluids flowing therethrough to swirl in the same direction so that the fluids will mix and enter the vortex chamber while swirling in the same direction and will continue to swirl until they flow out the tangential outlet.

3,188,977

STORAGE SYSTEM

Carl Alvar Viktorsson, Saffle, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed Dec. 31, 1962, Ser. No. 248,482
13 Claims. (Cl. 104—235)



5. The combination with a storage system comprising a plurality of movable storage units which are horizontally disposed in a row, a plurality of means for detachably connecting the units in the row, each of the connecting means functioning to couple two adjacent units in the row when they are moved together, and independent uncoupling mechanism operatively associated with each of the connecting means to render the latter inoperable to couple two adjacent units in the row, each uncoupling mechanism being mounted on one of the two adjacent units connected by the detachable connecting means with which it is operatively associated, of structure for maneuvering the units in the row to provide an access path to a particular storage unit, said maneuvering structure comprising means for propelling a single unit

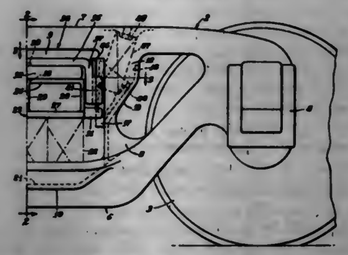
in the row, said propelling means including a rotatable member and means including a reversible electric motor for driving the rotatable member, the rotatable member and motor being mounted on the single propelled unit and movable therewith, an elongated member which is maintained in a fixed lengthwise position with respect to the row of movable units and coacts with the rotatable member and functions to move the single propelled unit when the rotatable member coacting therewith is driven by the motor, the single propelled unit functioning as a driving unit and the other units in the row functioning as driven units, and electrical control means on each of the driven units for selectively controlling the motor on the driving unit, the aforementioned electrical control means on each of the driven units including means for rendering the motor operable to move the driving unit forward and rearward and for rendering the motor inoperable to move the driving unit.

3,188,978
INDUSTRIAL TRUCKS
John Robert Vernon Dolphin and Ivor James Charles Kent, Basingstoke, England, assignors to Lansing Bagnall Limited, Basingstoke, Hampshire, England, a British company
Filed Feb. 12, 1963, Ser. No. 257,943
3 Claims. (Cl. 104—247)



1. An industrial truck comprising
(a) a truck chassis,
(b) a turntable-mounting at one end of the truck chassis,
(c) a sub-chassis mounted on the turntable-mounting for steering movements, which sub-chassis comprises a ground wheel, a brake therefor and driving means therefor,
(d) a hand control arm pivoted on the sub-chassis for up-and-down movement relatively thereto but so that it is restrained by its pivotal connection against lateral movement relatively to the sub-chassis,
(e) link means linking the hand-control arm and the brake, through which link means up-and-down movements of the control arm are transmitted to operate the brake, and
(f) means yieldingly urging the hand-control arm into a position in which it renders the brake operative, in combination with
(g) a steering arm pivoted on the sub-chassis for up-and-down movement relatively thereto but so that it is restrained by its pivotal connection from lateral movements relatively to the sub-chassis, the steering arm normally projecting from the sub-chassis in a direction away from the truck chassis,
(h) a guide-rail-engaging element on the free end of the steering arm,
(i) means for yieldingly urging the steering arm downward thereby yieldingly to urge said guide rail-engaging element to engage the guide-rail,
(j) a solenoid-and-plunger on a part fixed relatively to the sub-chassis, the solenoid-and-plunger being arranged for the plunger to move the hand-control arm out of said position in which it renders the brake operative when the solenoid is energized thereby to release the brake, and
(k) control means for operating the solenoid-and-plunger and for controlling motion of the truck, which control means are operable from the opposite end of the truck to that at which the sub-chassis is located.

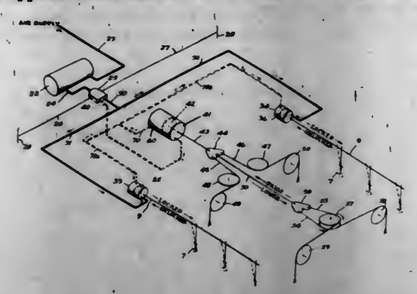
3,188,979
RAILWAY TRUCK
Carl E. Tack, Elmhurst, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Aug. 7, 1961, Ser. No. 129,805
7 Claims. (Cl. 105—197)



2. In a self-aligning spring plankless railway truck, spaced side frames having tension and compression members interconnected by spaced columns to define windows, wheel and axle assemblies supporting said side frames and journaled for free rotational and limited axial movements relative thereto, spring groups seated on said tension members, a tie member interconnecting said side frames and resiliently supported adjacent its ends upon said spring groups for vertical movement within said windows, pads of resilient material mounted upon said tie member adjacent the ends thereof, a bolster overlying said tie member and supported adjacent its ends upon said pads within said windows, and means securing the upper and lower surfaces of said pads to the bolster and tie member, respectively, whereby the pads serve to yieldably resist vertical, angular and longitudinal movements of the bolster relative to the tie member, said bolster having a top wall and depending side walls, said tie member and pads being arranged under said top wall and between said side walls.

3,188,980
PNEUMATICALLY ACTUATED HOPPER CLOSURE LATCHING AND OPERATING DEVICE
Daniel J. Tearpock, Iselin, and Einar O. Lunde, Clifton, N.J., assignors to Magor Car Corporation, Clifton, N.J., a corporation of Delaware
Filed Aug. 17, 1961, Ser. No. 132,092
3 Claims. (Cl. 105—240)

1. In a hopper type car having a pair of pivoted downwardly swinging doors, a source of fluid under pressure, means operated by said fluid under pressure for raising and lowering the doors in unison, said raising and lowering means comprising a cylinder, a piston slidable within said cylinder, a rod connected at one end to said piston, a first rigid link disposed above the level of said doors and pivotally connected to the other end of said rod, a first pair of cables each having one end connected to said pivotal link and each having their other end connected to an adjacent end of one of said doors, a connector member being longitudinally rigid secured at one end to said first link, a second rigid link disposed above the level of said doors and pivotally connected at the other end of said connector member in tandem with said first link, a sheave mounted in axial alignment with said links and rod, and a second pair of cables each having one end connected to said second pivotal link passing around said sheave and each having their other end connected to an adjacent end of one of said doors at the end opposite from the connection point of said first pair



of cables to said doors, whereby, actuation of said piston by said fluid under pressure causes longitudinal displacement of said first and second pivotal links in tandem while the force of each pair of said cables at each end of said doors is equalized by pivotal displacement of said links to maintain positive movement of said doors during raising and lowering thereof.

3,188,981
RAILWAY CAR
Rolf Mowatt-Larssen, Bridgeton, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 16, 1964, Ser. No. 338,072
4 Claims. (Cl. 105—368)

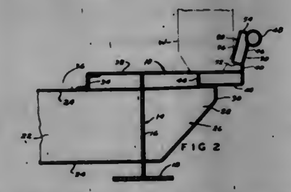
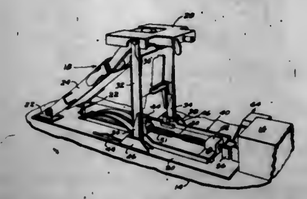


FIG 2

1. In a railway flat car adapted to transport highway trailers, an underframe comprising a center sill structure extending substantially the length of the underframe, a plurality of crossbearer members spaced along the length of the center sill structure and extending laterally therefrom, a side sill structure on each side of the center sill structure supported on the adjacent crossbearer members, a generally flat deck plate adjacent each side sill structure and disposed at a level below the upper surface of the side sill structure and adapted to support the roadway wheels of highway trailers, each of the side sill structures comprising a side sill web disposed adjacent the side edge of the adjacent deck plate and having an upper portion extending above the level of the deck plate, and an integral generally channel-shaped rub rail structure on the inner surface of each side sill web forming with the side sill web a box-shaped structure spaced from the deck plate, each channel-shaped rub rail structure comprising a lower leg welded to the upper portion of the associated side sill web at a position above the deck plate and extending in a generally lateral direction over the deck plate in generally parallel, spaced relation thereto, an upper leg welded to the upper portion of the associated side sill web in spaced parallel relation to the lower leg, and an integral connecting plate spaced inwardly from the side sill and extending between the upper and lower legs adapted to contact and guide the tires of a highway trailer on the railway car.

3,188,982
DRIVE MECHANISM FOR COLLAPSIBLE TRAILER HITCHES ON RAILWAY CARS
James W. Bergen, Lewisburg, and Edward F. Cove, Berwick, Pa., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 11, 1963, Ser. No. 315,601
1 Claim. (Cl. 105—368)

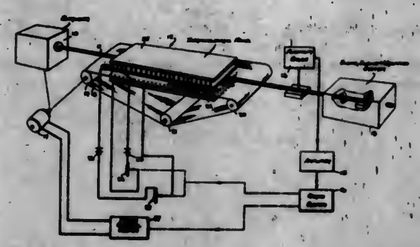


In a railway flat car having a deck plate for supporting trailers, a generally box-shaped draft gear housing projecting above the upper surface of the deck plate and extending rearwardly from an end of the railway car, a collapsible trailer hitch mounted on the car in general alignment with the longitudinal axis of the housing adjacent an end of the car and collapsing forwardly to a position closely adjacent the draft gear housing, said hitch including a saddle for engaging the king pin of a trailer and an elevating screw for raising and lowering the saddle, the elevating screw extending in a generally horizontal direction longitudinally of the car and having a free end disposed a relatively small distance from the rear end of said draft gear housing insufficient to permit a suitable power tool or the like between the elevating screw and the draft gear housing for rotating the elevating screw, the improvement comprising an offset drive mechanism secured to the deck plate closely adjacent the draft gear housing and operatively connected to the free end of said elevating screw in the space between the rear end of the housing and said free end for raising and lowering the saddle, said mechanism comprising a driven sprocket secured to the free end of said elevating screw, a drive sprocket mounted in lateral offset relation to said draft gear housing and in alignment with the driven sprocket transversely of the car, a sprocket chain connecting the sprockets in driving relation, and a socket on said drive sprocket having its longitudinal axis extending longitudinally of the car in lateral offset relation to the draft gear housing and adapted to be engaged by a suitable power tool or the like to rotate said driven sprocket and said elevating screw for raising and lowering the saddle, a support bracket on the deck plate for supporting the free end of said elevating screw, and a housing extending between said sprockets, said housing having a portion thereof cut away to form an opening extending upwardly from the deck plate to receive at least a portion of said support bracket and the extending end of the elevating screw.

3,188,983
APPARATUS FOR CONTINUOUSLY CONVEYING AND COOLING EXTRUDED SUBSTANCES
Victor T. Tomberg, Elmhurst, N.Y., assignor to Topps Chewing Gum Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 9, 1963, Ser. No. 250,371
14 Claims. (Cl. 107—14)

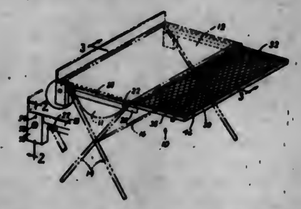
1. Apparatus for conveying and simultaneously cooling a heat-softened product to cause said conveyed product to reach a predetermined degree of plasticity, said appa-

ratus comprising a thermoelectric cooling device having a cooling surface, an adjustable direct-voltage source for energizing said device, means to convey said product along said surface at an adjustable rate, means to sense



the plasticity of said product after it leaves said surface to provide a control signal analogous thereto, and means responsive to said signal to adjust said voltage and the rate of conveyance to an extent maintaining said predetermined degree of plasticity.

3,188,984
SAFETY NET FOR DIAPER TABLES
Eva Brooker, P.O. Box 718, Stamford, Conn.
Filed June 16, 1964, Ser. No. 375,498
5 Claims. (Cl. 108—26)



1. In a diaper table having an underframe and an infant support panel having a front access side, a safety accessory comprising, in combination, bracket means for attachment to opposite ends of the table frame, a safety frame slidably carried by said bracket means for reciprocating lateral movement relative to said access side of said support panel, spring means normally urging said safety frame outwardly of said access side of said support panel to receive an infant falling from said support panel and being overcome by the pressure of a person leaning against said safety frame adjacent said access side of said panel, and counterbalancing means carried by said bracket means adjacent the opposite side of the panel to offset the weight of an infant received by said safety frame.

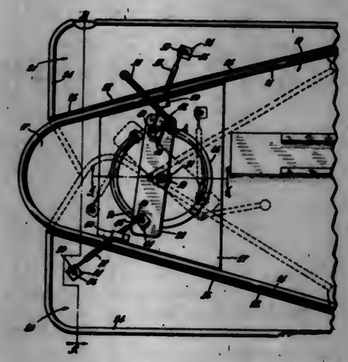
3,188,985
IRONING TABLE TOP
John R. Lucas, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Mar. 6, 1963, Ser. No. 263,323
4 Claims. (Cl. 108—77)

1. In combination with an ironing table top having a body portion with parallel lateral edges and a nose portion extending integrally from one end of said body portion and having converging lateral edges,

(a) a pair of wings swingably connected to the opposed lateral edges of said nose portion on axes parallel to said top,

(b) a pivot plate rotatably interconnected to the underside of said nose portion on an axis normal to said top and disposed within the lateral extent of said nose portion, and

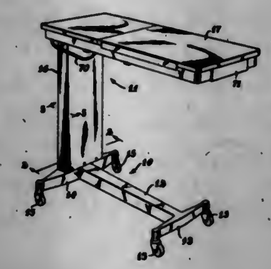
(c) a pair of links swingably interconnected to said pivot plate and said pair of wings whereby upon movement of said pivot plate in one direction said links will swing said wings into an extended position in which they are coplanar with said top and their outwardly disposed lateral edges are in substantial longitudinal alignment with the lateral edges of the body portion and upon movement of said pivot plate in an opposite direction said links will swing said wings into a retracted position in which they are



disposed below and within the lateral extend to said nose portion, and

(d) said links being interconnected to said pivot plate at different distances from the axis of said pivot plate whereby the wing interconnected to the link interconnected closer to the pivot plate axis will start toward its retracted position prior to the other wing during wing retraction to permit said wings to be in overlapping relationship in retracted position.

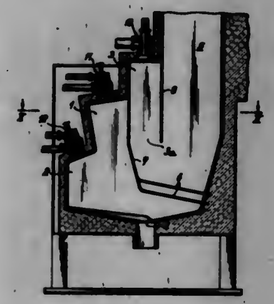
3,188,986
BEDSIDE TABLE
Eugene E. La Vigne, Creve Coeur, Mo., assignor to Brunswick Corporation, a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 185,923
4 Claims. (Cl. 108—136)



1. A bedside table comprising: a base having a vertical guide portion; a table top having a support portion adapted to cooperate with said vertical guide portion of the base to maintain the top horizontal as its vertical position is varied over a range; a constant force spring connected between said base and said table top to apply a constant force tending to raise said table top over said range; and locking means adapted to operate between said base and said table top to lock said table top at any vertical position within said range and including a vertical shaft secured to said base, a floating wedge plate pivotally

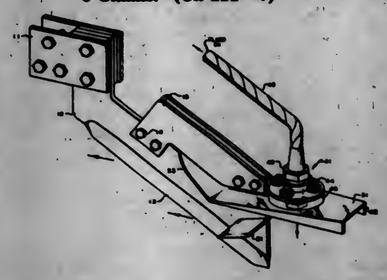
mounted between two abutments secured to said support portion of the top, said floating wedge plate having an aperture therein to surround said shaft and to lock said support portion to said shaft by a wedging action when said plate is pivoted from a horizontal position, a spring connected to said wedge plate and to said support portion to force said wedge plate to pivot away from a horizontal position into a wedging lock position with said shaft, and linkage connected to said wedge plate to unlock said wedge plate from said shaft, said linkage including an operating handle rotationally secured to said table top for upward unlocking movement and protruding below the underside of said table top.

3,188,987
COMBINED COAL DUST AND GAS FIRING SYSTEM
Otto Anschutz, Gummersbach, Rhineland, Germany, assignor to L. & C. Steinmüller G.m.b.H., Gummersbach, Rhineland, Germany
Filed Mar. 22, 1962, Ser. No. 181,697
Claims priority, application Germany, Mar. 25, 1961, St 17,628
6 Claims. (Cl. 110—22)



1. A melting chamber firing system which comprises: means defining a substantially vertical stepped coal dust fired combustion chamber comprising first and second portions each having a ceiling and each having coal dust burner means in the ceiling thereof and each being passed through by the flue gases from the top to the bottom, and means defining a substantially horizontal combustion chamber portion connected at one end to the bottom of said coal dust fired combustion chamber and extending therefrom in the flow direction of the flue gases, means defining a radiation chamber connected to and extending upwardly from the other end of said horizontal chamber portion, a slag collecting grate arranged between said other end of said horizontal chamber portion and said radiation chamber through which said flue gases pass, a slag discharge opening in the bottom of said horizontal chamber portion which is arranged ahead of the slag collecting grate in the flow direction of the flue gases, and means defining a substantially vertical gas fired combustion chamber separate from both said first vertical combustion chamber and said radiation chamber and located therebetween and having a discharge opening at the bottom thereof, said last named means comprising substantially vertical partitions separating said gas fired combustion chamber from said coal dust fired combustion chamber and separating said gas fired combustion chamber from said radiation chamber, and a ceiling having gas burner means therein, said discharge opening at the bottom of said gas fired combustion chamber leading directly into said radiation chamber at the bottom thereof on the side of said grate opposite said horizontal chamber portion.

3,188,988
APPARATUS FOR APPLYING AGRICULTURAL CHEMICALS TO THE SOIL
Alvin Wayne Peck, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 16, 1962, Ser. No. 238,112
6 Claims. (Cl. 111—7)



5. Apparatus for applying a normally gaseous fluid under pressure to the sub-surface of soil comprising:

(a) a swept back, narrow soil parting knife having a sharpened leading edge and being adapted to open a narrow slit in the soil;

(b) a pair of horizontal extensions attached to said knife adjacent the trailing edge thereof, the said extensions being tilted slightly downward whereby to open a horizontal slot beneath the surface of said soil and to aid in drawing said knife downwardly;

(c) a soil smoothing and compacting blade attached by bracket means to an upper portion of said knife, said blade being provided at a leading edge with an upswept deflector portion and along its sides with downwardly extending and rearwardly tapered side wings for drawing soil over the slit in the soil and for compacting same to prevent escape of a gaseous fluid injected into said slit, said blade being positioned generally above the upper side of said knife and having a portion extending beyond the trailing edge of said knife;

(d) a conduit for supplying a normally gaseous fluid under pressure to said apparatus, and

(e) nozzle means mounted on said blade adjacent the trailing edge of said knife, said nozzle means being adapted to project said fluid into said slit from a point above the surface of the soil.

3,188,989
APPLICATOR KNIFE
Douglas Johnston, Athens, Ala., assignor to Decatur Foundry & Machine Co., Decatur, Ala., a partnership
Filed Apr. 8, 1963, Ser. No. 271,242
2 Claims. (Cl. 111—7)



1. In combination, an applicator blade structure for subsurface application into the soil of liquids, the elements

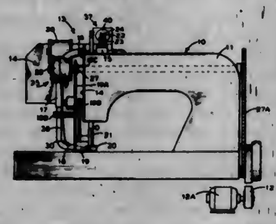
of the structure comprising a leading blade and a trailing materials dispensing tube, and at least two vertically spaced mounting means for mounting the elements together with said tube on and at the rear of said leading blade for subsurface dispensing, each mounting means comprising a tab on one of the elements, a hole through the tab, a slot in the other element, the slots being larger than the tabs to loosely receive the tabs, and each mounting means further including a pin fixed to the said other element and extending through the hole in the tab, the holes in the tabs being larger than the diameters of the pins, the aforesaid mounting means providing substantial play in the fit of the holes around the pins and the fit of the tabs within the slots to enable the tube to pivot freely relative to the blade.

3,188,990

APPARATUS FOR SERGING AND FRINGING

Bynom L. Chambers, Dalton, Ga., assignor, by mesne assignments, to Bellndco, Inc., Atlanta, Ga., a corporation of Delaware

Filed Apr. 12, 1962, Ser. No. 186,956
8 Claims. (Cl. 112—64)



1. In combination with a sewing machine, the improvement of an air fringing attachment operatively connected to said machine for permitting said machine to be selectively operated for performing either a straight serging operation or combined serging and fringing operation, said attachment including an air nozzle, means for supplying air to said nozzle, means for feeding yarn to said air nozzle during a serging and fringing operation whereby the yarn entering the air stream flowing through said air nozzle is fed to the sewing machine to form the fringe, and means operative for simultaneously stopping the feed of said yard and flow of air through said nozzle when only the serging operation is to be performed.

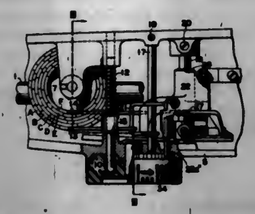
3,188,991

CAM CONTROLLING MECHANISM IN A PATTERN STITCH SEWING MACHINE

Atuso Ohira, Kariya, Japan, assignor to Aichi Kogyo Kabushiki-Kaisha, Kariya, Japan

Filed Feb. 1, 1963, Ser. No. 255,632
Claims priority, application Japan, Feb. 5, 1962, 37/4,347
4 Claims. (Cl. 112—158)

1. In a pattern stitch sewing machine for utilizing a plurality of pattern cams, the combination of a driving shaft, a cam disc having an axis perpendicular to the plane of the disc which axis is also perpendicular to the driving shaft, said cam disc having a plurality of concentric cam patterns on at least one face thereof, an actuating shaft and contact finger assembly mounted adjacent said disc cam and movable in the axial direction of the actuating shaft for moving the contact finger from one cam pattern to another, the contact finger being pivotable about said actuating shaft and engageable with the cam patterns, means biasing said assembly to move said contact finger outwardly of said cam disc, a manually rotatable controlling member in a plane perpendicular to the plane of said cam disc and having a contact finger lifting cam and a contact finger feed cam thereon, the contact finger feed cam being engaged with said assembly for moving said assembly against the action of said biasing means, and contact finger lifting means engaged with



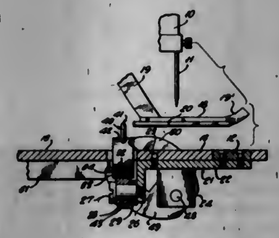
said contact finger lifting cam and with said contact finger for lifting said contact finger from engagement with said cam patterns prior to the shifting of said assembly when said manually rotatable controlling member is rotated.

3,188,992

THREAD CUTTER

Edward Freeman, Fall River, and Karl Tyas, Ocean Grove, Mass., Harry Firestein, Barrington, R.I., and Bert Greene, Larchmont, N.Y., assignors to Louis Hand Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 29, 1962, Ser. No. 233,604
4 Claims. (Cl. 112—252)



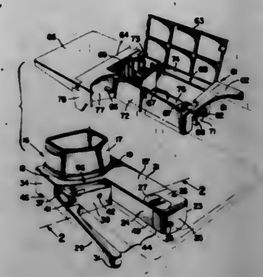
1. In combination with a sewing machine including a sewing needle and means for advancing a work piece along a predetermined path past said sewing needle, a pivotally mounted arm swingable between a raised and a depressed position and means normally urging said arm to said raised position, an electrically heated hot wire cutting element mounted on and extending beyond said arm and swingable with said arm between a raised and a depressed position across said work piece path forward of said needle, and a pivotally mounted actuating member including a cam surface along its upper edge disposed along the path of said work piece and movable with said actuating member between a raised and a depressed position, said actuating member further including an undersurface registering with the upper surface of said arm whereby said actuating member is normally held in its raised position by said arm and said urging means and movable to said depressed position when said cam surface is depressed by engagement with a work piece passing thereover to thereby effect a movement of said arm and said cutting element between said raised and depressed positions in response to the respective raising and depression of said actuating member to thereby cut threads positioned in the path of said cutting element on either the upstroke or downstroke of said cutting element.

3,188,993

CYLINDER BED SEWING MACHINE WITH AN ATTACHMENT BOX BED EXTENSION

Walter D. Szuba, Westfield, and Edward A. Bruder, Roselle, N.J., assignors to The Singer Company, a corporation of New Jersey

Filed June 15, 1961, Ser. No. 117,471
4 Claims. (Cl. 112—258)



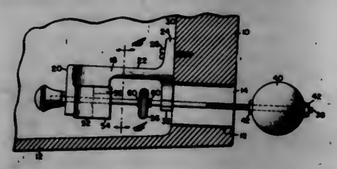
1. A sewing machine comprising in combination, a main bed, a standard rising above said main bed, a cantilever cylinder bed extending from a front portion of said main bed, and a supporting leg extending from a rear portion of said main bed, the cylinder bed, the main bed and the supporting leg defining and bounding three sides of an open ended cavity, a combination bed extension and attachment box designed to be received in said open ended cavity, and means for securing said combination bed extension and attachment box to said main bed and said cylinder bed.

3,188,994

AUTOMATIC BILGE DRAIN STOPPER

Leonard B. Dawson, 544 Loop Road, Hendersonville, N.C.

Filed Dec. 16, 1963, Ser. No. 330,885
2 Claims. (Cl. 114—197)



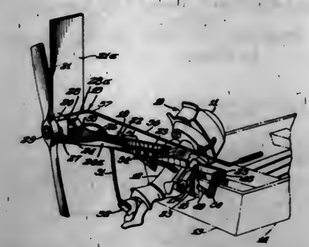
1. A bilge drain device for controlling the drain opening of a boat transom, said device comprising in combination: an elongate reciprocable actuating stem having forward and rear end portions, a support means for the stem comprising a body having a head, a mounting base, and a neck intermediate the head and the mounting base, bearing, means on the head and the mounting base, for supporting the reciprocable stem axially of the drain opening, with the rear end portion of the stem extended into the drain opening and the forward end portion thereof accessible inboard of the boat, an outboard buoyant valve member mounted upon the rear end portion of the stem for movement with the stem to and from seated position upon the drain opening outboard of the transom, and cooperative magnetic elements carried by the body and the stem, for releasably holding the stem at a shifted position at which the valve member seats upon the drain opening to close said opening.

3,188,995

AIR PROPELLER ATTACHMENT FOR MARINE ENGINES

Henry J. Barten, 217 Greenwood Drive, West Palm Beach, Fla.

Filed Aug. 23, 1963, Ser. No. 304,105
9 Claims. (Cl. 115—.5)



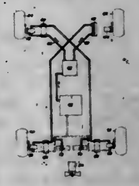
1. In combination, for use on a boat,
a marine engine of the outboard type adapted to be mounted on the boat and having a water propeller drive shaft pivotally connected thereto for movement into and out of the water,
a rotatable air propeller drive shaft having an air propeller mounted thereon and adapted for mounting on the boat, and flexible power transmitting means for operatively connecting said water propeller drive shaft to said air propeller drive shaft for driving said air propeller,
whereby said engine is adapted to provide power for both water and air propulsion and whereby said water propeller drive shaft can be pivotally moved out of the water during air propulsion operation and can be moved into the water during water propulsion operation while said force transmitting means is connected between said drive shafts.

3,188,996

HYDROSTATIC TRANSMISSION SYSTEM

William H. Thompson, Milwaukee, Wis., assignor to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin

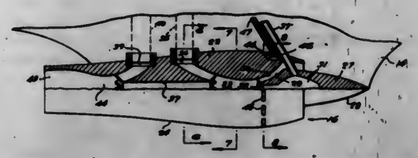
Filed Aug. 22, 1961, Ser. No. 133,169
8 Claims. (Cl. 115—1)



2. A hydrostatic transmission system for providing power to the driving means of an amphibious-land vehicle comprising in combination, a variable volume hydraulic pump having first and second power outputs, two front and two rear ground engaging wheels for driving said vehicle over land, and a water propulsion motor for driving said vehicle in water, valve control means having a first position selectively routing said first output to one of said two front wheels and to one of said rear wheels furtherest therefrom, and second valve control means for selectively routing said second output to the other of said front wheels and in series to the other of said rear wheels, said first and second valve control means having alternate positions selectively diverting said first and second outputs from said front wheels to said water propulsion motor, first means to detect that output carrying the greater load, second means for varying the output of said pump, and third means responsive to the detected pressure of said

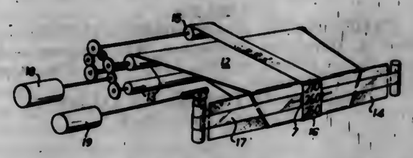
first means and operatively connected to said second means, and a cut-off means for rendering said third means inoperative when said valve is in its second position.

3,188,997
MARINE PROPULSION SYSTEM
Willard R. Christensen, Duffef Mill Road, Rte. 3, Box 55, Gaithersburg, Md.
Filed Nov. 27, 1963, Ser. No. 326,416
16 Claims. (Cl. 115—11)



15. A propulsion device comprising an elongated body having a forwardly opening front venturi cavity and a rearwardly opening rear venturi cavity, central passage means communicatively connecting the rear end of the front venturi cavity to the forward end of the rear venturi cavity, pump means to supply liquid under pressure into the front venturi cavity, and means to admit gas under pressure into the intake portion of the rear venturi cavity concentrically around the outlet of said central passage means.

3,188,998
DISPLAY OF INFORMATION
Francis Harold Wood, Watford, England, assignor to Elliott Brothers (London) Limited, London, England
Filed Aug. 30, 1962, Ser. No. 220,468
Claims priority, application Great Britain, Sept. 1, 1961, 31,607/61
3 Claims. (Cl. 116—129)



2. Apparatus for displaying information, comprising a means defining a rectangular display area of one color, two longitudinally tapered blinds of a contrasting color extending longitudinally across said display area, said tapered blinds extending edge to edge, a tape carrying quantitative information extending longitudinally across said display area, first driving means coupled to said tape for moving said tape longitudinally across said area, second driving means coupled to said blinds for effecting longitudinal movement of said blinds in unison for providing a field of variable width representing in analogue form a first variable quantity, and differential means coupled to said blinds for effecting differential longitudinal movement of said blinds for providing a lateral displacement of said field of variable width representing in analogue form a second variable quantity.

3,188,999
JET RESONATOR
Robert W. Baxter, Anderson, Ind., assignor to Sonitrol Corporation, Anderson, Ind., a corporation of Indiana
Filed Mar. 11, 1963, Ser. No. 264,214
5 Claims. (Cl. 116—137)

1. A resonator comprising a base member defining a base recess and having a first passage opening into the base recess and accommodating a first element having a frusto-conical and projecting into the base recess, said first element having coaxial passage extending therethrough for passage of a stream of compressed air, said base member having a second passage opening into the base recess and accommodating a second element projecting into the base recess and defining a coaxial recess, said second and first elements being coaxially aligned and spaced apart, a flexible member extending crosswise relative to the axis of said first and second elements and proximate to the



space therebetween, said flexible member being held against said first and second elements by engagement with an adjustable means for varying the pressure of the flexible member against said second and first elements, said flexible member defining a curved surface between said first and second elements, said adjustable means projecting into the base recess, said base member having a third passage opening into the base recess and accommodating said adjustable means, and a flaring bell shaped portion defined by a member and contiguous with the base recess.

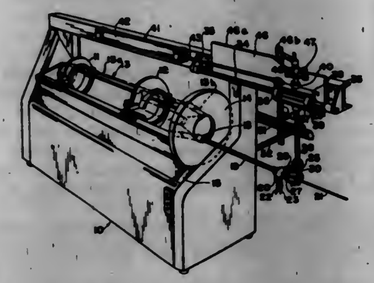
3,189,000
SIGNAL GENERATOR
Edward A. Salsers, Mount Prospect, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Continuation of application Ser. No. 43,234, July 15, 1960. This application Jan. 8, 1964, Ser. No. 340,581
9 Claims. (Cl. 116—137)



1. A supersonic signal generator including in combination, a housing and support means, a sonic radiator mounted on said support means and having a striking surface adapted to be impinged for production of a supersonic signal to be radiated externally of said housing, operating means mounted on said support means and manually movable between first and second positions, first spring means biasing said operating means to the first position thereof, a rocker lever having first and second end portions and a striker on said first end portion, means pivotally and slidably mounting said rocker lever intermediate the ends thereof so that said rocker lever is pivotal to permit said striker to impinge said striking surface and so that said rocker lever is slidable with respect to said operating means, the second end portion of said rocker lever being disposed to be engaged and disengaged by said operating means moving between said first and second positions for

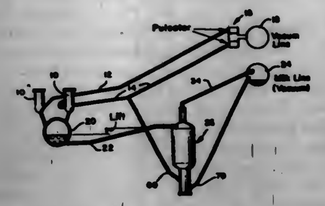
cocking and release of said rocker lever, second spring means engageable with said rocker lever for slidably urging said rocker lever toward said operating means and for pivotally urging said striker toward said striking surface upon disengagement of said operating means and said rocker lever for energizing said radiator by said striker, and third spring means pivotally urging said rocker lever to a position spacing said striker from said striking surface with said operating means in second position and disengaged from said rocker lever, said operating means and said second end of said rocker lever each having rigid engageable portions with rounded surfaces engageable upon movement of said operating means from said second position to said first position to cause slidable movement of said rocker lever away from said operating means to permit repositioning of said operating means by said first spring means.

3,189,001
APPARATUS FOR FLAME SPRAYING SURFACES OF VARYING DIAMETERS
Albert J. Thoma, Mountain View, Cornelius J. Bogert, Jr., Fair Lawn, and William F. Brown, Butler, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 16, 1960, Ser. No. 49,904
6 Claims. (Cl. 118—318)



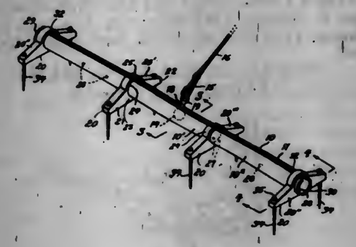
1. Apparatus for coating a longitudinally extending surface concentric to an axis of revolution at varying radial distances therefrom with a flame spray of a solid material rendered molten by the flame comprising a tube having a nozzle at one end, means for mounting the tube and nozzle for movement longitudinally of and toward and away from the axis of revolution of the surface to be coated, means for supplying a combustible mixture to the tube which burns at the outlet from nozzle, means for feeding coating material through the tube to the nozzle which is melted by the flame and propelled in a fine spray in a diverging pattern by the blast of the flame, a variable speed motor connected to rotate the surface to be coated at an angular velocity inversely proportional to changes in the radius of said surface from its axis of revolution to relatively move the nozzle and surface at a constant linear velocity therebetween, a variable speed motor connected to move the nozzle longitudinally of the surface to be coated at a velocity inversely proportional to changes in the radius of said surface to maintain a constant pitch between turns of the helical path traced by the nozzle on the surface, a profile cam having a contour corresponding to the surface to be coated, and a cam follower engaging the profile cam and connected to the nozzle and variable speed motors for maintaining the nozzle at a constant distance from the surface to be coated as it moves longitudinally thereof and maintaining a constant relative velocity and pitch of the nozzle and surface at all radial distances of the surface from the axis of revolution.

3,189,002
VACUUM STABILIZING UNIT FOR MILKING SYSTEMS
Daniel O. Noorlander, Madison, Wis., assignor to Dairy Equipment Company, Madison, Wis., a corporation of Wisconsin
Filed Feb. 6, 1963, Ser. No. 256,573
3 Claims. (Cl. 119—14.07)



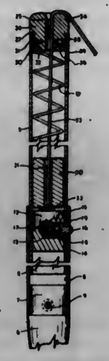
1. In a milking system for delivering milk from the claw of a milking unit to a milk line comprising:
a vacuum stabilizing unit including a chamber connected to the claw for receiving milk therefrom, said unit including pump means for pumping milk from said chamber to said milk line;
means for drawing a vacuum on said chamber; and
means for drawing a vacuum on the outlet of said pump means to facilitate the pumping of milk to the milk line, said last mentioned means including a means for subjecting said milk line to vacuum and a milk carrying conduit connected between said pump outlet and said milk line.

3,189,003
ANIMAL TETHER DEVICES
Carl Canfield, 229 Beechwood Road, Norristown, Pa.
Filed Nov. 16, 1962, Ser. No. 238,106
8 Claims. (Cl. 119—129)



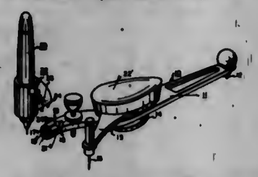
1. An animal tether device comprising:
a substantially hollow, longitudinal track member having a lower portion adapted to be embedded in the ground and an upper portion adapted to be exposed above the ground;
a longitudinal slot disposed in said upper portion;
means to secure said track member to the ground with said lower portion embedded in the ground, and said slot in exposed condition; and
a follower member comprising:
a base portion adapted to be disposed within said hollow track member,
a stem projecting from said base portion and through said slot, and
a retaining portion disposed on said stem and adapted to have secured thereto, the end of an animal leash.

3,189,004
ANIMAL TETHER
Fred Sinclair, 72 Leonard Ave., Ottawa, Ontario, Canada
Filed July 2, 1962, Ser. No. 206,851
2 Claims. (Cl. 119—124)



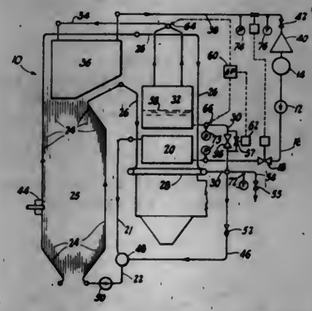
1. A tether for pets, other animals, or the like, comprising a ground engaging mounting socket sleeve, a pointed wooden peg with a concentric neck of reduced diameter projecting from one end of said sleeve, a tubular column rising from the other end of said sleeve and releasably locked therein, said column having a removable plug in the socket sleeve engaging end and an apertured cap closing the other end, a retractible tether line passing freely through said cap and a counterbalance weight on an end of said line housed in said column and normally slidable between said removable plug and said cap, wherein said plug houses a spring-urged radially disposed plunger and said tubular column and socket sleeve have normally registering perforations into which said plunger extends serving to normally lock said plug in said column and releasably lock said column in said socket sleeve.

3,189,005
STRUCTURE FOR LETTERING SCRIBERS
Gunnar B. Hansen, 1143 Sunnyside Ave., and Frank L. Johnson, 1129 East 4th South, both of Salt Lake City, Utah
Filed Aug. 12, 1963, Ser. No. 301,556
2 Claims. (Cl. 120—98)



1. In a lettering scriber including a scriber frame, a tail pin affixed to and depending from a rearward portion of said scriber frame, and a scriber point affixed to said frame forwardly of said tail pin, an improvement comprising a writing tool holder affixed to said frame, said writing-tool holder comprising a hollow holder portion, and an interiorly threaded adapter ring cooperably disposed within said hollow holder portion and adapted to receive the threaded portion of a barrel of a mechanical drawing pen, and wherein said adapter ring is vertically adjustable within said hollow holder portion and wherein said structure includes means for releasably securing said adapter ring to and within said hollow holder portion at a desired position, and wherein said hollow holder portion of said writing tool holder was provided with vertical wall slots, said adapter ring being provided with threaded studs protruding outwardly through said slots, and nut means threaded upon said threaded studs for frictionally and compressingly securing said adapter ring to and within said hollow holder portion of said writing-tool holder.

3,189,006
APPARATUS AND METHOD FOR STARTING A VAPOR GENERATING POWER PLANT
Edward L. Kochey, Jr., Colebrook, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Nov. 20, 1962, Ser. No. 238,885
8 Claims. (Cl. 122—406)



1. A method of starting a forced flow once-through vapor generator having a first heating section including vapor generating furnace walls and having a second heating section including a primary superheater and a finishing superheater said heating sections being directly connected and being serially arranged for flow of a vaporizable fluid therethrough; said method comprising the following steps:
(1) maintaining a body of heated working fluid at a predetermined relatively high pressure in said first heating section;
(2) flowing working fluid from said first heating section directly to said primary superheater, while reducing the pressure thereof from said high pressure down to a predetermined low pressure maintained in said primary superheater said low pressure being such that a partial flashing of said fluid into vapor occurs, so as to obtain a body of vaporizable fluid and a body of vapor, and establish a fluid level in said primary superheater;
(3) generating additional vapor from said body of vaporizable fluid in said primary superheater and passing vapor to said finishing superheater for superheating therein;
(4) conducting said superheated vapor to a point of use; and
(5) controlling the flow of vaporizable fluid from said first heating section to said primary superheater to establish and maintain the fluid level in said primary superheater within desired limits.

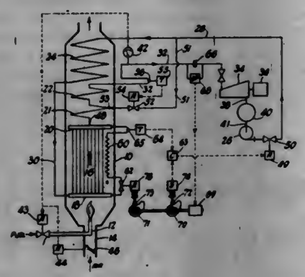
3,189,007
STEAM GENERATING UNIT
Max H. Kuhner, Oakham, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 23, 1963, Ser. No. 310,643
6 Claims. (Cl. 122—491)

1. A steam generating unit, comprising
(a) a steam-and-water drum of generally elongated cylindrical form,
(b) a steam separator housing of elongated tubular form lying in the drum with its axis parallel to the axis of the drum, the housing having closed ends,
(c) a dry pipe lying within and spaced from the housing generally coaxial thereof, the pipe being shorter than the housing and having at least one open end extending to a point immediately adjacent to the end of the housing,
(d) a steam off-take conduit located on the dry pipe at a position substantially removed from the said open end, the off-take conduit extending from the pipe and through the housing,



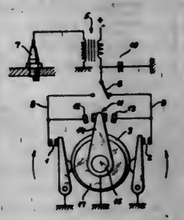
(e) means forming an entrance slot extending longitudinally of the housing,
(f) a water outlet slot extending longitudinally of the housing diametrically opposite the inlet slot,
(g) a drain trough underlying the housing to receive water from the outlet slot, and
(h) means forming a passageway surrounding the dry pipe leading from the outlet slot to the entrance slot to cause steam which does not flow from the inlet slot to the inside of the dry pipe to join steam entering the entrance slot for the first time.

3,189,008
METHOD AND APPARATUS FOR CONTROLLING A VAPOR GENERATOR OPERATING AT SUPERCRITICAL PRESSURE
Wilbert W. Schroedter, West Hartford, and Richard D. Hottenstine, Windsor, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,581
8 Claims. (Cl. 122—451.1)



4. In a vapor power plant comprising a forced once through flow boiler producing superheated vapor at supercritical pressure and at variable vapor output by absorption of heat from a stream of combustion gases, a system for regulating the supply of the working fluid in accordance with the vapor output required by varying operating conditions of the plant, said system comprising in combination:
(a) means for flowing a major quantity of the working fluid in first heat exchange relation with said stream of combustion gases to raise the temperature of the fluid to a predetermined vapor outlet temperature;
(b) means for flowing a minor control quantity of the working fluid in second heat exchange relation with said stream of combustion gases and in parallel flow relation with said major quantity of working fluid, to raise the temperature of said control fluid quantity to a predetermined control vapor temperature that is related to said vapor output;
(c) means for establishing a desired first relationship between said control temperature and any given vapor output;
(d) means for establishing a desired second relationship between an operating characteristic of said control quantity and an operating characteristic of said major quantity for any given vapor output;
(e) means for regulating the flow rate of said control fluid quantity in response to said second relationship to maintain the temperature thereof at said predetermined control vapor temperature; and
(f) means for regulating the fluid flow rate of said major working fluid quantity in response to said control temperature as maintained by said second relationship between the operating characteristic of said control quantity and the operating characteristic of said major quantity for any given vapor output.

3,189,009
IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINES
Stig Andersen, 9 Peter Hutfeldstraede, Copenhagen, Denmark
Filed Jan. 18, 1963, Ser. No. 252,522
Claims priority, application Denmark, Jan. 18, 1962, 251/62
6 Claims. (Cl. 123—41)

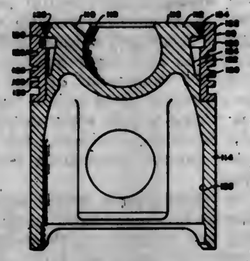


1. An ignition system for internal combustion piston engines, comprising in combination means for causing combustion of gas compressed in the engine during normal operation thereof, and means for causing combustion of gas compressed in the engine when the latter reverses its direction of rotation under the action of such compressed gas.

3,189,010
PISTON FOR INTERNAL COMBUSTION ENGINE
Walter F. Isley, Grosse Pointe, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Nov. 21, 1963, Ser. No. 325,271
10 Claims. (Cl. 123—41.35)

1. In an internal combustion engine a piston assembly comprising
(a) a piston member and a ring member secured to said piston member,
(b) said piston member having a head portion and said head portion having a combustion chamber cavity and an annular cavity spaced from and substantially encompassing said combustion chamber cavity,
(c) said ring member being provided with a plurality

of axially spaced piston ring grooves and being positioned to close said annular cavity,



(d) said ring member being constructed of a high temperature material such as stainless steel, and

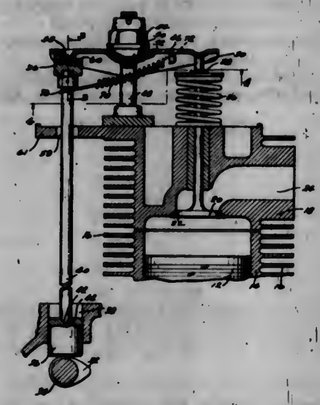
(e) means delivering a coolant to said annular cavity.

3,189,011

VALVE ACTUATING MECHANISM WITH MECHANICAL MEANS FOR SELF-ADJUSTMENT

Stephen F. Briggs, P.O. Box 1617, Naples, Fla.

Filed Apr. 30, 1964, Ser. No. 363,778
17 Claims. (Cl. 123—90)



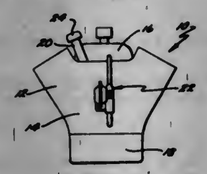
1. Mechanism for controlling the unseating and seating of a valve having a valve-seating spring, said mechanism comprising the combination with a rocker arm having mounting means on which it is oscillatable, and a push rod having an actuator and a free end for rocker arm oscillation, of means for the automatic self-adjustment of said mechanism both in a direction to increase the effective length of such mechanism and to decrease the effective length thereof, said last means comprising cam and cam follower means, one of which is fixed on the rocker arm and the other of which is fixed on the free end of the push rod, the cam having a surface which, throughout the range of relative movement required for self-adjustment, lies within narrow critical limits of angle with respect to a plane to which the push rod is normal, and means biasing the free end of the push rod in a direction transverse to its axis to effect relative movement between the cam and cam follower in a direction for increasing the effective length of the push rod, the cam inclination being such that valve spring bias tends to decrease such length, the angle of the cam surface throughout said range being so related to the coefficient of friction between the cam and cam follower means and to the bias of the valve-seating spring and to the bias of the means for biasing the free end of the push rod that throughout said range the entire displacement of the push rod by its actuator in a valve unseating direction is transmitted positively to the rocker arm to effect predetermined unseating displacement of the valve, the entire seating movement of the valve subject to the bias of said valve seating spring being transmitted through the cam and cam follower means to the push rod whereby the valve seating movement is positively controlled by said actuator; self adjustment between the cam and cam follower means occurring when the cam and cam follower means are substantially free of load after the seating of the valve.

3,189,012

CRANKCASE VENTILATION SYSTEM

John W. Humphreys, Muskegon, Mich., assignor to Johnson Products, Inc., Muskegon, Mich., a corporation of Michigan

Filed Jan. 22, 1964, Ser. No. 339,391
5 Claims. (Cl. 123—119)



1. An engine assembly comprising: an internal combustion engine including a sealed crankcase and intake manifold means; conduit means extending from said sealed crankcase to said intake manifold means; gaseous flow regulator means for said conduit including a valving means and a pressure responsive element operatively associated with said valving means to open and close it; said pressure responsive element being responsive to the pressure differential between positive crankcase pressure over a standard pressure to open said valving means and allow flow of gases from said crankcase to said intake manifold upon an increase in crankcase pressure over said standard pressure and causing said valving means to close upon a decrease of crankcase pressure to said standard pressure; and a one-way normally closed valve between said crankcase and the surrounding atmosphere subject to opening upon a decrease in crankcase pressure a predetermined amount below atmospheric pressure to open and admit a small quantity of atmospheric air to said crankcase until crankcase pressure increases above said predetermined amount.

3,189,013

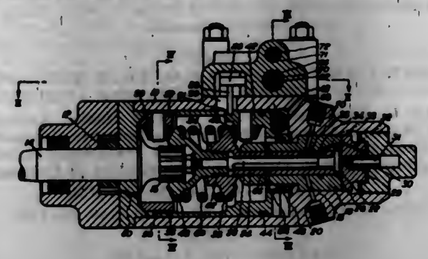
FUEL INJECTION PUMP

George Herbert Lee, Southport, England (% Leyland Motor Works, Hough Lane, Leyland, Lancashire, England)

Filed Dec. 19, 1962, Ser. No. 245,850
10 Claims. (Cl. 123—139)

1. A liquid fuel injection pump comprising a pump cylinder; a tubular plunger; a poppet valve having a stem extending through the bore of said plunger leaving free space for the passage of fuel and having a head adapted to carry the hydraulic pumping load and arranged to seat on the end of the said plunger to form a controllable valve; a spring interposed between said stem and said plunger tending to close the valve formed between the pumping head and the plunger; co-operating cam and cam follower, the one carried by said plunger and the other held within a casing of the pump; co-operating cam and cam follower, the one carried by said poppet valve spindle and the other by said pump casing; and means for

rotating said pumping head spindle and said plunger together, said cams and cam followers being so arranged that the pumping head and the plunger move together



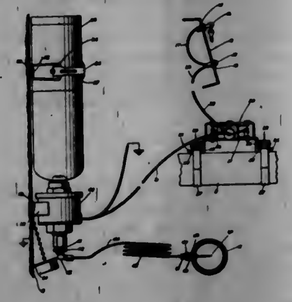
during the pumping stroke and separate at the end of it while the pumping head is still moving in the pumping direction.

3,189,014

ELECTRICALLY OPERATED STARTING AID FOR DIESEL ENGINES

Matthew L. Kaz, Sycamore, Ill., assignor to Turner Corporation, Sycamore, Ill., a corporation of Illinois

Filed July 13, 1962, Ser. No. 209,687
4 Claims. (Cl. 123—187.5)



1. In a starting system for an internal combustion engine having an intake manifold,

control circuit means for a starting aid device including

electrically operated actuating means for selectively injecting a shot of starting aid into the intake manifold of the engine,

a normally open control push button switch in said circuit means,

and a normally closed thermally sensitive switch in said circuit means having

a thermal element connected to the exhaust manifold of the engine to open the thermally sensitive switch when the exhaust manifold reaches engine operating temperatures,

whereby said starting aid actuating means can be actuated only upon operation of the control push button switch when said thermally sensitive switch is closed,

said actuating means comprising a solenoid motor having an armature plunger comprising a piston movable axially from a first to a second position upon energization of said coil,

a tank of starting aid liquid,

a cylinder in which said piston moves including a coupling connection at one end for attachment to said tank of liquid,

said cylinder including shoulders at opposite ends thereof prescribing therebetween a measuring chamber,

said plunger having spaced O rings each engageable with one of said shoulders when said plunger is at either said first or at said second position, said tank having a safety valve engaged by said plunger,

said cylinder and said plunger operable to admit a measured quantity of liquid from said tank into said measuring chamber,

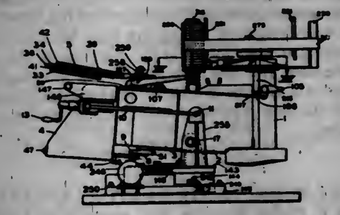
and conduit means connecting said measuring chamber to the intake manifold of the engine.

3,189,015

MAGAZINE AND TARGET FEEDING APPARATUS

Harry Clark Foster, East Alton, Ill., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia

Original application June 12, 1958, Ser. No. 741,571, now Patent No. 3,119,383, dated Jan. 28, 1964. Divided and this application Aug. 15, 1960, Ser. No. 61,794
1 Claim. (Cl. 124—47)



In a target throwing trap having a rotatable throwing arm, the combination of a frame, a magazine for holding a plurality of targets for timed delivery to said throwing arm comprising a rotary magazine detachably mounted on said frame and having in annular arrangement a plurality of holders for stacks of targets, individual resilient escapement means for each of said stacks with said escapement means pivotally mounted at the base of each respective stack to yieldingly engage the periphery of the lowermost target in each stack, a first means to index said magazine, a loading means adapted to move into close proximity to the lowermost target of one of the stacks of targets and to deliver said target to said throwing arm, and a second means adapted to engage and pivot said escapement means out of engagement with the lowermost target in close proximity to said loading means to thereby permit said stack of targets to drop on said loading means, said escapement means being adapted to remain free of said lowermost target and to re-engage the periphery of the target adjacent to the bottom target prior to movement of the said loading means to deliver said bottom target to said throwing arm, and means providing a timed relationship between the operation of said escapement means, said first means, said loading means, and said second means.

3,189,016

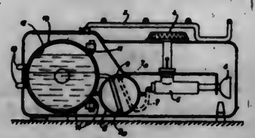
PORTABLE GAS STOVE

Gabriel F. Corlet, Pierre-Benite, France, assignor to Application des Gaz, Paris, France, a French joint-stock company

Filed Dec. 2, 1963, Ser. No. 327,214
Claims priority, application France, Dec. 7, 1962, 43,126, Patent 1,349,428
1 Claim. (Cl. 126—38)

In a portable gas stove, a relatively flat casing, a cylindrical gas-cartridge containing a liquefied combustible gas; means for supporting said cartridge for horizontal axial movement in said casing; an intermediate tank of

smaller size than said cartridge disposed horizontally in said casing beside said cartridge; a gas-burner in said casing; a gas-cock connected to and controlling said burner; a gas-intake head in the casing disposed axially opposite one end of the cartridge and having a hollow puncturing needle adapted to perforate said end of the cartridge when the latter is urged thereagainst; means for forcing the cartridge into puncturing contact with said needle; a first pipe connecting the lowermost portion of the intermediate tank with the hollow needle for delivering gas and



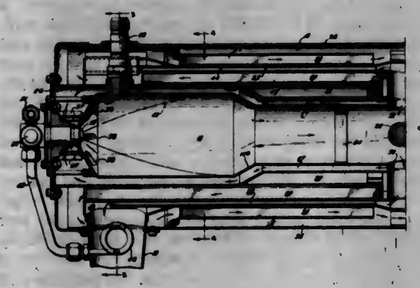
liquid into the intermediate tank; and a second pipe connecting the uppermost portion of the intermediate tank with the gas-cock for delivering gas to the burner, whereby the total height of the casing may be maintained at a minimum scarcely exceeding the diameter of the cartridge, and whereby any residual gas in the intermediate tank will vaporize and drive off any accumulated liquid therein through the first pipe when the cartridge is removed from the casing.

3,189,017

FUEL BURNING AIR HEATING APPARATUS

Patrick P. Hahn, Trooper, Pa., assignor to Thermal Research & Engineering Corporation, Conshohocken, Pa., a corporation of Delaware

Filed Feb. 28, 1962, Ser. No. 176,361
2 Claims. (Cl. 126—116)



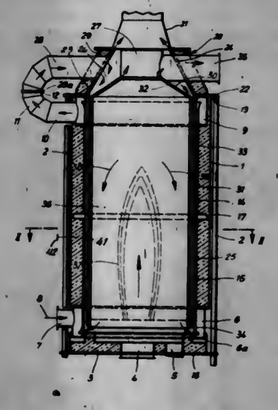
1. Burner heating apparatus comprising in combination, means forming a tubular combustion chamber having a larger upstream portion and a smaller downstream portion, fuel burner means in one end of said combustion chamber adapted to produce an outwardly flaring flame which strikes the wall of the combustion chamber at a circumferential region where the larger upstream portion of the combustion chamber merges with the smaller downstream portion thereof, means forming an annular combustion air intake duct of approximately uniform radial width surrounding said combustion chamber in heat exchange relationship with the outer surface of the combustion chamber for substantially the entire length of said combustion chamber, means forming an air heating duct surrounding said combustion air intake duct, said air heating duct closely surrounding and being in heat exchange relationship with the combustion air intake duct along the larger portion of said combustion chamber, and means forming a dead air space around the portion of the combustion air intake duct surrounding the smaller portion of said combustion chamber and inward of said air heating duct.

3,189,018

AIR HEATER WITH A PLURALITY OF TUBES POSITIONED COAXIALLY WITHIN ONE ANOTHER

Hans G. Sass, Krefeld, and Heinrich Hanke, Krefeld-Uerdingen, Germany, assignors to Industrie-Compagnie Kleinewefers Konstruktions- und Handelsgesellschaft m.b.H., Krefeld, Germany, a corporation of Germany

Filed Oct. 16, 1962, Ser. No. 230,931
Claims priority, application Germany, Nov. 20, 1961, J 20,858
11 Claims. (Cl. 126—116)



1. In an air heater having an outer casing and a generally cylindrical combustion chamber for burning fuel therein, the improvement comprising an air inlet and an air outlet of said casing, a plurality of spaced apart shells disposed substantially coaxially of said combustion chamber and of each other, the innermost of said shells being closed at its upper end by an end wall and forming said combustion chamber, the outermost of said shells defining on one side thereof with the interior wall of said casing a first portion of an air passageway for flow therethrough of air to be warmed and defining on the other side thereof with the next most outer shell a portion of a gas passageway for flow of products of combustion therethrough, end means closing the space between both ends of said outermost shell and said casing, said air inlet having an opening into said first portion of said air passageway, said next most outer shell and said innermost shell terminating short of the bottom of said heater and having an end wall member joined to the lower ends thereof and closing the space therebetween to form a second portion of said air passageway, duct means connecting said first and second portions of said air passageway for flow of air therethrough, said gas passageway having a connection with said combustion chamber and exhaust, said casing having an upper portion and a lower portion, means for removably supporting said upper portion of said casing upon said lower portion whereby said upper portion is liftable substantially vertically from said lower portion, a first part of said shells being mounted in suspension by and depending from said upper portion of said casing and a second part of said shells being mounted by said lower portion of said casing, said lower portion of said casing including a flame entry port extending therethrough into said combustion chamber.

3,189,019

OVEN DOOR STRUCTURE

George C. Pearce, Dayton, Jesse L. Evans, Tipp City, Millard E. Fry, Dayton, and Frank L. Milburn, Bellbrook, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application Mar. 31, 1960, Ser. No. 19,081, now Patent No. 3,157,175, dated Nov. 17, 1964. Divided and this application Aug. 31, 1962, Ser. No. 221,403
3 Claims. (Cl. 126—190)



1. An oven door adapted to be carried on supporting means comprising; an outer door panel including a peripheral flange and an attachment bracket; an inner door panel in nested relationship with said peripheral flange; said inner door panel formed of a folded single sheet of metal having a first wall portion, a second wall portion in juxtaposition to said peripheral flange and extending normal to said first wall portion, and a third wall portion in parallel spaced relationship to said first wall portion and interposed between said first wall portion and said outer door panel for reinforcing said door; a U-shaped door support channel in snugly nested engagement with said first and third wall portions; and means adapted for concealing said supporting means including a bushing member affixed to said door support channel between said inner door panel and said peripheral flange and adapted for pivotally engaging said supporting means, and an L-shaped retainer member having one leg affixed to said inner door panel along said third wall portion and another leg overlying said bushing member and adapted to retain said supporting means on said bushing; and fastening means cooperating with said attachment bracket and adapted for assembling said supporting means, said inner and outer door panels, said door support channel and said bushing member and said retainer member.

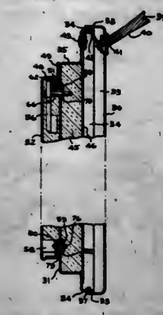
3,189,020

OVEN DOOR WITH FLOATING INNER PANEL

Clarence Getman, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,907
5 Claims. (Cl. 126—190)

1. In a domestic oven comprising a body with an insulated oven liner and a front-opening access door to define a heated cavity; the invention comprising a door design having an outer door panel, an inner door liner, and a floating inner panel, means holding said inner door liner to said outer door panel, and bracket means on the inner door liner for suspending said inner panel along its top edge so the inner panel is adapted to protrude into the oven liner, an elongated resilient gasket sandwiched between said inner door liner and said inner panel around the periphery thereof, pin means at two of the opposite corners of said inner panel and connected between the inner panel and said inner door liner, said pin means having limited relative movement between the inner panel and the inner door liner, and a slidable connecting means



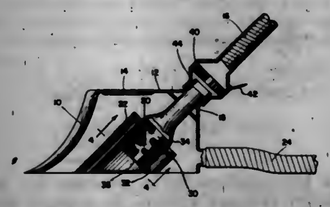
between a portion of the inner panel remote from said pin means, said connecting means serving to prevent the inner panel from moving away from the inner door liner while permitting relative parallel movement therebetween.

3,189,021

ICE MELTER

Paul T. Giguere, 27 Arbor Road, North Chelmsford, Mass.

Filed Mar. 21, 1963, Ser. No. 266,972
3 Claims. (Cl. 126—271.1)



1. A device for melting snow and ice, comprising a hood of poor heat-conducting material, said hood having an open bottom, a tubular member of poor heat-conducting material communicating with said hood and adapted to be connected to the exhaust pipe of a vehicle motor, and means within said hood for intensifying the melting effect of the stream of gases flowing from the tubular member into the hood, said means including a cartridge removably mounted in said hood and containing sodium chloride exposed to contact by the gases in said stream.

3,189,022

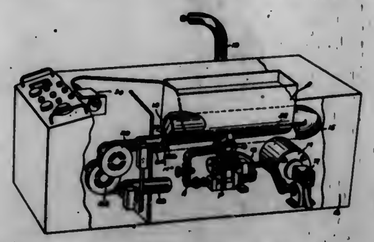
METHOD AND APPARATUS FOR PREMELTING THERMOPLASTIC ADHESIVE MATERIALS

Thomas J. Melsky, 90 Rossen Road, Holbrook, Mass.

Filed July 26, 1963, Ser. No. 297,850
4 Claims. (Cl. 126—343.5)

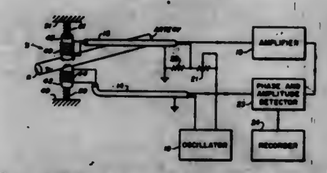
1. In a method of premelting a hot melt adhesive in which the hot melt adhesive is heated to form a liquified adhesive reservoir and portions of the liquified adhesive are furnished to a hot melt adhesive applicator the steps which include, supporting a mass of said hot melt adhesive with a hopper and around a heating duct supported in separated relationship to the bottom of the hopper to form a narrow passageway of crescent shaped cross section thereto, conducting a stream of hot gas in one direction through the heating duct to provide a flow of heat outwardly from said heating duct whereby portions of the mass of material located in the crescent shaped passageway are rapidly heated, simultaneously circulating a flow of heated gas around outer supported

portions of said adhesive received in the hopper to induce melting inwardly of the mass, confining a quantity of the premelted material in the elongated passageway of crescent shaped cross section to provide a thin laminar body of melted material, sensing changes in temperature



in the melted material in the crescent shaped passageway and controlling the said flow of hot gases internally and externally of the crescent shaped passageway in accordance with changes in temperature in said laminar body.

3,189,023
BLOOD PRESSURE INDICATING DEVICE
Paul Salz, Berkeley, Calif., Marvin B. Becaner, Minneapolis, Minn., and Nicholas W. Yanni, Berkeley, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 11, 1962, Ser. No. 194,205
4 Claims. (Cl. 128—2.05)



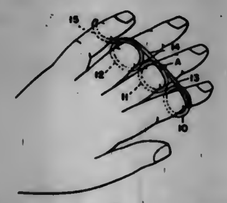
1. In a sphygmomanometric apparatus for indicating rapid changes in blood pressure in a blood vessel, the combination comprising a casing having a slot therein for receiving said blood vessel, a first diaphragm and a second substantially parallel diaphragm disposed in said casing on opposite sides of said slot, a first coil and a second coil movable with said first and second diaphragms respectively, a first spring and a second spring compressed between said casing and said first and second diaphragms respectively, a source of alternating current connected to said first coil, and a voltage amplitude detector connected to said second coil.

3,189,024
BLOOD PRESSURE TRANSDUCER
Peter Smith, Glendola, N.J., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed May 31, 1962, Ser. No. 199,179
10 Claims. (Cl. 128—2.05)



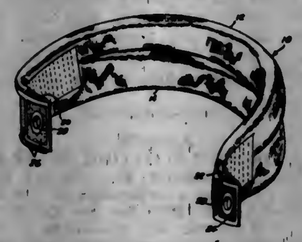
1. A transducer comprising a flexible cuff having an inner lining and outer shell forming a sealed chamber therebetween, at least one flexible compartment attached to said inner lining, particulate electrically conductive material within said compartment, spaced electrodes within said compartment in contact with said material, electrical leads extending from said spaced electrodes outwardly of said cuff, and a conduit extending outwardly of said cuff from said sealed chamber.

3,189,025
DEVICE FOR STRAIGHTENING A DISABLED FINGER
Leonard A. Yaklin, 2414 Churchill, Flint 6, Mich.
Filed Sept. 17, 1962, Ser. No. 224,001
4 Claims. (Cl. 128—26)



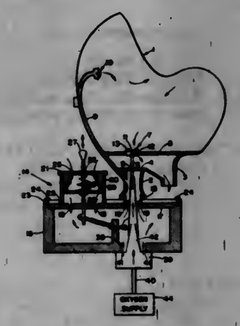
1. A device for straightening a disabled finger of a hand, formed from a single length of relatively heavy gauge wire, and comprising three rings arranged substantially in edge-to-edge relation and adapted to be sleeved upon healthy fingers of the hand, a longitudinally extending substantially horizontal bridge portion at the upper edges of and rigidly interconnecting two of said rings, a longitudinally extending substantially horizontal bridge portion at the upper edges of and rigidly interconnecting the third ring and one of said two rings, and a longitudinally extending upwardly opening substantially U-shaped portion rigidly connected to and projecting edgewise from said third ring and engageable with the underside of the disabled finger, the free end of said U-shaped portion and said horizontally extending bridge portions being substantially in a common horizontal plane, and the base of said U-shaped portion and the centers of the rings being substantially in a common horizontal plane.

3,189,026
COMBINATION CERVICAL COLLAR AND TRACTION APPARATUS
Harry E. Barnett, 6841 S. Constance, Chicago 49, Ill.
Filed Mar. 19, 1962, Ser. No. 180,433
10 Claims. (Cl. 128—75)



1. Combination cervical collar and traction apparatus comprising an elongated flexible body, fastening means on said body for operationally positioning said body about the neck of a wearer to afford a neck-encircling collar, said body being formed with a longitudinal slit therein to provide two laterally separable medial portions, said portions being juxtapositioned when used as said collar, said portions when separated being operationally positioned one under the chin and the other under the head adjacent the rear of the neck of a wearer to afford a traction head halter and coupling means associated with said body for accommodating auxiliary traction apparatus when said body is used as a traction head halter, said coupling means being spaced from the ends of said slit in a direction toward the ends of the body.

3,189,027
ANTI-SUFFOCANT APPARATUS FOR OXYGEN SUPPLY SYSTEMS
Roscoe G. Bartlett, Jr., Lime Kiln, Md.
Filed Nov. 29, 1962, Ser. No. 241,083
5 Claims. (Cl. 128—142)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An anti-suffocant safety valve for an oxygen supply system of the type wherein oxygen from a supply source enters a supply line leading into the interior of a facemask comprising, in combination,
a chamber;
a sleeve connected to an exterior wall of said chamber and having one end thereof communicating with the interior of said chamber;
a piston positioned within said sleeve and having a diameter less than the interior diameter of said sleeve:
an "over-center," snap-acting switching mechanism connected to said chamber and to said piston for moving said piston between an upper and lower position within said sleeve;
a bellows open at both ends thereof;
said bellows having one end thereof connected to the top of said sleeve and the other end extending downwardly to a position slightly beyond the mid-point between the upper and lower positions of said piston whereby said bellows contacts said piston to form an airtight seal therewith from the upper position of said piston to a position slightly beyond said mid-point and is spaced from said piston when said piston in in its lower position,
and means defining an air passageway between said chamber, said supply source and said supply line whereby whenever a negative pressure is created in said supply line in response to the inhalation efforts of an individual wearing said facemask, said piston is drawn downwardly from its upper position until said "over-center," snap-acting switching mechanism suddenly activates it to its lower position whereby air from the atmosphere can thereafter be drawn through said sleeve and into said chamber for use by the individual wearing said facemask.

3,189,028
BREAST SUPPORTER AND BINDER
Robert D. Dormire, 600 E. Winona, Warsaw, Ind.
Filed Jan. 28, 1963, Ser. No. 254,111
4 Claims. (Cl. 128—155)

1. A breast support and binder, comprising a band for reaching around the body of a wearer, said band being constructed of longitudinally stretchable material and having a rectangular opening therein near the center, a single pocket of elastic material secured to said band at said opening and constructed of longitudinally stretchable material for receiving the breasts, vertical slots on opposite sides of said pocket, resilient ribs disposed



in said slots, a strip of material secured to one end and on one side of said band and having numerous small securing means thereon in closely spaced relation, and a strip of material secured to the other end and on the other side of said band and having numerous small securing means thereon in closely spaced relation for adhering to said first mentioned strip.

3,189,029
HYPODERMIC INJECTION APPARATUS
Richard Russell Stephens, London, England, assignor to The Amalgamated Dental Company Limited, London, England
Filed July 27, 1961, Ser. No. 127,218
Claims priority, application Great Britain, Aug. 4, 1960, 27,099/60
6 Claims. (Cl. 128—173)

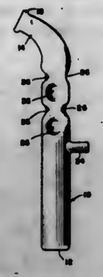


1. A jet injector comprising a fluid-tight cylinder provided with a connection for the admission of pressurized fluid thereto, a piston slidably mounted within said cylinder for axial movement therein under the action of the pressurized fluid, a plunger mounted for axial movement with said piston, said piston having a substantially larger cross-sectional area than said plunger, a holder for liquid to be injected so mounted with respect to said cylinder that on axial movement of the piston and plunger under the action of the pressurized fluid, the plunger moves inwardly of said holder for expelling liquid therefrom and a nozzle portion provided with a fine jet operably connected to the holder for transmitting liquid expelled from the holder by the plunger.

3,189,030
INHALING DEVICE
Otto Rupp, 74 Campbell, Hawthorne East 3, Melbourne, Victoria, Australia
Filed July 27, 1961, Ser. No. 127,305
8 Claims. (Cl. 128—186)

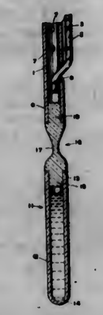
1. An inhaling device of the character described, comprising an elongated unitary outer tube closed at one end and open at its other end, said tube having an opening formed in the wall thereof in spaced relation to its closed end, an open-ended air-admitting tube within said outer tube extending from said opening to a point adjacent the closed bottom thereof and fitted into said opening in air-

tight relation with edges thereof, a portion of said outer tube above said air-inlet opening having at least one pair



of diametrically opposed inwardly extending indentations each of a width less than the diameter of said outer tube formed therein.

3,189,031
GASTROINTESTINAL SUMP TUBE
Harold W. Andersen, Oyster Bay, N.Y., assignor to H. W. Andersen Products, Inc., Oyster Bay, N.Y., a corporation of New York
Filed Nov. 4, 1963, Ser. No. 321,231
6 Claims. (Cl. 128—350)



1. A gastrointestinal sump tube instrument which embodies an aspirating tube and an air bleeder tube with the latter exteriorly connected to the former in parallel relation for most of their length and the former having a plurality of spaced holes in its wall near the distal end through one of which the distal end of the latter projects inwardly, said instrument including a hollow weighted director tip capsule and a connector uniting the capsule to the aspirating tube, the said connector being composed of a solid flexible substance and having a narrow waist for imparting added flexibility of motion to the capsule with respect to the aspirating tube for promoting the adaptability and capacity of the capsule to lie at any angle to said tube dictated by the intestinal formations while maintaining the distal end of the aspirating tube in correct longitudinal functional position with respect to the adjacent intestinal wall.

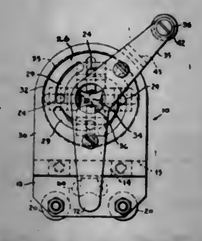
3,189,032
CIGAR WITH REINFORCED HEAD
Abe R. Brothers, 900 Jefferson Ave., Brooklyn, N.Y.
Filed Jan. 29, 1963, Ser. No. 255,723
10 Claims. (Cl. 131—11)

1. A cigar comprising a filler enclosed within a binder, and a reinforcing strip embracing the binder and filler at the mouth end of the cigar, said strip being crimped at circumferentially spaced portions of the cigar to provide a succession of tight folds forming reinforcing ribs ex-



tending longitudinally of the cigar, and surface portions of said strip within each of said folds being adhesively secured together.

3,189,033
CIGAR PRESSING
John A. Dreher, Trucksville, Pa., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York
Filed May 9, 1962, Ser. No. 193,499
9 Claims. (Cl. 131—81)

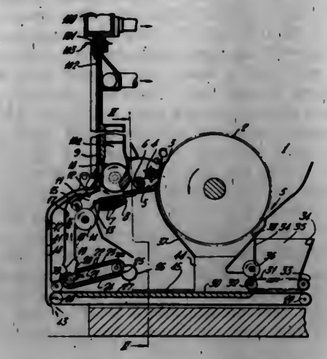


1. A compressing unit for shaping a cigar into a generally flat-sided configuration, which comprises a first pair of elongated jaws movable toward and away from each other along a first radial line, a second pair of elongated jaws movable toward and away from each other along a second radial line, said jaws each providing a continuous uninterrupted shaping surface of a length at least equal to the length of a cigar adapted to be received therebetween and of a width such that said cigar is completely surrounded by said jaws in their most inward position, said two pairs being arranged to form an elongated axial space to receive said cigar with said first radial line of movement of said first pair substantially at right angles to said second radial line of movement of said second pair, and means associated with said two pairs to move in synchronism all of said jaws radially toward and away from said axial space.

3,189,034
METHOD OF AND APPARATUS FOR FEEDING CUT TOBACCO IN A MACHINE FOR MAKING TOBACCO PRODUCTS
Desmond Walter Molins, Deptford, London, England, assignor to Molins Machine Company Limited, Deptford, London, England, a British company
Filed Mar. 20, 1963, Ser. No. 266,620
Claims priority, application Great Britain, Mar. 28, 1962, 11,845/62
7 Claims. (Cl. 131—84)

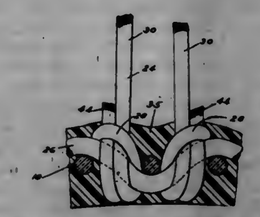
1. A method of feeding cut tobacco in a tobacco manipulating machine, comprising the steps of transporting selected cut tobacco from main feeding means in a main supply stream towards means for forming a tobacco filler, feeding shorts which become separated from cut tobacco fed by the said main feeding means to separate feeding means, separating stem from cut tobacco fed by the said main feeding means, separating usable stem from unusable stem, feeding the usable stem to the said separate feeding means, processing the unusable stem to

convert it into usable processed stem, feeding usab'e processed stem to the said separate feeding means, and feed-



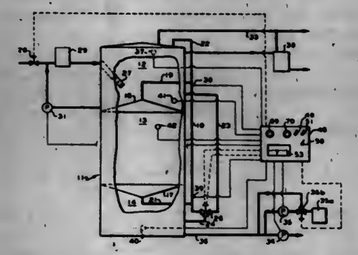
ing shorts, usable stem and processed stem together from the said separate feeding means into the main supply stream.

3,189,035
METHOD OF MAKING A HAIRPIECE
Walter Heck, Dearborn, Mich., assignor to Walter Heck Hairpieces, Inc., Dearborn, Mich., a corporation of Michigan
Filed Jan. 31, 1963, Ser. No. 255,356
5 Claims. (Cl. 132—5)



1. The method of forming a hairpiece which comprises forming a pattern conforming to the desired size and shape of the scalp to be covered by the hairpiece, utilizing said pattern to form from a piece of glass fiber cloth a foundation for the hairpiece which is slightly larger than the desired size and shape of the finished hairpiece, transferring the outline of said pattern to said foundation so that the outer marginal portion of the foundation provides a finger gripping portion extending peripherally around the pattern outline on the foundation, applying hair to that portion of the foundation lying within said outline by drawing strands of hair through the glass fiber cloth and knotting the hair strands to the threads of said cloth prior to impregnation and while the fabric is in a limp, flaccid condition, forming a mold having an outer surface which conforms in contour to the contour of the scalp to which the hairpiece is to be applied, using said pattern to indicate on said mold the size and shape of the portion of the scalp to be covered by the hairpiece, coating said mold with a plastic resin over an area slightly greater than the size of the finished hairpiece, said resin being of a type which when set will impart a relatively rigid shape to the foundation, overlaying the foundation with the hair applied thereto on the resin coated mold and registering the hairline on the foundation with the indicated pattern on the mold, utilizing said marginal edge portion of the foundation for gripping with the fingers to pull the foundation firmly down on the resin coated mold and thereby causing said plastic resin to impregnate said cloth and envelope the knots in the hair strands, permitting said resin to set so as to fixedly position and cement the knotted ends of the hair strands in place in the foundation and thereafter trimming off said marginal edge portion of the foundation along the hairline desired in the finished hairpiece.

3,189,036
FLUID METERING
Glen G. Hebard, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 28, 1963, Ser. No. 283,851
4 Claims. (Cl. 137—2)

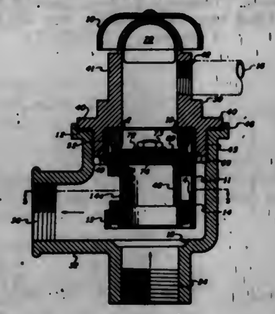


1. A method for metering and transferring custody of a fluid, which comprises the steps of:
flowing said fluid from a source of supply into an accumulation zone;
providing a first communication path from said accumulation zone at a level substantially above the bottom thereof through first and second openings of a transfer zone and flowing said fluid by gravity through said first path from said accumulation zone into a metering zone at a lower level;
continuing flow of said fluid from said accumulation zone into said metering zone to fill said metering zone;
closing said first path and providing a second communication path through said second opening and a third opening of said transfer zone when said fluid reaches a predetermined level defining the upper boundary of said metering zone, and flowing said fluid by gravity through said second path from said metering zone into a custody transfer zone at a lower level;
beginning transfer of said fluid from said custody transfer zone when said liquid reaches a predetermined level therein;
continuing transfer of said fluid from said custody transfer zone until said metering zone is empty;
closing said second path and opening said first path when the level of said liquid falls below a predetermined level in said custody transfer zone when said metering zone is empty;
continuously monitoring said fluid in said accumulation zone for the water content thereof at a level near the bottom of said accumulation zone; and
closing said first and second flow paths when said water content reaches a predetermined value.

3,189,037
BACKFLOW PREVENTER—VACUUM BREAKER
Modesto Callejo, 167 Cuba Hill Road, Huntington, N.Y.
Filed Feb. 7, 1963, Ser. No. 258,110
2 Claims. (Cl. 137—218)

1. A device of the character described comprising a housing having an inlet opening and an outlet opening right angularly disposed to the inlet opening and having an internally threaded open tubular portion opposite said inlet opening, a hollow head member having a vent opening and an outlet opening in its upper portion as well as an internally and externally threaded lower portion

screwed into the tubular open portion of said housing, a cylindrical guide member extended into said housing having an annular externally threaded upper portion screwed into the lower portion of said head member and engaging the internal thread thereof and having also a perforated main portion provided with inwardly extending shoulder sections above its lower extremity, a free-moving gravity-actuated plunger slidably mounted in said guide member being adapted to be reciprocated therein and having an increased upper portion engaging the interior of said guide



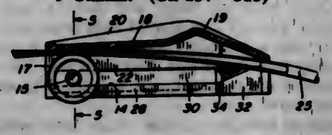
member above the shoulder sections of the same, first seal means removably interposed between said head member and the upper portion of said guide member and extended into said guide member, second seal means mounted on a lower portion of said plunger and adapted for closing temporarily said inlet opening of said housing, and a piston slidably mounted on said plunger and adapted for engaging said first seal means for separating the interior of said head member from the interior of said housing.

3,189,038

VARIABLE FLOW CLAMP FOR FLEXIBLE TUBING

Heinz A. von Pechmann, Lake View Terrace, Calif., assignor to Don Baxter, Inc., Glendale, Calif., a corporation of Nevada

Filed June 8, 1962, Ser. No. 201,193
9 Claims. (Cl. 137—315)



1. A roller clamp comprising a roller with stub shafts, a flexible, resilient body having a bottom wall and side walls with slots in said side walls inclined with respect to said bottom wall, which slots are closed at one end and partially open at an opposite end of said body, and a mouth between said side walls entering into said slots, said mouth having sides sloping inwardly and downwardly across the partially open ends of said slots toward said bottom wall, which sides are positioned to coact with the stub shafts of said roller to cam the side walls of said body apart for insertion and removal of said roller with a snap action.

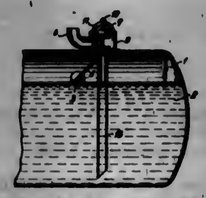
3,189,039

OVERFLOW PREVENTION DEVICE

Josef Bauer, 15 Am Taubhaus, Spreadlingen, Kreis Offenbach, Germany

Filed Jan. 15, 1963, Ser. No. 251,553
Claims priority, application Germany, Jan. 20, 1962, B 65,586; Oct. 16, 1962, B 69,250
14 Claims. (Cl. 137—434)

1. An overflow prevention device for oil tanks or the like comprising, in combination, a valve chamber adapted to be mounted on an oil tank to be filled up to a predetermined level; inlet passage means communicating at one end thereof with said valve chamber and being adapted to be fluidtightly connected at the other end thereof to a source of oil under pressure; outlet passage means communicating with an upper end thereof with said valve chamber and with a lower end thereof with the tank; valve means in said valve chamber movable from an upper open position spaced from said upper end of said outlet passage means to a lower closed position in engagement with said upper end of said outlet passage means for closing the latter; float means in the tank, said float means having a predetermined weight and being adapted to float on the oil in the tank when the tank is filled nearly up to said predetermined level; and lever means connecting said float means with said valve means for holding said valve means and said float means in substantially balanced position as long as the oil in the tank is far below said predetermined level so that the float means will not float on the oil, for moving said valve



means from said upper open toward said lower closed position when the oil in the tank approaches said predetermined level and said float means float in the oil, and said valve means being under the influence of the oil flow passing through said outlet passage means out of said valve chamber and said predetermined weight of said float means and the active length of said lever means being such that said valve means in approaching said lower closed position will be suddenly moved by the suction action of the oil flow downwardly into engagement with said upper end of said outlet passage means thereby closing the latter while lifting said float means to a certain extent out of the oil in the tank, said valve means being held in said closed position by the pressure in the valve chamber as long as said inlet means remains connected to a source of oil under pressure, and when said pressure is relieved, said float means will sink down and lift said valve means from said upper end of said outlet means permitting thereby oil in said valve chamber to flow in the tank.

3,189,040

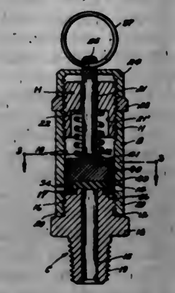
RELIEF VALVE

Arthur L. Johnson, El Monte, Calif., assignor to F. C. Kingston Company, Los Angeles, Calif., a partnership

Filed Jan. 31, 1962, Ser. No. 170,035
6 Claims. (Cl. 137—469)

1. A pressure relief valve including an elongate body with an elongate vertically disposed bore terminating at a flat bottom, a central flow passage continuing downwardly from said bottom, an annular upwardly projecting valve seat on the bottom surrounding the upper open end of the flow passage, and a lateral outlet port in the body adjacent said bottom, a head engaged in and closing the upper end of the body and having a central stem-receiving opening, an elongate valve member having upper and lower ends and an elongate stem arranged in the body with its bottom end normally engaging the seat on the bottom of the bore and closing the flow passage and with the stem projecting upwardly through the opening in the head, a cup-shaped actuator having

a top wall with a central stem-receiving opening arranged in the body to normally occur adjacent the upper end of the valve member and a depending skirt extending freely into the annulus between the bore and the valve member and terminating in the bore below the outlet port, a spacer ring between the top wall of the actuator and the valve member, and a compression spring between



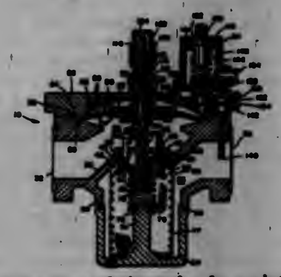
the head and the actuator normally yieldingly urging the actuator and the valve member downwardly, said actuator being greater in effective cross-sectional area than the valve member, whereby said actuator shifts upwardly away from the valve member and against the resistance of the spring when the valve member is urged upwardly and away from the seat by fluid pressure within the passage.

3,189,041

REFRIGERATION PRESSURE REGULATOR

Charles C. Hansen, Clarendon Hills, Ill., assignor to Refrigerating Specialties Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 5, 1962, Ser. No. 177,490
10 Claims. (Cl. 137—489.5)



4. In a pressure regulating valve for maintaining a predetermined refrigerant pressure at its inlet comprising:
- a housing having a partition wall dividing it into an inlet chamber and an outlet chamber with axially aligned inlet and outlet ports,
- said partition having an aperture therethrough interconnecting the chambers,
- a valve seat member mounted in sealed relationship in said aperture and having an opening extending into the outlet chamber from a valve seat located at the inlet end thereof,
- a valve plug having an end portion reciprocably guided in said opening and having a radial land engaging said valve seat,
- a valve stem carried by said valve plug for moving same to open position,
- a diaphragm secured centrally to said valve stem and marginally to the housing to define a sealed pressure chamber,
- a guide carried by said housing to reciprocably support said valve stem in guided relationship,
- a bleed passage interconnecting the sealed pressure chamber and outlet chamber to equalize pressures on opposite sides of the diaphragm when the valve plug is closed,
- pressure responsive pilot valve means for admitting pressure in the inlet chamber to said sealed chamber when same exceeds a predetermined pressure, and
- conduit means connecting said inlet chamber with the pressure chamber and including a pilot valve for controlling the flow of refrigerant to the pressure chamber when the pressure in the inlet exceeds a predetermined level to effect movement of the diaphragm and open the valve plug to the flow of refrigerant through the valve port to the outlet chamber, and
- an elongated pick-up tube having one end thereof disposed at the centermost point of the inlet opening to receive refrigerant from the center of said inlet opening free of dirt and oil.

9. A control valve mechanism for controlling refrigerant pressure at its inlet comprising:
- a housing having an inlet side and an outlet side with a flow path therebetween,
- a valve seat disposed in said flow path having a smooth wall valve port opening,
- a valve plug having a cylindrical portion having an externally smooth wall portion with openings therethrough reciprocably extending through said valve port opening with open tolerances in sliding guided relationship on the smooth wall of the valve port opening,
- said valve plug engaging the valve seat to form a leak-proof seal between the inlet side and the outlet side,
- a valve stem extending through the valve seat interconnected with said valve plug loosely received in engagement at its lower end with the plug beyond the valve seal,
- means for supporting the upper end of said stem in guided relationship on the housing,
- a diaphragm mounted with its peripheral portion fixed to the housing and its central portion secured to said valve stem,
- channel means to transmit the inlet refrigerant pressure to one side of the diaphragm to effect the movement thereof to move said valve plug to the open position permitting flow of refrigerant from the inlet side to the outlet side, and
- a spring member telescoping over said valve plug around the extending portion of the valve stem and disposed between the under surface of said valve plug and the housing to return the valve plug to a normally closed position when the inlet refrigerant pressure decreases to a predetermined level.

3,189,042

VACUUM RELIEF, PRESSURE RELIEF VALVE

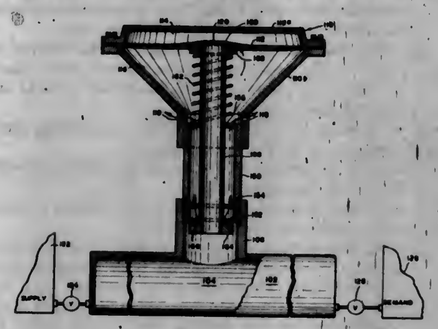
Bernard J. Kerley, Jr., 130 Crestview Drive, Orinda, Calif., and Donald F. Kerley, 2006 S. Jean St., Kennewick, Wash.

Filed June 12, 1963, Ser. No. 287,400
5 Claims. (Cl. 137—493.9)

1. A pressure-relief vacuum-relief valve adapted for use with a container having a vent opening, comprising
- a hollow housing including a tubular extension adapted for connection with said vent opening to afford communication between said container and said housing;
- a diaphragm mounted in said housing and defining first and second chambers therein, said second chamber being in communication with said container through said tubular extension;
- transverse wall means secured to said tubular extension intermediate said second chamber and said container, said transverse wall means containing a first valve seat opening;

a hollow valve member mounted for axial sliding movement in said valve seat opening to open and close the passage therethrough, said hollow valve member extending at one end in said second housing chamber and carrying at its free end a second valve seat adjacent said diaphragm, said housing containing openings affording continuous communication between said second chamber and the region external of said housing;

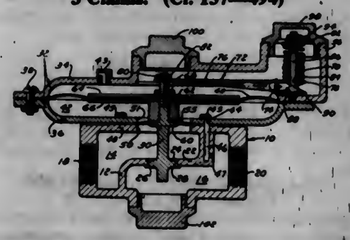
spring means biasing said valve member in one direction toward a position closing said first valve opening, said diaphragm being arranged for seating en-



gagement with said second valve seat when said valve member is in said closed position, thereby preventing communication between said second chamber and the container through the bore of said valve member;

and means affording continuous communication between said container and said first housing chamber, whereby when the pressure of the external region exceeds that of the container, the diaphragm is raised in one direction from said second valve seat, and when the container pressure exceeds that of the external region, the diaphragm is displaced in the opposite direction to open the hollow valve member from its valve seat.

3,189,043
ZERO GOVERNOR
Albert Stadler, Rockford, Ill., assignor to Eclipse Fuel Engineering Co., Rockford, Ill., a corporation of Illinois
Filed Jan. 30, 1963, Ser. No. 255,055
3 Claims. (Cl. 137—494)



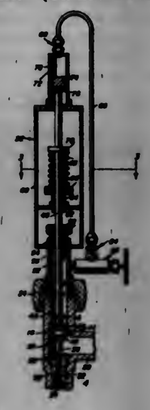
1. In a zero governor, in combination, a lower valve casing providing an internal valve space, a horizontal wall dividing the space and establishing inlet and outlet chambers respectively, inlet and outlet ports in said casing communicating with said inlet and outlet chambers respectively, there being a valve port in said wall establishing communication between the chambers and providing a valve seat, a valve element underlying and cooperating with said seat and movable at right angles to the wall downwardly away from the seat to an open position and upwardly toward the seat to a closed position, an upper diaphragm casing directly above the lower valve casing and having a movable diaphragm therein subject on one side to the degree of pressure in the outlet chamber, said valve and diaphragm chambers being provided with registering openings therein, a valve stem connecting said valve element and diaphragm whereby the valve element is constrained to follow the deflecting movements of the diaphragm, a sealing diaphragm through which the valve stem projects and extending across said registering openings in sealing relationship, and means for counterbalancing the weight of the diaphragm, valve stem and valve element, said counterbalancing means comprising a first class lever disposed within the diaphragm casing, means carried by said diaphragm casing establishing a fulcrum point for said lever, said lever including a relatively short lever arm and a relatively long lever arm, means establishing a supporting connection between the distal end of the long lever arm and said valve stem, a spring reaction support overlying the distal end of said short lever arm, a compression spring interposed between said reaction support and the distal end of said short arm and serving normally and at all times during operation of the zero governor to apply a downward thrust to the short lever arm and a consequent upward thrust on said valve stem to bias the valve toward its closed position, the moment of force exerted by said compression spring on the distal end of said short arm by said compression spring being precisely equal to the moment of force exerted by said supporting connection on the distal end of said long arm.

3,189,044
PRESSURE DIFFERENTIAL OPERATED SAFETY VALVE
Phillip S. Sizer, 3606 Seguin, Dallas, Tex.
Original application Apr. 21, 1959, Ser. No. 807,831. Divided and this application Apr. 9, 1963, Ser. No. 278,504
9 Claims. (Cl. 137—498)



1. A well tool for controlling flow of fluids including: an elongate body having a longitudinal flow passage; an actuating sleeve disposed in the flow passage of the body for limited longitudinal movement therein; a ball valve rotatably mounted in the body and having a flow passage therethrough; means pivotally connecting said ball valve with said body eccentrically of the longitudinal axis thereof; means operatively connecting the ball valve to the actuating sleeve whereby when the actuating sleeve moves to one extreme longitudinal position in the body the ball valve is rotated; seat means slidable longitudinally in the body and operatively engaging the ball valve for co-acting therewith with the flow passage thereof when the ball valve is rotated to control flow of fluid through the flow passage of the body; means in the body biasing the actuating sleeve to another extreme position spaced longitudinally from said one position, the actuating sleeve having a restricted orifice upstream of the ball valve whereby when the pressure differential between the upstream side of the actuating sleeve and the flow passage exceeds a predetermined value, the actuating sleeve moves to said one extreme position.

3,189,045
AUTOMATIC WELL HEAD FLOW CONTROL
Simon McCloud, Box 345, Lolita, Tex.
Filed May 23, 1962, Ser. No. 196,979
2 Claims. (Cl. 137—505.13)



1. A flow control device for use with a fluctuating pressure source of fluid comprising, a body having an inlet passage connected to said source and an outlet passage having an inner seating end, a choke element positioned in the body for movement into and out of engagement wtih said inner seating end of the outlet passage for regulating fluid flow from the inlet passage through said outlet passage, pressure responsive means actuatable for movement of said choke element, adjustable valve means establishing restricted fluid communication between the inlet pasage and the pressure responsive means for actuation thereof in delayed response to development of a pressure condition in said source, and pressure signal delay means responsive to positioning of the choke element for further delaying movement of the choke element only in response to an increase in pressure of said source when the choke element is out of engagement with the inner seating end of the outlet passage, whereby the flow of fluid from the source is varied to stabilize the pressure condition thereof, said pressure signal delay means comprising a yoke member interconnecting said choke element with the pressure responsive means, a connecting passage formed in the body establishing fluid communication between the inlet passage and the adjustable valve means, said yoke member moving into said connecting passage to reduce the flow area thereof when the choke element is out of engagement with the inner seating end of the outlet passage.

3,189,046
POPPET CHECK VALVE
Francis J. Callahan, Chagrin Falls, and Bernard J. Gallagher, Cleveland Heights, Ohio, assignors to Nuclear Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 9, 1962, Ser. No. 236,630
10 Claims. (Cl. 137—515.7)

9. In a valve device;

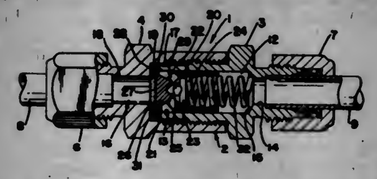
a female body forming member having a fluid passageway extending therethrough and an annular stepped shoulder intermediate the ends of the passageway;

a male body forming member having one end portion thereof received within the female body forming member and removably interlocked therewith to form a valve body;

a fluid passageway extending through the male body forming member and being generally coaxial with the fluid passageway in the female body forming member when the male member is received in the female member;

said one end portion of the male body forming member when received in the female body forming member being closely opposed to the annular stepped shoulder;

O-ring seal means abuttingly received between said one end portion of the male member and the stepped shoulder of said female member to establish a fluid tight relationship between the male and female body forming members, with the inner periphery of said seal means being exposed to the fluid in the passageway;



the inner diameter of said O-ring in its natural state being less than the diameter of the passageway in said one end portion of the male member;

a tubular poppet member slidably received within the fluid passageway in the male body forming member;

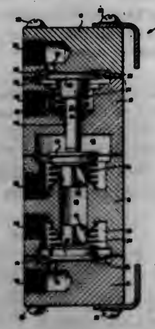
said poppet member including an end wall extending substantially transverse to the axis thereof, with the radial dimension of said end wall being of a greater dimension than the radially innermost edge of said seal means and substantially less than the radial dimension of the passageway through the portion of said male member abutting said O-ring seal means; and

spring biasing means normally urging said poppet member to a position wherein said end wall engages said seal means with said seal means coacting with said end wall to prevent projection of said end wall through the center of said seal means and thereby prevent substantial frictional contact between the inner periphery of said seal means and said poppet member.

3,189,047
PNEUMATIC LOCKOUT RELAY FOR ENGINE SAFETY CONTROL SYSTEM OR THE LIKE
Louis M. Paster, Knoxville, Tenn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,113
3 Claims. (Cl. 137—614.21)

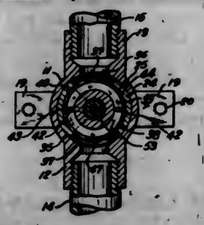
1. A pneumatic lockout relay comprising a casing having a first internal chamber and a second internal chamber therein, and an internal passage in said casing opening at one end into said first chamber and opening at its other end into said second chamber, a valve head in each chamber movable into a seated position overlying the end of said passage opening into the chamber to block communication between the chamber and the passage and movable away from its seated position to an open position to place the chamber and passage in communication with each other, a first port in said casing communicating with said first chamber, a second port in said casing communicating with said second chamber, first pressure responsive means in said casing actuable to move

the valve head in said first chamber to its seated position, second pressure responsive means in said casing operable when pressurized to move the valve head in said second chamber to its seated position, means for maintaining said valve head in said first chamber in its open position when said first pressure responsive means is in an unactuated condition, and second means for restoring the valve head in said second chamber to its open position, said first pressure-responsive means comprising means de-



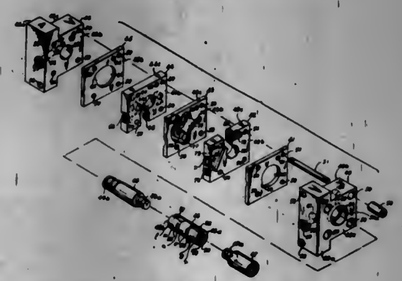
fining a third internal chamber in said casing, a first flexible diaphragm dividing said third chamber into a first and a second portion, a third port in said casing communicating with the first portion of said third chamber, and a valve actuating stem operable by said first diaphragm and engageable with the valve in said first chamber to move the first chamber valve head to its seated position when said first portion of said third chamber is pressurized.

3,189,048
BALANCED MIXING VALVE
Frank H. Parker, Lakewood, Cleveland, and Vernon C. Becks, Westlake, Ohio, assignors to Stephen C. Peplin, North Olmsted, Ohio, trustee
Filed Jan. 12, 1962, Ser. No. 165,900
4 Claims. (Cl. 137—625.17)



1. A hydraulically balanced mixing valve including a valve housing having an axial bore, a pair of fluid inlets communicating with said bore, an outlet passage in the housing, a generally cylindrical valve guide member in the bore closing one end thereof and having openings therein in register with the respective fluid inlets, a skirted valve element axially slideable and rotatable within said valve guide member, a fluid mixing chamber within the skirt of said valve element communicating with said outlet passage, and generally circular fluid sealing means received within each opening of the valve guide member, each generally circular sealing means comprising an O-ring of elastic material having a solid homogeneous circular cross-sectional area, the diameter of each sealing means with respect to the diameter of its associated opening and the cross-sectional area of each sealing means with respect to the thickness of the sleeve being such that the sealing means will be held in effective sealing engagement within its opening without the aid of any extrinsic fastening means and solely under forces of compression exerted thereon by the wall of the axial bore, the wall of the skirted valve element, and the peripheral wall of the opening in the guide member, said peripheral wall of the opening being angularly disposed with respect to the axis of the opening such that the sealing means makes tangential contact with the peripheral wall of the opening substantially midway between the walls of the axial bore and the valve element, thereby eliminating wedging action between the peripheral wall of the opening and the wall of the valve element, which wedging action would otherwise tend to impair the sealing effect of the sealing means and increase the force required to operate the valve.

3,189,049
MULTI-CHANNEL VALVE
Carl M. Carlson, 344 12th St., Cresskill, N.J.
Filed Aug. 2, 1963, Ser. No. 299,648
16 Claims. (Cl. 137—625.24)



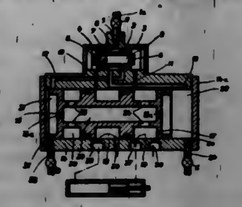
1. A valve including a body, a longitudinal bore provided in said body, a movable member within said bore, a first radially extending portion of said bore providing a first porting area, a second radially extended portion of said bore providing a second porting area, first and second ports, first and second hole means formed in said body and communicating said first and second porting areas with said first and second ports respectively, said first port being longitudinally spaced from said first porting area, a transverse segment of said body, a through hole in said segment forming part of said longitudinal bore, said first and second porting areas being longitudinally disposed on either side of said segment, a section of said movable member within said through hole in one position thereof, longitudinal passage means formed in said movable member having a longitudinal dimension greater than the longitudinal dimension of said segment whereby said longitudinally displaced porting areas are in communication when said section is so disposed.

3. A valve in accordance with claim 1 in which said movable member is movable rotationally within said bore for displacement from said one position whereby said longitudinal passage is removed from providing communication between said porting areas.

3,189,050
PRESSURE FLUID OPERABLE CONTROL VALVE
Günter Heckmann, Schult Eabriak 52, Sprockhovel, Westphalia, Germany
Filed June 19, 1961, Ser. No. 117,986
Claims priority, application Germany, June 21, 1960, H 39,723
6 Claims. (Cl. 137—625.63)

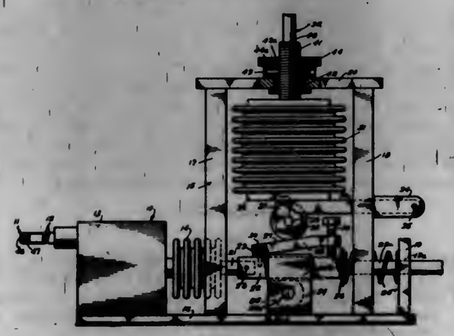
1. In a control valve, a main housing having a pressure fluid inlet and an outlet, a main control member having

end faces and reciprocable in said housing between first and second end positions, the end faces of said main control member respectively confining with said housing a first and a second end chamber, throttle means establishing a throttled communication between said pressure fluid inlet and said first and second end chambers, said housing also being provided with two relief passage means respectively communicating with said first and second end chambers, an auxiliary housing having an impulse outlet for connection with an impulse relief conduit, an auxiliary control member reciprocable within said auxiliary housing and forming therewith a pair of auxiliary end chambers, said auxiliary control member being moveable from a first position into a second position and vice versa in said



auxiliary housing for respectively establishing communication between one of said relief passage means and said impulse outlet while interrupting communication between the other relief passage means and said impulse outlet, a conduit leading from each said end chamber of said auxiliary housing, said main control member in one end position connecting one of said conduits to said fluid inlet and the other thereof to said outlet and in the other end position connecting said other conduit to said fluid inlet while connecting said one conduit to said outlet, channel means respectively connecting the chambers of said pair of auxiliary end chambers with said impulse conduit, check valve means preventing direct communication between the chambers of said pair of auxiliary end chambers, and a valve controlling said impulse relief conduit.

3,189,051
TEMPERATURE COMPENSATING MEANS FOR CLOSED HYDRAULIC SYSTEM
Robert B. Chambers, Lander, Wyo., assignor to Belt-Scales Corporation, Salt Lake City, Utah, a corporation of Nevada
Filed May 4, 1962, Ser. No. 192,444
8 Claims. (Cl. 138—30)



1. In a temperature change compensating apparatus for a primary hydraulic system including
frame means,
a first resilient means for attachment with the primary hydraulic system and mounted on said frame means,
a closed hydraulic system including a second resilient means mounted on said frame means,
a slidable bar connected with said second resilient means,
means connected to said slidable bar urging it toward said second resilient means, and
means mounted on said slidable arm for moving said first resilient means for varying the volumetric capacity of the primary hydraulic system to maintain a constant pressure in the primary hydraulic system as said slidable arm is reciprocated as a result of temperature variations causing variations in the volumetric capacity of said second resilient means.

ERRATUM
For Class 138—43 see:
Patent No. 3,189,125

3,189,052
THIN-WALL PLASTIC TUBING AND PROCESS OF MANUFACTURE
Richard G. Devaney, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 26, 1961, Ser. No. 147,752
6 Claims. (Cl. 138—130)



4. As a new article of manufacture a thin-wall transparent tubing, the tubing being comprised of at least one ribbon of polymeric composition helically coiled so that a portion of the ribbon overlaps another portion to form a joint wherein the overlapped portions are in intimate contact, the ribbon being of a thickness not substantially exceeding 0.0020 inch and consisting essentially of a polyester polymer material and the ribbon when overlapped having oriented and nonheat-set properties the oriented properties having been obtained by longitudinal and lateral stretching of the ribbon in its preparation, the tubing having been heated to a temperature no higher than the no-strength temperature of the polyester polymer and quenched from said higher temperature down to a temperature of the order of room temperature, whereby a monolithic strong thin-walled tubing is obtained without the need of cement, solvent, glue or pressure of a magnitude not substantially greater than that inherent in said winding.

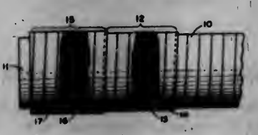
3,189,053
FLEXIBLE HOSE
Russell Dale Parr, Carlisle, Pa., assignor to Carlisle Tire and Rubber Division of Carlisle Corporation, a corporation of Delaware
Filed May 25, 1962, Ser. No. 198,692
6 Claims. (Cl. 138—133)



1. An improvement in flexible hose comprising a tube of a vulcanizable elastomer, a non-collapsible reinforcing filament coiled around the periphery of said tube with spaced apart coils exposing portions of said tube periph-

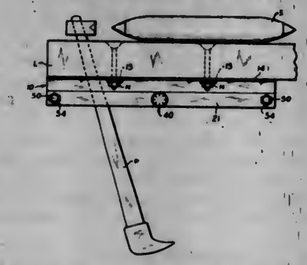
ery therebetween and a tape including synthetic fiber cords and coated with a vulcanizable elastomer being wrapped on and around said filament coil and the exposed peripheral portions of said tube and vulcanized to said tube exposed peripheral portions along most of the space between said coils with said tape drawn tight thereon by said cords.

3,189,054
LAMINATE STRUCTURE OF ALTERNATE LAYERS OF METAL AND GLASS FIBER TAPES
Edward L. Racks, Pasadena, and Harold R. Grant, Rancho Cordova, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed June 23, 1961, Ser. No. 124,273
14 Claims. (Cl. 138—143)



1. A laminate section for resisting predetermined axially unsymmetrical forces comprising alternate layers of metal and thermoset resin impregnated unidirectional glass fibers; said laminate section having at least a first axis and a second axis; said unidirectional glass fibers being arranged parallel to at least said first axis so as to support said predetermined forces applied to said laminate section parallel to said first axis; and said metal being substantially the only support for said predetermined forces applied to said laminate section parallel to said second axis.

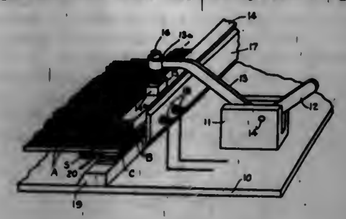
3,189,055
PICKER STICK CHECK
Paul Zobrist, Charlotte, N.C., assignor to Uster Corporation, Charlotte, N.C., a corporation of North Carolina
Filed Sept. 19, 1963, Ser. No. 310,012
17 Claims. (Cl. 139—164)



1. Means for checking picker stick travel said means comprising: constraining means slidable with the picker stick defining a path of limited free travel for the picker stick and a path of restrained movement for the picker stick after its free travel; and limiting means terminating the restrained movement of the picker stick at the desired limit of travel.

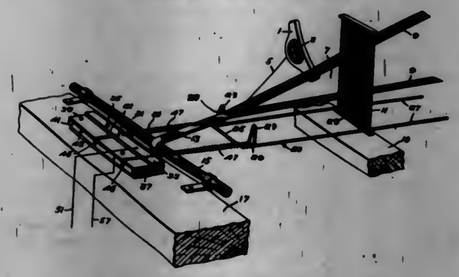
3,189,056
TEXTILE REED
Robert F. Parks, Greenville, S.C., assignor to Steel Heddle Manufacturing Company, Paris, S.C., a corporation of Pennsylvania
Filed Oct. 18, 1961, Ser. No. 145,931
1 Claim. (Cl. 139—192)

A textile reed construction including, a plurality of spaced parallel aligned dent wires, a pair of spaced transverse parallel bars confining the dent wires therebetween adjacent each end of the dent wires forming top and bottom framing for the reed, side frame members bridging the parallel bars adjacent each end thereof at right angles thereto, each pair of parallel bars extending above the top and below the bottom ends of said dent wires defining a space above and below the top and bottom ends of said spaced parallel dent wires respectively, and a rigid non-



brittle thermosetting plastic adhesive forming a bead between adjacent dent wires and the adjacent parallel bar, said dent wires being unrestrained other than that resulting from the bead and top and bottom bars, whereby each dent wire is spaced without the use of springs, solder and the like for maintenance of dent wire spacing thus providing a lighter reed having a greater free depth of dent wires.

3,189,057
WEFT DETECTORS FOR LOOMS
Samuel F. Siciliano, Westerly, R.I., assignor to George C. Moore Company, Westerly, R.I., a corporation of Rhode Island
Filed Mar. 11, 1963, Ser. No. 264,446
8 Claims. (Cl. 139—370)

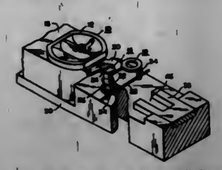


1. In a narrow fabric loom having a breast beam and a lay and a plurality of reeds and weft-bearing shuttles weaving fabrics thereon, in combination, a weft feeler supported on the breast beam for sliding movement forward and backward in the loom and comprising a unitary structure having surfaces to be engaged at each pick by the weft extending from a working shuttle, the structure being slid forward by such engagement, and means adapted to stop the loom whenever such forward sliding movement fails to be effected by the weft at each pick.

3,189,058
METHOD AND APPARATUS FOR RETAINING A FASTENER ON A WIRING OR OTHER DEVICE
Frank J. Petrasy, Bridgeport, Conn., assignor, by mesne assignments, to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Aug. 15, 1962, Ser. No. 217,197
5 Claims. (Cl. 140—92)

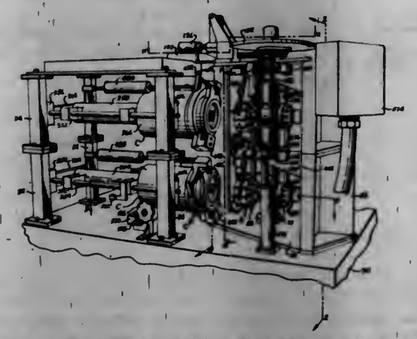
1. A method for securing a headed fastener against removal from an opening in an article through which an elongated shank of said fastener extends, said method comprising the steps of positioning laterally of said fastener shank an elongated wire element having an arm at

each end thereof bent to one side at a substantial angle, forming a central portion of said wire element laterally around said fastener shank so that the wire side opposite said one wire side faces said fastener shank, and bending said wire arms together so as to ensure extension of said



central wire portion about a susbtantial perimetrical shank portion located longitudinally and laterally inwardly of a laterally outwardly projecting ridge of said shank and further so as to locate respective inner elbow portions of said wire arms sufficiently proximate to each other to prevent withdrawal of said wire element laterally of said fastener shank.

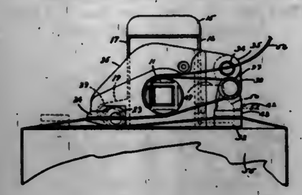
3,189,059
WINDING MACHINE
Harry W. Moore, 5051 Kittridge Road, Dayton 24, Ohio
Filed Sept. 25, 1962, Ser. No. 226,109
23 Claims. (Cl. 140—92.1)



1. In a coil winding machine, a support post; means mounting said post for rotation about a vertical axis; at least one coil receiving dummy field member mounted on said support post; at least one coil winding mechanism mounted adjacent said post for winding coils on said dummy field member; at least one coil transferring mechanism mounted adjacent said post for transferring coils from said dummy field member to a stator frame; and indexing means engaged with said post adapted to rotate said post selectively to align said dummy field member with said coil winding mechanism and said coil transferring mechanism.

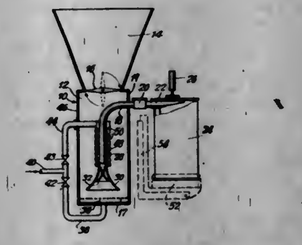
3,189,060
STRAP TENSIONING TOOL
Jack Eli Attas, Westmount, Quebec, Canada, assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 3, 1962, Ser. No. 185,775
7 Claims. (Cl. 140—123)

1. A strap tensioning tool comprising tensioning means for engaging a trailing portion of a strap and drawing it tight about a package in overlapping relationship with the leading end of the strap, strap end holding means for holding the leading end of the strap stationary while the strap is drawn tight by the tensioning means, said holding means comprising a relatively stationary member for engaging one face of the strap and a relatively movable member for engaging the other face of the strap so as to squeeze the strap therebetween, said members having parallel strap engaging surfaces, means for maintaining parallelism between said surfaces in all relative positions of said members, spring means urging said relatively movable member toward said relatively stationary member, means for moving said relatively movable member away



from said relatively stationary member, and means connected to said relatively movable member adapted to be engaged by the strap between said end holding means and said tensioning means to move said movable member toward said relatively stationary member as the strap is drawn tight by the tensioning means whereby the squeezing force of said end holding means is increased as the strap is drawn tighter.

3,189,061
LOW HEAD FORCE FLOW PACKER
Ivar H. Stockel, New City, N.Y., and Oliver R. Titchenal, Rumford, R.I., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed June 14, 1963, Ser. No. 287,834
8 Claims. (Cl. 141—68)

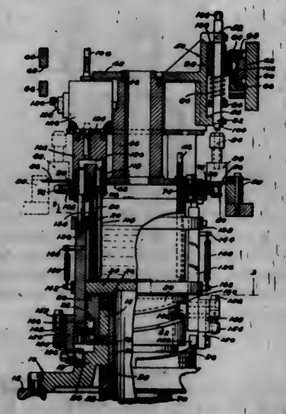


1. Apparatus for dispensing divided material, comprising: an elongated, vertically disposed bin having an upper receiving inlet and releasable closure means therefor, a conduit having one end thereof in communication with the base of said bin, said conduit extending upward substantially parallel in said bin and having the other end thereof disposed adjacent the upper portion of said bin, said upper portion of said conduit being disposed substantially perpendicularly to the side walls of said bin, a bag filling spout communicating with the upper portion of said conduit, means for injecting air under pressure into said bin for dispensing said material therefrom through said conduit, means for terminating such injection of air and venting said bin to terminate the flow of material through said filling spout.

7. Apparatus for dispensing bird seed or the like granular material, comprising: a closed bin having an upper receiving inlet and closure means therefor, a lower dispensing outlet for said bin, a bag filling spout connected to said outlet, means for injecting air under pressure into said bin for dispensing said material therefrom through said spout, said outlet being of reduced dimensions such that during air pressurization said material flows there-

through and when such pressurization is terminated the flow of said material is terminated.

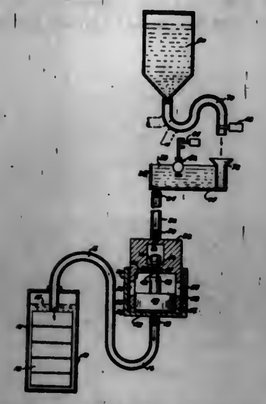
3,189,062
FILLING MACHINE
Walter S. Kazmierczak, Detroit, Mich., assignor, by mesne assignments, to Cherry-Burrell Corporation, Cedar Rapids, Iowa, a corporation of Delaware
Filed July 26, 1961, Ser. No. 127,065
5 Claims. (Cl. 141—147)



1. A device for continuous filling of a plurality of containers comprising a plurality of metering pumps mounted in a defined path, means for moving a plurality of containers into a registering relationship with each of said pumps, a nozzle to relate to the opening of a container in said container holders associated with each of said metering pumps, an actuator on each of said pumps, and means for controlling said actuators during the concurrent path of motion between said pumps and said containers comprising a plurality of cam followers on each actuator, one being finely adjustable relative to the other, and a plurality of cam tracks along said path, one being coextensive with said path and positioned to control the major portion of the motion of said actuators throughout the filling cycle and one being positioned co-extensively with said path and said first cam track at the final stage of the filling to cooperate with one of said cam followers to accurately position the actuators as the fill of each container is completed while the other cam follower is shifted out of contact with said first cam.

3,189,063
BATTERY WATERING DEVICE
Charles Thomas Lowe, 974 Stocker Ave., Flint 3, Mich.
Filed Aug. 7, 1962, Ser. No. 215,409
7 Claims. (Cl. 141—199)

1. A device for supplying electrolytic fluid to a battery cell, comprising:
a filling chamber communicative with the electrolytic fluid in said cell such as the fluid in said chamber normally maintains a level which is a function of the level in said cell;
a supply of electrolytic fluid;
a valve structure continuously communicative with said supply and adapted to be placed within said chamber, said structure having a central passage therethrough;
a float adapted to float upon the surface of the fluid in said chamber;
and valve means in said passage connected to said float adapted to restrict the flow of fluid from said supply through said passage to said battery cell when the level of fluid in said chamber is above a predetermined level and to restrict the flow of fluid from said supply through said passage when said valve structure is removed from said chamber.

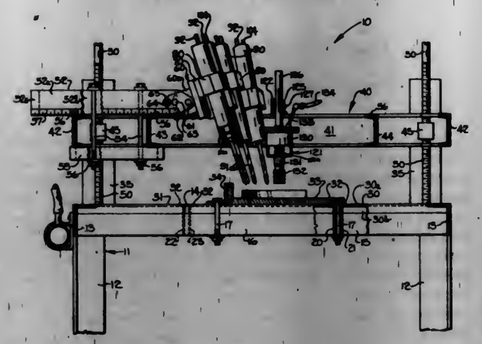


3,189,064
SAW CHAIN
Robert E. Frederickson, South Gate, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Oct. 15, 1962, Ser. No. 230,400
5 Claims. (Cl. 143—135)



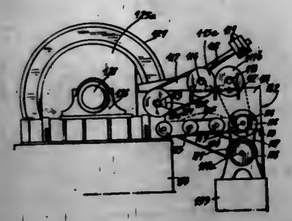
1. In a saw chain having center links pivotally joined at their ends in succession to side links, certain of said side links being selected to form a cutting element, comprising:
(a) a flat link plate portion;
(b) a shank portion extending vertically and laterally outwardly from the rear portion of said link plate portion, the lateral extent of the shank portion decreasing progressively from the forward edge to the rearward edge thereof and the forward edge of said shank portion being sharpened to cut the sidewall of a kerf, the shank portion being beveled laterally inwardly from the forward edge;
(c) a cutter portion extending laterally inwardly from said shank portion, said cutter portion having first and second adjoining outer top surfaces and an under surface, said under surface extending laterally inwardly from said shank portion, said first top surface being beveled at its forward end to provide an outer surface which forms an angle of clearance with the adjacent kerf base being cut thereby, said under surface extending rearwardly under said first and second top surfaces for their combined full lengths, said cutter portion being tilted rearwardly toward said link plate portion at an angle greater than said angle of clearance, the tilt angle being in the direction of the second top and under surfaces; and
(d) a cutting edge formed by the convergence of the leading edge of said beveled top surface with the leading edge of said under surface of said cutter portion.

3,189,065
MULTIPLE DRILLING APPARATUS
Jerry W. Cochrane and Roy H. Costner, Lincolnton, N.C., assignors to Cochrane Furniture Co., Inc., Lincolnton, N.C., a corporation of North Carolina
Filed May 1, 1962, Ser. No. 191,508
7 Claims. (Cl. 144—112)



1. A drilling apparatus for forming a multiplicity of holes in a workpiece in a variable pattern and at variable angles, said apparatus comprising
(a) a base adapted to receive workpieces of varying size and shape thereon,
(b) means adjustably carried by said base and engageable with workpieces of varying size and shape to insure correct positioning of the workpieces on said base,
(c) an upper frame mounted on said base for vertical adjustment relative thereto and normally being spaced in overlying relation to a portion of said base adjacent to the workpiece receiving portion of said base,
(d) a plurality of elongate drill unit supporting members slidably mounted on said upper frame for linear longitudinal and transverse movement relative to said workpiece receiving portion of said base and having one end thereof normally disposed in overlying relation to said workpiece receiving portion,
(e) a bank of drill units each including a normally rotating drill bit mounted for extensible movement into penetrating engagement with a workpiece,
(f) a first member pivotally mounted on said one end of each of said drill unit supporting members for pivotal movement about a first horizontal pivot,
(g) a second member pivotally mounted on said first member for pivotal movement about a second horizontal pivot perpendicular to said first horizontal pivot,
(h) means carried by said second members for clampingly mounting said drill units thereon in overlying relation to said workpiece receiving portion of said base and for independent vertical adjustment relative to said base whereby said drill units are mounted for individual linear adjustment longitudinally, transversely and vertically of said workpiece receiving portion of said base and for individual universal angular adjustment relative to said workpiece receiving portion, and
(i) means mounted on said upper frame in overlying relation to said workpiece receiving portion of said base and operable in timed relation to the extension of said drill bits for movement toward said workpiece receiving portion for clamping engagement with a workpiece carried thereby to hold the workpiece in position during the formation of the holes therein.

3,189,066
APPARATUS FOR PRODUCING UNIFORM WOOD CHIPS
Pierre Louis Victor Flamant, Auvers-sur-Oise, Seine-et-Oise, and Michel Jean-Marie Lisures, Versailles, Seine-et-Oise, France, assignors, by mesne assignments, to Sertum, Geneva, Switzerland
Filed Apr. 23, 1963, Ser. No. 275,103
9 Claims. (Cl. 144—172)

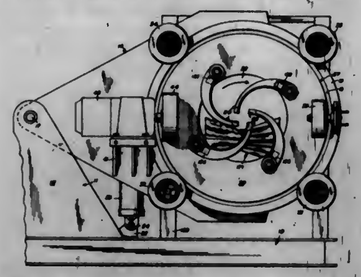


1. Apparatus for producing uniform natural wood chips particularly adapted for pulping and having "a coherent, porous fragile body of substantial uniform thickness having a series of loosely-interconnected, integral natural core lamellae disposed in substantially parallel planes, extending in the natural grain direction and interconnected by lignous fibers," comprising feed channel means defining a longitudinal path of travel for receiving a longitudinally disposed log of wood therein, power operated feed means projecting upwardly into said longitudinal path of travel for moving logs therealong, power-operated constraining-and-feed roller means suspended above and extending downwardly into said channel means and imposing a constant force toward said path of travel for preventing displacement of said log out of said longitudinal path of travel and cooperating with said feed means to positively feed said log, power means operatively connected to said power operated feed means and power operated constraining-and-feed roller means for simultaneously operating the same to feed at a predetermined speed along said channel, drive means mounting said constraining-and-feed roller means for simultaneous power operation and free-wheel movement for permitting a log to be drawn through said channel means at speeds greater than which said power operated constraining roller means is power-operated, and independently driven, rotating cutter means spaced from and downstream of said feed channel for engaging and shattering wood chips from the end of a log, said rotary cutter means including radial blades extending transversely of said longitudinal path of travel for engaging and rotating in a direction to draw a log longitudinally into engagement therewith at a speed greater than the rate of travel which said constraining roller means is power operated, said longitudinal path of travel defined by said feed channel means being disposed below a horizontal plane extending through the axis of rotation of said rotary cutting means, said rotary cutter means comprising an effective cutting area defined by a quadrant confronting said longitudinal path of travel and extending between said horizontal plane extending through the axis of rotation of said rotary cutting means and a second plane tangent to the lower periphery of said rotary cutter means.

3,189,067
VACUUM OPERATED DEBARKING APPARATUS
Frederick L. Dillingham, Sylacauga, Ala., assignor to Soderhamn Machine Manufacturing Company, Talladega, Ala.
Filed June 16, 1961, Ser. No. 117,585
17 Claims. (Cl. 144—208)

15. In a log debarking machine a rotary head having a central passage for the axial movement of logs there-

through, a plurality of arms carried by said head and mounted for movement toward the center of said passage, bark removing means mounted on the inner ends of said arms, individual vacuum operated means carried by said head, means for applying a vacuum to each of said vacuum operated means, each of said vacuum operated means being connected with one of said arms for



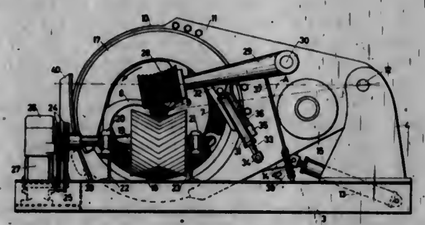
moving the same toward the center of said passage to effect debarking and means for rotating said head, whereby by reason of the vacuum actuation of said arms the engaging pressure between each of said bark removing means and the log will be maintained constant irrespective of outward or inward movement of any or all of said bark removing means as the result of variations in log diameter or contour.

3,189,068

LOG DEBARKING MACHINE

Per Gunnar Brundell, Tolfors, Gavle, and Karl-Erik Arnold Jonsson, Gavle, Sweden, assignors to Söderhamns Verkstäder AB, Soderhamn, Sweden, a corporation of Sweden

Filed Apr. 23, 1962, Ser. No. 189,466
Claims priority, application Sweden May 10, 1961, 4,948/61
5 Claims. (Cl. 144—208)



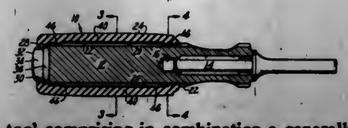
1. A debarking machine comprising a hollow rotor provided with debarking tools to remove bark from logs fed through it, a housing carrying the rotor and hingedly suspended on a shaft directed in parallel to the axis of the rotor, a motor mounted on the housing for rotating the rotor, conveyor means located at both ends of the rotor to move logs through it, the housing being adapted to be adjusted about said shaft in dependence on the diameter of the logs so as to place the rotor coaxially in alignment with a log to be introduced, means for maintaining the housing in adjusted position, a roll rotatably mounted above the conveyor at each end of the rotor and movable in vertical direction to exert a downward holding pressure on the logs moving through the rotor, arms carrying said rolls and hingedly supported in said housing to swing in vertical planes substantially perpendicular to the axis of the rotor, and power transmitting means mounted on the housing and connected to the arms to swing said arms relative to the housing to move the arms through a desired angle to lift the rolls above an oncoming log.

3,189,069

TOOL HANDLE WITH RESILIENT GRIPPING MEANS

Austin L. Stowell, New Britain, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut

Filed Dec. 6, 1963, Ser. No. 328,711
9 Claims. (Cl. 145—61)



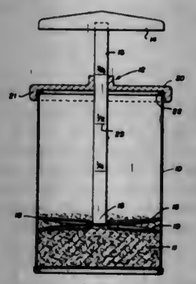
1. A tool comprising in combination a generally cylindrical handle body having a circumferential groove adjacent a first end thereof and a plurality of perhipherally spaced grooves extending parallel to the longitudinal axis of said body, and a fluted grip covering a substantial portion of said body and extending beyond the end of said body opposite said first end, said grip having at least one terminal shoulder portion disposed within said circumferential groove and comprises longitudinally extending alternating tongue and seating members, and both of said members having their internal surfaces spaced at a uniform radial distance from the longitudinal axis of said body so as to locate said tongue members in spaced radial relationship above said peripheral grooves, said tongue and seating members being integrally joined by an area of deformability and said tongue members having greater radial cross section than said seating members thereby forming a fluted outer surface on said grip and permitting said tongue members to move inwardly into said grooves upon the application of compressive force to the outer surfaces thereof.

3,189,070

CANNED FOOD CHOPPING AND REMOVING DEVICE

Clifford N. Darling, 132 Ashdale Ave., Winnipeg, Manitoba, Canada

Filed Oct. 26, 1962, Ser. No. 233,474
2 Claims. (Cl. 146—61)



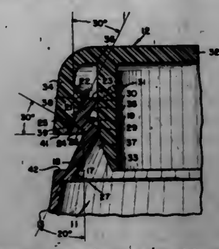
1. A device for chopping and removing relatively dense food from cylindrical cans and the like, comprising in combination a central stem, a circular cutting plate secured by the center thereof transversely to the base of said stem, the diameter of said cutting plate being slightly less than the diameter of the can within which it is to be used, handle means secured to the upper end of said stem for rotating said cutter plate within said can and a sliding can cover plate freely and slideably mounted on said stem, said cover plate having a depending peripheral lip freely engageable over the upper open end of the associated can, said cutting plate comprising a planar disc with at least one radially extending slit therein, the plane of the edges of said slit diverging in a vertical direction from the stem to the periphery thus forming a relatively small pitched auger plate.

3,189,071

FLEXIBLE DISPENSING CONTAINER ASSEMBLIES

Elmer Henry Balkema, Sparta, N.J., and Paul A. Marchant, Kansas City, Mo., assignors to Consolidated Thermoplastics Company, Los Angeles, Calif., a corporation of Delaware

Filed May 31, 1963, Ser. No. 284,407
5 Claims. (Cl. 150—.5)



1. In a plastic container assembly having a flexible walled hollow container body with a top opening closed by a closure member, said closure member being substantially non-removable from the body once assembled thereto, wherein:

(a) the upper end of the wall of the container body being necked inwardly in the form of an inwardly directed peripheral flange having an upwardly and inwardly directed first conical wall integral with an inner extremity of the flange,

(b) a second flange integral with and extending sharply from the upper extremity of said first conical wall,

(c) a second conical wall extending upwardly and inwardly from and integral with the outer extremity of said second flange, said second conical wall terminating at an upper edge defining said body top opening,

(d) said closure member including:

(1) a substantially planar top portion sufficient in size to cover said body top opening and positioned above the upper edge of the second conical wall,

(2) an outer skirt integral with and depending downwardly from the periphery of said closure top portion,

(3) an inwardly projecting rib on the inner face of said outer skirt, said rib being engaged beneath said second container flange when the closure is assembled on the container,

(4) an inner skirt integral with and depending downwardly from the underside of said closure top portion and terminating at a lower edge, said skirts being concentric and spaced from each other a distance only sufficient to receive the upper end of the container wall axially therebetween with minimum distortion of the skirts and an axial distortion of said second container flange to reduce the radial dimension of the flange.

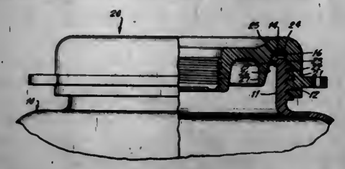
3,189,072

CONTAINER OUTLET AND CLOSURE THEREFOR

Anthony J. Starr, Wilmington, Del., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Feb. 8, 1963, Ser. No. 257,235
10 Claims. (Cl. 150—.5)

1. In a container structure, a tubular outlet constituted of flexible elastomeric material and having a cylindrical body wall provided with coupling means adapted to interengage with coupling means provided on a closure cap, and having at the top of said body wall an upwardly disposed, annular extension of substantially greater flexibility than said body wall and shaped to form with the top edge of said body wall an exterior annular concave groove, said extension being integral with the inner peripheral edge portion of the upper end of said body wall, and extending therefrom inwardly and upwardly, and then outwardly and upwardly, so that the lower portion thereof form at the upper end of said body wall an interior bead having an interior diameter substantially smaller than the interior diameter of said body wall and



from which rises the upper portion of said extension arranged with such lower portion in the form of a compound curve in cross-section such as to enable a closure cap by engagement therewith to compressibly deform such upper end portion downwardly and inwardly with a rolling action thereof overlies said top edge in such spaced relation that a closure cap may roll such upper end portion toward said top edge.

3,189,073

ARM PURSE AND HAND PURSE

Robert H. Todd, 728 Franklin Ave., Brooklyn 38, N.Y.

Filed June 13, 1962, Ser. No. 202,179
4 Claims. (Cl. 150—35)



1. A tubular purse to be worn on a person's forearm comprising a pair of semi-cylindrical covers, hinge means connecting said covers along adjacent edges thereof, a pocket formed on each cover, each pocket having an access opening on the inside of each cover, a slide fastener for closing each pocket opening, a strap secured intermediate its ends adjacent to each end of said covers and adjacent to said hinge means, said straps being disposed interiorly of said covers and of a length to encircle the person's forearm, fastener means at the ends of each strap for fastening the ends thereof together, fastener means on said straps at each end thereof and on each cover interiorly thereof arranged to co-act when the straps are fastened to the forearm to hold the covers secured to the straps and in closed encircling relation to the forearm; a locking strap secured exteriorly of one cover at the edge thereof opposite to said hinge means arranged to overlap the other cover when said covers are closed, and tongue means on said other cover insertable through a selected one of a plurality of openings provided in said locking strap for receiving a locking means.

3,189,074

CONTAINERS FOR STORING GOBLETS, GLASSES AND OTHER SIMILAR PRODUCTS

Seymour Schaefer, Evanston, Ill., assignor, by mesne assignments, to Aaron H. Plotzker, Skokie, Ill.

Filed Dec. 31, 1962, Ser. No. 248,496
2 Claims. (Cl. 150—52)

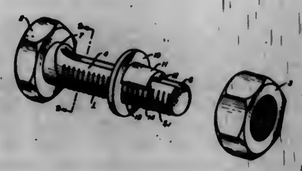
1. In a storage container of the character described for storing goblets, glasses and like articles of a fragile and

readily broken material and the container has a vertical side wall secured between opposite end walls; the herein invention consisting of an article receiving member adapted to be installed vertically oriented in said container between said end walls, said member comprising, a continuous, generally rectangular strip of flexible fabric material having a pair of opposite ends, said strip being folded intermediate said ends to locate said ends centrally of the length of the strip with each of said ends abutting a different surface of the strip whereby said strip



has a substantially 8-shaped configuration, said ends being secured to the strip to provide a pair of separate article receiving pockets of generally cylindrical configuration open at opposite ends thereof, the width of said strip being received selected to be greater than the article to be received in a pocket, said member capable of being collapsed to a substantially flattened configuration when not loaded with the articles contiguous one to the other, each of said ends being secured to the center of said strip along the upper and lower edges of said strip.

3,189,075
VIBRATION RESISTANT BOLT FASTENER
Garland R. Jobe, Greensboro, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 6, 1963, Ser. No. 300,370
11 Claims. (Cl. 151—7)



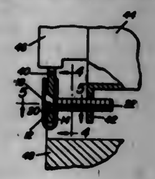
1. A vibration resistant bolt fastener comprising a bolt having a threaded shaft to fit the thread in a nut, a portion of the threads removed from one side of the bolt shaft to form a smooth convexly curved surface and a maximum cross section dimension less than the internal diameter of the nut thread so that the shaft may slidably receive said nut without relative rotary motion of the nut about the shaft, a friction insert of material softer than said nut for placement between said shaft and said nut, said insert having a concave inner surface complementary to said smooth convexly curved surface and an opposing convex outer surface, the thickness between said concave and convex surfaces gradually increasing from one end of the insert to its opposite end so as to increase the friction between the insert and the threads of said nut as the nut is turned to tightness on the bolt shaft, and means on said insert preventing its rotation about said shaft as said nut is turned thereon.

3,189,076
SHEET METAL CAGE NUT
James E. Adams, Toledo, Ohio, assignor, by mesne assignments, to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio
Filed May 22, 1962, Ser. No. 196,711
1 Claim. (Cl. 151—41.75)



A cage nut comprising a nut part having a flat sheet metal radially extending base flange and a centrally disposed outwardly extruded internally screw threaded tubular nut element formed with a downwardly and outwardly flaring skirt, the lower edge of which is integral with said flange, at least one notch in the edge portion of said flat base flange, a mounting part having a sheet metal plate, against which said base flange flatly abuts, tab means bent upwardly into said notch and then laterally inward into flatwise engagement with the outer face of said sheet metal base flange, thereby to hold the nut and mounting parts against relative turning movements, the bend of said tab means being substantially flush with the adjacent edge portions of said sheet metal plate, said sheet metal plate having laterally spaced slits and the portion between such slits being severed centrally and downward and outward and upward curved attaching hooks formed therefrom for engagement in a supporting panel aperture by first hooking one hook against an edge of the panel aperture and then forcing the other hook downwardly, the curved contour of the hook enabling a cam action to take place to effect snap engagement with the adjacent edge of such aperture, and the space between said hooks being substantially aligned with said nut element for the reception of a screw threaded shank, whereby said hooks are adapted for subsequent flattening between a surface of a supporting panel and a supported panel when said nut element supporting panel and supported panel are drawn together by screw action.

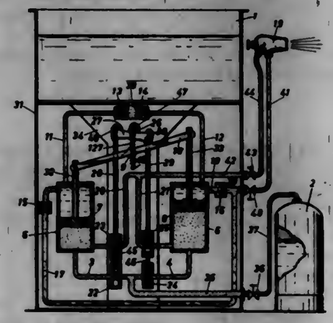
3,189,077
RETAINING CLIP FOR HEADED FASTENERS
Julian G. Willis, Jr., 3821 NW. 4th Ave., Pompano Beach, Fla., and Stephen E. Howard, 320 NW. 22nd St., Boca Raton, Fla.
Filed Aug. 7, 1962, Ser. No. 215,305
1 Claim. (Cl. 151—69)



In combination, a plate, a screw, and a clip, said plate having an aperture therethrough, said screw having a head on one end thereof, said screw being received through said aperture with the head rotatably engaged against one face of the plate, said clip consisting solely of two generally parallel planar legs interconnected at one end, said legs receiving both the screw head and plate therebetween with one leg being engaged against a planar face of the screw head so as to rotatably maintain the screw head against the plate and with the other leg engaged against the second face of the plate, said one leg having a hole therein aligned with the screw head and of a diameter less than that of the screw head, said other leg having an opening therein freely receiving said screw

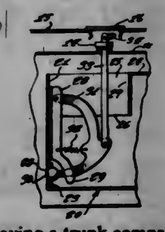
therethrough, said screw head having a tool receiving recess therein accessible through said one leg hole for effecting a rotation of said screw, said other leg including a notch therein extending inwardly from the free end thereof into communication with the opening, the sides of said notch converging inwardly toward said opening and intersecting said opening at points spaced apart less than the diameter of the opening and less than the cross-sectional diameter of the screw.

3,189,078
OIL BURNER APPARATUS
Tage Arnold Davidsson, 37 Jattekullegatan, Goteborg, Sweden
Filed Feb. 11, 1964, Ser. No. 344,067
1 Claim. (Cl. 158—36.3)



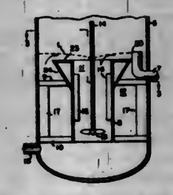
An oil burner utilizing a fuel oil and a combustible gas comprising a piston pump including a pump cylinder and piston slideable therein, a source of a combustible gaseous pressure medium, a first conduit connected to said source of combustible gaseous pressure medium and to said cylinder on one side of said piston, a source of fuel oil connected to said cylinder on an opposite side of said piston, an oil burner, a second conduit connected to the same side of said cylinder as said source of fuel oil and also to said oil burner for supplying fuel oil thereto, a third conduit connected to said cylinder on the same side thereof as said source of combustible gaseous pressure medium and also to said oil burner for supplying said combustible gaseous pressure medium thereto, mechanically operated valve means for alternately opening and closing said first and third conduits whereby said piston is raised and lowered and one way valve means each interposed in said second conduit and the connection of said source of fuel oil to said cylinder.

3,189,079
EMERGENCY INNER RESERVE TANK
Lee H. Ferguson, 10425 Jackson Road, Dexter, Mich.
Filed Oct. 5, 1962, Ser. No. 228,574
3 Claims. (Cl. 158—46.5)



1. In a vehicle having a trunk compartment and a main fuel tank having a fuel inlet suspended therebeneath, a reserve tank located within said main tank, bracket means securing the reserve tank to the bottom wall of said main tank, said reserve tank comprising top, bottom, side and end walls, a fuel inlet opening in said top wall disposed adjacent one end wall of said reserve tank, the upper edge of which defines one of the sides of said opening, a baffle wall structure depending from the reserve tank top wall and extending around the remaining other peripheral sides of said inlet opening and joined to said one end wall of said reserve tank, a discharge opening in said one end wall adjacent the bottom wall of said reserve tank, a valve seat surrounding said discharge opening, a bracket secured to said one end wall of said reserve tank above said valve seat, a lever arm pivoted at one end to said bracket, a valve carried by the other end of said lever arm for seating engagement on said valve seat, spring means connected to said bracket and lever arm for biasing said valve on its seat, a capped neck upstanding from the top wall of said main tank located over the inlet opening in the top wall of said reserve tank, an access opening in the floor of the trunk compartment in axial registry with said capped neck, a removable closure for said access opening, and a rod pivotally connected at its lower end to an intermediate portion of said lever arm and extending upwardly through said capped neck, the upper free end of said rod being disposed adjacent to said access opening.

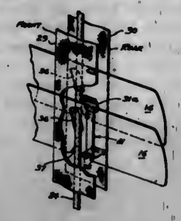
3,189,080
CIRCULATING SOLIDS DISPERSED IN A LIQUID
Robert H. Overcashier and Charles E. Sanborn, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1961, Ser. No. 159,379
5 Claims. (Cl. 159—25)



4. Apparatus for devolatilizing synthetic elastomer polymer crumbs containing volatile hydrocarbon solvent by prolonged contact with hot water, said crumbs tending to float on the surface of the water, which comprises:

(a) a closed, upright vessel,
(b) means for admitting hot water and synthetic elastomer polymer crumbs containing a volatile hydrocarbon solvent into said vessel to form said crumbs therein,
(c) means for discharging an aqueous slurry of said polymer from and maintaining liquid within the vessel to a predetermined level below the top,
(d) means for discharging vapor from the top of said vessel,
(e) a cylindrical draft tube situated vertically within said vessel and defining a central flow channel and an annular flow channel, said tube having the top thereof situated below said liquid level,
(f) impeller means within said tube for causing circulation of liquid and entrained polymer crumbs vertically successively through said channels, and
(g) an annular substantially horizontal, essentially flat baffle plate situated at the top of said tube a short distance below said liquid level and extending laterally outwardly from the tube to provide a shallow, horizontally elongated passageway for liquid flow from the top of one of said channels to the other, for inducing strong horizontal flow and thereby entraining said crumbs from the surface of the water.

3,189,081
VENETIAN BLIND SLAT AND CROSS TAPE CONSTRUCTION
Hans K. Lorentzen, Montclair, Joseph A. Anderle, Clifton, and James J. Kapeller, Jr., East Rutherford, N.J., assignors to Levolor Lorentzen, Inc., Hoboken, N.J., a corporation of New Jersey
Filed Oct. 26, 1962, Ser. No. 233,383
4 Claims. (Cl. 160—173)



1. In a Venetian blind of the full-closure type in which (a) a plurality of plastic ladders have front and rear vertical tapes, (b) the vertical tapes are interconnected by vertically-spaced cross tapes, (c) the cross tapes have front and rear ends, (d) crowned slats are supported by the cross tapes, (e) the slats have front and rear edges, and (f) the slats are spaced and the blind constructed to afford overlapping and contact of the slats when the slats are fully tilted in one direction, which direction is normally with the rear edges of the slats depressed; the improvement which comprises:
the cross tapes being substantially longer than the width of the slats,
the slats and cross tapes being preformed with definitely-located complementary-formations,
such formations being located toward the front and rear edges respectively of the slats, and toward the front and rear ends respectively of the cross tapes,
and such formations being located at predetermined inward spacings from the edges of the slats and the ends of the cross tapes respectively,
the complementary formations of the slats-and-cross-tapes providing shoulders on the cross tapes which overlie the slats at predetermined inward distances from the edges of the slats and at predetermined inward distances from the ends of the cross tapes,
such inward distances being pre-established by the preforming of the slats and cross tapes,
said cross-tape shoulders holding the slats against the cross tapes at locations that are toward the front and rear edges of the slats,
and the cross-tape shoulders that are toward the front edges of the slats co-operating with the cross-tape shoulders that are toward the rear edges of the slats to retain the slats at predetermined intermediate positions along the lengths of the cross tapes.

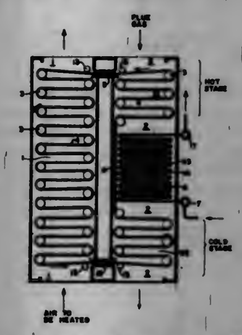
3,189,082
DEVICE FOR FASTENING LADDER TAPES OR LADDER CORDS TO A TILT ROD OF A VENETIAN BLIND
Petrus Johannes Hennequin, Rotterdam, Netherlands, assignor to Hunter Douglas International (Quebec) Limited, Montreal, Quebec, Canada, a corporation of the Province of Quebec
Filed June 24, 1963, Ser. No. 289,986
Claims priority, application Netherlands, July 5, 1962, 280,600
3 Claims. (Cl. 160—178)

1. A device for securing carrying means such as ladder tapes and ladder cords supporting slats on the tilt rod of a Venetian blind, comprising a carrier member for said carrying means having a depending front wall and a depending back wall, each of said walls being provided with a recess for slidably mounting said device on said tilt rod to rotate with said rod and two levers, each being L-shaped in cross-section, rotatably mounted in lips projecting from the upper surface of said carrier member, each



of said L-shaped levers, when in the securing position, having one of its legs in a substantial vertical position and the other of said legs then in an oblique position with regard to the upper surface of the carrier member, both legs of each lever being of sufficient length as to simultaneously clamp an end of the carrying means against the upper surface of the carrier member.

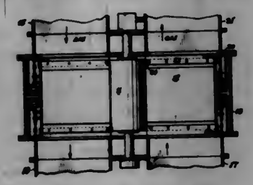
3,189,083
MULTI-STAGE SPRING BAND AIR PREHEATER
Friedrich Flkenscher, Gummersbach, Rhineland, Germany, assignor to L. & C. Steinmüller G.m.b.H., Gummersbach, Rhineland, Germany
Filed Aug. 10, 1962, Ser. No. 217,255
2 Claims. (Cl. 165—7)



1. In combination in an air preheater: first conduit means for passing flue gas therethrough, second conduit means for passing air to be heated therethrough, flexible endless metallic belt means passing through said first and second conduit means in succession, said belt means passing through a first section and a second section of said first conduit means along a closed serpentine pass, pipe means interposed between said first section and said second section for conveying cooling water through said first conduit means, said pipe means being located at that portion of said first conduit means at which the temperature curve of the cold stage of said belt means approaches the temperature curve of the air to a certain minimum extent, said belt means passing in a longitudinal direction of said first conduit means adjacent one side thereof to leave space in said first conduit means for said pipe means.

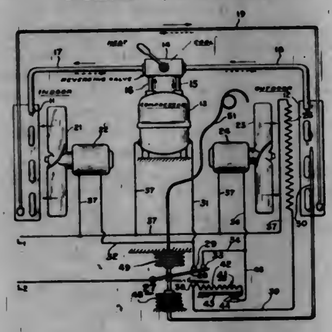
3,189,084
ROTARY REGENERATOR SEAL POSITIONING MEANS
Edward P. Horn, Wellsville, N.Y., assignor, by mesne assignments, to Combustion Engineering, Inc., a stock corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,417
2 Claims. (Cl. 165—9)

1. Rotary regenerative heat exchange apparatus having a rotor shell, a central rotor post, radial partitions extending from the rotor post to the rotor shell to provide a series of sectorial compartments therebetween, a mass of heat absorbent material carried by each compartment of the rotor, a cylindrical rotor housing having apertured end plates at opposite ends thereof adapted to enclose the rotor and provide an annular space therebetween, a sealing assembly intermediate the rotor and adjacent end plate including radial sealing means pivotally attached to each radial partition, seal positioning means for moving the sealing assembly into a preferred relationship between the rotor and rotor housing comprising axially spaced limit indicators carried by the housing in the annular space between the rotor and rotor housing, bracket means se-



cured to the rotor outboard from the radial partitions having an internally threaded aperture, tubular means having a threaded exterior surface carried by the threaded aperture of said bracket means, sensing means secured to said tubular means axially intermediate the limit indicators whereby said sensing means will be moved into contact with one of said limit indicators when the rotor is moved axially with respect to the housing, means for rotating the rotor about its axis, means responsive to rotation of the rotor for moving the sensing about its axis to thus actuate the tubular means axially within its bracket, and seal actuating means carried by said tubular means arranged to transmit axial movement of said tubular means to said sealing assembly.

3,189,085
AIR CONDITIONING APPARATUS
Arthur H. Eberhart, Hilliard, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 13, 1960, Ser. No. 55,794
5 Claims. (Cl. 165—12)



1. Apparatus for conditioning the air of an enclosure comprising a heat exchanger subject to the accumulation of frost, an electric heater arranged to defrost said heat exchanger by heating air flowing to said heat exchanger, means for propelling air over said heater and through said heat exchanger, an electric motor for driving said air propelling means, and an electrical supply circuit for said motor, a device for effecting energization of said motor at a reduced rate to cause air to be propelled over said electric heater and through said heat exchanger at a reduced rate, and control means responsive to an excessive accumulation of frost on said heat exchanger for simultaneously effecting energization of said heater and connecting said device in said circuit.

3,189,086
HEAT EXCHANGER WITH CONCENTRIC FLOW PASSAGEWAYS
Ludwig Hubert Esser, Upton Park, London, and Alan James White, Hayes, England, assignors to Metallurgical Engineers Limited
Filed Dec. 31, 1962, Ser. No. 248,348
Claims priority, application Great Britain, Jan. 2, 1962, 198/62
2 Claims. (Cl. 165—75)

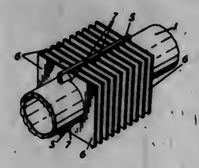


1. A heat exchanger, comprising:
an upstanding cylindrical casing having a lining of refractory material, said casing having a first inlet communicating with the bottom thereof;
a cap removably closing the upper end of said casing;
outer and inner cylindrical sleeves of large diameter mounted concentrically and spaced a short distance apart to provide a narrow first annular space therebetween, said sleeves being positioned within said casing with said outer sleeve being spaced from the inner surface of said lining to provide a second annular space therebetween, the first annular space being closed at the top and open at the bottom, means forming a passage between the interior of the inner sleeve and the second annular space at the upper end of the casing, said inner sleeve extending to the bottom of said casing for communication with said first inlet whereby a heated fluid supplied through said first inlet flows upwardly through said inner sleeve and then downwardly through said second annular space;
means defining a first outlet from said casing adjacent the lower end of said second annular space whereby said heated fluid flowing through said second annular space can be discharged;
means defining a second inlet in said casing communicating with the lower end of said first annular space and isolated from said first inlet and said first outlet whereby a fluid to be heated can be supplied to said first annular space;
means defining a second outlet extending laterally through said casing and communicating with the upper end of said first annular space whereby the fluid to be heated can be discharged from the casing;
a plurality of tubular members secured to and penetrating the outer sleeve at the upper end thereof and extending laterally therefrom;
a flanged ring secured to said tubular members and including a portion which extends outwardly and

upwardly to be secured between the cap and the casing whereby the sleeves are supported on the casing and the sleeves can be removed from the casing when the cap is removed; and

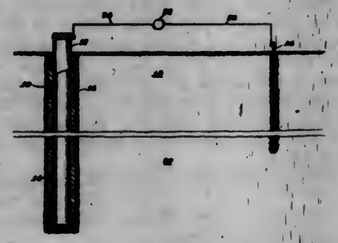
a ring of heat insulation material of substantially triangular cross-section disposed between said lining and said portion of said flanged ring above said tubular members to prevent overheating of the joint between the casing and the cap.

3,189,087
TUBULAR HEAT EXCHANGERS
Cyril Wright Farris, Wakefield, England, assignor to E. Green & Son Limited, Wakefield, England, a British company
Filed Oct. 6, 1958, Ser. No. 765,443
Claims priority, application Great Britain, Mar. 6, 1958, 7,259/58; Apr. 9, 1958, 11,255/58
3 Claims. (Cl. 165—181)



1. A heat-exchanger tube having external gills made in halves which extend substantially half way round the tube on opposite sides thereof and are joined to the tube by electric resistance welding, wherein the half-gills on one side of the tube have extremities spaced from the external surface of the tube and joined to the corresponding extremities of the half-gills on the opposite side of the tube by means including electric resistance welding.

3,189,088
WELL TREATING METHOD
Luther C. Cronberger, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 10, 1961, Ser. No. 88,583
7 Claims. (Cl. 166—25)



1. A method of reducing the setting time of an elongated un-set electrically conductive sheath in the annulus between the wall of an earth well and a string of casing disposed in said well, said sheath extending along at least a substantial part of the length of said casing, said string of casing constituting an electrode, comprising electrically connecting a source of electrical energy between said casing electrode and a ground electrode which is remote from said sheath and is contacting an earth formation, and applying in excess of one half ampere of electrical current per foot of active length of said casing electrode between said casing and said remote electrode to heat the sheath and accelerate the setting thereof.

3,189,089
METHOD OF ACCELERATING THE SET OF A CEMENT SLURRY IN WELL CEMENTING OPERATIONS
Lloyd G. Carter, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Original application Aug. 6, 1962, Ser. No. 215,091, now Patent No. 3,171,480, dated Mar. 2, 1965. Divided and this application Nov. 27, 1964, Ser. No. 414,398
7 Claims. (Cl. 166—25)

1. A method of cementing wells under relatively cold climatic conditions, comprising the steps of:

(a) introducing a hydraulic cement slurry into a desired area in a well bore for cementing a well casing therein; and

(b) chemically generating heat inside the well chasing by injecting an aqueous solution thereinto and subsequently injecting into the aqueous solution a quantity of a metal reactive with said aqueous solution, which metal reacts with said aqueous solution and generates a sufficient amount of heat to heat the well casing, wherein the amount of said metal and the amount of said aqueous solution are such that the reaction thereof and the reaction product formed thereby have substantially no deleterious effect on the well casing, thereby heating the cement slurry and accelerating the set thereof.

3,189,090
TREATMENT OF AN UNDERGROUND FORMATION
Francis J. Mitch, Houston, and Reeves B. Perry, Bellaire, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 8, 1961, Ser. No. 129,973
8 Claims. (Cl. 166—32)

1. A process of treating an underground water containing formation to render said formation less water permeable which comprises introducing into the formation a fatty acid monoglyceride in which the fatty acid portion thereof contains at least 14 carbon atoms whereby on contact with the water in said formation a water insoluble fatty acid monoglyceride gel is formed.

3,189,091
METHOD OF TREATING UNCONSOLIDATED WATER-CONTAINING WELL FORMATIONS
William G. Bearden and James W. Spurlock, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Aug. 27, 1962, Ser. No. 219,768
9 Claims. (Cl. 166—33)

1. A method of treating a water-containing incompetent formation penetrated by a well to prevent movement and sorting of particles therein as fluid flows from said formation into said well comprising:

injecting a solution of a cementing material into said formation,

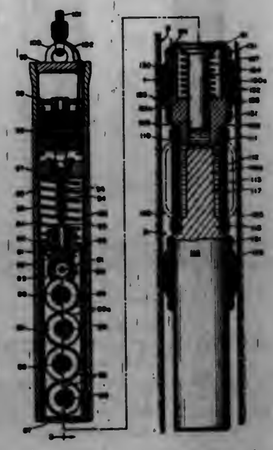
said solution comprising a hydrophilic solvent and a material which deposits a pliant solid on particles of said formation when said solution mixes with water in said formation,

then flushing said formation with a fluid to displace a portion of said solution from the interstices between the solid particles in said formation near said well,

maintaining said flush fluid in the interstices of said formation while said pliant solid deposits on said particles,

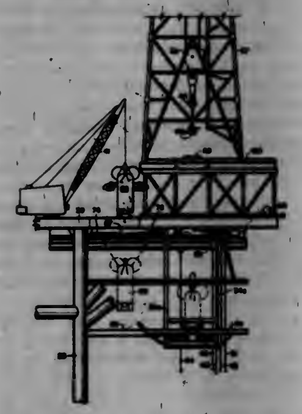
then placing said well on production and flowing formation fluids through the resulting permeable formation and into said well.

3,189,092
PETROLEUM WELL TREATMENT BY HIGH POWER ACOUSTIC WAVES TO FRACTURE THE PRODUCING FORMATION
Albert G. Bodine, Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed Oct. 24, 1958, Ser. No. 769,342
6 Claims. (Cl. 166—42)



1. The process of fracturing oil bearing formation surrounding a well hole, that includes: generating a non-linear peaked asymmetric pressure wave of steep wave front in a liquid body within said well by periodically inducing cavitation in said body of liquid, and transmitting said pressure wave to the formation surrounding the well hole, whereby to propagate in the formation a wave of corresponding wave form and of amplitude substantially exceeding the endurance limit of the formation.

3,189,093
WELL DRILLING PLATFORM
Douwe de Vries, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1962, Ser. No. 223,385
8 Claims. (Cl. 166—46)



1. In well drilling, completion and work-over operations carried on at offshore location from a drilling platform having a derrick and a hoist system therein, a method of handling equipment prior to running said equipment to an underwater wellhead, said method comprising

(a) positioning an equipment load to one side of a derrick on a drilling platform,

(b) lowering said equipment load from the level of the derrick base to a level on said drilling platform entirely below said derrick base and to one side thereof,

(c) positioning said equipment load at said lower level for lateral movement thereat,

(d) moving said equipment load laterally at said lower level to a position underneath the hoist system of said derrick,

(e) transferring said equipment load from said load moving position to load-support means,

(f) supporting said equipment load beneath said derrick,

(g) connecting lowering means to said equipment load,

(h) lifting said equipment load off said load-support means,

(i) retracting said load-support means from beneath said equipment load, and

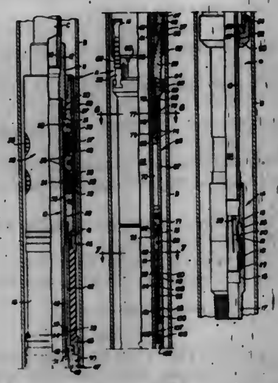
(j) lowering said equipment load from the drilling platform into the water to an underwater wellhead.

3,189,094
FIRING APPARATUS FOR GUN PERFORATORS
Walter E. Hyde, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Jan. 3, 1963, Ser. No. 249,229
14 Claims. (Cl. 166—55.1)



5. The combination with a formation tester including a tubing string, packer means for isolating the zone to be tested from the submergence pressure of well fluid, a formation tester valve operable to connect said zone with the interior of said tubing string, thereby to subject said zone to the reduced pressure present in the tubing string, and a gun perforator for perforating said zone for flow of formation fluids into said tubing string, of a firing apparatus for said gun perforator, comprising: a firing hammer operable to fire said gun perforator; restraining means responsive to submergence pressure to maintain said firing hammer inoperative; and a release means responsive to reduction in pressure, on setting of said packer for releasing said restraining means, thereby to permit operation of said firing hammer and firing of said gun perforator.

3,189,095
HYDRAULICALLY SET WELL PACKERS
John F. de Rochemont, Downey, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 5, 1962, Ser. No. 235,227
16 Claims. (Cl. 166—120)



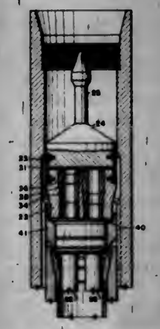
1. In apparatus adapted to be set in a well bore: body means; normally retracted means disposed about said body means and adapted to be expanded outwardly into engagement with the wall of the well bore; upper actuating means engaging said normally retracted means; lower actuating means engaging said normally retracted means; said upper and lower actuating means being movable toward each other to expand said normally retracted means; hydraulically operable means responsive to the hydrostatic head of fluid in the well bore for relatively shifting said upper and lower actuating means toward each other; releasable lock means for preventing relative shifting between said body means and one of said actuating means and held in locked position preventing such shifting by the other of said actuating means; means interconnecting said body means and said other of said actuating means for preventing relative shifting therebetween; and means for shifting said other of said actuating means from holding relation to said lock means to release said lock means.

3,189,096
RETRIEVABLE BRIDGE PLUG OR PACKER WITH SLEEVE VALVE
Fladger Phenix, Houston, Tex., assignor to Halliburton Company, Duncan, Oklahoma, a corporation of Delaware
Filed Sept. 12, 1961, Ser. No. 137,672
13 Claims. (Cl. 166—133)

1. A retrievable well packer comprising a mandrel, an expansible slip type anchor mounted in telescoping relation on the mandrel, means for selectively expanding the slips of the anchor, an expansible packer mounted on the mandrel, a compression sleeve mounted on the mandrel adjacent to the packer, said sleeve being movable axially on the mandrel to expand the packer, a sleeve valve mounted on the mandrel and movable axially thereof, said sleeve valve having a shoulder thereon in position to engage the compression sleeve, a slot in the mandrel adjacent the sleeve valve, and a pin on the sleeve valve extending into the slot, said slot being contoured for selectively controlling rotational and axial movement of the compression sleeve relative to the mandrel to expand the packer.

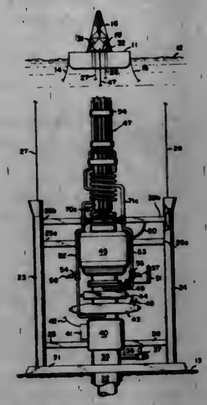


3,189,097
UNDERWATER DUAL TUBING WELL COMPLETION
John A. Haeber, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1961, Ser. No. 105,968
8 Claims. (Cl. 166—66.5)



1. In oil and gas well completion operations carried out from an operational base positioned above the surface of water, with a marine conductor pipe string extending from said base and connected to an underwater well casinghead, the method of installing dual tubing strings in a well casing depending from an underwater well casinghead and mounting a wellhead assembly thereon, said method comprising closing said well casing to formation fluids under pressure, running dual strings of tubing simultaneously from said base above water down through said marine conductor pipe and casinghead and into said casing, attaching a stop member and a running string to the tops of said tubing strings, landing in said casinghead said stop member with said tubing strings depending therefrom and withdrawing said running string, disconnecting from said casinghead said marine conductor pipe and withdrawing it to the above-water base, lowering a tool on a running string and guiding it within said casinghead to engage said tubing strings, withdrawing the upper ends of said tubing strings to a point above the surface of the water with the lower ends of the tubing strings remaining in the well, attaching a wellhead assembly to the top of said tubing strings, and lowering the upper portion of said tubing strings back into said well casing with the wellhead assembly, and closing the upper end of said casinghead with said lowered wellhead assembly.

3,189,098
MARINE CONDUCTOR PIPE ASSEMBLY
John A. Haeber, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1961, Ser. No. 163,242
7 Claims. (Cl. 166—66.5)



1. Apparatus for drilling, completing and working over an underwater well from an operating platform positioned above the surface of a body of water, said apparatus comprising

(a) a wellhead assembly positioned below the surface of the water,

(1) said wellhead assembly having an upwardly extending central tubular landing mandrel and

(2) at least one upwardly-extending tubular well member adjacent said mandrel and offset therefrom,

(b) an operating platform positioned above the surface of the water,

(c) a large-diameter marine conductor pipe extending from said wellhead assembly up to said operating platform

(d) a tubular landing head secured to the lower end of said conductor pipe and adapted to be connected in telescopic arrangement on said central wellhead landing mandrel,

(1) seal means carried by said landing head for sealing against said mandrel in a fluidtight manner,

(e) small-diameter conduit means fixedly secured on the outside of said conductor pipe co-longitudinal therewith, said marine conductor and said small-diameter conduit means fixedly secured thereto comprising a plurality of interconnected substantially rigid pipe sections having fluidtight coupling means at the ends thereof, the mating portions of said connector means being axially movable in telescopic arrangement one within the other, and

(f) stab-type connector means carried by said small-diameter conduit means at the lower end thereof for seating in a telescopic manner on said tubular well member of said wellhead assembly.

3,189,099
WELLHEAD CLOSURE
Lloyd G. Otteman and Nicholas B. Newman, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 27, 1962, Ser. No. 205,585
2 Claims. (Cl. 166—66.5)

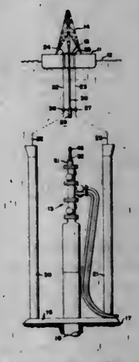
1. A remotely positionable and removable wellhead bore closure apparatus adapted to close in a fluidtight manner the bore at the top of a tubular production wellhead in a fluidtight manner, said bore closure apparatus comprising

a plug-like body member of a size to operatively engage and close the open top of a tubular wellhead having locking recess means formed in the adjacent wall thereof,

spring-loaded latch means carried by said body member and normally extending beyond the outer surface thereof, said latch means being of a size to seat within the recess means in the wall of said wellhead,

sealing means carried on the outer surface of said body member for establishing a fluidtight seal between said body member and said wellhead,

camming surfaces formed on the upper and lower faces of those portions of said spring-loaded latch means extending outwardly beyond the outer surface of said body member whereby said latch means are cammed into said body member by a force applied to said camming surfaces,



fishing head means secured to a portion of rod means slidingly movable through the top of said body member and latch-blocking means secured to the other end of said rod means and adapted to be slidably positioned in back of said latch means to prevent movement to said latch means to an inoperative position,

said latch-blocking means being provided with fluid port means therethrough in a direction to permit passage of fluid in a general direction which is substantially parallel to the axis of said body member, and

check valve means through the top of said body member to permit the escape of fluid from the inside thereof.

3,189,100
UNDERWATER WELLHEAD WITH CEMENT RETURN LINE
John A. Haeber, Houston, Tex., and Raymond F. Perner, Metairie, and Frank Poorman, Jr., Lafayette, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 27, 1962, Ser. No. 205,586
7 Claims. (Cl. 166—66.5)

1. An underwater drilling wellhead assembly fixedly positioned to the ocean floor and adapted to have an operational platform positioned substantially thereabove, said wellhead assembly comprising

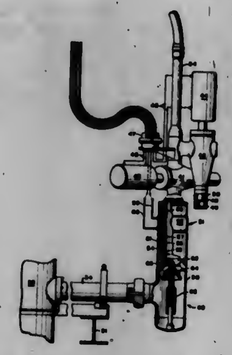
(a) a tubular well member extending into the ocean floor and fixedly positioned therein with the upper end thereof extending above the ocean floor,

(b) side conduit means extending substantially laterally from said tubular well member and being in

communication with the interior thereof, said side conduit means extending upwardly from said drilling wellhead assembly to said operational platform at the surface of a body of water,

(c) conduit disconnect means in said side conduit means at a level adjacent said wellhead assembly, and

(d) first valve means in said side conduit means between the tubular well member and the conduit disconnect means,



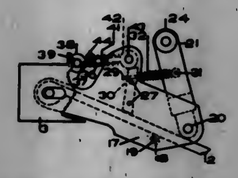
(e) wherein said side conduit means has fluid discharge port means through the wall thereof downstream of said disconnect means when flow is outwardly from the well and in communication with the ocean on the side of the disconnect means away from the wellhead assembly substantially at the level of said wellhead assembly, and there being remotely actuatable second valve means normally closing said discharge port means.

3,189,101
NUCLEAR REACTOR FUEL ELEMENTS
Leslie Reginald Blake, Shepshed, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Mar. 12, 1962, Ser. No. 179,121
Claims priority, application Great Britain, Mar. 28, 1961, 11,413/61
8 Claims. (Cl. 176—72)



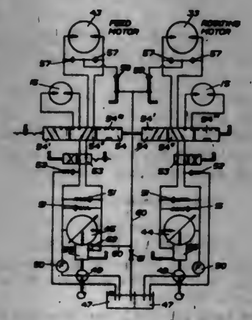
1. A fuel element for a nuclear reactor comprising a metal sheath, and an integral section of nuclear fuel contained within said sheath, said section of nuclear fuel being in direct and intimate contact over its outer periphery with the sheath and being slotted from its outer periphery to a depth reaching to the center of the fuel section throughout the length of said fuel section, opposing walls of the slot being spaced apart to allow for elastic radial deformation of the section of nuclear fuel, the voidage internally of the sheath resulting from the slot being filled with a gaseous medium which is inert towards the fuel.

3,189,102
IMPLEMENT CULTIVATING SHANK MOUNTING
John Roy Brown, 217 Roslyn Ave., Yorkton, Saskatchewan, Canada
Filed Apr. 20, 1964, Ser. No. 361,027
6 Claims. (Cl. 172—266)



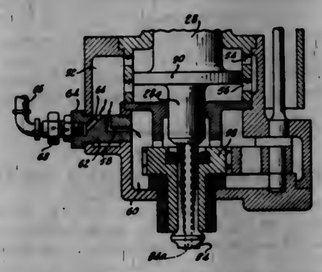
1. In an implement having a cross bar and including a cultivator shank, means mounting the shank on the cross bar to be slidable forward and backward, said means comprising an outer casing including side plates, means attaching the casing on the under side of the cross bar with the side plates depending downward spaced apart, a shaft to which the shank is forwardly pivotally attached movable between a working position in relation to the ground and an elevated position, the casing side plates having slotted openings in which the shaft is transversely mounted to slide forward and backward, an inner casing having side plates forwardly pivotally engaging the shaft, a locking bar, means pivotally attaching the lower end portion of the locking bar between the inner casing side plates with the lower end of the locking bar bearing against the cultivator shank, and rollers mounted on the upper end portion of the locking bar, the outer casing having recesses therein and in which the rollers are engageable with the locking bar held thereby against upward movement, said rollers being disengageable from the recesses by upward pressure on the lock bar.

3,189,103
HYDRAULIC DRILL FEED CONTROL
Kurt Anders Gustav Attebo, Nacka, Nils Johan Björnberg, Goteborg, and Karl-Erik Qvarström, Vendelso, Sweden, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed July 13, 1962, Ser. No. 209,578
Claims priority, application Sweden, July 20, 1961, 7,486/61
7 Claims. (Cl. 173—8)



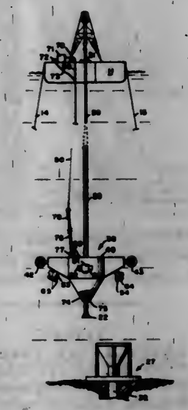
2. In apparatus of the character described for fluid pressure control of the feed of a rock drill toward a surface to be drilled and having a rock drill with a fluid pressure driven rotary drill motor and a first high-pressure fluid variable displacement pump in flow communication with said drill motor and forming therewith a first pressure fluid circuit, a fluid pressure driven rotary feed motor and second high-pressure fluid variable displacement pump in flow communication with said feed motor and forming therewith a second pressure fluid circuit, and means for driving said pumps, the combination which comprises first adjusting means connected to said first pump for controlling the displacement of said pump and the torque of said drill motor in response to fluid pressure and including means for sensing fluid pressure in said first circuit for actuation of said first adjusting means, second adjusting means connected to said second pump for controlling the displacement of said second pump and the torque of said feed motor in response to pressure and including means for sensing fluid pressure in said second circuit for actuation of said second adjusting means, and control means connected to said second adjusting means and in flow communication with said first and second circuits and responsive to a predetermined maximum pressure in either of said circuits for actuating said second adjusting means to reduce the displacement of said second pump when said predetermined maximum pressure is reached.

3,189,104
PERCUSSION TOOLS
Douglas W. Jamer, Upper Saddle River, and Richard A. Kirtham, Ringwood, N.J., assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Sept. 9, 1960, Ser. No. 54,864
9 Claims. (Cl. 173—154)



1. In apparatus of the character described for powering a percussion tool and for supplying pressure fluid for driving auxiliary feeding means and the like to be used with said tool and having a combustion engine with a combustion cylinder and an auxiliary cylinder coaxial therewith, the combination which comprises a motor piston reciprocable in said combustion cylinder, a radial flange on said motor piston reciprocable therewith in said auxiliary cylinder for compressing fluid in said auxiliary cylinder, a hammer piston reciprocable in said combustion cylinder and driven by combustion in said combustion cylinder imparting impact to said percussion tool, a receiving chamber adjacent said hammer piston for receiving compressed fluid from said auxiliary cylinder and for supplying said fluid to said hammer piston for the return thereof after each impact stroke, a conduit in flow communication with said auxiliary cylinder and said receiving chamber for carrying compressed fluid from said auxiliary cylinder to said receiving chamber, a connection disposed in said receiving chamber with said connection having a passage disposed therein for supplying pressure fluid to said auxiliary means, and adjusting means in said connection for maintaining the said pressure fluid in said receiving chamber at a predetermined constant pressure.

3,189,105
METHOD AND APPARATUS OF DRILLING UNDERWATER WELLS
William F. Bates, Arcadia, Glenn D. Johnson, Downey, and Bruce J. Watkins, West Covina, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 23, 1962, Ser. No. 197,115
15 Claims. (Cl. 175—5)



1. A method of drilling an underwater well from a vessel on the surface of a body of water, said underwater well having a well base positioned a substantial distance below the surface of the water, said method comprising

(a) positioning a drilling vessel at a selected offshore location above said underwater well base,

(b) slidably mounting a submersible self-propelled pipe manipulator and well-indicating device above a bit on a drill string depending from said vessel,

(c) lowering said drill string and device simultaneously through the water into the vicinity of the underwater well base,

(d) determining the position of the drill bit relative to the well base,

(e) moving at least the bottom of said drill string and bit into alignment with the top of the well base,

(f) lowering the pipe manipulator and well-indicating device into a seated position on the top of the well base, and

(g) lowering the drill bit and drill string into the well.

3,189,106
SONIC PILE DRIVER
Albert G. Bodine, Jr., Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed Jan. 9, 1962, Ser. No. 165,126
5 Claims. (Cl. 175—56)

4. A sonic driver for a pile or the like, comprising:

a mechanical oscillator for generating an alternating force in a vertical direction, said oscillator including a relatively massive body providing a vertically vibratory output means;

pile coupling means for operatively coupling said oscillator body to a pile, whereby the vibrations of said body are applied to the pile;

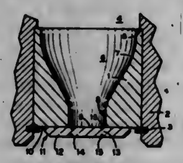
a power plant for driving said oscillator,

support means compliantly supporting said power plant relative to said oscillator body;



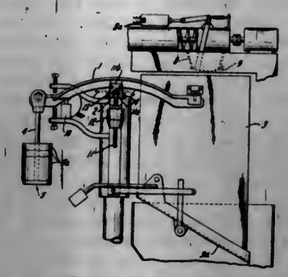
a driver supporting framework; and
means supporting said support means on said framework for pivotal movement about a horizontal axis.

3,189,107
FLUSHING PASSAGEWAY CLOSURES WITH REVERSE PRESSURE RUPTURABLE PORTION
Edward M. Galle, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,559
21 Claims. (Cl. 175—393)



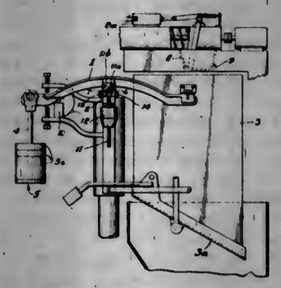
1. A closure for a generally downwardly extending flushing fluid passageway in an earth penetrating tool connected to equipment at the surface of the earth by a hollow drill stem through which flushing fluid is supplied to said tool and passageway, such tool also having a surface surrounding and generally transverse the discharge end of said passageway, said closure comprising a member having means for securing it to said tool at said discharge end of the passageway so that it is expellable downwardly therefrom at predetermined downward pressure gradients, said member having a peripheral flange portion adapted to sealingly engage said traverse surface of the tool under the influence of all predictable upward pressure gradients, said peripheral portion having an inner terminus at the intersection of said discharge end of the passageway and the adjacent transverse surface of said tool, and a center portion connected to said inner terminus of said peripheral portion to completely bridge and fill the gap defined thereby, at least a part of said center portion consisting of a rupturable portion secured to the balance of the member by a juncture of such reduced strength that the upturable portion is predictably separable from the closure at such juncture and is expellable upwardly under the influence of upward pressure gradients in excess of a safe margin below the collapse pressure of the lowermost sections of said drill stem, said upward pressure gradients at which the rupturable portion is separable being greater than said predetermined downward pressure gradients.

3,189,108
WEIGHT COMPENSATING METHOD FOR AUTOMATIC NET WEIGHERS
Ralph E. Williams, La Grange, and Leon J. Nowak, Jr., Park Ridge, Ill., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Original application Ser. No. 218,736, Aug. 22, 1962. Divided and this application Aug. 4, 1964, Ser. No. 387,304
4 Claims. (Cl. 177—1)



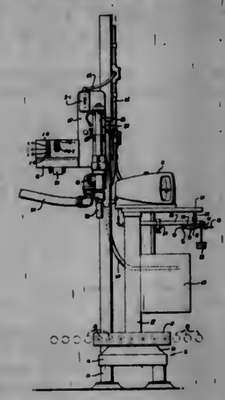
1. The method of operating an automatic net weighing machine having a movable weigh beam carrying a counterpoise weight and a bucket and a material feed terminable by movement of the beam, including the steps of setting the weight for a predetermined desired weight of material in the bucket, initiating a flow of material to the bucket and terminating the flow in response to movement of the weigh beam whereby a mass of material is delivered to the bucket after movement of the weigh beam, adding a biasing force to said weigh beam in amounts sufficient to then balance the weigh beam, then removing said force and adding a force of identical magnitude to the weigh beam but opposed to the direction of the first named force, dumping the bucket, and then initiating the flow of material to the bucket, and thereby automatically obtaining the desired net weight on following discharges without further adjustment.

3,189,109
WEIGHT COMPENSATING SYSTEM FOR AUTOMATIC NET WEIGHERS
Ralph E. Williams, La Grange, and Leon J. Nowak, Jr., Park Ridge, Ill., assignors, by mesne assignments, to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 22, 1962, Ser. No. 218,736
8 Claims. (Cl. 177—68)



1. In an automatic weighing machine wherein delivery of material to a weigh beam supported receptacle is automatically terminated by a predetermined movement of said receptacle, a weigh beam, a receptacle supported by one end of said weigh beam and a counterpoise of selected magnitude associated with the other end of said weigh beam, and an auxiliary weight structure associated with said weigh beam, said auxiliary weight structure including a screwthreaded elongated member pivoted coaxially with the axis of the weigh beam, a weight adjustable along said member, said member being movable along its axis, and a supplemental support on the weigh beam at each side of its axis, the permitted movement of the elongated member along its axis being sufficient to permit it to clear the outer ends of said supports, whereby the elongated member may be swung into a position above said supports, the parts being so proportioned that thereafter, when the elongated member has been moved along its axis in a retrograde direction in relation to its original movement, it may be swung into a supported relationship with either of said supports.

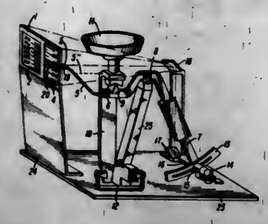
3,189,110
WEIGHING APPARATUS
Kenneth C. Yarborough, 754 21st St., Richmond, Calif.
Filed June 6, 1963, Ser. No. 286,062
10 Claims. (Cl. 177—81)



1. In a weighing apparatus, a scale having a balance beam, means connected to the balance beam for adjusting the scale so that the balance beam will assume a balanced position when the scale weighs a predetermined weight of material, bulk and dribble control means providing bulk and dribble flow of the material to be weighed by the scale, means applying a predetermined pre-load to the balance beam to urge the balance beam towards a balanced position, at least one source of light, a pair of photosensitive elements adapted to receive light from the light source, circuit means connecting the photosensitive elements to the bulk and dribble control means, a vane connected to the balance beam and adapted to travel between the light source and the photosensitive elements to affect the passage of light to the photosensitive elements from the light source, said circuit means terminating bulk flow from the bulk and dribble control means when the vanes affects the passage of light to one of said photosensitive elements and terminating dribble flow from the bulk and dribble control means when the vane affects the passage of light to the other of said photosensitive elements.

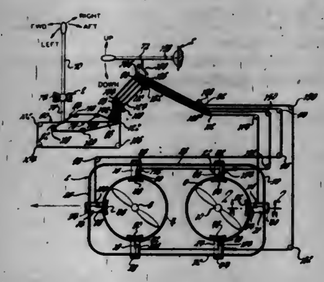
3,189,111
OPTICAL INDICATOR BALANCE WITH FINE AND COARSE INDICATOR SCALES
Adolf Ast, Messtetten, Germany, assignor to August Sauter K.G., Ebingen, Germany
Filed Jan. 18, 1963, Ser. No. 252,390
Claims priority, application Germany, Jan. 26, 1962, S 80,189
7 Claims. (Cl. 177—178)

1. An optical indicator balance comprising an optically projected fine scale, a movable projection scale, said optically projected fine scale being formed by a portion of said movable projection scale, a coarse scale extending throughout the entire range of measurement spacedly arranged from, yet in substantially a common plane with, said optically projected fine scale, said coarse scale being



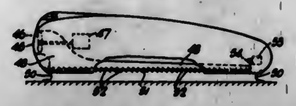
stationary, an optical system cooperating with said movable projection scale for producing said optical projected fine scale for sensitive optical indication of a measured value, and a mechanically controlled indicator cooperating with said coarse scale for coarse indication of a measured value.

3,189,112
AIR CAR DIRECTIONAL CONTROL SYSTEM
Paul E. Beam, Jr., Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 6, 1961, Ser. No. 101,109
7 Claims. (Cl. 180—7)



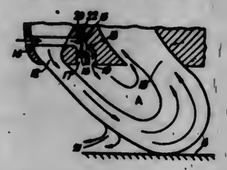
1. An airborne vehicle comprising, a generally box-like hull, a pair of horizontally spaced cylindrical shrouds formed in said hull and extending vertically therethrough, means for directing air downwardly through said shrouds, three radially extending ducts formed in said hull adjacent each shroud, the inner ends of said ducts opening into the space defined by said shrouds and the outer ends thereof opening through the side walls of said hull, said ducts being curved in side elevation so that air moving outwardly therethrough is ejected in opposition to the direction of air flow through said shrouds, hinged closures mounted in said shrouds adjacent the inner ends of said ducts, means biasing said closures to open positions which intercept and direct air from said shrouds into said ducts, and means for selectively adjusting said closures to vary the flow of air through said ducts, whereby said vehicle is caused to assume and maintain pitch and roll attitudes which causes the supporting air to produce a horizontal thrust component tending to propel the vehicle.

3,189,113
GROUND EFFECT VEHICLE WITH FLUID FLOW DIRECTION VARYING MEANS
Denys Stanley Bliss, Ashurst, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed June 7, 1962, Ser. No. 200,830
Claims priority, application Great Britain, June 9, 1961, 20,938/61
6 Claims. (Cl. 180—7)



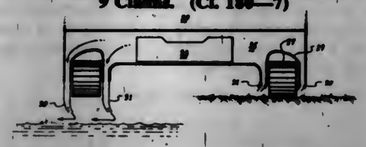
1. A vehicle of the type which in operation is supported over a surface by at least one cushion of pressurised gas containing beneath the vehicle at least in part by a curtain of moving fluid issuing from a supply port in the lower part of the vehicle, including a duct for supplying fluid to said supply port, said duct having a portion of enlarged cross-section upstream of said supply port, at least one shaft rotatably mounted in said duct with its axis substantially parallel to said supply port and perpendicular to the direction of fluid flow through said duct, said shaft being positioned within the enlarged portion of said duct out of the main path of flow of fluid through said duct, a plurality of vanes mounted on said shaft and inclined to the rotational axis thereof so as to present deflecting surfaces to the fluid flowing through said duct, and means for rotating said shaft to vary the deflection of the flow of fluid by said vanes.

3,189,114
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER
Wilfred James Eggington, Highworth, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Jan. 16, 1963, Ser. No. 251,813
Claims priority, application Great Britain, Sept. 4, 1959, 30,334/59
18 Claims. (Cl. 180—7)



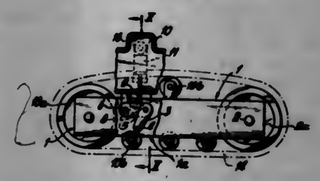
1. A vehicle for travelling over a surface of the kind which is at least partly supported above that surface by a cushion of pressurised fluid at least partly formed and contained beneath the vehicle by a curtain of fluid formed from fluid which is discharged from the vehicle, comprising at least one supply port in the bottom of the vehicle, from which the curtain-forming fluid issues, at least one recovery port in the bottom of the vehicle spaced inboard of and substantially parallel to the supply port, the supply port being so constructed and arranged that the curtain-forming fluid first flows downwards and inwards towards the surface to form a down-going limb of the fluid curtain, at least part of the curtain-forming fluid then being deflected round and upwards by the cushion pressure to form an upward-going limb of the fluid curtain which enters the recovery port, a space being formed by the flow of the curtain-forming fluid bounded on one side by the downward-going limb of the fluid curtain, on another side by the upward-going limb of the fluid curtain and on the third side by the vehicle structure, means for supplying fluid to said space, and means for controlling the pressure in said space in dependence upon the difference between the pressure in said space and the pressure on one side of the curtain.

3,189,115
AQUA-TRACK G.E.M.
Scott C. Rethorst, 1661 Lombardy Road, Pasadena, Calif.
Filed May 27, 1963, Ser. No. 283,275
9 Claims. (Cl. 180—7)



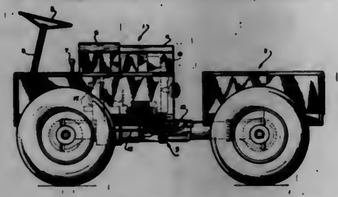
2. An amphibious G.E.M., comprising:
a boat hull;
a plenum chamber in said hull;
a fan for selectively delivering air to said plenum chamber;
extendible and retractable nozzle means communicating with said plenum chamber and positioned under the boat hull to selectively provide an air cushion between the hull and a water or land surface underneath said hull, said nozzle means being extended during discharge of air to provide said cushion, said nozzle means being retracted when no flow of air is provided to said plenum chamber; and
means for propelling said G.E.M. as displacement vessel and land vehicle whenever said nozzle means is retracted.

3,189,116
LEVELING MECHANISM FOR ENDLESS TRACK TYPE VEHICLES
Egon Steffen, Huttersdorf uber Lebach, Saar, Germany, assignor to Saarbergtechnik G.m.b.H., Saarwellingen, Saar, Germany
Filed Feb. 11, 1963, Ser. No. 257,527
6 Claims. (Cl. 180—9.5)



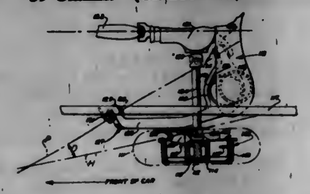
1. Levelling mechanism for an endless track vehicle having a chassis and running gear comprising a pair of driven rollers mounted on an axle adjacent the rear of said chassis, frames pivotally mounted on said axle and extending forwardly on each side of said chassis, an idler roller rotatably mounted adjacent the forward end of each frame and ground-engaging tracks trained over said driven rollers and said idler rollers, said mechanism comprising a link pivotally connected to one frame forwardly of said axle, a crankshaft rotatably mounted on said chassis adjacent said one frame, a crank arm on said crankshaft pivotally connected to said link, a first cylinder pivotally mounted on said chassis, a piston in said cylinder, a second crank arm on said crankshaft pivotally connected to said piston, a second link pivotally connected to the other frame forwardly of said axle, a second crankshaft rotatably mounted on said chassis adjacent said other frame, a crank arm on said second crankshaft pivotally connected to said second link, a second cylinder pivotally mounted on said chassis, a second piston in said second cylinder, a second crank arm on said second crankshaft pivotally connected to said second piston and a conduit connecting said cylinders, said cylinders and conduit being filled with fluid, whereby upon vertical movement of the forward end of either frame with respect to the other, movement of said pistons in said cylinders will cause fluid to flow through said conduit from one cylinder to the other to maintain said chassis substantially level about the longitudinal axis.

3,189,117
ARTICULATED VEHICLE
William B. Ammon, Tucson, Ariz., assignor to Dynaco Manufacturing, Inc., Tucson, Ariz.
Filed Dec. 16, 1963, Ser. No. 330,989
7 Claims. (Cl. 180—51)



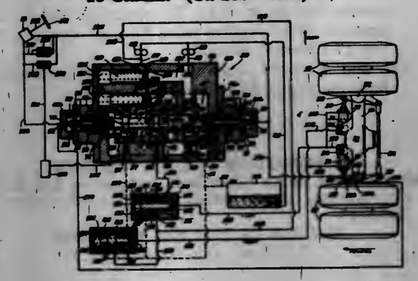
1. In an articulated vehicle having a four wheel drive, the combination comprising a forward axle and a rear axle, a forward torque tube attached to the forward axle and having a clevis joint at the rear thereof, a rear torque tube consisting of an inner tube and an outer tube in concentric relationship, the inner tube being attached at one end to the clevis joint and having an annular bearing plate at the other, means including the outer tube for rotatably connecting the bearing plate to the rear axle, an engine, clutch and transmission located adjacent to and directly over the forward torque tube, at least a portion of the transmission constituting a part of the forward torque tube, an operator's seat mounted above the transmission and steering means located adjacent said seat, said engine, clutch, transmission and operator's seat further being horizontally positioned between the forward axle and the clevis joint.

3,189,118
VEHICLE REAR WHEEL SUSPENSION
Klaus H. Arning, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 29, 1961, Ser. No. 99,167
59 Claims. (Cl. 180—73)



1. In a motor vehicle, in combination, a frame, a wheel support, a rear road wheel rotatably mounted upon said wheel support, upper and lower suspension structures guiding said road wheel during jounce and rebound movements, one of said suspension structures being connected between said frame and one portion of said wheel support to form a guiding support for the latter, and the other of said suspension structures being universally connected at one end to said frame and pivotally connected at its opposite end to another portion of said wheel support, and a control arm pivotally connected at its opposite ends to said frame and to an intermediate portion of said other suspension structure, said last named pivotal connection between said other suspension structure and said control arm permitting rotation therebetween about a generally transversely extending axis.

3,189,119
FLUID POWER STEERING SYSTEM
Emil F. Moreno, Melrose Park, Julius F. Marquardt, Westchester, and E. A. Domes, Wheaton, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Nov. 5, 1962, Ser. No. 235,312
15 Claims. (Cl. 180—79.2)



1. A fluid power steering system for a steerable axle on a vehicle,
(a) said axle comprising an inner axle housing and a pair of steerable outer axle housings,
(b) said inner axle housing including opposed ends defining steering axes such that said steerable outer axle housings are each pivotally connected to one of said ends about one of said steering axes,
(c) a hydraulic working circuit and a hydraulic control circuit,
(d) said working circuit having a source of fluid under pressure and including fluid return means,
(e) a control valve in said working circuit having an inlet port communicatively connected to said source of fluid under pressure,
(f) a double acting actuator pivotally connected at its ends to said outer housings and said inner housing for controlled steering movement therebetween,
(g) a first fluid outlet port in said control valve communicatively connected to one end of said actuator,
(h) a second fluid outlet port in said control valve communicatively connected to the other end of said actuator,
(i) a discharge port disposed in said control valve,
(j) a movable valve member disposed in said control valve, said member being movable from a neutral position to a forward position for communicatively connecting said source of fluid under pressure with said actuator for steering movement in one direction,
(k) said member being movable from said neutral position to a reverse position for communicatively connecting said source of fluid under pressure with said actuator for steering movement in another direction,
(l) said control valve being adapted to connect communicatively said source of fluid under pressure with said discharge port and said actuator when the valve member in said control valve is in neutral position,
(m) a servo-motor connected to actuate said movable member of said control valve,
(n) said control circuit having manually operable means for moving fluid in at least one direction in said control circuit,
(o) said servo-motor being operatively responsive to movement of fluid in said control circuit for actuating said movable member of said control valve,
(p) a servo-pump operable in opposite directions and

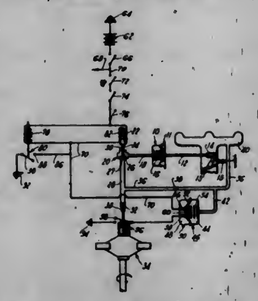
being pivotally connected at one of its ends to said inner axle housing and at the other of its ends to one of said outer steerable axle housings,

(q) the pivotal connections of said servo-pump being positioned relative to said steering axis such that steering movement in the opposite directions of said outer axle housing results in equal displacement of pressure fluid from said servo-pump,

(r) means for communicatively connecting said pump to said control circuit, said pump being operatively responsive to steering movement so that pressure fluid in said control circuit is moved in a direction to actuate said servo-motor for returning said movable member of said control valve from an operating position to a neutral position,

(s) said actuator including means to mechanically limit the degree of steering movement.

3,189,120
AUTOMOTIVE CRUISE CONTROL
John D. Bohl, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,048
5 Claims. (Cl. 180—82.1)



1. In an automotive vehicle having an engine and a driver operated throttle control member for controlling the fuel supply to the engine, fluid pressure means for regulating and controlling movement of said throttle control member to a position for maintaining said vehicle at a predetermined speed, said fluid pressure varying as a function of the movement of the throttle control member, valve means having first and second positions for controlling the application of fluid pressure to said fluid pressure means, solenoid means operatively connected to said valve means for causing movement thereof from said first to said second position upon energization of said solenoid means, and an electrical circuit for energizing said solenoid means, said circuit including a plurality of switches in series, one of which is a normally closed fluid pressure safety switch which is operatively connected to said fluid pressure means and controlled by a predetermined variation of fluid pressure therefrom, said safety switch being opened to insure deenergization of said solenoid means when said fluid pressure reaches a predetermined value as a result of temporary opening of one of said other switches.

3,189,121
VACUUM SEISMIC PULSE GENERATOR
Dean M. Vander Stoep, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,275
1 Claim. (Cl. 181—5)

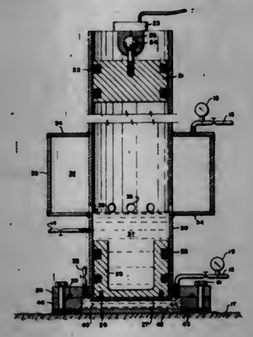
A seismic pulse generator for use in surveying land areas, said source comprising:

a vertical cylinder having a free piston disposed therein, said cylinder being open to the atmosphere at the upper end and closed at the lower end by a restrained piston, said restrained piston being free to move out of said cylinder but restrained from moving into said cylinder;

a flexible diaphragm secured to said lower end of the cylinder and spaced from the end of said restrained piston;

a reservoir, said reservoir communicating with said cylinder through a series of circumferentially spaced ports, said ports being disposed above the upper edge of said restrained piston;

a non-compressible fluid, said fluid filling the lower end of said cylinder to the end of said ports;



a vacuum producing means, said reservoir being coupled to said vacuum producing means;

a second non-compressible fluid, said second fluid filling the space between said flexible diaphragm and said restrained piston;

conduit means communicating with said cylinder above said restrained piston, said conduit means in addition being coupled to a source of gas under pressure whereby said free piston may be raised in said cylinder;

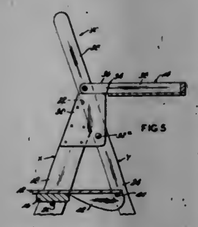
a latch means disposed on the upper end of the cylinder and adapted to hold said free piston at the upper end of the cylinder, said latch means in addition having a means to release said free piston and permit it to be driven downwardly by atmospheric pressure acting on the upper surface and a vacuum on the lower surface.

3,189,122
MUFFLER WITH DUAL PAIRS OF CURVED AND PERFORATED CHAMBER DEFINING WALLS
Herbert Martin, Esslingen (Neckar), Germany, assignor to J. Eberspächer, Esslingen (Neckar), Germany, a German firm
Filed Dec. 18, 1961, Ser. No. 160,188
3 Claims. (Cl. 181—56)



1. A muffler for combustion engines comprising an elongated vessel, first and second perforated walls in said vessel adjacent each end dividing said vessel into inlet chambers at each end and a central exit chamber with the inlet chambers being of a smaller size than said exit chamber and with the remainder of the interior of said vessel being substantially unobstructed, a plurality of inlet pipes for conducting exhaust gases from an engine connected into each of said inlet chambers substantially transverse to the longitudinal axis of said vessel, and a discharge conduit connected substantially transversely to the axis of said vessel from said exit chamber for discharging the exhaust gases which are delivered to the muffler.

3,189,123
FOLDING LADDER
Robert M. Bond, 973 Shadybrook Drive, Akron, Ohio, assignor of forty percent to Homer L. Bond, Akron, Ohio
Filed May 11, 1962, Ser. No. 194,075
9 Claims. (Cl. 182—125)



1. In a folding ladder having a front section and a rear section, the combination comprising:

a pair of ears pivotally uniting the front and rear sections,

a tray pivotally connected to the rear section,

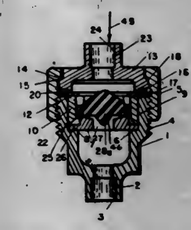
said ears having rearward extending cam surfaces cooperating with the tray to move it into a horizontal position as the ladder is opening, to support the tray in said horizontal position when the ladder is in open position, and to guide the tray to a downward vertical position as the ladder is closing.

3,189,124
LADDER
Marcel Rateau, Chateau de St. Christophe, Puch-d'Agenais, Lot-et-Garonne, France
Filed Nov. 29, 1963, Ser. No. 326,872
Claims priority, application Belgium, Nov. 30, 1962, 625,530
3 Claims. (Cl. 182—170)



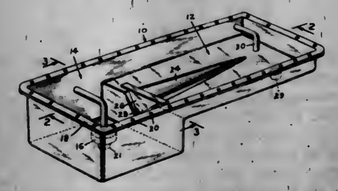
1. A ladder comprising a straight ladder section, stabilizing arms, first link means articulately interconnected at opposite ends thereof with a midportion of said straight section and with the upper ends of said stabilizing arms, the length of said first link means being such that in one position of said link means when said link means extends downwardly from said straight section the upper ends of said stabilizing arms contact a lower portion of said straight section, and second link means articulately interconnecting the base of said straight section and a portion of said stabilizing arms below said upper ends.

3,189,125
FLOW CONTROL
Richard T. Windsor and Alvin Lodge, Erie, Pa., assignors to Hays Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Nov. 22, 1957, Ser. No. 698,175
6 Claims. (Cl. 138—43)



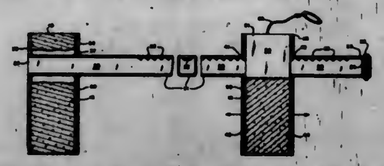
1. A flow control unit comprising a hollow body having an inlet and an outlet, a peripheral shoulder in said hollow body, said shoulder being in the form of an orifice plate, said orifice plate having a face within said body, said face having an opening therethrough, a radially disposed slot in said face, a control member made of flexible material supported on said face and overlying said slot, said control member being of such thickness relative to its width that substantially no bending of said control member will occur when in normal use fluid pressure is exerted on said control member, said control member being deformable by longitudinal fluid pressure exerted against said control member, thereby forcing said control member against said face and into said slot, thereby restricting the flow passage under said control member and through said slot in proportion to the pressure on said control member whereby fluid flow under said control member and through said slot is controlled, said face extending from said slot outwardly normal to the radial direction of said slot throughout the width of said face in said radial direction and sloping toward said inlet.

3,189,126
ENGINE CRANKCASE
Walter M. May, Allentown, Pa., assignor to Mack Trucks, Inc., Plainfield, N.J., a corporation of New York
Filed Mar. 18, 1963, Ser. No. 265,943
7 Claims. (Cl. 184—6)



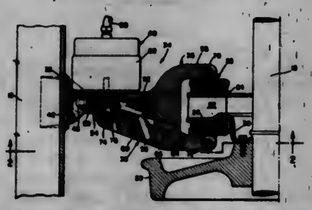
1. An engine crankcase for accumulating lubricating oil for an engine, comprising a deep sump, a relatively shallow portion communicating with said sump, trough means in said shallow portion sloping toward said sump to direct oil into said sump from said shallow portion when the crankcase is tilted downwardly in the direction of said shallow portion, and means in said trough for limiting the flow of oil from said sump into said shallow portion to a predetermined flow rate.

3,189,127
UNIVERSAL WHEEL CHOCK
Paul Karnow, Glenside, and Blanchard S. Hutchins, Warrington, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 30, 1963, Ser. No. 298,906
9 Claims. (Cl. 188—32)
(Granted under Title 35, U.S. Code (1952), sec. 266)



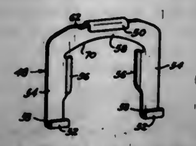
1. A symmetrical wheel chock assembly for rendering an aircraft wheel nonrotational, comprising:
a plurality of spaced, parallel, elongated members each in cross section defining a hexagon having a relatively wide side surface and a spaced parallel relatively narrower side surface, spaced parallel top and bottom surfaces each extending from an opposite side edge of said wide side surface, inclined surfaces on each of said members, each joining said top and bottom surfaces with a respective opposite edge of said narrower side surface,
a bar means connected to said narrow side surfaces intermediate the inclined surfaces to place said relatively narrow sides in interfacing and confronting relationship,
and one of said elongated members being fixed to said bar means and the other of said elongated members selectively movable with respect to said bar means whereby an adjustable and symmetrical wheel chock assembly is formed which is speedily and efficiently operable.

3,189,128
DISC BRAKE INSTALLATION
Thomas M. Herbert, Huntingdon Valley, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 7, 1962, Ser. No. 221,990
5 Claims. (Cl. 188—59)



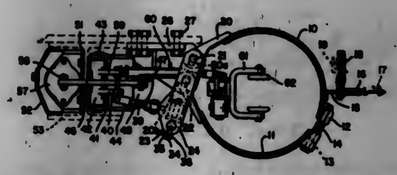
1. In a disc brake mechanism for a railway car truck having a rotating disc and a supporting member to enable pivotal movement of the mechanism about an axis transverse to the axis of rotation of the disc, the combination comprising, a first tong member having a first brake block on one of its ends and pivotally mounted to said supporting member about said transverse axis at its other end, a second tong member having a second brake block at one of its ends, pivot means interconnecting said first and second tong members intermediate their respective ends for rotation about a common axis parallel to said transverse axis, and actuator means connected to said first tong member and to the other end of said second tong member to cause relative pivotal movement therebetween wherein said first and second brake blocks are moved into and out of frictional engagement with said brake disc.

3,189,129
BRAKE SHOE RETAINER
Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 4, 1962, Ser. No. 228,346
8 Claims. (Cl. 188—73)



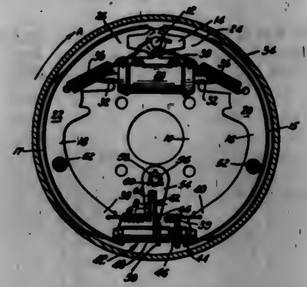
1. In a disk brake: a rotor having friction surfaces thereon, a housing having a bore, a piston slidable in said bore toward and away from said rotor friction surfaces, a brake shoe comprising a backing plate with friction lining affixed to the front face thereof, said backing plate having portions extending beyond the radially inner and radially outer peripheral edges of said lining, a generally flat U-shaped resilient member, a plurality of tabs attached to said resilient member and spaced from one face thereof to form grooves, said backing plate portions being received within said grooves for securing said resilient member to said brake shoe, said one face of said resilient member engaging the rear face of said backing plate and exposing the portion of said rear face of said backing plate between the legs of said U-shaped member, flange means attached to said legs overlying a portion of said exposed portion of said rear face of said backing plate and spaced therefrom, said piston having an annular groove spaced from its front face, said flange means being disposed within said annular groove, said piston front face engaging the exposed rear face of said backing plate.

3,189,130
BRAKE ASSEMBLIES FOR HEAVY TRAVELING MACHINES
Kenneth W. Randall, Indianapolis, Ind., assignor to Insley Manufacturing Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Sept. 13, 1961, Ser. No. 137,881
1 Claim. (Cl. 188—77)



In a brake assembly for heavy traveling machines of the type having a brake-lining equipped band in embracing relation to a drum, the improvement which comprises a stationary bracket having a pair of spaced elongate slots, a rockable lever having a pair of side plates, a pin connecting one end portion of said side plates to said bracket and arranged in one of said elongate slots, a connection between one end of the brake band and said pin, a slide reciprocable between said side plates, a second pin connected to said slide and arranged in the other of said elongate slots of said bracket, a connection between the other end of the brake band and said second pin, a spring seat adjacent the opposite end of said spaced side plates, a spring interposed between said spring seat and said slide for imparting constant pressure against said slide and thence against said second pin to contract the brake band but to allow the brake band to shift in either direction in relation to the rotation of the brake drum, and means for effecting rocking movement of said lever in one direction or the other to apply or to release the brake band.

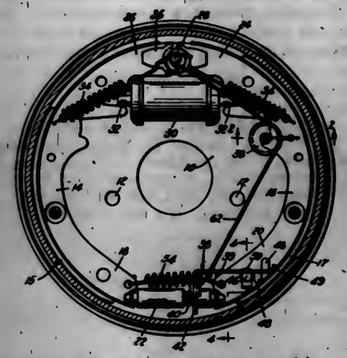
3,189,131
AUTOMATIC SHOE RETRACTOR
Earl R. Price, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,682
9 Claims. (Cl. 188—78)



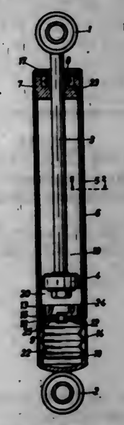
1. In a drum brake; a support, a pair of brake shoes slidably mounted on said support in end-to-end relationship, a strut interconnecting a pair of adjacent ends of said shoes, means maintaining said pair of adjacent ends in engagement with said strut, a member mounted on said support for relative movement thereon to successive new positions on said support, said member having an abutment surface, means producing opposition to movement of said member relative to said support, lever means mounted on said member arranged for engagement with said abutment surface and being biased a predetermined distance away from said abutment surface by a force which is less than said means producing opposition to rotation of said member, said strut having lever engaging means thereon, said lever means being located between said abutment surface and said lever engaging means, said lever means having a portion for engagement with said lever engaging means on said strut, whereby upon movement of said strut in one direction beyond said predetermined distance during brake actuation, said strut will engage said lever means with said abutment means to overcome the force of said means opposing movement of said member to move said member to a new position on said support and upon brake release, said lever means will return said strut said predetermined distance in the opposite direction.

3,189,132
AUTOMATIC ADJUSTER
Joseph L. Mossey, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Continuation of abandoned application Ser. No. 163,682, Jan. 2, 1962. This application Aug. 23, 1963, Ser. No. 304,167
4 Claims. (Cl. 188—79.5)

1. In a brake assembly: brake shoes arranged in end to end relationship; each of said brake shoes comprising an arcuate rim having friction material on the outer face thereof and a web extending transversely from the inner face thereof; an adjustable strut between two opposed ends of said brake shoes and operatively connected to said brake shoes for adjustment thereof; said adjustable strut including an element for changing the length thereof; a resilient one piece member for actuating said element; said resilient member being carried at one end portion by one opposed end of one of said brake shoes and having an element actuating portion normally biased in engagement with said element; said one end portion of said resilient member engaging the inner face of the rim of said one brake shoe and having lateral projections extending therefrom engaging each face of said web of said one brake shoe for stabilizing said one end portion on said one brake shoe; means attached to said resilient member for moving said element actuating portion of said resilient member upon spreading of said shoes thereby accumulating energy in said resilient member for returning said element actuating portion to its normal position upon retraction of said brake shoes, whereby said element actuating portion actuates said element when said brake shoes travel a certain distance upon spreading thereof to change the length of said adjustable strut and thereby adjust the position of said brake shoes.



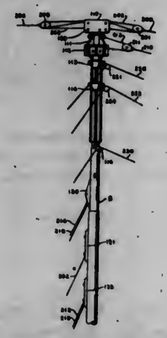
3,189,133
TELESCOPIC SHOCK ABSORBERS
Albert Dillenburger, Andernacher Strasse 28a, Koblenz-Lutzel, Germany
Filed Oct. 29, 1962, Ser. No. 233,599
5 Claims. (Cl. 188—94)



1. A telescopic shock absorber comprising, an outer cylinder having top and bottom portions, a shorter inner cylinder mounted substantially without clearance inwardly of said outer cylinder, the exterior wall of said inner cylinder being in engagement with the inner wall of said outer cylinder, said walls having irregularly disposed bleed grooves forming capillary passages for fluid, said outer cylinder having a top flange spaced from the top end of the inner cylinder, a trough shaped end piece provided with a bore communicating with the interior of said outer cylinder for the passage of liquid, secured between said top flange and the top end of said inner cylinder, a packing disposed centrally of said trough; a bottom wall unit comprising a transverse bottom wall spaced

from the bottom edge of said outer cylinder, said bottom wall having fluid passages therein; an accordion-like elastic compensating element extending downwardly of said bottom wall into the bottom portion of the outer cylinder, a closure unit including a head piece provided with an annular connecting part and secured to the bottom end of the outer cylinder, a piston slidable in said inner cylinder and a connecting rod secured with one end to said piston and extending outwardly through said packing.

3,189,134
PORTABLE SKYLINE YARDER
Archer L. Wemmack, Arthur C. Blaine, and Bud Orley, Castle Rock, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Nov. 27, 1961, Ser. No. 154,983
8 Claims. (Cl. 189—11)



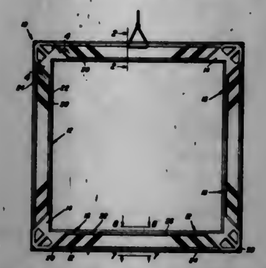
1. In a portable skyline yarder, a tubular tower, means for leading a skyline tensioning line down the center of the tower tube, means for leading a pair of front guy tensioning lines down in the front side of said tower tube, means for leading a pair of back guy tensioning lines down in the back side of said tower tube, and means for leading all of said lines out of the back side of said tower tube at a distance above its lower end.

3,189,135
DEMOUNTABLE PARTITION
Robert H. Slowinski, Tonawanda, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed May 11, 1959, Ser. No. 584,307
2 Claims. (Cl. 189—34)



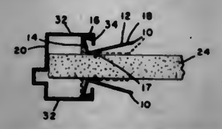
1. A demountable partition comprising an upwardly opening bottom channel affixed to a floor, a downwardly opening top channel affixed to a ceiling parallel to and above said bottom channel, a resilient, vertically compressed spring disposed within said bottom channel, a partition panel having a bottom edge disposed within said bottom channel above said spring and having a top edge disposed within said top channel, said compressed spring constantly urging said panel upwards, said spring and said panel being vertically restrained by said relatively fixedly spaced top channel, said top channel including an uppermost horizontal top face adjacent said ceiling, sides extending downwardly from the lateral edges of said top face, and inwardly directed lips at the bottom edges of said sides, said top channels having disposed therein at spaced positions self-retained spacing clips, said spacing clips being generally M-shaped, including two oppositely outwardly and downwardly directed arms for centering said clip in said top channel, and a central lower face for abutting the panel top edge and holding said panel spaced downwardly from said top face.

3,189,136
ADJUSTABLE PICTURE FRAME MOLDING
Carson S. Stickney, Rte. 4, Bryan, Ohio
Filed July 3, 1962, Ser. No. 207,250
6 Claims. (Cl. 189—36)



1. A picture frame molding consisting of an elongated strip having a front surface and a rear surface, and a plurality of angularly extending cutting tool receiving stabilizing and guiding means located at spaced points on the rear surface thereof, said means including a plurality of spaced grooves formed by a plurality of aligned longitudinally spaced quadrilaterally shaped raised portions, each raised portion consisting of two longitudinally spaced parallel ribs extending at a 45 degree angle to the longitudinal axis of the strip and interconnected at their ends by inner and outer longitudinally extending ribs.

3,189,137
DOOR FRAME CLIP
David A. Harris, Tonawanda, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,795
6 Claims. (Cl. 189—36)



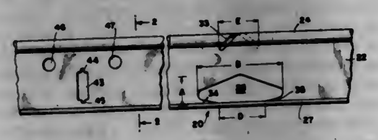
1. A partition edge structure comprising
(a) an elongate channel having a cross section of generally C-shape with spaced parallel side walls and inwardly directed terminal flanges forming the two respective side edges of said channel,
(b) a partition core section having an edge thereof disposed within said channel and being of substantially less thickness than the spacing between said terminal flanges, and
(c) a clip on at least one side of said partition core section disposed partially within said channel, said clip being formed from a single sheet of rigid material and comprising
(1) a flat main body section lying flat against said partition core section, said main body section being formed from one end of said single sheet of rigid material disposed between said core section and a facing material laminated to said core section,
(2) a core spacer section extending outwardly from the plane of said body section and having an outermost edge contacting and retaining a respective portion of said channel in spaced relation to said partition core section, said spaced relation being greater than the inward extent of said channel terminal flanges, and
(3) a clip spacer section extending inwardly from said outermost edge in a direction toward said body section and having an edge remote from said core spacer section contacting and retaining a respective portion of one of said terminal flanges in spaced relation to said core spacer section, said clip spacer section being of a shorter length than the length of said core spacer section, to permit a pivoted placement of said core spacer section and said clip spacer section within the space formed between said partition core section and the channel.

3,189,138
CEILING CONSTRUCTION
Henry Zaamirowski, Ellicott City, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed Oct. 24, 1961, Ser. No. 147,337
10 Claims. (Cl. 189—37)



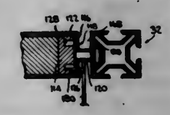
1. A beam for use in a fire retarding structural system, comprising an upstanding web portion and a horizontal flange portion, said web portion having an opening forming an expansion relief space extending from said flange through the opposite edge of said beam, said space being positioned intermediate the ends of said beam, said opening having a length taken along the length of said beam selected to accommodate anticipated axial expansion of said web portion upon exposure to a fire to thereby prevent lateral buckling of said web portion, said opening having an axially elongated portion intermediate said flange and said opposite edge, the opposite sides of said opening between said elongated portion and said flange being convergent toward each other to their line of juncture with said flange to cause buckling of said flange below said opening when said beam is exposed to fire.

3,189,139
CEILING CONSTRUCTION
Henry Zaamirowski and Martin L. Lydard, Ellicott City, Md., assignors to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed June 26, 1962, Ser. No. 205,279
11 Claims. (Cl. 189—37)



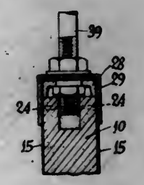
1. A beam for use in a fire retarding structural ceiling system, comprising a pair of elongated metal strips disposed in side by side relationship and forming an upstanding web, an elongated bulbous rib joining the tops of said strips, and an elongated flange extending laterally from each side of the base of said web whereby said beam has substantially an inverted T cross section, each of said strips having an opening extending upwardly from the base thereof at an intermediate location in the length of said beam, said openings being in substantial axial alignment, said openings forming an expansion relief space in a lower portion of said web, said rib having an elongated slot extending in a spiral path from one side of said web to the other side of said web and being in substantial axial alignment with said space whereby when said beam is subjected to expansion stresses accompanying fire conditions said strips will buckle laterally in the region above said openings and said flanges will buckle downwardly in the region below said openings thereby to relieve said expansion stresses without substantial twisting of said beam.

3,189,140
PARTITIONING SYSTEM
Gerald Lass, Great Neck, N.Y., assignor to Designs for Business, Inc., New York, N.Y., a corporation of New York
Filed Aug. 5, 1959, Ser. No. 831,838
3 Claims. (Cl. 189—41)



1. For use in a partitioning system of the character described, a post having at least one groove parallel to the length thereof, said groove having a broad back and a narrow mouth, and resilient strip gasketing in said groove, said gasketing being shaped to fill the broad back of the groove and to extend into the narrow mouth thereof, the portion of the gasketing in the mouth of the groove being shaped to provide a pair of spaced parallel narrow ribs lying against the sides of the mouth of the groove and between them defining an ontwardly facing groove in the gasketing which is parallel to the groove in the post.

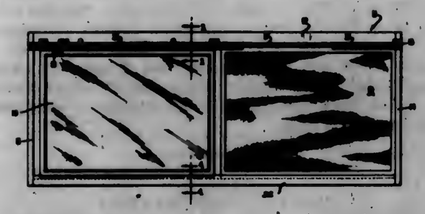
3,189,141
FIRE DOOR CONSTRUCTION
Leon F. Dusing, Buffalo, Charles F. Dusing, Leroy, and Carl F. Gerhardt, Clarence, N.Y., assignors to Dusing and Hunt, Inc., Buffalo, N.Y.
Filed Apr. 4, 1960, Ser. No. 19,549
6 Claims. (Cl. 189—46)



1. In a fire door, generally rectangular slab means of insulating material extending substantially the height of the door, sheet metal facing members attached to the opposite faces of said slab means, top framing channel means forming a longitudinal passage along the top of said door directly above the slab material, said longitudinal passage being open to the atmosphere at at least one end of said door, and notches along the upper edges of said slab means extending downwardly below said

top framing channel means to permit escape of gas from between the facing sheets and the slab means to said longitudinal passage.

3,189,142
CLOSURE OPERATOR
Fred O. Carlson, P.O. Box 837, Hesperia, Calif.
Filed Feb. 19, 1963, Ser. No. 259,554
13 Claims. (Cl. 189—47)



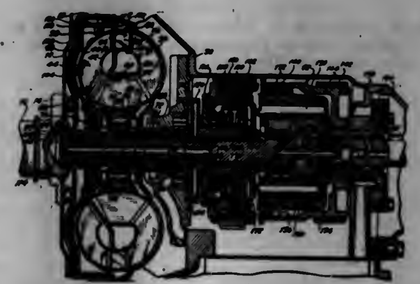
1. An automatic operator for moving a horizontally shiftable closure member across a framed opening from a first inoperative position adjacent one side of the opening to an operative position adjacent a second side of said opening, said automatic operator comprising a resilient member adapted to be considerably lengthened under tension, means to connect one end of the resilient member to the frame, means to connect the other end of the resilient member to the closure member so that the said resilient member is in substantial alignment with the normal direction of movement of the closure member, connection means secured to the said frame in alignment with the resilient member, a fusible link means, means to interconnect said link means with said connection means and the end of the spring at the connection of the spring with said closure to normally maintain the closure to said one side of said opening against the tension of said resilient member, said resilient member being of such a length and being under such a tension when the closure is at one side of the opening that, upon release of said fusible link, the closure member will be moved across the opening by the force of said resilient member as its tension is released.

3,189,143
MOLDING TRIM ATTACHING CLIP
James E. Adams, Toledo, Ohio, assignor, by mesne assignments, to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio
Filed Apr. 19, 1963, Ser. No. 274,079
3 Claims. (Cl. 189—78)



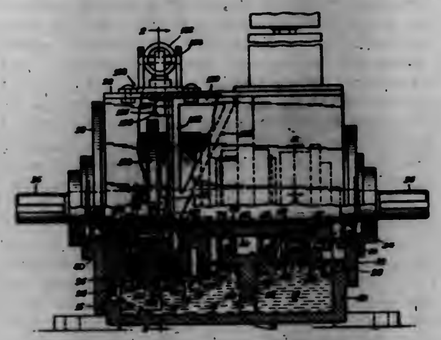
1. In an automobile body having a window panel and a resilient rubber sealing strip embracing the edge portions of the panel and in sealing engagement with the automobile body, said strip having a substantially wedge shaped notch coextensive therewith and disposed adjacent the outer side of the window panel, a series of spaced sheet metal molding receiving clips having a leg portion disposed in said notch and arranged alternately so that the leg portion of one clip engages one side wall of the notch and the leg portion of the adjacent clip engages the other side wall of the notch, and integral laterally extending upwardly cambered arm on the outer end of the leg portion of each of said clips terminating in an inwardly curled lip, the cambered arm of one clip extending in one direction on the outer side of the sealing strip and the cambered arm of the adjacent clip extending in the opposite direction on the outer side of said sealing strip, and a resilient spreader strip crowded into said wedge-shaped notch for retaining the clips in place and clamping the sealing strip to the edge portions of the window panel.

3,189,144
HYDROKINETIC TORQUE CONVERTER MECHANISM WITH DUAL PERFORMANCE RANGE
Martin G. Gabriel, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,413
3 Claims. (Cl. 192—3.2)



1. A hydrokinetic mechanism comprising a driving member, a bladed main impeller, a bladed auxiliary impeller and a bladed turbine disposed in toroidal fluid flow relationship, in a common torus circuit, each impeller having a flow entrance section and a flow exit section, the fluid flow exit section of said main impeller being located at a radially outward region of the circuit, said auxiliary impeller being disposed adjacent the exit section of said main impeller, the blades of the main impeller and the blades of the auxiliary impeller defining fluid flow paths, the motion of a particle of fluid at any point in said circuit being defined by both an absolute flow velocity vector and a velocity vector representing flow relative to bladed portions of said mechanism, said vectors defining an included angle when they are extended from a given point in said circuit, one path being a continuation of the other, the included angle between the tangential component of the absolute flow velocity vector for a particle of fluid at the exit section of the main impeller and the velocity vector for that particle of fluid extending in the direction of the main impeller exit angle being greater than the angle between the corresponding vectors at the exit section of the auxiliary impeller, said main impeller comprising an impeller shell, means for drivably connecting said impeller shell to said driving member, a clutch member disposed within said shell and connected to said auxiliary impeller, a first annular friction clutch surface carried by said clutch member, a second annular friction clutch surface carried by said shell adjacent said first surface and in close proximity thereto, a fluid feed passage means communicating with said circuit for supplying hydrodynamic fluid thereto, fluid flow return passage means extending from said circuit including a portion defined in part by the space between said shell and said clutch member, said clutch member being actuated to a friction surface engaging position when the pressure in said portion of said flow return passage means is less than the pressure of the fluid in said circuit.

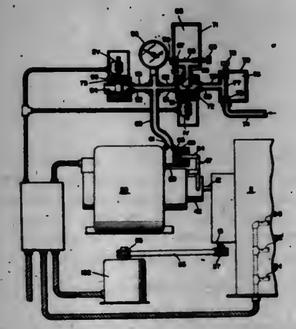
3,189,145
ONE-WAY CLUTCH WITH ELECTROMAGNETIC BRAKE CONTROLLED BACKSTOP
Joseph A. Marland, P.O. Box 308, La Grange, Ill., and Charles W. Hill, La Grange, Ill.; said Hill assignor to said Marland
Filed June 7, 1962, Ser. No. 200,833
9 Claims. (Cl. 192—12)



1. A releasable device for limiting the rotation of a member to one rotational direction comprising, in combination, a housing, a shaft journaled within the housing and extending from the housing, said shaft being adapted to be coupled to the member, a one-way clutch having a generally cylindrical first race, a generally cylindrical second race coaxially disposed about the first race, and a plurality of drive elements disposed between the first race and second race, said drive elements wedging between the first and second races responsive to a torque applied in one direction between the races and slipping freely between the races for torques applied to the races in the reverse direction, means for coupling one of the races to the shaft for rotation therewith, brake means having a stationary member mounted on the housing, a rotatable member, and spring means mechanically coupling the rotatable and stationary members, said brake means including electromagnetic means having an electrical circuit for reducing the coupling between the rotatable and stationary members responsive to the flow of electrical current through the circuit thereof, said electrical circuit including means for controlling the magnitude of the electrical current flowing through said circuit to control the coupling between the stationary and rotatable members of the brake means, and means for coupling the other race of the one-way clutch to the rotatable member of the electromagnetic brake means.

3,189,146
POWER TRANSMITTER
Edgar P. Turner, Watchung, N.J., assignor to The Singer Company, a corporation of New Jersey
Filed June 23, 1961, Ser. No. 119,197
5 Claims. (Cl. 192—18)

1. In a power transmitter for the drive shaft of a machine including a constant speed motor, a driving member rotatable with said motor, a fixed brake member spaced from said driving member, and a clutch member disposed between said driving member and said brake member; said clutch member being rotatable with said drive shaft and shiftable axially into frictional engagement with said driving member or said brake member, spring means for biasing said clutch member axially into engagement with said brake member, fluid pressure operated piston means for shifting said clutch member axially in opposition to said spring means, a fluid pressure intake line operatively connected to said piston means and adapted to be connected to a source of fluid under substantially constant pressure, an exhaust line open to atmospheric pressure, valve means for selectively connecting said piston means to said intake or said exhaust line, separate fluid flow regulating means in said intake and exhaust lines providing in said intake line a selected substantially fixed rate of flow of fluid under pressure to said piston means from said source, and providing in said exhaust line a selected substantially fixed rate of flow of fluid under pressure from said piston means to atmospheric pressure, a reservoir connected in said intake line between said valve means and said flow regulating means for accumulating fluid from said source under the substantially constant pressure thereof, said reservoir being formed of that size relatively to said intake line, said piston means, and the force of said spring means, to contain only sufficient fluid under

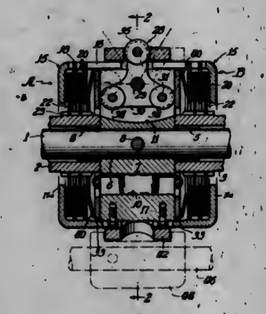


the constant pressure of said source as to shift said clutch member out of engagement with said brake member immediately upon opening of said intake line by said valve means, and a second reservoir connected in said exhaust line between said valve means and said flow regulating means therein for establishing an equilibrium at atmospheric pressure while said valve means connects said piston means with said intake line, said second reservoir being of that size relatively to said exhaust line, said piston means and the force of said spring means to contain only sufficient fluid from said piston means and said exhaust line immediately upon connection of said exhaust line with said piston means by said valve means as to shift said clutch member out of engagement with said driving member immediately upon connection of said exhaust line with said piston means by said valve means.

3,189,147
MULTIPLE CLUTCH WITH LEVER
John W. Holdeman, Auburn, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 9, 1962, Ser. No. 193,481
6 Claims. (Cl. 192—48)

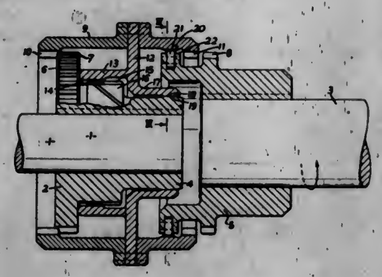
1. A clutch mechanism comprising: a rotary input shaft; a hub member connected to said input shaft, said hub member being provided with a radial, axially extending slot; a pair of independently journalled output shafts arranged co-axially with respect to said input shaft, each said output shaft being disposed on opposite sides of said hub member; a pair of multiple friction disc clutch units, each being disposed on opposite sides of said hub member and arranged to selectively couple said hub member with one or the other of said output shafts, each said multiple friction disc clutch unit comprising a drum member adjustably threaded onto said hub member radially outwardly from said input shaft; at least one friction disc carried by each said output shaft; at least one friction disc

carried by said drum member, said friction discs being adjacent to one another and adapted, when compressed together in frictional engagement, to transmit drive from said hub member to said output shaft; an annular pressure plate disposed between said hub member and one of said friction discs; actuating means in the form of a lever



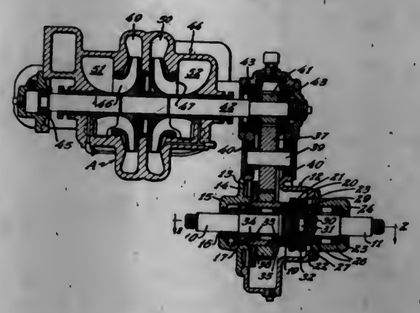
disposed within the radial, axially extending slot in said hub member to urge said pressure plate against said disc to compress said disc into engagement with an adjacent disc; and resilient means for constantly urging said annular pressure plate towards said hub member in opposition to movement of said actuating means.

3,189,148
SYNCHRONOUS SELF-SHIFTING CLUTCH ARRANGEMENTS
Harold Sinclair, London, and Herbert Arthur Clements, Weybridge, England, assignors to S.S.S. Patents Limited, Richmond, Surrey, England, a British company
Filed Mar. 6, 1962, Ser. No. 177,920
Claims priority, application Great Britain, Mar. 13, 1961, 9,181/61
3 Claims. (Cl. 192—67)



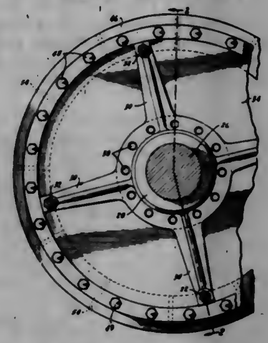
1. A power transmission arrangement comprising first and second shafts mounted substantially in line, means for automatically establishing or interrupting a driving connection between said shafts, according to the direction of relative rotation of the shafts, the said means comprising a first rotary clutch member carried by said first shaft, a secondary rotary clutch member carried by said second shaft, an intermediate member, means constraining said intermediate member for helical movement relative to said second clutch member, first clutch teeth on said first clutch member, second clutch teeth on said second clutch member, said first and second clutch teeth being spaced apart in the axial direction of the clutch, third clutch teeth on said intermediate member, said third clutch teeth being drivably engageable with said first clutch teeth by helical movement of said intermediate member in one direction relative to said second clutch member and disengageable therefrom by helical movement of said intermediate member in the other direction, fourth clutch teeth on said intermediate member, said fourth clutch teeth being drivably engageable with said second clutch teeth by helical movement of said intermediate member in said one direction relative to said second clutch member and disengageable therefrom by helical movement of said intermediate member in said other direction, first stop means for limiting said helical movement in said one direction, second stop means for limiting said helical movement in said other direction, said intermediate member being supported adjacent one end by the engagement of the tips of one set of said second and fourth clutch teeth with the roots of the inter-tooth spaces of the other set, coacting means on said second clutch member and said intermediate member for supporting and centering said intermediate member adjacent the other end thereof when said third and fourth clutch teeth are disengaged from said first and second clutch teeth, said coacting means being operative to support and center said intermediate mmeber when said third and fourth clutch teeth are drivably disengaged from said first and second clutch teeth, and being inoperative when said third and fourth clutch teeth are drivably engaged with said first and second clutch teeth, said intermediate member being supported at said other end, when said third and fourth clutch teeth are drivably engaged with said first and second teeth, by the interengagement of said third teeth with said first teeth.

3,189,149
ELECTRIC SHIFT FOR CLUTCH
David F. Thomas, St. Paul, and Robert A. Hill, Minneapolis, Minn., assignors to Waterous Company, Ramsey County, Minn., a corporation of Minnesota
Filed Aug. 11, 1961, Ser. No. 131,011
9 Claims. (Cl. 192—82)



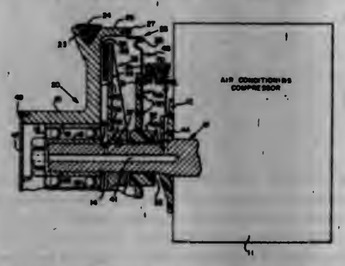
1. An electric shift for shifting a clutch between two extreme positions, the shift including a support, a shifting fork, a pivot shaft connecting said fork to said support, a lever secured to said pivot shaft for movement therewith, a second lever pivotally supported intermediate its ends by said support, a swivel connection pivotally connected to one end of said second lever, said swivel connection having an aperture therein, a rod pivotally connected to said first lever, said rod passing through said aperture in said swivel connection and being releasably connected to said swivel connection, an electric actuator connected to said second lever to pivot the same, whereby movement of said actuator acts to pivot said first lever and said shift fork, and means for releasing said swivel connection from said rod to permit manual slidable movement of said rod through said aperture in said swivel to pivot said first lever and said shift fork when said actuator is immovable.

3,189,150
MAGNETIC CLUTCH
Everett Chapman, West Chester, Pa., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 25, 1962, Ser. No. 212,345
7 Claims. (Cl. 192—84)



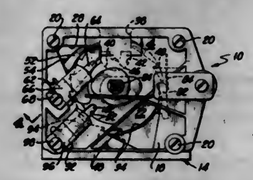
1. A magnetic clutch for coupling two shafts together, including a first clutch member adapted to be mounted on one of the shafts, an electric coil mounted on the clutch member adjacent its outer periphery, a second clutch member adapted to be mounted on the other shaft and having a generally annular disc-like armature positioned in generally axial alignment with the coil and normally spaced somewhat from it, a spring mounting for said armature and means for preloading said spring mounting to apply a peripheral uniform axial bias to the armature, a circuit for supplying starting current to the coil to form a magnetic field therein and to thereby move the armature into contact with the first clutch member, means for advancing the collapse of the magnetic field in the coil and the release of the armature from the first clutch member when the circuit is broken for disengagement of the clutch including a condenser in parallel with the coil and a diode in series with the condenser to prevent charging of the condenser when the coil is energized by the circuit, and means for reducing the current in the coil to a fraction of its starting value after engagement of the armature and first clutch member including a resistor in circuit with the coil and a time delay switch in parallel with the resistor.

3,189,151
TORQUE TRANSMITTING MEANS
Arthur F. Sullivan, Southgate, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 3, 1961, Ser. No. 121,735
7 Claims. (Cl. 192—85)



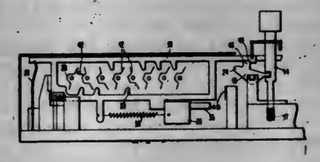
1. A torque establishing device comprising a first member having an axially extending flange portion, a second member spaced radially inwardly of said flange portion and positioned axially between the ends of said flange portion, means supporting said first and second members for relative rotation, said first member further including a flexible diaphragm secured around its periphery to said flange portion at one end thereof adjacent said second member, means for sealing said first member to form an expansible fluid tight chamber enclosing said second member, and means for varying the fluid pressure within the chamber of said first member for deforming said diaphragm into axial engagement with said second member to create a torque establishing relationship between said first and second members.

3,189,152
COIN RECEIVER HAVING EMERGENCY STOP
Norman G. Weitzman, Sepulveda, Calif., assignor to Oak Manufacturing Co., Inc., Culver City, Calif., a corporation of California
Filed July 15, 1963, Ser. No. 294,914
9 Claims. (Cl. 194—97)



6. In a coin receiver for vending machines, the combination of: a housing; a coin wheel mounted for rotation in said housing, said coin wheel having a coin receptacle, a detent opening and a plurality of perimetrical reversal presenting teeth therein; a coin dog associated with said coin wheel and mounted in said housing engageable with said receptacle to prevent rotation of said coin wheel when said receptacle is empty; a reverse dog engageable with said teeth to prevent rotation of said coin wheel in a reverse direction; and an emergency dog engageable with said detent opening to prevent rotation of said coin wheel upon failure of either said coin dog or reverse dog.

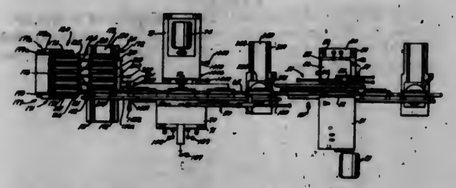
3,189,153
KEYBOARD
Cecil P. Barnard, San Jose, and Donald H. Heiser, Los Gatos, Calif., assignors to International Business Machines Corporation, New York N.Y., a corporation of New York
Filed July 3, 1962, Ser. No. 207,213
2 Claims. (Cl. 197—98)



1. A keyboard comprising
a plurality of data keys,
a plurality of code bars operable in response to the movement of the corresponding data keys,
a plurality of bistable code bails adapted to be moved by said code bars to one or the other of the stable positions in predetermined combination representative of the selected data key,
switch means responsive to the movement of said code bails for generating data signals, and
delaying means responsive to the movement of said code bars in a switch closing direction for holding

the switch means against release for a predetermined time so that said data signals are available to a utilization device for said predetermined time.

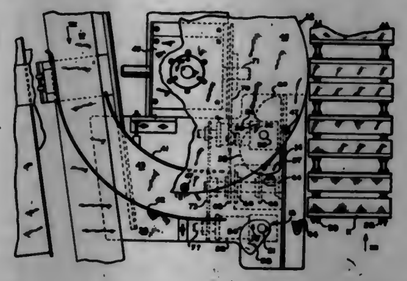
3,189,154
MACHINE TOOL
Arthur H. Fetsch, Wauwatosa, and Gilbert W. Ross, Brookfield, Wis., and Richard F. Fischer, Santa Rosa, Calif., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Original application June 1, 1959, Ser. No. 817,106, now Patent No. 3,118,332, dated Jan 21, 1964. Divided and this application Nov. 29, 1961, Ser. No. 155,630
16 Claims. (Cl. 198—22)



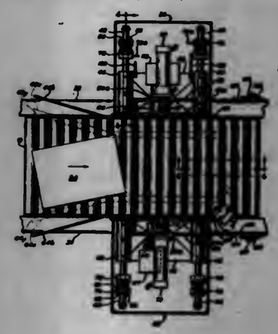
1. In a machine tool:
a longitudinally extending guideway comprising a plurality of longitudinally spaced apart stationary guide rails and a bodily movable guide rail operatively interconnected therewith to constitute a transfer pathway for constraining edge supported workpieces against lateral movement in either direction;
a reversibly operative power drive connected to move said movable guide rail in one direction relative to said stationary guide rails for operating on a workpiece positioned adjacent said movable guide rail, said power drive being operable to move said movable guide rail in the opposite direction for returning it to transfer guiding position;
a carriage movably carried in operative proximity at one end of said guideway and being provided with spaced guide rails operative to support a plurality of workpieces on edge in an upright position;
a power drive connected to indexably position said carriage for aligning one of the workpieces carried thereby with said longitudinally extending guideways for subsequent positioning movement therealong;
a power driven transfer mechanism operably connected to transfer an edge supported workpiece from said carriage into laterally supported guided engagement with said guideway and to advance workpieces therealong for positioning one edge supported workpiece adjacent said movable guide rail;
means responsive to transfer movement of a workpiece from said carriage connected to activate said power drive for indexably moving said carriage; and,
means responsive to return movement of said movable guide rail to transfer guiding position connected to actuate said power driven transfer mechanism for transferring and positioning edge supported workpieces along said guideway.

3,189,155
PAPERMAKING MACHINE
Wayne F. Everman, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,526
6 Claims. (Cl. 198—25)

1. In apparatus for transferring articles having rectangular cross sections, the combination of a conveyor movable along a predetermined path, said conveyor comprising a series of buckets carried by a movable belt, each of said buckets extending transversely of said belt and said path and having bottoms and closed vertical sides and open ends, a deck across which the articles may be moved which is substantially on the same level as said bucket bottoms and having an edge located adjacent said buckets, a transfer wheel having a plurality of spaced depending pusher elements which is rotatably mounted about a vertical axis located on the same side of said path as said deck so that the pusher elements may push articles across the deck toward said conveyor in a first phase of movement, a first cam effective on articles on said deck adjacent said conveyor and effective for moving the articles toward said conveyor in a second phase of movement, a second cam effective on the articles on said deck adjacent to said conveyor for moving the articles in a direction parallel with said path, and means for driving said two cams and said conveyor and said transfer wheel simultaneously and in timed relation so that said second cam is effective to move the articles at substantially the same speed as said conveyor in a component of motion parallel with said path and whereby each of the articles is moved into one of said buckets as said conveyor continues its movement.

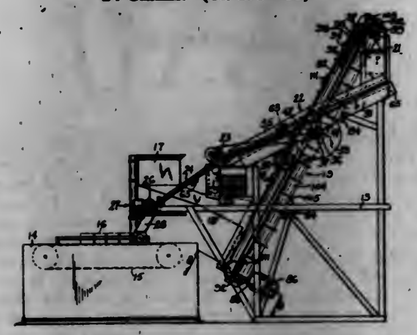


3,189,156
APPARATUS FOR ALINING AND SPACING ARTICLES
Frank S. Hyer, Whitefish Bay, and John H. Trumble, Wauwatosa, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,568
11 Claims. (Cl. 198—29)



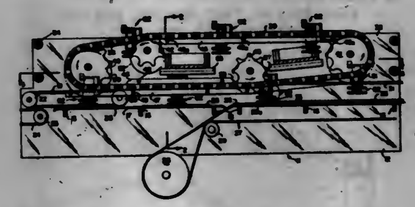
1. For aligning and spacing articles on a continuously moving conveyor, the combination with reciprocably movable members mounted in opposing relation on opposite sides of the conveyor and means for moving said members toward and away from each other, of control means for the first mentioned means comprising means responsive to movement of each article to a first point relative to said members to cause the latter to move toward each other from starting positions to intermediate positions affording in-line alinement of an article while it is being conveyed, means responsive to advance of the article to a second point relative to said members to cause the latter to move further toward each other to final positions in which they engage and hold the article against conveyor advancing action, and means responsive to presence of a preceding article in a given zone beyond said members to maintain said members in their final positions pending advance of the latter article beyond said zone.

3,189,157
PARTS-PACKAGING MACHINE
James W. Batchelder, Chester, Vt., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed July 25, 1962, Ser. No. 212,220
14 Claims. (Cl. 198—33)



1. In a machine for effecting the orientation of parts supplied to a hopper in bulk, random form, the combination of a hopper, a feeder, an inclined chute adapted to deliver, by gravity, parts from said hopper to the base of said feeder, a vibrating mechanism, said feeder adapted to raise the parts from its base to said vibrating mechanism, said vibrating mechanism adapted to orient the parts to facilitate counting and packaging of the parts, and an overflow chute for unoriented parts connected between said vibrating mechanism and said inclined chute, said feeder comprising a first channel member mounted to said frame, a second channel member mounted to said frame, each channel member having a planar surface and a longitudinal axis, said longitudinal axes being parallel to one another and said planar surfaces being perpendicular to one another with the longitudinal edge of one surface adjacent the longitudinal edge of the other surface, a first pair of spaced parallel pulleys rotatably mounted at opposite ends of said first channel member, a second pair of spaced parallel pulleys rotatably mounted at opposite ends of said second channel member, the axis of each pulley being parallel to the plane of the planar surface of the channel member on which it is mounted, first power-operated means for driving one pulley of each of said first and second pairs, a first endless belt overlying the planar surface of said first channel member and frictionally engaged over and extending between said first pair of pulleys, said first endless belt including a plurality of upstanding legs extending perpendicularly from the surface of said first endless belt and parallel to the axes of said first parallel pulleys, said upstanding legs being spaced along the outer surface of said belt, and a second endless belt overlying the planar surface of said second channel member and engaged over and extending between said second pair of pulleys, said planar surfaces sloping upwardly and rearwardly so that parts fed from the hopper to the overlying portions of said endless belts will fall, by way of gravity, toward the adjacent longitudinal edges of said planar surfaces, whereby parts fed to a lower portion of said feeder will be raised up and dropped onto said vibrating mechanism, said vibrating mechanism comprising a support plate mounted to said frame, a pair of axially aligned trackways positioned above said support plate, a pair of planar reeds, one mounted between the outer end of each of said trackways and said frame, the plane of said reeds being perpendicular to a vertical plane through the axis of said aligned trackways, said reeds being secured to said frame to permit movement of said trackways toward and from one another and to prevent lateral movement, oscillating means mounted between said support plate and said trackways for supporting the other adjacent ends of said trackways and effecting axial movement of each trackway in a direction opposite to the movement of the other trackway at any given instant of time, and second power-operated means for effecting oscillation of said oscillating means, whereby the parts dropped onto said vibrating mechanism by said feeder are vibrated along said trackways into said trackways to orient the parts with respect to one another.

3,189,158
SHEET TURNING MECHANISM
Malcolm B. Lucas, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 31, 1962, Ser. No. 234,474
5 Claims. (Cl. 198—33)

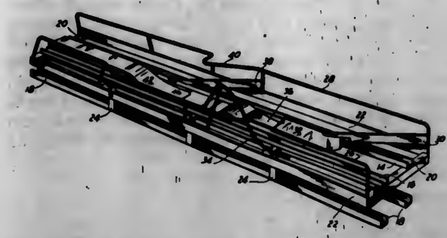


1. Apparatus for turning a moving sheet received from a delivery conveyor comprising a polished dead plate onto which said sheets are delivered, a turnaround member mounted on a conveyor, said conveyor moving the bottom surface of said turnaround member into contact with a sheet delivered to said dead plate from said delivery conveyor, the lower surface of said turnaround member having a relatively high coefficient of friction, said conveyor moving said turnaround member and sheet forward over the polished dead plate, means for rotating the said lower surface of said moving turnaround member a limited number of degrees on an axis substantially perpendicular to said dead plate while over said dead plate whereby said sheet is rotated through a predetermined arc for delivery to a take-away conveyor, and means associated with said conveyor to maintain the rotative axis of said turnaround member substantially vertical throughout its path of travel.

3,189,159
CASE INVERTER
Paul E. Shields, Cedar Rapids, Iowa, assignor to Cherry-Burrell Corporation, Cedar Rapids, Iowa, a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,767
8 Claims. (Cl. 198—33)

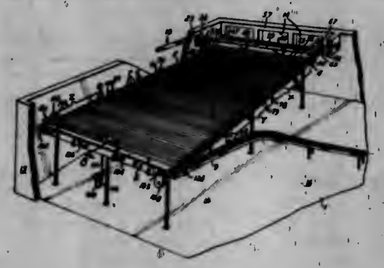
1. In combination with a conveyor having laterally spaced-apart sections continuously moving along parallel lines to carry containers normally engaging both of said moving sections, an inverter comprising a first diverter to force a container laterally so that it engages only one of said conveyor sections and one edge of said container

drops between said sections causing the container to tilt, limiting means to limit the amount said container can drop between the sections and to gradually lift the dropped edge of said container back to the level of the moving conveyor sections, and a second diverter to move the



tilted container back laterally so that it engages both moving sections of said conveyor, said second diverter cooperating with said limiting means to continue tilting said container until it has been rotated 90° from its original position with a side engaging both moving sections of the conveyor.

3,189,160
ROLLER BED CONVEYOR
Edward T. Holland, Jr., Lancaster, Pa., assignor to Dalin Corporation, Hopkins, Minn., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,565
8 Claims. (Cl. 198—37)



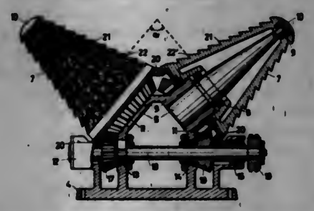
1. In a storage and conveying system,
(a) a frame structure,
(b) a storage and conveyor bed having opposite inlet and outlet ends and comprising a plurality of aligned conveyor bed sections in tandem relationship,
(c) each of said sections including a plurality of elongated horizontally disposed conveyor rollers extending transversely of said frame structure,
(d) bearing means on said frame structure journalling said rollers at axially spaced portions thereof and on spaced parallel axes,
(e) inlet feeding means including a transverse conveyor element extending transversely of the inlet end of said conveyor bed and a transfer element for feeding transversely extending rows of articles from the transverse conveyor element to the inlet end of said conveyor belt in succession,
(f) control means including an article engaging conrol element adjacent said transverse conveyor and operative to control said transverse conveyor to cause articles delivered thereto to be disposed in predetermined spaced relationship on said transverse conveyor,
(g) independent drive means for each of said conveyor bed sections for imparting rotary movement to the rollers of their respective sections,
(h) and control means for independently controlling each of said independent drive means and including control mechanism for controlling said section adjacent said inlet feeding means to disposed said rows of articles in predetermined spaced relationship longitudinally of said conveyor bed.

3,189,161
POWERED ROLLER CURVE
Donald A. Schneider, Ada, and Carl J. Falcon, Grand Rapids, Mich., assignors to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Dec. 21, 1962, Ser. No. 246,396
10 Claims. (Cl. 198—127)



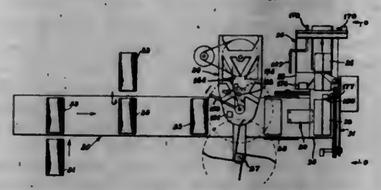
1. A nonlinear live roller conveyor having live rollers; an endless chain; means for driving said chain; support means for supporting said chain against vertical movement at a predetermined spacing from said live rollers of said conveyor; lateral guide means for supporting said chain against radially inwardly movement; resilient, independently movable drive blocks mounted on links of said chain, said live rollers of said conveyor being in frictional engagement with said drive blocks; and said blocks shaped such that they laterally overlap one another, whereby one or more of said blocks engages any one of the rollers at all times.

3,189,162
ROLLER CONVEYOR
Per Gunnar Brundell and Karl-Erik Arnold Jonsson, Gavle, Sweden, assignors to Soderhamns Verkstader Ab., Soderhamn, Sweden, a corporation of Sweden
Filed Dec. 26, 1962, Ser. No. 247,197
2 Claims. (Cl. 198—127)



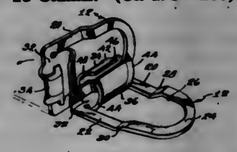
1. A roller conveyor for feeding logs or the like, said conveyor comprising a frame, at least one pair of spindles mounted on said frame in upwardly diverging relationship, at least one pair of frusto-conical rollers rotatably mounted on said spindles in upwardly diverging relationship with the ends of larger diameter disposed adjacent each other at the lower ends of said rollers to provide a trough-like log receiving space having an included angle of the order of between sixty and one hundred fifty degrees and a plurality of log penetrating prongs distributed peripherally and longitudinally on each roller, the prongs on one roll being disposed symmetrically with respect to the prongs on the other roll, each prong having in its log penetrating position one lower side clamping surface disposed at an angle of not greater than ninety degrees to the axis of said spindle and inclined inwardly toward the log in a plane converging upwardly toward the central vertical plane of the conveyor, the included angle between an opposed pair of lower clamping surfaces being not less than ninety degrees, whereby a log will be clamped between opposed pairs of converging clamping surfaces in a manner to prevent upward movement of the log with respect to said rollers.

3,189,163
APPARATUS FOR TYING MOVING BUNDLES
Walter D. Ayres, Jr., Oaklawn, Ill., assignor to B. H. Bunn Company, Chicago, Ill., a corporation of Illinois
Filed May 6, 1963, Ser. No. 278,053
4 Claims. (Cl. 198—167)



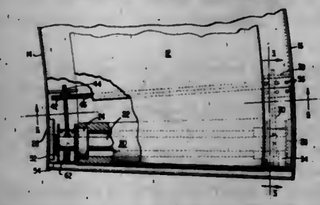
1. In combination, a conveyor, an abutment on the conveyor, a support for a bundle of envelopes or the like, on the conveyor adjacent the abutment, means for moving the conveyor, and bundle supported thereon, and means for compressing the bundle against said moving abutment, said compression means comprising a shaft, a fixed bearing for the shaft for supporting said shaft on an axis disposed transversely of the direction of movement of the conveyor, spoke means on the shaft extending into the path of movement of the bundle and adapted to be contacted and moved thereby, and means for retarding the movement of said spoke means, thereby causing said spoke means to press said bundle against the abutment.

3,189,164
CHAIN CONSTRUCTION
William W. Robinson, Jr., Signal Mountain, and Dempsie C. Camp, Dunlap, Tenn., assignors to Cumberland Case Company, Chattanooga, Tenn., a corporation of Tennessee
Filed Nov. 21, 1963, Ser. No. 327,575
15 Claims. (Cl. 198—168)



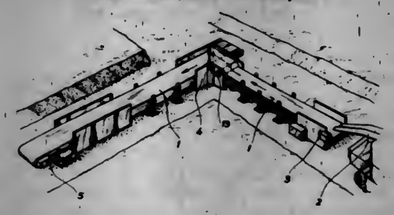
1. A feed conveyor chain constructed of one-piece links, each link comprising: a body having a leading end and a trailing end, said body including transversely spaced apart longitudinally extending parallel side members and a symmetrically curved pintle providing a U-shaped central opening in plan, and the outer edge of said side members and said pintle having a symmetrically disposed U-shaped configuration relative to said central opening, said side members having upwardly inclined, rearwardly extending intermediate portions in lateral alignment at the rearward ends thereof, at least portions of the lowermost surface of each of said side members forward of said intermediate portions being in a generally flat common lower supporting plane and said pintle at the rearward end of said intermediate portions being in another substantially flat plane extending above said lower support plane, a transversely extending forward end member joined to the forward extremities of said side members, the lowermost surface of said forward end member being disposed in said lower supporting plane, and pintle-receiving means joined to said forward end member for receiving the pintle of an adjacent link, said pintle-receiving means including longitudinally spaced apart front and rear pintle-receiving members extending freely upwardly from said forward end member to heights greater than the height of the plane of said pintle, said pintle-receiving members having transversely extending concave facing surfaces, said rear pintle-receiving member having a uniform transverse width substantially equal to the transverse distance between the inner edges of said side members and the forwardmost extent of the concave front pintle-receiving member having a transverse extent substantially less than the transverse extent of said rear pintle-receiving member.

3,189,165
LATERAL BEND-TYPE CONVEYER
Frederik Theijsmeijer, Port Hope, Ontario, Canada, assignor to Mathews Conveyer Company, Ellwood City, Pa., a corporation of Pennsylvania
Filed Apr. 23, 1963, Ser. No. 275,033
6 Claims. (Cl. 198—182)



1. In a curved conveyer having spaced curved side rails, a take-up roller mechanism comprising a roller, tracks on the side rails of the conveyer mounting the end of the roller for sliding movement therealong, and differential adjusting means for simultaneously sliding the ends of the roller along said tracks in proportion to the respective radii of said curved rails.

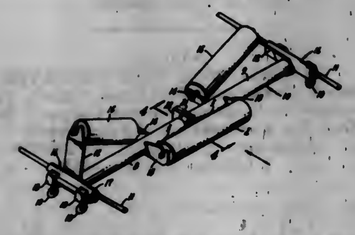
3,189,166
BELT CONVEYOR
Hans Ziller, Kirschenallee 3, Millrath uber Hochdahl, Germany
Filed Feb. 8, 1961, Ser. No. 87,801
Claims priority, application Germany, Feb. 11, 1960, Z 7,809/60
6 Claims. (Cl. 198—187)



1. In a belt conveying system having a conveyor belt, driving means for driving said belt at its normal driving speed, and an angle station with a deviating beam forming an angle with the direction of movement of the belt to said deviating beam for deviating said belt into another direction, which includes driving roller means arranged adjacent to and preceding said deviating beam when looking in the direction of movement of said belt and frictionally engaging said belt, and means drivingly connected to said driving roller means and operable to drive said driving roller means at a higher surface speed than the normal driving speed of said belt while the latter is being driven at its normal driving speed thereby to urge the belt toward said deviating beam and reduce the

friction between the belt and the beam, said driving roller means being located beneath the belt and engaging the underside of the belt.

3,189,167
TROUGHING ROLLER ASSEMBLIES
Thomas R. Davis, McHenry, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1961, Ser. No. 162,422
6 Claims. (Cl. 198—192)



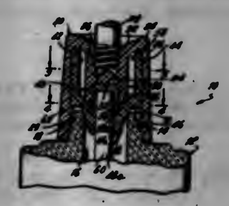
1. A separable troughing idler assembly in a wire rope sideframe conveyor which includes, in combination,
elongated connectors to engage the side wire ropes,
a crosspiece extending to said connectors, said crosspiece being hollow in at least a portion thereof and separated at about its center,
a plurality of rollers attached to said crosspiece,
adjacent means secured to each separated part of the cross piece at the point of separation, said means being in opposed relationship and movable relative to each other over a limited range of movement to allow limited downstream and limited downward movement,
and means within the hollow portion of the crosspiece to variably urge the crosspiece against downstream and downward separation of the crosspiece.

3,189,168
DRIVE FOR AUGER ELEVATOR
Raymond E. Coats and Raymond W. Phillips, Sac City, Iowa, and Robert V. Jones, Chicago, Ill., assignors to Noble Manufacturing Company, Sac City, Iowa, a corporation of Iowa
Filed Sept. 6, 1962, Ser. No. 221,704
10 Claims. (Cl. 198—213)



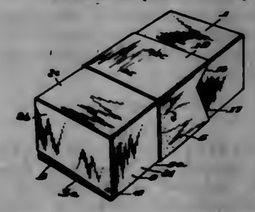
1. An intermediately driven conveyor unit for moving material along a substantially uninterrupted flow path, said unit including, in combination
an upper and a lower auger housing disposed in axially aligned, spaced relationship one to the other,
each housing having a substantially constant internal diameter,
an auger in each housing, each of said augers including a centrally located core member,
said core members being disposed in axially aligned, space relationship to one another,
means exteriorly connecting the upper and lower housings in spaced relationship to one another to thereby define a material flow path of substantially constant diameter, and
means for driving the augers concurrently to thereby move the material within the housing along an uninterrupted path of movement spanning the gap between the opposed housing ends, said driving means firstly including,
means for connecting the opposed auger core members to one another in torque transmitting relationship, and secondly,
a drive member having a power input point located radially outwardly from the periphery of the material flow path,
said drive member having generally radially inwardly disposed extension means joined to the torque connection means for relative movement with respect thereto axially, and for conjoint movement with the torque connection means in a circular direction, and
means for supporting the core members of the auger with respect to the auger housings,
said means including auger thrust bearing means,
said thrust bearing means being located a substantial distance from, and flanking, the driving means
whereby axial thrust on the augers will bypass the driving means.

3,189,169
CLOSURE FOR CONTAINERS
Emil Davidson, Scarsdale, N.Y., assignor to Guild Molders, Inc., Elmsford, N.Y., a corporation of New York
Filed June 14, 1962, Ser. No. 202,518
5 Claims. (Cl. 206—15.2)



1. A combined closure and sealing assembly for a bottle including a neck having external threads comprising a relatively rigid cap including a top wall and a depending substantially cylindrical body wall terminating in an open end, internal threads on said body wall extending inwardly from said open end and terminating at an intermediate location spaced from said top wall, said internal threads being dimensioned to engage said external threads on said neck, a substantially cylindrical first socket-forming wall depending from said top wall and terminating substantially at said intermediate location, said first socket-forming wall cooperating with said body wall to form a first socket therebetween extending inwardly of said intermediate location, an insert of yieldable and flexible material including a substantially cylindrical mounting wall, a base wall at one end of said mounting wall, a frustro-conical sealing member depending from said base wall, and a substantially cylindrical second socket-forming wall disposed concentrically of said first socket-forming wall and extending within said sealing member to form a second socket, and an applicator including a rod received within said second socket and mounting said applicator on said insert coaxially of said sealing member such that said applicator depends from said sealing member for insertion into said bottle when said cap is engaged with said neck, said insert and said cap cooperating to form an internal volume extending at least partially within said sealing member for imparting resiliency thereto such that the frustro-conical surfaces of said sealing member accommodate to said neck and provide a seal thereagainst, said mounting wall of said insert being force fitted within said first socket to provide a substantially unitary assembly of said cap and insert with said sealing member being disposed concentrically of and in confronting spaced relation to said internal threads.

3,189,170
DISPLAY PACKAGE
Carmon M. Elliott, Jr., Pittsford, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 18, 1963, Ser. No. 252,339
5 Claims. (Cl. 206—44)



1. An improved display box comprising:
(a) a bottom portion having at least an elongate base wall, an upright front wall joined at an angle to the front edge of the base wall and coextensive with the base wall, and two upright end walls each joined to and coextensive with respective opposite lateral edges of the base and front walls;
(b) a cover portion having an elongate top wall spaced from the base wall, an upright back wall coextensive with the top wall at the rear edge of the top wall and extending downwardly therefrom to a bottom edge adjacent the base wall, and two additional upright end walls each being joined to and coextensive with respective opposite lateral edges of the top and back walls, the additional lateral edges extending downwardly over at least a portion of the bottom portion end walls in an overlapping slideable relationship therewith;
(c) hinge pins connecting the respective bottom and cover portion end walls proximate to the lower edge of the back wall and the rear edge of the base wall to permit pivoting of the cover portion about a pivot axis between a closed position with the cover portion end walls overlapping the bottom portion end walls, and an open display position with the bottom edge of the back wall abutting the base wall to hold the cover portion in an upright and rearwardly inclined position; and
(d) a support sleeve of relatively stiff material having a plurality of panels joined in an annular fashion, the panels having respective widths to form the sleeve with a cross-section equal in size to the overall outer lateral cross-section of the cover and bottom portions transverse to the pivot axis when the cover portion is in its closed position and the sleeve being slideable over the cover and bottom portions along the pivot axis to firmly retain the cover portion in its closed position, the sleeve panels further having base edges along one side of the sleeve in a common plane enable the sleeve to stand with the panels upright, and at least two of the panels including edge means at the opposite side of the sleeve defining cut outs at an angle equal to the angle of the base and front walls, the edge means engaging the base and front walls when the sleeve is standing to support the bottom portion in an inclined display position with the cover portion in its open display position.

3,189,171
COMPACT DRINKING STRAW
Ruth S. Miller, 3945 Connecticut Ave. NW., Washington, D.C.
Filed Dec. 5, 1963, Ser. No. 328,220
4 Claims. (Cl. 206—47)



1. A packageable, telescopically collapsible straw comprising at least two separate tubes each tapered from one end to the other, the smaller of said tubes having a larger end snugly received in the smaller end of the next larger tube, the largest of said tubes being made of a relatively rigid and less crushable material than any of the smaller of said tubes, and crimp means at the largest end of said larger tube preventing any of said smaller tubes from falling out of the large tube when said straw is collapsed and said tubes are nested within one another in the crush resistant larger tube and when enclosed in a sanitary wrapper.

3,189,172
REEL FOR PILE FABRICS WITH NOTCHED BASE
Clarence O. Williams, P.O. Box 226, Rocky Mount, N.C.
Filed June 28, 1963, Ser. No. 291,422
10 Claims. (Cl. 206—51)

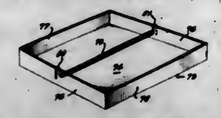


1. In a package for pile fabric, a reel structure comprising an elongated spacer tube adapted to extend throughout a center of a spirally wrapped pile fabric roll, said spacer tube having circumferentially spaced longitudinal notches at each end thereof, an end assembly engaged with each end of said tube, each end assembly including a generally square plate having notches in at least two edges thereof for engaging existing loading and crating machinery, a plurality of arms secured to said plates in generally perpendicular relation thereto with the arms being disposed radially across the corner portions of the plate and including webs disposed perpendicular to the p ate for reception in the notches in the spacer tube, each arm including a reinforcing rib forming a flat surface engaging the end of the tube, and a sleeve encircling the tube and rigidly secured to said arms for retaining the tube and end assemblies in properly orientated relation, each arm having hooks on the axially inner edge thereof extending substantially throughout the entire length of the inner edge thereof for engagement with the convolutions of the pile fabric roll.

3,189,173
KIT FOR PROVIDING TAPE AND REEL HOLDING MEANS IN A TAPE REEL BOX
Thomas S. Kulka, 200 Film Bldg., 2108 Payne Ave., Cleveland 14, Ohio
Filed Sept. 11, 1962, Ser. No. 222,779
15 Claims. (Cl. 206—52)

13. A kit for application to a tape reel box to provide tape and reel holding means, said kit comprising an elastic band of a size to be received between the flanges of a tape reel and a hook on each end of said band, said hook being

adapted to be disposed over the edges of opposite side walls of a tape reel box to secure said band thereto, said

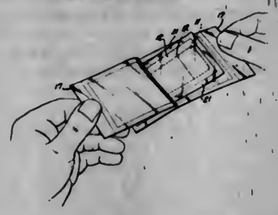


hook having an inner and an outer leg, the length of said inner leg being approximately one-half the distance between the flanges of a conventional tape reel.

ERRATUM

For Class 206—63.2 see:
Patent No. 3,189,702

3,189,174
SURGICAL SUPPLY PACKAGE
James Anderson Cormack, Pointe Claire, Quebec, Canada, assignor to Ethicon, Incorporated, a corporation of New Jersey
Filed Jan. 12, 1962, Ser. No. 165,807
4 Claims. (Cl. 206—63.2)

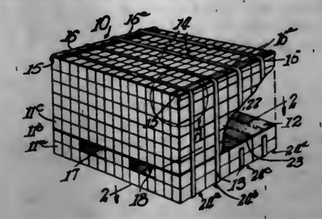


1. A surgical supply package which comprises a hermetically sealed inner envelope sterilized inside and out and enclosing a surgical item in sterile condition, a first outer envelope sterile inside and out and enclosing the inner envelope, and a second outer envelope sterile inside and enclosing the first outer envelope and contents, the first and second outer envelopes each having opposed stripping flaps at one end adjoining a strippable seal extending across the same end of the envelope and down its sides, whereby the envelope may be opened by pulling the flaps away from one another to strip the seal and exposed its contents, said inner envelope and said first outer envelope each having means adjacent one end of the envelope for facilitating tearing of the inner envelope and the first outer envelope together along a common tear line extending across said envelopes when said inner envelope is in position in said first outer envelope, the opposed stripping flaps of said first outer envelope being located at the opposite end of said first outer envelope to said tear line.

3,189,175
BRICK PACKAGING DEVICE AND METHOD
Ira G. Cruckshank, New Britain, Conn., assignor of one-half to International Paper Company, New York, N.Y., a corporation of New York, and one-half to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 17, 1962, Ser. No. 223,996
9 Claims. (Cl. 206—65)

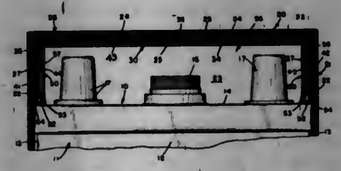
4. A brick package, comprising a plurality of bricks arranged in layered, side-by-side, end-to-end aligned relation to form a generally rectangular solid arrangement wherein the package has a width at least equal to the length of two bricks,

a metal strap-reinforced corrugated paperboard panel interposed between a pair of adjacent brick layers, lines of bricks being omitted from said arrangement to provide openings for the receipt of lifting means, and a plurality of bands about said arrangement to define a plurality of sub-arrangements,



said panel being equipped with spaced-apart lines of weakness between the straps thereof, whereby said panel is segmentable to provide individual sub-arrangements.

3,189,176
STACKING STRUCTURE FOR BATTERIES
Paul F. Boeye, Mound, and Samuel A. Bright, Minneapolis, Minn., assignors to Northwestern Corrugated Box Co., Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 22, 1963, Ser. No. 274,727
1 Claim. (Cl. 206—65)

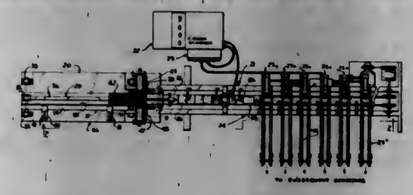


A strut adapted to be used in a battery stacking structure constructed from a sheet of corrugated board having spaced facings with a corrugated body therebetween, spaced parallel cuts extending across the corrugations of the board and through one of said facings and into the corrugated body to sever a strip of the cut facing and the portion of the body adhering thereto between said cuts from said facing and body, said uncut facing being folded at the locality of said cuts to form said strut with a leg and a reinforcing member from the portion of the board disposed outwardly of said cuts and a base therebetween, said leg and reinforcing member overlying one another, said severed strip of said cut facing and said severed portion of said body throughout the width thereof being pressed against said base, and means for securing said leg and reinforcing member together.

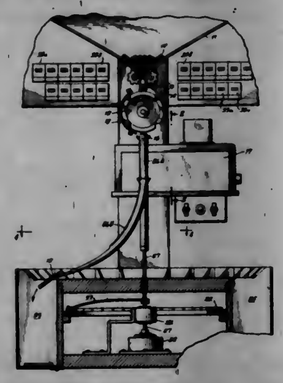
3,189,177
SORTER
Howard D. Mays, Zanesville, Ohio, Donald C. Bennett, Little Silver, N.J., and Henry G. Anzuini, Columbus, Ohio, assignors to The Mosaic Tile Company, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 860,879, Dec. 21, 1959. This application July 5, 1963, Ser. No. 294,215
4 Claims. (Cl. 209—74)

1. In a sorter for items subject to damage upon impact with other objects, said sorter having an item detail analyzer and detail signal storage and delivery means associated with said detail analyzer, the improvement comprising, in combination, a pair of laterally spaced, parallel and horizontally extending item conveyor belts for moving items sequentially along a path to and from said analyzer with said items resting on said belts, means for driving said belts continuously at constant speed and a plurality

of sorter stations located sequentially along said path, each of said sorter stations comprising a stacker having an item lifter reciprocable through the space between said belts between a lower position beneath and not obstructing said path and an upper position located above said path a distance greater than the vertical thickness of said items, means responsive to a signal corresponding to an item to be selected at such sorter station for actuating said lifter, two sets of catch means mounted above said path a distance greater than the vertical thickness of said items and engageable beneath the edges of an item lifted thereto by said lifter, said catch means of each set being normally laterally spaced from each other less than the corresponding lateral dimension of said item and separable by entry of an item therebetween, means for urging each of said sets of catch means into normal position, an elevator mechanism including means for mounting one of said sets of catch means, means for lifting said elevator catch means and a stack of items thereon upwardly from the other of said sets of catch means, and for returning said elevator catch means to lower position with said other set of catch means, a third set of catch means located in a third position above said first two sets for retaining said stack of items at such third position, and means actuated by the accumulation of a predetermined number of items in a stack on said elevator catch means for actuating said elevator lifting means.



3,189,178
ARTICLE SORTING MACHINE
Donald A. Calleson and William R. Weidlich, Durham, N.C., assignors to Liggett & Myers Tobacco Co., New York, N.Y., a corporation of New Jersey
Filed Oct. 16, 1962, Ser. No. 230,839
1 Claim. (Cl. 209—121)



A cigarette sorting machine comprising

a hopper to receive a desired sample of cigarettes,

a fluted feeding drum beneath said hopper to receive cigarettes from said hopper,

an electronic balance having a balance pan to provide a signal that is a function of the weight being registered on said balance pan, the balance pan of said balance being located under said feeding drum to receive cigarettes from said drum,

a series of collection bins deployed in an arc at a level lower than said balance pan,

a feeding chute having an upper end disposed adjacent to said balance pan and a lower end disposed adjacent to said bins whereby one of said cigarettes ejected into the upper end of said feeding chute will be fed to one of said bins assisted by gravity feed,

said feeding chute having a lower portion and an upper portion, said lower portion being pivotally mounted to permit changing the location of said lower end of said chute along said arc of said bins, said upper portion permitting said lower portion to pivot while said upper end is held in fixed relationship to said balance pan,

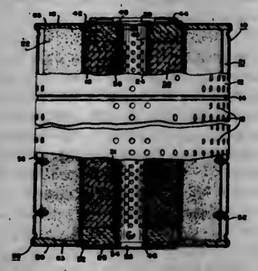
servo means linked to said lower portion of said feeding chute and responsive to said signal to pivot said lower end of said chute to a position along said arc of said bins that is correlated to the weight being registered,

counting means linked to said lower portion of said chute to register a count each time that a cigarette is weighed, said counting means including a separate counter corresponding to each one of said bins whereby the number of cigarettes deposited in each bin may be separately counted,

ejection means for transferring a cigarette from said balancing pan to said upper end of said chute, and

timing means correlated to the rotational speed of said feeding drum to initiate the operation of said counting means and of said ejection means after said servo means has pivoted said lower end of said chute to the appropriate one of said bins.

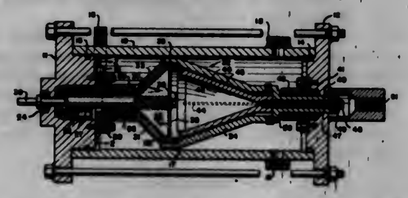
3,189,179
REPLACEABLE FILTER CARTRIDGE FOR A DRY CLEANER
John D. McMichael, Swarty Creek, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 18, 1962, Ser. No. 210,651
4 Claims. (Cl. 210—238)



3. A disposable cartridge for use with dry cleaning solvent comprising a perforated cylindrical outer shell adapted to receive solvent to be filtered and conditioned, a perforated inner tube concentric with said outer shell and having one end open for dispensing conditioned solvent therethrough, a perforated support tube concentric with said outer shell and said inner tube and interposed therebetween, an annular imperforate end plate at each end of said cartridge connecting said outer shell and said support tube in spaced relationship respectively along the outer and inner peripheral edges of said end plates to define an annular solvent filtering chambers and a center cavity, a first cover frictionally engaging the inner peripheral edge of one of said end plates in a press fit and having solvent outlet means in communication with said

one end of said inner tube, said inner tube being fastened at said one end to said first cover in a manner to support said inner tube in said center cavity thereby to define with said support tube an annular solvent conditioning chamber, a tube of longitudinally folded filter paper in said filtering chamber for removing particulate matter from solvent flowing therethrough, activated carbon granules in said conditioning chamber for removing soluble matter from solvent flowing therethrough, means for retaining said carbon granules in said conditioning chamber including plug means at each end of said conditioning chamber extending from said support tube to said inner tube, a second cover frictionally engaging the inner peripheral edge of the other of said end plates in a press fit and having means for lockingly receiving the other end of said inner tube, and means connected to said second cover for handling said cartridge.

3,189,180
CYCLONE-CENTRIFUGE SEPARATOR
Paul R. Scott, Houston, and John W. Mizenko, Crosby, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 18, 1961, Ser. No. 124,937
2 Claims. (Cl. 210—256)



1. An apparatus for converting a sample of a liquid lighter than water to a clean dry sample, said apparatus comprising: a closed cylindrical housing; a tangential nozzle disposed in said housing for introducing said sample tangentially into said housing; a centripetal turbine blade means fastened to said housing and disposed to intercept a portion of the sample introduced into said housing and convert its rotational energy to pressure; an outlet disposed in said housing for discharging the remaining portion of the sample; a shaft rotatably mounted in said housing and projecting through the wall thereof, a hollow rotor member secured to said shaft and disposed within said housing, said centripetal turbine blade being disposed to discharge said portion of the sample into said hollow rotor at one end; said hollow rotor having small diameter ends and a larger diameter central section with flow control means for forcing said portion of the sample to flow outward to said center section; said center section including a flow control means disposed to divert the heavy portion of said portion of the sample adjacent the inner wall of said rotor to cause the heavy portion to flow to the other end thereof and be discharged into said housing; said flow control means diverting the lighter portion of said portion of the sample to the center of said rotor and a discharge opening coupled to the other end of said rotor and passing through the wall of said housing.

3,189,181
UNDERDRAIN CONSTRUCTION FOR TANKS
John Scott Cowe, Toronto, Ontario, Canada, assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 24, 1961, Ser. No. 105,222
10 Claims. (Cl. 210—291)

5. Liquid treating apparatus comprising a tank, a header within said tank extending across the bottom thereof, at least one plastic tube extending laterally from said header, means defining a passageway extending from the exterior of said sube to the interior of said header including a plurality of openings in said tube spaced longitudinally thereof, means providing for fluid communication between the interior of said header and the exterior of the tank, an elongated screen of a corrosion resistant



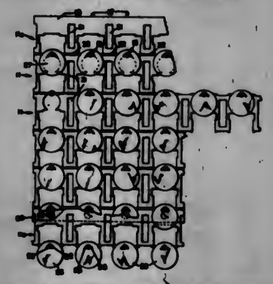
metal joined with said tube at the longitudinal screen edges, the longitudinal edges of said screen being joined to said tubular member by a welded junction formed in grooves extending axially of said tubular member and spaced on opposite sides of said openings.

3,189,182
FUEL FILTER WATER SEPARATOR ELEMENT
Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,685
4 Claims. (Cl. 210—492)



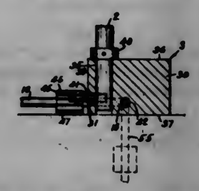
1. In a fuel filter water separator device a porous separator element for permitting flow of fuel therethrough but preventing flow of any water droplets therethrough comprising a plurality of axially aligned continuous convolutions of a resin impregnated fibrous ribbon material which are bonded together by said resin to form a hollow tubular member, radial pores located between said convolutions and extending from the hollow interior of said member to the outside surface thereof, and a continuous Teflon coated wire embedded between said convolutions for preventing the passage of water droplets through said pores.

3,189,183
MOBILE TYPE SIGN
Warren T. Thrasher, Seminole, Okla., assignor to The Daw Corporation, Seminole, Okla., a corporation of Oklahoma
Filed Aug. 21, 1963, Ser. No. 303,621
6 Claims. (Cl. 211—13)



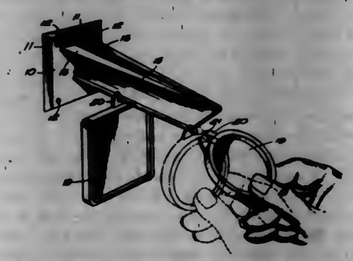
1. A base for a mobile sequin sign comprising: a sheet of deformable material having rows and columns of tongues cut therefrom, each of said tongues having a relatively wide base portion, a substantially cylindrical neck portion for receiving thereon an apertured sequin, a pair of inner guide arms extending from said tongues between said base portion and said neck, and a pair of outer guide arms extending from said tongue outwardly of said neck, said tongues extending outwardly from the surface of said sheet, whereby, when bent horizontally away from said sheet, said tongues will permit horizontal bending of said sheet, the material remaining between said tongues defining webs interconnecting adjacent tongues and also connecting one row of tongues to the adjacent rows with small area portions easily bent to permit bending said sheet over vertically curved surfaces and being easily broken to permit separation of said sheet into strips of one or more rows of tongues.

3,189,184
BATH MAT HANGER
Leo V. Walsh, 6023 Arlington Ave., Los Angeles, Calif.
Filed July 15, 1963, Ser. No. 294,923
3 Claims. (Cl. 211—45)



1. In a device of the character disclosed, a shaft, a block provided with a bore for receiving one end of said shaft, a pin radially carried by the shaft, the block provided with a groove for positioning the pin within the block and for extension from the block when the shaft is rotated, a hanger and means carried by the hanger for engagement with the pin to maintain the shaft and the hanger in angular relationship when the shaft is rotated to extend the pin.

3,189,185
SEAL AND SEAL RACK
Philip Grasso, Stanford, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Jan. 23, 1962, Ser. No. 168,127
1 Claim. (Cl. 211—59)



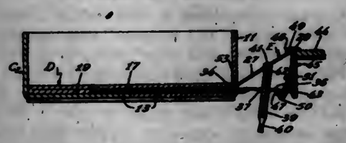
A rack adapted to store container seals, said rack including a vertical mounting bracket adapted to be secured to a rigid surface, a vertical plate affixed and extending substantially normal to said bracket, said vertical plate having a horizontally extending lower edge, and a vertically extending front edge, a gusset plate affixed to said mounting bracket and additionally extending from each side of said vertical plate at the upper portion thereof and convergent toward said vertically extending front edge, a cylindrical rib integral with and extending along said entire lower edge, portions of the rib extending outwardly from the sides of the vertical plate; a second rib integral with and extending along said vertically extending front edge of the plate, portions of the second rib extending outwardly from the sides of the vertical plate.

3,189,186
HOLDER FOR SMOKING PIPES
Irwin Palant, 3346 Bayfield Blvd., Oceanside, N.Y.
Filed Apr. 24, 1964, Ser. No. 362,253
1 Claim. (Cl. 211—60)



A holder for a smoking pipe comprising a rigid pipe support body having a rigid pipe stem supporting portion and a rigid pipe bowl supporting portion, said supporting portions each being substantially U-shaped and extending coextensive with the other to form a constantly open and substantially fully exposed support for respective stem and bowl portions of a pipe, clip means on said body at said stem supporting portion directed away from said U-shape to supportingly suspend the rigid support body with said pipe stem supporting portion disposed substantially vertically above said pipe bowl supporting portion, a pipe stem receiving aperture defined in said rigid pipe bowl supporting portion in substantial vertical alignment with and between the legs defining said U-shaped pipe stem supporting portion when said body is suspended by said clip means, the stem of a pipe being insertable downward into said aperture and partially encompassed in said U-shaped stem supporting portion with the bowl of the pipe extending sidewise beyond one of the sides defining said U-shaped stem supporting portion, and retaining means connected across the legs of said U-shaped stem supporting portion to define a continuous loop and open enclosure therewith to encompass a portion of the stem of a pipe adjacent the bowl thereof, said clip means including a yieldable arm, means spacing said arm from said body, said arm being connected at one end to the end of said pipe stem supporting portion remote from said bowl supporting portion and extending in the direction of said pipe bowl supporting portion, and magnetic means on said pipe support body directed away from the bowl supporting portion thereof to hold said stem and bowl supporting portions thereof in a substantially V-shaped relationship with the bowl of a pipe supported in said bowl supporting portion and the stem of a pipe supported in said stem supporting portion wholly encompassed by said continuous loop defined by the U-shaped stem supporting portion and said retaining means.

3,189,187
SHELF EXTENDERS
Reynolds W. Guyer, Jr., White Bear, and William J. Robinson, St. Paul, Minn., assignors to Reynolds Guyer Agency of Design, St. Paul, Minn., a corporation of Minnesota
Filed Nov. 7, 1962, Ser. No. 236,035
5 Claims. (Cl. 211—71)



1. A shelf extender for use in displaying a product contained in a container, the container including rectangularly

arranged connected side walls and top and bottom closure walls,

a tear strip extending continuously about said rectangularly arranged side walls intermediate the top and bottom closure walls, whereby the portion of the container above said tear strip may be detached and removed to expose the container contents,

a pad of two layers secured overlying said container bottom closure wall,

the lower layer of said pad having a pair of slots therein communicating with an edge thereof,

one said side wall having a pair of apertures therethrough in registry with the ends of said slots communicating with the pad edge,

the upper layer of said pad having a pair of apertures therein in registry with the other ends of said slots,

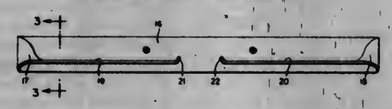
a pair of arms extending through said one wall and said slots and including upturned flanged ends extending into said apertures in said upper layer, and

means for attaching said arms to a shelf edge.

3,189,188
DRYING RACK

Shirley Zeper, 8448 Forrest Ave., Philadelphia, Pa.

Filed May 11, 1962, Ser. No. 193,981
2 Claims. (Cl. 211—105.1)



1. A unitary rack for drying apertured wet garments comprising: a substantially flat elongated section of sheet material for connection to a supporting surface, first and second projecting sections of sheet material respectively connected to said elongated section at each end thereof and extending generally transverse thereto, and two garment-engaging sections of sheet material connected respectively to said first and second sections and extending inwardly therefrom toward one another with their respective free ends spaced from each other, said garment-engaging sections being substantially flat and relatively wide for preventing substantially all of the opposing inner surfaces of garments slipped thereover from touching one another, and said garment-engaging sections being disposed substantially perpendicular to said elongated section and to said first and second projecting sections.

3,189,189
COLLAPSIBLE CRANE WITH INTERIORLY HOUSED JIB

Julius Nicolaj Meyer Waerum, Hellerup, and Helge Ejnar Krex, Charlottenlund, Denmark, assignors to Byggeriets Maskinstationer Aktieselskab, Copenhagen, Denmark

Filed June 25, 1963, Ser. No. 290,443
Claims priority, application Denmark, July 3, 1962, 2,969/62
2 Claims. (Cl. 212—46)

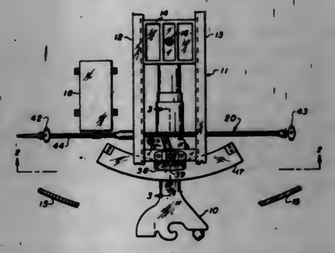
1. A crane comprising a stem which consists of an upper stem portion and a lower stem portion, means pivotally connecting said stem portions to enable them to be folded from extended substantially aligned positions to collapsed positions alongside of each other, said upper stem portion being substantially hollow, a jib of cross-sectional dimensions somewhat smaller than those of the interior of said upper hollow stem portion so as to be housed within the latter, means for mounting said jib for sliding telescopically within said upper stem portion from housed position to an upwardly extending working position, and means for pivotally supporting said jib upon said upper stem portion when in such working position.



3,189,190
COUPLER CENTERING DEVICE

Donald L. Herbert, Mansfield, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey

Filed Jan. 2, 1964, Ser. No. 335,245
6 Claims. (Cl. 213—21)



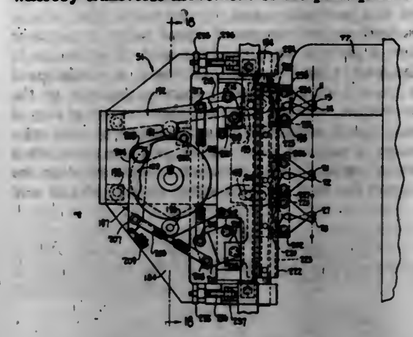
1. Coupler apparatus comprising a mechanical coupler pivotally mounted on a car, a sector bar supporting the outer end of the coupler for swinging movement thereon with flange means on the coupler riding on the top side of the said sector bar, and a detent member on the coupler below the sector bar, a locking mechanism mounted on the car above the sector bar on the longitudinal axis of the car and defining a center position for the coupler, the said locking mechanism including a plunger, a spring for urging the plunger into an extended position, and a cam for withdrawing the plunger from the forward extended position, operating means for the said cam pivotally mounted on the said car comprising a mechanical lever, an intercar line switch mounted on the said car, and a two-position operating mechanism operatively connecting the said switch and the said lever, whereby when the operating mechanism is in one position the line switch is closed and the plunger is withdrawn for free swinging movement of the coupler, and in the remaining position the line switch is open and the plunger is released for holding the coupler in the center position.

3,189,191
TRANSFER MEANS IN AN ARTICLE FORMING MACHINE

Howard D. Prutton, Fairview Park, Ohio, assignor to Prutton Corporation, a corporation of Ohio

Filed Oct. 4, 1961, Ser. No. 142,967
2 Claims. (Cl. 214—1)

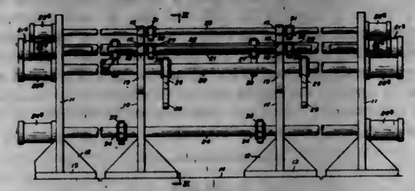
1. In a transfer mechanism a transversely moveable plate having a longitudinally extending groove therein, a set of transfer fingers, each finger having a pivot and an arm extending from the pivot normally at a slight angle to the grooves in the transversely moveable plate, means to move said finger pivots in a longitudinal direction, a cam follower at the end of each arm engaging said groove, whereby transverse movement of the plate produces rotation of the fingers about said pivots for opening and closing action and longitudinal movement of said pivots maintains said fingers stationary relative to each other.



3,189,192
SLAB TURNING DEVICE FOR SCARFING AND INSPECTION

Walter R. Egger, Austintown Township, Mahoning County, Ohio, assignor to United States Steel Corporation, a corporation of New Jersey

Filed Jan. 15, 1963, Ser. No. 251,530
4 Claims. (Cl. 214—1)



2. Apparatus for turning slabs comprising a plurality of spaced upstanding plates, each plate having a portion of its upper edge adapted to support a slab laid face down thereon, a shaft extending normal to said plates below said portion, arms spaced along said shaft and extending laterally beyond said plates, each of said arms having a terminal hook projection substantially normal thereto whereby, on rotation of said shaft, said arms and hooks are adapted to pick up a slab having a width several times its thickness disposed adjacent said shaft and at an angle to the horizontal, then lift and turn it over so it falls face down on said portions of the upper edges of said plates, a shaft below said first-mentioned shaft and parallel thereto extending through said plates, arms spaced along said lower shaft and extending laterally beyond said plates, each arm having a portion of its upper edge adapted to support a slab laid face down thereon, means for transferring a slab to said arm portions whereby on consecutive rotation of said lower and first shafts respectively, said slab is transferred from said lower shaft arms to said first shaft arms.

3,189,193
ARTICLE TRANSFER MACHINE

Chester O. Merchant, East Longmeadow, Mass., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 12, 1963, Ser. No. 287,269
4 Claims. (Cl. 214—1)

1. An article transfer machine comprising,

a base,

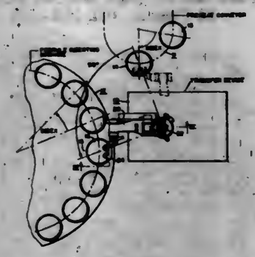
an upright column rotatably mounted on said base,

a radial arm extending from said column for rotation therewith,

a pivoted arm depending from the outer end of said radial arm to be movable inward and outward of said column,

article gripping means pivotally connected to the outer end of said pivoted arm,

means to rotate said column and radial arm to and from first and second transfer work positions,



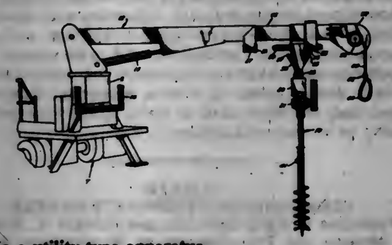
means to pivot said pivoted arm inward towards said column before said column is rotated to move from the first transfer position and to pivot the pivoted arm outward as said column approaches the second transfer position,

and means interconnecting said pivotally connected article gripping means and said radial arm to pivot said article gripping means upward as said depending arm is moved inward and downward as said depending arm is moved outward.

3,189,194
UTILITY EQUIPMENT

Ralph E. Carbert, Minneapolis, and Harry R. Larson, Long Lake, Minn., assignors to Tel-E-Lect Products, Inc., Minneapolis, Minn., a corporation of Minnesota

Original application Oct. 30, 1961, Ser. No. 148,677, now Patent No. 3,116,840, dated Jan. 7, 1964. Divided and this application Oct. 24, 1963, Ser. No. 318,680
10 Claims. (Cl. 214—3)



1. In a utility type apparatus,

(a) a vehicle,

(b) a boom mounted on said vehicle and extending outwardly therefrom,

(c) a stinger carried by said boom and being extendible and retractable relative thereto,

(d) means connected to said stinger for extending and retracting said stinger relative to said boom,

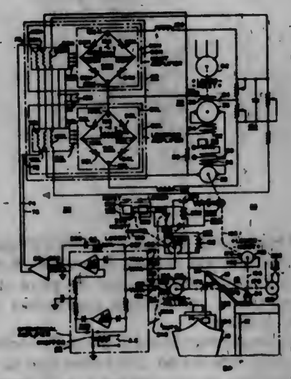
(e) a winch carried by said stinger at the outer end portion thereof,

(f) power means connected to said winch for operating the same, and

(g) said winch including a cable having an outer end portion with a hook member secured thereto, and and elongated normally extended stiff coiled spring carried by said outer end portion of said cable in

encircled relation adjacent said hook member to facilitate disengagement of said hook member when tension upon said cable is released.

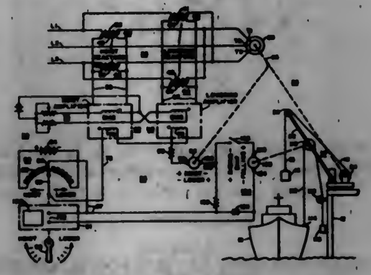
3,189,195
LOAD MANEUVERING APPARATUS
Edgar C. Fox, Jr., Penn Township, Allegheny County, and Richard L. Meyer, Plum, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 25, 1963, Ser. No. 253,801
13 Claims. (Cl. 214—14)



1. In apparatus for maneuvering a load between two stations which are subject to relative movement between each other, and wherein there is an adjustable speed reversible drive means for moving the load, said drive means including motor means located on one of said stations for moving the load, the combination therewith of first control means responsive to the difference between actual and desired speeds of relative movement between the load and the other station for producing a first signal component proportional to that difference, second control means responsive to the difference between actual and desired instantaneous positions of the load relative to the other station for producing a second signal component proportional to the last said difference, and means coupled to said drive means and to said first and second control means for controlling said drive means in response to said first and second signal components to maintain a desired speed of relative movement between the load and the other station while relative movement is going on between said stations.

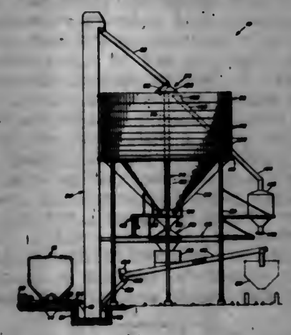
3,189,196
LOAD MANEUVERING APPARATUS
Wellington C. Carl, Churchill, and Howard A. Zellinger, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 25, 1963, Ser. No. 253,809
7 Claims. (Cl. 214—14)

1. Hoisting apparatus for transferring a load between two stations while said stations are subject to relative vertical motion between each other, said apparatus comprising load moving means including adjustable speed reversible drive means, said drive means including a motor located on one of said stations for moving said load, control means coupled to said drive means for controlling the drive means to move said load in a direction and at a speed in accordance with signals supplied to said control means, means for providing and selectively supplying to said control means either of first and second command signals, said first command signal being of one sense and a particular magnitude for commanding the control means to operate said drive means to move the load in the hoist direction at a particular speed relative to the other of said stations, said second command signal being of opposite sense and a certain magnitude for said drive means to move the load in the lowering direction at a certain speed relative to said other station, means responsive to the relative motion between said stations for supplying a first speed signal proportional to the speed of said relative motion to said control means in said one sense when the relative motion is in a direction tending to close the gap between the load and said other station, and in said



opposite sense when the relative motion is in the direction tending to widen the gap between the load and said other station, and means for providing and supplying to said control means a second speed signal representing the actual speed of said load relative to said one station and in a sense to oppose the selected one of said command signals being supplied to said control means, said control means being operable in response to said first and second speed signals and said selected one of said command signals to operate said drive means in a manner to maintain the commanded speed and direction of movement of said load relative to said other station.

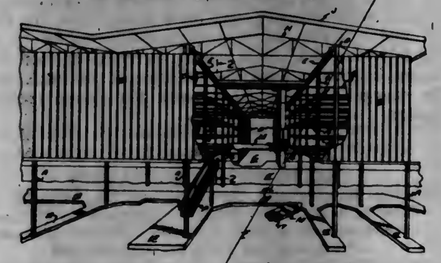
3,189,197
MULTI-COMPARTMENT BULK STATION
Walter J. Sackett, Sr., Baltimore, Md., assignor to The A. J. Sackett & Sons Company, Baltimore, Md., a corporation of Maryland
Filed June 6, 1961, Ser. No. 115,203
5 Claims. (Cl. 214—16)



1. A multi-compartment bulk station type storage tank, comprising, means including a truncated cone having a plurality of vertically extending compartments radially arranged therein, support structure for supporting said cone in a downwardly facing elevated position, a multi-compartment silo formed of staves bound together with hoops and mounted on top of said support structure in contiguous relationship with said cone, said silo being

thereby demountable, selector means rotably secured to the top of said silo, said selector means having a topmost stationary portion adapted to communicate with material supply means and a bottom swivel portion for directing material to a selected compartment, means including a hollow mast member positioned along the longitudinal axis of said storage tank and extending from said selector means to the truncated portion of said cone, guide means vertically arranged on the outer surface of said mast member for positioning walls defining said compartments, means including a rotating member located beneath said silo and having a connecting rod passing along the interior of said mast member to said selector means for operation thereof, and means including a compartment gate positioned at the bottom of each compartment in said truncated cone for selectively discharging material from desired compartments.

3,189,198
SMALL BOAT DRY STORAGE FACILITY
Andrew M. Flisk, 4105 Admirable Drive, Portuguese Bend, Calif.
Filed Oct. 3, 1963, Ser. No. 313,606
12 Claims. (Cl. 214—16.4)



1. A dry storage facility for boats of not greater than a predetermined length in which boats can be stored and selectively removed therefrom for use on a body of water, and removed from said water for storage or maintenance including:

(a) two parallel, laterally spaced runways that extend at least partially over said body of water;

(b) two elongate open frameworks separated by a longitudinally extending corridor of greater width than said predetermined length of said boat, which frameworks are defined by a plurality of vertical columns and cross pieces;

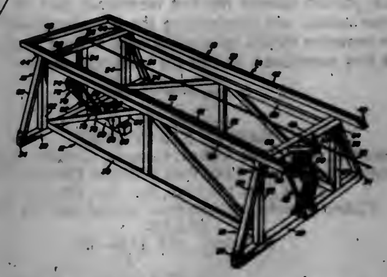
(c) a plurality of horizontal, vertically spaced boat supports that are mounted on said columns and disposed adjacent to said corridor;

(d) a plurality of vertically spaced resilient slings extending between the outermost of said columns in said frameworks, with said boat supports and slings co-operatively defining a plurality of compartments in which said boats can be removably positioned, with each of said boats when so positioned having the bow portion thereof suported by one of said slings and the stern portion thereof by said boat supports;

(e) first means for supporting one of said boats to move the same from one location to another;

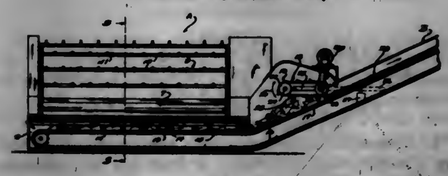
(f) power-driven crane means situated in said corridor and movably supported on said runways, said crane means having a movable portion thereof connect to said first means, which movable portion and said first means being adapted to be moved vertically to deposit one of said boats in said body of water or remove one of said boats therefrom, said crane means capable of being moved longitudinally on said runways until it is in vertical alignment with a desired one of said compartments to permit said movable portion and said first means to be moved vertically and transversely to deposit one of said boats in said desired compartment or lift one of said boats therefrom.

3,189,199
PICK-UP TRUCK CAMPER BODY LOADER
Walter A. Eaton, 8612 Juanita Drive, Yakima, Wash.
Filed Oct. 18, 1962, Ser. No. 231,405
6 Claims. (Cl. 214—38)



1. A pick-up truck camper body loader for loading and unloading truck camper bodies, said loader comprising an elongated base adapted to be supported from the ground and including widespread leg means for steadying against lateral tilting, an elongated generally horizontal support bed including a pair of interconnected longitudinal slide and guide rails pivotally secured at one end to one end of said base for movement about a generally horizontally disposed axis extending transversely of said support bed, lift means interconnected between the other end of said bed and the corresponding end of said base for raising and lowering said other end relative to said base, said base comprising a pair of upstanding opposite end and transversely extending end sections interconnected at corresponding ends by means of a pair of upstanding longitudinally extending opposite side sections, said one end of said support bed being pivotally secured to the upper end of the corresponding end section, the other end of said bed and the corresponding end of said base including coacting guide means guiding said other end of said bed against lateral deflection, said coacting guide means comprising an inverted U-shaped member secured between the corresponding ends of said slide and guide rails and including a pair of depending legs whose remote surfaces are disposed in sliding contacting relation with a pair of opposing vertical guide surfaces defined by opposite end portions of the corresponding end section.

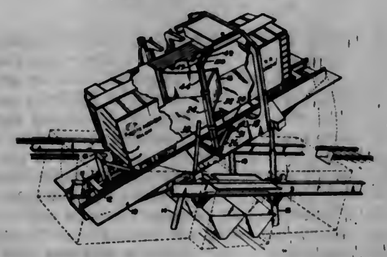
3,189,200
FEEDING CONVEYOR SYSTEM WITH UNIFORMITY CONTROL
Gerald D. Arnold, Galesville, Wis.
Filed Aug. 15, 1963, Ser. No. 302,238
7 Claims. (Cl. 214—46)



1. In a dehydrating system, the combination with infeed conveyor means for delivering material to the system, of means for maintaining a substantially constant level of material on the conveyor means and including a

floating leveler adjacent part of the conveyor means and having a portion movable to and from the adjacent part of the conveyor means, said leveler including on its said portion a leveling means movable oppositely to the conveyor means and provided with material-engaging teeth, and means for driving said leveling means for raking rearwardly of the conveyor means the material engaged by said teeth, a speed changing drive to a part of the conveyor means, and connections from such leveler portion to said speed changing drive for accelerating the last mentioned part of the conveyor means upon movement of such portion toward the first mentioned part of the conveyor means and decelerating the last mentioned part of the conveyor means upon movement of such portion from the first mentioned part of the conveyor means.

3,189,201
BAFFLE STRUCTURE
Robert G. Day, Port Arthur, Ontario, Canada, assignor to Seaber Equipment Ltd., Fort William, Ontario, Canada
Filed June 17, 1963, Ser. No. 288,078
Claims priority, application Canada, July 25, 1962, 854,532
3 Claims. (Cl. 214—47)



2. In combination with a grain car dumper, a grain deflecting structure comprising

(a) a first pair of beam members pivotally connected to said dumper on opposite sides thereof and projecting laterally therefrom;

(b) a second pair of beam members pivotally connected to said dumper on opposite sides thereof and spaced upwardly from said first pair;

(c) a vertical post connected at its ends to a first and second beam member of each pair thereof;

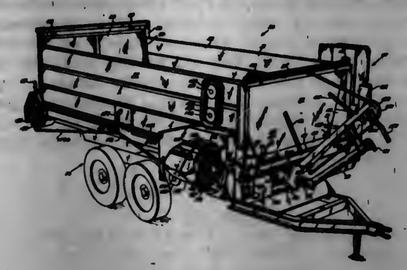
(d) a baffle mounted on each post;

(e) hydraulic means on said dumper operatively connected to said first pair of beam members adapted, when actuated, to swing said beam members sequentially on their pivotal connections so as to laterally insert said baffles into the doors of a car held on said dumper and along the floor of said car in arcuate paths whereby said baffles form a plow in said car; and

(f) means associated with said second pair of beam members for raising or lowering said baffles on the posts.

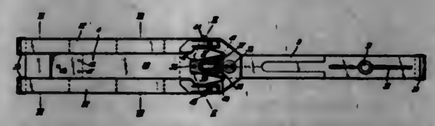
3,189,202
MATERIAL UNLOADING VEHICLE
Elmer K. Hansen, 3100 Correctionville Road, Sioux City 5, Iowa
Filed Aug. 22, 1961, Ser. No. 133,208
4 Claims. (Cl. 214—83.36)

1. A material unloading vehicle comprising a box having a bottom wall, side walls, a front end gate movable between open and closed positions, a rear end gate movable between open and closed positions, a conveyor supported on said box for reversible movement longitudinally over said bottom wall to move material to be unloaded selectively toward each end gate, latch means for holding the rear end gate in the closed position, means for controlling the movement of said conveyor including first rotatable means mounted on the front of said box for moving said conveyor toward said front end gate, second rotatable means mounted on the rear of said box for moving said conveyor toward said rear end gate, drive means operably and concurrently engageable with each said first and second rotatable means for transmitting ro-



tation thereto, and clutch means operable concurrently to disengage said drive means from one of said rotatable means while engaging said drive means with the other of said rotatable means, and means connected to said latch means and clutch means for releasing said latch means concurrently with the actuation of the clutch means to engage the drive means with the second rotatable means.

3,189,203
MECHANICAL EXCAVATORS
Norman Brocklebank, Beverley, and Roy Wardill and Gordon Scott, Hull, England, assignors to Priestman Brothers Limited, Hull, England, a British company
Filed Aug. 26, 1963, Ser. No. 304,586
Claims priority, application Great Britain, Aug. 28, 1962, 33,006/62
3 Claims. (Cl. 214—138)

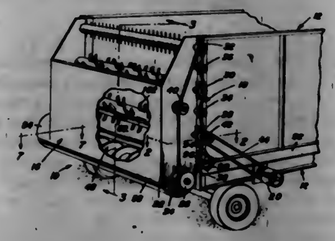


1. In an excavator of the kind having a body, a boom, means pivotally mounting said boom on said body, a digging arm, means pivotally mounting said digging arm on said boom, a digging bucket mounted on said digging arm; the improvement according to which said boom comprises an inner boom part mounted on said body, an outer boom part carrying said digging arm and adapted to be telescopically slidable into said inner boom part, and means fixing said inner and outer boom parts together either in their contracted position with said outer boom part lying largely within said inner boom part or in their extended position in which said outer boom part extends upwards and outwards from said inner boom part, wherein said inner boom part comprises parallel, laterally spaced, first and second closed box sections and a bottom plate extending between said first and second box sections, said box sections and the bottom plate defining a trough dimensioned to slidably receive said outer boom part.

3,189,204
FORAGE FEED TROUGH ASSEMBLY
Woodrow W. Wiberg, Prairie Farm, Wis.
Filed Aug. 8, 1963, Ser. No. 300,758
2 Claims. (Cl. 214—519)

1. A material handling apparatus comprising, a conveyor having a delivery end portion, a trough mounted at

said delivery end portion for receiving material deposited by the conveyor, material feeding means movably mounted in said trough having a discharge end on which the material is fed through the trough, metering means operatively mounted in spaced relation to the conveyor for rotation in one direction tending to displace material into the trough through a metering passage at the delivery end of the conveyor, and material beating means mounted on said metering means for progressive engagement with said material to prevent abrupt loading of the metering means and overloading of the feeding means, said metering means comprising a plurality of drums mounted for rotation in the same direction about fixedly spaced axes spaced from the conveyor to form said metering passage at the discharge end portion of the conveyor restricting movement of the material into the trough, said beating means comprising a plurality of spaced teeth mounted



on said drums for movement of the teeth on one of said drums through the metering passage in the direction of movement of the material by the conveyor, said teeth being of equal length shorter than the radii of the respective drums, said material beating means comprising an auger member, peripherally mounted bearing means secured to the auger member at the discharge end for rotatable mounting thereof in the trough, and an elongated bearing strip fixedly mounted in the trough for bearing contact with said peripherally mounted bearing means, said conveyor including, material guide means at the delivery end portion spaced from the trough to form a gap, material pushing elements movable in the direction of material movement through said gap for displacing said material into the trough and means intermittently displaced out of the path of movement of the pushing elements for closing said gap between the guide means and the trough to prevent loss of material therethrough.

3,189,205
STACKING MECHANISM
George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Nov. 8, 1962, Ser. No. 236,263
8 Claims. (Cl. 214—670)

1. A load stacking mechanism comprising,

a traveling support,

upper and lower elongated stationary racks for guiding said traveling support along a predetermined path,

upper and lower pinions carried by said traveling support and meshing with said racks whereby to prevent tipping of said traveling support,

means on said traveling support directly connected with said pinions for simultaneously rotating said pinions to move said traveling support along said predetermined path,

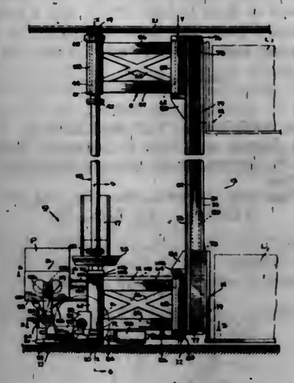
a supporting arm structure pivotally mounted at one end on said traveling support for horizontal pivotal movement relatively to said traveling support,

means for pivoting said supporting arm structure relative to said traveling support,

a load supporting and lifting mechanism pivotally mounted on the other end of said supporting arm structure,

means for pivoting said load supporting and lifting mechanism relatively to said supporting arm structure, and

control means including cam means cooperating with cam followers for effecting combined, correlated, pivotal movement of said supporting arm structure relatively to said traveling support, means for correlating rotation of said cam means and cam followers with linear movement of said traveling sup-



port along said predetermined path for effecting pivotal movement of said load supporting and lifting mechanism relatively to said supporting arm structure and linear movement of said traveling support to rotate said load supporting and lifting mechanism horizontally through an angle of substantially 90° while moving said load supporting and lifting mechanism transversely of said linear path, whereby a load supported on said load supporting and lifting mechanism is rotated and inserted into a storage space at the side of said path.

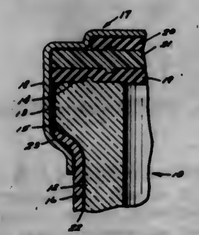
3,189,206
NON-REFILLABLE CLOSURE FOR A BOTTLE
William J. Miller, 1270 Syracuse St., Denver 8, Colo.
Filed Jan. 21, 1963, Ser. No. 252,735
2 Claims. (Cl. 215—22)



1. A non-refillable closure for a bottle of the type having a conical threaded neck comprising: a cap portion having an axial passage and provided with internal threads to thread upon the threaded neck; an inverted-cup-shaped housing, provided with an air opening and a pour opening, fitted downwardly over said cap portion, said housing being both rotatable on and vertically movable on said cap portion, said openings being positioned adjacent the top of said housing so that they will be in an open pouring position above said cap portion when said housing is in a raised position and in a closed sealed position below said cap when said housing is in a lowered position;

inclined ratchet fangs interengaging between said housing and said cap portion so that, when said housing is rotated clockwise, it will similarly rotate said cap portion and, when rotated counter-clockwise, it will elevate above and not rotate said cap portion; a cylindrical sleeve formed on said housing and surrounding and extending downwardly about said axial passage and through the top of said cap portion, said sleeve having a discharge port and an air port both arranged to be opened by the raising of said housing; a valve block closing the bottom of said sleeve; a valve stem extending vertically through said sleeve; a check valve being mounted on said valve stem and preventing return of fluid to said bottle; and a weighted element suspended from the lower extremity of said valve stem for urging said check valve to its seat by gravity.

3,189,207
AEROSOL-TYPE PACKAGE
Clarence A. Heyne and John R. Johnson, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Feb. 15, 1963, Ser. No. 258,850
4 Claims. (Cl. 215—38)



1. In a package, a glass container comprising a body and a mouth-defining neck having an annular external generally downwardly facing shoulder, a sheath of thermoplastic material intimately encasing the container up to about the upper margin of the shoulder, a sheet metal closure telescoped over the neck with an attaching skirt in part overlying a part of said sheath and contracted into holding engagement with the shoulder and a bonding agent securing the closure skirt directly to underlying areas of the sheath.

3,189,208
CLOSURES, MORE ESPECIALLY FOR CONTAINERS
George Edward Jowett, Mumbles, Swansea, Glamorgan, Wales, assignor to Viscose Development Company Limited, London, England, a British company
Filed Mar. 16, 1964, Ser. No. 352,220
Claims priority, application Great Britain, Mar. 19, 1963, 10,884/63
4 Claims. (Cl. 215—38)



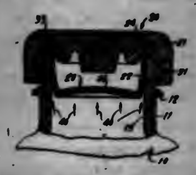
1. A shaped structure for the production in situ of a closure for a container, said structure consisting of a length of heat-shrinkable thermoplastic tubing in flat form and closed at one end by means of a line heat-seal extending across the full width of the flat tubing, the tubing being of such transverse dimension in relation to the container to be closed that the said structure can be placed over an opening of the container and shrunk to fit the same, and the profile of the heat sealed end of the tubing being generally concave towards the interior thereof so that when the structure is so shrunk the closed end thereof will conform to the outline of the container.

3,189,209
CLOSURE FOR CONTAINERS
Edward W. Owens, Muscatine, Iowa, assignor to Thatcher Glass Manufacturing Company, Inc., New York, N.Y., a corporation of New York
Filed May 21, 1963, Ser. No. 282,076
11 Claims. (Cl. 215—40)



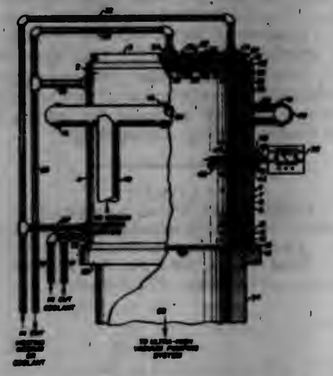
1. A container closure having a body consisting of a cover portion and an upstanding internally threaded skirt portion, said cover portion having an inner surface provided with a plurality of pitched female undercut locking elements and a plurality of smaller planar disturbances, said pitched locking elements extending into said cover portion and under said inner surface and the pitch being inclined at an angle to the face of said inner surface, a plastic deformable internal disc-shaped liner coextensive with said inner surface, and male protrusions molded on said disc engaging said undercut elements and female openings in said disc engaging said smaller planar disturbances, whereby said liner and closure are locked together to increase resistance against separation of the same.

3,189,210
VENTING CLOSURE FOR CONTAINERS
Jerome S. Holsler, Wilmington, Del., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Feb. 13, 1963, Ser. No. 258,330
5 Claims. (Cl. 215—56)



1. In a container structure, a tubular neck defining an opening in the container and constituted of flexible elastomeric material and having a seating surface at its upper end, a cup-shaped sealing member constituted of flexible elastomeric material and having at its upper end an outwardly extending flange seated on said tubular neck seating surface, the body of said sealing member being of tubular configuration and having a flexible upper portion bearing against the interior surface of said neck at a given pressure such as to provide a gas tight, liquid tight seal for a given normal range of gas pressures within the container, and yieldably withdrawable from such sealing engagement with such interior surface when such member is subjected to a gas pressure within the container outside such given range to permit the passage of gas therebetween, the exterior surface of the lower portion of said sealing member being spaced from said interior surface of the neck to facilitate the entry and escape of gas of high pressure between said upper portion and said interior surface, and a closure cap constituted of elastomeric material and having an outer depending wall coupled to said tubular neck, said closure cap having an inwardly tapered frusto-conical wall portion engageable with the inner peripheral edge of the flange on said sealing member to normally hold such flange seated in sealing relation on said neck seating surface when the gas pressure within the container is within said normal range and permitting such seated flange to move relative to said seating surface to enable the passage of gas therebetween when such gas pressure is outside such normal range, said closure cap having an interior annular groove adjacently enclosing said tapered wall portion thereof and overlying said neck seating surface, the outer periphery of said sealing member flange being short of the outer edge of said groove to enable movement of said flange from said seating surface and into said groove to permit such passage of gas therebetween.

3,189,211
ULTRAHIGH VACUUM CHAMBER
Stanley E. Pedlasock, Jr., Edgewood, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Jan. 15, 1963, Ser. No. 251,563
9 Claims. (Cl. 220—9)



8. In an ultrahigh vacuum system, the improvement comprising:
(a) a chamber enclosure structure including an inner wall having a thickness no greater than .010 inch and a thin outer wall spacedly arranged with respect to each other and joined by an inner core structural member whereby said inner wall, said outer wall and said inner core structural member form an integral structural frame;
(b) an ultrahigh vacuum pumping system connecting to a first space enclosed by said inner wall; and
(c) a vacuum pumping system connected to a second space between said inner wall and said outer wall whereby the pressure differential across the inner wall is held to no greater than .010 mm. mercury thereby preventing the diffusion of gas through said inner wall into said first space as an ultrahigh vacuum condition is created within said first space.

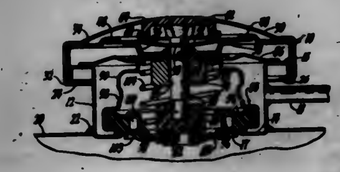
3,189,212
WEATHERPROOF OUTLET WITH RECIPROCABLY MOVABLE CLOSURE PIVOT PIN
Frank G. Bellak, Chicago, Ill., assignor to Bell Electric Company, Chicago, Ill., a corporation of Illinois
Filed July 11, 1961, Ser. No. 123,134
5 Claims. (Cl. 220—24.3)

2. A weatherproof outlet comprising a base plate, an annular ring defining an opening in the base plate to be disposed in register with an electrical outlet, a bifurcated bracket secured to the base plate having apertures through each side thereof, a pivot pin of a diameter appreciably less than the diameter of the apertures in a plane vertical to the base plate and disposed within the apertures parallel to said base plate for rotational and reciprocal movement in said vertical plane, an abutment on said base plate in said vertical plane, a closure member secured to



said pivot pin movable in a path of interference with said abutment, and a coiled spring member about said pivot pin engaging said closure member and said bracket, torsional stress of the spring urging rotation of the closure member to its closed position, and tensile stress of the spring urging said pin to hold said closure member in said path of interference with said abutment.

3,189,213
MANUAL RESET RELIEF VALVE CLOSURE
Harry W. Nimmo, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 159,911
4 Claims. (Cl. 220—44)



1. A closure for a filler neck of an automobile radiator having axially spaced annular inner and outer shoulders and a vent between said shoulders, said closure including an outer cover rotatably detachable from said neck, a main valve corresponding with said inner shoulder, a disk corresponding with said outer shoulder, said main valve having a central vent opening adapted to be placed in communication with said vent, a relief valve in registry with said vent opening, over-centering spring means fixed to said closure and relief valve for selectively holding of said relief valve closed and open, a plunger connecting said spring means and said relief valve and extending through said outer cover for exterior control of said relief valve, and the contour of an exposed surface of said plunger substantially conforming with the contour of said outer cover when said relief valve is closed.

3,189,214
SPOOL CAN WITH PULL-TAB TEAR STRIP RECLOSURE COVER
John Henchert, Morton Grove, Ill., assignor to Continental Can Company Inc., New York, N.Y., a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,189
24 Claims. (Cl. 220—54)

1. A container cover comprising an end and a skirt depending peripherally from the end, said skirt including a tear strip, said tear strip including a pull-tab and an intermediate portion integrally joining the pull-tab to the tear strip, said intermediate portion including a notch providing an area of low resistance to tear, a peripheral score line formed on said skirt and an extension of said peripheral score line traversing said inter-

mediate portion and terminating at said notch whereby a pull of the pull-tab initially severs said intermediate



portion along the extension of the peripheral score line and continued pulling severs and separates the cover end from the peripheral skirt along the peripheral score line.

3,189,215
ARTICLE CARRIER AND PACKAGE
Grover C. Currie, Jr., Charlotte, N.C., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Oct. 30, 1962, Ser. No. 234,074
10 Claims. (Cl. 220—115)



5. Means for interlocking the sides of a carton blank to form a carton for enclosing articles and for supporting the articles within the carton and means for carrying said carton, said carton having a plurality of article positions, comprising

a first side of said blank,

a second side of said blank opposite said first side;

said first side having a first aperture therein, said first aperture being spaced inwardly of the outer edge of said first side and being off-set from any article positions,

said first side having a second aperture therein between said first aperture and said outer edge of said first side;

said second side having a first outwardly extending tab thereon adjacent its outer edge, said tab being aligned with said first aperture, and having a central portion and projections, and being at least semi-resilient,

said central portion and projections being of a size that allows said tab to be inserted through said first aperture and said projections to contact the other face of said first side,

said second side having a second inwardly extending tab formed therein, said second tab being aligned with said second aperture and being spaced inwardly of said first tab a distance that allows said first and second tabs to be inserted through said first and second apertures;

carrying means adjacent said first side,

said means comprising a reinforced handle structure having

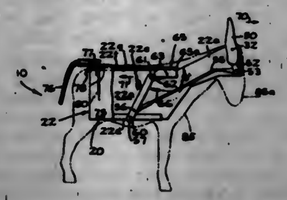
a first outer web in alignment with said first aperture,

a first flap connected to said first web along one edge and overlaying said first web, and

a second flap connected to said first web along the opposite edge of said first web and overlaying said first flap,

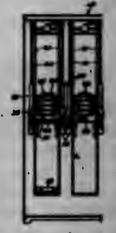
the outer edge of said flaps having a relief in alignment with said first aperture.

3,189,216
CIGARETTE HOLDER AND DISPENSER
Clarence F. Pinard, % Louise Armstrong, 1549 Sanborn Ave., San Jose 10, Calif.
Filed Nov. 4, 1963, Ser. No. 321,119
4 Claims. (Cl. 221—24)



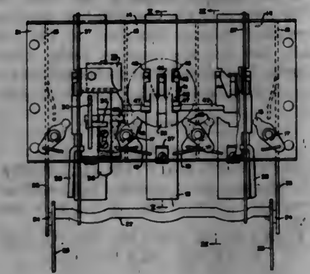
1. A cigarette container and dispenser comprising a form having the configuration of an animal, said form being formed with an opening therein, a vertically movable platform in said form for carrying a plurality of cigarettes with one of said cigarettes aligned with said opening, a first movable member projecting from said form, means in said form responsive to the movement of said first member for ejecting said one cigarette through said opening, means in said form supporting said platform for vertical movement to urge said platform into position whereby a cigarette is aligned with said opening, a second movable member projecting from said form, and means in said form connected to said platform support means and responsive to the movement of said second member to move said platform vertically for loading cigarettes onto said platform through said opening.

3,189,217
FOOD DISPENSING APPARATUS
William W. Cease, Fredonia, N.Y., assignor to Cease Central, Inc., Dunkirk, N.Y.
Filed Aug. 9, 1963, Ser. No. 301,025
14 Claims. (Cl. 221—69)



1. Apparatus for supporting a stack of food-containing plates and successively dispensing individual plates from the bottom of said stack, said apparatus comprising means for housing a vertical stack of food plates with spacing members intervening between vertically adjacent plates, the body portions of said spacing members being of less lateral extent than said plates whereby the plate edges project generally laterally beyond said body portions, vertically reciprocable support members disposed at opposite sides of said stack and having supporting portions projecting toward said stack, said spacing members having projections at opposite sides thereof for engagement by said supporting portions whereby engagement of the latter with the lowermost spacing member of a stack supports the stack thereon, a pair of generally parallel supporting rails in said housing at a lower portion thereof spaced to receive and support the edge portions of the lowermost plate of a stack, said rails having openings in registry with said supporting portions to permit free vertical reciprocation of the latter, and means for retracting said supporting portions as they approach the lower ends of their vertical reciprocations and for again projecting the same in the course of their upward reciprocation, whereby said supporting portions lower the stack by engagement with the lowermost spacing member until the plate immediately above such member moves downwardly upon said supporting rails, then retract to permit said spacing member to fall free with the stack supported by said plate, then move upwardly and project during such upward movement to engage the projections of the spacing member above said supporting plate and raise the same and the stack thereabove to free said rail-supported plate for removal.

3,189,218
DISPENSING APPARATUS
Francis A. Gasparini and John A. Gormley, Springfield, Mass., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 25, 1963, Ser. No. 260,623
6 Claims. (Cl. 221—125)



1. A dispensing machine comprising

a magazine structure for retaining articles to be dispensed,

a plurality of releasing mechanisms for releasing articles from said magazine structure,

a reciprocable carriage for operating a selected one of said releasing mechanisms,

a plurality of engaging elements carried by said carriage and having portions movable into driving relation to said releasing mechanisms respectively,

a locking member for locking each releasing mechanism against movement,

each engaging element and the locking member associated therewith being mounted in said relation to each other that said engaging element, upon movement into driving relation to its associated releasing mechanism, moves said locking member out of locking relation to said releasing mechanism.

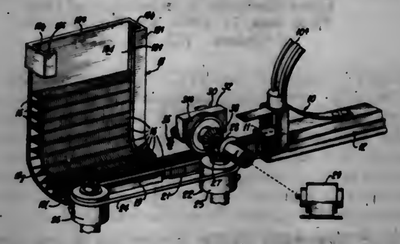
3,189,219
PORTABLE STRIP DISPENSER
Henry A. Holzworth, Bayside, John D. Wark, Freeport, and Peter Schladermundt, Bronxville, N.Y., assignors to Johnson & Johnson, a corporation of New Jersey
Filed July 10, 1963, Ser. No. 293,970
2 Claims. (Cl. 221—131)

1. A dispenser for strips of uniform length which comprises a base member having front and bottom walls and a cover member having rear and top walls, said base and cover being hinged together about an axis disposed adjacent the lower edge of said rear wall to facilitate opening and closing said dispenser, said bottom wall and said top wall being substantially parallel when the dispenser is closed and defining between them a chamber for receiving an appropriate stack of strips of uniform length, said front wall having a shelf portion inclined outwardly near the top edge thereof and said rear wall presenting a portion inclined inwardly and generally following the contour of the front inclined shelf portion, and a leaf spring anchored at one end to the dispenser base adjacent said axis and having its other end free, said leaf spring when the dispenser is fully opened being in a relaxed condition spaced sufficiently from the dispenser top wall to accommodate said appropriate stack of strips, and said spring when the dispenser is fully closed being under stress and bearing against the stack at the bottom thereof to urge the stack at the top thereof into contact with said



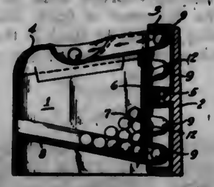
top wall and the strips in the stack at one end thereof into contact with said inwardly inclined portion presented by said rear wall, the inclination of said inclined portion being such as to cause a leading edge of the top strip in the stack to overlap the leading edge of the next strip in the stack, and said top wall presenting a dispensing opening in its front edge overlying the shelf portion and the top strip of the stack near the front end thereof, whereby the strips may be dispensed one at a time by pressing the top strip downwardly and forwardly to facilitate its grasping and removal from the dispenser.

3,189,220
FASTENER FEED CONSTRUCTION
Frank W. Mullaney, Villa Park, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed May 9, 1962, Ser. No. 194,747
9 Claims. (Cl. 221—176)



1. A fastener feed construction for use with a fastener driving device of the type having fastener driving means operable to drive fasteners from an elongated strip of detachably connected fasteners into a workpiece and comprising an elongated fastener feed track, the combination comprising means for storing and sequentially feeding elongated strips of detachably connected fasteners to said feed track comprising, a gravity feed bin for receiving a plurality of elongated strips of detachably connected fasteners in side-by-side relation and for delivering said strips sequentially from a position to one side of the axis of said feed track into a path coaxial with said feed track, stop means positioned to receive strips of fasteners as they are delivered from said bin into said path, guide means interconnecting said bin and said feed track for guiding strips of fasteners from against said stop means to said feed track, and fastener advancing mechanism resiliently driving strips of fasteners from against said stop means along said guide means and resiliently biasing strips of fasteners in said guide means along said feed track.

3,189,221
DISPENSER
Ernest J. Lachance, Leominster, Mass., assignor to Ollo Matheson Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed July 16, 1963, Ser. No. 295,418
7 Claims. (Cl. 221—192)



7. A dispenser comprising (1) a hopper, (2) a dispensing wheel and (3) a cover containing a cup, said hopper having four sides and an inclined bottom, said dispensing wheel being rotatably mounted in a vertical plane adjacent one side of said hopper and the perimeter of said wheel extending beyond the adjacent side, said side of the hopper adjacent the dispensing wheel having an aperture adjacent the bottom, a plurality of substantially hemispherical pockets radially located near the outer edge of the dispensing wheel in the surface facing said aperture, said pockets being adapted to receive individually by gravity feed the article to the dispensed through said aperture when in the lowest position and adapted to dispense said article into said cup in the cover when in the highest position, said cup in the cover being connected with the forward edge of said cover by an inclined channel which registers with each pocket when in dispensing position and conveys the dispensed article from pocket to cup.

3,189,222
DISPENSING CLOSURE HAVING RESILIENT FINGERS
Ned J. Smalley, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Aug. 31, 1964, Ser. No. 399,125
7 Claims. (Cl. 221—220)



1. A dispensing closure comprising a top panel, an annular skirt depending from said top panel, and means for attaching said closure to a container, said top panel having a central resilient portion domed axially outwardly from the container to which the closure is affixed, said resilient domed portion adapted to be flexed inwardly toward said container interior, a plurality of fingers depending from the interior surface of said resilient domed portion, said fingers adapted to fulcrum about their respective points of juncture with said resilient domed portion to increase the distance between their respective free ends upon the inward flexing of said domed portion.

3,189,223
LIQUID DISPENSING DEVICE
Henry H. Mackal, Fort Lauderdale, Fla., assignor to Halsey-Roberts Corporation, Paramus, N.J., a corporation of New Jersey
Filed May 18, 1964, Ser. No. 368,120
17 Claims. (Cl. 222—1)

1. A liquid dispensing device comprising a hollow body, said body having a cavity therewithin adapted to communicate at its inner end with the interior of a liquid containing container, the body having a liquid dispensing orifice therein communicating with the cavity at a location remote from the inner end of the cavity, a compressible porous body mounted and held within the cavity so as to span the portion of the cavity in advance of the



orifice and a disc-like member substantially spanning the cavity inwardly of and engaging the outer end of the compressible porous body, the disc-like member presenting a dispensing passage therepast to the compressible porous body, the disc-like member being reciprocable in the cavity so as to compress the compressible porous body upon an increase in pressure applied to its inner surface.

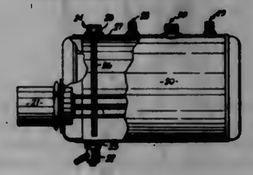
3,189,224
SUBMERGED OIL STORAGE SYSTEM
Douglas C. Meyers, Connersville, Ind., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,667
11 Claims. (Cl. 222—23)



1. A submerged oil storage and delivery system for an offshore installation, said system comprising
an offshore structure having at least the lower portion thereof submerged beneath the surface of a body of water,
an oil storage tank secured to said structure underwater,
oil conduit means in communication between said underwater storage tank near the upper end thereof and a point above said body of water,
water outlet means through the wall of said storage tank in open communication at all times with said body of water,
a control column carried by said structure in communication between the space above the body of water and the interior of said storage tank above the water outlet means thereof,
means in said oil conduit means for controlling the supply of oil therethrough under a pressure sufficient to deliver it to said storage tank,

an oil discharge line from said oil conduit means at a point above said body of water, and
normally-closed valve means in said discharge line.

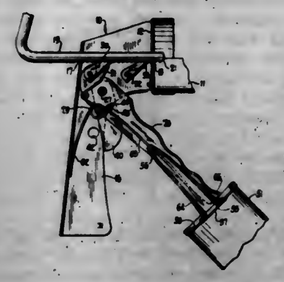
3,189,225
HOT WATER SUPPLY APPARATUS FOR A BEVERAGE DISPENSING MACHINE
Stewart Alfred Maxwell, Walsall, England, assignor to Fisher & Ludlow Limited, Birmingham, England, a British company
Filed July 16, 1963, Ser. No. 295,552
Claims priority, application Great Britain, July 19, 1962, 27,686/62
2 Claims. (Cl. 222—64)



1. In a beverage dispensing machine which includes means for mixing dry beverage ingredients with hot water in a mixing chamber and conveying the resultant beverage to a dispensing station, a hot water supply apparatus including a container having heating means, the said container including:
(a) an outlet pipe leading to said mixing chamber,
(b) an inlet pipe disposed adjacent said outlet pipe, said inlet pipe extending a substantial distance into said container and having a discharge opening at the lower end thereof, said inlet pipe being formed adjacent its upper end with a hole facing away from the outlet pipe, the hole being of substantial smaller cross-sectional area than the discharge opening of the inlet pipe,
(c) an expansion pipe,
(d) a normally open valve in said expansion pipe whereby said container is normally in communication with the atmosphere via said expansion pipe and whereby a gradual flow of water from the container into the expansion pipe is permitted, and
(e) a valve closure member which closes the normally open valve when the pressure inside the container is rapidly increased,
the container in use being completely filled with water whereby the introduction of a given volume of cold water into the container through the inlet pipe causes the same volume of hot water to be discharged through the outlet pipe and the provision of the hole in the inlet pipe ensuring that, in the event of the pressure in the inlet supply falling below atmospheric pressure, the maximum volume of water which will be withdrawn through the inlet will be only that volume which is above the level of the hole in the inlet pipe, the inlet pipe thereafter being in communication with the atmosphere via said expansion pipe.

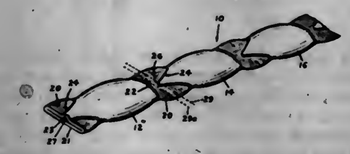
3,189,226
CALKING ASSEMBLY
William A. Sherbondy, 2417 Guilford Road, Cleveland Heights 18, Ohio
Filed Mar. 4, 1963, Ser. No. 262,600
7 Claims. (Cl. 222—82)

1. A calking apparatus comprising a gun including a barrel, a handle connected to one end of said barrel, and a trigger pivotally connected to said handle; a calking cartridge carried in said barrel, said cartridge including a nozzle at one end, said nozzle having an inlet end and an outlet end extending beyond the end of said barrel opposite said one end, and a diaphragm normally closing said inlet end, and a spring between said handle and said trigger for urging it away from said handle, said spring including an elongated leg having a pointed, terminal end portion disposed out of engagement with said trigger, said leg being formed so that it is freely



insertable through said nozzle, and said leg having a length exceeding the length of said nozzle between said inlet and outlet ends so that said diaphragm can be punctured by inserting said pointed terminal end through said nozzle.

3,189,227
FLUID DISPENSER
Norman L. Hobbs, Rosemont, and Howard Tint, Havertown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 242,981
1 Claim. (Cl. 222—94)



A multicontainer flexible, collapsible, dosage dispensing article comprising a fluid-containing, plastic tube partitioned into a plurality of linked, severable containers by a plurality of spaced fluid-tight seals, each of said seals comprising opposite sides of said tube sealed in fluid-tight relationship and simultaneously forming a substantially horizontal sealing base of one fluid container and the dispensing neck of the next adjacent container, said dispensing neck having fluid therein and terminating in a sealed tip, a scored, severance depression extending across said seal in the vicinity of but not including said sealed tip and terminating in opposing indented V-shaped, tear-aids, said severance depression being positioned sufficiently close to the sealed tip so that when adjacent containers are severed by tearing, a slight pressure applied to the base of a severed container will rupture the sealed tip.

3,189,228
MECHANISM FOR THE DELIVERY BY A BOX, OF COTTON-WOOL, SPRINKLED WITH DISINFECTANTS
Hildrude Steinbert, 1 Via Antonio Chinotto, Rome, Italy
Filed May 16, 1962, Ser. No. 196,559
18 Claims. (Cl. 222—129)

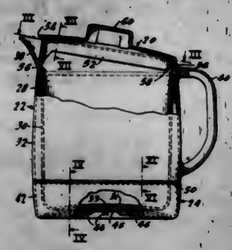
1. Apparatus for dispensing cotton wool comprising an open-topped cotton receptacle having a cover operatively mounted across the top thereof for a dispensing movement from a first position to a second position, a cotton dispensing arm extending into the cotton receptacle and being connected to the cover so that upon movement of

the cover said cotton dispensing arm will push cotton out of the receptacle, and a container for disinfectants operatively mounted within said cover, said container having a disinfectant dispensing opening positioned so as to be



in overlying relation to the portion of cotton being dispensed so that the disinfectant will flow out of said opening and be deposited on said dispensed portion of cotton as it is being dispensed.

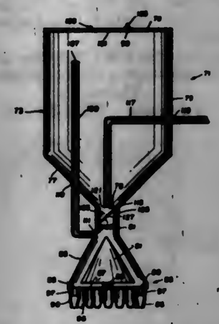
3,189,229
INSULATED PITCHER
John L. Carroll, Robert W. Wingard, and Earl R. Baxter, Fremont, Ohio, assignors to Quikut Incorporated, Fremont, Ohio, a corporation of Ohio
Filed Dec. 26, 1963, Ser. No. 333,296
7 Claims. (Cl. 222—183)



1. A double walled plastic pitcher comprising:
a main body member having an inner container and a spaced outer casing joined together to form a top annular wall,
a pouring spout in said wall,
a handle integral with said outer casing,
said top wall being inclined upwardly from said handle to said spout to provide an elliptical opening.
a cover having a depending flange inwardly of the marginal edge of said cover, said flange fitting within said opening in either of two positions and having an extended portion on said flange for closing said pouring spout, and a notched portion in said flange for opening said pouring spout.

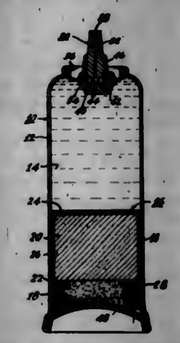
3,189,230
SEEDING DEVICE
Robert V. Gillespie, 506 E. 5th St., Metropolis, Ill.
Filed Mar. 20, 1962, Ser. No. 181,145
4 Claims. (Cl. 222—193)

1. A seeding device for mounting on a tractor and the like comprising an enclosed hopper including a substantially cylindrical side wall, an inverted frusto-conical bottom having a central opening therein, said bottom sloping downwardly and inwardly from said side wall to said opening, a pipe having open upper and lower ends, said pipe being joined to said frusto-conical bottom adjacent said opening with said upper end of said pipe being in communication with the interior of said hopper through said opening, a frusto-conically shaped housing in communication with the lower end of said pipe and extending outwardly and downwardly therefrom, said housing including a circular bottom having at least one aperture therein, door means in said hopper for introducing seeds into said hopper, gas supply means for supplying gas under pressure, conduit means leading from said gas supply means into the interior of said hopper and directed downwardly through said pipe to blow seeds



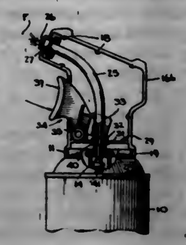
therethrough into said frusto-conical housing and through said aperture, valve means in said pipe operable between open and closed positions for controlling the flow of seeds and gas through said pipe, and by-pass pipe means leading from the interior of said hopper to a place in said seeding device downstream of said valve means for by-passing the gas when said valve means is closed.

3,189,231
AEROSOL DISPENSER WITH SPONGE FOLLOWER AND METHOD OF MAKING SAME
William H. Kibbel, Jr., and James E. Krumbach, Pennington, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 16, 1963, Ser. No. 251,790
5 Claims. (Cl. 222—389)



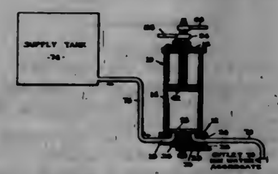
1. A pressurized dispenser comprising a container, product to be dispensed, a valve communicating with said product for controlled dispensing thereof and a pressurizing system for exerting pressure on said product to be dispensed through said valve upon opening thereof, in which there is provided as said pressurizing system a pressurization and piston unit having a sealed outer bag of resilient gas-containing material having the general diameter of the inside of said container, and within said bag a resilient foam body of a shape and size to press the bag into contact with the inside of said container, and on the side of the foam body away from the product to be dispensed a gas in an amount sufficient to inflate said bag and to create a dispensing pressure on said product through said body and said bag.

3,189,232
DISPENSER FOR AN AEROSOL CONTAINER
Edward J. Joffe, Summit, N.J., assignor to Park Plastics Co., Inc., Linden, N.J., a corporation of New Jersey
Filed Oct. 22, 1962, Ser. No. 232,231
4 Claims. (Cl. 222—394)



4. A dispenser for an aerosol container of the type having a valve which through pressure exerted thereagainst is pressed outwardly of the container into a closed position to prevent escape of material from said container through said valve until said valve is pressed inwardly of said container against said pressure, comprising a dispenser body, means for mounting said body on the container, a flexible dispensing tube separate from said dispenser body and placed in said dispenser body and having an upper dispensing end and a lower receiving end, said receiving end having a surface for coaction with said valve and for accepting the endwise pressure of said valve when said dispenser body is assembled to said container, the pressure on said valve holding it in closed position while pressing said receiving end of said flexible dispensing tube relatively to said body whereby to contribute predetermined curvature to said tube so as to shorten the effective distance between said dispensing and receiving ends of said tube, and manually movable means on said dispensing body for decreasing said predetermined curvature and thereby lengthening the effective distance between said dispensing and receiving ends whereby to move said receiving end of said dispensing tub linearly relatively to said body in the direction of movement of said valve to depress said valve against the pressure exerted thereagainst whereby to effect flow of material through said valve and said dispensing tube from said container.

3,189,233
DEVICE FOR DISPENSING METERED QUANTITIES OF LIQUID
Donald J. Wilson and Edwin N. Lorenzen, Denver, Colo., assignors to Protex Industries Inc., Denver, Colo., a corporation of Colorado
Filed July 17, 1963, Ser. No. 295,705
4 Claims. (Cl. 222—440)



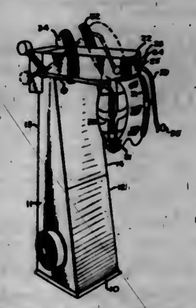
3. A device for dispensing liquids comprising a base member, a substantially cylindrical hollow body member upstanding from said base member, liquid inlet port means and liquid outlet port means carried by said base member, means for selectively placing either one of said port means in communication with the interior of said body member and for simultaneously preventing communication between the other of said port means and the interior of said body member, a cover member closing the upper end of said body member, a piston in said body member in axially spaced relation above said port means, an axially extending threaded member extending through said cover member and supporting said piston member within said hollow body member, said threaded member having a vertical key-way in its outer surface, a vertically disposed key fixed to said cover extending into said key-way to prevent rotation of said threaded member with respect to said cover, nut means having a peripheral groove in its outer surface threadedly engaging said axially extending threaded member, a retainer strap mounted with one end attached to said cover and its other end riding in said groove to prevent axial travel of said nut means whereby rotation of said nut means on said axially threaded member is effective to impart axial movement to said threaded member and to said piston supported thereby, said piston being thereby axially movable to an adjusted position to provide a metering chamber of predetermined volume in said body member between said port means and said piston.

3,189,234
VENTING-TYPE CONTAINERS
John W. Thomson, West Covina, Calif., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed July 18, 1963, Ser. No. 296,045
6 Claims. (Cl. 222—542)



1. A blown plastic container having a neck providing a filling and discharge opening, said neck terminating in an annular rim end comprising a continuous pouring lip extending radially outward and having a flat annular sealing surface, there being an annular declined sealing surface between the interior of the neck and said flat sealing surface and merging with the latter and at least one upstanding rib extending radially across both said sealing surfaces.

3,189,235
TROUSER TOPPING APPARATUS AND PLEAT-SETTER THEREFOR
Frank H. Richterkessing and Walter M. Ingold, both of Louisville, Ky., assignors to W. M. Clasell Manufacturing Company, Louisville, Ky., a corporation of Kentucky
Filed Apr. 25, 1962, Ser. No. 190,008
6 Claims. (Cl. 223—72)



1. In a trouser topping apparatus, a buck having a convex outer surface adapted for removably supporting a

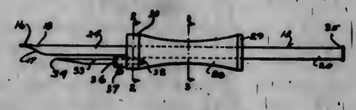
pair of pleated trousers, said outer surface being convex both along its transverse vertical axis and along its transverse horizontal axis, a housing portion for supplying processing fluids to said buck, said housing portion having forward and rearward ends and side walls therebetween generally horizontally disposed at a convenient working height and supporting said buck at the forward end of said housing portion, a pair of pleat-setters each comprising an elongated lever arm with forward and rearward sections, means pivotally connecting said lever arms adjacent their rearward sections upon the respective side walls of said housing and adjacent the rearward end of said horizontal portion of said housing thereby to effect a substantial leverage for movement of said arms, and a pleat-setter plate adjustably attached to each of said lever arms adjacent the forward sections thereof, and with concave pleat-engaging faces, said pleat-engaging faces being concave both along their transverse vertical axis and along their transverse horizontal axis, said pleat-setters each being movable in a generally vertical direction between a raised first position out of contact with said buck and a lowered second position in which said pleat-setters are adapted to confine pleats of trousers between said buck and said plates, thereby to effect, during movement of either pleat-setter to its second position about a fixed radius equal to the distance between the pivotal axis of said arm and the point of attachment of the plate to the arm, the final clamping of said pleats against the buck.

3,189,236
GARMENT HANGER GUARD
Hubert B. Tillery, 7221 Lydia, Kansas City, Mo.
Filed Apr. 3, 1963, Ser. No. 270,445
3 Claims. (Cl. 223—98)



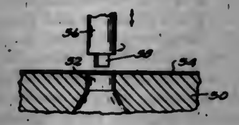
1. A protector for use on garment hangers having a cross bar, said protector comprising a sheet of paper-like material having a central zone bordered by a pair of integral oppositely disposed loops, each loop terminating in a reversely bent extension portion having an end edge, the extension portions proceeding in adjacent overlapping relationship with one another across the central zone with one extension next to said zone, the end edges of the respective extension portions lying on opposite sides of the central zone, and the extensions forming with the central zone a laminated triple thickness of material, the extension portions bonded to one another and to the central zone with glue.

3,189,237
NEEDLE FOR LOOPED PRODUCTS
Grace Wilfert, 5478 Montgomery Road, Cincinnati, Ohio
Filed Dec. 14, 1961, Ser. No. 159,323
1 Claim. (Cl. 223—104)



In a needle of the class described for forming loops of yarn on one side of fabric, the combination of a tube constituting the needle per se through which yarn is adapted to be fed, said tube having an eye and a point at one end adapted for insertion into and through the fabric being worked upon, an operative handle having an upper and a lower end on the needle tube with said needle tube having the eye and point projecting ahead of the lower end of the handle for a distance greater than that required to form a loop, a pin having a body portion, an inner end and an outer end with its inner end secured to and its body portion projecting from said lower end of the handle laterally of and parallel with the needle projecting portion and said pin having its outer end pointed and adapted to project into and through the fabric so that the pin provides a pilot hole for the next insertion of the needle, a collar on said pin adjustable toward and from its outer pointed end adapted to engage the fabric and limit the amount of projection of the projecting needle portion beyond the fabric to establish and control the length of the loop on said one side of the fabric, and means carried by said collar for securing same to the pin in adjusted positions.

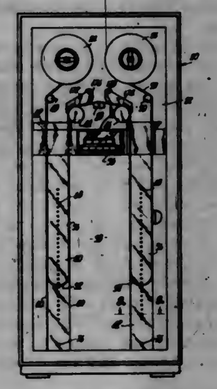
3,189,238
METHOD OF WORKING HARD BRITTLE METALS
John F. Sherrill, % Lamert Engineering Co. Inc., Plymouth, Ind.
Filed Feb. 20, 1961, Ser. No. 90,420
5 Claims. (Cl. 225—1)



1. The method of forming a circular hole in sheet metal characterized by hardness and brittleness when cold and selected from the group consisting of titanium alloys, magnesium alloys, aluminum alloys and stainless steel, consisting of the step of repeatedly and simultaneously oscillating and rotating an impact tool having a blade with a flat end parallel to the metal sheet to be pierced and of a width equal to the desired diameter of the hole to be formed and a reduced thickness to impart successively and rapidly to different limited portions only of the area of the metal sheet to be pierced, while said sheet is cold and is supported by a member having an opening axially aligned with said tool and of a diameter slightly greater than the width of said tool blade, blows substantially normal to the metal sheet to be pierced and of substantially uniform force and less than the fatigue limit of the metal, the force of each blow and the width of the impact surface of the tool being inversely proportional to the rapidity of the blow and sufficient to pierce the metal, the direction of said blows being substantially perpendicular to the end of the blade and to the metal sheet to be pierced, and the rotation of said tool producing hammering of all of the area registering with said opening.

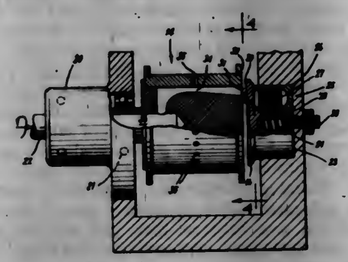
3,189,239
DIGITAL TAPE TRANSPORT
Robert M. Brumbaugh, Tulsa, Okla., assignor, by mesne assignments, to Midwestern Instruments, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Feb. 16, 1961, Ser. No. 89,792
32 Claims. (Cl. 226—95)

1. In a digital tape transport, a support; a pair of tape driving capstants rotatably mounted in spaced relationship on said support and each being provided with an air passage therethrough terminating in an outlet; means on said support and operably coupled with said capstans for rotating said capstans in opposite directions; perforated means on each of said capstans across the outlet thereof for passing air outwardly from said passage and for providing a surface engageable with the tape in driving relationship; pneumatic means on said support in fluid communication with each of said passages for continuously directing air under a positive pressure through the latter and outwardly through said perforated means to normally maintain said tape out of engagement with the surface of the latter as said capstans continue to rotate; a pair of arms carried by the support, each of said arms being positioned on said support adjacent to



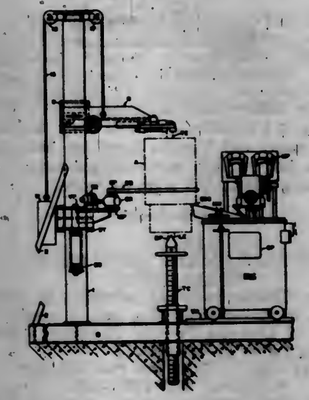
a corresponding capstan and provided with an air duct therethrough disposed to direct air toward the surface of said corresponding capstan; and pneumatic means on said support and in fluid communication with the ducts of said arms for selectively directing air under a pressure greater than said predetermined pressure into and through either of said ducts, whereby said tape is forced into engagement with the surface of the corresponding capstan and driven thereby.

3,189,240
DRIVE SYSTEMS
Norman M. Emslie, Yardley, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 16, 1962, Ser. No. 217,387
2 Claims. (Cl. 226—95)



1. In tape driving apparatus, a generally cylindrical wheel for releasably driving a tape, said wheel having therein a series of Venturi passages which have inlet and outlet portions respectively adjacent a first end surface and an opposite end surface of the wheel, each passage having a restricted neck located closely adjacent the peripheral and tape-engaging surface of the wheel; inlet means for feeding compressed air or the like from outside the wheel into said inlet portions; valve means facing said opposite end surface of the wheel for controlling the outlet portions of said passages; and duct means extending from said peripheral surface of the wheel substantially directly to said restricted necks.

3,189,241
AUTOMATIC HIGH TEMPERATURE SOLDERING MACHINE
Alexander Taleff and Harry P. Kipple, Penn Hills Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 30, 1960, Ser. No. 79,622
4 Claims. (Cl. 228—37)



1. A machine for substantially automatically soldering the commutator risers to the coil leads in the workpiece, namely the armature of a dynamoelectric machine provided with a commutator, including in combination, a base, two parallel horizontal rails on the base, a solder supplying device, said device having a plurality of supporting wheels engaging the rails for accurately rectilinearly moving said solder supplying device on the base, a vertically adjustable first bearing means on said base for rotatably receiving the bottom end of the shaft of the workpiece, a vertically adjustable second bearing means on said base and disposed directly above the first bearing means for rotatably receiving the top end of the shaft of the workpiece, means for rotating the workpiece at any one of a plurality of selected speeds, a solder pot disposed on said device, a solder discharge channel in part disposed down in the pot but with a part slanting upwardly and outwardly from the pot to a point beyond the edge of the pot and at its outer upper end terminating in a solder-discharge spout having a horizontal discharge end, the vertical adjustment of the first bearing means and the horizontal positioning of the spout being such that the horizontal downwardly directed surfaces of the commutator risers will fall directly above and in closely spaced relationship to the horizontal discharge end of the spout, means for melting the solder in the pot and maintaining the solder at the proper soldering temperature, a pump, driving means for the pump, said pump being disposed in the pot to move molten solder, when driven by said driving means, along the channel and out of the spout so that the solder wells up and bathes the lower surfaces of the commutator risers to thus cause effective soldering, by capillary action, of the commutator risers to the coil leads of the workpiece.

3,189,242
COATED EXPANDED RESIN CONTAINER
John B. Orr, Great Barrington, Mass., assignor to Sheffield Plastics, Inc., Sheffield, Mass., a corporation of Massachusetts
Filed May 23, 1961, Ser. No. 112,014
10 Claims. (Cl. 229—3.1)

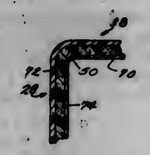
1. A lightweight container of expanded polystyrene bead construction of a density within about ½ to 20

pounds per cubic foot having a paraffin wax coating of a thickness of about .002 to less than about .006 of an inch in an adhering and relatively uniform relation on a surface of its wall, said coating having a melting point



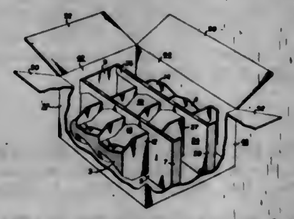
within a range of about 140° to about 180° F., said coating also being in a solidified state and being characterized by its smoothness and freeness from pin holes and by providing the body with a minimum resistance to moisture vapor loss of about .043 gram per week.

3,189,243
CONTAINERS MADE FROM PLASTIC FOAM SHEET
John H. Lux, Charlestown, Md., assignor, by mesne assignments, to Haveg Industries, Inc., a wholly owned subsidiary of Hercules Powder Company, Newcastle, Del., a corporation of Delaware
Filed May 21, 1963, Ser. No. 282,051
4 Claims. (Cl. 229—3.5)



1. A collapsible carton formed by folding a carton blank, characterized in that the blank consists of (1) a uniform foam, thermoplastic resin core, (2) a tough, non-porous, unfoamed resin outer skin, and (3) a tough, non-porous, unfoamed resin inner skin, said core being integral with said skins and comprising 50 to 90% of the total thickness of the blank, the skin which forms the convex surface along the fold lines of the carton being 2 to 5 times the thickness of the skin forming the concave surface along said fold lines said skins being of the same material as the foam.

3,189,244
CARTONS
Charles Richard Whalen, Montreal, Quebec, Canada, assignor to Hygrade Containers Limited, Montreal, Quebec, Canada
Filed Apr. 4, 1963, Ser. No. 270,691
Claims priority, application Canada, Apr. 25, 1962, 847,498
2 Claims. (Cl. 229—15)



1. A carton having a wall structure including a pair of mutually opposed side walls, a pair of mutually opposed end walls, and a bottom; said carton including an interior assembly of mutually transverse partitions fixed to said wall structure, said assembly including:

(a) a pair of outer longitudinal partitions each secured at least to an adjacent said side wall;

(b) a pair of intermediate longitudinal partitions each secured, at one end thereof, to an adjacent said end wall and each, with an adjacent said outer longitudinal partition, defining an outer article receiving row, said pair of intermediate longitudinal partitions, together, defining an intermediate article receiving row;

(c) a plurality of outer transverse partitions arranged to divide each of said outer article receiving rows into a plurality of article receiving compartments, each of said outer transverse partitions being integrally and hingedly connected to an associated said outer longitudinal partition and an adjacent said intermediate longitudinal partition; each of said outer transverse partitions and their associated outer longitudinal partition normally being in the plane of a said adjacent intermediate longitudinal partition when said carton is in a knock-down condition and being adapted, when said carton is erected, to hinge out of said plane whereby said associated outer longitudinal partition extends parallel with, and spaced from, said adjacent longitudinal partition, and said outer transverse partitions extend normal to, and between, their said associated outer and intermediate longitudinal partitions;

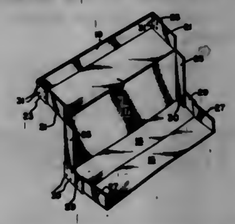
(d) a first occlusion panel, integrally connected to, and forming part of, a selected one of said intermediate longitudinal partitions and serving, on erection of said carton and the said hinging of the outer transverse partitions and outer longitudinal partition associated with said selected intermediate longitudinal partition, to occlude areas formed in the latter and due to the said hinging, commensurate with the area of its associated outer transverse partitions and outer longitudinal partition;

(e) a plurality of intermediate transverse partitions arranged to divide said intermediate article receiving row into a plurality of article receiving compartments, each of said intermediate transverse partitions being integrally and hingedly connected, at one end thereof, to the remaining intermediate longitudinal partition and, at the other end thereof, being integrally and hingedly connected to means for securing said intermediate transverse partitions to said first occlusion panel; each of said intermediate transverse partitions and their said securing means normally forming part of the said remaining intermediate longitudinal partition when said carton is in a knock-down condition and being adapted, when said carton is erected, to hinge out of the plane of said remaining intermediate longitudinal partition whereby said securing means extends parallel with, and spaced from, said remaining intermediate longitudinal partition, and said intermediate transverse partitions extend normal to, and between, their said securing means and said remaining intermediate longitudinal partition;

(f) a second occulsion panel, integrally connected to, and forming part of, said remaining intermediate longitudinal partition and serving, on erection of the carton and the said hinging of the outer and intermediate transverse partitions associated with said remaining intermediate longitudinal partition, as well as the hinging of the outer longitudinal partition and said intermediate transverse partition securing means associated with said remaining intermediate longitudinal partition, to occlude areas formed in the latter and due to the said hinging, commensurate with the area of its said associated outer and intermediate transverse partitions and its said associated outer longitudinal partition and said intermediate transverse partition securing means; and

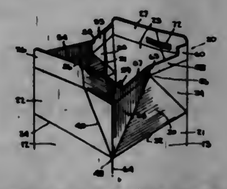
(g) a tertiary panel having a width substantially equal to the width of the intermediate row of article receiving compartments, said tertiary panel integrally connecting the other ends of each of said intermediate longitudinal partitions together and securing said other ends to the remaining end wall, as well as serving as an end partition for said intermediate row of article receiving compartments.

3,189,245
CARTON
Oscar J. Klutner, Cincinnati, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed May 9, 1963, Ser. No. 279,220
5 Claims. (Cl. 229—16)



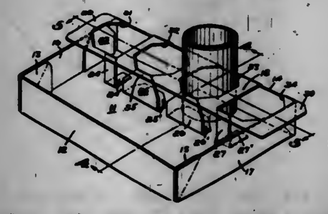
1. A container comprising a bottom wall, a rear wall, a cover hingedly connected to the upper edge of said rear wall, a front wall hingedly connected to the forward edge of said bottom walls, a rear half side wall extending forwardly from each side of said rear wall, a front half side wall extending rearwardly from each side of said front wall, a flap upwardly extending from each side of said bottom wall and affixed in each case to the overlapped portion of the adjacent rear half side wall and means carried by said cover for retaining said front wall in closed condition.

3,189,246
GABLE TOP CONTAINER
Seaver A. Seline, Jr., 1304 N. 56th St., Omaha 32, Nebr.
Filed July 25, 1961, Ser. No. 126,556
3 Claims. (Cl. 229—17)



1. A gable top for a container comprising a pair of opposed inclined walls each having an upright panel hingedly disposed on the uppermost edges thereof, said walls being inclined inwardly over said container to form a peaked roof, said panels being joined and sealed to each other, a pair of opposed triangular side panels inclined inwardly under said walls, each triangular panel having a pair of opposed triangular flap portions hingedly secured on each of the side edges thereof, said flap portions resting against the underside of said walls and each having a quadrilateral strip portion hingedly disposed along the top edges thereof, the strip portions on adjacent flap portions being hingedly joined to one another along a common edge, said strip portions secured between said upright panels, one pair of said flap portions adapted to provide a retractable spout for said container and the strip portions thereof having opposed rectangular recessed portions of substantial depth and extent along their upper edges communicating with one another to provide reduced sealing areas of said strip portions with respect to said upright panels, the opposed inner surfaces of said upright panels, which surfaces are defined by said rectangular recessed portions of said strip portions, being coated with an abhesive substance.

3,189,247
PAPERBOARD SERVING TRAY
Henry F. Wischmeu, Manchester, Mass., assignor to Winchester Carton Corporation, Winchester, Mass., a corporation of Massachusetts
Filed Mar. 17, 1964, Ser. No. 352,556
3 Claims. (Cl. 229—28)



1. A serving tray formed from a blank of paperboard and comprising a bottom, a front wall, a rear wall and a pair of end walls, providing a tray body, the end portions of the front, rear and end walls being adhesively connected so that said walls may be collapsed onto the bottom or swung upright relative to said bottom when the body is set up, a panel hingedly connected to the upper edge of the rear wall and foldable inwardly onto the erected body, the panel having a plurality of partially cut-out flaps hinged thereto and foldable downwardly to form cup holes in the panel, certain of said flaps having foldable end portions cemented to the tray bottom intermediate the front and rear walls, said last-named flaps constituting spaced struts supporting the free margin of the panel in parallel relation to said bottom, said panel and said struts being collapsible onto the bottom and the collapsed walls, and the cup holes being automatically opened when the tray is set up, the panel having opposite end portions extending outwardly beyond the respective end walls and resting thereon.

3,189,248
CARTON
Harry I. Roccaforte, Chicago, Ill., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed July 15, 1963, Ser. No. 295,151
2 Claims. (Cl. 229—31)

1. A carton comprising a base having upstanding side and end walls;

said side and end walls comprising inner and outer wall members;

bellows fold members comprising upper and lower sections with said lower section thereof connecting said outer side and end walls;

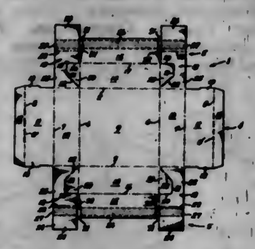
said upper section of each said bellows fold members being provided with a straight glue line extending across its entire surface and being folded along a score line and adhered to said lower section;

said inner side wall members being provided with a straight glue line coaxial with said glue line on the upper section of said bellows fold members and extending across its entire surface and being folded along a score line and adhered to said outer side wall;

said lower section of said bellows fold members provided with an angular cut line having a horizontal portion and a vertical portion;

said horizontal portion of said cut line extending from the inner edge of said lower section to the mid-portion thereof and coaxial with the upper end of said outer side wall and intersecting said vertical portion of said cut line;

said vertical portion of said cut line extending downwardly and intersecting a diagonal fold line extending from the end of said vertical portion of said cut



line to the lower inside corner of said lower section forming a hinge panel on said lower section adjacent said outer side wall;

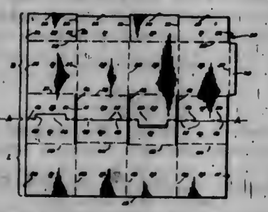
said bellows fold members and said outer side walls being folded along another score line with said outer side wall adjacent said base and said bellows fold members adhered to said end walls by a straight glue line across the entire surface of said bellows fold members.

3,189,249

CONTAINER AND BLANK THEREFOR

Clifford D. Fallert, St. Louis, Mo., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed June 21, 1963, Ser. No. 290,285
6 Claims. (Cl. 229—37)



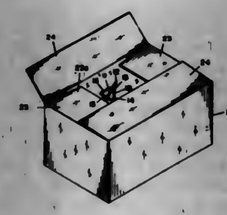
1. A container having foldably connected wall panels and closure flaps on one end thereof formed from a foldable blank comprised of a body section and a liner section folded in mutual flatwise contacting relationship with body and liner sections in contacting engagement with wall panels, closure flaps and fold connections therebetween of double ply thickness, the container having body section wall panels foldably connected in rectangular tubular formation and closure flaps with fold connections to one end of the said wall panels, the closure flaps comprising an opposed pair of inner closure flaps and an opposed pair of outer closure flaps, the fold connections of the inner closure flaps being vertically offset from the outer bottom closure fold connections, the liner section having corresponding foldably connected wall panels and closure flaps disposed interiorly and in flatwise contacting relation to the respective paired wall section panels and flaps, the respective fold connections between the liner section wall panels and closure flaps being offset from the corresponding body section folds vertically inwardly from the end of the container to relieve fold tension in infolded relationship, connecting webs each determined by parallel lines of scoring and free side edges, slit edges extending between the webs and defining free end edges of the flaps, the connecting webs each being in closer proximity to the body section flap fold connections than to the liner section flap fold connections and the liner section flaps being of greater length than the body section flaps, the connecting webs providing a slidable relation between each respective paired wall section and liner section closure flap upon the folding movement of said flaps between an open position and a closure position in perpendicular relation to the wall panels compensating for the differential in length between said respective flaps, whereby the double ply thickness of the fold connections between each of the wall panels and flaps is relieved of stress consequent to the folding thereof.

3,189,250

CARTON CLOSURE

Robert M. Hayssman, 1009 Reed St., Green Bay, Wis.

Filed Dec. 10, 1963, Ser. No. 329,529
2 Claims. (Cl. 229—47)



1. A carton closure comprising:

(a) a rod having a first portion, a second portion, and an arcuate portion,

(b) said first portion having three substantially coplanar legs bent in a substantially triangular outline, and being substantially laterally symmetrical with respect to said second portion,

(c) said second portion comprising a single leg having a connected end and a free end,

(d) said arcuate portion connecting said first portion and said connected end of said second portion, and maintaining the leg of said second portion in spaced relation to the plane of the legs of said first portion, and

(e) said free end of said second portion extending substantially beyond the area of said plane enclosed by the legs of said first portion, and having a hook projecting from said free end toward a point in said plane which lies outside the limits of said area enclosed by the legs of said first portion.

3,189,251

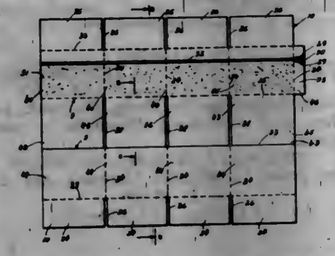
CONTAINER

William W. McFarland, Wooster, Ohio, assignor to International Paper Company, New York, N.Y., a corporation of New York

Filed Apr. 25, 1961, Ser. No. 105,407
11 Claims. (Cl. 229—51)

1. A one-piece blank of sheet material foldable to form a container, said blank including intermediate walls having opposed surfaces, inner and outer walls connected to said intermediate walls at opposite edges thereof, said inner, intermediate and outer walls being of substantially

equal height and tape hinging means along said opposite edges of said intermediate walls whereby said inner and



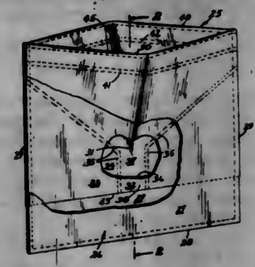
outer walls are foldable into abutting contact with said opposed surfaces of said intermediate walls.

3,189,252

PLASTIC SELF-SEALED VALVED CONTAINER

Theodore A. Miller, St. Paul, Minn., assignor to Unimed, Incorporated, Morristown, N.J., a corporation of Delaware

Filed Sept. 21, 1962, Ser. No. 226,480
1 Claim. (Cl. 229—62.5)



A flexible container consisting of a pair of identical rectangular sheets of thermoplastic material which are identically folded, said sheets being assembled with each other to form the entire container and each sheet being folded only once to form an elongated fold from which a pair of layers of each sheet extend, one of said layers forming an inside layer of each sheet and the other of said layers forming an outside layer thereof, and said inside layers respectively terminating distant from said folds in free edges which are nearer to said folds than free edges of said outside layers which are distant from said folds respectively, and said sheets being superimposed upon each other with said inside layers next to each other and between said outside layers and with said elongated folds coextensively arranged to define between themselves a mouth of the container through which access may be had to the interior thereof, said free edges of said outside layers which are distant from said folds being heat-sealed to each other to define the bottom of the container and said sheets being heat-sealed to each other along opposed side edges extending between said folds and bottom of the container so that the mouth defined between said folds forms the only entry into the container, the inner layers of said sheets being heat-sealed to each other at their opposed side edges and also being heat-sealed to said outer layers at the opposed side edges of the latter while said outer layers are heat-sealed directly to each other only at the portions thereof which extend beyond said inner layers, said inner layers being heat-sealed to each other, but not to said outer layers, along a pair of lines which extend from said side edges of said inner layers at points spaced from said free edges toward each other along oppositely inclined paths while approaching said free edges of said inner layers and which before reaching said free edges extend parallel to each other substantially perpendicularly to said free edges and terminate at said free edges to define in the region of said free edges of said inner layers an elongated one-way closure passage through which fluid may enter into the interior of the container but not pass outwardly thereof.

3,189,253

BAG STRUCTURE

Albert B. Mojonnier, 5357 NE. River Road, Chicago, Ill.

Continuation of application Ser. No. 151,060, Nov. 8, 1961. This application Feb. 27, 1964, Ser. No. 348,901
1 Claim. (Cl. 229—66)



A bag for liquid, comprising front and rear walls connected at the side edges and closed at the bottom, said walls being formed of flexible material; and opening and closing means extending transversely across the bag adjacent to the top thereof, said means including a strip of material having adhesive on one side applied to each side of the bag with the adhesive side of the strip adhering to the outer face of the adjacent side wall, each strip having a portion intermediate its ends folded outwardly and back upon itself with the adhesive side of each fold portion adhering throughout its length with the opposite fold portion to provide a pull tab of substantial length, each such pull tabe portion being of no greater width than that of the strip, said intermediate pull tabs each being pivotal from side to side from its juncture point at the strip between an outwardly extending position where said tabs are adapted to be manually pulled in opposite directions for the purpose of opening the bag and a position substantially flat against the outer side of the adjacent strip, the ends of at least one strip extending beyond the side edges of the bag to provide another pair of pull tabs adapted to be manually pulled outwardly for closing the bag at the top end, whereby after contents for the bag have been filled through the open end thereof the end tabs may be pulled outwardly to close the bag, the top portion of the bag including the strip material and intermediate pull tabs may be roll-folded over a number of times to close the bag with the intermediate tabs positioned flat against the adjacent strips, and the end tabs may be folded inwardly over said roll-folded top portion to lock this portion in its bag-closing position, and whereby the integral structure of the intermediate tabs with the strips provides permanent connection of said intermediate tabs with the strips and permits folding of such tabs compactly against the strips to avoid leakage of the liquid after the bag has been roll-folded over in the described closing operation.

3,189,254

REMAILABLE GREETING CARD OR STATIONERY SET

Leonard J. Pattishall, 113 Tee Road, Carpentersville, Ill.

Filed Jan. 13, 1964, Ser. No. 337,215
1 Claim. (Cl. 229—92.8)

In a stationery and greeting card combination, the combination of a core, a transparent plastic case encas-

ing said core, a washable plastic envelope, and a washable plastic sheet of writing material, the outer side of said envelope and the outer side of said sheet having a tooth of suitable nature to receive a washable opaque liquid of various colors, said liquid adhering to the surfaces of said envelope and said sheet, said case being adhered to said core, said core comprising a card, said case providing waterproof protection for said card on both sides thereof, said envelope comprising a means for receiving said plastic covered core and said writing sheet, said envelope being sealed by an adhesive which is removable by washing and said core having a thickness which is equal to the thickness of each side of said plastic case containing said core.

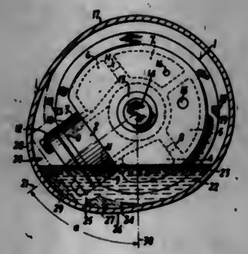


3,189,255
MOTOR-COMPRESSOR FOR SMALL REFRIGERATING MACHINES
Arne Fremm Enemark, Sonderborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Nov. 28, 1962, Ser. No. 240,627
Claims priority, application Germany, Nov. 28, 1961, D 37,548
8 Claims. (Cl. 230—58)



1. In a refrigeration compressor, in combination, a unitary body casting having a central annular portion defining a compressor chamber, an elongated tubular bearing portion disposed coaxially with said annular portion extending axially therein spaced radially inwardly therefrom defining jointly therewith a crank case, radial ribs fixed to said annular holding said bearing portion in fixed position, annular partition means defining a cylinder disposed radially outwardly of said compressor chamber having one end in communication with said chamber and an opposite end open, radially extending partitions disposed angularly spaced on said annular portion, an outer wall defining in conjunction with said angularly spaced partitions angularly spaced muffler chambers disposed circumferentially of said compressor chamber and at least some of which are in communication with each other, a rotary driven crankshaft in said chamber, a piston reciprocably driven in said cylinder from said crankshaft, a motor rotor connected to said crankshaft and rotatably supported in said bearing portion, a stator circumferentially of said rotor having windings extending axially, an other wall having an annular portion defining a collar extending axially in a direction away from said muffler chambers radially spaced outwardly from said compressor chamber for receiving said rotor winding therein.

3,189,256
ENCAPSULATED MOTOR COMPRESSOR FOR REFRIGERATING MACHINES
Paul Adam Bechmann, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Apr. 2, 1963, Ser. No. 269,996
Claims priority, application Germany, Apr. 2, 1962, D 38,559
7 Claims. (Cl. 230—58)



1. An encapsulated motor compressor for refrigerating machines comprising a capsule containing oil and a motor compressor having a horizontally-disposed shaft and a cylinder head extending beyond the cross-section of the remainder of the motor compressor, said capsule enclosing the motor compressor closely throughout and having a cross section substantially circular along at least one half the cross section and an enlargement in cross section being provided to receive the cylinder head, the centerline of the cylinder being inclined downwardly relative to the horizontal to an extent that the enlargement provides an oil sump which is at least partly filled in operation with oil contained in said capsule.

3,189,257
MOTOR COMPRESSOR WITH EXTERNAL WELDING FLANGE
Mads Clausen, Elsmark, pr. Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Apr. 9, 1963, Ser. No. 271,799
Claims priority, application Germany, Apr. 10, 1962, D 38,635
5 Claims. (Cl. 230—58)



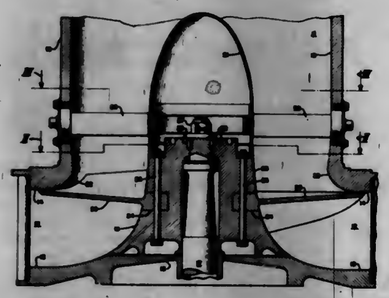
1. A hermetic motor compressor capsule comprising, two mating shells having arcuate surfaces defining a body having an outwardly projecting flange joining the two shells, said capsule being circumscribable in an imaginary parallelepiped figure defined by intersecting planes tangential to the surfaces of said capsule other than said flange and said flange being disposed inclined relative to said intersecting planes, whereby said capsule including said flange occupies a minimum space.

3,189,258
MOTOR COMPRESSOR CAPSULE WITH ELECTRICAL TERMINAL BOX
Bendt Wegge Larsen, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Apr. 9, 1963, Ser. No. 271,800
Claims priority, application Germany, Apr. 10, 1962, D 38,634
10 Claims. (Cl. 230—58)



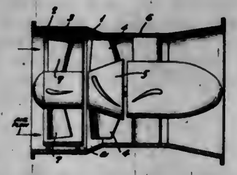
1. A motor compressor hermetic capsule and an electrical terminal box attached thereto, said terminal box being disposed inside a space bounded by the capsule and by two intersecting planes defining an imaginary plane-faced parallelepiped figure circumscribing the capsule.

3,189,259
HIGH SPECIFIC SPEED RADIAL FLOW FAN
Yasutoshi Senoo, Scottsdale, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed May 31, 1963, Ser. No. 284,437
3 Claims. (Cl. 230—119)



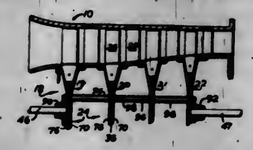
1. A fluid-moving fan, comprising:
(a) housing means forming a passage with a tubular inlet portion and an outlet portion with radially extending first and second walls spaced axially relative to the inlet portion, the wall of the tubular inlet being connected with the first wall of the outlet by a relatively small radius;
(b) an impeller rotor supported in said housing means for rotation about the axis of said inlet, said impeller having a hub which cooperates with said housing means to provide the passage inlet with an annular cross section having an area bearing a predetermined inverse ratio to that of said outlet, the surface of said hub forming a turn in said passage from axial to radial direction and fairing smoothly into the second wall of the outlet; and
(c) a plurality of blades projecting from said hub, the leading edges of said blades extending across said inlet in a plane substantially at right angles to the axis thereof, the trailing edges of said blades extending from a line on said hub between one-half and three-quarters of the distance around said turn from the inlet to the first wall of the outlet at the downstream end of said small radius, the peripheral edges of said blades being curved and disposed in closely spaced relation to the outer wall of said passage at said small radius, said blades causing fluid to flow of high velocity at the inlet and decreasing velocity as the fluid flows past the fan blades.

3,189,260
AXIAL BLOWER
Sergei Konstantinovich Ivanov, Donetsk, U.S.S.R., assignor to Donetsky Gosudarstvenny Proektno-Konstruktorsky i Eksperimentalny Institute Kompleksnoi Mekhanizatsii Shakht "Dongiprouglemash"
Filed Mar. 8, 1963, Ser. No. 264,742
2 Claims. (Cl. 230—120)



1. An axial flow blower comprising a circular elongated hollow casing, said casing having a cylindrical air inlet portion terminating in an inwardly tapering transition portion which in turn terminates in a cylindrical discharge portion, a ring ferrule disposed solely in said inlet portion in spaced relation to the casing of said inlet portion to provide an annular air passage between said ferrule and said casing, the outside diameter of said ferrule being substantially equal to the inside diameter of said discharge portion, radially disposed guide vanes fixed within said ferrule, a rotor rotatably mounted in said discharge portion and radially disposed blades on said rotor, a portion of each blade being disposed within said transition portion and the remainder of each blade being disposed in said discharge portion.

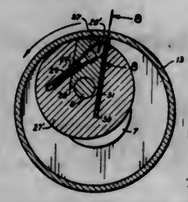
3,189,261
BLADED ROTOR FOR FLUID MACHINES
Edward A. Stalker, Bay City, Mich., assignor to Stalker Development Company, Bay City, Mich., a corporation of Michigan
Original application Feb. 14, 1957, Ser. No. 640,197, now Patent No. 3,091,383, dated May 28, 1963. Divided and this application Jan. 9, 1963, Ser. No. 250,409.
4 Claims. (Cl. 230—122)



1. In combination in an axial flow compressor a compressor case means, a rotor assembly mounted in said case means for rotation about the rotor axis, said assembly comprising a plurality of rotors positioned in tandem, each said rotor comprising a blade means including a radially extending support disk and a plurality of axial flow blades disengageably secured thereto, said blades being peripherally spaced about said support disk and extending outward in the general radial direction, axially spaced side plates on opposite sides of said support disk faying said disk along an inner radial extent thereof, said plates having an outer generally radial portion diverging axially outwardly and terminating at a rim means extending axially to opposite sides of said blades, and disengageable connecting means connecting said plurality of rotors together in spaced relation including tie rods passing through said support disk and the

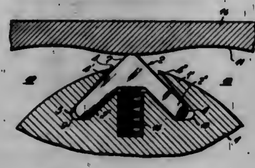
side plates radially inwardly of said diverging portion of each said rotor disengageably securing said assembly together.

3,189,262
SPACE COOLERS
Roy R. Hanson, Maryland Heights, Mo., and Elmer A. Braden, Springfield, Ill., assignors of one-sixth to William H. Anderson, Glencoe, Mo., one-fourth to Joseph H. Schlerman and one-fourth to George A. Blase, both of the county of St. Louis, Mo.
Filed Apr. 10, 1961, Ser. No. 102,060
7 Claims. (Cl. 230—140)



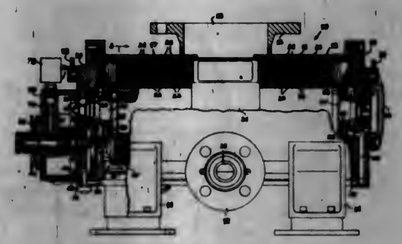
1. A compressor for use in space coolers and the like, said compressor comprising a rotatable housing having walls defining a cylindrical chamber, said walls being provided with opposed inlet and outlet ports located in arcuately spaced relation to each other with respect to the direction of rotation of the housing, a fixed rotor shaft mounted within said housing and being provided with a portion eccentric to the axis of rotation of said housing, a rotor rotatably mounted on said eccentric portion, and means rockably secured to said housing between the inlet and outlet ports, said means being adapted for slide-fitting reception within the rotor for forming a fluid barrier between said ports, said means being in spaced parallel relation to the axis of said eccentric portion.

3,189,263
PACKING SYSTEM FOR ROTARY COMBUSTION ENGINE AND THE LIKE
Ernst Ansorg, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Jan. 21, 1963, Ser. No. 252,987
Claims priority, application Germany, Feb. 8, 1962, F 35,900
9 Claims. (Cl. 230—145)



1. In a rotary engine, in combination:
(a) a shell formed with a cavity therein;
(b) a rotor movable in said cavity about an axis of rotation,
(1) said shell and said rotor having oppositely spaced respective circumferential faces in said cavity,
(2) said rotor being formed with an axially extending recess, said recess having an orifice in said face of the rotor and an inner portion spaced from said orifice,
(3) said rotor having a wall portion in said inner portion of the recess, said wall portion being circumferentially offset relative to said orifice;
(c) a packing member having one axially elongated edge portion received in said inner portion and another axially elongated edge portion outwardly spaced from said orifice,
(1) said packing member being dimensioned for circumferential movement in said orifice and in said inner portion toward and away from a position of abutting sealing engagement in which said one edge portion and said wall portion are substantially in line contact,
(2) said one edge portion and said wall when in said position jointly constituting pivot means for movement of said packing member about a pivot axis extending in the direction of said axis of rotation,
(3) said other edge portion of said packing member moving toward and away from a position of sealing engagement with said face of said shell when said packing member moves about said pivot axis; and
(d) yieldably resilient means urging said other edge portion toward said position of sealing engagement.

3,189,264
VACUUM PUMP DRIVE AND SEAL ARRANGEMENT
Willi Becker, Ehringshausen, Kreis Wetzlar, Germany, assignor to Arthur Pfeiffer Company (G.m.b.H.), Wetzlar, Germany, a corporation of Germany
Filed June 4, 1963, Ser. No. 285,362
5 Claims. (Cl. 230—207)



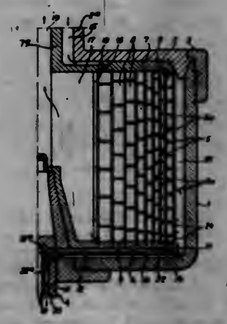
1. In a vacuum pump provided with a housing, said housing defining an internal cavity, gas intake and discharge means forming a part of said housing and in communication with a cavity thereof, gas moving means in said cavity to move gas therethrough from said intake means to said discharge means, shaft means rotatably driving said gas moving means in said cavity, at least one end portion of said shaft means exposed externally of said housing, journal means supporting said shaft means in spaced portions of said housing, and shaft sealing means cooperating with one of said journal means through which said one end portion of said shaft means extends, said sealing means being arranged to prevent higher external pressure leakage into said cavity along said shaft means, the improvement comprising the provision of lubricant supply sump means in said cavity adjacent said shaft means and said sealing means, lubricant pumping means on said shaft means for operation therewith to pump lubricant axially to said sealing means to assist said sealing means in preventing leakage inwardly along said shaft means, means communicating said sump means with said pumping means to supply lubricant to said pumping means, and passage means communicating with said shaft means between said pumping means and said sealing means and communicating with the other of said journal means spaced from said one journal means to deliver lubricant to said other journal means under pressure developed by said pumping means.

3,189,265
MAILBOX
William E. Franklin, 1451 E. 56th St., Los Angeles, Calif.
Filed July 16, 1963, Ser. No. 295,402
1 Claim. (Cl. 232—19)



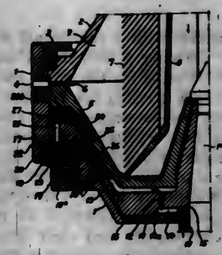
In a mailbox adapted to be mounted on a transverse axis for limited tilting movement, a casing having top, bottom and front walls defining a main section for receipt of mail, said section being open at the back end, a hollow neck at the front end of said main section projecting forwardly of said front wall and formed in part by a continuation of said top wall, said neck having a bottom wall disposed at a substantial distance above the bottom of said main section at the upper end of the front wall of said main section, said front wall forming an interior angle of substantially a right angle with the bottom wall of said main section, the interior of said neck being open to the interior of said main section, said neck having a mail entry slot in its upper wall, a closure hingedly mounted on said casing and normally covering said neck and the entry slot therein, and a hingedly mounted closure at the back end of said main section of said casing normally closing the same.

3,189,266
CENTRIFUGAL COUNTERCURRENT EXTRACTION APPARATUS
Fredrik T. E. Palmqvist, Solna, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed Apr. 25, 1962, Ser. No. 190,890
Claims priority, application Sweden, May 10, 1961, 4,931/61; Aug. 22, 1961, 8,445/61
3 Claims. (Cl. 233—15)



1. A centrifugal extractor comprising a hollow rotor rotatable about an axis, annular partition means in the rotor forming therewith a group of annular zones generally concentric to said axis and interconnected in series, said zones being disposed in adjacent intersurrounding relation and including innermost and outermost extraction zones constituting final extraction zones and also including intermediate extraction zones and a separating zone adjacent one of said final extraction zones but remote from said intermediate zones, said separating zone communicating with the adjacent part of said one final extraction zone to provide the sole source of liquid supply to the separating zone, the rotor having a first outlet leading directly from said separating zone and a second and separate outlet leading from the other of said final extraction zones, the rotor also having a first separate inlet leading to said other final extraction zone and a second separate inlet leading directly to said one final extraction zone, means external of the rotor for supplying fresh feed to said first inlet, and means external of the rotor for feeding a mixture of heaviest and lightest liquid components to said second inlet, said feeding means including means for mixing with fresh feed to said second inlet some of the discharge from said first outlet in the same composition in which it is dishcarged from said first outlet, said mixing means including a return pipe leading directly from said first outlet to feed one of said components and a separate pipe to initially feed the other of said components.

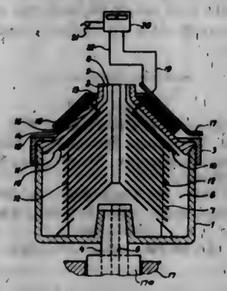
3,189,267
SLUDGE CENTRIFUGE
Henric Wilhelm Thylefors, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 29, 1961, Ser. No. 99,294
Claims priority, application Sweden, Apr. 20, 1960, 3,858/60
8 Claims. (Cl. 233—20)



1. In a sludge centrifuge of the type adapted for intermittent discharge of separated sludge, the combination of a hollow rotor having a separating space for a feed material to be separated, and also having a sludge discharge opening leading through the rotor wall from said space, a slide valve in the rotor movable lengthwise of the rotor axis to positions for opening and closing said discharge opening, the slide valve having an inner surface partly defining said separating space and having an outer surface partly defining a control chamber located between said outer surface and the rotor wall, said control chamber including an inner portion having an inlet and also including an outer portion extending radially inward from the rotor wall to a radius substantially shorter than the maximum radius of said separating space, a device for supplying an operating liquid to said inlet to accumulate in said chamber a body of liquid operable under centrifugal force to hold the slide valve in its closing position against the pressure in the separating chamber, the rotor having means forming an outlet leading from said chamber between its inner and outer portions, whereby discharge of liquid through said outlet is operable to reduce said liquid body and effect movement of the slide valve to its opening position while retaining liquid in said outer portion of the chamber, and a control valve carried by the rotor for opening and closing said outlet to control said liquid discharge, said outer portion of the chamber having sufficient volumetric capacity and radial extent that, in said opening position of the slide valve, said retained liquid

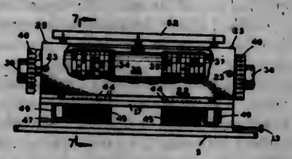
is operable to return the slide valve to its closing position automatically when the separation material in said space has receded to a predetermined level.

3,189,268
DEVICE FOR DETERMINING THE POSITION OF THE INTERFACE BETWEEN TWO SEPARATED COMPONENTS IN A CENTRIFUGAL SEPARATOR
Viget Raymond Nilsson, Hagersten, Sweden, assignor to Aktiebolaget, Separator, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 17, 1962, Ser. No. 245,228
Claims priority, application Sweden, Dec. 22, 1961, 12,861/61
12 Claims. (Cl. 233—27)



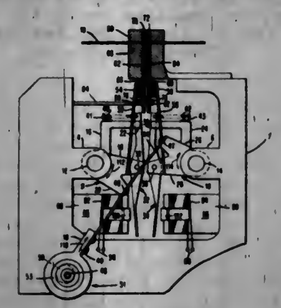
1. In combination with a centrifugal separator having a hollow rotor forming a centrifugal separating chamber, a stationary housing for the rotor, and means mounting the rotor in the housing for rotation relative to the housing, a device for determining the position of the interface between two separated components of different dielectric constants in the separating chamber, said device comprising a measuring capacitor including two capacitor elements mounted to form between said elements a space positioned in said chamber to receive parts of the separated components and their interface, whereby said parts form between the capacitor elements a dielectric which varies in strength with displacements of said interface, a transmission capacitor including two capacitor elements mounted in opposed spaced relation on the outside of the rotor and on the housing, respectively, a capacitance-measuring instrument, an electrical current source, and electrical connections connecting said capacitors in series in a circuit including said instrument and current source.

3,189,269
HANDICAP GOLF SCORE PUNCH
Michael L. Passacero, R.F.D. 3, Stone Road, Bristol, Conn.
Filed Nov. 18, 1963, Ser. No. 324,425
7 Claims. (Cl. 234—45)



1. A punching machine for perforating golf score cards to indicate handicap holes on a golf course, the machine embodying a body portion forming an elongated housing, a cover plate for the housing and end plates for closing the ends of the housing, a shaft extending through the housing to bear against the end plates, reduced shaft extensions journaled in openings formed in the end plates, a plurality of disks having splined engagement with the shaft and with the disks having their edges provided with a plurality of recesses, the shaft extensions projecting beyond the end plates and provided with actuating knobs, the disks being disposed in groups of nine from each end of the shaft, an intermediate spacer disposed upon the shaft and spacers carried by the shaft at the end portions, the spacers being rotatable upon the shaft, the body portion having a flange extension that underlies the disks, the body portion being provided with a plurality of punch pins that extend through the flange and and through openings in a base plate, the pins being biased upwardly by a spring, the groups of pins and the disks being in vertical alignment, a pressure bar extending across the cover plate in spaced relation thereto and with lugs carried by the pressure bar that extend through openings in the cover plate and that bear against the spacers, the pressure bar adapted to move the shaft and its supported disks downwardly for engagement with the punch pins, certain of the pins engaging within the recesses of the disks whereby the pins are maintained in a non-punching position, certain of the pins engaging the non-perforated edges of the disks and whereby to force the pins downwardly against the tension of the springs, a slide opening below the base plate for receiving a golf score card and whereby certain of the pins are shifted downwardly by the pressure bar to punch predetermined openings in a golf score card and spring means adjacent each end of the body portion for moving the shaft and the disks upwardly after the punching has been performed, the said knob being calibrated and numbered in accordance with the particular handicap holes to be provided.

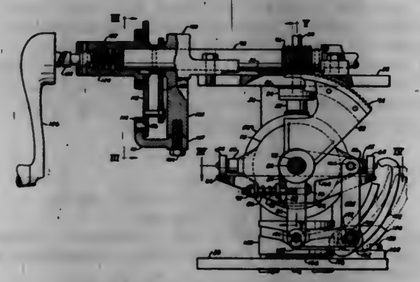
3,189,270
CARD PUNCHING DEVICE
Raymond Eugene Seymour, Ambler, Pa., Frank E. Riedl, New Rochelle, N.Y., and Ian Feniston Campbell, Norwalk, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,257
4 Claims. (Cl. 234—115)



1. A record perforating device comprising: a rotatable bail assembly; an interposer arm connected to said bail assembly and movable with said bail assembly; a punch bar engageable with said interposer arm, and arranged to be moved to position to permit perforation of a record as said bail assembly is moved; said punch bar having a notch at its lower portion; a stripper bar engaging the notch in said punch bar and operable to return said punch bar to an initial position from said perforation position; a drive means for providing circular motion; an eccentric assembly connected to said drive means to convert said circular motion into elliptical motion; a flexible drive member connected to said eccentric assembly and said bail assembly for converting said elliptical motion into

essentially linear motion along the length of said flexible drive member, whereby said bail assembly is moved in an arcuate path; a second flexible drive member connected between said bail assembly and said stripper bar to cause said stripper bar to move said punch bar from the perforation position to an initial position as said bail assembly is moved; said flexible drive members, flexing to compensate for the relative forms of motion of said bail assembly, said eccentric assembly and said punch bar.

3,189,271
VARIABLE SPEED DRIVE
Edward D. Rapisarda, West Springfield, Mass., assignor to Gilbert & Barker Manufacturing Company, West Springfield, Mass., a corporation of Massachusetts
Filed Nov. 4, 1959, Ser. No. 850,896
13 Claims. (Cl. 235—61)



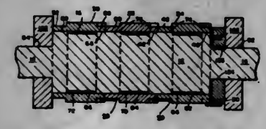
12. In a liquid dispensing unit having a variator comprising a shaft adapted to be driven by a meter in the dispensing unit, a "money" shaft aligned therewith, said shafts being rotatable on a common axis, means for providing a positive drive connection between said meter driven shaft and said "money" shaft in one direction of rotation of said meter driven shaft, said means including a gear secured to said "money" shaft and another gear meshing therewith, said other gear being rotatable with said meter driven shaft and also rotatable relative thereto, and optional means for rotating said other gear relative to said meter driven shaft at a substantially uniform rate when said meter driven shaft is rotated thereby introducing a speed differential between said shafts and means for varying said optional means in increments sufficient to cause the "money" shaft to be varied by incremental steps in its rate of rotation reflecting the lowest significant figure by which the unit cost of the gasoline is measured, the range of adjustment of said varying means being sufficient to cover a plurality of digits or figures and a single control lever for operating said varying means.

3,189,272
CALCULATOR DEVICE
Dale L. Miller, Runnells, Iowa
(9341 Joynelle Drive, Garden Grove, Calif.)
Filed July 22, 1963, Ser. No. 296,601
5 Claims. (Cl. 235—61)



1. A calculator comprising in combination a log sheet having scale markings thereon and data markings superimposed on said scale markings to diagrammatically indicate recorded data, an overlay assembly including a frame member having an elongated opening formed therethrough for cooperation with said log sheet, a plurality of movable elements dimensioned to correspond with the scale markings and adapted to be moved into said opening, and scale markings provided on said overlay assembly along the opening thereof to indicate the count of movable elements, said overlay assembly adapted to be disposed above said log sheet so that said recorded data appears through said opening in said frame, said movable elements being adapted to be placed first in registering alignment with selected data markings as they occur in said openings, and subsequently being adapted to be merged together in continuous relation to read on said scale markings along said opening for the composite total value of the selected data.

3,189,273
HIGH SPEED COUNTER
James S. Hellen, Wayne, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 300,127
6 Claims. (Cl. 235—117)

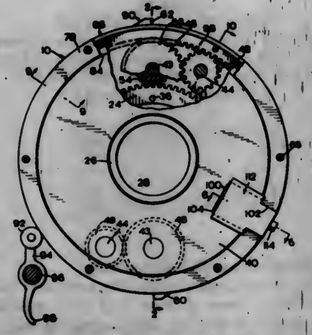


1. A high speed counter comprising:
a plurality of juxtaposed rotatable members each member having a bore portion and each member bearing a series of discrete alpha-numeric indicia thereon spaced about the respective centers of rotation of the members, individual indicia on respective members being adapted for display in groups to convey intelligence;
a rotative input drive shaft member extending through said bores forming annular gaps separating said rotatable members from said shaft;
a yieldable-solid substance disposed in said annular gaps and carried by said shaft for supporting said rotatable members and for providing a slipable coupling between said rotatable members individually and said drive member; and
latch means normally maintaining said rotatable members against rotation and sequentially operative to release respective rotatable members momentarily for incremental rotational displacement.

3,189,274
VARIABLE KICKER FOR NEWSPAPER COUNTING MECHANISMS
Edward D. Pierson and James C. Wright, Denver, Colo., assignors to Miner Machine Company, Denver, Colo., a corporation of Colorado
Filed May 1, 1963, Ser. No. 277,299
10 Claims. (Cl. 235—136)

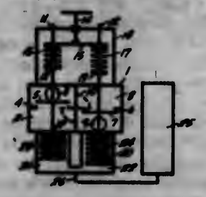
1. In a counting mechanism of the type having a shaft-mounted rocker arm adapted upon actuation to engage and misalign selected newspapers passing therebeneath on a conveyor that have been laid thereon in overlapping aligned relation by peripherally-slotted flyers mounted on a flyer shaft that also carries a flanged-hub operatively connected thereto for rotation at reduced speed, the improved means for actuating the rocker arm at different predetermined intervals which comprises: inner planetary element means mountable directly on the flanged hub of the counting mechanism for conjoint rotation therewith, said inner means including gear means mounted coaxially with respect to the flyer shaft; intermediate planetary element means mounted for coaxial rotation relative to the inner planetary element means, said intermediate means including a spider, at least one pinion mounted on the spider for rotation therewith but relative

thereto in meshed engagement with the gear means of the inner planetary element means, and a reversing gear mounted on the spider for rotation therewith but relative thereto in meshed engagement with each pinion independent of the gear means of the inner planetary element means; outer planetary element means mounted for coaxial rotation relative to both the inner and intermediate assembly wherein said outer planetary element means including gear means in meshed operative engagement with the reversing gear of the intermediate planetary element means, said inner, intermediate and outer planetary element means cooperating to provide a planetary assembly wherein said outer planetary element means turns the same direction as said inner planetary element



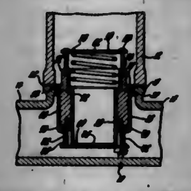
means when the spider of said intermediate planetary element means is held against rotation, and the gears of said planetary assembly cooperating to drive the outer planetary element means thereof at a different speed than the inner planetary element means is driven by the flanged-hub when the spider of the intermediate planetary element means is secured against rotation; and, fixed cam means mounted on the periphery of the outer planetary element means for rotation therewith in a circular path adapted to engage the rocker arm of the counting mechanism, said cam means being adapted upon contact with said rocker arm to momentarily actuate same causing the latter to move into operative position for engagement with a corner of a newspaper.

3,189,275
HEATING AND COOLING PLANT
Carl Sprensen and Helmer Tryst Nielsen, Nordberg, Denmark, assignors to Danfoss ved Ing. M. Clausen, Nordberg, Denmark, a company of Denmark
Filed Oct. 4, 1961, Ser. No. 142,908
Claims priority, application Germany, Oct. 6, 1960, D 34,437
6 Claims. (Cl. 236—1)



1. A thermostatic valve system for thermostatically controlling and regulating a heating flow and a cooling flow comprising, a unit for controlling and regulating heating and cooling flows, said unit having inlet means and outlet means for inflow and outflow of a cooling flow and a heating flow, a pair of alternately operable valves comprising a heating flow control valve and a cooling flow control valve in said unit each operable to an open and a closed condition for respectively controlling flow of said heating flow and said cooling flow through said inlet means and out of said outlet means, a thermostatic system comprising sensing means for sensing temperature variations of a temperature to be controlled and for controlling said valves in dependence upon said temperature being sensed and the variations thereof, valve operating means connected in common to said sensing means and responsive to said sensing means for operating said valves independently and alternately in dependence upon whether said temperature being sensed is above a given temperature level or below said given temperature level, said operating means comprising means for opening said cold flow control valve when said given temperature level of said temperature being sensed is exceeded and for closing said cold flow control valve when said given temperature level obtains and for maintaining said cold flow control valve closed when said temperature being sensed is below said given temperature level, and said valve operating means comprising means to close said heating flow control valve when said temperature level obtains and is exceeded and for opening the last-mentioned valve when said temperature being sensed has a value less than said temperature level.

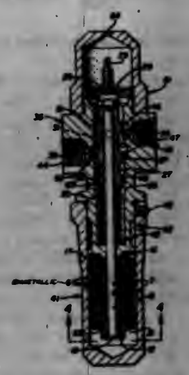
3,189,276
THERMOSTATIC VALVE FOR LIQUID COOLED ENGINE
Charles S. Bailey, Lockport, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 22, 1963, Ser. No. 253,088
7 Claims. (Cl. 236—34)



1. A thermostatic valve for controlling the flow of fluid in a conduit comprising a supporting frame adapted to be mounted in said conduit, and two telescopically arranged sleeves, the outer of said sleeves being fixed to said frame and having an inside shoulder, an end plate joined to said outer sleeve to form a box-like structure, the inner of said sleeves having an outside shoulder facing said inside shoulder and being slidable in said outer sleeve, spring means urging said inner sleeve toward said end plate to seat thereon, an opening in said box-like structure located outside the diameter of said inner sleeve and giving access to said inner sleeve, and an expansible temperature sensitive material filling the space between said shoulders.

3,189,277
TEMPERATURE RESPONSIVE SAFETY CONTROL VALVE
Elton B. Fox, Richmond, Calif., assignor to Amot Controls Corporation, a corporation of California
Filed Dec. 17, 1962, Ser. No. 244,962
3 Claims. (Cl. 236—101)

1. A temperature responsive safety control valve comprising, a valve housing formed with an internal cylindrical wall defining a valve chamber and inlet and discharge passages opening to said wall at longitudinally spaced positions and being formed with a transversely extending end wall for said chamber in longitudinal spaced relation to said ports, a spool shaped valve having longitudinally spaced flanged portions mounted for reciprocation on said chamber wall in sealed relation thereto and having a closed position closing off connection between said inlet and discharge passages and a longitudinally spaced open position communicating said passages, said flanged portions in both of said positions being disposed on opposite sides of said inlet passage to provide a pressure balanced condition enabling ready movement of said valve from closed to open positions and vice versa, means providing a stop for said valve in closed position, a valve stem extending axially from one end of said valve and projecting through and being slidably supported by said end wall and having an end portion disposed exteriorly of said end wall remote from said valve chamber, a helical



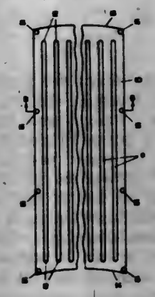
spring surrounding said stem and mounted in compression between said end wall and said valve end for constantly urging said valve to closed position, a plurality of bimetal discs formed with central openings mounted upon said stem end portion to provide a stack with one end disposed for engagement with said end wall, and means on said stem end portion engaging the opposite end of said stack, said discs being arranged in reversely positioned pairs and being so constructed that upon heating each pair of discs will bow away from each other to produce longitudinal displacement of said stem and said valve in the direction of closed to open position and against the resistance of said spring.

3,189,278
VALVE
William B. Drury, Providence, R.I., assignor to Taco, Inc., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,441
10 Claims. (Cl. 237—56)



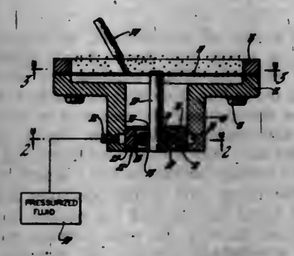
1. A balancing and purge valve comprising a body; first and second return inlet ports in said body; a common return outlet port in said body; a common outlet drain port in said body; bypass means in said body connecting said inlet ports to said common drain port; and unitary rotary plug means in said body adapted in one rotary position to simultaneously connect said inlet ports to said common return outlet port and to block said bypass means leading to said common outlet drain port, in another rotary position to block said first inlet port to said common return outlet port while opening said first inlet port to said common outlet drain port, and in still another rotary position to block said second inlet port to said common return outlet port while opening said second inlet port to said common outlet drain port.

3,189,279
MOUNTING MEANS FOR RAILS
John Hornblow, Redhill, and Alan Gordon Senior, London, England, assignors to Kinx Developments Limited
Filed Sept. 24, 1962, Ser. No. 225,786
2 Claims. (Cl. 238—283)



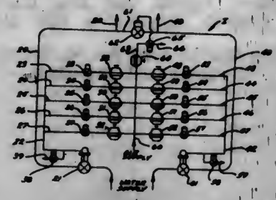
1. A rail mounting pad formed of rubber-like material, said pad having an upper surface provided with a plurality of grooves and reinforcement means completely enclosed within the material of the pad to limit the lateral expansion of the pad under load, said pad having one concave and one convex end whereby pads can be placed end-to-end with the concave end of one pad cooperating with the convex end of an adjacent pad to resist relative lateral movement of adjacent pads.

3,189,280
VIBRATORY ATOMIZER
William L. Drayer, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 14, 1961, Ser. No. 159,313
5 Claims. (Cl. 239—4)



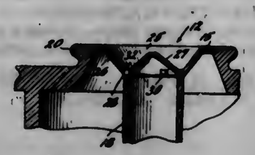
3. In a method for atomizing liquid from the surface of a disk-type member having a rod centrally extending therefrom, comprising the steps of constraining the peripheral edge of said disk member, supplying liquid to said surface of said member, and generating sufficient gyratory movement in said rod to cause a rotating wave-type motion of said disk member about the axis of the rod so that the liquid deposited on said surface is atomized.

3,189,281
FOUNTAIN
William M. Booth, 2006 Vista Place, Grand Haven, Mich.
Filed May 6, 1963, Ser. No. 278,335
20 Claims. (Cl. 239—17)



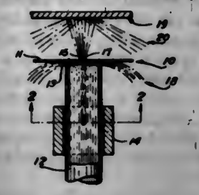
1. A means for determining and varying the amount of water supplied to a fountain utilizing spraying devices receiving water from a water source under pressure, said means comprising: a normally closed first valve determining the amount of water passing from the water source; a source of pressurized air; a plurality of air lines connecting said air source and said first valve; a pressure regulator positioned in each of said air lines, each of said regulators allowing a different pressure to pass to said first valve; and a normally closed second valve positioned in each of said air lines between said regulators and said first valve, whereby operation of said second valves controls the amount of water passing through said first valve and emitted from the spraying devices.

3,189,282
ATOMIZING DEVICE HAVING AN ANNULAR ASPIRATING ZONE
Douglas F. Cornette, Los Angeles, Calif., assignor to Calmar, Inc., City of Industry, Calif., a corporation of California
Filed Apr. 15, 1963, Ser. No. 272,952
4 Claims. (Cl. 239—327)



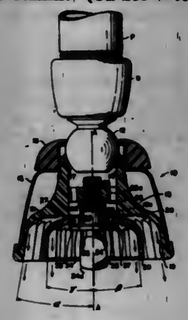
1. As an article of manufacture, an integral atomizing device for liquid, said device being molded in one piece from moldable plastic material and having a top portion and, depending from said top portion, an annular skirt portion dimensioned for reception in the mouth of a resilient deformable container for liquid, said device having within said skirt portion and depending from said top portion a tubular portion having a length sufficient to extend to the lower part of the container and beneath the level of liquid therein, said top portion having a depressed channel therein, the walls defining said channel converging downwardly toward and merging with the upper end of said tubular portion to provide thereat an annular aspirating zone, said converging walls having at their junction proximate openings therein leading from said channel into (a) said tubular portion and (b) externally of said tubular portion at said aspirating zone, whereby on application of pressure to said resilient container, liquid is forced upwardly in said tubular portion, and is atomized in said aspirating zone on passage through openings (a) into said channel by air discharge through openings (b) into said channel.

3,189,283
SPRAY HEAD
John R. Moore, 82 Casterton Ave., Akron 3, Ohio
Filed Jan. 7, 1963, Ser. No. 249,856
3 Claims. (Cl. 239—383)



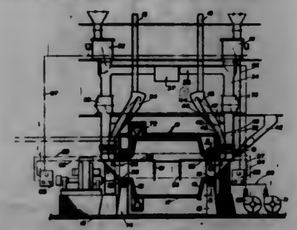
1. In a spray head device associated with the open end of a liquid flow pipe,
a liquid deflector member adapted to fit flatly in closed position against and parallel to the open end of the flow pipe and adaptable to be axially movable away from the flow pipe open end to open positions,
and a weighted collar means annularly disposed about the flow pipe and including means connecting said collar means to said liquid deflector member, said collar means continuously biasing said liquid deflector member toward said closed position and being adapted to be axially slidable relative to said flow pipe so that said deflector member is movable by liquid flowing from the pipe in an axially parallel direction away from said open end to open positions determined by the force of the flow and counter biasing effect of the collar means to obtain an even distribution of liquid outwardly from between the flow pipe open end and the distributor member toward the periphery of the distributor member,
said periphery of the deflector member including additional means for deflecting the liquid in a tiered pattern beyond said periphery.

3,189,284
SHOWER HEAD
Martin William Downey, Morgantown, W. Va., assignor to Sterling Faucet Company, Morgantown, W. Va., a corporation of West Virginia
Filed Apr. 11, 1963, Ser. No. 272,259
14 Claims. (Cl. 239—460)



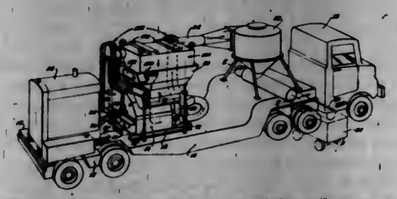
1. In a shower head for use in bathing that has a body member which is concentric about an axis, the body member having a bore formed therein along the axis and a concentric outwardly-diverging surface that includes means positioned downstream of the bore forming a plurality of individual diverging flow channels; the improvement comprising: means forming a primary peripheral nozzle orifice adjacent the bore and providing a fluid communication between the bore and the outwardly-diverging surface, opposed planar surface means substantially normal to the axis of the bore and forming a secondary peripheral nozzle orifice that is in fluid communication with the bore, and a secondary diverging surface which includes a plurality of diverging channels that are positioned in fluid communication with said secondary peripheral nozzle orifice for receiving a radial outward flow of water therefrom.

3,189,285
BALL MILL
Earle C. Miller, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Dec. 18, 1962, Ser. No. 245,547
6 Claims. (Cl. 241—171)



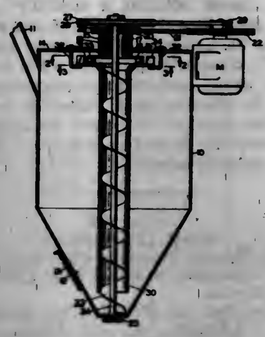
1. A ball mill, comprising
(a) a horizontal tubular main body,
(b) a tubular trunnion extending co-axially from each end of the main body,
(c) bearing means supporting the trunnions to permit rotation of the main body about its axis,
(d) means driving the main body to produce the said rotation,
(e) a dividing wall extending across one of the trunnions and dividing it into an inlet and an outlet portion,
(f) means introducing solid fuel into the inlet portion of the trunnion,
(g) and means removing pulverized fuel and air from the main body through the outlet portion.

3,189,286
DOCUMENT DISINTEGRATING MECHANISM
James E. O'Connor, Los Angeles, Calif., assignor to Document Disintegration, Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 5, 1963, Ser. No. 285,162
11 Claims. (Cl. 241—186)



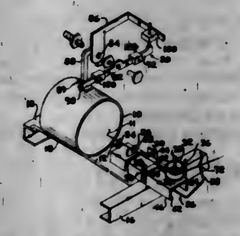
7. Disposal apparatus for material such as papers, documents and the like, including: material destroying means, a housing enclosing said destroying means, said housing having an inlet for receiving material to be fed to said destroying means and having an outlet for discharging material from said destroying means, a receptacle for containing such material, means mounted adjacent said inlet for receiving said receptacle containing such material in position to permit its contents to be unloaded into said inlet, means for moving such receptacle into position on said receiving means such that its contents are inaccessible from the exterior thereof, and means for locking the receptacle in said position on said receiving means in which its contents are inaccessible from the exterior thereof.

3,189,287
FEED GRINDER
Jonas J. Byberg, 511 N. Water St., Silverton, Oreg.
Filed Mar. 2, 1964, Ser. No. 348,536
5 Claims. (Cl. 241—275)



1. In a feed grinder of the character described, a pair of co-axial discs spaced a short distance apart in parallel horizontal planes, at least one of said discs being an annular disc having a central opening, means for delivering feed to be ground through said central opening in said latter mentioned disc and into the space between said discs, means for holding the lower of said discs in stationary position, means rotatably supporting the upper of said discs, means for imparting rotation to said upper disc, said lower stationary disc having a greater outer diameter than said upper rotating disc, a series of equally spaced substantially rectangular impeller blades mounted on the lower face of said upper rotating disc, said blades positioned adjacent the periphery of said rotating disc, the edges of said blades adjacent said stationary disc terminating within a short clearance distance from said lower stationary disc, and a series of equally spaced substantially radially extending anvil blades mounted on the upper face of said stationary lower disc and positioned adjacent the periphery of said stationary low dinc, the inner edges of said anvil blades on said stationary disc being spaced from the respective outer edges of said impeller blades on said rotating disc by a distance of not less than approximately one-quarter inch.

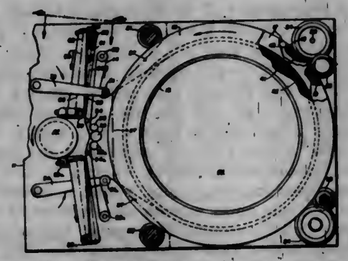
3,189,288
APPARATUS FOR WINDING STRAND MATERIAL
Svend A. Petersen, Toledo, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Sept. 18, 1962, Ser. No. 224,390
11 Claims. (Cl. 242—37)



1. Apparatus for winding strand material comprising: a source of strand wound in a package; powered strand winding mechanism, including an electrical motor, advancing said strand from said source; detection means for detecting the pending exhaustion of the strand package; feeler means positioned to engage said strand in its path

of travel; severing means responsive to the tension of said strand to sever said strand when the tension exceeds a predetermined value and thus free said feeler means from tension of said strand; and electrical circuit means for controlling the operation of said winding mechanism, said circuit means including a normally closed circuit portion for controlling the rotation of said motor, means responsive to the actuation of said feeler means to open said normally closed circuit portion when free from tension of said strand, and detection responsive means responsive to the actuation of said detection means to open said normally closed circuit when the number of convolutions remaining in said package have been reduced below a preselected number.

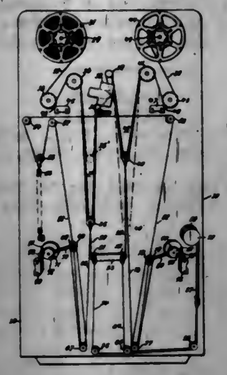
3,189,289
TAPE TRANSPORT
Alexander R. Maxey, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Nov. 24, 1961, Ser. No. 154,869
9 Claims. (Cl. 242—55.11)



1. In combination with a tape transport wherein the tape is stored in a coil and is conducted in a path away from and out of the plane of said coil, the elements comprising:
a reel for mounting said coil, said reel having a cylindrical outer periphery;
at least three rotating bearing elements engaging said cylindrical outer periphery of said reel and supporting said reel for rotation;
a plurality of tape guiding members arranged on the path of said tape so as to cause said tape to leave said reel substantially at the radial line joining one of said bearing elements and the axis of said reel;
at least two of said tape guiding members having axes that are inclined to one another in such a way that the longitudinal center line of said tape in said path passes around each of said members in a plane that is perpendicular to the axis of the respective members.

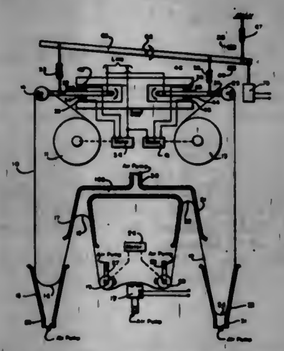
3,189,290
TAPE DRIVE AND RECORDING APPARATUS
Herbert Frazer Welsh, Philadelphia, Pa., and Edmund D. Schreiner, Port Washington, and Leon Robert Meck, Forest Hills, N.Y., and John Prosper Eckert, Jr., Philadelphia, Pa., assignors to Sperry Rand Corporation, a corporation of Delaware
Original application July 29, 1950, Ser. No. 176,722, now Patent No. 2,708,554, dated May 17, 1955. Divided and this application Apr. 6, 1955, Ser. No. 499,566
24 Claims. (Cl. 242—55.12)

17. A high speed tape feeding mechanism comprising a reel, a tape moving means, a length of tape wound on said reel and coupled to said tape moving means, the tape forming a dependent loop between the reel and said tape moving means, sensing means continuously responsive to the length of the tape loop, variable speed rotatable means fed by said sensing means and coupled to said reel to feed the tape from said tape moving means to said reel to provide a loop of substantially constant length, and dynamic electrical braking means activated by



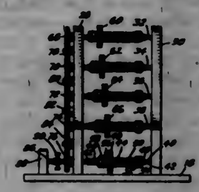
said sensing means at a predetermined loop length and coupled to said variable speed rotatable means to stop said variable speed rotatable means rapidly.

3,189,291
TAPE HANDLING MACHINE
Herbert Frazer Welsh, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 14, 1955, Ser. No. 546,643
17 Claims. (Cl. 242—55.12)



1. In a tape handling apparatus, tape supply means, a work station, a tapered vacuum box having a mouth and a neck, said vacuum box having a varying cross-dimension between said mouth and neck, a length of tape extending in a loop from said supply means into the mouth of said tapered box toward said neck and thence out of said mouth to said work station, said loop being contiguous with the interior walls of said box adjacent both the entrant and exit portions of said loop from said box whereby the cross-dimensional size of said loop varies with variations in the position of said loop in said box, resilient means for applying a tensile force to said tape, means coupled to the neck of said tapered box for reducing the pressure in said box so that said tape loop has a differential pressure on opposed sides thereof the magnitude of which varies with variations in the cross-dimensional size of said loop whereby said loop assumes an equilibrium position in said box dependent upon pressure differences between opposite sides of said loop and upon opposing tensile forces applied by said resilient means to said tape, and control means responsive to changes in position and resulting changes in cross-dimensional size of said tape loop within said box for actuating said supply means whereby the position and cross-dimensional size of said loop in said box is altered to restore said equilibrium condition.

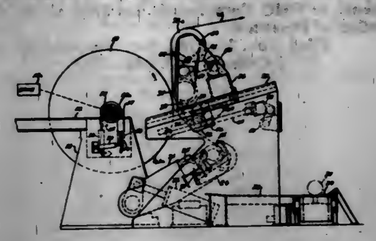
3,189,292
TAKE-UP MECHANISM FOR FOIL SLITTING MACHINE
Joseph Torres, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1962, Ser. No. 191,657
3 Claims. (Cl. 242—56.9)



1. Take-up apparatus for use in combination with a machine for cutting thin sheet material into strips comprising:
(a) a plurality of spaced, take-up shafts;
(b) a take-up reel rotatably mounted on each of said shafts, said reel including:
(1) first and second matable cylindrical projections each having an annular flange extending radially outward from one end thereof, said second projection being hollow to define a radially outer surface and an end surface and to further define a radially inner surface receiving said first projection with a sliding fit, said first projection being of greater length than second projection such that a substantially U-shaped annular channel is formed with said second projection serving as the base of said U-shaped channel when said projections are mated with said first projection being within said second projection, said second projection being provided with a kerf communicating with said radial outer surface and said end surface but spaced from said radially inner surface whereby said kerf is exposed at said outer and end surfaces when said projections are separated from one another but is exposed only at said outer surface when said projections are mated together;
(c) means for yieldably applying axial pressure to each reel, said means being yieldable to the extent that said projections can be separated a significant distance, whereby the tension of the strip wound about said reel may be adjusted without adjustment of the speed of rotation of said shaft during operation of said apparatus, said yielding drive means permitting the separation of said projections of said reel while still on said shaft for examination of the edges of the strip of material wound about it and for attaching the end of a strip to said reel at the start of a reeling operation; and
(d) means for rotating said shafts.

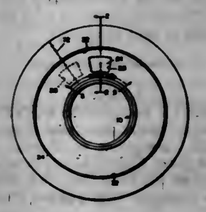
3,189,293
RADIAL FLYING SPLICE MECHANISM
George J. Fraser, Bryn Mawr, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 190,921
8 Claims. (Cl. 242—58.3)

1. A flying splice mechanism comprising a support for a fresh parent roll for rotation about an axis, means for holding an expiring parent roll having a web run feeding off of the expiring roll, a splice support carriage movable on straight slides in a straight line path toward and away from the roll support, a splice roll on the carriage, means for moving the splice roll independent of the carriage against the surface of the fresh parent roll to form a splice, a cutter mounted on the carriage, means for



moving the cutter independent of the carriage to cut the web after a splice has been made, and air jet means carried on the cutter and movable through the web with the cutter to direct the following cut end of the web away from the path of travel of the web when the splice is made, and means for moving the carriage with the cutter and splice roll on the slides to position the carriage to accommodate fresh parent rolls of different sizes.

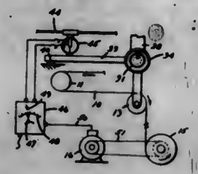
3,189,294
REEL WITH AUTOMATICALLY CLOSING AND LOCKING WINDOW MEANS
Otto Morningstar, Brookline, and Frank H. Burgess, Somerset, Mass., and Gregory Mathus, West Hartford, Conn., assignors to Morningstar Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 5, 1963, Ser. No. 270,975
3 Claims. (Cl. 242—71.8)



1. A reel comprising
a hub and a pair of spaced flanges,
a bezel mounted on one of the flanges in the region of the hub and having a radially outwardly facing channel,
a second channel provided on the flange and facing radially inwardly toward the channel of the bezel,
an opening in the flange radially beyond the hub and between the two channels,
an arcuate member disposed over the opening and with its inner and outer edges disposed in the channels,
an opening in the arcuate member adapted to overlie the opening in the flange when the member is disposed in one position,
said member closing the flange opening when the member is in a second position,
a cavity provided in the region of the hub beneath the member and between the channels,
a protrusion provided on the member and extending into the cavity,
latching means disposed in the cavity and carried by the member for retaining the member in the second position,

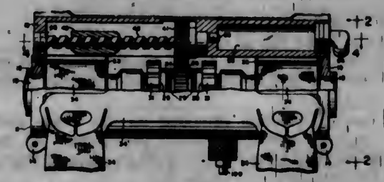
and releasing means carried by and movable with the member for disabling the latching means so that the member may be moved manually to the first position.

3,189,295
CONTROLLED TENSION WINDING APPARATUS
Harold A. Haley, Secane, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,753
3 Claims. (Cl. 242—75.5)



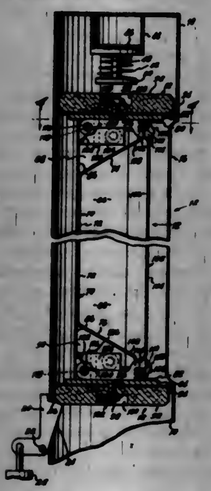
1. In a controlled tension winding apparatus wherein strip material is wound onto a roll which increases in diameter as the winding operation proceeds, a winding reel for mounting the roll, variable speed drive means for said reel, guide means over which the strip material passes as it approaches said reel, a support for said guide means, pivot means mounting said support for swinging movement thereabout, means for latching said support in a plurality of swung positions about said pivot means to thereby locate said guide means in a plurality of positions in all of which the strip material makes a substantial change in direction as it passes thereover whereby the tension on the strip material produces a force perpendicular to said support which force, for any particular strip tension, increases as the diameter of the roll increases, sensing means for sensing the force perpendicular to said support, and means operated by said sensing means for operating said variable speed drive means to reduce the speed of said reel so as to maintain the tension in the strip material at the level necessary to keep constant the force perpendicular to said support.

3,189,296
SAFETY HARNESS DEVICE
Robert J. Wrighton, Santa Ana, and Howard M. Lastrell, Anaheim, Calif., assignors to Pacific Scientific Company, San Francisco, Calif., a corporation of California
Filed May 15, 1963, Ser. No. 280,559
13 Claims. (Cl. 242—107.4)



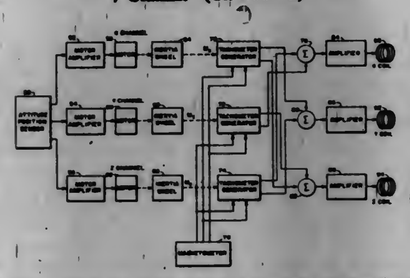
1. An inertia operated safety device for mounting on a vehicle to restrain the movement of a body within the vehicle where the body is subjected to accelerated movements relative to the vehicle comprising a pair of tension members for coupling to the body, a pair of reels on which said tension members are wound, a main shaft on which said reels are rotatably mounted, a main gear fixedly secured to said shaft and positioned between said reels, a pair of ratchet wheels fixed respectively to said respective reels on opposite sides of said main gear, said ratchet wheels having bevel gear teeth, and a bevel gear carried by said main gear and meshing with said bevel gear teeth, whereby said tension members may be moved independently of each other in use to permit independent movement of the shoulders of the body, stop means interposed between said main gear and said ratchet wheels for limiting said independent movement, said bevel gear serving for coupling said reels to said main gear to cause said main gear to rotate in unison with said reels during rotation in the wind-up and unwind direction, yieldable resilient means coupled to said shaft tensioned so as to urge said shaft in the direction to rotate said reels through said main gear in a direction to wind up said tension members thereon, said reels, main gear, and shaft being rotatable against the tension of said resilient means in a direction to unwind the tension members from the reels responsive to movements of the body, a second shaft, a second gear rotatably mounted on said second shaft meshing with said main gear, a flywheel rotatably mounted in axial alignment on said second shaft, second yieldable means coupling said flywheel to said second gear to rotate said flywheel in unison with said second gear during rotation thereof in the unwind direction of the reels below a certain acceleration, said second yieldable means yielding during rotation of said second gear at said certain acceleration whereby said second gear rotates relative to said flywheel, and locking means comprising a pair of lock dogs respectively positioned adjacent said respective ratchet wheels and operated in response to the yielding of said second yieldable means for engaging said ratchet wheels and locking said reels against further rotation in the reel unwind direction, said lock dogs by respectively locking a respective one of said ratchet wheels and associated reel providing an exceedingly rugged and reliable lock for said reels in use.

3,189,297
PNEUMATIC TUBE CONVEYER SYSTEM
Clarence D. Ellithorpe, Hamilton, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed June 1, 1962, Ser. No. 199,379
9 Claims. (Cl. 243—19)



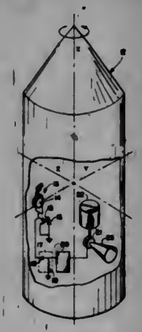
1. A pneumatic conveyer system for moving articles between plural stations, said system comprising a conveyer tube extending between said plural stations, a carrier movable through said conveyer tube between said stations in response to airflow in the tube, a door mounted upon said carrier, a pair of hinge means attached to two opposite ends of said door, a pair of lock means mounted upon said carrier and engageable with said hinge means to permit said door to open about either of said pair of hinge means, a pair of opening means each of which is operable to selectively actuate one of said lock means so as to cause said door to open about one of said hinge means, and means at each of said stations to render operable only one of said pair of opening means.

3,189,298
CONTROL APPARATUS FOR SPACECRAFT
Arthur G. Buckingham, Baltimore, Thomas P. Haney, Sykesville, John W. Knight, Baltimore, and David W. Roese, Catonsville, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 6, 1962, Ser. No. 214,884
7 Claims. (Cl. 244—1)



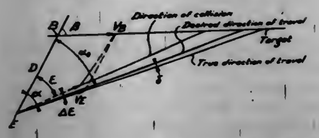
1. In control apparatus of a space vehicle operative with input orientation information, the combination of: field measuring means providing field signals proportional to the earth's magnetic field at the vehicle; momentum means for providing momentum signals proportional to the momentum of the vehicle in response to said input information; multiplying means to provide product signals of said momentum signals and said field signal generators; and conversion means to provide control signals to effect control of the vehicle in response to said product signals.

3,189,299
DYNAMIC PRECESSION DAMPER FOR SPIN STABILIZED VEHICLES
Howell D. Garner, Newport News, and Henry J. E. Reid, Jr., Yorktown, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 27, 1963, Ser. No. 305,020
12 Claims. (Cl. 244—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A dynamic precession damper for a spin stabilized vehicle comprising: means attached to said vehicle for producing a signal related to an angular movement of said vehicle about an axis in a plane perpendicular to the spin axis of said vehicle; and a torque producing means energized by said first means for producing a torque about an axis contained in said plane whereby said angular movement is decreased.

3,189,300
SYSTEM FOR THE SELF-GUIDANCE OF A MISSILE TO A MOVING TARGET
André Charles Robert, Paris, France, assignor to Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France
Filed Mar. 23, 1960, Ser. No. 17,084
Claims priority, application France, Mar. 31, 1959, 790,732, Patent 1,265,834
8 Claims. (Cl. 244—14)

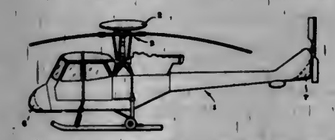


1. A system for the self-guidance of a missile equipped with flight control-surfaces to a moving target comprising, in combination on the missile, means for angularly detecting and spotting the target with respect to the missile axis in order to continuously give the value of the instantaneous true bearing angle α_t with respect to said axis, means for analog calculation connected to said detecting and spotting means for receiving therefrom said value of the instantaneous true bearing angle to determine from said value and from that of an initial desired bearing angle b an instantaneous desired bearing angle α_{0t} fulfilling the relation:

$$a\int_0^t \delta dt - \delta + \alpha_t = b$$

where a is a constant representing the transfer constant of the calculation means, α_t is the instantaneous true bearing angle, and δ is the angular difference $(\alpha_t - \alpha_{0t})$ between the instantaneous true and desired bearing angles, and a piloting means connected to said calculation means which transmits to it an order related to the value of said angular difference δ and connected to the missile control-surfaces for deflecting said surfaces through an angle proportional to the value of said angular difference δ.

3,189,301
FLOTATION DEVICE FOR HELICOPTER
Arthur Parkes, Yeovil, England, assignor to Westland Aircraft Limited, Yeovil, England
Filed Feb. 20, 1964, Ser. No. 346,324
Claims priority, application Great Britain, Mar. 8, 1963, 9,199/63
3 Claims. (Cl. 244—17.17)



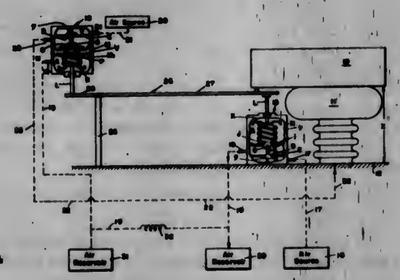
1. In combination, a helicopter having at least one main rotor with a normal vertical center plane of the helicopter extending vertically through the center of the helicopter in the normal position thereof, means for supporting the helicopter floating on the side thereof with the normal vertical plane substantially parallel to the surface of the water, said means including first flotation apparatus mounted above the center of gravity of the helicopter in the normal position of the helicopter, said first flotation apparatus being symmetrical about the vertical center plane.

3,189,302
TORQUE-COMPENSATION APPARATUS FOR HELICOPTERS
Emanuel A. Bullinger, P.O. Box 352, Etna, Calif.
Filed Sept. 23, 1963, Ser. No. 310,753
4 Claims. (Cl. 244—17.21)



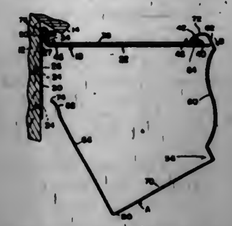
1. Torque-compensation apparatus for a helicopter having an engine and a main rotary wing and a tail rotor drivingly connected thereto which apparatus comprises fluid delivery means terminating laterally in the tail portion of the helicopter to provide a torque arranged to compensate for the torque generated by rotation of the main rotary wing, normally-closed clutch means in the drive connection between the engine and the tail rotor for controlling operation of the tail rotor only, and means for simultaneously opening said clutch to deenergize the tail rotor and for energizing said fluid delivery means.

3,189,303
PNEUMATIC SYSTEM FOR MACHINERY SUPPORT
Willis A. Boothe, Scotia, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 6, 1963, Ser. No. 307,272
9 Claims. (Cl. 248—22)



1. A pneumatic system for machinery which generates vibration comprising
(a) a pneumatic expansible container supporting the machinery under vibrational movements of the machinery,
(b) a first normally closed valve which is adjusted to open position in accordance with the vibrational movement of the machinery,
(c) a first pneumatic source for supplying a first fluid stream to said first valve,
(d) a second normally closed valve,
(e) conduit means providing communication between the first and second valves,
(f) means for adjusting said second valve to open position,
(g) a second pneumatic source for supplying a second fluid stream to said second valve, and
(h) said second valve communicating with said expansible container whereby fluid from said first and second streams is effective to minimize the vibrational movement of the container.

3,189,304
GUTTER HANGER
Louis M. Vranyosovics, 5982 McGuire, Taylor, Mich.
Filed Dec. 26, 1961, Ser. No. 162,627
5 Claims. (Cl. 248—48.2)



1. A one-piece support and hanger for gutters and the like comprising: an elongated substantially straight mounting leg; a mounting aperture in said leg; an arm having an inverted substantially U-shaped portion connected at its opposite ends to adjacent portions of said leg and arm respectively; said U-shaped portion providing a relatively narrow, substantially vertical, downwardly opening, slot-like space between said leg and said arm; the back wall of said U-shaped portion having a relatively small protrusion forming a detent extending forwardly towards the front wall thereof and spaced therefrom; and an integral rearwardly turned lip on the forward extremity of said arm for interlocking engagement with the forwardly turned flange provided on the front wall of a gutter to form a first connection therebetween; the raised forwardly extending upper edge of the back wall of a gutter being insertable into the aforesaid space by snap-action upon completion of the first connection to partially fill the space defined by said U-shaped portion; said detent being engageable with the back side of the back wall of a gutter for urging the front side thereof into friction locking engagement with the opposite front wall of said U-shaped portion to form a second connection therebetween; said first and second connections being the sole connections provided between a gutter and hanger; said arm constituting a rigid brace for a gutter, with the end portions of said arm engaging the front and back walls of a gutter to hold the walls in a predetermined spaced relationship.

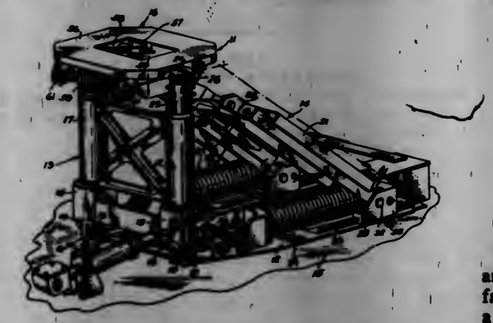
3,189,305
SILO BRACKET FOR ATTACHING FILLING CHUTES
Laverne H. Willenborg, Dyersville, Iowa
Filed Feb. 5, 1962, Ser. No. 171,088
3 Claims. (Cl. 248—74)



1. A removable bracket for attaching a filling chute to the top of a silo comprising
(A) an adjustable clamp having
(1) a long leg for disposition exteriorly of a silo,
(2) a short leg for disposition within a silo,
(3) said short leg being movable relative to said long leg,
(4) means for securing said legs in adjusted position,

(B) a pair of outwardly diverging angle members mounted on said long leg,
(1) braces connecting the outer ends of said angle members and said long leg,
(C) a chute receiving strap disposed between the outer ends of said angle members and being
(1) pivotally connected thereto,
(2) constructed of shock absorbent material,
(D) a chain carried by one of said angle members and adapted to extend around a chute,
(1) hook means on the other of said angle members for securing said chain,
(E) an arcuate brace connecting said angle members intermediate the ends thereof and having
(1) a lower central portion,
(2) a ring about said central portion, and
(3) a pulley connected to said ring
whereby said bracket can be clamped to the upper edge of said silo and utilized to raise the filling chute into position and thereafter to secure said chute to a silo.

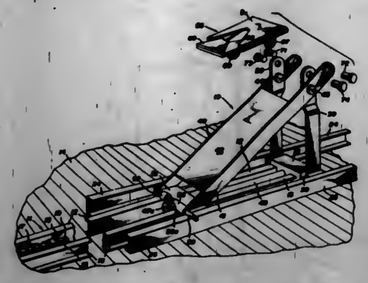
3,189,306
FIFTH WHEEL STAND ELEVATING MECHANISM
Willis H. Knippel, Palos Park, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,924
7 Claims. (Cl. 248—119)



1. In a trailer supporting stanchion mounted on a railway car for movement between a retracted position and an elevated trailer supporting position and including a support structure carrying a support plate assembly for supporting the trailer and hitching the latter to a railway car the improvement comprising, a stanchion lifting device comprising a screw drive means connected at one end to said support structure for raising and lowering said stanchion to said retracted and elevated positions, a power input means connected to said other end of said screw drive means, and means mounting said screw drive means on said car, and resilient means disposed between said screw drive means and said mounting means to yieldably support said screw drive means and provide a force opposing the forces exerted on said screw drive means by said stanchion.

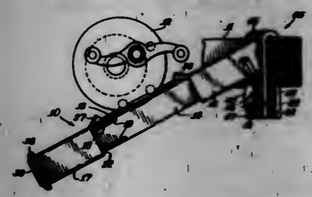
3,189,307
COLLAPSIBLE FIFTH WHEEL STAND ASSEMBLIES
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 10, 1963, Ser. No. 294,042
18 Claims. (Cl. 248—119)

1. A collapsible stand for a fifth wheel comprising, a king-pin engaging member including two, opposed, relatively movable parts slidable with each other for locking engagement with a king-pin upon movement of the parts toward each other, a frame assembly including two vertically collapsible arm means pivotally attached to each other intermediate their ends and having their upper ends pivotally mounting said movable parts, respectively,



and actuator means for erecting the arm means whereby upon erection of the latter said parts are moved toward each other for locking engagement with a king-pin.

3,189,308
FISHING REEL DISPLAYER
Edward E. Schaefer, 1534 Park Ave., River Forest, Ill.
Filed July 9, 1962, Ser. No. 208,266
6 Claims. (Cl. 248—214)

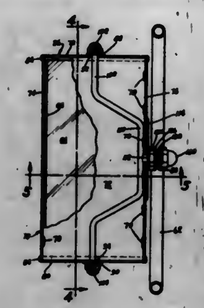


1. A displayer for fishing reels, or the like, comprising an elongated support having at least one longitudinal side face and an end face inclined with respect to said side face, a pair of relatively shiftable members carried by said support, said shiftable members having clamping means adapted to engage and retain the base plate of a fishing reel therebetween, and connecting means at one end of said support for adjustably securing the latter in a selected one of a plurality of angular positions to a display surface, said inclined end face coacting with said connecting means so that support extends obliquely with respect to said connecting means.

3,189,309
REAR VIEW MIRRORS FOR VEHICLES
Albert P. Hager, Minneapolis, Minn., assignor to Re-Trac Manufacturing Corp., Minneapolis, Minn., a corporation of Minnesota
Filed July 12, 1963, Ser. No. 294,487
4 Claims. (Cl. 248—279)

1. A rear view mirror for a vehicle comprising in combination, a support tube affixed to said vehicle, said tube including a vertically disposed portion, a mirror head including a casing, a mirror glass mounted within said casing, a reinforcing member extending vertically through said casing between the upper and lower ends thereof for exerting an inward force upon the upper and lower ends of said casing, a portion of said reinforcing member extending to one side of said casing intermediate the top and bottom thereof, a first pivot member positioned in a horizontal plane and extending from said portion of said reinforcing member out of said casing, said first pivot being rigidly connected to said reinforcing member and

a second pivot member mounted upon said support tube and connected to said first pivot member, said first pivot member being adapted to allow the casing to pivot about



a horizontal axis and said second pivot member being adapted to allow the casing to pivot about a vertical axis upon said support tube.

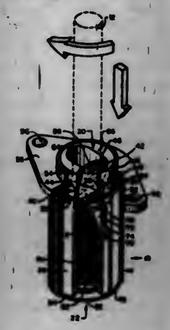
3,189,310
CHRISTMAS OUTSIDE LIGHT HOLDER
Joseph Trueson, 1846 Haring St., Brooklyn 29, N.Y.
Filed May 18, 1962, Ser. No. 195,893
1 Claim. (Cl. 248—314)



For use with an electric light-bulb socket having wires extending from each side thereof; a one-piece plastic holder having a substantially thick cylindrical wall, a base integral with said wall and forming a closure at one terminal end thereof, the other end of said wall being open, said cylindrical wall having its inside wall surface tapering outwardly from said base to said open end, whereby said inside wall surface of said cylindrical wall at its base end will be of a diameter greater than the diameter thereof at said open end and said cylindrical wall will correspondingly be of a less thickness at its base end than at its open end, a pair of like diametrically opposed rectilinear slots of uniform width formed in said cylindrical wall extending longitudinally thereof from said open end to a point adjacent said base, such that upon insertion of said socket into said holder, the outer end portions of said cylindrical wall will firmly grip said socket in a friction-tight fit by virtue of said cylinder wall thickness and with each slot receiving an associated wire, and a fastener receiving opening provided centrally in said base.

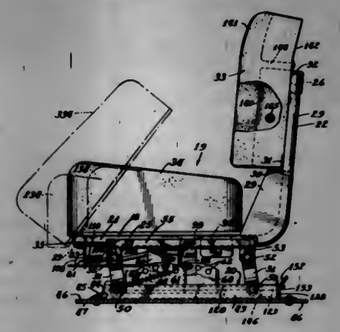
3,189,311
OMNI-DIRECTIONAL LOAD TRANSFERRING RECEPTACLE DEVICE
Jeff F. Hutchison, Fort Worth, Tex., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 17, 1963 Ser. No. 331,288
7 Claims. (Cl. 248—361)

1. A flush-mounting, self-aligning, omni-directional load transferring receptacle comprising:
(A) a hollow body member having an end portion defining first omni-directional load transmitting means;
(B) a hollow retainer member having means integral therewith for bearing cooperation with said body member load transmitting means,
said retainer member also having means cooperative with said bearing means operative to retain a load imposing means and to transfer forces



from the load imposing means to said retainer member; and
(C) means cooperative with said retainer member operative to transfer said retainer member force to a structural element.

3,189,312
ADJUSTABLE VEHICLE SEAT
Raymond A. Bilancia, Arlington Heights, Ill., assignor to Coach and Car Equipment Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 25, 1963, Ser. No. 275,700
5 Claims. (Cl. 248—394)



1. In a seat:
a base portion;
seat frame means located above said base portion;
means mounting said seat frame means for movement, relative to the base portion, along a horizontally extending, vertically arcuate path;
means normally urging the seat frame means along said path;
a rod;
means mounting said rod to said seat frame means in a horizontal disposition for the rod and in which the rod extends transversely relative to said path;
lock means attached to the base portion and including a plurality of means for engaging one end portion of said rod;
said engaging means for the rod's one end portion being arranged in a horizontally extending, vertical arc corresponding to said path of movement of the seat frame means;

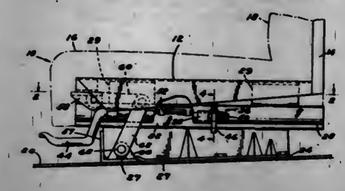
a cross member attached to the seat frame means and extending in substantially the same direction as said rod;
an elongated member extending transversely to said cross member;
means mounting said elongated member on said cross member for pivotal movement of the former about a normally vertically disposed first axis located between the ends of the elongated member;
said rod-mounting means including means pivotally mounting the other end portion of said rod, opposite said one end portion thereof, on said elongated member at a location on the latter spaced from said first pivotal axis, for movement of said rod between a first position, in which the rod's one end portion is engaged by one of the engaging means on the lock means, and a disengaged second position, and mounting said rod for movement with said seat frame means;
and spring means, on said seat frame means, normally urging said elongated member in a pivotal sense to urge said rod toward its first position.

3,189,313
TRACK SUPPORTED MOUNTING DEVICE
Stephen J. Burns, Hollywood, and Russell B. Howell, Burbank, Calif., assignors to Burns Aero Seat Company, Inc., Burbank, Calif., a corporation of California
Filed Nov. 12, 1963, Ser. No. 322,739
3 Claims. (Cl. 248—429)



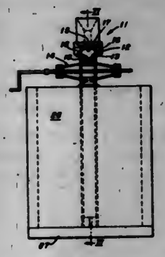
1. A track supported mounting device comprising:
an elongated supporting member extending along a support track, said track containing a channel defined by a bottom support surface and by upper flanges between which extends a slot communicating with said channel;
a pair of support shoes secured to said elongated member at spaced locations and having a lower surface supported by said bottom surface;
each of said shoes having a foot extending outwardly from each edge of said lower surface and each shoe being divided into two parts with one foot on each part;
each foot being separately insertable through said slot at spaced locations into said channel and underneath one of said flanges so that each shoe is slidably secured in said channel when said parts are moved opposite one another and secured to said support member;
and locking means for selectively engaging said bottom surface of said channel to hold said member in a selected position along said track;
said locking means comprising a pair of cam members pivotally mounted on said member and spaced apart along said channel;
the cam surface of one cam member being moved into engagement with said bottom channel surface by clockwise rotation and the cam surface of the other member being moved into engagement with said bottom channel surface by counterclockwise rotation; and
means for normally holding said cam surfaces in engagement with channel surface.

3,189,314
VEHICLE SEAT
Joseph Pickles, Dearborn, Mich., assignor to Ferro Stamping Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 26, 1963, Ser. No. 326,109
7 Claims. (Cl. 248—429)



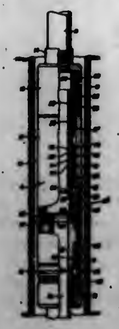
1. A seat supporting and adjusting device comprising a seat frame, a fixed support, a single elongated track located beneath said seat frame adjacent the transverse center thereof and fixedly connected to said support, a single track movably mounted on said fixed track for lengthwise movement and connected to said seat frame adjacent the transverse center thereof, a transversely extending stabilizing bar pivotally connected on opposite ends to said seat frame adjacent the front edge thereof, a pair of levers fixed to said stabilizing bar adjacent each end thereof, said levers extending rearwardly from said stabilizing bar, and a link adjacent each side of said seat frame, each link being pivotally connected to one of said levers and to said fixed support, said stabilizing bar, levers and links providing lateral stability for said seat frame so as to prevent turning of said seat frame around the longitudinal axes of said tracks.

3,189,315
TEEMING GATE WITH CONSUMABLE ANTI-SPLASH SHIELD
Ralph A. Verna, Scenery Hill, Pa.
(Box 186, R.D. 1, Daisytown, Pa.)
Filed Dec. 28, 1962, Ser. No. 248,046
1 Claim. (Cl. 249—206)



A gate for an ingot mold comprising a neck portion of refractory material, a heat destructible elongated shield portion, the neck portion and the shield portion having coaxially arranged bores therethrough with the shield portion bore larger than that of the neck portion, a cross-beam with a flange centrally positioned thereon and provided with a passage through the flange, the passage being of stepped diameter forming a ledge, the gate neck portion being nested within the flange on the ledge, the consumable shield being fastened to the flange, and means for leveling the cross-beam for positioning the consumable portion of the gate dependingly within an ingot mold, the consumable portion having spaced ribs extending from the lower end thereof for positioning the consumable gate portion relative to a mold bottom with said ribs providing passages through which molten metal is initially introduced into a mold without splashing.

3,189,316
SUBSURFACE APPARATUS FOR INDUCING FLOW OF FLUIDS IN WELL FORMATIONS
Dan C. Preston, Jr., Whittier, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed May 11, 1962, Ser. No. 193,993
18 Claims. (Cl. 251—74)



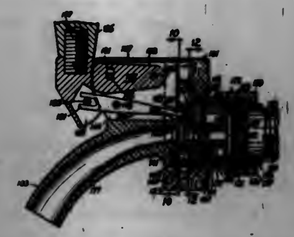
2. In a valve adapted to be disposed in a well bore on a tubular string: an outer tubular member; an inner tubular member within said outer member, said members being relatively movable and having a passage therethrough, one of said members being connectible to the tubular string; valve means sealingly mounted in said passage for controlling fluid flow through said passage including a valve seat element and a valve head element engageable with said seat element to close said passage; releasable latch means engaging one of said elements to maintain said elements coengaged; said one element being movable with respect to said members and with respect to the other of said elements; means responsive to movement of said one member by the tubular string with respect to said other member for releasing said latch means from said one element; means preventing said other of said elements from moving with said one element, following release of said latch means, to enable said elements to disengage from one another; and means for moving said one element following release of said latch means for opening said passage.

3,189,317
PNEUMATIC LEVEL CONTROL
Roland D. Beck, Anaheim, Calif., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Nov. 10, 1961, Ser. No. 151,474
11 Claims. (Cl. 251—75)



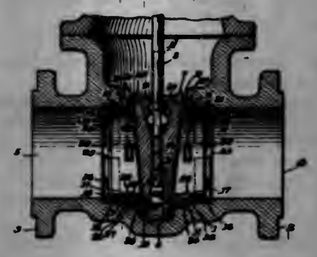
1. In a pneumatic control device, the combination comprising a casing, conduits opening into said casing for permitting a vacuum flow therethrough, diaphragm means operatively disposed in said casing, flexible valve means disposed adjacent the openings of said conduits, means interconnecting said diaphragm means and said flexible valve means for operating the same in response to operation of said diaphragm means, and channel means on said flexible valve means for channelling the vacuum flow between the openings of said conduits, said flexible valve means being flexed in response to suction of the vacuum flow whereby there is no leakage of the vacuum flow.

3,189,318
FAUCET AND VALVE STRUCTURE THEREFOR
Donald Lee Monson, Kenosha, Wis., assignor to Monson Research Company, Inc., Kenosha, Wis., a corporation of Wisconsin
Filed Apr. 24, 1962, Ser. No. 191,675
7 Claims. (Cl. 251—174)



1. A faucet comprising a hollow body having a downstream outlet and an upstream inlet, an outlet seat, a movable carrier in the body, an inlet seat located on the carrier, a hollow inlet stem connected with said carrier, a flexible diaphragm extending from said stem, means immovably sealing the margin of the flexible diaphragm to the body, a valve plate in the hollow body movable between said seats, and means carried by the body adapted to operate said valve plate.

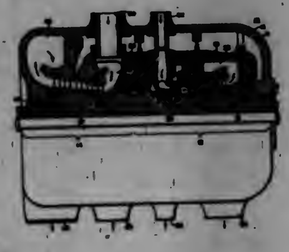
3,189,319
RENEWABLE VALVE SEAT CONSTRUCTION
Kurt B. Bredtschneider, Chicago, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 20, 1963, Ser. No. 266,690
3 Claims. (Cl. 251—328)



1. In a renewable seat ring assembly for valves or the like, the combination of a valve closure member and a valve body having a port with an outer end, an intermediate annular recess, and an inner annular shoulder portion;
a body seat ring, the said seat ring comprising first and second telescopically arranged relatively rotatable annular members, the first said annular member being received within said annular recess and being joined by interengaging means thereon to said annular member;
said body port recess substantially removed from said outer end portion of said body port;
the first one of said pair of telescopically arranged annular members comprising split ring means snugly disposed in said annual recess;
said split ring means being mounted over an end portion of the said second annular member;

the said second anular member providing the seat contact for the said closure member;
the said second of said telescoped annular members having an annular shoulder portion for engagement with said body port inner annular shoulder portion upon predetermined positioning of the second one of said telescoped members, the said engaged shoulder portions being in spaced apart relation to the said body recess and the first of said telescoped members.

3,189,320
METHOD OF COOLING TURBINE ROTORS AND DISCS
Frank A. Beldecos, Nether Providence Township, Delaware County, Pa., and Robert O. Brown, Springfield, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1963, Ser. No. 276,439
4 Claims. (Cl. 253—39.15)



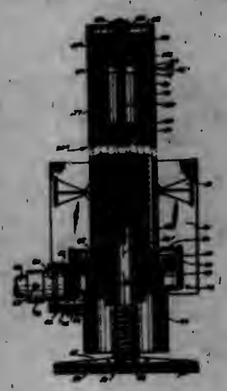
1. A cooling and sealing arrangement for a dual unit axial flow elastic fluid turbine, comprising
a first plural stage motive fluid expansion section and a second plural stage motive fluid expansion section disposed within a unitary shell structure,
wall structure interposed between said first and second expansion sections,
means for directing motive fluid to said first expansion section,
means for directing motive fluid to said second expansion section,
a rotor structure comprising a first bladed disc portion and a second bladed disc portion disposed in said first expansion section and said second expansion section, respectively,
rotor sealing means disposed between said wall and said rotor intermediate said first and second discs for restricting leakage of motive fluid along said rotor from said first expansion section to said second expansion section,
means defining a distribution space for expanded motive fluid on the downstream side of said first disc,
blade sealing means for minimizing leakage of unexpanded motive fluid on the upstream side of said first disc,
means defining a sealing space on the upstream side of said first disc and communicating with said blade sealing means, and
means for pumping expanded motive fluid from said distribution space through said first disc to said sealing space for cooling said first disc,
said rotor sealing means being in fluid communication with said sealing space and said second rotor disc and being effective to conduct at least a portion of the expanded motive fluid in said sealing space to said second rotor disc for cooling said second rotor disc.

3,189,321
NOZZLE AND ITS APPLICATIONS, ESPECIALLY FOR THE SUPPLY OF TURBINES
Georges Devillard, Bourg-la-Reine, and Léon Cerist, Paris, France, assignors to Etablissements Codeco, Vaduz, Liechtenstein, a company of Liechtenstein
Filed May 21, 1962, Ser. No. 196,291
Claims priority, application France, May 23, 1961, 862,506, Patent 1,297,810
1 Claim. (Cl. 253—78)



An elongated nozzle construction comprising two flat parallel walls, two lateral walls extending between and perpendicular to said parallel walls throughout their length, said lateral walls have opposing interior surfaces arranged symmetrically with respect to the longitudinal axis of said nozzle and each of which is generated by the displacement of a straight line which is perpendicular to said parallel walls, said interior surfaces having corresponding arcuate wall portions of constant radius and defining a convergent transonic zone, a neck and an expansion zone of small axial length, said interior surfaces having further wall portions defining a divergent supersonic expansion zone extending axially away from said first-mentioned expansion zone and followed by a transition zone, the contours of said divergent supersonic expansion zone and said transition zone being defined so that the velocity of the fluid is brought to a uniform value in a direction parallel to the longitudinal axis of the nozzle.

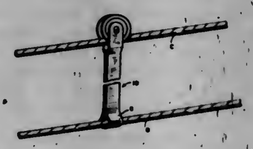
3,189,322
PERMANENT AUTO JACK
Charles G. Hadek, Oyster Bay, N.Y., assignor of one-half to George Fiszuick, Flushing, N.Y.
Filed Aug. 21, 1964, Ser. No. 391,273
13 Claims. (Cl. 254—86)



1. A jack unit for raising and lowering an end portion of a vehicle having a chassis frame, comprising a generally cylindrical casing, means for supporting said casing on one end of the chassis frame, a cylindrical hollow member extending axially upward from the casing, a pair

of axially vertical hollow shafts telescopically disposed one within the other in said member, each of said shafts being externally threaded for substantially the full length thereof and being internally threaded for only a part of its length from one end thereof, a ring gear having external teeth and an internal helical thread rotatably disposed in the casing, a miter gear rotatably carried by the casing in mesh with the teeth of said ring gear, the external thread of the outer one of said shafts being engaged with the internal thread of the ring gear, the external thread of the inner shaft being engaged with the internal thread of the outer shaft, a third externally threaded shaft axially disposed inside said inner shaft and engaged with the internal thread of said inner shaft, said third shaft having one end extending vertically outside of the casing, a horizontal base plate secured to said end of the shaft, means for turning said miter gear to extend and retract the shafts axially, a block secured at the upper end of the outer shaft, said block being internally and axially threaded, and an externally threaded rod engaged with the thread in said block, said rod having an upper end secured to said cylindrical member, said third shaft being hollow, said rod extending axially inside the third shaft when the shafts are retracted, said rod serving to guide the outer shaft to rotate and move axially when the ring gear turns around the outer shaft.

3,189,323
SELF LOCKING CLOTHES LINE HANGER
Charles J. Kliss, 179 Palisade Ave., Garfield, N.J.
Filed Aug. 21, 1962, Ser. No. 218,356
1 Claim. (Cl. 254—198)



A clothes line hanger comprising:

a generally U-shaped unitary frame having the closed end adapted to freely enclose a clothesline and the two side sections extending therefrom in side-by-side relation with a lateral spacing insufficient for passage of a clothesline after installation, said frame being resilient enough to permit lateral separation of said side sections during installation on a clothesline;

said side sections having at their free ends spaced apart portions to freely receive a clothesline with the free end of one side section having a keyhole-shaped aperture with the small end of said aperture indented toward the free end of the other side section to form a socket;

an axle having one end extending in loosely pivotal movable relation from a hole in the free end of said other side section, said axle having at its free end a narrow neck portion supporting a large ball which is small enough to pass easily through the large end, but too large to pass through the small end of said keyhole-shaped aperture, said ball being shaped to fit into said indented socket and to be held there by the resiliency of said side sections so as to inhibit escape through the large end of the aperture;

and a pulley riding in freely rotatable relation on said axle;

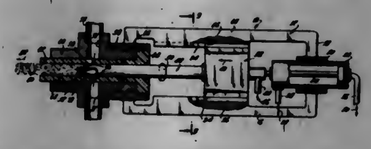
the hanger being so constructed and arranged that in use the hanger can be easily installed on an endless loop clothesline and when in place the upper and lower runs of the line are kept separated and the hanger is prevented from accidental opening.

3,189,324
KNEADING AND MIXING APPARATUS
Ernst Gubler, Nadelberg 7, Basel, Switzerland
Filed Dec. 6, 1961, Ser. No. 157,426
1 Claim. (Cl. 259—9)



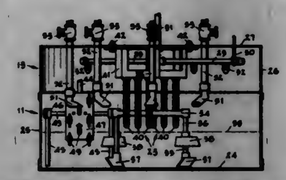
A kneading and mixing apparatus comprising a housing: tooth-like projections integral with the interior of said housing which project from said interior at regularly spaced intervals and provide kneading teeth; a rotatable worm shaft fitting into said housing the front portion of said worm shaft serving to define a mixing zone and the rear portion of said worm shaft serving as a kneading element, said worm shaft being provided along its entire length with at least three longitudinally spaced and circumferentially placed slots; at least three helical vanes having wedge-shaped faces fitted at their bottoms into each of the corresponding slots; said teeth extending into the interspaces between said helical vanes; elongated strips longitudinally mounted along the rear portion of the worm shaft which build up the cross section of said rear portion, and said elongated strips being set back from the outer edge of the wedge face of each of the helical vanes at the rear portion of said shaft, the helical vanes and kneading teeth together with said longated strips defining a greatly reduced free space between the worm shaft and housing at the rear portion of said worm shaft into which the product is drawn from the front to the rear of the mixing apparatus.

3,189,325
MIXING DEVICE
Sidney Levy, 145 W. Cuthbert Blvd., Oaklyn 6, N.J.
Filed Jan. 22, 1962, Ser. No. 167,768
5 Claims. (Cl. 259—10)



1. A mixing device comprising means defining a mixing chamber having an elongated bore, entry ports defined in said chamber, said entry ports being in fluid flow communication with said bore between the ends thereof, shaft means mounted in substantially fluid-tight relation in said bore, said shaft means extending into said bore from one end thereof and being movable to and from retracted and projected positions thereof, said shaft means having a front end defining a shear mixing means, said shear mixing means being positioned adjacent said entry ports when said shaft means is in said retracted position, said front end projecting outwardly from said other bore end and said entry ports being obstructed by said shaft means to prevent the flow of fluid therefrom when said shaft means is in said projected position, and said shaft means being mounted for rotation within said bore.

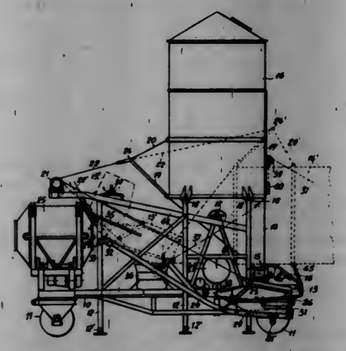
3,189,326
MIXING GLASS BATCH MATERIALS
Chester J. Brown, Jr., and Delmar E. Carney, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Apr. 15, 1963, Ser. No. 272,970
16 Claims. (Cl. 259—15)



1. In a method of preparing glass batch wherein separate batch ingredients are intermixed by first and second rotary mixing elements within a cylindrical mixing pan adapted to rotate in a horizontal plane about its longitudinal axis, the steps of admitting the batch ingredients to the mixing pan and rotating said mixing pan and first and second mixing elements to intermix the batch ingredients, repeatedly subjecting portions of said first mixing element to impact in response to its rotation to prevent accumulation of batch on said portions, and dislodging batch particles adhering to the side wall of said mixing pan by impact in response to rotation of said second mixing element.

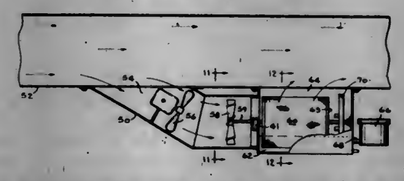
4. In apparatus for preparing glass batch, a cylindrical mixing pan for receiving separate glass batch ingredients, said mixing pan being mounted for rotation in a horizontal plane about its longitudinal axis, first and second rotary mixing elements mounted within said pan for intermixing said batch ingredients in response to rotation of said mixing pan and mixing elements, means for repeatedly striking portions of said first rotary mixing element during its rotation for preventing accumulation of batch materials thereon, and means carried by said second rotary mixing element for dislodging batch materials adhering to the side walls of the mixing pan in response to rotation of said second mixing element.

3,189,327
MOBILE BATCHING AND MIXING PLANTS
Costante Domenighetti, Piazzale Giulio Cesare 20, Milan, Italy
Filed May 16, 1961, Ser. No. 110,388
Claims priority, application Italy, June 24, 1960, 11,268/60; Patent 623,601
1 Claim. (Cl. 259—164)



A mobile batching and mixing unit for mixing components comprising frame means, wheel means connected to said frame means for moving said unit from place to place. Mixer means mounted on one end of said frame means, hopper means mounted on the other end of said frame means for storing material therein, said hopper means including a chute extending downwardly away from said mixer means, inclined track means on said frame means sloping from below said chute upwardly to said mixer means, movable container means mounted on said track means for movement back and forth to transfer material from said hopper means to said mixer means, means mounting said hopper means for vertical swinging movement about a horizontal axis such that said hopper means in an upright position has its center of mass above said axis and on the side of said axis opposite said mixer means whereby said hopper means overbalances to the side opposite said mixer means, said axis being disposed a substantial distance above the lower end of said chute, means for swinging said hopper means upwardly about said axis and towards said mixer means and into an upright operative position and for lowering said hopper means under the influence of its overbalanced weight so that said hopper means swings downwardly about said axis and away from said mixer means and into a lowered position for transportation, and means for releasably retaining said hopper means in said upright position.

3,189,328
HUMIDIFIER
Clifford Hotchkiss and Lourdes V. McCarty, Milwaukee, Wis., assignors to Controls Company of America, Schiller Park, Ill., a corporation of Delaware
Filed Jan. 23, 1961, Ser. No. 84,162
3 Claims. (Cl. 261—28)

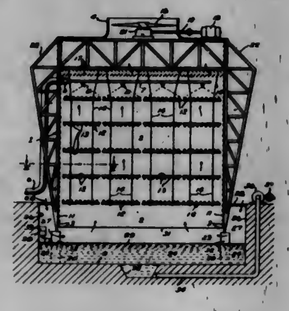


1. In combination with a heating system having a hot air duct, an auxiliary duct having an inlet and outlet in communication with said hot air duct, fan means for carrying air from said hot air duct into said auxiliary duct, evaporator means in the auxiliary duct, means connected to said evaporator means and operative to actuate said evaporator means in response to operation of said fan means, said evaporator means including a reservoir and means for carrying water from said reservoir into the path of air flowing through said auxiliary duct, bailing means for wasting water from said reservoir, means for supplying fresh water to said reservoir to replace the water removed so that the humidity of the air in the hot air duct is increased and the water in said reservoir is continuously changed during operation of said evaporator means.

3,189,329
COOLING TOWER AIR INLET FOR COLD CLIMATES
Arthur D. Smith and Arthur A. Beard, St. Catharines, Ontario, Canada, assignors, by mesne assignments, to Fluor Products Company, Santa Rosa, Calif., a corporation of California
Filed June 6, 1962, Ser. No. 200,572
1 Claim. (Cl. 261—28)

A cooling tower construction at ground level for cold climates comprising a housing including an upright casing, the casing having side walls defining a chamber, the side walls being substantially air tight; a basin disposed below the housing having a bottom wall and upwardly extending side walls, the upper edge of the basin side walls being substantially at ground level; the casing side walls having a bottom rim which describes a lower opening communi-

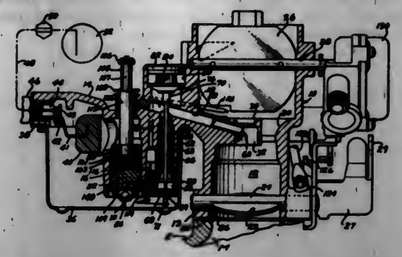
cating with the chamber; means supporting the housing whereby the bottom rim of the casing extends into the basin below ground level and spaced from the basin bottom wall to define an air passageway; the casing being dimensioned so that at least one side wall is spaced inwardly from the basin side walls to define with the basin side walls at least one peripheral air inlet substantially at ground level, the air inlet being in fluid communication with the air passageway; means for showering a relatively warm liquid downwards through the chamber, the liquid exiting through said lower opening and being collected in said basin; a fill within said chamber and comprising horizontal decks to retard the fall of liquid in the chamber; means supporting the fill whereby the lower most deck is substantially at ground level and above the level of said bottom rim; forced draft means above said fill for moving air upwards through the chamber for direct contact with



the liquid showered downward therethrough, the air in said air passageway flowing downwardly and then inwardly under said bottom rim and then horizontally across the liquid collected in said basin to warm the air for maintaining the lower most fill ice free under icing conditions; the casing having an upper rim which defines an outlet opening communicating with the chamber to exhaust air therefrom, and means for sensing the level of liquid in said basin and for withdrawing liquid therefrom thereby to control the level of the liquid in the basin to in turn control the size of said air passageway, said last named means including a float within the basin, a conduit having an entrance at the basin, and a pump and valve connected in series with said conduit, the float controlling the rate of liquid flow through said valve, and control means connected to and operating with said sensing means to vary the level maintained by said sensing means.

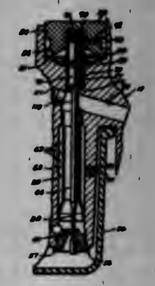
3,189,330
CARBURETOR
Ottis E. Newman, Normandy, Mo., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Nov. 29, 1962, Ser. No. 240,999
5 Claims. (Cl. 261—34)

1. A carburetor for an internal combustion engine comprising a body having a tubular mixture conduit therethrough, a fuel chamber for the storage of fuel and a fuel passage between said fuel chamber and said mixture conduit to provide for the delivery of fuel from said fuel chamber to said mixture conduit, said fuel passage including a fuel pumping chamber, pumping means movably mounted within said pumping chamber, a compressible mass of fuel absorbent material positioned within said pumping chamber to be contacted and compressed by said pumping means, and a check valve in said fuel passage between said pumping chamber and said fuel chamber, said fuel passage including a portion forming an outlet from said pumping chamber for the flow of



fuel from said pumping chamber under the action of said pumping means.

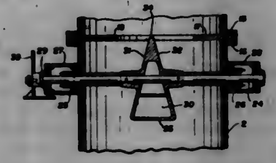
3,189,331
CARBURETOR
Jesse L. Szwargulski, Florissant, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Aug. 16, 1963, Ser. No. 302,676
3 Claims. (Cl. 261—60)



1. A carburetor for an internal combustion engine, said carburetor comprising a body formed with an air and fuel mixture conduit adapted to be connected to the intake manifold of said engine and a fuel bowl, said body including a vertical fuel passage extending between said fuel bowl and said mixture conduit, a throttle movably mounted within said mixture conduit, said fuel passage including a well having a predetermined restriction at the lower end thereof, said body formed with a cavity above said vertical fuel passage and an opening between said cavity and the top of said vertical fuel passage, an emulsion tube fixed vertically within said vertical passage, means supplying air to said emulsion tube, a metering rod extending through said emulsion tube and having one end thereof shaped with varying thickness and positioned within and for movement through said fuel passage restriction, a retainer in said opening supporting said metering rod in said well portion, a diaphragm extending across said cavity, a first spring within said cavity on said one side of said diaphragm and biasing said diaphragm toward said restriction and providing a dished configuration of said diaphragm, means sealing the peripheral edge of said diaphragm to the cavity wall with the diaphragm in said dished configuration, a duct in said body extending from said cavity on said one side of said diaphragm to said mixture conduit downstream of said throttle to connect said diaphragm to low air pressures within said engine intake manifold whereby said diaphragm may be moved against said first spring in a direction opposite to said one direction, and a second spring between said body and said retainer holding said retainer

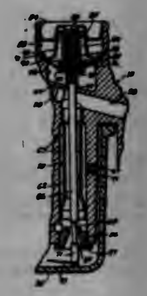
against the other side of said diaphragm whereby said metering rod is caused to follow the movements of said diaphragm.

3,189,332
VARIABLE ORIFICE GAS WASHER
Frederick H. Rehmus, Whitehall, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 2, 1962, Ser. No. 191,838
9 Claims. (Cl. 261—62)



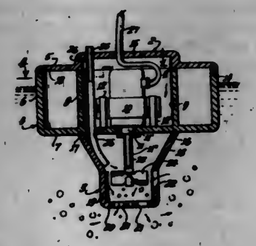
1. A gas washer comprising a duct, means for introducing dirty gas into the duct, a partition across the duct provided with a central orifice, means positioned upstream of the partition for introducing washing liquid into the duct, means connected to the duct downstream of the partition for separately collecting clean gas and dirty washing liquid, a rotatable shaft positioned transversely of the duct, means for rotating the shaft, and a cylindrical wedge fixed to the shaft adjacent the orifice and adapted to vary the orifice area as the shaft is rotated by varying the portion of the circumferential wall of the wedge adjacent the orifice.

3,189,333
CARBURETOR
Ralph E. Kalert, Jr., Granite City, Ill., and Eldon A. Johnson, Sunset Hills, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 29, 1962, Ser. No. 206,220
3 Claims. (Cl. 261—69)



1. A carburetor for an internal combustion engine, said carburetor comprising a fuel reservoir, a body formed with an air and fuel mixture conduit adapted to be connected to the intake manifold of said engine, said body including a fuel passage extending between said fuel reservoir and said mixture conduit, a throttle movably mounted within said mixture conduit, said fuel pasage including a portion having a predetermined restriction, a metering rod having one end thereof shaped with a varying thickness and positioned within and for movement through said passage restriction, a metering rod retainer fitted to the other end of said metering rod, said body formed with a cavity and an annular conical shoulder within said cavity, a generally cone-shaped diaphragm mounted across said cavity with the periphery of said diaphragm fitted to said shoulder and the central portion of the diaphragm extending toward said restriction, a sheet metal thimble-shaped retainer mounted within said cavity, said retainer having a rim portion thereof pressing the periphery of said diaphragm against said shoulder, said metering rod retainer fixed to the center of said diaphragm, a spring between the bottom of said thimble-shaped retainer and one side of said diaphragm to bias said diaphragm in one direction, said body formed with a passage extending from said cavity on said one side of said diaphragm to said mixture conduit downstream of said throttle to connect said cavity to low air pressure within said engine intake manifold whereby said diaphragm may be moved against the bias of said spring, and a sheet metal cup pressed into said cavity against the bottom of said thimble-shaped retainer and forcing the rim of said thimble-shaped retainer onto the periphery of said diaphragm to form a fuel-tight seal of said diaphragm on said shoulder.

3,189,334
AERATING DEVICE
Robert Wayne Bell, 723 N. Myers St., Burbank, Calif.
Filed Oct. 4, 1963, Ser. No. 314,064
1 Claim. (Cl. 261—93)



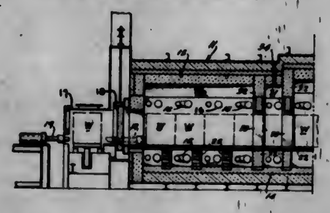
In an aerating means for a minnow bucket or like container of live fish adapted to contain water, a hollow buoyant body structure including a bottom wall and a perimetrical side wall; said bottom wall being normally disposed below the plane of the top surface of the water in said container, an electric motor mounted on said bottom wall and enclosed within said hollow body, a rotatable, bladed impeller disposed in the water beneath the bottom wall of the portion of said hollow body in which said motor is housed, a drive shaft extending from said motor through said bottom wall portion and carrying said impeller, a housing formed as a part of said hollow body and surrounding said impeller and having openings for the ingress of water and egress of water and air; the blades of said impeller providing means to produce cavitation when said impeller is rotated by said motor, an air conduit means formed through said hollow body and extending from a point thereon above the water to a point in close adjacency to the portion of the path of travel of the blades of said impeller in which cavitation is caused, a power source component comprising a battery container having battery engaging contacts and support means affording detachable mounting of said battery container on the side of a minnow bucket or other container of live fish and a manually operable switch for controlling the supply of power from battery means contained in said battery container, and flexible conductor means connecting battery means in said battery container and said switch with said motor.

3,189,335
ARCHED PACKING FOR COOLING TOWERS
Alfred L. Fuller, Santa Rosa, and Harley H. Boober, Kenwood, Calif., assignors to Fluor Corporation, Ltd., Los Angeles, Calif., a corporation of California
Filed May 28, 1962, Ser. No. 198,224
1 Claim. (Cl. 261—112)



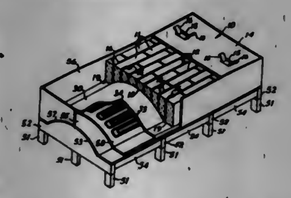
Packing adapted to be used as generally horizontally disposed grid decking in gas-liquid contacting equipment having means supplying liquid particles to fall on said decking, the packing comprising interconnected sheet-like strips extending in generally vertical planes and forming vertically open cells the sides of which present water filming surfaces, and projections extending from the strips and facing upwardly for intercepting falling liquid causing the liquid to splash against the projections and then film on said surfaces, the packing having opposite ends and a span therebetween, the packing having uppermost and lowermost faces each with a predetermined amount of upward camber along a major extent of the packing span when said packing is in said generally horizontal disposition, said packing consisting of molded plastic and being subject to increasing tendency to sag with temperature increase, the plastic packing being generally rectangular in outline with an overall length dimension between said ends which is substantially greater than the packing overall width dimension, the predetermined amount of said camber at each of said uppermost and lowermost faces being slight yet sufficient that some camber is retained when the plastic packing is solely supported at said opposite ends thereof and when said plastic packing is continuously subjected to an environmental temperature of between 100° and 120° F. while at the same time the liquid splashed and filmed by the packing is evenly distributed, the packing being free of supporting structure at its underside and between said opposite ends and the packing everywhere having substantially the same vertical thickness between said uppermost and lowermost faces, the overall length of the packing between said opposite ends being greatly in excess of said vertical thickness.

3,189,336
METALLURGICAL HEATING FURNACE
Joseph Montagino, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Nov. 15, 1962, Ser. No. 237,865
1 Claim. (Cl. 263—36)



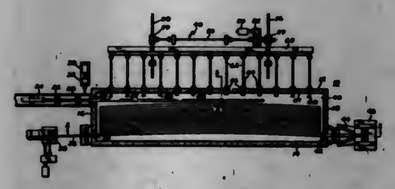
In an atmosphere furnace having side walls, a roof, and a floor defining an elongated chamber; separating means for separating said elongate chamber into a first treating compartment and a second treating compartment in longitudinal series relationship with the first treating compartment; hearth means comprising rails extending longitudinally through the chamber; a plurality of spaced apart piers located beneath the rails and extending upwardly from the floor of the chamber and disposed transversely thereof between the side walls; radiation heating means disposed within the first treating compartment; radiation heating means disposed within the second treating compartment; and atmosphere recirculating means comprising the bladed portion of a fan impeller disposed within at least one of said first and second treating compartments for rapidly recirculating the atmosphere therein, the improvement wherein the separating means comprises, in combination: a first drop arch extending downwardly from the furnace roof in the chamber at the end of the first treating compartment that is adjacent the second treatment compartment; and a second drop arch extending downwardly from the furnace roof in the chamber at the end of the second treating compartment that is adjacent the first treating compartment, said first and second drop arches being disposed above and vertically aligned with first and second piers respectively which are disposed next to each other in the plurality of piers and being substantially impervious to the flow of atmosphere gas, the first and second arches and corresponding first and second piers defining with one another a buffer compartment intermediate the first and second treating chambers, the length of the buffer compartment being short in relationship to the lengths of the first and second treating compartments.

3,189,337
AMORPHOUS SILICA REFRACTORY STRUCTURES
John W. North, Atlanta, Ga., assignor to Glasrock Products, Inc., Atlanta, Ga., a corporation of Georgia
Filed Sept. 7, 1960, Ser. No. 54,537
3 Claims. (Cl. 266—2.5)



1. A refractory structure comprising a plurality of fused silica blocks cemented together with a fused silica cement, said cement being formed initially from grains of fused silica, water and colloidal silica, said block including grains of fused silica bonded together by minute quantities of crystobolite, said block being an open cell member with a density of from .5 to .9 gm./cc., the structure being capable of withstanding temperatures of 2000° F., said blocks forming a pair of mating mold elements, and layers of cement along the mating surfaces of said blocks.

3,189,338
APPARATUS FOR CONTROLLING BUCKLE IN HEATED STEEL BILLETS
Paul E. Smith, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Jan. 26, 1962, Ser. No. 168,970
6 Claims. (Cl. 266—5)



1. Apparatus for conveying a plurality of billets through a furnace having side and end walls, said apparatus including means for successively charging one end of the furnace with billets, a reciprocating ram mechanism having a plurality of laterally spaced pusher bars of varying lengths extending into said furnace through one end wall thereof with the outermost pusher bars extending inwardly a greater distance from said end wall than the innermost pusher bars, means for imparting motion to said ram mechanism so that said pusher bars exert a force on each billet normal to its greater dimension, and push-out means acting on one end of the billet and disposed adjacent the opposite end wall of said furnace to remove individual billets from the furnace.

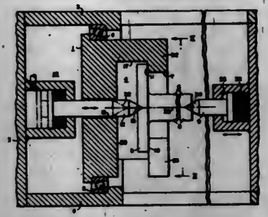
3,189,339
CLOSURE OPERATOR
Iginio Siciliano, 8420 SW. 27th St., Miami, Fla.
Filed Dec. 12, 1963, Ser. No. 330,153
4 Claims. (Cl. 268—111)



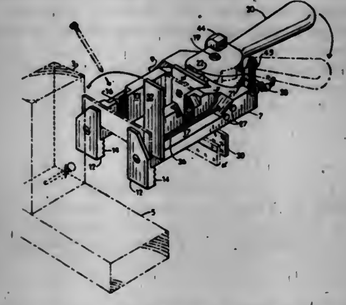
4. An operating device for windows of the jalousie type comprising, an operator bar connected to the pivotal panels of the window for opening and closing said panels, the window including a jamb on which the operating device is mounted, a face plate fixed to the jamb, a disk rotatively mounted in the face plate, a pivot pin mounted in the face plate and on which the disk is pivotally mounted, said disk having an arm pivotally connected to the operator bar, the disk having a notched edge, a spring-biased detent for selectively engaging with any one of the notches in said edge to locate the panels in any desired position, a handle including a pair of plates between which the disk is sandwiched, each of the plates having an elongated slot in which the pivot pin is located, said slots permitting a transverse movement of the plates relative to the disk, the disk having an arcuate slot provided with an offset part at one end, and a pin extending through the plates and entering said slot and caused to enter the offset part thereof upon the transverse shift of the plates permitted by the engagement of the pivot pin with the elongated slots provided in the plates.

3,189,340
WORK HOLDER APPARATUS
Frederick F. Dessel, Baltimore, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 5, 1961, Ser. No. 108,161
2 Claims. (Cl. 269—20)

1. Rotary work holder apparatus for an elongated workpiece having a flange at one end, comprising a generally cylindrical rotatable member having a cylindrical flange-accommodating cavity for disposition of the flange of the workpiece and having a circumferentially-distributed inwardly-extending radial abutment portion for engagement with a face of said flange while a projecting portion of the workpiece extends beyond said abutment portion, said generally cylindrical member having a flange-accommodating portal opening radialwise into said flange-accommodating cavity and a radial slot extending from said cavity axialwise through said abutment portion, whereby the flanged workpiece may be advanced sidewise while in an attitude parallel to the axis of said cylindrical member to a position in which the workpiece flange is disposed in the aforesaid cavity of said member adjacent to its aforesaid abutment portion and the projecting portion of the workpiece extends axially therebeyond, and a tapered pin member actuated by fluid under pressure into engagement with a central tapered recess in the flanged end of the workpiece to center such end and strongly urge the workpiece flange into contact with the abutment portion of said rotatable member.

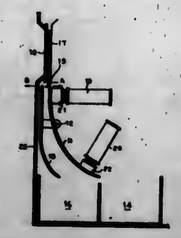


3,189,341
CARPENTER'S WOOD FRAMING TOOL
John Maurus, Macomb County, Mich. (16100 Kennedy, Roseville, Mich.)
Filed Aug. 17, 1961, Ser. No. 132,106
9 Claims. (Cl. 269—153)



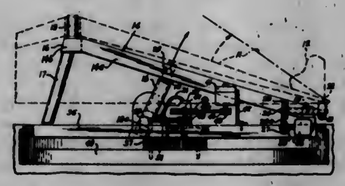
1. A carpenter's wood framing tool for toe-nailing a pair of wood-framing members at a T-joint formed by said members, said tool comprising a bifurcated frame which is closed at one end and open at the other for extending said frame across said joint when the tool is applied to said members for toe-nailing them together, one of said members passing between the bifurcations when the tool is so applied, the bifurcations disposed in a common plane so that the frame rests in the plane of junction between said members when the tool is so applied, a force-applying means fast on the free end of each bifurcation, said force-applying means extending below said one plane for individually and commonly applying a force to the other of said members on one side of said joint, a force-applying means swingable transversely of the frame across the free ends of the bifurcations, said swingable force-applying means extending above said one plane for applying a force to said one member on said one joint side, and a force-applying means at the closed end of the frame movable axially thereof toward its open end, said axially movable force-applying means extending above and below said one plane for applying a force on the opposite side of said joint simultaneously to both of said members.

3,189,342
SORTING APPARATUS
William Arthur Bocock, Coventry, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Nov. 26, 1962, Ser. No. 239,878
Claims priority, application Great Britain, Dec. 21, 1961, 45,859
5 Claims. (Cl. 271—64)



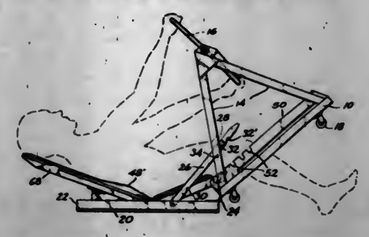
1. Card sorting apparatus comprising a mounting and deflecting arrangement having a platform on which a card can be positioned on edge, a first deflecting member which depends from the platform and is inclined so as to intersect the path of a card falling off the platform at one side, a second deflecting member which is inclined in the same general direction as the first and intersects the plane of the positioned card beneath the platform, and means operable by a viewer for effecting movement of said arrangement to cause displacement of the platform in one direction or the other transverse to said plane as required, such displacement in the direction generally opposite to that which the deflecting members incline resulting in a card positioned on the platform falling off said one side thereof and being intercepted and guided by the first deflecting member towards one stack position, whereas such displacement in the other direction results in the card falling off the other side and being intercepted and guided by the second deflecting member towards another stack position.

3,189,343
CARNIVAL RIDE
Friedrich K. Beirer, Jr., Munich, Germany, assignor to Carl J. Sedlmayr, Jr., Tampa, Fla.
Filed Apr. 5, 1962, Ser. No. 185,356
4 Claims. (Cl. 272—36)



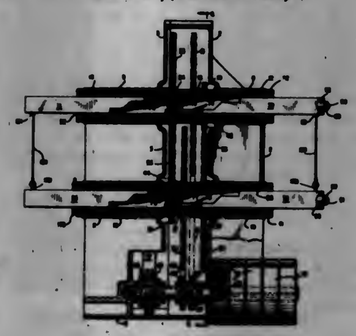
4. A carnival ride comprised of a main base, a turnable rotatably mounted on said base, means for rotating said turntable including a first motor means, a frame carried at one end by said turntable and pivotally mounted thereon at a peripheral point, a riding cone carrying passenger seats mounted for rotation on the other end of said frame, second motor means including frictional driving means engaging the rim of said riding cone for rotating said riding cone independently of the rotation of said turntable and about an axis offset relative to the axis of rotation of said turntable, and lift means for pivoting said frame and hence said cone in a vertical arc about the pivotal connection of said frame to said turntable.

3,189,344
BODY EXERCISER
Theodore S. Swarts, 1017 L St., Springfield, Oreg.
Filed July 16, 1962, Ser. No. 209,857
5 Claims. (Cl. 272—58)



1. A body exerciser comprising:
(a) a base,
(b) a frame forwardly of the base,
(c) first pivot means interconnecting the base and frame for relative pivotal movement on an axis substantially transverse of the base,
(d) an exerciser pedal mounted on the frame for rotation on an axis above and substantially parallel to the axis of the first pivot means,
(e) a seat,
(f) a back rest,
(g) second pivot means interconnecting the back rest and the rearward end of the seat for relative pivotal movement on an axis substantially parallel to the axis of the first pivot means, the interconnected seat and back rest forming a body support assembly,
(h) the body support assembly being mounted freely on the base for longitudinal movement relative thereto, and
(i) third pivot means interconnecting the seat and the frame for relative pivotal movement on an axis substantially parallel to the axis of the first pivot means.

3,189,345
WALKER AND LIFTING DEVICE
Walter M. Simpson, Evansville, Ind., assignor to Seven E Corporation, Evansville, Ind., a corporation of Indiana
Filed Oct. 2, 1962, Ser. No. 227,882
19 Claims. (Cl. 272—70.4)



1. A lifting and transporting device for incapacitated persons and the like comprising, a wheeled supporting frame, a housing mounted on said supporting frame, a pair of vertically spaced means transversely journaled in said housing for rotation, vertically spaced pairs of parallel support arms connected in opposite ends of said pair of transversely journaled means for movement therewith and extending forwardly of said housing, supporting means

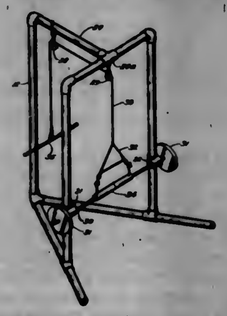
carried by and pivoted to the terminating ends of each vertically spaced pair of parallel support arms for engaging the user, gearing disposed in said housing mutually rotatively interconnecting the pair of transversely journaled means of the vertically spaced pairs of parallel support arms, and means connected with said gearing for imparting rotative lifting forces thereto to adjust the elevation of said supporting means and said support arms, whereby said gearing mutually distributes the rotative lifting forces equally between the pair of transversely journaled means and the upper and lower arms of the spaced pairs of parallel support arms.

3,189,346
JUMPING STICKS
Jose Miguez, New York, N.Y., assignor of fifty percent to Laforest S. Saulsbury, New York, N.Y.
Filed Feb. 11, 1963, Ser. No. 257,434
5 Claims. (Cl. 272—74)



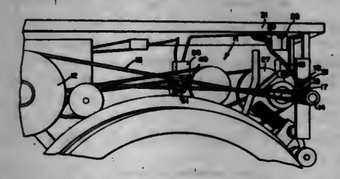
4. In a game of jumping sticks, a playing assembly comprising an elongated cylindrical member and a pair of pair of shoe clamping members at opposite ends of said cylindrical member, each of the clamping members having a flat sole plate, a pair of spaced parallel walls extending upwardly parallel to each other from opposite lateral edges of said sole plate, means at a rear end of each clamping member for engaging at the rear of a player's shoe, a pocket near the forward end of each clamping member integral with said walls and sole plate for receiving and engaging the toe of the player's shoe, and a tube at the forward end of each clamping member extending forwardly of said pocket and engaged with an end of said cylindrical member.

3,189,347
GYMNASTIC APPARATUS
Peter William Dodge, 11 W. 74th St., New York, N.Y.
Filed Mar. 12, 1963, Ser. No. 264,668
2 Claims. (Cl. 272—81)



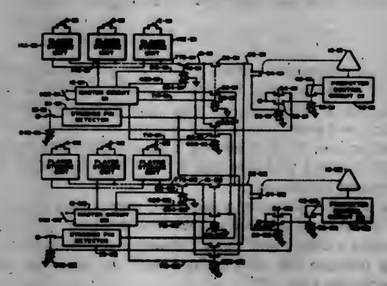
1. An exerciser comprising a pair of base bars connected together at one end, said bars being spread to form an open triangle in which a user may stand, the bottom surface of said bars being in a common plane adapted to engage a supporting surface, a pair of lateral vertical posts having their bottom ends rigidly attached respectively to a mid point on said base bars providing a space between them, said vertical posts extending substantially above the head of the user, a first upper bar comprising a cross bar rigidly connecting the tops of said vertical posts, a third vertical post having its bottom end attached to and extending up from the apex of the said triangle of a height equal to said lateral posts, a second upper bar comprising a bracing bar rigidly connecting the top of said apex post to a mid point on said cross bars, and exercising apparatus connected to at least one of the said upper bars.

3,189,348
TIMER FOR DISCONNECTING MECHANISM FOR AUTOMATIC PIN SETTERS
Richard W. Keahey, 405 Konsthoeft Ave., Campbell, Calif.
Filed Jan. 29, 1962, Ser. No. 169,346
6 Claims. (Cl. 273—43)



4. In combination, drive means, driven means, a clutch movable between engaged position driving said driven means from said drive means and disengaged position, a bowling lane having ball-actuated means moved by a ball reaching the end of said lane, a timer, means to start said timer upon every movement of said ball-actuated means, a switch having a movable first contact controlled by said timer and a stationary second contact positioned to establish electrical contact with said first contact after lapse of a predetermined time interval after start of said timer, a solenoid connected to move said clutch to disengaged position when energized, and an electrical circuit including said solenoid and switch operable to energize said solenoid when said first and second contacts are in the closed position.

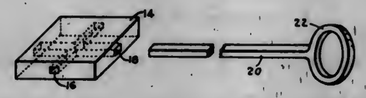
3,189,349
BOWLING ALLEY PIN-SPOTTER CONTROL
Everett K. Mentzer, Struthers, Ohio, assignor to Cleveland Trust Company, Cleveland, Ohio, as trustee
Filed Sept. 13, 1962, Ser. No. 223,479
6 Claims. (Cl. 273—54)



1. Apparatus for controlling a bowling alley pin-spotter comprising a first switch device which is closed when said pin-spotter has completed a first ball cycle preparatory to a second ball cycle, a second switch device which

is closed under the control of a bowler preparing to deliver the first ball in a frame and before that player's first ball in a frame is delivered, and circuit means completed when said first and second switch means are closed to cause said pin-spotter to cycle through a second ball cycle and come to rest preparatory to a first ball cycle.

3,189,350
MAGIC SQUARE PUZZLE
Bushrod W. Hopkins, P.O. Box 123-B, R.F.D. 1, Brookeville, Md.
Filed Aug. 15, 1960, Ser. No. 49,704
2 Claims. (Cl. 273—153)



1. For use in solving puzzles of the magic square type, a plurality of rectangular blocks, each bearing a pair of symbols on at least one face, and said pairs being dissimilar throughout the blocks, said blocks each having at least one passage of oblong cross-section extending between a pair of opposite edges of the block, at least one assembly rod of oblong cross-section adapted to mate with said passages in sliding relationship, and a rectangular tray with vertical, marginal walls to receive the assembled blocks, said walls having notches to accommodate the assembly rod.

3,189,351
RECORD PLAYER WITH STYLUS CLEANING MEANS
Richard A. Hathaway, Des Plaines, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 19, 1962, Ser. No. 167,251
3 Claims. (Cl. 274—1)



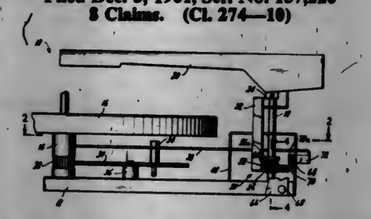
1. In an automatic record player for playing a record disc of a predetermined maximum radius having a tone arm bearing a stylus at one end and movable along a predetermined path from a rest position to a record tracking position and further having a record changing mechanism for moving said arm and stylus along said path, the improvement comprising:

a rest post for supporting said tone arm during intervals in which said arm is in said rest position, said post having a cavity and spaced to define a limiting tracking position for said stylus which is less than said maximum radius;

a stylus cleaning brush supported in said cavity for movement between a rest position and a second position in which said brush is disposed in the path of movement of said stylus;

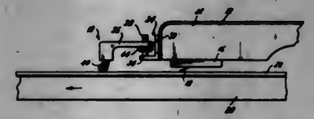
and actuating means coupled to said record changing mechanism for displacing said brush from said rest position to said second position in timed relation to the movement of said stylus along said path.

3,189,352
ANTI-SKATE DEVICE
Frank T. Scalera, Maplewood, N.J., assignor, by mesne assignments, to General Electric Company, a corporation of New York
Filed Dec. 5, 1961, Ser. No. 157,226
8 Claims. (Cl. 274—10)



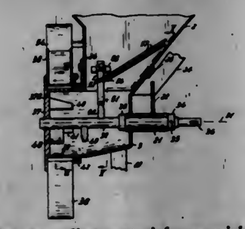
1. In an automatic phonograph changer having a chassis and a turntable supported thereon, a tone arm, means including a shaft extending vertically from said chassis to mount said tone arm for horizontal movement about a vertical axis, automatic record changing means supported upon said chassis for depositing individual records on said turntable and for placing the outer end of said tone arm onto the outer edge of each record after it is placed on said turntable, an anti-skate device for preventing said tone arm from skating across a record when said tone arm is set down upon the record, said device comprising a first member frictionally secured for horizontal rotation about said vertical shaft in response to movement of said tone arm, a second member mounted on said chassis and movable into and out of engagement with said first member for selectively inhibiting rotation of said first member thereby frictionally opposing horizontal movement of said tone arm about said vertical shaft, and anti-skate activating means connected to and operable from said automatic record changing means and engagebale with said second member for moving said second member into engagement with said first member during the portion of the changing cycle of said automatic phonograph wherein said tone arm is lowered onto a record.

3,189,353
RECORD CLEANING DEVICE FOR MOUNTING ON A RECORD CHANGER TONE ARM
Joseph F. Grado, 641 46th St., Brooklyn 20, N.Y.
Filed Sept. 19, 1962, Ser. No. 224,650
6 Claims. (Cl. 274—47)



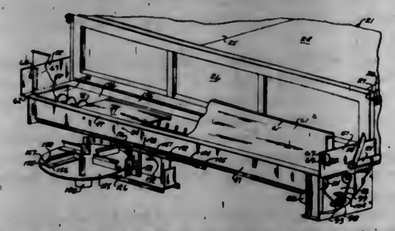
6. A record cleaning device mounted on the tone arm of a phonograph comprising a bracket for securement to the tone arm, a vertical mounting pin carried by said bracket forwardly of said tone arm, a cleaning pad carrier formed with an opening at one end sized to be loosely engaged about said mounting pin when said carrier is perpendicular to said mounting pin and to be tightly engaged about said mounting pin when said carrier is askew to said mounting pin, a cleaning pad secured to said carrier at the opposite end thereof, and means positioning said carrier at a selected location along said mounting pin, said device being movable from a cleaning position with said cleaning pad engaging the surface of a record on the phonograph with the carrier loosely carried by the mounting pin and an inoperative position with said cleaning pad removed from a record and the carrier askew to and tightly engaged about said mounting pin.

3,189,354
DEVICES FOR SPREADING MATERIAL
Cornelis van der Lely, Zug, Switzerland, and Ary van der Lely, Maasland, Netherlands, assignors to C. N. V. van der Lely, Maasland, Netherlands, a Dutch limited company of the Netherlands
Original application Oct. 21, 1959, Ser. No. 847,845, now Patent No. 3,063,724, dated Nov. 13, 1962. Divided and this application Nov. 9, 1962, Ser. No. 236,490
3 Claims. (Cl. 275—8)



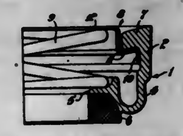
1. A device for spreading material comprising an upper container part for said material, said upper container part having an opening at its top for loading material and another opening at its bottom for discharge of material, a lower container part, said lower container part receiving the discharge opening from the bottom of said upper container part, a frame, said lower container part being fixed to said frame, a revolvable shaft and a material spreader having ejector blades mounted on one end of said shaft, said shaft extending substantially straight and horizontally through said lower container part to said spreader, a bearing being mounted to the said lower part of the container to bear said shaft, connecting means being provided on said shaft at the other of its ends to be directly connected to the power take-off of a tractor, said frame having coupling means to couple the device to the arms of a power hoist of a tractor, the lower container part having a sidewardly extending outlet mouth with at least one discharge aperture for the discharge of material therefrom to the material spreader and the axis of said mouth coinciding with the axis of said shaft.

3,189,355
TRUCK SPREADER APPARATUS
Eskil W. Swenson, Cherry Valley, and Charles B. Strang, Jr., Lindenwood, Ill., assignor to Swenson Spreader & Mfg. Co., Lindenwood, Ill., a corporation of Illinois
Filed Aug. 9, 1963, Ser. No. 301,045
15 Claims. (Cl. 275—8)



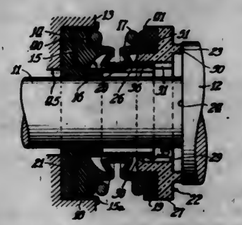
8. In combination with a truck, a truck spreader apparatus comprising, a hopper having a discharge opening at the underside thereof, means mounting the hopper on the truck, a broadcast type spreader including a spinner, means mounting said spinner below the hopper for rotation about a generally upright axis offset in a direction parallel to the front-to-rear centerline of the truck to one side of the discharge opening in the hopper whereby material from the hopper is deposited on the spinner substantially at one side of the center thereof, said mounting means for the spinner including selectively adjustable means supporting the spinner for shifting movement of the spinner axis laterally back and forth across the discharge opening in the hopper to permit shifting of the spread pattern of the broadcast spreader in a direction crosswise of the centerline of the truck, and drive means operable to rotate said spinner in all shifted positions thereof.

3,189,356
FACE SEAL
Ernest T. Jagger and Robert W. Wallace, Newcastle upon Tyne, England, assignors to George Angus & Company Limited, Newcastle upon Tyne, England
Filed Mar. 26, 1962, Ser. No. 182,544
Claims priority, application Great Britain, Apr. 20, 1961, 14,353/61
2 Claims. (Cl. 277—42)



1. A face seal comprising a moulded rubber sleeve, said sleeve having a cylindrical holding portion, an integral inward flange on said holding portion forming an acute angle with the bore thereof, a flexible cylindrical wall portion thinner than said holding portion, said wall portion extending axially from said holding portion, and an inwardly turned end portion at that end of said wall portion further from said holding portion, said inwardly turned end portion and said cylindrical wall portion defining a U-section annulus at which rolling of the sleeve can occur to vary the over-all length of said sleeve; a sealing ring mounted coaxially in said inwardly turned end portion; a retaining ring seated in said holding portion between said integral flange and said bore thereof; and a helical compression spring in said sleeve extending coaxially in compression between said sealing ring and said retaining ring and stretching said sleeve axially to a length greater than the moulded length of said sleeve.

3,189,357
ANNULAR SEAL WITH KEYED SEALING RING
John Talamonti, Chicago Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 22, 1962, Ser. No. 204,410
2 Claims. (Cl. 277—42)



1. In an annular fluid seal, a body portion of rubber-like material, a tubular member in a keyed sealing ring, said body portion having a central cylindrical portion and

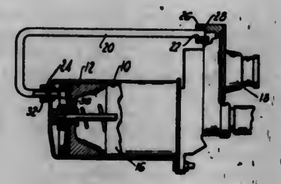
annular inner and outer diaphragm-like flanges, said inner flange and cylindrical portion contiguous with said tubular member, said keyed sealing ring having a central opening constituting the internal periphery of said ring with a plurality of spaced slots in said internal periphery, the internal periphery of said ring having an axially forwardly facing shoulder portion co-terminus with each slot and at least one groove in the periphery of said ring angularly spaced from said shoulder portion that extends through the length of said internal periphery, said tubular member situated within said central opening of said ring, first enlargements on said tubular member sliding in said grooves to key said ring and said tubular member against relative rotative movement, and second nipple-like extensions on said tubular member of a dimension sufficient to allow said tubular member to snap into locking engagement with said sealing ring, said nipple-like extensions abutting said shoulder portion of said slots in said ring to limit relative axial movement of said ring and tubular member in one direction.

3,189,358

MEANS TO SEAL A MOVABLE TUBULAR MEMBER

John W. Blair, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Original application July 21, 1958, Ser. No. 749,992, now Patent No. 3,059,330, dated Oct. 23, 1963. Divided and this application Feb. 7, 1962, Ser. No. 171,723
1 Claim. (Cl. 277—58)



For two members having generally parallel, spaced apart openings in each, a means to provide fluid communication between said openings, said means comprising:

a U shaped tubular member having end portions one of which is flared outwardly, which member's end portions extend into the respective openings;

an annular grommet placed over said tubular member adjacent and behind the end that is flared outwardly, said annular grommet being sized to affix the tubular member in the opening in one of said members with the diameter of the tubular member being of a size to expand said grommet outwardly to engage the member evenly around said opening; and

a sliding seal in the other of said openings in the other member to sealingly and slidably connect said tubular member to said other member so that relative displacement between said members is allowed while permitting continued, sealed, fluid communication.

3,189,359

SEALING RING WITH CORNER LIP

Robert W. Haberkorn, Minneapolis, Minn., assignor to Minnesota Rubber Company, Minneapolis, Minn., a corporation of Minnesota

Filed Dec. 14, 1961, Ser. No. 159,232
14 Claims. (Cl. 277—205)

1. A fluid seal comprising,

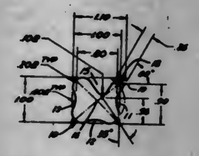
(a) a pair of contiguous surfaces, one of said surfaces having an annular sealing groove formed therein opposite to and facing the other of said surfaces and adapted to receive a sealing ring therein,

(b) fluid under pressure disposed between said surfaces with the pressure applied in a predetermined direction across said groove,

(c) and a pressure actuated sealing ring disposed within said groove and effecting a seal between said surfaces,

(d) said sealing ring being comprised of a continuously formed ring-like member made of a resilient flowable material such as rubber throughout and adapted to be fitted into said sealing groove,

(e) said sealing ring in its free form having a substantially rectangular cross-sectional configuration throughout its continuous extent and having a convexly shaped lobe at three of its corners between adjacent sides



(f) said sealing ring when considered cross-sectionally having a concavity formed in each of its sides, one of said concavities being substantially deeper than the others and defining with an adjacent side an annular sealing lip extending away from the remaining two sides of said member,

(g) two of said convexly shaped corner lobes of said ring being disposed in the bottom of said groove and said sealing lip extending outwardly from the groove and bearing against the surface disposed opposite said groove to effect a seal between said surfaces.

3,189,360

SEALING DEVICE

Robert W. Haberkorn, Minneapolis, Minn., assignor to Minnesota Rubber Company, Minneapolis, Minn., a corporation of Minnesota

Filed May 10, 1963, Ser. No. 279,487
9 Claims. (Cl. 277—205)



1. A fluid seal comprising:

(a) A pair of conttiguous surfaces, one of said surfaces having an annular sealing groove formed therein opposite to and facing the other of said surfaces and adapted to receive a sealing ring therein,

(b) fluid under pressure disposed between said surfaces with the pressure applied in a predetermined direction across said groove,

(c) and a pressure actuated sealing ring disposed within said groove and effecting a seal between said surfaces,

(d) said sealing ring being comprised of a continuously formed ring-like member made of a resilient flowable material such as rubber throughout and adapted to be fitting into said sealing groove,

(e) said ring in its free form being generally rectangular in cross-sectional configuration and having a convexly shaped lobe at three of its corners between adjacent sides,

(f) said sealing ring when considered cross-sectionally having a deep concavity formed in one of its sides substantially deeper than the concavities formed in the remaining sides by the convexly shaped lobes and having an immediately adjacent straight side defining therewith an annular sealing lip extending away from the remaining two sides of said member,

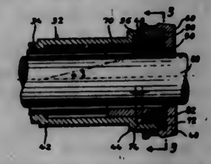
(g) two of said convexly shaped corner lobes of said ring being disposed in the bottom of said groove and said sealing lip extending outwardly and bearing against the surface disposed opposite said groove to effect a seal between said surfaces.

3,189,361

CHUCK

Hermann Walker, Esslingen-Waldenbrenn, Germany, assignor to Index-Werke K.G. Hahn & Tessky, Esslingen (Neckar), Germany

Filed May 8, 1963, Ser. No. 278,830
Claims priority, application Germany, May 11, 1962, J 21,755
10 Claims. (Cl. 279—4)



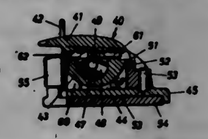
7. In a machine tool, in combination, a support; a hollow drive shaft mounted in said support for rotation about an axis and having at one end a casing means having a central opening in the region of said axis; a plurality of clamping means angularly spaced about said axis and guided in said casing means for movement in radial direction and non-movable in axial direction, each clamping means having first guide means; at least one control means located between said clamping means and mounted in said casing means for movement in axial direction and non-movable in radial direction, said control means having second guide means engaging said first guide means, and at least one guide means of engaging pairs of first and second guide means being slanted relative to said axis; and operating means including a tubular operating member guided in said hollow drive shaft for axial movement and having one end operatively connected with said control means, and hydraulic motor means cooperating with the other end of the tubular operating member for moving the same and said control means in axial direction to cause radial movement of said clamping means for clamping and releasing an elongated workpiece fed through the interior of said tubular operating member and having an end projecting out of said central opening.

3,189,362

SAFETY SKI-BINDING

Paul Weberling, Munich, Germany (% E. Adam, Dandlerstrasse 10, Munich-Obermenzing, Germany)

Filed June 13, 1963, Ser. No. 287,650
12 Claims. (Cl. 280—11.35)



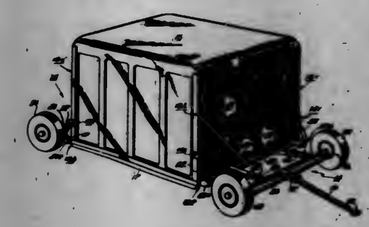
1. In a safety ski-binding comprising a toe lug iron unit and a heel lug iron unit, said units being adapted to grip the sole toe portion and the sole heel portion respectively of the skier's boot, the improvement comprising a spring for biasing the toe unit against the boot sole in the closed binding, a lever for drawing the toe unit forwardly against the bias of said spring for opening the binding, link means connecting said spring and said lever, said heel lug iron unit comprising a base plate, a pair of upwardly extending side members fixedly secured to said plate, a crosspin mounted transversely in said side members, said heel lug unit further comprising a displaceable member having a crossbore, a bush received in said crossbore, said bush having a radial bore to receive said crosspin slidable therein, the heel lug iron being mounted on said crosspin to be forwardly slidable and upwardly swivelable, said displaceable member having a rearwardly extending abutment face portion, a stop mounted on said base plate in abutment with said face portion, the heel lug iron in the closed binding being prevented from swiveling by said abutment face portion and said stop, whereby the torque exerted on the heel lug iron unit in the case of a forward plunge of the skier gives origin to a forward component of force which moves the heel lug iron away from said stop against the pressure of the spring in the toe lug iron unit and permits same to swivel upwardly while releasing the boot from the binding.

3,189,363

MOBILITY ADAPTERS

Michel A. Pierrat, Andover, Mass., assignor to Proctec Co., Inc., North Reading, Mass., a corporation of Massachusetts

Filed Nov. 8, 1963, Ser. No. 322,406
19 Claims. (Cl. 280—35)



1. A wheeled adapter for imparting shock-isolated mobility to an end of a load, comprising elongated axle means supporting rotatable wheels at opposite ends thereof, elongated support means substantially parallel with said axle in spaced relationship thereto, at least two semi-elliptical spring units each connected to said axle means and to said support means at laterally-spaced positions and preserving said support means in said spaced relationship to said axle means, each of said units including a convex semi-elliptical spring having its opposite ends connected to said axle means and support means, respectively, and further including mechanical stop means preventing upward movement of the mid position of said spring relative to one of said support and axle means beyond a predetermined amount, and connector means on said support means for detachably connecting said support means to a load at a plurality of laterally-spaced positions.

3,189,364

AUTOMATIC FOLDUP SEAT FOR GOLF CART

Robert A. Westphal, Frankfort, Mich., assignor to Allis-Chalmers Sports Products, Inc., a corporation of Illinois

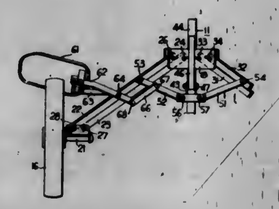
Filed Dec. 30, 1963, Ser. No. 334,289
8 Claims. (Cl. 280—36)

1. In a golf cart the combination comprising:

a central frame structure,

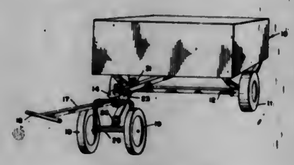
a pair of wheels disposed at opposite lateral sides of said frame structure,

a pair of wheel supporting legs having their corresponding upper ends pivotally connected to said central frame structure,
means connecting the corresponding lower ends of said legs to said wheels, respectively,
a bracing structure for said legs including
a bracket mounted on and slidable along said central frame member and
a pair of braces pivotally connected at their inner ends to said bracket and pivotally connected at laterally outward points to said legs, respectively,
a seat and
a seat supporting linkage for said seat including
a first link having one of its opposite ends supportingly connected to said seat,



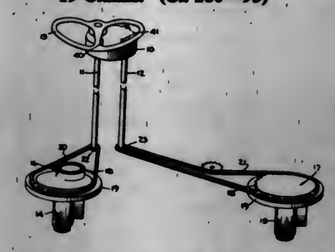
a pivot connection between said first link and one of said legs,
a second link pivotally connected at one end to the brace connected to said one leg in spaced relation to the pivot connection between said brace and said one leg and
means pivotally connecting the other end of said second link to said first link in spaced relation to the pivot connection between the latter and said one leg,
said legs and seat swinging from an extended operating position toward said central frame structure to a foldup position when said bracket is slid along said central frame structure.

3,189,365
PORTABLE HAULERS
Philip Blacher, 709 Front St., Dunellen, N.J.
Filed Aug. 20, 1963, Ser. No. 303,235
5 Claims. (Cl. 280—47.24)



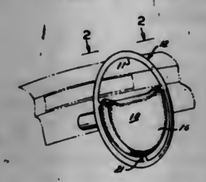
1. A portable hauler for trailers or the like comprising a handle, a pair of road wheels, axle means for said road wheels, a framework disposed between said road wheels and including a horizontal crossbar, an angle bracket pivotally connected to said crossbar, a rearward tongue pivotally connected to said angle bracket, a clamping bracket on the rearward end of said tongue for connection to the front tongue of a trailer, and a hitch mounted on said framework and adapted to be engaged by a complementary hitch on said trailer tongue.

3,189,366
STEERING MECHANISM FOR INDUSTRIAL TRUCK
Bronislaus I. Ulinski, Flossmoor, Ill., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Dec. 6, 1962, Ser. No. 242,743
19 Claims. (Cl. 280—93)



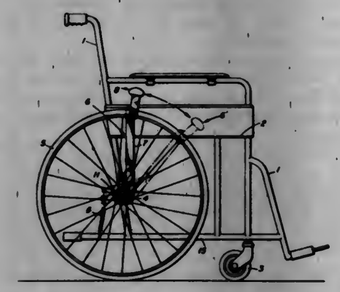
1. In a truck of the class described having a pair of support wheels mounted for steering rotation,
a pair of steering shafts connected one to each support wheel,
steering control mechanism including a pair of rotatably mounted control members,
a link pivoted at one end to one of said control members and at its other end to the other control member for interconnecting said control members, said link being pivoted to said control members at points that are so offset relatively to the axes of the control members as to effect differential angular rotation between said members,
and gear means connecting one of said control members to each steering shaft and having a gear ratio whereby each control member rotates a relatively slight degree while the corresponding shaft rotates an effective distance to steer its wheel, enabling the control mechanism to be relatively small while adapted to effect geometric steering of the support wheels through rotation of one or the other support wheel at a slightly higher speed when the wheels are steered in one or the reverse direction.

3,189,367
SAFETY CUSHION FOR VEHICLE STEERING WHEELS
Adolph C. Glass, 20146 Hart St., Canoga Park, Calif.
Filed Dec. 10, 1962, Ser. No. 243,358
7 Claims. (Cl. 280—150)



1. A vehicle safety cushion for protection of the driver against injury by the steering post and steering wheel, including the wheel rim, radial spokes, and horn ring, comprising:
a bottom wall of rigid material in engagement at its outer periphery with said horn ring and located within the confines of said rim;
said bottom wall substantially covering said horn ring and having a central, rigid steering post contacting portion;
a plurality of recesses in said wall extending from said central portion for receiving said radial wheel spokes;
a resilient cushion secured to said wall on the side of said wall opposite said wheel for engaging the chest of the vehicle driver upon impact with the driver; and
means for securing said wall and cushion to said horn ring.

3,189,368
WHEEL CHAIR DRIVER ATTACHMENT
James F. Petersen, 3301 N. 59th St., Omaha, Nebr.
Filed Dec. 23, 1963, Ser. No. 332,744
11 Claims. (Cl. 280—242)



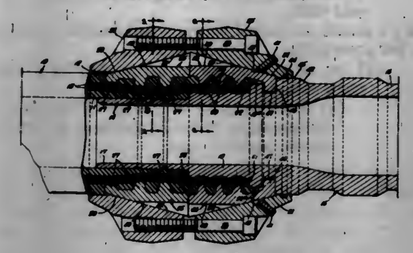
1. A wheel chair driver attachment comprising
a driving arm,
mounting means rotatably mounting said arm on the chair adjacent a wheel of the chair so that the arm extends toward the periphery of the wheel,
a handle assembly pivotally connected to said arm, said assembly including handle means to which a driving force may be applied and also including a shoe positioned adjacent the periphery of the wheel and so operably connected to said handle means that the shoe engages the periphery of the wheel to drive the chair when a driving force is applied to said handle means,
and means urging said shoe toward a disengaged position away from the periphery of said wheel.

3,189,369
FAN-FOLD BOOK
Elbert L. Walker, Jr., 4456 Clarissa Ave., Los Angeles, Calif.
Filed Apr. 4, 1963, Ser. No. 270,626
8 Claims. (Cl. 281—33)



1. A fan-fold book comprising:
(a) a core of fan-folded pages, and
(b) a cover having an intermediate flexible portion to enclose at least the opposite sides of said core and one edge thereof,
(c) the end pages of said core being connected each to an opposite inner face of the cover, and
(d) the width across two connected pages of the core being less than the distance between the end folds of said core when the same is opened out on an intermediate hinge.

3,189,370
HOSE COUPLING CONNECTION FOR WIRE REINFORCED ELASTOMERIC CABLES
Don J. Marshall, Edgewater, Md., assignor to Dixon Valve & Coupling Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 13, 1962, Ser. No. 209,520
3 Claims. (Cl. 285—27)



1. A hose coupling connection for cable lay reinforced hose, comprising in combination, a nipple having an inner cylindrical portion of large diameter to fit the reinforcement layer with the inner layer of rubber removed and an outer cylindrical portion of a smaller diameter to fit the interior of the hose with the inner layer of rubber remaining, axially spaced annular ribs and intervening annular grooves on said large diameter portion, a first set of wedge segments including a plurality of separate wedge segments evenly spaced around the hose, said wedge segments having axially relatively narrow round-ended circumferentially extending hard projections of a radial length sufficient to penetrate the outer layer of rubber and engage the hose reinforcement above said large diameter portion of the nipple and acting to force the reinforcement into the grooves, and a similar second set of wedge segments having axially relatively wider hard projections over the small diameter portion of the nipple for penetrating the outer layer of rubber less deeply than said relatively narrow projections of said first set, means for forcing said wedge segments radially inward to grip the hose, said last-mentioned means including a pair of clamping rings having opposed wedge surfaces cooperating with opposed wedge surfaces of said sets of wedge segments, axial clamp bolts for pulling said clamp rings together, said wedge segments having grooves embracing said clamp bolts when the parts are in initial position, the grooves in the wedge segments and the bolts having relative axial movement as the parts are tightened, said nipple having a reaction gaging shoulder, and a plurality of gaging screws in one of said clamp rings engageable with said gaging shoulder for holding the parts in desired initial position, said screws being disengaged and moving axially away from said shoulder after initial assembly.

3,189,371
JOINT FOR LINED PIPE SECTIONS WITH GASKET COMPRESSION LIMITING MEANS
Donald G. Swan, Pleasant Hill, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,503
3 Claims. (Cl. 285—55)

1. A gasketed joint which comprises:
(a) a pair of pipe sections joined in spaced, coaxial, end-to-end relation, each said section comprising:
(1) a rigid outer part having at its end a chamfer with a surface that inclines radially inwards in the direction away from the end, said rigid part extending essentially the full length of the section,

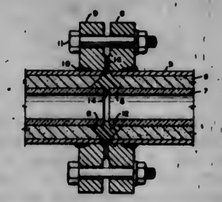
(2) a brittle internal liner bonded to said outer part and having a terminal portion extending toward the said end opposite said chamfer and having the outer surface thereof exposed in spaced relation to the inclined surface to form therewith an annular chamber, and

(3) abutments on said rigid parts substantially at said ends,

(b) a gasket positioned between said sections, said gasket comprising:

(1) an annulus of an elastomer having a radial cross section which includes:

(a) a major area of outline to fit into and substantially fill said chambers of the conjoined sections, and



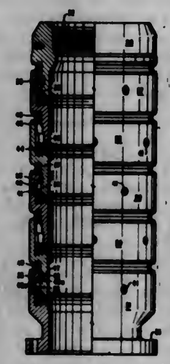
(b) a lip area extending radially inwards from said major area, and

(2) a metal spacer carried on the periphery of the annulus between said abutments to limit approach thereof,

(c) the lip formed by said lip area being situated between the ends of said liner and having a thickness relative to that of the metal spacer such that upon axially contracting the section to move the abutments into engagement with the spacer, the ends of the glass liner will first engage and then compress the lip slightly, and

(d) means for compressing said lip and parts of the annulus within said chambers and securing said abutments in clamping relation to said spacer.

3,189,372
FLEXIBLE PIPE JOINT HAVING DEFLECTION LIMITING MEANS
Glenn D. Johnson, Downey, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 24, 1962, Ser. No. 197,325
1 Claim. (Cl. 285—91)



A flexible articulated pipe joint assembly for flexibly connecting together two sections of pipe, said pipe joint assembly comprising

at least three vertically-walled tubular assembly sections having transverse end faces and movably being secured together end-to-end in normal coaxial relationship,

one end portion of each tubular assembly section having reduced internal and external diameters forming internal and external circumferential shoulders on the internal and external surfaces of said tubular assembly sections, said shoulders forming sealing surfaces against which sealing means may seal,

each of said reduced diameter portions of each tubular assembly section being of a diameter to fit telescopingly within the enlarged portion of the adjacent assembly section,

annular sealing means carried between the inner and outer shoulders and the adjacent transverse end faces of the adjacent tubular assembly section for sealing the space between each pair of sections in a fluidtight manner,

connector means carried by adjacent ends of each pair of assembly sections and adapted to be engaged to prevent separation of said pair of assembly sections, said connector means being positioned on said sections in a manner such that when engaged with one another the sealing means are in compression, while permitting limited axial deflection of the sections and compression of the sealing means,

said connector means comprising a plurality of outwardly-extending lugs carried in spaced relationship around the periphery of one end of one assembly section and a plurality of inwardly-extending lugs carried in spaced relationship around the periphery of the adjacent assembly section, said outwardly-extending lugs being movable into register with said inwardly-extending lugs upon partial rotation of one assembly section relative to the adjacent assembly section,

said outwardly-extending lugs having a lock-engaging recess formed on the outer wall thereof, said recess having a vertical dimension greater than the diameter of a locking pin to permit vertical movement of said pin in said recess, a locking pin extendible through the wall of each tubular assembly section at a point below the inwardly-extending lugs thereof, said locking pin being extendible into the bore of said tubular assembly section a distance sufficient to be positioned in the lock-engaging recess means formed on the outer wall of the outwardly-extending lugs,

deflection limiting cooperating stop means formed at a plurality of circumferentially-spaced points on the outer surface of the inner telescoping portion and the inner surface of the outer telescoping portion of adjacent surfaces of the telescoping portions of adjacent assembly sections, said stop means in one section being spaced axially from said stop means of the adjacent section to permit limited axial deflection of one section relative to another, and

means on opposite ends of the two outermost assembly sections of said pipe joint assembly for securing said assembly in axial alignment with openings of associated equipment.

3,189,373
QUICK-CONNECTION ASSEMBLY FOR METAL STRUCTURES
Roland Mignot, Saint-Amour, France, assignor to F. Fillod F.S.A.
Filed Mar. 1, 1961, Ser. No. 92,633
Claims priority, application France, June 22, 1960, 830,175
2 Claims. (Cl. 287—54)

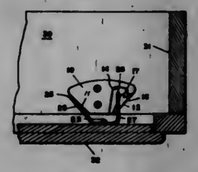
1. A joint comprising a pair of channel members each having a web and a pair of flanges, the channel members being disposed with their webs back to back with the

flanges of each channel member extending away from the other channel member, each web comprising a pair of parallel portions lying in planes spaced from each other and an inclined portion interconnecting said parallel portions, said inclined portion of both channel members having substantially the same inclination, said webs nesting with each other, a said parallel portion of each channel member having complementary nesting detent means, at least one of the interengaging surfaces of said detent



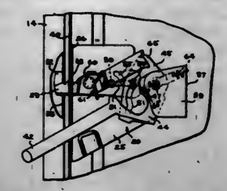
means merging with its associated said parallel portion on the same side of said detent means as said inclined portion at an acute angle of opposite inclination from said inclined portion thereby to force said inclined portions together, and a sleeve embracing the channel members and so disposed about said members as to cooperate with said interengaging surfaces of said detent means to resist lateral separation of said members occasioned by longitudinal tensile forces tending to separate said members.

3,189,374
PUSH RELEASE LATCH
Paul M. Mertes, 10603 Tujunga Canyon Blvd., Tujunga, Calif.
Filed Aug. 30, 1963, Ser. No. 305,771
4 Claims. (Cl. 292—80)



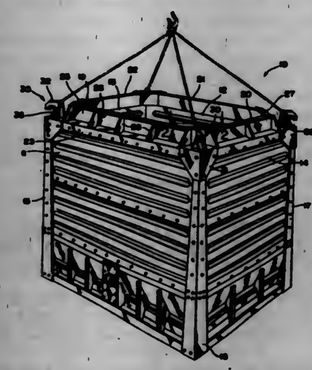
1. A latch of the kind described comprising a U-shaped spring attachable to a cabinet door with its arms on the same level and projecting inwardly from said door, a pin carried by and projecting downwardly from each of said arms, one of said pins being a latching pin and the other a door opening pin, a thick catch plate which, viewed in its operative position, has a front side portion and end edge portions which converge forwardly and join said front side portion, a groove in the upper face of said plate, said groove having an entrant portion for said latching pin leading in from the rear part of one of said end edge portions and an exit portion leading thence to said front side portion of the plate, an outer stop shoulder for said latching pin at the mouth of said entrant portion of said groove, an inner stop shoulder for said latching pin at the juncture of the entrant and exit portions of said groove, said entrant groove portion being forwardly inclined from said outer to said inner stop shoulder, and means to secure said catch plate upon the front edge portion of a cabinet shelf in a position for the door opening pin to engage the inclined end edge of said catch plate farthest from the entrant groove portion and for the latching pin under stress to engage the said outer shoulder when the door is closed, thence to travel along the entrant portion of the groove to said inner stop shoulder when pressure upon the door is released, renewed pressure upon the door causing said latching pin to override said inner stop shoulder and allow said door opening pin slightly to open the door.

3,189,375
SAFETY FEATURE FOR DOOR LATCH
Clarence Getman, Fern Creek, Ky., assignor to General Electric Company, a corporation of New York
Filed May 1, 1963, Ser. No. 277,174
6 Claims. (Cl. 292—113)



1. A latch mechanism adapted for locking a door, a door and a door frame where the door is hingedly mounted to the door frame along one edge thereof, said latch mechanism having a mounting bracket which is supported from the door frame adjacent the distal edge of the door, a latching bolt pivotally mounted on said bracket and having a hook portion on the free end thereof, the door including a keeper for mating engagement with the hook portion of the latching bolt, a handle lever pivotally mounted to the said bracket and pivotally connected to the latching bolt so that swinging action of the handle lever causes a swinging movement in the bolt, a door senser bar pivotally supported on the latching bolt, and spring means acting upon the door senser bar to cause a portion of it to overlie the hook portion of the latching bolt, the latch mechanism including a stop means so that if the handle lever is caused to move from its open position towards its closed position and the door is not in its closed position a portion of the door senser bar will normally engage the stop means and restrict the movement of the handle lever at a point intermediate its full range of travel.

3,189,376
GUSSET HOOK
Carl E. Johansson, Cleveland, Ohio, assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 8, 1963, Ser. No. 257,217
6 Claims. (Cl. 294—67)



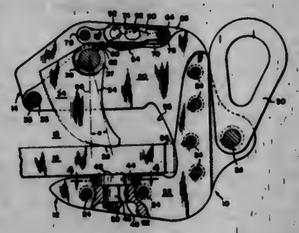
1. A gusset hook combination comprising a gusset adapted to be attached to the corner of a container,

said gusset having a horizontal surface and legs depending from two adjacent edges of said horizontal surface,

means defining a slot in said horizontal surface, said slot extending from the juncture of said two adjacent

edges of said horizontal surface along the diagonal of said horizontal surface,
a vertical plate received in said slot,
said vertical plate having a portion cut therefrom to define a hook shaped recess,
a plate having a width greater than the thickness of said vertical plate disposed in and conforming to said hook shaped recess and being secured to said vertical plate,
triangular gusset means on either side of said vertical plate and being secured to said vertical plate and said horizontal surface of said gusset.

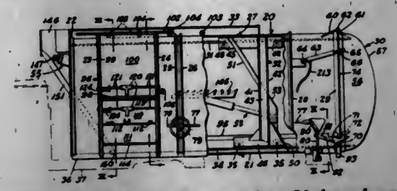
3,189,377
STEEL PLATE LIFTING CLAMPS
Edward Merrill Gardner, Flushing, N.Y., assignor to Merrill Brothers, Maspeth, N.Y., a corporation of New York
Filed May 21, 1962, Ser. No. 196,194
2 Claims. (Cl. 294—101)



1. In a clamp of the type used for lifting steel plates including a body having spaced opposed projecting jaws defining a U-shaped structure and providing a plate-receiving space between the jaws open at the projecting ends of the jaws, said space being adapted for receiving a steel plate to be lifted by the clamp, a lifting shackle for the clamp opposite said space, a gripping pad carried by one of said jaws and having a gripping surface facing the other jaw across said space, and a gripping cam having an arcuate plate gripping surface and being pivotally mounted in the other jaw with its arcuate gripping surface facing toward the gripping surface of the pad, the improvement in which said pad is slidably mounted for lengthwise movement relative to the inner face of said one jaw, the inner face of said one jaw including a recess extending lengthwise of said one jaw, said gripping pad including a head slidably located in said recess and having a serrated portion projecting from the inner face of said one jaw, said one jaw being provided with an opening extending lengthwise of the recess, and a shank on the back of the head of the pad extending into said one jaw and movable lengthwise in said opening.

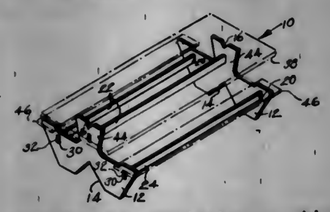
3,189,378
REAR DOOR LATCHING MEANS
Ellsworth R. Boeck, Buffalo, and Robert J. Walter, Kenmore, N.Y., assignors to Truck Equipment Co., Inc., Buffalo, N.Y.
Original application May 11, 1960, Ser. No. 28,339, now Patent No. 3,148,786, dated Sept. 15, 1964. Divided and this application Dec. 27, 1963, Ser. No. 340,841
2 Claims. (Cl. 296—56)

1. In a refuse compacting vehicle body, a longitudinally extending body shell of generally circular cross-section, a material discharging door at the rear thereof hinged to to the upper portion of said body to swing upwardly and rearwardly to open position, a pair of latch members at lower portions of said body at opposite sides thereof adapted to engage said door for latching the same in closed position, a pair of latch operating shafts for simultaneously latching and unlatching said pair of latch members, said pair of shafts lying transversely along the underside of said body to form a shallow V as viewed from the rear, each of said shafts having operating connection with one of said latch members, and means connecting said shafts for simultaneous synchronous rotative movement, said means comprising an offset bearing formation fixed to



the inner end of each shaft and a short V-shaped connecting shaft having its opposite ends rotatively and slidably engaged with said bearing formations, and operating means at one side of said body engaging an end portion of one of said shafts for simultaneously rotating the pair of shafts between latching and unlatching positions.

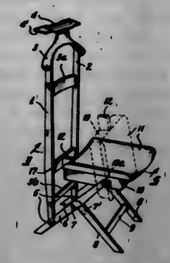
3,189,379
COMBINATION BENCH AND TABLE SET
Harvey W. Potter, Rte. 1, Box 328a, Cleveland, Liberty County, Tex.
Filed Dec. 23, 1963, Ser. No. 332,869
5 Claims. (Cl. 297—157)



1. A bench and table combination comprising: a pair of vertically disposed end members spaced from and parallel to one another; a plurality of longitudinal members spaced from one another and extending between said end members to maintain the vertical disposition and spacing thereof; means connecting said end members for maintaining said longitudinal members in compressed relation therebetween; each of said end members being provided with a bench supporting surface and a table top supporting surface; a bench slab and a table top slab extending in bridging relation between said end members and resting on the bench and the table top supporting surfaces thereof respectively; and cushioning means disposed between at least one of said slabs and its associated supporting surface.

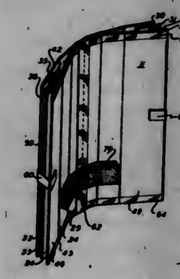
3,189,380
CLOTHES STAND WITH FOLDING SEAT
Aristide Reguitti, Via Renzana 5, Agnosine (Brescia), Italy
Filed Sept. 16, 1963, Ser. No. 309,265
3 Claims. (Cl. 297—191)

1. A clothes stand with a folding seat, comprising: a pair of forwardly inclined rear legs; a vertical standard pivotally connected at the lower end thereof to each of said rear legs; apparel support means carried by the upper end of said standard; a pair of rearwardly inclined front legs pivotally connected at the upper ends thereof to the respective rear leg; a box disposed between said rear legs and pivotally connected to said rear legs adjacent the upper ends thereof; a lid hinged to said box providing a seat; an extension rigid with said box extending outwardly from the back edge of said box; a cross-piece fixed between said standards for cooperation with said extension when said clothes stand is unfolded; and means for detachably connecting said extension to said cross-piece, the rear edge of said lid and said box being spaced for-



wardly from the front surface of said standard whereby apparel depending from said apparel support means is adapted to be received in the space between said standard and cross member and the rear edge of said lid and box.

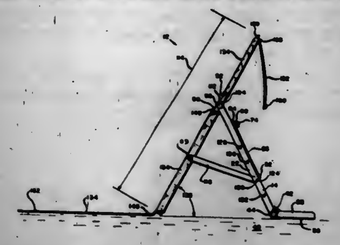
3,189,381
BACK BOARDS
William J. Heidt, 160 Gordonhurst Ave., Upper Montclair, N.J., and William M. Emery, 44 Pottsford Way, New Providence, N.J.
Filed Mar. 18, 1964, Ser. No. 352,824
1 Claim. (Cl. 297—230)



A back board to support the spine vertically while sitting and leaning there against comprising a rectangular section of corrugated board, a plurality of substantially vertical scores therein, foldings along said scores to form a structure flexible along said vertical scores, accordion folds along the vertical edges of said support to provide vertical stiffness and added thickness and resiliency in depth along said edges and means to confine said accordion folds maintaining them closely adjacent to each other.

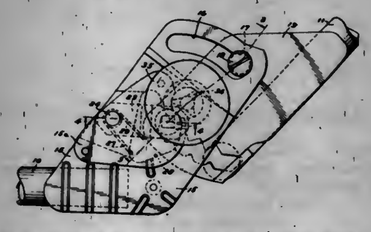
3,189,382
COLLAPSIBLE BACKREST
J. Paul Fortier, U.S. Rte. 1, Foxboro, Mass.
Filed June 4, 1963, Ser. No. 285,283
10 Claims. (Cl. 297—351)

1. In a collapsible backrest, the combination of a pair of channel members, each having two ends; an outer and inner telescoping rods in each of the channel members with the outer of each of the telescoping rods mounted to pivot at one end of the respective channel member and the telescoping rods of one channel member having no direct rigid connection with the telescoping rods of the other channel member; a flexible membrane carried by the telescoping rods to form the sole direct connection between said rods as well as the only support contact with the back of a user of said backrest; and a foldable cross bracing structure fixed to the channel members for holding the channel members distal from each other in



support position when unfolded and in substantial contact with each other when folded.

3,189,383
RECLINING SEAT CONSTRUCTION
Edmund J. Gulech, Detroit, Mich., assignor to Young Spring & Wire Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 3, 1963, Ser. No. 313,585
8 Claims. (Cl. 297—365)



1. In a reclining seat, the combination comprising
a seat base,
a seat back,
means for pivoting said back to said base for movement from generally upright position to a rearward reclining position,
means defining two rows of teeth on said base in closely spaced relation to said pivot,
an arm pivoted for swinging movement on said base,
a stop member on said arm adapted to move upwardly into engagement with said teeth,
spring means yieldingly urging said arm and, in turn, said stop member into engagement with one row of said teeth,
a knob rotatably mounted on said base,
a member rotatably mounted and adapted to be operated by rotation of said knob,
said rotatable member having a plurality of circumferentially spaced projections thereon which are successively movable downwardly upon rotation of said member to periodically swing said arm downwardly and, in turn, said stop out of engagement with a tooth in said one row of said teeth into engagement with a tooth in said other row of teeth to permit said back to be moved angularly relative to said base.

3,189,384
INVALID'S LEG REST
Jerome J. Blus, Minneapolis, Minn., assignor to Metal-Matic, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 6, 1964, Ser. No. 335,907
6 Claims. (Cl. 297—427)

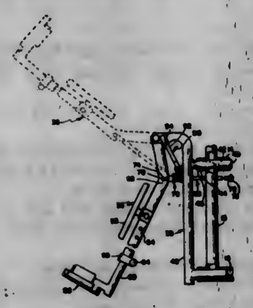
1. A leg rest for wheel chairs comprising:
(a) a support member adapted to be connected to a wheel chair;

(b) a laterally extending foot rest carried at one end of said support member;
(c) an arm connected to said support member intermediate its ends and in a spaced relation with respect to said foot rest;
(d) a pair of upstanding stud elements attached at their lower ends to said arm and in general alignment with the axis of said arm;



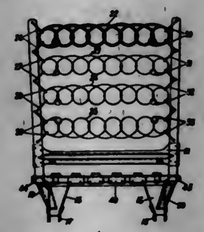
leg may be placed attached to the upper ends of said
(e) an elongated member against which a person's stud elements and extending generally perpendicularly to said arm, and
(f) a pair of tubular resilient elements between said elongated member and said arm, each of said tubular elements being in an encircling relationship with one of said stud elements.

3,189,385
LOCK ASSEMBLAGE FOR ADJUSTABLE LEG REST
Adolph C. Mommsen, Minneapolis, Minn., assignor to Metal-Matic, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 6, 1964, Ser. No. 335,908
5 Claims. (Cl. 297—429)



1. In combination with an adjustable leg rest for wheel chairs including a generally vertical first member, a second member pivotally connected at its upper end to said first member, and means carried on said second member for supporting a person's leg, a lock assemblage for said leg rest comprising:
(a) a generally horizontal rod pivotally connected at one end to said second member at a point beneath the pivotal connection of said first and second member;
(b) a lever having a horizontal U-shaped portion connected to the first member of said leg rest;
(c) a keeper affixed to the lower leg of said lever having an aperture therein through which said rod freely extends;
(d) a sleeve encircling said rod so as to permit slidable movement of said rod with respect thereto;
(e) a vertical flange affixed to one end of said sleeve;
(f) a horizontal flange affixed to the upper end of said vertical flange and overlying a portion of said rod and having a transverse slot therein through which said keeper projects; and
(g) a coil spring interposed between said keeper and said sleeve in an encircling relation with said rod for normally cocking said keeper into a tilted position with respect to said rod so as to cause gripping thereof to thereby prevent movement of said rod and second member toward said first member,
(h) whereby actuation of said lever into a position to cause said keeper to assume a more nearly perpendicular relationship with said rod will allow said rod and second member to move toward said first member.

3,189,386
MOTOR VEHICLE SEAT
Ernst Geschelde, Gross-Gerau, and Rudolf Thier, Russelsheim am Main, Germany, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,309
Claims priority, application Germany, May 31, 1961, O 6,014
5 Claims. (Cl. 297—455)



1. A vehicle seat having a rigidly-arranged back rest which comprises a back rest frame formed of two separate spars directed freely upwards and spring-steel bands stretched between said spar and consisting of wire rings lying adjacent each other in the plane of said back rest.

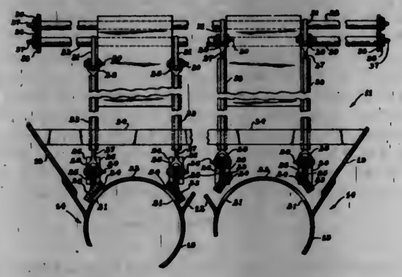
3,189,387
VEHICLE MOTION ACTUATING TILTING TRAILER BED
Joe A. Nieto, Jr., Rte. 2, Box 49, Roswell, N. Mex.
Original application Oct. 19, 1959, Ser. No. 847,187, now Patent No. 3,052,342, dated Sept. 4, 1962. Divided and this application June 14, 1962, Ser. No. 205,820
4 Claims. (Cl. 298—5)



1. A trailer comprising a mobile wheeled frame, a platform, means connecting the platform to the frame for swinging movement about a horizontal axis disposed adjacent the rear of the frame, and means mounted on the forward portion of the platform for elevating the forward end of the platform in response to forward movement of the frame, said last-mentioned means including an elongated shaft rotatably mounted on the forward portion of the platform and extending transversely thereacross, a segmental eccentric wheel fixed to one end of said shaft along one side of the platform for rotation therewith and selective engagement with the ground, said eccentric wheel

having a progressively greater radial dimension from a shorter forward end to a larger rear end, a counterweight fixed to the shaft, said counterweight being orientated so as to bias the shaft and wheel toward the forward end of the frame for initial engagement of the shorter end of the wheel with the ground, releasable latch means for preventing rotation of said shaft and maintaining the wheel out of engagement with the ground, and means for limiting rotation of said shaft, upon a release of the latch means, to one complete revolution.

3,189,388
HOPPER CAR AND HOPPER UNLOADING DEVICES THEREFOR
Jack W. Borger, Calumet City, and Frank A. Vander Linden, Chicago, Ill., and Richard J. Green, Butler, Pa., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,328
10 Claims. (Cl. 302—52)



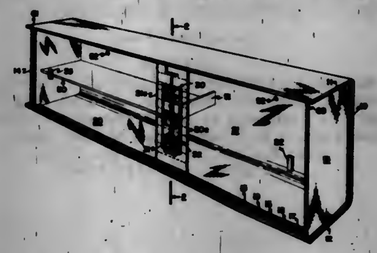
1. In a hopper car having a hopper formed with downwardly converging wall sections defining a material discharge portion, the provision of pneumatic material discharge conduit means extending through said hopper discharge portion with at least a part of said conduit means being located within said hopper discharge portion for direct contact with material therein, said part being of arcuate configuration to externally baffle the downward flow of material transversely thereof during discharge of said material, said conduit means including at least one slot-like opening longitudinally thereof in communication with the interior of said hopper to receive material for discharge from said hopper, said part being arranged to direct said material toward said opening, and mechanically reciprocable valve means in said hopper, said valve means including at least one valve member movable through material in said hopper into engagement with said conduit means to close off said opening to limit material discharge therethrough into said conduit means independent of the presence of material in said hopper, and valve member operating means extending through said hopper for access thereto externally of said hopper to move said valve member toward and away from said conduit means for total unimpeded use of said opening during discharge of material from said hopper, said operating means including valve member selective positioning means.

3,189,389
BEARING
Walter Heer, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Oct. 26, 1961, Ser. No. 147,919
Claims priority, application Switzerland, Nov. 10, 1960, 12,551/60
8 Claims. (Cl. 308—9)

1. In a bearing of a machine tool in combination a fixed bearing member; a bearing bush mounted pivotally in said fixed bearing member so as to allow angular displacement about an axis extending at right-angles to the axis of the bearing bush; a spindle mounted for rotation in said bush; said bush having end faces extending at right-angles to the spindle axis and each end face having pockets with separate pressure lubricant supply means; and said spindle being provided with shoulders co-operating with said end faces of the bearing bush so as to define a throttling gap for the discharge of the pressure lubricant from said pockets.



3,189,390
CONCEALED LOCK MEDICINE CABINET
Oliver B. Elliott, Wichita, Kans., assignor to Life Guard, Inc., Denver, Colo., a corporation of Colorado
Filed Oct. 23, 1961, Ser. No. 146,803
1 Claim. (Cl. 312—138)

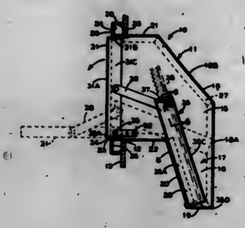


A concealed lock medicine cabinet, comprising an elongated box-like body having an open face and otherwise closed against access from the exterior of the body, each of the opposed inner surfaces of the upper and lower walls of the body having a pair of adjacent straight parallel channels disposed inwardly from the edge bordering the open face, a pair of flexible transparent panels each disposed in one opposed pair of said channels and having inner end portions disposed in lapping relation for completely closing the open face of the body and movable by flexing into a superposed position in said channels to open one portion of said face, vertical strips disposed on the facing surfaces of the lapping portions of said transparent panels for positioning the strips in side-abutting relation when the panels close the open face requiring an external pressure to be exerted on one panel transverse to its direction of movement displacing the strips from the side-abutting relation and allowing the movement of said one panel in its channel into said superposed position, and each strip having beveled edges to aid displacing the strips from side-abutting relation so as to permit sliding movement of the panel lengthwise along the other panel from the superposed position to the closed position.

3,189,391
WALL RECESSED TOOTHBRUSH HOLDER
Andrew G. Magrauth, Fox Run Road, New Canaan, Conn.
Filed Feb. 20, 1962, Ser. No. 174,482
9 Claims. (Cl. 312—206)

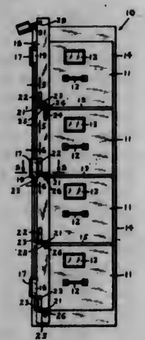
9. A toothbrush cabinet construction adapted to be recessed in an opening of an upright wall comprising an opening front housing having a well portion depending below the front opening of said housing and spaced inwardly of the upright wall, a door for closing said opening, hinge means pivotally connecting the lower portion

of said door to said housing for swinging between open and closed positions, said hinge means spacing the bottom of said door from said housing to form a vent opening to the interior of said housing in the closed position of said door, a receptacle for holding a toothbrush extending into said well within said housing in the closed posi-



tion of said door, means for connecting said receptacle to said door whereby said receptacle is rendered movable in and out of said well as said door is moved between closed and open positions, said latter means including a link having one end directly pivoted to said door and having another end directly pivoted to said receptacle.

3,189,392
SECURITY DEVICE FOR FILING CABINETS
Herman E. Mehlig, Jr., Hibernia, and Carl Torp, Brookside, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Jan. 15, 1964, Ser. No. 337,769
4 Claims. (Cl. 312—216)



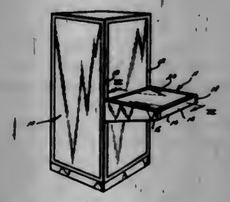
1. In a file cabinet having a back wall, and top, bottom, and side walls terminating on the forward edge of each in a rigid framework bounding the front edges of said top, bottom, and side walls, a plurality of superposed outwardly movable drawers having outer vertical faces arranged, when in closed position, to lie in substantially the same plane as the front face of said framework, means for locking said drawers in closed position comprising a rigid drawer frame member rigidly associated with said framework and interposed between the bottom of each drawer and the top of the subjacent drawer, tabs mounted on said framework between said drawers, a locking bar movably attached to the framework of a side wall and adapted on closure of said drawers to be moved into locking position against the vertical length of the face of each drawer, a latch bar movably carried by said locking bar and carrying studs adapted to lockingly engage said tabs and means for locking the locking bar and latch bar to the top and bottom of said framework.

3,189,393
DRAFTING BOARD ASSEMBLY
William A. Crawford, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 5, 1962, Ser. No. 171,168
3 Claims. (Cl. 312—231)



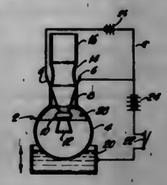
1. A multi-purpose functional desk unit comprising in combination a desk and a drafting board assembly positioned adjacent to the rear peripheral edge of said desk, said drafting board assembly comprising a stationary upright frame, a drafting board disposed substantially coextensive with and in the plane of said frame when said board is in the stowed position and said board projecting from said frame onto said desk when said board is in the drafting position, said board being mounted pivotally but vertically displaceable of said frame at the upper margin of said board, and stop means coacting with said frame to arrest downward vertical movement of the upper margin of said board past a predetermined position.

3,189,394
CABINET WITH AN INVERTIBLE HORIZONTAL OR SLOPED WORK WRITING TOP
Lawrence J. Fay, Elgin, Ill., assignor to Equipto Electronics Corporation, Naperville, Ill., a corporation of Illinois
Filed Sept. 17, 1962, Ser. No. 224,014
7 Claims. (Cl. 312—231)



1. In a cabinet structure including a cabinet, the improvement of
a work writing top mounted on a front face of the cabinet,
said top comprising spaced side cowlings,
a front cowling and vertically spaced upper and lower rear cowlings, the front and rear cowlings being joined at opposite ends with the side cowlings,
horizontal panel support flanges secured below a top horizontal surface of the writing top between the cowlings and a second set of inclined panel support flanges secured with the writing top inwardly of an inclined opposite surface of the writing top between the cowlings,
a removable writing top panel, adapted to be framed within the cowlings having means for securing the writing top panel to either of said sets of flanges, and
mounting means supported by said rear cowlings enabling the writing top to be attached with either a horizontal or an inclined writing surface being topside of the work writing top.

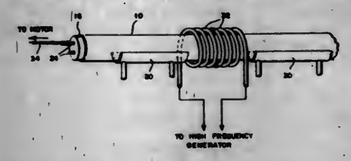
3,189,395
METHOD OF MAKING AN INCANDESCENT LAMP
Nickolas P. Demas, Cranford, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Aug. 29, 1961, Ser. No. 134,651
2 Claims. (Cl. 316—5)



1. In the manufacture of an incandescent lamp, a method for introducing a getter into the lamp and for eliminating the usual spark test given the lamp, comprising making the glass envelope for the lamp of an alkali metal glass and with the filament for the lamp therein and the terminals for the filament extending therefrom, locally heating a portion of the glass envelope while it is unsealed to a temperature which is sufficient to cause the glass thereof to become electrically conductive but which is below the softening temperature of the glass, bringing the heated portion of the unsealed glass envelope into contact with a molten compound of the alkali metal while maintaining a subatmospheric pressure of inert gas within the envelope, initiating electron emission from the lamp filament and establishing a potential difference between the lamp filament and the molten compound while the heated portion of the unsealed glass envelope is in contact with the molten compound to cause alkali metal ions to migrate through the glass envelope and deposit as a getter on unheated portions of the envelope after neutralization by electrons given off by the filament, hermetically sealing the glass envelope with the filament for the lamp therein and the terminals for the lamp extending therefrom while maintaining subatmospheric pressure within the glass envelope, and examining the unheated portions of the glass envelope for the deposit of the getter to determine whether the lamp is hermetically sealed.

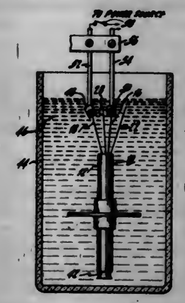
3,189,396
METHOD FOR PROCESSING DISCHARGE DEVICES
George S. Evans, Caldwell, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1960, Ser. No. 13,504
11 Claims. (Cl. 316—25)

1. The method of seasoning a low-pressure discharge device after fabrication and before installation in order to obtain a predetermined lowered starting voltage, which method comprises, exciting all of that portion of the device through which a discharge occurs during normal operation with a discharge-exciting high-frequency electromagnetic field of predetermined intensity, and main-



taining such electromagnetic field excitation of the device for a predetermined period of time.

3,189,397
METHOD OF GETTER FLASHING
John B. Fitzpatrick, Essex County, N.J., and William O. Zvonik, Flushing, N.Y., assignors to Radio Corporation of America, a corporation of Delaware
Filed Feb. 28, 1961, Ser. No. 92,245
2 Claims. (Cl. 316—25)

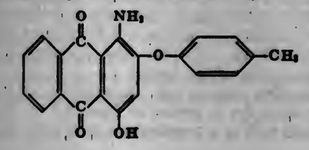


1. Method of flashing a getter structure, wherein the getter structure is disposed within an envelope having a glass portion and two lead-in conductors sealed through said glass portion in glass-to-metal seals are connected to spaced portions of said getter structure and have legs extending exteriorly of said envelope, said method comprising suspending a portion of said legs in a relatively cool non-electrolytic liquid while engaging said two lead in conductors only, passing electrical power through said conductors of a magnitude normally accompanied by heat harmful to said glass-to-metal seals of said conductors through said envelope in the absence of cooling by said liquid, said liquid serving to cool said conductors at the regions of said seals to a temperature harmless to said seals, stopping the passage of electric power through said conductors after said getter has flashed, continuing the immersion in said liquid of said leg portions after said stoppage of said electrical power through said conductors, for dissipating residual heat in said getter structure, and removing said legs from said liquid after said residual heat has been dissipated.

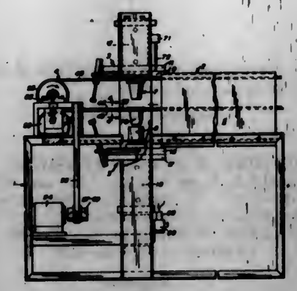
CHEMICAL

3,189,398
ANTHRAQUINONE DYE
Roy A. Pizzarello, Mount Vernon, N.Y., and Walter A. Caraccioli, Clifton, and Otto Poltersdorf, Fair Lawn, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Apr. 15, 1963, Ser. No. 272,843
3 Claims. (Cl. 8—39)

1. Dyed polyester fiber made from terephthalic acid and ethylene glycol, the dye consisting essentially of a compound having the structural formula,



3,189,399
FORMING MACHINE AND PROCESS
William A. Jacobs, Ellenville, and Kenneth A. Hornung, Kerhonkson, N.Y., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 13, 1961, Ser. No. 145,541
16 Claims. (Cl. 18—19)



1. Apparatus for converting thermoplastic sheet material into shaped articles comprising in line a heating zone, for heating said sheet material, drawing means for forming shaped articles from said sheet material and a delivery zone for delivering said shaped articles, said drawing means comprising a retractable shaped former, a retractable die having a cavity substantially mating with said former and retractable retaining means operating on that portion of said sheet material between said drawing means and said delivery zone for holding said portion against substantial longitudinal displacement during drawing said shaped former and die being movable toward each other for mating engagement to draw the portion of sheet material disposed therebetween; actuating means for intermittently actuating said retaining means, said shaped former and said die to draw and form a portion of said sheet material disposed therebetween into a shaped article and thereafter retracting said retaining means, shaped former and die; and moving means for intermittently moving said sheet material to remove said shaped articles and to pass undrawn following sheet material from said heating zone into stationary shaping position between said shaped former and said die while moving additional undrawn following sheet material into said heating zone, said moving means being actuated when said retaining means, shaped former and die are in their retracted position.

3,189,400
POLYOLEFIN TEXTILE DYEING WITH SOLVENT AND DYE HEATED THEREON
Fred Fortess, Joseph S. Warner, and George C. Ward, all of Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 20, 1961, Ser. No. 104,229
12 Claims. (Cl. 8—55)

1. A process for dyeing a high density polyolefin textile material which comprises the steps of:
(a) providing a coloring composition comprising a dispersion of 0.05 to 8% of a dyestuff for said polyolefin, 1 to 20% of a dyeing assistant selected from the group consisting of hydrogenated aromatic compounds, triethyl phosphate, butyl benzoate, butyl Cellosolve, phenyl Cellosolve, and diphenyl; and 0.1 to 4% of an emulsifying agent;
(b) immersing said textile material in said coloring composition for a period of from 0.5 to 50 seconds with said bath at a temperature of at least about 100° F. to impregnate said textile material with said coloring composition;
(c) removing the wet, impregnated textile material from immersion in said coloring composition;
(d) heating said wet, impregnated textile material for from 2 to 60 seconds at a temperature in the range of about 190 to 280° F., the material being maintained in constant contact with said dyeing assistant during said heating, and
(e) scouring said textile material to remove excess coloring material.

3,189,401
SIMULTANEOUS ALDEHYDE, CHROME AND AROMATIC ALCOHOL OR QUINONE TANNAGE OF SPUN COLLAGEN FIBER
Ernest J. Griset, Jr., Bound Brook, N.J., assignor to Ethicon, Inc., Somerville, N.J., a corporation of New Jersey
Filed May 29, 1963, Ser. No. 284,255
12 Claims. (Cl. 8—94.11)

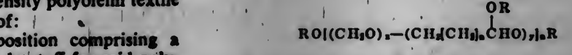
1. In a method of tanning collagen that has been acid-swollen, extruded and reconstituted; the steps of contacting said collagen with a solution containing an aldehyde, a basic trivalent chromium salt and an aromatic compound selected from the group consisting of monocyclic and dicyclic polyhydric phenols, and monocyclic, dicyclic and tricyclic quinones.

3,189,402
ABRASION DEFLESHING PARTIALLY TANNED FUR-SKINS
George Sax, London, England, assignor to Deladeal Limited, Manchester, England, a company of Great Britain
No Drawing. Filed Jan. 30, 1963, Ser. No. 255,066
Claims priority, application Great Britain, Mar. 29, 1960, 11,091/60
13 Claims. (Cl. 8—94.14)

1. Method of dressing raw fur-skins having areolar tissue attached to the flesh side to enable said tissue to be removed by abrasion and to effect partial tanning of the skin, which comprises immersing said fur-skin in a mixture of a tanning liquor and a penetrant consisting essentially of an emulsified sulphited unsaturated natural oil for a period of time sufficient to cure and facilitate the removal of said areolar tissue, and removing said tissue by mechanical abrasion.

3,189,403
TANNING WITH A HEMIACETAL AND RESORCINOL OR PYROGALLOL SOLUTION
Wallace Windus, Meadowbrook, and Mary V. Hannigan, Lafayette Hill, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed June 19, 1963, Ser. No. 289,144
12 Claims. (Cl. 8—94.24)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A tanning process comprising impregnating skins with a buffered aqueous solution at a pH in the range of about 4.0 to 5.0 containing a hemi-acetal of the formula

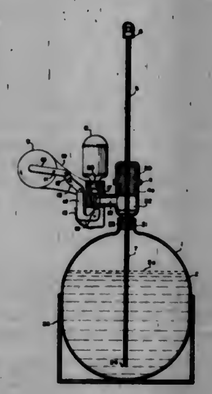


wherein at least one R is hydrogen and the remaining R's are members of the group consisting of hydrogen and alkyl radicals, x is an integer of 1 to 5, a is an integer of 1 to 8, y is an integer of 1 to 5, and n is an integer of at least 2 and a phenol selected from the group consisting of resorcinol and pyrogallol and adjusting the pH of the solution during the tanning process to a pH in the range of about 7.5 to 8.5.

3,189,404
TREATMENT OF CELLULOSIC FIBRE FABRICS
Iwao Takizaki and Juta Okito, Shiganan, Japan, assignors to Toyo Boseki Kabushiki Kaisha, Osaka, Japan
No Drawing. Filed Oct. 3, 1961, Ser. No. 142,519
Claims priority, application Japan, Oct. 13, 1960, 35/42,052; Mar. 15, 1961, 36/9,134
3 Claims. (Cl. 8—116.4)

1. A process of treating cellulosic fiber-containing fabric to improve the crease and wrinkle resistance thereof, which comprises pretreating said fabric with resin so that the resin is deposited on the fabric in an amount of from 0.05 to 3.0% by weight based on the fabric, immersing the resultant fabric for 1 to 3 seconds in an aqueous solution containing sulfuric acid in a concentration of from 30 to 60%, based on the weight of the aqueous solution, and formaldehyde in a concentration of from 5 to 20%, based on the weight of the aqueous solution, the temperature of said solution being maintained at, a temperature below 40° C., removing the fabric after 1 to 3 seconds and leaivng the fabric in contact with air for from 30 seconds to 2 minutes, and then immediately washing and drying said fabric.

3,189,405
DECONTAMINATING DEVICE AND FOG GENERATOR
Robert A. Fulton, Silver Spring, Md., and Alfred H. Yeomans, Washington, D.C., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Mar. 6, 1962, Ser. No. 177,928
1 Claim. (Cl. 21—121)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A device for generating a fog or vapor comprising:
(a) a container for holding a liquid to be vaporized and having an opening in the top thereof;
(b) a valve connected to the container for admitting a gas under pressure to said container, said valve being provided with a plurality of ports, said valve communicating with the interior of the container through a first of said ports;
(c) release means connected to the valve in operating relationship with means within said valve for initiating flow of gas into the valve through a third port thereof;
(d) time-controlled means connected to the release means for actuating said release maens at a predetermined time;
(e) first liquid conducting means connected to the valve in a second port thereof and extending in the interior of said valve through the first port of substantially the bottom of the container;
(f) exterior second liquid conducting means attached at one end thereof to the valve at said second port and communicating with said first liquid conducting means, said first and second conducting means being adapted to discharge the entire contents of the container when flow of gas is initiated; and
(g) an atomizing nozzle connected to said second liquid conducting means at the other end thereof.

3,189,406
PROCESS FOR THE REMOVAL OF ORGANIC SULPHUR COMPOUNDS FROM GASES
Klaus Storp, Frankfurt am Main, and Heinrich Kleemann, Walldorf, Hesse, Germany, assignors to Laboratorium fuer Adsorptionstechnik G.m.b.H., Frankfurt am Main, Germany
No Drawing. Filed May 29, 1962, Ser. No. 198,443
Claims priority, application Germany, Aug. 6, 1959, L 33,904
4 Claims. (Cl. 23—2)

1. A process for the removal of organic sulfur compounds selected from the group consisting of carbon disulfide and sulfur compounds as present in coke oven gases from gases, which comprises passing said gases, at temperatures of 110 to less than 150° C. and in the presence of water and oxygen in the quantities required to carry out said process, over a plurality of successively arranged alternate layers of activated alumina and activated carbon.

3,189,407
METHOD OF RECOVERING LITHIUM FROM LEPIDOLITE
Roger Botton, Paris, Jean Paul Delgrange, Le Vesinet, and Andre Steinmetz, Aubervilliers, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
No Drawing. Filed Feb. 7, 1961, Ser. No. 87,553
Claims priority, application France, Feb. 11, 1960, 818,181
9 Claims. (Cl. 23—32)

6. A method of extracting lithium from lepidolite containing gangue which comprises digesting the mineral in sulfuric acid of 65 to 75% H_2SO_4 by weight, at a temperature between 140° and 200° C., the weight of acid employed being within the range of about 55 parts of H_2SO_4 to 100 parts of mineral when the mineral contains less than about 1% of Li and about 100 parts of H_2SO_4 to 100 parts of mineral when the mineral contains 1.5 to 2% of Li by weight, reducing the acidity to a value in the range 3.5 to 4.5 pH, isolating the precipitate thus formed from the filtrate, and extracting Li from the filtrate.

3,189,408
METHOD OF PRODUCING SODA ASH FROM TRONA
Warren Standish Miller, Fullerton, Calif., assignor, by mesne assignments, to Intermountain Research & Development Corporation, Cheyenne, Wyo., a corporation of Wyoming
Filed Sept. 25, 1961, Ser. No. 140,583
15 Claims. (Cl. 23—63)

1. The method of producing refined soda ash from crude trona which comprises dissolving the soluble constituent of materials from the group consisting of crude trona and calcined crude trona to form a solution thereof, separating the insoluble material from said solution, evaporating the solution to produce sodium carbonate containing crystals therein, mixing a slurry of said crystals and said solution with hot soda ash to substantially absorb said solution and calcining the mixture thus produced to soda ash.

3,189,409
MANUFACTURE OF POTASSIUM BICARBONATE
Friedrich Wolstein, Hannover, Germany, assignor to Kali-Chemie Aktiengesellschaft, Hannover, Germany
No Drawing. Filed Dec. 30, 1960, Ser. No. 79,534
Claims priority, application Germany, Jan. 2, 1960, K 39,576; Spain, Dec. 15, 1960, 263,256
2 Claims. (Cl. 23—64)

1. A method of preparing potassium bicarbonate comprising reacting potassium chloride with a member of the group consisting of triethylamine bicarbonate and a mixture of triethylamine and carbon dioxide, recovering the precipitated potassium bicarbonate, adding lime to the mother liquor containing triethylamine hydrochloride, thereby obtaining the major part of said triethylamine as a separate layer, decanting said layer, and distilling off residual triethylamine as an azeotropic mixture with water.

3,189,410
METHOD OF PRODUCING ANHYDROUS ALKALI METAL CYANIDE
Iral Brown Johns, Marblehead, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,177
7 Claims. (Cl. 23—79)

1. The method of producing anhydrous alkali metal cyanide free of hydrolysis products which comprises contacting the organometallic compound of an alkali metal having an atomic weight below 40 of the formula R—M where M is said alkali metal and R is a hydrocarbon radical of up to 12 carbon atoms with hydrogen cyanide in a hydrocarbon solvent under anhydrous conditions.

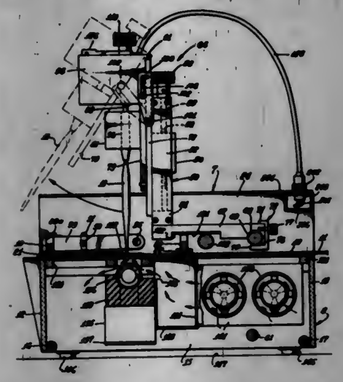
3,189,411
PREPARATION OF HYDRAZINE HYDRATE
Heinrich Kohnen, Rudolf Mundil, and Jobst Steinbrecht, all of Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 23, 1962, Ser. No. 168,235
Claims priority, application Germany, Feb. 8, 1961, F 33,165
9 Claims. (Cl. 23—190)

1. A process for the production of hydrazine hydrate which comprises decomposing a hydrazine compound selected from the group consisting of dimethyl ketazine and acetone hydrazine in the form of an aqueous solution thereof by fractionally distilling such a solution under a pressure of between 2 atmospheres and 50 atmospheres and at a sump temperature ranging between 120 and 250° C.

3,189,412
METHOD OF MANUFACTURING BORON NITRIDE
Anthony Arthur Robinson Wood, Watford, and Eric Campbell Shears, Putney, London, England, assignors to United States Borax & Chemical Corporation, a corporation of Nevada
No Drawing. Filed Mar. 19, 1959, Ser. No. 800,382
6 Claims. (Cl. 23—191)

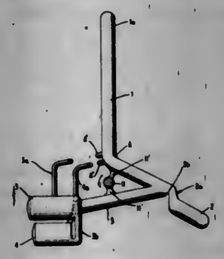
1. In the method for producing boron nitride by heating in the presence of nitrogen an intimate admixture of carbon and boric oxide, the improvement which comprises heating said admixture at a temperature within the range of from about 1200° C. to about 1600° C. in the presence of from about 1% to about 10% of the weight of said admixture of a catalyst selected from the group consisting of molybdenum, niobium, manganese, chromium, calcium, barium, strontium, lithium, sodium, potassium, rubidium, cesium, magnesium, lanthanum, cerium, titanium, vanadium, cobalt, nickel, copper, zinc, yttrium, zirconium, tantalum, tungsten, and thorium, the oxides thereof, the carbonates thereof, the hydroxides thereof, the nitrates thereof, the nitrides thereof, and the acetates thereof; and extracting the resultant reaction mixture with dilute mineral acid to give substantially pure crystalline boron nitride.

3,189,413
SPOT AND STRIPE APPLICATOR FOR CHROMATOGRAPHY
John E. Davis, Garden Grove, Calif., assignor to Bio-Science Laboratories, Los Angeles, Calif., a corporation of California
Filed Sept. 25, 1961, Ser. No. 140,597
34 Claims. (Cl. 23—253)



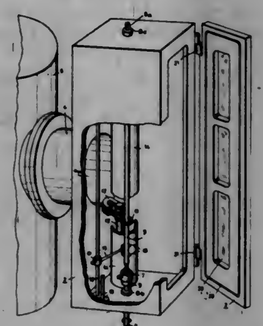
1. In apparatus for depositing test solution upon chromatography paper or the like: a means forming a bed for chromatography paper or the like; a first clamp member and a second clamp member each engageable with the bed at spaced positions therealong; means supporting the clamp members for movement in paths diverging from each other as the clamp members engage the bed; resilient compressible pads carried by the clamp members for providing a friction grip upon chromatography paper placed on the bed for ensuring the tensioning of said paper; and releasable means movable to elevate the clamp members for placement and removal of the paper.

3,189,414
COUNTERCURRENT LIQUID-LIQUID EXTRACTION APPARATUS
Raymond Beau, Massy, Seine-et-Oise, France, assignor to Societe Anonyme les Produits Semi-Conducteurs, Paris, France
Filed Apr. 10, 1961, Ser. No. 102,013
Claims priority, application France, Jan. 21, 1961, 850,415
2 Claims. (Cl. 23—270.5)



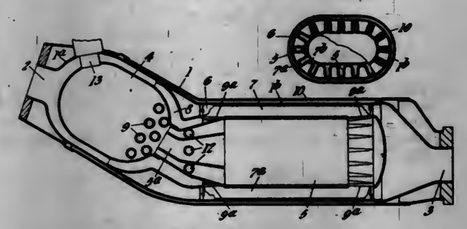
1. Apparatus for mixing immiscible liquids which comprises a rotatable member and mounted thereon for rotation therewith at least one mixing unit which includes, spaced about the member, first and second adjacently and parallely disposed containers connected at their bases by a first conduit, a weir formed by the end of said first conduit extending into and parallel to the base of the first container, a second conduit projecting into and perpendicular to the base of said second container and extending therefrom, an elongated mixing tube connected at an intermediate point of said tube to the second conduit, one leg of the mixing tube having a constriction adjacent to the junction between the second conduit and the mixing tube, a plurality of containers adapted to receive the separated liquids, conduit means extending from the weir in the decanter means to the containers, said containers being arcuately arranged about the member so that the rotation thereof discharges the separated liquids in sequence into the separate containers, and conduit means adapted, on further rotation, to discharge the separated liquids separately from the containers.

3,189,415
DEVICE FOR CRUCIBLE-FREE ZONE MELTING
Reimer Emeis, Ebermannstadt, Upper Franconia, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed July 28, 1959, Ser. No. 830,026
Claims priority, application Germany, July 30, 1958, S 59,210
4 Claims. (Cl. 23—273)



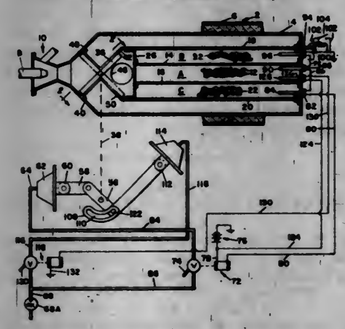
2. In a device for crucible-free zone melting of a meltable rod, a stationary housing, two holder members in the housing, means for relatively displacing the holder members vertically with respect to each other, a melting coil in the housing, means for supporting and for relatively displacing the coil vertically of the vertical axis of the holder members; the improvement therein, the housing having an access opening having a height substantially at least as great as the entire vertical displacement path of the melting coil, and a closure member for said opening having an observation window extending over at least the major part of the height of the opening, and two rod-gripping devices in said housing, each including a rotary vertical shaft and a gripper means mounted on the shaft, and means extending through the housing to turn the shafts to position the grippers on opposite sides of the rod to hold the rod, so that upon opening the closure member the rod can be placed and held between the holders at the start of the melting operation, and, after closing the closure member and commencing the melting, the grippers can be turned away from the rod to permit the said relative displacement of the melting coil.

3,189,416
EXHAUST GAS COMBUSTION APPARATUS
John Stanley Clarke, Medbourne, near Market Harborough, and Squire Ronald Jackson, Burnley, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Nov. 19, 1962, Ser. No. 238,375
Claims priority, application Great Britain, Nov. 28, 1961, 42,443/61
2 Claims. (Cl. 23—277)



1. Combustion apparatus for treating exhaust gases comprising an elongated casing, an exhaust gas inlet duct at one end of the casing, an outlet duct at the opposite end of the casing, an inner casing defining a combustion chamber of generally spherical form, said inner casing being mounted within an upstream end portion of the casing, a tubular part extending from the inner casing towards the opposite end of the casing, a portion of the tubular part adjacent to the inner casing comprising a mixing section, an outer air chest surrounding said casing, a duct connecting the air chest with said mixing section, passage forming means in a space defined between the casing and the tubular part, defining two alternating series of side-by-side longitudinally extending passages, one of said series forming passages connecting the exhaust gas inlet duct and the mixing section, and the other of said series forming passages connecting the combustion chamber and the outlet duct.

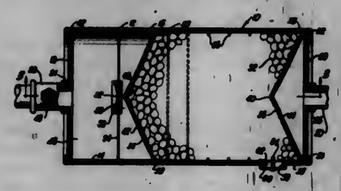
3,189,417
APPARATUS FOR IMPROVING THE PURIFICATION OF EXHAUST GASES FROM AN INTERNAL COMBUSTION ENGINE
Eugene J. Houdry, Ardmore, and William R. Thomas, Paoli, Pa., assignors to Oxy-Catalyst, Inc., Berwyn, Pa., a corporation of Pennsylvania
Filed May 29, 1962, Ser. No. 198,507
2 Claims. (Cl. 23—288)



1. In an exhaust gas purifier having a zone for the oxidation of exhaust gases comprising a bed of oxidation catalyst the improvement comprising: a bed of heat exchange material on each of two sides of said zone, means for guiding exhaust gases through one bed then through said zone and then through the other bed to preheat the exhaust gases before entering the oxidation zone with one

bed and to transfer heat from the oxidized gases leaving the oxidizing zone to the other bed, valve means to reverse the direction of flow through said zone and beds, means responsive to a minimum temperature in said purifier to periodically actuate the valve means to reverse said direction of flow, and means responsive to a predetermined maximum temperature in the purifier to divert the exhaust gases to by-pass said oxidizing zone.

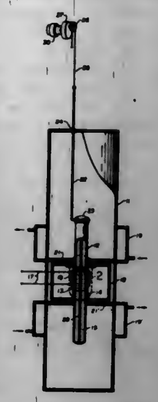
3,189,418
CATALYTIC CONVERTER
Wright W. Gary, 2317 Kinsridge Road, Beverly Hills, Calif.
Application June 19, 1961, Ser. No. 117,933, which is a division of application Ser. No. 27,721, May 9, 1960, now Patent No. 3,065,595, dated Nov. 27, 1962. Divided and this application Apr. 1, 1964, Ser. No. 358,139
6 Claims. (Cl. 23—288)



1. A catalytic converter for an internal combustion engine exhaust system which comprises a case having an inlet opening to admit exhaust ingredients into the case and an outlet opening to permit exhaust ingredients to flow out of the case, the case including wall means defining a flow channel in the case through which the exhaust gases flow from said inlet opening to said outlet opening, and a catalyst bed in said case disposed in said flow channel so that the exhaust gases flowing through said flow channel from said inlet opening to said outlet opening pass through the catalyst bed, the catalyst bed having an upstream surface through which the exhaust gases enter the catalyst bed and a downstream surface through which the exhaust gases leave the catalyst bed, said flow channel including a substantial clearance between said inlet opening and said upstream surface of the catalyst bed, a portion of the catalyst bed at said upstream surface projecting upstream from the main body of the catalyst bed into said clearance so as to expose a small volume of the catalyst to the incoming exhaust gases before the exhaust gases pass through the main body of the catalyst, whereby under cold engine starting conditions said projecting portion of the catalyst bed will be more quickly heated by the exhaust gases than the main body of the catalyst so as to accelerate initiation of catalytic activity in the bed.

3,189,419
ZONE-MELTING CRYSTALLIZATION TECHNIQUE
William R. Wilcox, Torrance, Calif., assignor to The United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 2, 1961, Ser. No. 128,907
4 Claims. (Cl. 23—301)

1. In the method of zone-melting wherein a molten zone is moved through a solid volume of a fusible substance which is disposed within a long container, the improvement comprising effecting stirring by free convection in said molten zone near the freezing interface thereof, said free convection being provided by disposing a heat conducting foreign body along substantially the entire length of said solid volume of said subtsance, said body being extended within said container along the direction of movement of said molten zone and through the region to be traversed by said freezing interface,



said foreign body being formed of a material which is chemically stable in said molten zone and being maintained at a temperature differing from that of said molten zone.

3,189,420
ELECTRICALLY CONDUCTIVE ELEMENT
Paul R. Gould, Framingham, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 1, 1962, Ser. No. 227,616
1 Claim. (Cl. 29—195)
(Granted under Title 35, U.S. Code (1952), sec. 266)

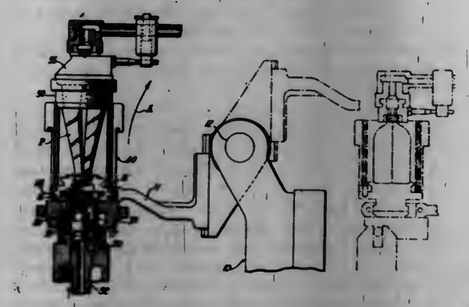


An electrically conductive element comprising a glass substrate, an electrically conductive thin film covering a portion of the substrate, the part of the film in immediate contact with the substrate being a metallic layer of manganese and the part of the film furthest from the substrate being a metallic layer of silver, the area between the aforementioned two layers of metal of the film being a mixed metal layer of manganese-silver.

3,189,421
BRAZED STRUCTURE
Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware
No Drawing. Filed Mar. 11, 1964, Ser. No. 351,196
3 Claims. (Cl. 29—196)

2. A brazed structure comprising:
parts of austenitic stainless steel in which it is desired to avoid brittleness resulting from the diffusion of carbon thereinto from the brazing alloy used during brazing, said parts being of austenitic stainless steels containing less than 0.10% carbon prior to brazing and said parts containing not in excess of 0.06% carbon derived from the brazing alloy as a result of said brazing;
and a brazing alloy interposed between said parts and fused thereto securing them together, said brazing alloy consisting of 0.025 to 5.25% boron, 1 to 5.5% silicon, and from 0.005 to 0.06% carbon and the remainder of the alloy being substantially all nickel.

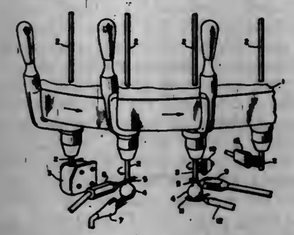
3,189,422
PRODUCTION OF MULTI-CAVITY CONTAINERS
Donald P. Shea, Anne Arundel County, and Roscoe G. Reed, Baltimore County, Md., assignors to Maryland Glass Corporation, Baltimore, Md., a corporation of Maryland
Filed Oct. 19, 1960, Ser. No. 63,640
4 Claims. (Cl. 65—46)



1. A method of producing a multiple cavity container having a single finish with a separate access opening to each cavity extending through such finish comprising forcing molten glass into a neck ring and parison mold formed to produce a blank having a single finish with a separate opening therein for each cavity of the container to be produced, said blank further having a separate and independent blank body portion for each of said openings joined solely with and extending from said finish, introducing air through each of said openings to form said blank into a parison having a separate semi-formed cavity within each blank body portion with said portions remaining separate and independent and being joined solely at the single finish, transferring the parison to a blow mold while said body portions are separate and independent, introducing air through each of said openings into said semi-formed cavities to expand said cavities and fuse adjacent blank body portions along their length into a unitary partition wall between adjacent cavities and shape the cavities outwardly from said partition wall to the contour of the blow mold, and guiding from the exterior of the blank body portions the fusing of said adjacent blank body portions to locate said unitary partition wall and thereby achieve a predetermined volumetric relationship between the respective cavities.

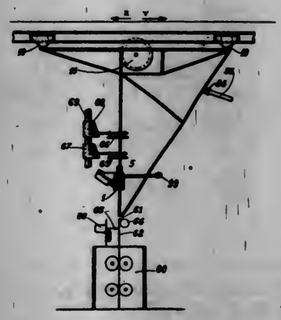
3. Apparatus for producing a multiple cavity container comprising a parison mold and a neck ring mounted to cooperate therewith, said parison mold defining separate and independent passages to form separate blank body portions extending from and joined solely with a single finish formed in said neck ring, means mounted relative to said neck ring to form a plurality of separate openings through said finish each of said openings communicating with a semi-formed cavity in the parison, a blow mold defining a chamber of the configuration desired for the container, said chamber having rib means extending inwardly from opposite sides thereof, said rib means being disposed in a plane corresponding to the plane of a unitary partition wall to be produced between adjacent cavities of the container, means disposed to be operable intermediate said parison mold and said blow mold for transferring a parison formed in said parison mold and neck ring to said blow mold, and means mounted to cooperate with said blow mold for introducing air through said openings to expand said semi-formed cavities to the contour of the blow mold chamber.

3,189,423
GLASS BULB CUT OFF METHOD
Angelo Paiona, Lewiston, Maine, assignor to Paragon Glass Works, Inc., Lewiston, Maine
Filed Jan. 15, 1962, Ser. No. 166,193
4 Claims. (Cl. 65—105)



1. A method of cutting and sealing a blown glass article from a sealed glass tube from which it is blown including the steps of applying a jet blast of heat on the said blown glass tube above its first sealed end at a temperature and rate severing the said blown tube by said heating whereby said blown section seals itself by the fusing of the molten glass as it falls away from said tube maintaining a temperature of the softened sealed end while allowing said blown severed tube to cool creating a pressure differential between the inside and outside of the said severed sealed tube thereby causing the second sealed end of said blown tube to collapse inwardly into the softened end of said severed sealed tube to form a sealed blown glass article.

3,189,424
AUTOMATIC CUTTING AND DISCHARGING OF A CONTINUOUS VERTICALLY DRAWN GLASS RIBBON
Edgard Brichard, Jumet, and Jean Albert Marchand, Charleroi, Belgium, assignors to Union des Verreries Mecaniques Belges Societe Anonyme, Charleroi, Belgium, a company of Belgium
Filed Dec. 22, 1960, Ser. No. 77,555
Claims priority, application Belgium, Mar. 23, 1960, 467,536, Patent 588,952
16 Claims. (Cl. 65—160)



1. Apparatus for producing glass sheets comprising means for drawing a glass ribbon vertically from a molten glass bath by application of an upward feeding force ap-

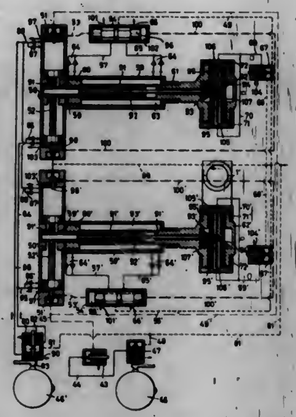
plied to such ribbon along a transverse line located below the upper end of such ribbon, clamping means, means operable when the rising upper end of the ribbon has reached a given height above said feeding means to actuate said clamping means to grip such upper ribbon end, means spaced from one side of the glass ribbon in its normal path of feed for scoring a transverse cutting line on the associated surface of the ribbon, means spaced from the other side of the glass ribbon its normal path of feed for cracking-off the upper end portion of the glass ribbon above the cutting line applied to the ribbon, a horizontally movable frame carrying said clamping means, and means connected to said frame and including driving means for horizontally reciprocating said frame, and sensing means controlling said driving means and constructed and arranged to be operated when the gripped, rising end of the ribbon has risen above said given height to actuate said driving means to cause said frame to be moved horizontally in one direction to initially apply through said clamping means a force such as to bend said ribbon above said feeding means from its normal path of feed into engagement with said scoring means, said sensing means being then operated to actuate said driving means to cause said frame to be moved horizontally in the opposite direction to apply through said clamping means an opposite force such as to bend the ribbon above said feeding means back from its engagement with said scoring means and into engagement with said cracking-off means, said connected means being operable to cause said frame to continue its horizontal movement in said opposite cracking-off direction to move the gripped, freely suspended separated upper end portion of the glass ribbon away from the rising body of glass ribbon.

3,189,425

MACHINE FOR MAKING HOLLOW GLASS ARTICLE

Hans Joachim Bittner, Hagen, Westphalia, Germany, assignor to H. Putsch & Company, Hagen, Westphalia, Germany

Filed July 12, 1961, Ser. No. 123,550
Claims priority, application Germany, July 19, 1960, P 25,385
5 Claims. (Cl. 65—237)



1. In a machine for making glass bottles and like hollow glass articles, in combination:

(a) a support;

(b) a gathering mold;

(c) a final mold;

(d) two mouth molds,

(1) said gathering mold, final mold, and mouth molds being mounted on said support, and each having a plurality of parts movable relative to each other between an open position and a closed position,

(2) said gathering mold and said final mold in the closed position thereof having a common axis fixed relative to said support, and

(3) said mouth molds each being movable in cyclic sequence from a first position, in which the mouth mold defines a pre-molding cavity with said gathering mold, to a second position in which said mouth mold defines a final-molding cavity with said final mold, to a delivery position spaced from said second position, and thence to said first position;

(e) mouth mold moving means for moving said mouth molds through said positions thereof in said cyclic sequence;

(f) mouth mold operating means for sequentially moving the parts of each mouth mold from the closed to the open position thereof when the mouth mold is in said delivery position thereof, for moving said mouth mold parts from the open to the closed position after said mouth mold reaches said delivery position and before the mold leaves said first position, and for keeping said mouth mold parts in the closed position while said mouth mold is being moved from said first position to said second position and thence to said delivery position thereof by said mouth mold moving means;

(g) gathering mold operating means and final mold operating means for moving said parts of said gathering mold and of said final mold between said open and closed positions thereof; and

(h) control means for actuating said mouth mold moving means, said mouth mold operating means, said gathering mold operating means, and said final mold operating means in timed sequence.

3,189,426

GLASS BENDING APPARATUS

Joseph E. Jendrisak, Northville, Mich., assignor to Shatterproof Glass Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 29, 1960, Ser. No. 18,288
8 Claims. (Cl. 65—290)



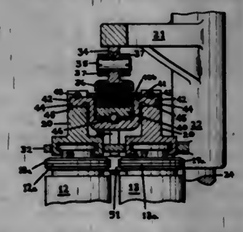
1. Glass bending apparatus comprising a supporting cradle, a collapsible mold having center and end sections pivotally connected end to end and movable from a glass receiving position to a molding position, said sections being constructed to provide a narrow perimetric upwardly facing glass shaping surface that is substantially continuous and concave when the sections are in closed molding position and being movable from said molding position to a glass receiving position in which end and intermediate portions of the shaping surface are in a substantially horizontal plane for supporting engagement with the under side of a glass sheet, a transverse shaft journaled in each end section intermediate the ends of the section, a pair of spaced crank arms on each of said shafts located one on each side of the end section in which the shaft is journaled, supporting wheels mounted on the crank arms of each pair for rotation about an axis parallel to the shaft axis, parallel ways on said cradle extending longitudinally of the mold upon which said wheels roll, means for adjusting each of said crank shafts angularly to simultaneously shift the wheels carried thereby toward or away from the inner end of the end section in which the shaft is journaled, and means for holding said center section against endwise movement.

3,189,427

BAFFLE MECHANISM FOR GLASS MOLD ASSEMBLY

Helmut T. Schirm, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed May 31, 1961, Ser. No. 113,935
2 Claims. (Cl. 65—323)



1. I a double-cavity blank mold defining a pair of side-by-side vertically disposed molding cavities each having an upper end opening, a pair of baffles adapted at times to close the said end openings, adjacent clamping surfaces respectively on each of said baffles and the blank mold, a horizontally disposed baffle carriage arm, toggle links pivotally connected to said baffle arm, toggle arms pivotally connected at their one end to said links, a holder assembly connected to said toggle arms and said baffles comprising a lateral yoke pivotally connected with said toggle arms, a baffle holder having laterally extending support dogs, means connected to each baffle including a pivot thereon engaging said baffle holder, a swivel connection between said baffle holder and said yoke permitting limited rocking movement between the yoke and said holder, a pair of lateral clamping bars, a swivel connecting means for said clamping bars at the other end of said toggle arms providing limited rocking movement of said clamping bar thereon, a plurality of clamping shoes, means for connecting a clamping shoe on each end of the lateral clamping bars providing limited vertical and horizontal movement thereon, whereby the clamping shoes are self-aligning on said adjacent clamping surfaces of the baffle and mold, spring means connected between the baffle carriage arm and said lateral yoke normally actuating the toggle links and toggle arms for baffle unclamping movement, means connected to said carriage arm for moving the baffles to and from said upper mold openings and actuating the toggle links and toggle arms for baffle clamping movement, thereby clamping and unclamping the baffles substantially simultaneously on said blank mold openings.

3,189,428

METHOD FOR INHIBITING PLANT GROWTH

Dorsey R. Mussell, Clare, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 4, 1962, Ser. No. 199,651
7 Claims. (Cl. 71—2.2)

1. The method which comprises applying to plants and plant parts and their habitats a growth inhibiting amount of a hexafluoro compound selected from the group consisting of hexafluoroarsenic acid and hexafluorophosphoric acid, and their salts.

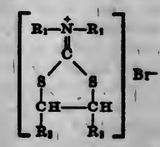
3,189,429

METHOD OF CONTROLLING PLANT GROWTH

John F. Olin, Ballwin, Mo., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 13, 1963, Ser. No. 258,141
4 Claims. (Cl. 71—2.5)

1. The method of contacting plants with a phytotoxic amount of a compound having the chemical structure



where R_1 is alkyl containing from one to twelve carbon atoms and R_2 is hydrogen.

3,189,430

HERBICIDE COMPOSITION AND METHOD

James A. Kelly, Midland, and George W. Scoles, Hemlock, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 21, 1957, Ser. No. 667,286
7 Claims. (Cl. 71—2.6)

1. A method which comprises applying to the above-ground parts of vegetation a viscous, water-in-oil emulsion comprising water, an emulsifying agent and a solution of a herbicidal amount of a systemic herbicide in a water-immiscible, organic solvent, the proportions of said solvent and water being adjusted to provide from about 10 to about 35 parts by volume of the solvent per 100 parts by volume of finished emulsion.

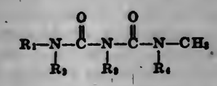
3,189,431

METHOD FOR THE CONTROL OF UNDESIRABLE PLANT GROWTH

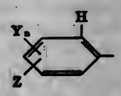
Paul L. Salzberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 15, 1960, Ser. No. 56,115
1 Claim. (Cl. 71—2.6)

A method for the control of undesirable plant growth which comprises applying to the locus to be protected, in an amount sufficient to exert a herbicidal action, a substituted biuret represented by the formula:



where R_1 and R_3 are selected from the group consisting of hydrogen, methyl and aryl represented by:



where Y is selected from the group consisting of hydrogen and halogen, n is a positive whole number less than 4 and Z is selected from the group consisting of hydrogen, nitro, and alkyl of 1 through 4 carbon atoms, with the proviso that one and only one of R_1 and R_3 is aryl; and R_2 and R_4 are selected from the group consisting of hydrogen and methyl.

3,189,432

METHOD OF DESTROYING GROWING WEEDS

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Original application Oct. 15, 1958, Ser. No. 767,263. Divided and this application Dec. 18, 1961, Ser. No. 160,229

10 Claims. (Cl. 71—2.6)

1. A method of destroying growing weeds which comprises contacting said weeds with a herbicidal composition comprising an inert carrier and as the essential active ingredient, in a quantity which is herbicidally toxic to said weeds, a compound selected from the group consisting of 2-methyl-3-chloro-6-methoxyphenylacetic acid, its anhydride, its alkali metal salts, its alkyl and alkanol amine salts wherein the amine component contains up to ten carbon atoms, its ammonium salt, its morpholine salt, its esters wherein the esterifying group is an unsubstituted alkyl containing from one to ten carbon atoms, its unsubstituted amide, and its alkyl amides wherein the amine component contains up to ten carbon atoms.

3,189,433

METHOD OF AGGLOMERATING PHOSPHATE MATERIAL

Clinton A. Hollingsworth and Jack J. Lewis, Lakeland, Fla., assignors, by mesne assignments, to The Borden Company, a corporation of New Jersey

No Drawing. Filed June 11, 1962, Ser. No. 201,269

2 Claims. (Cl. 71—37)

1. A method of forming agglomerates of a mixture of a fluorine containing phosphate rock having a silica content from 2% to 6% by weight, an acid phosphate compound selected from the group consisting of phosphoric acids and their acid sodium salts and a sodium compound selected from the group consisting of sodium carbonate, sodium bicarbonate, sodium hydroxide, sodium phosphates, sodium chloride, sodium sulfate and sodium nitrate, suitable for use as a defluorinated feed material, said method comprising:

(a) adding to fluorine containing phosphate rock at least one of said acid phosphate compounds, the amount of the added acid phosphate compound (calculated as P_2O_5) being about 7% to 13% by weight on a dry basis of the final agglomeration mixture,

(b) blending the phosphate rock and the acid phosphate compound together with sufficient water for a sufficient time to obtain a pastry reaction mix,

(c) adding to the pastry reaction mix at least one of said sodium compounds, the amount of the added sodium compound (calculated at Na_2O) being between about 5% to 9% by weight on a dry basis of the final agglomerate mixture,

(d) blending the phosphate rock acid phosphate compound and sodium compound together to obtain a substantially homogeneous mixture,

(e) adjusting the moisture content of the homogeneous mixture so that the final agglomeration mixture contains from about 5% to 18% by weight of water, and

(f) agglomerating said final agglomeration mixture forming nonhygroscopic agglomerates capable of being stored indefinitely, having sufficient mechanical strength to be screened and to withstand calcination in a rotary kiln without appreciable physical disintegration, and being capable of defluorination by heating in the presence of water vapor without fusion at a temperature of at least 2200° F.

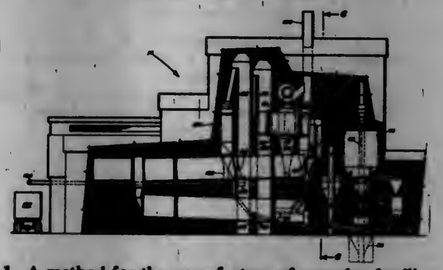
3,189,434

METHOD FOR THE MANUFACTURE OF GRANULAR FERTILIZER

Walter J. Sackett, Sr., Baltimore, Md., assignor to The A. J. Sackett & Sons Company, Baltimore, Md., a corporation of Maryland

Filed Sept. 14, 1962, Ser. No. 223,614

2 Claims. (Cl. 71—64)



1. A method for the manufacture of granular fertilizer, comprising blending a predetermined amount of raw material ingredients for said granular fertilizer, treating said predetermined amount of ingredients with ammonia and acid, granulating the treated ingredients, classifying the granulated ingredients into first oversize, intermediate, and fine groups of granules, with said intermediate group of granules being the acceptable group, returning said first oversize and fine groups of granules to the treating step, drying and cooling the acceptable group of granules, classifying the dried and cooled granules into second oversize, intermediate, and fine groups of granules, with said second intermediate group of granules being a second acceptable group, adding a predetermined proportion of said second fine group of granules to said second acceptable group, packaging the resulting group of granules, returning the remainder of said second fine group of granules to the treating step, comminuting the second oversize group of granules, and returning the comminuted granules to the last mentioned classifying step.

3,189,435

LEACHING OF COPPER FROM ORES WITH CYANIDE AND RECOVERY OF COPPER FROM CYANIDE SOLUTIONS

George William Lower, Bethel, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,208

9 Claims. (Cl. 75—2)

1. A process of extracting copper from a low grade sulfide ore fraction which comprises leaching said fraction with an aqueous cyanide solution containing at least about three moles of cyanide per mole of extractable copper, for a time less than about four hours, thereby converting a major part of the copper to a soluble cuprocyanide; treating said cuprocyanide with a stoichiometric deficiency, based on the copper in said cuprocyanide, of a water-soluble sulfied compound and acidifying to a pH below about 5; thereby forming cuprosulfide, and hydrocyanic acid, and precipitating the copper as the cuprosulfide.

3,189,436

PROCESS FOR THE AGGLOMERATION OF PULVERULENT METALLIFEROUS MATERIALS

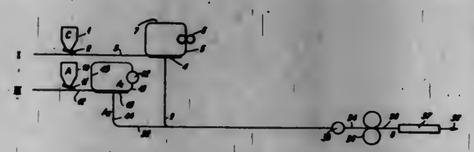
Eugene M. Berstein, 7 Rue Basse de la Terrasse, Meudon-Bellevue, Seine-et-Oise, France

Filed Apr. 23, 1962, Ser. No. 189,635

Claims priority, application France, Mar. 3, 1959, 788,416, Patent 1,228,176

7 Claims. (Cl. 75—5)

1. A process for agglomerating metalliferous pulverulent materials for obtaining compact briquettes in the cold state, without the aid of binding agents, said briquettes acquiring a porosity during their descent through a shaft furnace which will enable their full and easy reduction during smelting, comprising the steps of subjecting said materials to a crushing cycle associated with screening operations wherein said materials are fed to a screening zone equipped with a first control screen having a mesh size of up to 5 mm. for separating an oversize fraction, passing said oversize fraction through a crushing zone operating at a low crushing rate whereby in any given crushing cycle only a fraction of 25 to 80 percent by weight of said total oversize fraction acquires a fineness sufficient to pass through said control screen, recycling the product issuing from the crushing zone to the control screening zone for separating the undersize fraction thereof and recycling the oversize fraction to the crushing zone as often as is necessary to reduce the oversize fraction to a crushed product having a particle size controlled by said control screen and a constant particle size distribution; subjecting a solid carbonaceous reducing agent to a crushing cycle associated with screening operations in a manner similar to the above recited but using a second control screen having a mesh size of up to 3 mm. for obtaining a crushed reducing agent having a particle size controlled by said second control screen which is lower than the particle size of said crushed product and having a constant particle size distribution; adding to said crushed product from 2% to 12% by weight of said crushed reducing agent, said mesh sizes being selected and said crushing rates being selectively adjusted relatively to each other, to obtain fractions in the total mixture of the crushed product and crushed reducing agent having from 29% to 42% by weight of fine particles, from 13–19% by weight of medium particles and from 58–39% by weight of large particles, said fine, medium and large particles being relative to one another and each fraction constituting ⅓ of the total range of particle sizes in said mixture, adding to said mixture the necessary quantity of water for adjusting its moisture content between 7 and 16% by weight, and compressing said moist mixture at a pressure of at least 250 kg./cm.² into briquettes having a volume lower than about 40 cc.



3,189,437

PROCESS FOR ROASTING BY FLUIDIZATION, MORE PARTICULARLY FOR MAGNETIZING ROASTING

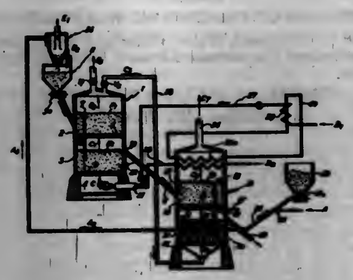
Michel Boucraut, Metz, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, France, a professional institution governed by French law

Filed June 14, 1963, Ser. No. 287,999

Claims priority, application France, July 5, 1962, 903,020

12 Claims. (Cl. 75—9)

1. A process for roasting ore by fluidization comprising the steps consisting of fluidizing the ore with a first stream of hot gases, roasting said fluidized ore to obtain roasted ore; providing a second stream of hot gases from at least a part of said first stream forming fluidized beds with said roasted ore and said second stream of hot gases; injecting reducing products in one of said latter beds to reduce the ore; transferring sensible heat from the ore to the second stream of hot gases; and adjusting separately the rate of flow, the temperature and chemical composition of said two streams of hot gases.



3,189,438

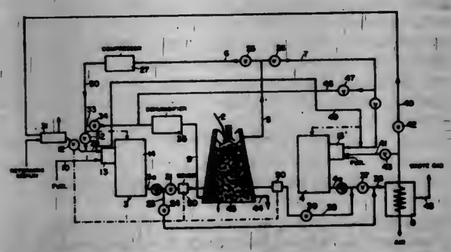
METHOD OF AND APPARATUS FOR REDUCING IRON OXIDES

Ludwig von Bogdandy, Essen-Frintrop, Germany, assignor to Firma Hüttenwerk Oberhausen AG, Oberhausen, Rhineland, Germany, a corporation of Germany

Filed Nov. 19, 1962, Ser. No. 238,655

Claims priority, application Germany, Nov. 23, 1961, H 44,211

9 Claims. (Cl. 75—34)



1. A method of operating a plant for producing sponge iron from iron ore in an upright shaft-type ore-reducing furnace with the aid of at least two reducing-gas generators, comprising the steps of:

introducing said iron ore into said furnace at the top thereof and causing said iron ore to descend in said furnace countercurrent to a reducing-gas stream;

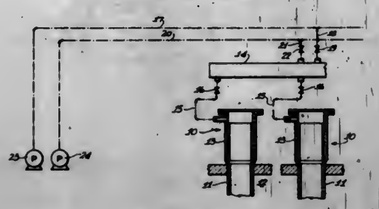
reacting a hydrocarbon fuel with a substance selected from the group consisting of molecular oxygen, carbon dioxide and water vapor in said reducing-gas generator in a molar ratio of the oxygen of said substance to the carbon in said hydrocarbon of substantially 1:1 to produce said reducing gas consisting substantially completely of hydrogen and carbon monoxide;

introducing said reducing gas into said furnace substantially at the bottom thereof so that said reducing gas converts said iron ore in said furnace to sponge iron while producing an exhaust gas rich in carbon dioxide and water vapor;

diverting a portion of said exhaust gas to said generator for reaction with said hydrocarbon fuel whereby the carbon dioxide and water vapor of said portion constitute at least part of the quantity of said substance introduced into said generator; and

regeneratively heating a further reducing-gas generator operable alternately with the first-mentioned reducing-gas generator to produce said reducing gas with the remaining portion of said exhaust gas.

3,189,439
METHOD OF PRODUCING MAGNESIUM
Desmond M. Peplinski, Haley, Ontario, Canada, assignor to Dominion Magnesium Limited, Toronto, Ontario, Canada
Filed May 6, 1963, Ser. No. 278,316
2 Claims. (Cl. 75—67)



1. A method of producing magnesium in a plurality of retorts each having a reducing zone and a condensing zone which comprises the steps of heating a charge of magnesia and reducing agent in said reducing zones to cause formation of magnesium vapor from said charge, subjecting said condensing zones to the action of a vacuum pump to reduce the pressure in said retorts and cause flow of said magnesium vapor into said condensing zones, maintaining the temperature in said condensing zones less than the melting point of magnesium to cause condensation of said magnesium vapor therein, said condensing zones having a condensing rate cycle comprising an initial build-up period, a peak rate period, and a tapering off period, said temperature maintaining step including the step of interrupting said vacuum pumping action during said peak rate period to increase the pressure in said condensing zones and thereby decrease the temperature thereof.

3,189,440
PROCESS FOR THE PREPARATION OF PURE BISMUTH
Heinz-Günther Plust, Spreitenbach, Aargau, Switzerland, assignor to Aktiengesellschaft, Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
No Drawing. Filed May 6, 1963, Ser. No. 278,431
Claims priority, application Switzerland, May 9, 1962, 5,554/62
1 Claim. (Cl. 75—70)

A process for the preparation of spectrally pure bismuth which comprises the following steps:
(a) chlorination of bismuth to give bismuth trichloride,
(b) hydrolysis of said bismuth trichloride to give bismuth oxychloride,
(c) reduction of said bismuth oxychloride with pure hydrogen at about 900° C.

3,189,441
MAGNESIUM-LITHIUM-THORIUM ALLOYS
Paul D. Frost and Thomas G. Byrer, Columbus, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
No Drawing. Filed May 27, 1963, Ser. No. 283,642
6 Claims. (Cl. 75—122.7)

1. A magnesium-lithium-thorium group metal alloy having better stability and hardness at elevated temperatures than magnesium-lithium alloy of similar composition, said alloy consisting essentially of lithium in amounts ranging from 10 to 12 percent by weight, thorium in amounts ranging from 2 to 4 percent by weight, and the remainder magnesium.

3,189,442
MAGNESIUM-LITHIUM-YTTRIUM ALLOYS
Paul D. Frost and Thomas G. Byrer, Columbus, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
No Drawing. Filed May 27, 1963, Ser. No. 283,643
4 Claims. (Cl. 75—122.7)

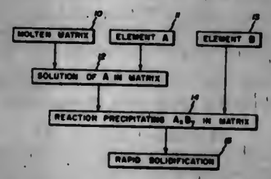
2. A magnesium base alloy consisting of about 10 to 12 percent by weight lithium, about 1 to 3 percent by weight yttrium, and about 1 to 5 percent by weight of a metal selected from the group consisting of thorium and aluminum, the balance being magnesium.

3,189,443
IRON FOUNDING
Harry B. Laudensiager, Jr., Jamestown, and Everett W. Hale, Falconer, N.Y., assignors to Blackstone Corporation, a corporation of New York
Filed Feb. 6, 1963, Ser. No. 270,484
8 Claims. (Cl. 75—123)



1. The process of producing blackheart type malleable iron substantially free from section criticality comprising the steps of melting a white iron composition substantially free of nickel and copper above the normal residual amounts acceptable in conventional malleable practice and consisting essentially of about 1% to 4% carbon, about 0.5% to 4.5% silicon, manganese up to about 1%, sulfur up to about 0.02%, phosphorus up to about 0.15%, and the balance iron with usual impurities in ordinary amounts, adding thereto metallic magnesium at least 50% of which is in the form of spheres of 6 to 100 mesh size in an amount sufficient to produce a residual magnesium between about 0.02% to 0.05%, casting the resulting molten mass, solidifying the cast and annealing to produce graphitization of carbon and feritization of the iron.

3,189,444
METALLIC COMPOSITION AND METHOD OF MAKING
Leonard E. Olds and Joseph F. Nachman, Denver, Colo., assignors to Colorado Seminary, Denver, Colo., a corporation of Colorado
Filed July 24, 1958, Ser. No. 752,392
16 Claims. (Cl. 75—148)



6. The method of making an aluminum base alloy of increased tensile strength which comprises performing in a controlled atmosphere the steps of melting a first and a second mass of aluminum, adding a quantity of silicon to the first molten mass to form a solution of silicon in aluminum, adding thorium to the second molten mass to form a solution of thorium in aluminum, mixing the first solution with a quantity of the second solution to provide sufficient thorium to react with substantially all of the silicon in the first solution to form a precipitate of fine particles of thorium silicide throughout the mass of aluminum, and cooling the molten mass rapidly to solidify the aluminum with the thorium silicide particles dispersed therein.

8. An aluminum base alloy comprising essentially approximately 1.7% by weight of thorium silicide and the balance aluminum plus incidental impurities, said thorium silicide being in the form of a dispersion of particles precipitated within the aluminum.

3,189,445
BINARY NICKEL BASE ALLOYS
Vincent P. Calkins, Cincinnati, Earl S. Funston, Hamilton, and James A. McGurty, Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Dec. 31, 1956, Ser. No. 631,977
3 Claims. (Cl. 75—170)

1. Binary alloys of nickel which consist of nickel and from 5 to 25 weight percent of a rare earth metal selected from the group consisting of samarium, europium, and gadolinium.

3,189,446
TERNARY NICKEL BASE ALLOYS
Vincent P. Calkins, Cincinnati, Earl S. Funston, Hamilton, and James A. McGurty, Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Dec. 31, 1956, Ser. No. 631,978
3 Claims. (Cl. 75—171)

1. An oxidation resistant ternary nickel base alloy which consists of nickel, chromium, and a rare earth metal selected from the group consisting of samarium, europium, and gadolinium, the weight ratio of nickel to chromium in said alloy being 4:1, and the amount of rare earth metal in said alloy constituting from 5 to 25 percent of the weight thereof.

3,189,447
ELECTROPHOTOGRAPHIC MATERIAL AND METHOD
Wilhelm Neugebauer, Martha Tomanek, and Hans Behmenburg, all of Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed May 29, 1957, Ser. No. 662,319
Claims priority, application Germany, June 4, 1956, K 29,014
41 Claims. (Cl. 96—1)

1. An electriphotographic material comprising an electrically conductive support layer and a photoconductive insulating layer, the latter containing a 2,5-bis-(p-aminophenyl)-1,3,4-oxadiazole and a dyestuff sensitizer.

3,189,448
DEVELOPING COMPOSITIONS USED IN PHOTOGRAPHIC TRANSFER PROCESSES
Frederic R. Bean, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 22, 1962, Ser. No. 218,500
8 Claims. (Cl. 96—28)

1. A composition useful in developing layers of unhardened gelatin-silver halide emulsions in a photographic transfer process, which essentially consists of an aqueous solution of an alkali metal salt of an aromatic sulfonic acid containing 6–8 carbon atoms per molecule, a polyethylene glycol containing up to 6 carbon atoms per molecule and sufficient alkaline material to impart a pH of 10.5–12.5 to the solution.

7. A method of photographic reproduction which comprises exposing an unhardened gelatin-silver halide photosensitive emulsion layer to a two-tone subject, developing in the presence of a tanning developing agent and treating with a composition essentially consisting of an aqueous solution of an alkali metal salt of paratoluene sulfonic acid, a polyethylene glycol containing up to 6 carbon atoms per molecule and sufficient alkaline material to impart a pH of 10.5–12.5 to the solution, thereby giving a hardened colloid image and leaving substantially unhardened colloid in the remaining area of the emulsion layer, pressing the emulsion layer while moist against a sheet having an absorbent surface to cause only said unhardened colloid portion of the layer to adhere to said sheet and separating said sheet and said emulsion layer whereby only a stratum of the unhardened colloid portion of said layer is transferred to said sheet.

3,189,449
COLLOID STRATUM TRANSFER PROCESS
Richard G. Yost, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 1, 1962, Ser. No. 227,562
4 Claims. (Cl. 96—28)

1. A method of photographic reproduction which comprises developing an exposed, substantially non-hardened, gelatino-silver halide emulsion layer, said emulsion being not harder than a gelatin layer containing 0.7 gram of formaldehyde per pound of gelatin freshly coated, with a solution of tripotassium phosphate and potassium salicylate in the presence of both a gelatin tanning silver halide developing agent and a substantially non-tanning silver halide developing agent to obtain a hardened gelatin and silver image in the areas of the emulsion layer corresponding to the highlights of the subject, and substantially unhardened gelatin, silver, and silver halide in the areas of the emulsion layer corresponding to the shadows of the subject, said development being such as to prevent any substantial tanning of the emulsion layer in said areas corresponding to the shadows of the subject, pressing a sheet having an absorbent surface against said emulsion layer while said emulsion layer is moist to cause only the shadow areas of the emulsion to adhere to the sheet, and separating said sheet and emulsion layer to transfer only a stratum of said shadow areas of the emulsion layer to said sheet.

3,189,450
PRETREATMENT OF IRON CONTAINING BASE PLATES AND THEIR USE IN PHOTOENGRAVING
Michael Kocsuta, 327 E. 285th St., Willoughby, Ohio
No Drawing. Filed Apr. 4, 1960, Ser. No. 19,484
19 Claims. (Cl. 96—36)

8. A process of reproducing an image in the surface of an iron-containing metal comprising the steps: (1) treating the surface of the metal with hydrochloric acid solution consisting essentially of about 30–53 grams of hydrogen chloride per gallon of solution while the metal is maintained at a temperature of about 110° F. to 140° F. for a period of about 2 to 6 minutes; (2) subsequently applying a coating of a photo-resist material selected from the class consisting of light-sensitive dichromate resists, light-sensitive polyvinyl cinnamate, light-sensitive bitumen, light-sensitive diazo resins, light-sensitive silver salt emulsions, light-sensitive vinyl monomer-polymer mixtures, and light-sensitive polymeric quaternary ammonium salt resins, while said metal is maintained at a temperature in the range of about 110° F. to 140° F.; (3) allowing said coating to dry; (4) exposing said coating to light of the type to which said photo-resist coating is sensitive in such a manner that different amounts of light strik-

ing different areas of said coating reproduce the desired image thereon; (5) placing in contact with said exposed photo-resist coating a developer which softens and makes removable that part of the photo-resist coating which did not receive light during exposure; and (6) removing the softened coating from the metal in the softened areas.

9. A process of claim 8 in which the exposed metal surfaces from which said softened coating has been removed are placed in contact with a mordant solution which etches said exposed surfaces.

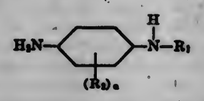
3,189,451

LIGHT SENSITIVE REPRODUCTION MATERIAL COMPRISING A COLLOID CONTAINING AN ALDEHYDE AND A DIAZOTIZED PHENYL AMINE COMPOUND AND USE THEREOF

Maximilian Karl Reichel, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Mar. 13, 1962, Ser. No. 179,489
Claims priority, application Germany, Mar. 15, 1961, K 43,194
34 Claims. (Cl. 96—49)

1. Light sensitive material comprising a carrier and a colloid layer, the latter including at least one aldehyde and at least one diazo compound of an amine having the formula



in which R_1 is selected from the group consisting of alkyl, aryl, aralkyl, cycloalkyl and heterocyclic groups, R_2 is selected from the group consisting of hydrogen, halogen, alkyl, alkoxy, nitro, and carboxyl groups, and n is an integer from 1 to 2.

3,189,452

COLOR-FORMING PHOTOGRAPHIC PROCESS UTILIZING A BLEACH-FIX FOLLOWED BY A BLEACH

Charleton C. Bard and George P. Varian, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 5, 1961, Ser. No. 157,096
4 Claims. (Cl. 96—55)

1. In the color processing of an exposed photographic silver halide emulsion layer containing a color coupler that has been color developed to form a dye image, the improvement which comprises treating the said color developed emulsion layer with an aqueous solution containing ferric chloride and a thiosulfate silver halide solvent and thereby solubilizing and removing silver and silver halide from said emulsion layer, and thereafter further treating the resulting emulsion layer with an aqueous solution containing a ferricyanide silver oxidizing agent and thereby oxidizing leuco dye in said emulsion layer to full color intensity.

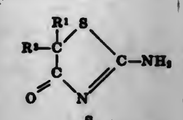
3,189,453

PHOTOGRAPHIC EMULSIONS CONTAINING THIO DERIVATIVES AS FIXERS AND METHOD OF USING SAME

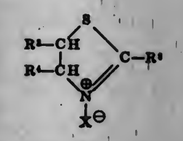
Arthur H. Herz and Norman W. Kalenda, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 25, 1961, Ser. No. 133,770
13 Claims. (Cl. 96—61)

1. A photographic silver halide emulsion containing at least one mole per mole of silver halide of a thiazoline derivative having a formula selected from the group consisting of



and



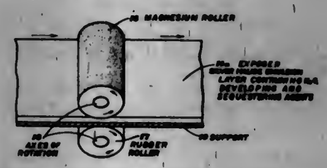
wherein R^1, R^2, R^5 and R^6 are selected from the group consisting of a hydrogen atom, a phenyl radical and an alkyl radical; R^3 and R^4 are selected from the group consisting of a hydrogen atom, a phenyl radical, an alkyl radical, an alkyl radical containing a hydroxyl group and together the necessary carbon and hydrogen atoms to form a phenyl radical; and X, in combination with the adjacent nitrogen atom, is selected from the group consisting of a covalent quaternary salt group containing an electronegative group and an alkyl quaternary salt group including an anion group.

3,189,454

METHOD OF PHOTOGRAPHIC DEVELOPMENT AND FIXING

George W. Luckey and Arthur A. Rasch, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 16, 1961, Ser. No. 145,368
18 Claims. (Cl. 96—61)



1. In a method for processing a photographic element containing at least one light-sensitive hydrophilic colloid layer containing silver halide grains with a latent image comprising the steps of:

(1) development to convert the said latent image to a silver image by contacting said layer with an aqueous alkaline solution of a developing agent, and subsequently

(2) fixing the said silver image by contacting the said layer with an aqueous solution of a fixing agent,

the improvement comprising the use of a substantially neutral solution in at least one of the said steps, and supplying substantially all of the hydroxyl ions needed by contacting the said hydrophilic colloid layer of the photographic element with the appropriate processing solution in the presence of at least one metal sequestering agent and at least one metal above hydrogen and not higher than magnesium in the electromotive series of metals.

3,189,455

VESICULAR PHOTOGRAPHIC MATERIALS CONTAINING A POLYAMIDE VEHICLE

Alfred F. Daech, New Orleans, La., assignor to Kalvar Corporation, New Orleans, La., a corporation of Louisiana

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,288
4 Claims. (Cl. 96—91)

1. A scatter center photographic material for producing a record by light scattering discontinuities within an otherwise optically homogeneous vehicle, said material consisting essentially of a dry film of water/alcohol soluble synthetic polyamide with a light decomposable solid agent substantially uniformly dispersed therein, said polyamide film having a permeabiliy constant within the range of 8.6×10^{-10} and 8.0×10^{-10}, said constant being the number of cubic centimeters of nitrogen transmitted at 30° C. by an area of one square centimeter in one second when the pressure gradient is one centimeter of mercury per centimeter of transmission layer thickness and said decomposable agent itself being non-reactive to said vehicle and upon exposure to light decomposing into products which are also chemically non-reactive to said vehicle and which solely upon warming are volatile to form said radiation scattering discontinuities only in the light struck areas in said polymer to thereby furnish said record.

3,189,456

RADIATION-SENSITIVE EMULSIONS AND ELEMENTS AND THEIR PREPARATION

Herman Dowd Hunt, Estontown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 19, 1961, Ser. No. 117,805
2 Claims. (Cl. 96—102)

1. A process for making light-developable, direct-writing colloid-silver halide emulsion characterized by adding to the liquified, washed colloid-silver halide emulsion having an average silver halide grain size in the range of 0.1 to 10 microns, an optical sensitizing dye selected from the group consisting of cyanine, pseudocyanine, carbocyanine and merocyanine dyes capable of extending the sensitivity of a silver bromide emulsion from the normal blue region to at least one of the green, red and infrared regions of the spectrum, maintaining the emulsion at a temperature of from 50° C. to 70° C. for a period of about 5 minutes to about 20 minutes so that the dye is thoroughly mixed and strongly adsorbed to the silver halide grains, then adding about 0.1 to 120 mole percent of a water-soluble stannous salt per mole of silver halide and a water-soluble halide.

3,189,457

SENSITIZED PHOTOGRAPHIC EMULSIONS CONTAINING QUATERNARY AMMONIUM COMPOUNDS

Donald M. Burness, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 11, 1961, Ser. No. 137,035
9 Claims. (Cl. 96—107)

1. A silver halide photographic emulsion containing therein, per mole of silver halide, 0.1 to 4 g. of a sensitizer selected from the group consisting of the compounds having the formula

$$YCH_2CHOHCH_2\overset{+}{N}R_2X^-$$

wherein Y is selected from the group consisting of alkyl mercapto groups of 6–30 carbon atoms and secondary and tertiary amino groups containing linear chains of 10–30 carbon atoms, R is lower alkyl of 1–4 carbon atoms and X is a suitable anion and the compounds having the formula

$$R_2\overset{+}{N}CH_2CHOHCH_2ZCH_2CHOHCH_2\overset{+}{N}R_2\cdot 2X^-$$

wherein R is lower alkyl of 1–4 carbon atoms, X is a suitable anion and Z is selected from the group consisting of dimercapto and diamino groups in which the mercapto and the amino groups are joined by an alkylene chain containing at least 4 carbon atoms and dimercapto and diamino groups in which the mercapto and the amino groups are joined by an aliphatic chain of hetero atoms including at least 4 carbon atoms.

3,189,458

SENSITIZING PHOTOGRAPHIC SILVER HALIDE EMULSIONS WITH ELEMENTAL SULFUR AND AN ORGANIC THIOL

Arthur H. Herz, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 6, 1961, Ser. No. 151,413
22 Claims. (Cl. 96—108)

1. The process for sensitizing a photographic silver halide emulsion which comprises incorporating in said emulsion:

(A) At least .0001 gram per mole of silver halide in said emulsion of an addendum selected from the group consisting of

(1) elemental sulfur, and

(2) a sulfur-containing compound that forms elemental sulfur in said emulsion; and

(B) At least .001 gram per mole of silver halide in said emulsion of a compound selected from the group consisting of

(1) an organic thiol, and

(2) a sulfur-containing compound that forms an organic thiol in said emulsion selected from the group consisting of

(a) an organic thioether, and

(b) an organic disulfide.

3,189,459

PHOTOGRAPHIC COMPOSITION CONTAINING EPOXY HARDENING AGENTS

Donald M. Burness, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 17, 1962, Ser. No. 244,898
The portion of the term of the patent subsequent to May 28, 1980, has been disclaimed and dedicated to the Public
4 Claims. (Cl. 96—111)

1. A photographic element comprising a layer which contains cellulose ether phthalate having a phthalyl content of at least 20% by weight and as a hardener therefor, a quaternary ammonium salt containing at least two oxirane rings separated from the quaternary nitrogen by a single carbon atom.

3,189,460

ROASTING AND HEATING METHODS

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

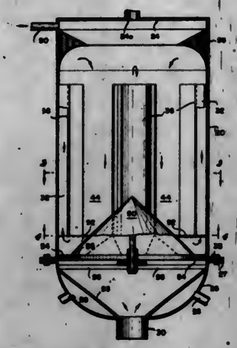
Filed Oct. 4, 1962, Ser. No. 228,429
9 Claims. (Cl. 99—68)

1. A method of roasting discrete coffee granules in a roasting vessel, comprising the steps of:

(a) pressurizing the roasting vessel to a pressure substantially above atmospheric pressure and in the range of from about 100 to about 300 pounds per square inch;

(b) effecting a continuous flow of a roasting fluid heated to a temperature of at least 300° F. upwardly through said roasting vessel; and

(c) effecting a continuous circulation of the granules being roasted through paths in which said granules alternately move upward in said roasting vessel in a first peripheral zone extending completely around the circumference of the roasting vessel and downwardly in a second zone surrounded by said first zone, whereby there is a uniform treatment of said granules by



the circulating roasting fluid, said circulation being effected by suspending said beans in said upwardly flowing roasting fluid in said peripheral zone to effect the upward movement of said beans and then moving said beans downwardly by gravity in said second zone;

(d) said circulation being continued until said granules are roasted.

3,189,461
PROCESS FOR PRODUCING QUICK-COOKING RICE

Ataullah K. Ozai-Durrani, Stuttgart, Ark.; James R. Cherry and The Chase Manhattan Bank, executors of said Ataullah K. Ozai-Durrani, deceased
No Drawing. Filed Sept. 15, 1960, Ser. No. 56,102
10 Claims. (Cl. 99—80)

4. In a process of preparing a quick-cooking rice product the steps which comprise parboiling the rice by soaking the rice in water at about room temperature and thereafter exposing the soaked rice to a water carrying medium at a temperature and for a period of time sufficient to gelatinize the starch substantially and increase the moisture content of the rice grains to about 27 to 45%, further hydrating the rice until it contains about 60 to 80% moisture, freezing the moisture in the rice grains while still containing about 60–80% by weight of moisture, and thawing the frozen moisture of said rice grains at a rate not greater than the rice grains will reabsorb the moisture so as to maintain the moisture content of the grains substantially constant.

3,189,462
PROCESS FOR THE PREPARATION OF PRECOOKED RICE

Harry S. Autrey and Lawrence Lynn, Houston, Tex., assignors to River Brand Rice Mills, Inc., Houston, Tex., a corporation of Delaware
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,715
26 Claims. (Cl. 99—80)

1. The proces of creating a precooked rice product that can be very rapidly rehydrated for serving and that upon rehydration substantially possesses the attributes of natural flavor and texture of a good grade of regular cooked rice, the process being characterized by a thermal cycling pretreatment to render the rice grains highly permeable and absorptive, and attained by a process comprising the steps of exposing the rice grains alternately to elevated and low temperatures, the grains being first exposed to an elevated temperature of from about 120° to 225° F., then to a low temperature of from about 60° to 100° F., and then for a second time to an elevated temperature of from about 120° to 230° F., whereby the rice grains are rendered highly permeable and adbsorptive; cooking the grains by subjection to heat and moisture until the grains reach a moisture content of from about 65 to 75% and are substantially completely gelatinized; and rapidly drying the cooked grains by spreading the grains in the form of a bed and raising the temperature of the bed to a temperature of from about 210° to 350° F. by passing a heated inert gas through the bed, whereby the cooked grains are rapidly dried to a stable moisture content.

3,189,463
PROCESS FOR PRODUCING COMPRESSED FROZEN SLICES OF BAKED CELLULAR PRODUCTS

W Bartlett Jones, 38 S. Dearborn St., Chicago, Ill.
No Drawing. Filed Dec. 21, 1961, Ser. No. 161,284
17 Claims. (Cl. 99—86)

1. A moisture-containing frozen compressed baked cellular cereal product characterized by expansibility on thawing.

12. The method which comprises compressing a moisture-containing baked cellular cereal product with retention of its cellular structure, freezing the compressed product while holding the product against expansion, and releasing the frozen product, whereby said product retains its compact form while frozen, the extent of compression being such as to effect a substantial reduction from original volume and such that on thawing the cellular structure expands substantially to said original volume.

3,189,464
BLUE CHEESE SALAD DRESSING

Burdet Heinemann, Springfield, Mo., assignor to Producers Creamery Company, Springfield, Mo., a corporation of Missouri
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,599
8 Claims. (Cl. 99—116)

1. A salad dressing which has the appearance and texture of a freshly-prepared dressing of the type containing pieces of blue cheese, said dressing comprising: a homogenized salad dressing base containing a member selected from the group consisting of fluidized blue cheese, blue cheese flavoring and mixtures thereof; and a particulate member selected from the group consisting of particles of cottage cheese in curd form and mixtures thereof with dried cultured mycelial pellets of *Penicillium roqueforti*, said particulate member being dispersed in said base to produce the texture and appearance of dispersed blue cheese particles, said cottage cheese particles being present in an amount from about 0.5% to about 30% by weight.

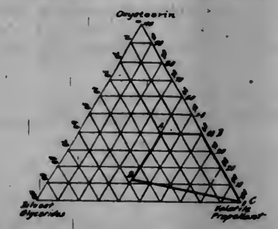
3,189,465
COOL TASTING MARGARINE

Henry Bowen Oakley, Bebington, and Timothy James Gullick, Birkenhead, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed May 7, 1962, Ser. No. 192,961
Claims priority, application Great Britain, May 15, 1961, 17,596/61
11 Claims. (Cl. 99—122)

1. Cool tasting margarine in which the total fat has the following dilatations: at 37° C. below 40, at 30° C. below 150, at 25° C. below 350 and at 15° C. at least 350 units higher than at 25° C., said total fat consisting of 0 to 10% of butter and 100 to 90% of a fat composition which is substantially free from trisaturated glycerides other than those characteristic of palm kernel oil and coconut oil, said fat composition the lower melting moiety of a fractionated mixture of palm oil and an oil selected from the class consisting of lard and liquid oils hardened to a slip-melting point of 33 to 35° C., said mixture being at least the major proportion of said total fat, all percentages being by weight.

3,189,466
ANTI-STICKING COMPOSITION FOR FRYING AND BAKING

James A. McGrory, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 2, 1962, Ser. No. 163,706
8 Claims. (Cl. 99—123)



1. The method of improving a cooking utensil for frying and baking which comprises coating the cooking surface of the said utensil with a thin film of an anti-sticking composition consisting esssentially of from about 20% to about 95%, by weight, oxystearin and from about 5% to about 80%, by weight, diluent glyceride.

3,189,467
PRESERVATION OF PERISHABLE PRODUCTS

Arthur F. Kalmar, Riverside, Calif., assignor to FMC Corporation, a corporation of Delaware
No Drawing. Filed Dec. 14, 1959, Ser. No. 859,138
10 Claims. (Cl. 99—168)

1. A process of preserving fruit consisting of contacting fruit with a non-aqueous solution consisting essentially of between about 1 percent and about 20 percent by weight of resin, between about 0.5 percent and about 5 percent by weight of orthophenylphenol, and a petroleum distillate solvent which will dissolve said resin and orthophenylphenol, said resin and said orthophenylphenol being present in a ratio of at least about two parts resin to about one part orthophenylphenol, the balance of said solution being said solvent.

3,189,468
PROCESS FOR PRESERVING FRUITS AND VEGETABLES AND PRESERVATIVE COATING THEREFOR

Arthur F. Kalmar, Riverside, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,376
4 Claims. (Cl. 99—168)

1. A process of enabling intimate contact of a fungicide with the surface of fruit and vegetables which it is desired to preserve, said surface including mold spores and their hydrophobic coverings, consisting essentially of applying on said surface a non-aqueous solution consisting essentially of the fungicide 1,2-dibromo-1,1,2,2, tetrachloroethane a waxy carrier for said fungicide, and a non-aqueous volatile organic solvent capable of dissolving said carrier and fungicide, said fungicide and carrier being dissolved in said solvent, the ratio of carrier to fungicide being such as to enable the fungicide to be controllably released from said carrier so as to vaporize around said surface, said fungicide being uninhibited by an emulsifier which, if present, would prevent intimate contact of said fungicide with the hydrophobic covering of the mold spores and would also coat said mold spores thereby forming a barrier against the entrance of the fungicide thereinto, said fungicidal vapor thereby directly contacting said mold spores and their hydrophobic coverings.

3. A preservative composition for application to the surface of fruits and vegetables having mold spores consisting essentially of a solution of waxy carrier and the fungicide 1,2-dibromo-1,1,2,2,tetrachloroethane dissolved in non-aqueous solvent capable of dissolving said carrier and fungicide, the ratio of carrier to fungicide being such as to enable the fungicide to be controllably released from said carrier so as to vaporize around and intimately contact said spores, said fungicide being uninhibited by the presence of an emulsifier which, if present, would prevent said intimate contact.

3,189,469
CONCRETE CURING COMPOSITIONS

Frank W. Littler, Mineola, Ernst P. Rittershausen, Hempstead, and Cornelius C. Smith, Lynbrook, N.Y., and Irving P. Hammer, Nutley, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed Feb. 23, 1961, Ser. No. 90,977
6 Claims. (Cl. 106—12)

1. A wax emu sion of high reflectance when applied to a surface and adapted for application to fresh concrete as a curing aid, comprising in combination: about 15–50% by weight of hydrocarbon wax; about 1–10% by weight of the reaction product of (1) at least one fatty material of the grouping consisting of C_{12}–C_{22} saturated fatty acids, C_{12}–C_{22} unsaturated fatty acids and fatty material containing said acids, and (2) at least one material selected from the group consisting of an alkali metal base and an amine; about 1–10% by weight of a dispersible pigment of high reflectancy; about 1–3% by weight of a pigment dispersant system comprising a mixture of nonionic and anionic dispersants; and the balance water, said combination provided in stable emulsified form so as to provide a reflectancy value of at least 60.

3,189,470
CERAMIC MICACEOUS MATERIAL

Roger A. Long, Escondido, Calif., assignor to Whittaker Corporation, a corporation of California
No Drawing. Filed May 29, 1961, Ser. No. 113,068
17 Claims. (Cl. 106—39)

8. A ceramic material of the crystalline type adapted for use in radomes, antenna windows and the like, consisting essentially of an intimate substantially homogeneous mixture of micaceous crystals and a binder, said binder being present in an amount sufficient to effectively bond said micaceous crystals, said binder being a eutectic of a metal pyrophosphate and a member selected from the group consisting of micaceous crystals and refractory oxides, said binder having a melting point less than the decomposition point of said micaceous crystals.

3,189,471
HIGH TENSILE STRENGTH MAGNESIUM ALUMINUM SILICATE GLASS COMPOSITIONS

George L. Thomas, Parma, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed May 11, 1962, Ser. No. 194,156
6 Claims. (Cl. 106—50)

1. A glass composition, employing B_2O_3 as a flux, for high tensile strength glass fiber consisting of:

SiO_2	50.0–64.0
Li_2O	0.1–2.5

Al_2O_3	18.0–30.0
MgO	11.0–23.0
B_2O_3	0.0–4.9
Sb_2O_3	0.0–1.0
Fe_2O_3	0.0–1.0

parts by weight with the ratio Al_2O_3/MgO in the range of 1.0–2.2, said fiber having a tensile strength from about 541,000 to 663,000 p.s.i.

3,189,472
REFRACTORY ARTICLES
Kenneth M. Taylor, Lewiston, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Feb. 3, 1961, Ser. No. 87,032
3 Claims. (Cl. 106—55)

1. A method for producing a dense body consisting principally of silicon carbide and having improved resistance to oxidation at temperatures in the range from about 1500° C. to about 1850° C., which comprises: forming a body consisting essentially of silicon carbide, carbon, and, as an additive for imparting said oxidation resistance, at least one member of the group consisting of tungsten, chromium, iron, hafnium, tantalum, titanium, zirconium, and molybdenum, and compounds thereof; and siliconizing said body at a temperature of at least about 2100° C. to convert said carbon to silicon carbide whereby to give a dense body having a density of at least 3.0 g./cm.³, said additive being present before siliconizing in an amount equivalent to from about 2 wt. percent to about 10 wt. percent of metal in said dense body and being of such nature as to remain in said body at the temperature employed in siliconizing said body.

3,189,473
METHOD OF MAKING A CONTAINER
Berthold C. Weber, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Apr. 2, 1962, Ser. No. 184,610
1 Claim. (Cl. 106—57)
(Granted under Title 35, U.S. Code (1952), Sec. 266)

The method of making a container for molten titanium comprising forming a mixture of 93.5 percent ZrO_2 powder and 6.45 percent Ti powder, adding methyl alcohol to the powder mixture to form a suspension, casting the suspension into a desired shape, air drying the shape, firing the dried shape in a vacuum at a temperature in the range from about 1760° C. to about 1870° C. and cooling the fired shape in the vacuum.

3,189,474
METHOD FOR THE PRODUCTION OF A RIGID MASS FOR ACETYLENE GAS ACCUMULATORS
Sten Gunnar Dalen, Lidingo, and Sten Mogensen, Djursholm, Sweden, assignors to Svenska Aktiebolaget Gasaccumulator, Lidingo, near Stockholm, Sweden, a corporation of Sweden
No Drawing. Filed Mar. 22, 1962, Ser. No. 181,799
Claims priority, application Sweden, May 25, 1961, 5,456/61
5 Claims. (Cl. 106—86)

1. A method of producing a rigid porous mass for acetylene gas accumulators comprising forming a mixture comprising a siliceous acid material and a lime containing material in approximately stoichiometric quantities, water in excess of the stoichiometric amount, and a plurality of small pearl-shaped bodies constituted by a frangible thin shell and a fluid entrained therein, said shell being non-penetrable by said entrained fluid, and thereafter heating the whole to cure said mixture, to evaporate the surplus of water, and to burst said frangible shells whereby the rigid mass thus obtained comprises a fine porosity due to evaporation of surplus water from said mixture and a coarse porosity due to the evaporation of fluid from the frangible pearl-shaped bodies.

3,189,475
PINK CERAMIC STAIN AND PROCESS
John E. Marquis, Towson, and Robert E. Carpenter, Baltimore, Md., assignors to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 20, 1962, Ser. No. 246,148
14 Claims. (Cl. 106—299)

1. A ceramic stain which is the solid state reaction product resulting from the oxidative calcination at 1800° F.–2300° F. for 1–5 hours of a uniform mixture of the following comminuted starting materials whose proportions are expressed in weight percent and total 100%:

	Percent
Zirconia having a purity of at least 98%	50–75
Silica	13–40
Alkaline silicofluoride mineralizer	2–10
Ferric oxide (Fe_2O_3)	2.5–25

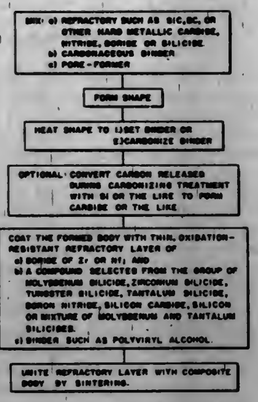
said zirconia having an average particle size and particle size distribution such that substantially all particles are between 1 and about 6 microns; and said silica consisting of particles finer than about 325 mesh.

3,189,476
METALLIZING PROCESS FOR CERAMICS
Robert E. Cowan, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Sept. 18, 1962, Ser. No. 224,578
8 Claims. (Cl. 117—22)

1. A process for forming a metallic coating on an alumina ceramic surface, said coating containing between 84 and 95 percent by weight of the metal, said metal being selected from the class consisting of molybdenum and tungsten, comprising the applying of a powdered calcium oxide-aluminum oxide and a metallic oxide of at least one of the said metals in an approximate molar ratio of 1:1:10 respectively in a thin coating to the said ceramic surface and heating the said ceramic and its coating in an atmosphere which is reducing only to said metallic oxide to a temperature of approximately 1650° C. for about 30 minutes.

3,189,477
OXIDATION-RESISTANT CERAMICS AND METHODS OF MANUFACTURING THE SAME
Peter T. B. Shaffer, Niagara Falls, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 13, 1960, Ser. No. 21,896
14 Claims. (Cl. 117—46)

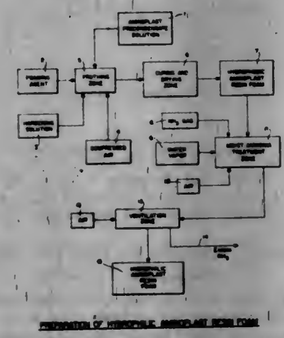
1. A composite, oxidation-resistant refractory article comprising a refractory body portion and a sintered coating of an oxidation-resistant refractory material on at least one external surface thereof, said coating being formed from a mixture consisting essentially of at least 50 mole percent of a boride of a metal selected from the group consisting of zirconium and hafnium and up to 50 mole percent of a compound selected from the group consisting of molybdenum silicide, zirconium silicide, tungsten silicide, tantalum silicide, silicon carbide, silicon, boron nitride, and a mixture of molybdenum and tantalum silicides, said coating being substantially impervious to gases.



3,189,478
CONDUCTIVE SILVER COATING OF RESINS HAVING AMINE GROUPS AT THE SURFACE
James Cooper, Jr., Elkins Park, Pa., assignor to General Electric Company, a corporation of New York
No Drawing. Filed July 2, 1962, Ser. No. 207,082
1 Claim. (Cl. 117—47)

In the process of silvering, by Brashear's method, the surface of a resin having free amine radicals at its surface, which process comprises the step of sensitizing the said surface with a solution of stannous chloride prior to application of Brashear's silvering solution thereto, the improvement comprising the step of treating the said surface of the plastic, after said sensitizing with said solution of stannous chloride, with a solution of ammonium hydroxide.

3,189,479
MODIFIED RESIN FOAMS AND PROCESS OF MANUFACTURE THEREOF
Sydney Coppick, Ridley Park, and Ronald L. Beal, Lansdowne, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 4, 1961, Ser. No. 142,777
8 Claims. (Cl. 117—98)

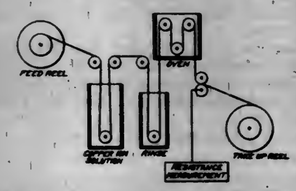


1. A process of imparting hydrophilicity to a foamed, cured and hardened aminoplast resin structure which comprises contacting the surfaces of said foam structure with ammonia.

3,189,480
PRESSURE SENSITIVE ADHESIVE SHEET MATERIAL WITH DIKETENE-ACRYLIC ACID ESTER COPOLYMER COATING
Kurt Franzen, Hamburg, and Horst Lehmann, Hamburg-Niendorf, Germany, assignors to P. Beiersdorf & Co. Aktiengesellschaft, Hamburg, Germany
No Drawing. Filed Apr. 23, 1962, Ser. No. 189,287
Claims priority, application Germany, Apr. 25, 1961, B 62,276
5 Claims. (Cl. 117—122)

1. A pressure sensitive adhesive coated sheet material comprising a flexible backing having bonded thereto a pressure sensitive adhesive material in the form of a cured coating of a copolymer of monomers comprising (a) at least one monomeric acrylic ester of a non-tertiary alkyl alcohol having from one to fourteen carbon atoms, and (b) a minor amount of diketene, the amount of diketene being selected to provide a normally tacky and pressure sensitive adhesive copolymer, said amount of diketene being less than about thirty-five mole percent of the total amount of monomers, said cured coating being formed by curing the coating at a temperature between about 100° to 150° C.

3,189,481
METHOD FOR THE PREPARATION OF COPPER SULFIDE FILMS AND PRODUCTS OBTAINED THEREBY
Joseph Gaynor and James F. Burgess, Schenectady, and Bernard C. Wagner, Troy, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 29, 1961, Ser. No. 134,701
6 Claims. (Cl. 117—211)

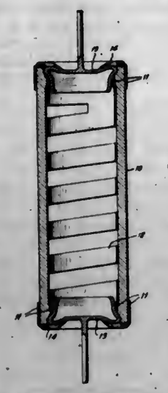


1. A method for the preparation of a transparent electrically conducting film on a flexible polymeric substrate which comprises nucleating the receptor surface of the substrate with a low-surface mobility metal, vapor depositing a crystalline layer approximately 50 to 400 angstroms thick of a first compound selected from the group having a cation selected from the group consisting of zinc, cadmium, and mixtures thereof and an anion selected from the group consisting of sulfur, selenium, tellurium, and mixtures thereof on the receptor surface of the substrate, and contacting the crystalline layer with a liquid solution of copper ions for a period of time sufficient to convert at least the major portion of the crystalline layer to an electrically conducting copper compound film wherein copper ions are substituted for cations of said first compound.

3,189,482
METAL FILM RESISTOR AND METHOD OF ITS FORMATION
Harry D. Bajars, Livingston, N.J., Martin Pope, Brooklyn, N.Y., and Edward G. Barth, Union, and Richard J. Newman, West Orange, N.J., assignors, by mesne assignments, to General Mills, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 9, 1961, Ser. No. 94,492
9 Claims. (Cl. 117—212)

1. A method which comprises forming a solution of gold resinate, palladium resinate and iron resinate, depositing said solution on an inert, relatively refractory

surface and subjecting the thus deposited solution in a non-oxidizing environment to a relatively high temperature sufficient to thermally decompose each of the afore-



mentioned resinates with the resulting production of the corresponding free metal and thereupon subjecting the resulting heat treated material to a relatively high temperature in the presence of free oxygen.

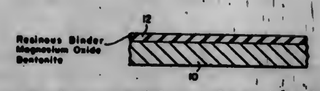
3,189,483

COATINGS FOR MAGNETIC SHEET MATERIAL

Warren M. Trigg, Orchard Park, N.Y., and Byron V. McBride, Irwin, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Application Jan. 15, 1959, Ser. No. 786,922 which is a division of application Ser. No. 452,472, Aug. 26, 1954, now Patent No. 2,904,875, dated Sept. 22, 1959. Divided and this application Oct. 26, 1962, Ser. No. 233,309

4 Claims. (Cl. 117—222)



1. Magnetic sheet material coated on at least one side thereof with a tenaciously adhering coating consisting of from 3.45 to 10.45 parts by weight of a mixture of magnesium oxide containing up to 50% of its weight of a finely divided inert refractory insulating solid selected from the group of metal oxides, metal silicates and metal phosphates, and from 0.1 to 1 part by weight of bentonite, said coating bonded to the sheet by at least one fully cured aminotriazine-aldehyde resin.

3,189,484

PROCESS FOR THE DRYING OF NEGATIVE ELECTRODE PLATES

Folke Sundman, Hultsfred, Sweden, assignor to Boliden Batteri Aktiebolag, a company of Sweden

Filed July 27, 1964, Ser. No. 386,118
Claims priority, application Sweden, Jan. 14, 1960, 327/60
1 Claim. (Cl. 136—33)

A method for the drying and coating of a negative electrode plate for lead accumulators of the dry-charged type, which plate contains water following the forming process, comprising

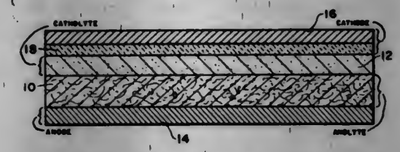
(1) suspending said plate in a bath consisting of a treatment liquid which is no more than slightly miscible with water, said liquid boiling at a temperature higher than the boiling point of water and being substantially free of difficulty volatile material,
(2) heating said bath to a sufficiently high temperature to expel substantially all of the water from said plate by evaporation and to substitute said treatment liquid for said water,
(3) removing said plate from said treatment liquid, suspending said plate and permitting partial drying thereof by self-contained heat,
(4) suspending said plate in a second bath consisting of a solution of substantial amounts of difficulty volatile material in a volatile solvent not miscible with water but miscible with said treatment liquid, whereby the upper parts of said plate receive comparatively more of said difficulty volatile material than the lower parts, and
(5) removing said plate from said second bath and evaporating said volatile solvent so that said solution of difficulty volatile material in a solvent not miscible with water absorbed by said plate flows downwardly following said second bath and in the evaporating process to distribute uniformly throughout the active mass of said plate, seen in directions parallel with the flat sides of the latter.

3,189,485

ELECTROCHEMICAL POWER PRODUCING BATTERY CELL

Richard E. Panzer, Arlington, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 25, 1962, Ser. No. 168,850
2 Claims. (Cl. 136—93)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An electrochemical power producing battery cell comprising:

(a) a solid uranium metal anode,
(b) a cathode of uranium oxide (UO_3),
(c) an electrolyte pill made in two sections—an anolyte section and a catholyte section,
(d) said cell being operative at and above the melting point of said electrolyte and below the melting point of the cell electrodes.

3,189,486

PRIMARY ELECTRIC CELL

Michael J. Pryor and Douglas S. Kelr, Hamden, and Philip R. Sperry, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,024
7 Claims. (Cl. 136—100)

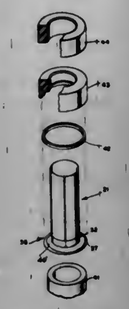
1. In a primary electric cell containing a metal anode, a consumable unpolarized cathode, and a liquid electrolyte in contact with said anode and said cathode, the improvement wherein said metal anode is of an aluminium base alloy consisting essentially of at least 90 percent aluminum and between 0.04 and 0.5 percent tin with the tin being retained in solid solution to the maximum degree, said maximum degree being 0.1 percent.

3,189,487

METHOD OF ASSEMBLING BATTERIES

Rodolfo Rodriguez Balaguer, Harbor Beach, Fort Lauderdale, Fla., assignor to J. D. Hedges and Company, Limited Partnership, Kingston, Jamaica, British West Indies, a limited partnership of Cuba

Filed Oct. 20, 1961, Ser. No. 146,585
19 Claims. (Cl. 136—175)



1. In the method of assembling a primary battery having a cylindrical hollow metal anode and a circular metal end cap, the steps of placing a quantity of solder on the inside surface of said end cap, heating said end cap to melt said solder whereby said solder spreads in a molten layer over at least a major portion of the inside surface of said end cap, placing a quantity of a molten mastic bituminous material on said solder layer whereby said material spreads in a molten layer over said solder layer, forcing one end of said cylindrical anode through said layers of material and solder and into firm contact with said end cap, and allowing said end cap and said layers to cool whereby said solder and said material harden.

15. In the method of assembling a primary battery having a hollow cathode cup and a hollow cylindrical anode with a bibulous paper wrapping covering the major portion of the inner and outer surfaces of said anode, the steps comprising coating said bibulous paper with a jellied soft startch solution, placing a predetermined quantity of battery mix in said cup, and forcing said anode with said coated bibulous paper wrapping through said battery mix into position within and concentric with said cup.

19. In the method of assembling a primary battery having a cylindrical hollow metal anode, the steps of placing a flat rectangular metal battery anode blank on a bibulous paper blank, said paper blank comprising a first rectangular portion having a height slightly greater than the height of said anode blank, and a second rectangular portion having a height slightly less than the height of said anode blank and a width less than the width of said first portion, said portions being in alignment side by side and about a central lateral axis and having a combined width less than twice the width of said anode blank, said first portion being slit below the top and bottom edges thereof, said slits being in alignment with and forming extensions of the upper and lower edges, respectively, of said second portion and extending inwardly to an imaginary fold line at the lateral midpoint of said combined portions, one side edge of said anode blank being aligned with said fold line and said anode blank being aligned with said portions about said central lateral axis, folding said paper blank about said fold line so that said blank overlies the major portion of both sides of said anode blank, folding the excess height sections of said first portion forwardly and inwardly so as to cover the top and bottom sections of said anode blank not covered by said second portion, and folding the tabs formed in said first portion by said slits about said fold line so as to overlie said first portion adjacent the upper and lower edges, respectively, of said anode blank.

3,189,488

SOLUTIONS AND METHOD FOR COATING METAL SURFACES

Louis Schiffman, Elkins Park, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed Sept. 24, 1962, Ser. No. 225,876
10 Claims. (Cl. 148—6.2)

1. The method of applying a coating to the surface of metals selected from the class consisting essentially of iron, zinc and aluminum which method comprises treating the surface with an aqueous bath, the coating producing ingredients of which bath consist essentially of:

(1) at least 0.25% by weight of a product comprising mixtures of chromic acid including its soluble salts and reduced forms thereof such as is derived from the reaction of an aqueous solution consisting essentially of from 50 to 800 grams/liter of a hexavalent chromium compound, expressed as CrO_3, with from 0.03 to 1 mol of formaldehyde, expressed HCHO, for each mol of said hexavalent chromium compound, and
(2) at least 0.1% by weight of water soluble polymers of hydroxyethyl ethers of cellulose,

the treatment being continued until the metal surface is completely wetted by the solution, and then drying the surface.

3,189,489

METHOD AND SOLUTIONS FOR TREATING METAL SURFACES

Louis Schiffman, Elkins Park, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed Sept. 24, 1962, Ser. No. 225,879
10 Claims. (Cl. 148—6.2)

1. The method of applying a coating to the surface of metals selected from the class consisting essentially of iron, zinc and aluminum which method comprises treating the surface with an aqueous bath, the coating producing ingredients of which bath consist essentially of:

(1) mixtures of chromic acid including its soluble salts and reduced forms thereof such as are derived from the reaction of an aqueous solution consisting essentially of from 50 to 800 g./l. of a hexavalent chromium compound, expressed as CrO_3, with from 0.03 to 1 mol of formaldehyde, expressed as HCHO, for each mol of said hexavalent chromium compound, and
(2) a polyvinyl alcohol compound

the quantity of each of (1) and (2) in the bath being not less than 0.25% by weight, the treatment being continued until the surface is completely wetted by the solution, and then drying the surface.

3,189,490

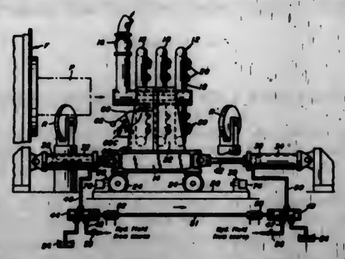
METHOD AND APPARATUS FOR QUENCHING PIPE

James A. Scott, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of New Jersey

Filed Nov. 5, 1962, Ser. No. 235,341
7 Claims. (Cl. 148—18)

7. The process of spray quenching pipe sections emerging successively from a furnace, said process being adapted to reduce the propensity for trailing end cracking of the pipe due to spray entering internally of the pipe before the trailing end of the pipe has had extended quenching, said process comprising moving a pipe section with respect to a quenching spray, then moving the quenching

spray a substantial distance in the direction of pipe travel as the trailing end of the pipe approaches the quenching



spray, and thereafter returning the quenching spray to its original position.

3,189,491
ALUMINUM FLUX
Frank E. Robbins, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,065
8 Claims. (Cl. 148—26)

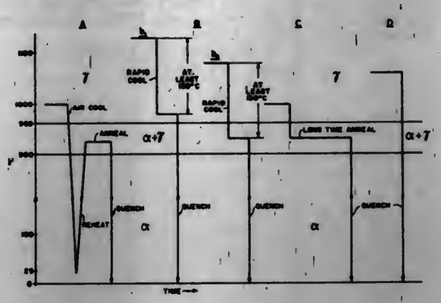
1. A flux composition for use in melting aluminum and aluminum alloys containing at least 70 percent aluminum in a melt vessel, said flux composition consisting essentially of from about twenty to about thirty-five percent sodium chloride, from about fifty to about seventy percent calcium chloride, from about four to about ten percent barium chloride, and from about three to about ten percent calcium fluoride.

3,189,492
CAST IRON OF HIGH MAGNETIC PERMEABILITY
Harry B. Laudenslager, Jr., Jamestown, and Everett W. Hale, Falconer, N.Y., assignors to Blackstone Corporation, a corporation of New York
Filed Jan. 29, 1963, Ser. No. 254,730
6 Claims. (Cl. 148—35)

1. A cast iron of high magnetic permeability comprising about 1.75% to 2.3% carbon, about 2% to 4% silicon, up to about 0.02% sulfur, up to about 0.05% phosphorus, up to about 0.4% manganese, about 0.025% to 0.05% magnesium and the balance iron with usual impurities in ordinary amounts, said iron having been cast white and having been annealed by a malleable iron heat treatment cycle to convert the carbon to temper carbon, said iron having a permeability of at least about 80 kilolines/in.^{2} at 40 ampere turns per inch.

3,189,493
PROCESSES FOR PRODUCING DUCTILE COBALT-IRON-VANADIUM MAGNETIC ALLOYS
Charles W. Chen, Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 14, 1961, Ser. No. 131,161
2 Claims. (Cl. 148—120)

1. A heat treatment process capable of developing a highly ductile microstructure in an alloy member whereby the alloy member may be readily cold-worked to sheet form and thereafter heated treated to develop good magnetic properties, the alloy consisting essentially of, by weight, from 0.5% to 4% vanadium from 30% to 70% cobalt, and the balance iron except for small amounts of incidental impurities, the steps comprising, annealing the alloy member at a temperature above the two-phase region, air cooling the member to ambient temperature to produce a fine-grain two-phase structure, reheating the member to a temperature in the two-phase region for at least 50 minutes, and quenching the alloy member in a medium at a temperature below room temperature to



obtain a fine-grain microstructure having a high proportion of martensite therein.

3,189,494
EPITAXIAL CRYSTAL GROWTH ONTO A STABILIZING LAYER WHICH PREVENTS DIFFUSION FROM THE SUBSTRATE
John P. Short, Satellite Beach, Fla., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,877
12 Claims. (Cl. 148—175)

1. An improvement in the process for epitaxial crystal growth wherein a solid epitaxial layer of monocrystalline structure is grown upon a doped crystal substrate at an elevated temperature by nucleation of a semiconductor material from the gaseous phase upon a monocrystalline surface of the crystal substrate followed by continued growth of said epitaxial layer by the deposition of additional semiconductor material from the gaseous phase upon the exposed surface of the growing epitaxial layer the improvement in combination therewith comprising epitaxially growing a stabilizing monocrystalline layer on said substrate at said elevated temperature, thereafter lowering the temperature of the crystal growth surface of the said stabilizing layer to a temperature above the polycrystalline formation temperature of said semiconductor material, and continuing the growth process of said layer at the lower temperature.

3,189,495
AMMONIUM NITRATE COMPOSITION CONTAINING COMBUSTION CATALYST SYSTEM WITH AN N-AMINOALKYL-MORPHOLINE
Jack Linck, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Apr. 24, 1958, Ser. No. 733,223
3 Claims. (Cl. 149—19)

1. A composition consisting essentially of between about 0.5 and 8 weight percent of a Prussian blue, between about 0.5 and 8 weight percent of an N-aminoalkylmorpholine having 1–4 carbon atoms in the alkyl portion, ammonium nitrate as the predominant component and between about 10 and 40 weight percent of oxidizable organic binder consisting of a polymeric base selected from the class consisting of cellulose esters of alkanoic acids containing from 2 to 4 carbon atoms, polyvinyl chloride, polyvinyl acetate, and styrene-acrylonitrile, and an oxygenated hydrocarbon plasticizer therefor.

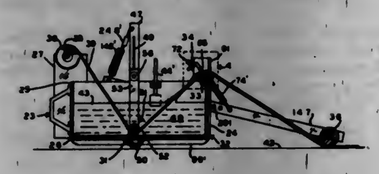
3,189,496
AMMONIUM NITRATE PROPELLANT CONTAINING AMINO ALKANDIOATE COMBUSTION CATALYST
Jack Linck, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Jan. 29, 1958, Ser. No. 712,049
4 Claims. (Cl. 149—19)

1. A composition consisting essentially of between about 0.5 and 15 weight percent of alkali-metal aminoalkandioate having 4–6 carbon atoms as a combustion catalyst, ammonium nitrate as the predominant component and between about 10 and 40 weight percent of oxidizable organic material consisting of a polymeric base selected from the class consisting of cellulose esters of alkanoic acids containing 2 to 4 carbon atoms, polyvinyl chloride, polyvinyl acetate and styrene-acrylonitrile, and an oxygenated hydrocarbon plasticizer therefor.

3,189,497
BORON HYDRIDE SALT-HYDRAZINE SYSTEM
Robert E. Williams, La Canada, Calif., assignor to National Engineering Science Co., Pasadena, Calif., a corporation of California
No Drawing. Filed Mar. 29, 1962, Ser. No. 183,392
13 Claims. (Cl. 149—22)

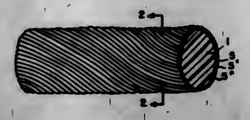
1. A mixture comprising pentaborane-9, hydrazine and LiB_4H_7.

3,189,498
ROOFING METHOD
Harry Michael Rapp, 8722 Lupton Lane, Houston, Tex.
Original application Jan. 30, 1961, Ser. No. 85,805, now Patent No. 3,148,104, dated Sept. 8, 1964. Divided and this application Feb. 6, 1962, Ser. No. 171,482
4 Claims. (Cl. 156—71)



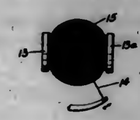
1. A method of automatically impregnating roofing webbing and applying same to a roof surface in a predetermined path comprising the steps of drawing a sheet of said webbing through a body of liquid tar in a container therefor and thereafter drawing one side of said sheet of webbing against a first firm surface at an acute angle to said sheet of webbing, thereby pressing the liquid tar into the interstices of said webbing and forcing tar through the webbing in a first direction, and thereafter passing the other side of said sheet of webbing material against a second firm surface above the level of the liquid tar at an acute angle to the plane of said webbing and forcing tar through the webbing in a direction opposite to said first direction while a third firm scraping surface parallel to said second firm surface is in proximity to the first side of said sheet of webbing and continuously downwardly applying a portion of the weight of said body of tar to the upper surface of said thus impregnated sheet of webbing downwardly in contact with the roof surface while moving said body of liquid in said predetermined path.

3,189,499
METHOD FOR MAKING POROUS COMPOSITE MATERIALS
Herbert S. Schwartz, Tretwood, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 9, 1961, Ser. No. 108,963
6 Claims. (Cl. 156—155)
(Granted under Title 35, U.S. Code (1952), sec. 266)



5. The method of making a porous composite material that comprises the recited steps of moving linearly a substantially cylindrical soluble plastic core, applying a slippage preventing cement to the core, winding spirally on the plastic core a plurality of insoluble refractory filaments in juxtaposed position axially of the core to substantially cover the surface of the plastic core to make a yarn, impregnating a plurality of yarns with cement, positioning said impregnated yarns together in bonding relationship, applying heat and pressure to form the cement impregnated yarns into a formed object, and dissolving out selectively the soluble plastic core.

3,189,500
METHOD OF MAKING A COMPOSITE MULTI-WALLED PRESSURE VESSEL
William J. D. Escher, 4907 Sherwood St., Washington 21, D.C.
Filed July 27, 1961, Ser. No. 127,405
3 Claims. (Cl. 156—155)
(Granted under Title 35, U.S. Code (1952), sec. 266)

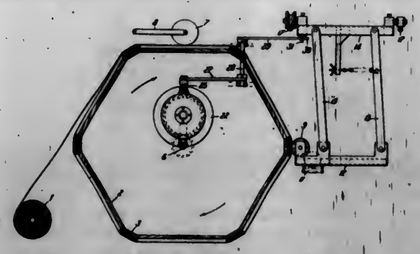


3. A method of forming a pressure vessel of the type having a liner shell spaced inwardly from an outer shell, comprising the steps of bonding a plurality of outwardly extending rigid members to the exterior surface of the liner shell, applying a melt-out material to the exterior surface of the liner shell between the rigid members, winding a resin-impregnated filament about the melt-out material to a depth less than the axial length of the rigid members, providing a head for the exposed extremity of each of the rigid members, winding an additional resin-impregnated filament about the first mentioned filament and enclosing the headed members in interlocked relation therein to form the outer shell, curing the resin-impregnated filament to provide a composite with the liner shell supported in tension on the outer shell, and removing the melt-out material to form a space between the liner shell and the outer shell.

3,189,501
HONEYCOMB MATERIALS
Desmond Deverell White, Radlett, England, assignor to Dufaylite Developments Limited
Filed Oct. 19, 1961, Ser. No. 146,286
Claims priority, application Great Britain, Oct. 21, 1960, 36,226/60
2 Claims. (Cl. 156—189)

1. A method of producing unexpanded structural honeycomb material which comprises winding a single web of sheet material upon a rotary former formed with flat web receiving faces, applying to the sheet material, during the

winding operation, an adhesive which is distributed in mutually parallel evenly spaced bands extending in the winding direction of the web material, shifting the position of the bands across the web between a first registration position and a second registration position an odd number of times for each revolution of the former, said shiftings being made when the former occupies predeter-



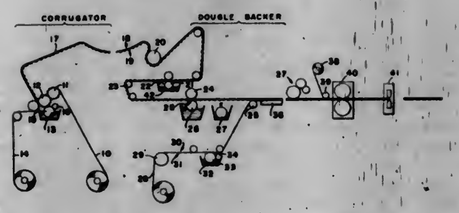
mined angular positions on its rotation and said first and second positions being such that on account of the shifting the wound material has the adhesive bands on one layer staggered with respect to the adhesive bands on the next preceding layer, slicing the wound material parallel with the axis of rotation of the former to divide it into sections and removing the sections from the former.

3,189,502

METHOD OF MAKING IMPREGNATED CORRUGATED PAPERBOARD SHEETS ON A CORRUGATOR MACHINE

John R. Little, Sandusky, Ohio, assignor to West Virginia Pulp & Paper Company, New York, N.Y., a corporation of Delaware

Filed Mar. 3, 1961, Ser. No. 93,054
4 Claims. (Cl. 156—210)



1. In the process of manufacturing on a corrugator machine corrugated paperboard impregnated with wax in which a wax resist waterproof starch adhesive is applied to the exposed crests of the corrugated medium of a single-face board, molten paraffin wax is applied to the corrugated medium of the said single-face board and is prevented by the resist character of said waterproof starch adhesive from directly contacting the surfaces of said crests, a second liner web is contacted against the exposed crests of the corrugated web and heat is then applied to and through said liner web to activate and set said waterproof starch adhesive; the improvement which permits the continuous manufacture of fully impregnated sheets of double-face corrugated board paperboard comprising:

(a) applying molten paraffin wax to the liner web of the single-face board before said single-face board is combined into double-face board,

(b) applying molten paraffin wax to the outer face of the second liner web and allowing said wax to strike through to the inner face of the said second liner web before the said second liner web is combined into double-face board without thereby impairing the bonding of the said liner to the crests of the flutes of the single-face board,

(c) trimming the edges of the said double-face corrugated paperboard web after the aforesaid heating and adhesive-setting step has effected impregnation of the wax throughout the thickness and width of the double-face corrugated paperboard web, and

(d) cutting said double-face corrugated paperboard web transversely into a succession of sheets.

3,189,503

CAST COATING OF PAPER AND BOARD

Frank D. Bergstein, Wyoming, and Alfred B. Kleingers, Jr., Middletown, Ohio, assignors to Bergstein Packaging Trust, a trust composed of Robert M. Bergstein and Frank D. Bergstein, trustees

No Drawing. Filed Nov. 20, 1959, Ser. No. 854,240
10 Claims. (Cl. 156—231)

4. In a process for making cast mineral surfaced paper and board wherein a layer of aqueous coating composition consisting essentially of mineral pigment and an adhesive binder is applied to a moving heated casting surface and maintained in intimate contact therewith until said composition has dried, whereupon the dried layer is stripped from the casting surface in association with a web of backing material adhered to the side of said cast layer opposite said casting surface as an incident of the casting operation, the improvement which comprises intimately admixing with said aqueous coating composition prior to its application to said casting surface a small quantity of polyethylene on the order of about one-half parts polyethylene to each one hundred and twenty parts of the total coating composition, on a dry weight basis, the said polyethylene acting to render the dried coating composition essentially self-releasing from the casting surface.

3,189,504

METHOD OF METALLIZING CERAMICS OR THE LIKE

Francis F. Whittle, Elmira, and Lee C. Williams, Big Flats Township, Chemung County, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 8, 1960, Ser. No. 1,171
8 Claims. (Cl. 156—234)

4. The method of forming a metallized coating on a ceramic member comprising the steps of making a slurry comprising a powdered metal, a binder and a liquid carrier, pouring staid slurry onto a smooth, planar surface inclined at an angle to the horizontal, allowing said liquid carrier to evaporate to form a coherent film of said metal in said binder, stripping said film from said surface, removing a portion of said film having an area and pattern of that of the ceramic surface to be metallized, wetting the ceramic surface to be metallized with a solvent, forcing said film and said surface into intimate contact until adhesion occurs therebetween.

3,189,505

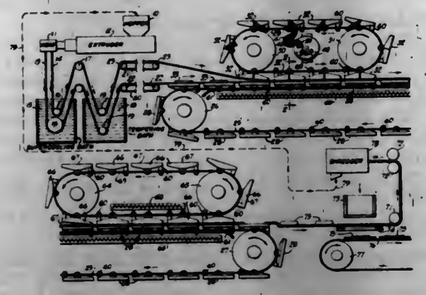
METHOD AND APPARATUS FOR FORMING A PACKAGE

Edward C. Sloan, Augustus H. Eberman, and Hans A. Jensen, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 24, 1956, Ser. No. 630,194
34 Claims. (Cl. 156—244)

1. A method of packaging including extruding spaced sheets of polyvinylidene chloride film, immediately supercooling said sheets to retard crystallization of said film,

inserting a product between said sheets, contacting portions of said sheets to completely enclose said product,



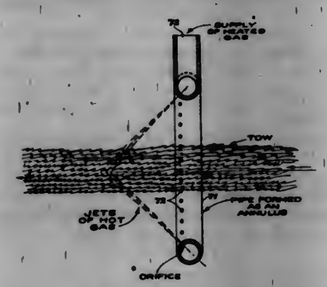
and completing maximum obtainable crystallization of said film.

3,189,506

METHOD AND APPARATUS FOR FORMING CONTINUOUS FILAMENT FILTER RODS

Phara L. Cobb, Jr., Kingsport, Tenn., and Melvin R. Hargrave, New York, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 12, 1962, Ser. No. 186,891
3 Claims. (Cl. 156—296)



1. In a method for the manufacture of rod-like elements comprised of a core of aligned, crimped, continuous filaments arranged in substantially parallel relationship and generally parallel to the axis of the rod comprising heating the rod to coalesce the filaments and subsequently after shaping into rod-like form forming a fused sheath from the external filaments by heating, the step which comprises heating the filaments to coalesce them during the introducing of hot gases to an annulus surrounding the filaments shaped in rod-like form and projecting hot gases through a plurality of holes in said annulus positioned somewhat off-center and on a tangent angularly against and into the bundle of filaments in rod-like form passing through and surrounded by the annulus.

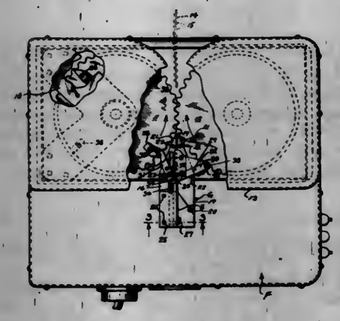
3,189,507

FEED MECHANISM FOR MEDIUM FLUTER

Fleming D. Long, Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Illinois

Filed Mar. 5, 1962, Ser. No. 177,331
5 Claims. (Cl. 156—596)

1. In a medium fluter of the type embodying a pair of inter-meshing rotatable fluting rolls; an attachment for automatically feeding and guiding a strip on edge into and between the rolls including a guide having a tapering nose extending into the machine and between the rolls having a guide slot for receiving a strip on edge to be fluted, a slide block reciprocally carried by the guide having a feed hook for engaging the rear end of a strip placed in the slot, and means for reciprocating the slide block in the guide for feeding a strip in the slot into and between the rolls in an exact time relation relative to the teeth on said rolls embodying a crank pivotally supported at one end on the guide and including an arm extending partially



over an edge of one roll, means operatively connecting the crank with the block, means normally holding the crank and block in one position, and at least one cam shoe carried by the last mentioned roll for engaging and operating the crank to slide the block during the rotation of the roll.

3,189,508

ARTIFICIAL ORNAMENTAL FRUIT

Jack Burnbaum, Newton, Mass., assignor, by direct and mesne assignments, to Bradford Novelty Co., Inc., Boston, Mass., a corporation of Massachusetts

Filed July 23, 1962, Ser. No. 211,607
4 Claims. (Cl. 161—25)



1. An ornamental fruit comprising a hollow, main body having a hole therein, a stem device embodying a shank and a wedge portion extending into said body opposite said hole and having a plurality of triangular-shaped, resilient vanes spaced apart and attached to and extending laterally from said shank and tapering outwardly to a common point, said vanes normally being of greater width than said hole, the space laterally between one vane and another being greater than the thickness of any of said vanes.

3,189,509

PATCH FOR METAL PANEL

Frank L. Needham, 423 23rd Ave., Moline, Ill.

Filed Oct. 1, 1962, Ser. No. 227,188
4 Claims. (Cl. 161—39)

1. A patch construction adapted for mounting on a panel having an irregular surface displaced from a given

plane at non-uniform distances, comprising: a patch composed of a thin non-porous and imperforate layer with spaced apart projecting portions and recesses on opposite sides; a self-hardening adhesive material between one side of the patch and the panel to be patched, the adhesive being fluidal prior to hardening and extending into the



spacing between the projecting portions; a self-hardening material on the other of the sides of the patch disposed in the spacing of its projecting portions defining therewith a generally smooth and uninterrupted surface; and a generally smooth and generally uninterrupted juncture adjacent the edge of the patch between the outer surface of the patch and the outer surface of the panel.

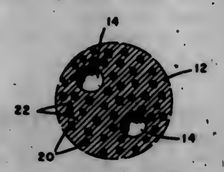
3,189,510
ARTICLE FOR FORMING HIGH TENSILE STRENGTH COVERING
Wendell E. Eldred, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed July 9, 1959, Ser. No. 825,958
8 Claims. (Cl. 161—143)



3. A flexible flat tape adapted for forming laminations, comprising a plurality of filaments of metallic ductile work-hardenable wire material, each individual filament being of a continuous length coextensive with said tape and disposed as a single row of filaments and lying side by side relatively to each other and at the same relative location to each other throughout said tape to provide uniform stress concentration, and a binder filling the voids between said filaments and coating said filaments to maintain separation thereof throughout their length, said binder being formed of a thermosetting resin.

6. The structure in accordance with claim 3 wherein a plurality of rows of filaments are superimposed one over the other to provide additional tape thickness.

3,189,511
GYPSUM WALLBOARD
George H. White, Kenmore, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,666
2 Claims. (Cl. 161—162)



1. Gypsum wallboard comprising a unitary, solid, mineral core disposed between paper cover sheets, said core being the dried rehydrated product of the following formulation;

	Parts by weight
Calcined gypsum of purity between 75% and 100%	65 to 95
Inert anhydrous calcium sulfate	(1)
Set accelerator	About 1
Fibrous material	About 1
Starch	About 1
Foaming agent	About .04
Water	About 100

[1] Sufficient parts by weight to reduce the effective purity to 65% to 70%.

3,189,512
CERAMIC CEMENTS, LAMINATES AND METHODS
Guy E. Stong, Elmira, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Jan. 8, 1962, Ser. No. 164,993
11 Claims. (Cl. 161—192)

1. A ceramic cement for joining ceramic substrates having a low coefficient of thermal expansion consisting essentially, by weight, of about 1 to 16 percent of lead oxide, about 1 to 15 percent of a flux other than lead oxide, at least one member seletced from the group consisting of about 1 to 6 percent of silicon carbide and about 1 to 6 percent of sulfur trioxide and the remainder substantially all lithium aluminosilicate ceramic material.

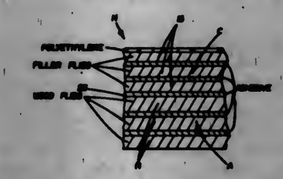
3,189,513
TRACK RESISTANT SELF-EXTINGUISHING COMPOSITION
Robert H. Calderwood, Hampton Township, Allegheny County, Harry R. Sheppard, Whitehall Boro, Charles R. Ruffing, Churchill Boro, and Ben A. Moreland, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 14, 1960, Ser. No. 68,602
5 Claims. (Cl. 161—195)

1. A resinous laminate comprising at least two sheets of glass fabric embedded in and bonded together by a resinous material having the composition derived by reacting, in which all parts are by weight:

	Parts
(A) Chlorinated polyester resin	8–35
(B) Non-chlorinated polyester resin	20–35
(C) Acrylic monomer	2–10
(D) Catalyst	0.4–2.0

together with up to about 60% by weight of the resinous material of a filler containing a major proportion of alumina trihydrate, and said laminate characterized by improved tracking and flame resistance.

3,189,514
COMPOSITE BOARD
Ellsworth H. Shriver and Stanley E. Knowles, Chillicothe, Ohio, assignors to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed June 15, 1959, Ser. No. 820,355
9 Claims. (Cl. 161—250)



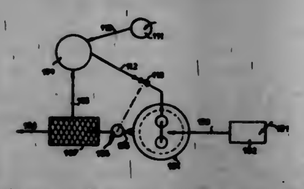
1. An improved laminated panel comprising a wood base providing a major portion of the rigidity and structural strength of said panel, said wood base having opposed surfaces and a dimensionally stable composite board adhesively secured to at least one of said surfaces of said wood base, said composite board comprising a fiber board having an inner surface and an outer surface, said inner surface being adhesively secured to said wood base, said composite board consisting of at least one board filler element having incorporated therein a water repellant size to render said board filler element substantially water impervious, and a water, water vapor proof and relatively high heat resistant continuous barrier film autogenously adhered to and in direct contact with said outer surface of said fiber board and substantially uniformly distributed over said surface to effectively prevent diffusion of water and water vapor into said fiber board, said panel by reason of said water repellant size and said barrier film having low water vapor and water transmission characteristics whereby said panel is rendered substantially stable against warping from exposure to water and conditions of high relatively humidity, said dimensionally stable composite board being of a sufficient thickness to add considerable strength and rigidity to said laminated panel.

3,189,515
VULCANIZED FIBRE
Howard M. Phillips, Philadelphia, Pa., assignor to Taylor Corporation, a corporation of Delaware
Filed Oct. 5, 1961, Ser. No. 143,195
8 Claims. (Cl. 161—269)



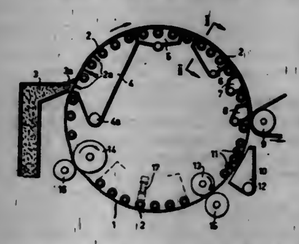
6. Vulcanized fibre comprising a plurality of paper sheets having an average cellulose degree of polymerization of from about 500 to about 900 and a minimum alpha cellulose content of 92% and a plurality of less reactive kraft paper sheets having an average cellulose degree of polymerization of from about 1200 to about 1700, said sheets being plied together with at least one reactive sheet separating each adjacent less reactive sheet and said sheets having been reacted with a gelatinizing solution.

3,189,516
METHOD OF MANUFACTURING INK-FREE PULP WITH UNBROKEN FIBRES FROM RECLAIMED PAPER
Guillaume Duchange, 16 Place du Marche, Neuilly-sur-Seine, France
Filed June 26, 1961, Ser. No. 119,549
Claims priority, application France, June 30, 1960, 831,591; June 15, 1961, 864,991
4 Claims. (Cl. 162—6)



1. In a method of manufacturing pulp from reclaimed inked paper, the steps of providing an aqueous solution containing bicarbonate; lacerating said paper; introducing said lacerated paper into said bicarbonate solution at a temperature of substantially 25° C., the paper concentration in said solution being substantially 4%; processing said paper in said solution during 4 to 5 minutes by agitating said solution to disperse the fibres of said paper therein so as to form a pulp; draining said solution from said pulp, introducing the drained pulp into an aqueous diluted solution containing chlorine and having a pH value comprised between 8 and 10; said chlorine solution being maintanined at a temperature comprised between 8° and 40° C.; agitating the mixture of pulp and chlorine solution to render it homogeneous; allowing said mixture to repose; draining the chlorine solution from the bleached pulp thus obtained; introducing said pulp into an aqueous acid solution containing about 0.06 gr. of phosphoric acid per liter, at a temperature comprised between 8° and 20° C., the proportion of pulp in the acid solution being about 4% by weight, as evaluated on the basis of paper in the dry state; agitating the mixture of pulp and acid solution, to obtain a uniformly salmon-pink-tinted indelible pulp; and rinsing said tinted pulp in water until a pH value of 7 is obtained.

3,189,517
APPARATUS FOR FORMING AND DEWATERING WEBS OF FIBROUS MATERIAL
Willy Stoffel, Neuenehorn, Wurttemberg, Germany, assignor to Escher Wyss G.m.b.H., Ravensburg, Wurttemberg, Germany, a corporation of Germany
Filed Aug. 27, 1962, Ser. No. 219,582
Claims priority, application Germany, Sept. 8, 1961, E 21,639
4 Claims. (Cl. 162—348)



1. An apparatus for forming and dewatering webs comprising an endless flexible wire cloth; driving means causing said wire cloth to move in its longitudinal direction; at least one pulp feeding device arranged to supply pulp of fibrous material to the outer surface of said wire cloth so as to form a web thereon; a web detaching device spaced from said pulp feeding device in the longitudinal direction of the wire cloth so as to leave a dewatering zone between the two; rolls for guiding said wire cloth; and at least one suction box arranged in said dewatering zone; said driving means, guide rolls and suction box being arranged to cause the wire cloth to travel along a path free of reverse bends and of substantially circular configuration at least in the regions of the pulp feeding device, the dewatering zone and the web detaching device.

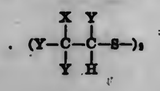
3,189,518
COMPOSITION FOR TREATING SWIMMING POOL WATER
George U. Glasgow, New York, N.Y., assignor to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware
No Drawing. Filed June 27, 1961, Ser. No. 119,794
6 Claims. (Cl. 167—17)

1. A composition of matter useful for water treatment, such as the treatment of swimming pool water containing available chlorine, consisting essentially of a solid admixture of water-soluble ammonium salt and a water-soluble iodide, said water-soluble ammonium salt capable

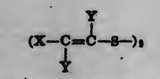
upon dissolution in water containing available chlorine of reacting with available chlorine therein to form monochloramine in situ and said iodide upon dissolution in water being capable of ionizing to form the corresponding iodide ion, said water-soluble iodide comprising 5–50% by weight of said admixture.

3,189,519
METHOD OF KILLING NEMATODES WITH DISULFIDES
Paul C. Aichenegg, Prairie Village, Kans., assignor to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 10, 1963, Ser. No. 250,500
9 Claims. (Cl. 167—22)

1. A process of killing nematodes comprising applying to the nematodes a nematocidally effective amount of a compound having a formula selected from the group consisting of



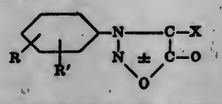
and



where X is selected from the group consisting of chlorine and bromine and Y is selected from the group consisting of chlorine, bromine and hydrogen, and at least one Y is hydrogen.

3,189,520
FUNGICIDAL PHENYLSYDNONES
Edward F. Rogers, Middletown, N.J., and David Davis, Brooklyn, N.Y., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 9, 1956, Ser. No. 596,399
2 Claims. (Cl. 167—33)

1. The method of combatting plant fungi which comprises applying to the plant fungi a phenylsydnone having the following structure:



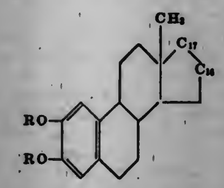
in which R is selected from the group consisting of hydrogen, chlorine and bromine, R' is selected from the group consisting of hydrogen, chlorine and bromine, and X is selected from the group consisting of hydrogen, chlorine, bromine and lower alkyl in the amount of from 0.04 to 80 pounds per acre.

3,189,521
DIAMINO- AND TRIAMINO-S-TRIAZINES AS CHEMOSTERILANTS FOR INSECTS
Alexej B. Borkovec, Kensington, and Paul H. Terry, College Park, Md., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,126
15 Claims. (Cl. 167—33)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method of causing sexual sterility of an insect comprising contacting the insect with a compound selected from the group consisting of 2,4,6-tris(dimethylamino)-s-triazine, 2,4,6-tris(diethylamino)-s-triazine, 2-4-6,-tris (methylamino)-s-triazine, 2-amino-4,6-bis(dimethylamino)-s-triazine, 2,4-diamino-6-dimethylamino-s-triazine, 2,4-diamino-6-methoxy-s-triazine, 2,4-diamino-6-ethoxy-s-triazine, 2,4-diamino-6-pyrrolidinyl-s-triazine, and 2,4-diamino-6-morpholino-s-triazine and a hydrochloride salt thereof.

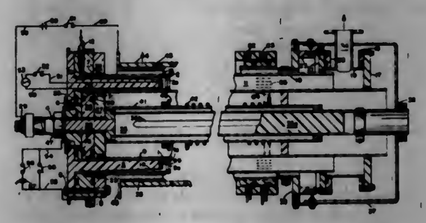
3,189,522
ANTI-HYPERCHOLESTEROL STEROIDS
Edward W. Cantrall, Pearl River, Seymour Bernstein, New City, and Walter P. Ceklenink, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 17, 1962, Ser. No. 210,569
17 Claims. (Cl. 167—65)

1. A method for treating hypercholesteremia in warm-blooded animals which comprises administering to said animals a composition containing as an essential active ingredient a compound of the formula:



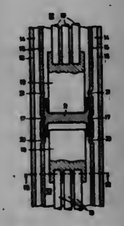
in which R is selected from the group constisting of hydrogen, lower alkyl, lower alkanoyl and benzoyl, C_{16} and C_{17} are selected from the group consisting of methylene, carbonyl, hydroxymethylene and lower alkanoyloxymethylene, said administration being in an amount sufficient to lower blood cholesterol content.

3,189,523
MEANS FOR PRODUCING HIGH TEMPERATURE PLASMA
Richard M. Patrick, Winchester, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 27, 1961, Ser. No. 98,539
8 Claims. (Cl. 176—6)



1. Apparatus for producing high temperature plasma comprising inner and outer concentric cylinders of electrically conductive nonmagnetic material defining an annular space therebetween, cylindrical electrodes extending into the space from one end thereof, insulating means between said electrodes and closing one end of the space, means for sealing the other end of the annular space, means for evacuating the space, a continuous electrical coil within the inner cylinder and concentric therewith, a continuous electrical coil concentric with and surrounding said outer cylinder, said coils establishing a magnetic field longitudinally through the annular space, another coil surrounding said outer cylinder at its end remote from said electrodes for establishing a radially disposed magnetic barrier field transverse of the annular space, a gas source, means for admitting gas from said source to the annular space adjacent said electrodes, a high frequency coil in said insulator for pre-ionizing the gas between said electrodes to produce plasma, and means for establishing a voltage differential between said electrodes, whereby current is discharged between said electrodes and through the plasma forming a radial current sheet, the current sheet establishing an azimuthal magnetic field that interacts with the current sheet to propel it through the annular space toward the barrier field thereby accelerating the plasma and forming a shock wave in advance of the plasma, the shock wave, upon impact with the barrier field, being reflected back toward the moving plasma and rapidly decelerating the plasma whereby its kinetic energy is converted to thermal energy.

3,189,524
FUEL ELEMENT ASSEMBLY
Karl H. Höcker, Stuttgart-Vaihingen, and Friedrich Wagner, Stuttgart-Mohringen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed July 9, 1959, Ser. No. 825,914
Claims priority, application Germany, July 12, 1958, S 58,958
2 Claims. (Cl. 176—71)



1. A fuel element assembly for a neutronic reactor, said assembly comprising an elongated tubular member, a plurality of elongated fuel elements disposed within and out of contact with said tubular member and extending longitudinally thereof, means disposed within said tubular member for supporting said fuel elements in a substantially parallel array in spaced relation relative to the inner wall of said tubular member and in at least transversely spaced relation relative to one another, said supporting means including at least two blocks of moderator material spaced along the length of said tubular member and contained therein, said fuel elements being suspended between said blocks, means for movably mounting at least one of said blocks relative to said tubular member so that said fuel elements can elongate differentially relative to said tubular member, said mounting means including a recessed member rigidly secured to said tubular member adjacent said one block, said one block being slidably mounted in the recess of said recessed member, and means for sealing said fuel elements in said tubular member.

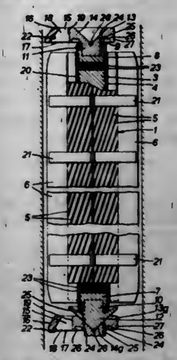
ERRATUM

For Class 176—72 see:
Patent No. 3,189,101

3,189,525
NUCLEAR REACTOR FUEL ELEMENTS
Michael Davis, Bowdon, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 12, 1961, Ser. No. 102,588
Claims priority, application Great Britain, Apr. 19, 1960, 13,631/60
2 Claims. (Cl. 176—81)

1. In an elongate fuel element for use in a fuel element channel of a nuclear reactor having coolant flowing in a path therethrough, the said element including heat transfer fins and end locating members for stacking the element with a plurality of other similar fuel elements in the channel, the improvement of a single end part at one end of the fuel element extending laterally beyond the heat transfer fins and comprising:

a portion of arcuate, parallel-sided shape extending only part way around the periphery of the fuel element and defining a surface inclined to the path of coolant flow to produce a force lateral to the fuel element at the said one end, and



at least one web having sides parallel to the longitudinal axis of the element spacing the said portion from the remainder of the fuel element.

3,189,526
METHOD OF PRODUCING L-HOMOSERINE BY FERMENTATION
Shukuo Kinoshita and Hirotoshi Samejima, Tokyo, Chuzo Fujita, Hofu-shi, and Takashi Nara, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Sept. 23, 1963, Ser. No. 310,936
Claims priority, application Japan, Sept. 12, 1960, 35/37,659
22 Claims. (Cl. 195—29)

1. In the fermentative production of L-homoserine comprising culturing a microorganism in a culture medium, the improvement wherein the microorganism is a threonine-requiring strain of *Micrococcus glutamicus*.

3,189,527
BIOSYNTHETIC PROCESS FOR MAKING CITRIC ACID
Lewis Byford Lockwood and Mario Alexander Ratti, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,064
8 Claims. (Cl. 195—36)

1. In the production of citric acid by fermentation with *Aspergillus niger*, in submerged culture, of a medium prepared with organic nutrient derived from an impure carbohydrate source, said nutrient including impurities in an amount effective normally to promote, during fermentation, a cellular metabolism of said *Aspergillus niger* producing of at least some mycelium of inferior citric acid-producing capacity, the method of promoting a cellular metabolism of the *Aspergillus niger* favoring the production of efficient citric acid-producing mycelium which comprises incorporating in said medium an organic agent which is toxic toward said *Aspergillus niger* by interfering with the activity of at least one of the respiratory enzymes of the cells of the organism, said agent being used in an amount effective to overcome at least partially said effect of said impurities on said *Aspergillus niger* but in sub-lethal concentration, the entire amount of said agent being incorporated in said medium prior to the expiration of the initial growth period of said *Aspergillus niger*, said toxic organic agent being selected from the class consisting of cresylic acid, 3,4-xylenol, 2,6-xylenol, 2,5-xylenol, p-cresol, m-cresol, o-cresol, 1-naphthol, 2-naphthol, hydroquinone, resorcinol, phenol, salicylic acid,

3-hydroxy-2-naphthoic acid, 4-methylumbelliferone, isophthalic acid, phthalic acid, terephthalic acid, diphenic acid, trimesic acid, 2-anthraquinone-carboxylic acid, 1-naphthoic acid, 2-naphthoic acid, phenyl acetic acid, benzoic acid, 1-chloronaphthalene, bromobenzene, chlorobenzene, phenylrosinduline trisulfonate, hexamethyl pararosaniline chloride, p-aminobenzoic acid, sulfanilamide, pyridine, tribenzylamine, dibenzylamine, gentisic acid, 2,4-dintrophenyl hydrazine, 1-naphthalene acetic acid, cyclohexane-carboxylic acid, anisaldehyde, 1-naphthaldehyde, benzaldehyde, chlorothymol, heptamethyl-p-rosaniline chloride and triphenyl methane.

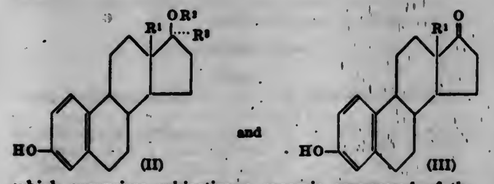
3,189,528

RESOLUTION OF RACEMIC Δ^4-3-KETO-13β-ALKYL STEROIDS BY USING *CORYNEBACTERIUM SIMPLEX*

Leland L. Smith, Malvern, George Greenspan, Narberth, and Theodore J. Foell, King of Prussia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 25, 1963, Ser. No. 297,656
12 Claims. (Cl. 195—51)

1. The method of preparing compounds of the structure:

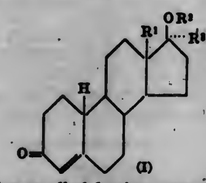


(II)

and

(III)

which comprises subjecting a racemic compound of the structure:



(I)

wherein R^1 is lower alkyl having more than one carbon atom; R^2 is selected from the group consisting of hydrogen and acyl; R^3 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkynyl to the microbiological action of *Corynebacterium simplex* to effect A ring aromatization.

3,189,529

HIGH-ACTIVITY LIPASE AND METHOD OF PREPARATION THEREOF

Keichi Yamada, Tokyo, and Haruo Machida, Saitama-ken, Japan, assignors to Meito Sangyo Kabushiki Kaisha, Nishi-ku, Japan, a corporation of Japan

No Drawing. Filed Sept. 24, 1962, Ser. No. 225,908
Claims priority, application Japan, Sept. 25, 1961, 36/34,236
6 Claims. (Cl. 195—62)

1. A lipase having high-activity at a pH from 3.0–8.5 obtained by cultivating at a temperature of from 20–35° C. in a suitable medium *Candida cylindracea* A.T.C.C. No. 14,830.

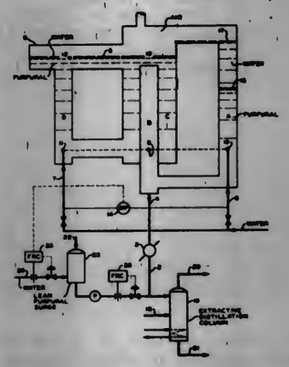
3,189,530

SOLVENT MONITOR

Harold W. Orr, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 28, 1961, Ser. No. 127,699
3 Claims. (Cl. 202—39.5)

1. A method for determining the concentration of water in a furfural-water solution which comprises obtaining a portion of said furfural-water solution,
cooling said portion to a predetermined temperature, at which predetermined temperature said portion becomes supersaturated with water whereby some of said water forms a dispersion of water phase in a furfural phase saturated with water, and at which predetermined temperature the amount of water in said furfural phase saturated with water is known,
introducing the resulting dispersion of said water phase in said furfural phase saturated with water into a separation zone wherein said water phase is separated and removed from said furfural phase saturated with



water and a body of said furfural phase saturated with water is formed, and
measuring the difference in hydrostatic pressure between said body of said furfural phase saturated with water and a body of said resulting dispersion of said water phase in said furfural phase saturated with water immediately prior to the introduction of said resulting dispersion into said separation zone, said bodies being of equal height, thereby obtaining a value representative of the concentration of said dispersed water in said furfural phase saturated with water.

3,189,531

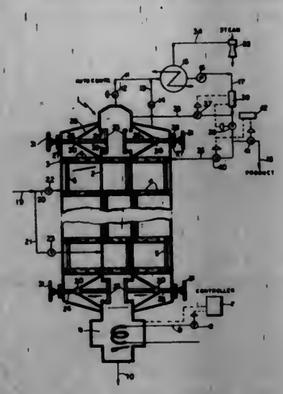
DISTILLATION COLUMN FOR VACUUM AND PRESSURE OPERATIONS

Charles W. Hack, Lake Charles, La., and Rayford G. Anthony, Austin, Tex., assignors, by mesne assignments, to Cities Service Oil Company, a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,911
5 Claims. (Cl. 202—154)

1. A distillation system suitable for conducting both vacuum and pressure operations comprising:
(a) concentric distillation columns, each column containing spaced-apart vapor-liquid contacting plates, the inner column having openings at spaced intervals on the periphery thereof, thereby establishing communication between the inner and outer columns;
(b) mechanical means for regulating the flow of the liquid being distilled to the inner and outer distillation columns;
(c) a reboiler located in the lower portion of the inner distillation column for reboiling the liquid being distilled;
(d) mechanical means for removing distillate from the outer distillation column;
(e) mechanical means for removing distillate from the inner distillation column;
(f) a condenser suitable for condensing distillate from the inner and outer distillation columns;
(g) mechanical means for closing off the openings

on the periphery of the inner distillation column, thereby isolating said inner distillation column from said outer distillation column, whereby the said openings may be closed off so that the inner distillation column alone is employed during pressure distillations and the openings are uncovered so that the



inner and outer distillation columns are employed concurrently during the vacuum distillations, the internal contacting plates of the inner column serving as an integral part of the internal contacting plates of the outer column, eliminating the need for separate sets of column accessories for vacuum and pressure operations.

3,189,532

PROCESS FOR MAKING CONDUCTIVE-CORE MAGNETIC DEVICE

Eric T. K. Chow and Harry L. Watkins, Los Angeles, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed May 19, 1960, Ser. No. 30,362
3 Claims. (Cl. 204—28)

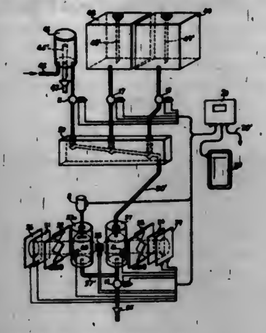
1. A process of producing a slender rod-like bistable magnetic device having a thin iron-nickel film-like coating exhibiting a uniform substantially rectangular magnetic hysteresis characteristic throughout a long length of the device, said process consisting essentially of: providing a long length of a stiff resilient copper-beryllium wire having a diameter of the order of 5 to 50 mils to serve as the core of said magnetic device, cleaning said copper-beryllium wire in an alkaline cleaning solution, immediately rinsing the cleaned wire with distilled water, then immersing the wire in a nitric acid bath for a period of time sufficient to etch only a substantially complete surface layer of the wire, immediately rinsing the etched wire with distilled water, and then prior to appreciable chemical degradation of the wire surface, electroplating the wire in a nickel chloride-iron chloride aqueous solution having a pH of the order of 1.00 ±0.05 by connecting the wire as the cathode of the system and passing the wire through a spiral anode electrode along the axis of the wire, the plating current and the time of exposure of each portion of the wire in the plating bath being chosen so as to produce on the wire an adherent uniform bistable magnetic layer having a thickness ranging from 500 to 10,000 angstroms and composed of from about 93% to about 99% iron and from about 7% to about 1% nickel over the surface of a long length of the wire.

3,189,533

AUTOMATIC COULOMETRIC ANALYZER

Arnošt Auscherlik, 5 Revolucni, Prague 1, Czechoslovakia

Filed May 11, 1961, Ser. No. 109,303
Claims priority, application Czechoslovakia, May 23, 1960, 3,327/60
10 Claims. (Cl. 204—195)



1. In an analyzer, in combination:
(a) two containers;
(b) an electrode in each container;
(c) a conduit connecting said containers, said conduit having an inside diameter substantially narrower than that of the containers such that the conduit will allow the passage of liquids but would prevent significant intermixing of liquids in said containers;
(d) supply means for supplying an electrically conductive liquid mixture to said containers and to said conduit, said conduit when supplied with said mixture constituting an electrolytic bridge between said containers;
(e) a source of direct current adapted to be connected to said electrodes;
(f) photoelectric means for generating an electrical signal responsive to a color difference of respective portions of said liquid mixture in said containers;
(g) electric control means for actuating said supply means and for connecting said source of current to said electrodes in timed sequence; and
(h) time sensing means operatively connected to said control means and to said photoelectric means for sensing the time elapsed between the connecting of said source to said electrodes and the generating of said signal.

3,189,534

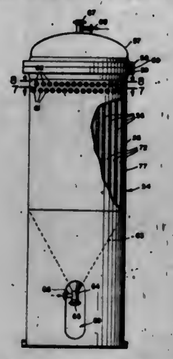
CELL FOR CARRYING OUT ELECTROCHEMICAL REACTIONS

David G. Braithwaite and William Hansel, Chicago, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 7, 1960, Ser. No. 74,360
1 Claim. (Cl. 204—274)

A cell for carrying out electrochemical reactions comprising a generally cylindrical container which is electrically conducting and adapted to hold a body of reaction liquid, said container being provided with a top and being sealed from the atmosphere, the lower part of said container being generally conical in shape and having a passageway at the apex thereof, the top of said container having a passageway therein, a plurality of cathode units mounted in the main cylindrical body portion of said container in spaced relationship to each other and to the walls of said container, heat exchange means for controlling the temperature of said cathode units, electrical insulating means on the interior surface of said container, electrical insulating means chemically inert to the re-

actants and products of reaction in contact with surfaces of each of said cathode units permitting the flow of an electrolyte to said surfaces, said electrical insulating means on the surfaces of each of said cathode units being spaced to form anode passagesways in communication with said passageway at the top of said container, metal anode particles in said anode passageways, means to introduce metal anode particles through said passageway in the top



of said container whereby the anode passageways and the conical section at the bottom of said container are filled with said metal particles, means to circulate an electrolyte through said passageways in the top and bottom of said container and through said metal anode particles, means connecting a negative source of electricity directly to said cathode units, means electrically insulating each of said cathode units from said container, and means connecting a positive source of electricity to said container.

3,189,535
MEANS AND METHOD OF DEPOSITING THIN FILMS ON SUBSTRATES

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Hubert Erpenbach

Filed Apr. 18, 1962, Ser. No. 188,594
6 Claims. (Cl. 204—298)



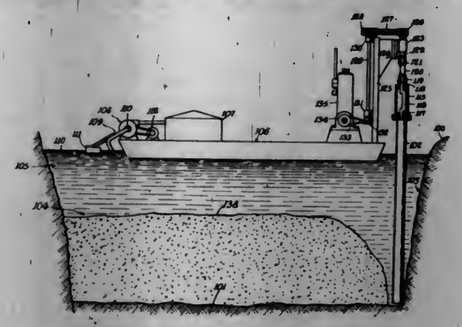
1. Means for depositing thin metallic films on spheres, comprising:
(a) a vertically disposed supporting rod recessed at its upper end to support a spherical workpiece with the major surface of the workpiece exposed above the supporting rod;
(b) means for vibrating said rod thereby to vibrate said workpiece to cause random rotation thereof on said supporting rod;
(c) and means for transforming a metal into a state capable of deposition and causing said metal to deposit on the surface of said randomly rotating workpiece.

3,189,536
ACOUSTIC METHOD FOR EXTRACTING HYDROCARBON FROM OIL-SANDS

Albert G. Bodine, Los Angeles, Calif.
(7877 Woodley Ave., Van Nuys, Calif.)

Filed Aug. 1, 1963, Ser. No. 299,209
2 Claims. (Cl. 208—11)

1. The method of recovering hydrocarbon liquid from a natural deposit of oil-sands in an earthen petroleum reservoir, that includes: removing material including hydrocarbons from said reservoir, conducing said material being removed from said reservoir along a predetermined path, transmitting sonic vibrations along a wall adjacent to said predetermined path to said material being removed

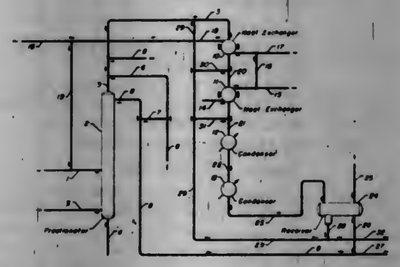


from said reservoir so that said material is subjected to said vibrations, whereby the petroleum is released from the sand in the physical form of a hydrocarbon liquid, and the released hydrocarbon liquid separated from said sand.

3,189,537
RETARDING CORROSION OF HEAT EXCHANGERS

Robert H. Carlton, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Mar. 14, 1962, Ser. No. 179,584
10 Claims. (Cl. 208—47)



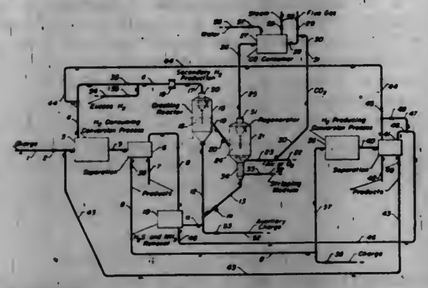
1. A method of retarding corrosion of a heat exchanger being used to cool hot hydrocarbon vapors from a crude column containing nitrogenous salt, which comprises: conditioning the overhead vapors by injecting ammonia and then a corrosion inhibitor therein cooling and condensing said conditioned hydrocarbon vapors in the presence of water introduced as hereinafter described, separating water from hydrocarbon, and commingling at least a portion of said water with said hot hydrocarbon vapors prior to cooling same to the solidification temperature of said salt.

3,189,538
COMBINATION OF HYDROGEN PRODUCING AND HYDROGEN CONSUMING UNITS

Jack B. Pohlenz, Arlington Heights, and Donald H. Belden, Prospect Heights, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 7, 1960, Ser. No. 67,532
3 Claims. (Cl. 208—58)

1. A conversion process which comprises
(1) subjecting hydrocarbon oil in admixture with hydrogen to a hydrogen-consuming reaction in a first conversion zone,
(2) separating from the resultant products a normally gaseous hydrocarbon fraction and a normally liquid hydrocarbon fraction,
(3) cracking said normally gaseous fraction to hydrogen and carbon in a second conversion zone in contact with heated subdivided catalyst particles,

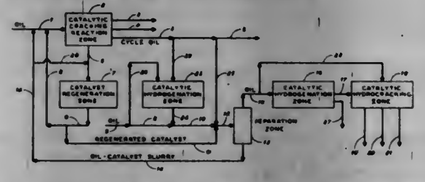


(4) subjecting said normally liquid fraction to a hydrogen-producing conversion reaction in a third conversion zone,
(5) separating a hydrogen-containing gas from the effluent of said third zone, and
(6) introducing at least a portion of said gas to said second zone and passing hydrogen from the latter to said first zone to supply hydrogen for the hydrogen-consuming reaction therein.

3,189,539
REMOVAL OF NITROGEN COMPOUNDS FROM HYDROCARBON OILS BY ADSORPTION ON CRACKING CATALYST

Robert P. Sieg, Piedmont, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,254
2 Claims. (Cl. 208—254)



1. A process for lowering the nitrogen content of an oil from above 200 p.p.m. to below 10 p.p.m., which comprises:
(1) passing a hydrocarbon oil containing above 200 p.p.m. nitrogen in nitrogen compounds through a first catalytic hydrogenation zone wherein a major portion of said nitrogen compounds is removed by hydrogenation to ammonia, and recovering liquid hydrogenated oil boiling below about 750° F. and reduced in nitrogen content to below 200 p.p.m.,
(2) contacting said liquid hydrogenated oil with a portion of freshly regenerated cracking catalyst withdrawn from a catalytic cracking process, having a reaction zone and a regeneration zone between which catalyst is continuously circulated, forming a catalyst-oil mixture at conditions including a weight ratio of catalyst to oil below 0.1, temperature below 400° F., and sufficient contact time such that at least 10% of the nitrogen compounds is adsorbed on the catalyst,
(3) separating said mixture into a slurry of oil and catalyst carrying adsorbed nitrogen compounds, and catalyst-free oil further reduced in nitrogen content,
(4) passing said slurry to the reaction zone of said catalytic cracking process,
(5) passing said catalyst-free oil through a second catalytic hydrogenation zone wherein, because of the foregoing removal of nitrogen compounds, the remaining nitrogen compounds are substantially removed by hydrogenation to ammonia more easily than in said first hydrogenation zone, and recovering oil reduced in nitrogen content to below 10 p.p.m. nitrogen.

3,189,540
PRODUCTION OF LUBRICATING OILS BY CATALYTIC HYDROGENATION

Robert H. Kozlowski, Berkeley, and Robert L. Jacobson, Pinole, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

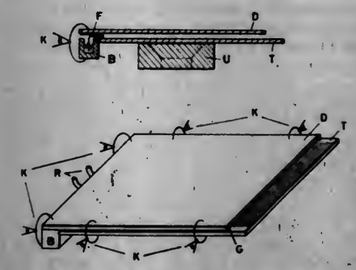
No Drawing. Filed Jan. 2, 1962, Ser. No. 163,923
4 Claims. (Cl. 208—264)

1. A process for producing lubricating oil of improved color and natural oxidation stability which comprises solvent refining a heavy petroleum oil to obtain a solvent-refined lubricating oil fraction rich in polycyclic hydrocarbons, containing heterocyclic nitrogen compounds and having poor color above 4.5 on the ASTM scale and poor natural oxidation stability,
hydrogenating said solvent refined fraction by contacting in the presence of excess hydrogen with a sulfided nickel-molybdenum-alumina catalyst containing between 4 and 10 weight percent nickel and between 12 and 30 weight percent molybdenum at reaction conditions in the ranges 800–3000 p.s.i.a. hydrogen partial pressure, 600–750° F., and 0.2–3 LHSV, while controlling the reaction conditions in a narrow range within said ranges appropriate for the particular solvent-refined fraction to obtain only partial removal amounting to between 30% and 60% of the nitrogen from said oil,
and recovering as the product hydrogenated lubricating oil having improved color below 4.5 on the ASTM scale and improved natural oxidation stability.

3,189,541
METHOD FOR THE SELECTIVE PERFORMANCE OF THIN-LAYER CHROMATOGRAPHY AND AN APPARATUS FOR PERFORMING THE SAME

Max Brenner, Gerstenweg 66, Riehen, near Basel, Switzerland, and Alois Niederwieser, St. Johanns-Ring 19, Basel, Switzerland

Filed May 9, 1962, Ser. No. 193,435
Claims priority, application Switzerland, May 10, 1961, 5,607/61
14 Claims. (Cl. 210—31)



1. A method for the selective performance of thin-layer chromatography which comprises applying a mixture of substances to be separated along a starting line on a thin-layer, causing a solvent to flow from a solvent container

through a fluid bridge onto the covered thin-layer, allowing the solvent to flow through said layer for the time required for substance separation.

5. An apparatus for the performance of thin-layer chromatography in which a solvent is flowed through a thin-layer to which a mixture of substances has been applied and separation of the components of the mixture is thus effected, which apparatus comprises a carrier plate bearing a thin-layer used for the separation; a container for the solvent; a fluid bridge constituting means for transporting the solvent from the solvent container to one end of the thin-layer; and a cover plate constituting means for isolating the thin-layer from the outside environment.

3,189,542

LUBRICATING COMPOSITIONS CONTAINING 1,3,5-TRIAZINE COMPOUND AND METAL SALT OF FATTY ACID

Arnold J. Morway, Clark, and Hans G. Vesterdal, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,250
7 Claims. (Cl. 252—17)

1. A solid lubricating grease consisting essentially of (a) a major proportion of a polyorgano siloxane having a viscosity at 100° F. of from 10 to 300 cs., (b) about 20 to 40 wt. percent of a mixture of 2,4-diamino-6-hydroxy-1,3,5-triazine and calcium acetate in a weight ratio of from 0.7:1 to 2:1, said calcium acetate having a particle size of less than about 2 microns, (c) from 1 to 3 wt. percent of p,p'-dioctyl diphenylamine, and (d) from 2 to 5 wt. percent of phenyl-α-naphthylamine.

3,189,543

GREASE YIELDS

Dean W. Criddle, Pleasant Hill, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,504
5 Claims. (Cl. 252—18)

1. A grease composition comprising a major proportion of an oil of lubricating viscosity, from 7% to 12% by weight of calcium 12-hydroxy stearate, from 4% to 25% by weight, of calcium acetate, excess alkalinity in amount of about 1.0% to about 8.0% by weight expressed as calcium hydroxide, from 1.7% to about 10.0% by weight of calcium carbonate, wherein the mole ratio of said calcium acetate to said calcium 12-hydroxy stearate has a value from 2 to 5, and from 0.5% to 3% by weight of an oil-soluble polyglycol substituted polymer of at least one monomer, said monomer containing a single polymerization ethylenic bond and said polymer containing from about 40 to about 96% by weight of hydrocarbon oil-solubilizing groups from said polymerized monomer and from about 4 to about 60% by weight of polyglycol groups, said oil-solubilizing groups being selected from the class consisting of aliphatic and cycloaliphatic hydrocarbon groups of at least 4 carbon atoms each, said polyglycol groups being selected from the class consisting of polyalkylene glycols and monoalkyl ethers thereof having from 2 to 7 carbon atoms in each alkylene group and a molecular weight between about 220 and 30,000, said polymer being substantially saturated and having a total molecular weight of at least about 50,000 and a solubility in oil of at least 0.5% by weight, said polyglycols having at least 5 alkylene oxide units each and being attached by a single thermally stable organic linking group to said polymer wherein said organic linking group is selected from the group consisting of alkylene groups having from 1 to 7 carbon atoms, oxy, carbonyl, and carbonyloxy groups and combinations thereof with alkylene groups having from 1 to 7 carbon atoms.

3,189,544

NON-ASH-CONTAINING LUBRICATING OIL COMPOSITION

Hyman Ratner, Florissant, Mo., and Roland F. Bergstrom, Martinez, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,682
13 Claims. (Cl. 252—33)

1. A lubricating composition comprising a major amount of lubricating oil and minor amount, sufficient to impart detergency and prevent wear, of a nitrogen-containing non-ash forming detergent salt of an amino-imide of a mono C_{30-300} polymeric hydrocarbyl substituted succinic anhydride the amine used to form the amino-imide being an aliphatic polyamine having at least 2 amine groups and an organic sulfonic acid the acid being present in an amount sufficient to neutralize at least 10% of the amino-imide compound.

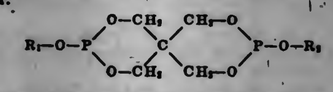
3,189,545

LUBRICATING COMPOSITION

Randel Q. Little, Jr., and Sigmund S. Deluga, both of Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,749
6 Claims. (Cl. 252—46.6)

1. A lubricating composition characterized by improved resistance to sulfur corrosion and improved lubricity properties, which composition comprises a major amount of a hydrocarbon mineral lubricating oil, a sulfur-containing anti-oxidant in amounts sufficient to normally tend to cause silver-on-steel seizure and wear due to the presence of said anti-oxidant, and from 1/10 to 5% of a sulfur corrosion inhibitor comprising a dialkyl pentaerythritol diphosphite having a composition corresponding to the structural formula:



wherein R_1 and R_2 are alkyl radicals containing from about 1 to about 20 carbon atoms per radical, and wherein the sum of the carbon atoms in said radicals is more than about 7.

3,189,546

MINERAL OIL COMPOSITIONS AND ADDITIVES THEREFOR

Henricus G. P. van der Voort, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 8, 1960, Ser. No. 74,469
Claims priority, application Netherlands, Feb. 9, 1960, 248,210
8 Claims. (Cl. 252—47)

1. An improved mineral lubricating oil composition comprising a major amount of mineral lubricating oil and a minor amount, sufficient to inhibit wear, of an oil-soluble reaction product obtained by reacting at between 20° C. and 130° C. a polymerized 1,2-alkylene imine having an intrinsic viscosity of from about 0.025 to about 3 in isopropanol at 25° C. with an oil-soluble polar-containing compound selected from the group consisting of C_{14-18} epoxy-alkane, C_{14-18} thio-epoxy alkane, esters of glycidol and alkanoic acids having from 10 to 30 carbon atoms, glycidyl ethers of an alcohol selected from the group consisting of alkyl phenol and alkanol each having from 14 to 18 carbon atoms and C_{14-18} alkyl phenols, the imine being present in the amount of 1.25 to 2 gram-equivalents per gram-equivalent of the oil-soluble polar-containing compound.

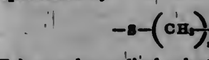
3,189,547

LUBRICATING COMPOSITIONS

George M. Calhoun, Berkeley, Calif., assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Filed July 3, 1959, Ser. No. 824,796
8 Claims. (Cl. 252—48.6)

1. A mineral lubricating oil composition comprising a major amount of mineral lubricating oil and from about 0.5% to about 20% of an oil-soluble dithiaether derivative of a diester of a long chain unsaturated fatty acid having 18 carbon atoms and a diol selected from the group consisting of polyethylene glycol and 2,2'-thiodiethanol, the thioether radical components of the ester being represented by



where Z is a polar radical selected from the group represented by —OR''' and —COOR''' and R''' is selected from the group consisting of hydrogen and C_{1-4} alkyl radical and *n* is an integer of from 1 to 4.

3,189,548

POLYPHENYL ETHERS CONTAINING AN EXTREME PRESSURE ADDITIVE

Glenn R. Wilson, Cambridge, and John R. Stemniski, Swampscott, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 30, 1963, Ser. No. 276,976
11 Claims. (Cl. 252—51.5)

1. A composition consisting essentially of (1) a major amount of a base oil of lubricating viscosity which remains in the liquid phase up to at least about 500° F., and (2) a diaminodichlorobenzoquinone having an aromatic radical attached to each of the amino nitrogen atoms selected from the class consisting of aryl and arylcarbonyl radicals, in an amount sufficient to improve the extreme pressure and anti-wear characteristics of said base oil.

3,189,549

SYNTHETIC LUBRICANTS OBTAINED BY THE TELOMERIZATION OF UNSATURATED HYDROCARBONS WITH POLYOXYALKYLENE COMPOUNDS

Donald D. Emrick, Shaker Heights, Samuel M. Darling, Lyndhurst, and Edwin O. Hook, Chagrin Falls, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Original application Sept. 4, 1959, Ser. No. 838,044, now Patent No. 3,137,737, dated June 16, 1964. Divided and this application Jan. 18, 1961, Ser. No. 81,211
5 Claims. (Cl. 252—52)

1. A lubricant consisting essentially of a mineral lubricating oil and an amount sufficient to improve the lubricating properties of the lubricant of a telomer prepared by the telomerization of at least one α-olefin taxogen selected from the group consisting of alkenes having from two to about ten carbon atoms and styrene with a polyoxyalkylene compound telogen having at least one active hydrogen atom on a carbon atom adjacent to an ether oxygen and having the formula



wherein R_1, R_3, R_2, R_4 and R_5 are selected from the group consisting of hydrogen and lower alkyl, *m* has a value within the range from about 10 to about 5000, and *x* has a value from one to three, at a reaction temperature within the range from about 40 to about 200° C. in the presence of a free radical initiator having a half-life at the reaction temperature within the range from about 0.25 to about 10 hours, until a free-flowing liquid telomer is obtained having a molecular weight within the range from about 500 to about 10,000.

3,189,550

PROCESS OF MAKING FERRITE MAGNETIC CORE MATERIAL

Walter W. Malinofsky, Wanamassa, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 7, 1961, Ser. No. 94,806
1 Claim. (Cl. 252—62.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

The method of making a magnetic core material of densified nickel ferrite powder of 0.1 micron average diameter in size including the steps of (1) propelling an alcoholic solution of nickel nitrate hydrate and iron nitrate hydrate by means of oxygen pressure of at least 12 to 15 pounds per square inch through a fine nozzle at a rate of flow of about 30 milliliters per minute, (2) igniting the solution, (3) collecting the resulting nickel ferrite powder in a water tower, (4) prepelletizing the powder, and (5) simultaneously applying heat and pressure of about 2050° F. and 6,000 pounds per square inch respectively to the power for approximately 25 minutes.

3,189,551

HEAT-DRIED DETERGENT PROCESSES

Joe S. Metcalf, Webster Groves, and Chung Yu Shen, Olivette, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 10, 1960, Ser. No. 61,373
4 Claims. (Cl. 252—135)

1. A process for the preparation of a heat-dried detergent composition having a predetermined fraction of sodium tripolyphosphate in the hexahydrate form, which comprises first intermixing for at least about 3 minutes at a temperature between about 85° C. and about 110° C. a first portion of sodium tripolyphosphate, which first portion of sodium tripolyphosphate contains at least about 70 weight percent of Form I and more than sufficient water to hydrate said first portion of sodium tripolyphosphate; thereafter adding a second portion of sodium tripolyphosphate, which second portion of sodium tripolyphosphate contains at least about 75 weight percent of Form II, thereafter maintaining the resulting mixture at a temperature between about 85° C. and about 110° C., and heat-drying said mixture within about 40 minutes of the time of addition of said second portion of sodium tripolyphosphate; said predetermined fraction of sodium tripolyphosphate in the hexahydrate form being approximately equivalent by weight to said first portion of sodium tripolyphosphate, calculated as the hexahydrate.

3,189,552

STABLE SOLVENT COMPOSITION

Leslie L. Sims, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,252
5 Claims. (Cl. 252—153)

1. A stabilized composition for metal degreasing consisting essentially of 1,1,1-trichloroethane having dissolved therein a stabilizing mixture of a trialkyl amine wherein each alkyl group contains from 1 to about 6 carbon atoms and a mononitroalkane having from 1 to 2 carbon atoms in the molecule, these being present in an amount sufficient to stabilize the 1,1,1-trichloroethane against metal-induced decomposition, either component of said stabilizing mixture being present in at least about 10 percent by weight of the other component and the concentration of the stabilizing mixture being from about 0.3 to about 12 weight percent based on the weight of the 1,1,1-trichloroethane.

3,189,553
PAINT STRIPPING COMPOSITIONS
Henry B. Lange, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 31, 1960, Ser. No. 18,859
7 Claims. (Cl. 252—165)

1. A paint stripping composition comprising at least 50–99 weight percent of 2,5-bis(chloromethyl)tetrahydrofuran, from 0–15 weight percent of a thickener selected from the group consisting of finely divided silicon dioxide, polyethylene glycol, methyl cellulose, ethyl cellulose, cellulose acetate, and nitro cellulose, and from 0–25 weight percent of methylene chloride.

3,189,554
WATER TREATING COMPOSITION
Ralph R. Dean, 4924 Stadium Drive, Fort Worth, Tex.
No Drawing. Filed Sept. 22, 1961, Ser. No. 139,834
11 Claims. (Cl. 252—181)

1. A stiff non-pourable water treating composition for inhibiting the deposition of scale on surfaces contacted by said water consisting essentially of a water-soluble surfactant selected from the group consisting of an anionic organic surfactant selected from the group consisting of an alkyl aryl sulfonate, an aryl sulfonate, an alkyl sulfate, an alkyl ester of sodium sulfosuccinic acid, tall oil fatty acids and neutralized salts thereof, and mixtures thereof, a non-ionic organic surfactant and mixtures thereof, a substantially equal proportion by weight of a water-soluble inorganic polyphosphate in particulate form and a third substantially equal proportion by weight of water, the amount of said polyphosphate being in excess of its normal solubility in the amount of water present and maintained in a non-caking suspension by means of a thin, evenly dispersed coating of the surfactant on the particles of said polyphosphate.

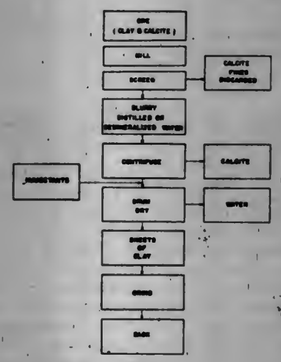
3,189,555
PROCESS FOR PREPARING URANOUS OXIDE SOLS
Jean G. Smith and Frederick T. Fitch, Baltimore, Md., assignors to W. R. Grace & Co., a corporation of Connecticut
No Drawing. Filed Feb. 28, 1962, Ser. No. 176,878
4 Claims. (Cl. 252—301.1)

1. A process for preparing stable uranous oxide sols made up of aqueous dispersions of uranous oxide particles in the size range of 10 to 300 millimicrons which comprises preparing a solution of a non-oxidizing uranyl salt selected from the group consisting of the oxybromide, the oxychloride, the oxyacetate and the oxyformate, electrodialyzing to convert the non-oxidizing uranyl salt, autoclaving the uranous oxysalt solution at a temperature of about 100 to 200° C. for a period of time sufficient to complete sol particle preparation, redispersing in deionized water and recovering uranous oxide sol as the final product.

3,189,556
NOVEL CATALYST FOR THE PREPARATION OF ACETALDEHYDE FROM ACETYLENE
Ronald W. Chapman, Whittier, and Roger M. Dille, La Habra, Calif., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application Dec. 4, 1959, Ser. No. 857,246, now Patent No. 3,116,333, dated Dec. 31, 1963. Divided and this application May 20, 1963, Ser. No. 286,436
4 Claims. (Cl. 252—428)

1. A catalytic composition useful in the preparation of acetaldehyde from acetylene consisting essentially of between about 1 and 25 wt. percent sulfuric acid, between about 3 and 15 wt. percent ferric sulfate, between about 0.5 and 4 wt. percent acetic acid, and between about 0.1 and 2 wt. percent of a member selected from the group consisting of mercuric oxide and mercuric acetate, the remainder of said composition being composed of water.

3,189,557
METHOD OF TREATMENT OF ORE AND PRODUCT
Richard G. Shaler, Las Vegas, Nev., assignor to American Tansul Company, Las Vegas, Nev.
Filed Apr. 6, 1964, Ser. No. 355,070
18 Claims. (Cl. 252—428)



1. A method of treating an ore of the montmorillonite family initially having calcite impurities comprising grinding the ore, forming an aqueous slurry of the ore, removing substantially all calcite impurities, adding a humectant having a boiling point above water selected from the group consisting of water soluble organic polyols and water soluble polysaccharides to constitute about 1–20% by weight of the total solids in the slurry, and drying the slurry.

3,189,558
BIS(PHENYLTOLYL)ETHER CHROMATOGRAPHIC ADSORPTION MEDIA
James D. Doedens, 20 Rosemary Court, Midland, Howard P. Cordts, 5448 Kasemeyer Road, Bay City, and David F. Wisnlewski, 4869 Franklin St., Auburn, Mich.
No Drawing. Original application Aug. 31, 1959, Ser. No. 836,927. Divided and this application June 3, 1964, Ser. No. 378,481
3 Claims. (Cl. 252—428)

3. An improved chromatographic adsorption medium comprising a major proportion of an inert particulate packing material and a minor proportion of a liquid condensation product of 4,4'-di(chloromethyl)diphenyl oxide with a benzenoid hydrocarbon having the formula

$$R_1R_2R_3C_6H_3$$

wherein C_6H_3 represents a benzene moiety and R_1, R_2 and R_3 individually represent one of the group of hydrogen and alkyl groups having from 1 to 2 carbon atoms and at least one of which is hydrogen, said condensation products having from 1 to 2 diphenyl oxide moieties and from 2 to 3 benzenoid hydrocarbon moieties per molecule.

3,189,559
DECHLORIDED PLATINUM ON ETA ALUMINA CATALYST PREPARATION
Louis C. Doelp, Jr., Glen Mills, and George Alexander Mills, Swarthmore, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Mar. 21, 1962, Ser. No. 181,467
2 Claims. (Cl. 252—442)

1. A method of preparing catalysts consisting essentially of about 0.1 to about 1% platinum on eta alumina, and containing a quantity of chloride less than 25% of the weight of the platinum which method consists essentially of: preparing particles of sorbtive alumina identifiable by X-ray as substantially pure eta alumina; impregnating an aqueous solution of chloroplatinic acid into the eta alumina particles; calcining the impregnated particles to strengthen the adherence of the platinum to the eta alumina; cooling the calcined particles; leaching a significant portion of the chloride content from the cooled, calcined particles by treatment with a volume of an aqueous solution greater than the volume of the particles for more than 30 minutes, said aqueous solution containing at least 3 molar ammonium hydroxide; leaching the ammonium hydroxide treated particles with a volume of water greater than the volume of the particles; and drying the leached particles for at least 30 minutes at a temperature above 120° C. to provide catalyst particles consisting essentially of about 0.1 to about 1% platinum on eta alumina, and containing a quantity of halide less than 25% of the weight of the platinum.

3,189,560
IMPROVEMENT OF THE ACTIVITY OF PLATINUM HYDROGENATION CATALYSTS BY HIGH ENERGY IRRADIATION
Donald P. Graham, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 12, 1961, Ser. No. 82,172
2 Claims. (Cl. 252—447)

1. A process for increasing the activity of a hydrogenation catalyst consisting of platinum metal supported on activated carbon which comprises irradiating said catalyst with beta radiation above 3 million electron volts.

3,189,561
IMPROVEMENT OF THE ACTIVITY OF PALLADIUM HYDROGENATION CATALYSTS BY HIGH ENERGY IRRADIATION
Donald P. Graham, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 12, 1961, Ser. No. 82,173
5 Claims. (Cl. 252—447)

1. A process for increasing the activity of a carbon-supported palladium hydrogenation catalyst which comprises irrradiating said catalyst with a form of high energy irradiation selected from the group consisting of beta-radiation, X-radiation, neutron-radiation and deuteron-radiation, said beta-radiation consisting essentially of irradiating said catalyst with 1½ million electron volts of beta-radiation in dosage of 2000 to 30,000 watt-seconds per square centimeter, said X-radiation consisting essentially of irradiating said catalyst with 1½ to 3 million electron volts of X-radiation in dosage of 1×10^6 to 1×10^7 reps., said neutron-radiation consisting essentially of irradiating said catalyst in dosage of 1×10^{15} to 1×10^{17} neutrons per square centimeter, said deuteron-radiation consisting essentially of irradiating said catalyst with deuteron-radiation at 15 million electron volts and 20 microamperes for 20 to 40 seconds.

3,189,562
IMPROVEMENT OF THE ACTIVITY OF NICKEL HYDROGENATION CATALYSTS BY HIGH ENERGY IRRADIATION
Donald P. Graham, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 12, 1961, Ser. No. 82,171
3 Claims. (Cl. 252—459)

1. A process for increasing the activity of a nickel hydrogenation catalyst selected from the group consisting of Raney nickel and nickel supported on diatomaceous earth which comprises irradiating said catalyst with high energy irradiation selected from the class consisting of 1½ to 3 million electron volts of beta radiation in a dosage of 5 to 60 watt seconds per square centimeter and 1½ to 3 million electron volts of X-radiation in dosages of 1×10^5 to 1×10^7 REPS.

3,189,563
OPEN MESH GLASS FABRIC SUPPORTED CATALYST
Anna P. Hasel, West Orange, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Dec. 1, 1960, Ser. No. 72,842
13 Claims. (Cl. 252—460)

1. A supported catalyst comprising a catalyst carrier having an open mesh glass fabric base coated with an adherent solid refractory oxide selected from the group consisting of alumina, silica, titania, zirconia, porcelain and set air-setting and hot-setting bonding mortars and high alumina cements, and a material selected from the group consisting of metals of Group VIII of the Periodic Table and oxides thereof as catalyst on the refractory oxide.

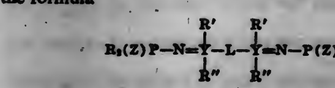
3,189,564
PHOSPHORANES, ARSANES AND STIBANES, AND PROCESSES FOR PREPARING THE SAME
Robert M. Washburn and Roger A. Baldwin, Whittier, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Nov. 3, 1961, Ser. No. 149,888
42 Claims. (Cl. 260—2)

2. As new compositions of matter, compounds having the formula

$$R_{3-n}P(=Z)(N=YR'R''R''')_n$$

wherein R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, arylthio, and azide groups;
Z is selected from the group consisting of oxygen and sulfur;
Y is selected from the group consisting of phosphorous, arsenic and antimony;
R', R'', and R''' are selected from at least one of the group consisting of alkyl, aryl, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio groups; and n is a whole number of from 1 to 3.

20. As new compositions of matter, compounds having the formula



wherein R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio groups;
Z is selected from the group consisting of oxygen and sulfur;

3,189,553
PAINT STRIPPING COMPOSITIONS

Henry B. Lange, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 31, 1960, Ser. No. 18,859
7 Claims. (Cl. 252—165)

1. A paint stripping composition comprising at least 50–99 weight percent of 2,5-bis(chloromethyl)tetrahydrofuran, from 0–15 weight percent of a thickener selected from the group consisting of finely divided silicon dioxide, polyethylene glycol, methyl cellulose, ethyl cellulose, cellulose acetate, and nitro cellulose, and from 0–25 weight percent of methylene chloride.

3,189,554
WATER TREATING COMPOSITION

Ralph R. Dean, 4924 Stadium Drive, Fort Worth, Tex.

No Drawing. Filed Sept. 22, 1961, Ser. No. 139,834
11 Claims. (Cl. 252—181)

1. A stiff non-pourable water treating composition for inhibiting the deposition of scale on surfaces contacted by said water consisting essentially of a water-soluble surfactant selected from the group consisting of an anionic organic surfactant selected from the group consisting of an alkyl aryl sulfonate, an aryl sulfonate, an alkyl sulfate, an alkyl ester of sodium sulfosuccinic acid, tall oil fatty acids and neutralized salts thereof, and mixtures thereof, a non-ionic organic surfactant and mixtures thereof, a substantially equal proportion by weight of a water-soluble inorganic polyphosphate in particulate form and a third substantially equal proportion by weight of water, the amount of said polyphosphate being in excess of its normal solubility in the amount of water present and maintained in a non-caking suspension by means of a thin, evenly dispersed coating of the surfactant on the particles of said polyphosphate.

3,189,555
PROCESS FOR PREPARING URANOUS OXIDE SOLS

Jean G. Smith and Frederick T. Fitch, Baltimore, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,878
4 Claims. (Cl. 252—301.1)

1. A process for preparing stable uranous oxide sols made up of aqueous dispersions of uranous oxide particles in the size range of 10 to 300 millimicrons which comprises preparing a solution of a non-oxidizing uranyl salt selected from the group consisting of the oxybromide, the oxychloride, the oxyacetate and the oxyformate, electrodialyzing to convert the non-oxidizing uranyl salt, autoclaving the uranous oxysalt solution at a temperature of about 100 to 200° C. for a period of time sufficient to complete sol particle preparation, redispersing in deionized water and recovering uranous oxide sol as the final product.

3,189,556
NOVEL CATALYST FOR THE PREPARATION OF ACETALDEHYDE FROM ACETYLENE

Ronald W. Chapman, Whittier, and Roger M. Dille, La Habra, Calif., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

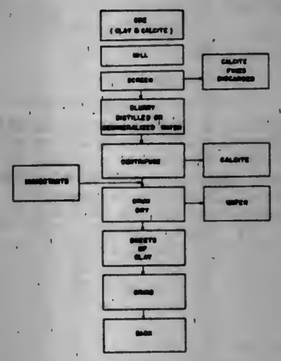
No Drawing. Original application Dec. 4, 1959, Ser. No. 857,246, now Patent No. 3,116,333, dated Dec. 31, 1963. Divided and this application May 20, 1963, Ser. No. 286,436
4 Claims. (Cl. 252—428)

1. A catalytic composition useful in the preparation of acetaldehyde from acetylene consisting essentially of between about 1 and 25 wt. percent sulfuric acid, between about 3 and 15 wt. percent ferric sulfate, between about 0.5 and 4 wt. percent acetic acid, and between about 0.1 and 2 wt. percent of a member selected from the group consisting of mercuric oxide and mercuric acetate, the remainder of said composition being composed of water.

3,189,557
METHOD OF TREATMENT OF ORE AND PRODUCT

Richard G. Shaler, Las Vegas, Nev., assignor to American Tansul Company, Las Vegas, Nev.

Filed Apr. 6, 1964, Ser. No. 355,070
18 Claims. (Cl. 252—428)



1. A method of treating an ore of the montmorillonite family initially having calcite impurities comprising grinding the ore, forming an aqueous slurry of the ore, removing substantially all calcite impurities, adding a humectant having a boiling point above water selected from the group consisting of water soluble organic polyols and water soluble polysaccharides to constitute about 1–20% by weight of the total solids in the slurry, and drying the slurry.

3,189,558
BIS(PHENYLTOLYL)ETHER CHROMATOGRAPHIC ADSORPTION MEDIA

James D. Doedens, 20 Rosemary Court, Midland, Howard P. Cordts, 5448 Kasemeyer Road, Bay City, and David F. Wisniewski, 4869 Franklin St., Auburn, Mich.

No Drawing. Original application Aug. 31, 1959, Ser. No. 836,927. Divided and this application June 3, 1964, Ser. No. 378,481
3 Claims. (Cl. 252—428)

3. An improved chromatographic adsorption medium comprising a major proportion of an inert particulate packing material and a minor proportion of a liquid condensation product of 4,4'-di(chloromethyl)diphenyl oxide with a benzenoid hydrocarbon having the formula

$$R_1R_2R_3C_6H_3$$

wherein C_6H_3 represents a benzene moiety and R_1, R_2 and R_3 individually represent one of the group of hydrogen and alkyl groups having from 1 to 2 carbon atoms and at least one of which is hydrogen, said condensation products having from 1 to 2 diphenyl oxide moieties and from 2 to 3 benzenoid hydrocarbon moieties per molecule.

3,189,559
DECHLORIDED PLATINUM ON ETA ALUMINA CATALYST PREPARATION

Louis C. Doelp, Jr., Glen Mills, and George Alexander Mills, Swarthmore, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,467
2 Claims. (Cl. 252—442)

1. A method of preparing catalysts consisting essentially of about 0.1 to about 1% platinum on eta alumina, and containing a quantity of chloride less than 25% of the weight of the platinum which method consists essentially of: preparing particles of sorbtive alumina identifiable by X-ray as substantially pure eta alumina; impregnating an aqueous solution of chloroplatinic acid into the eta alumina particles; calcining the impregnated particles to strengthen the adherence of the platinum to the eta alumina; cooling the calcined particles; leaching a significant portion of the chloride content from the cooled, calcined particles by treatment with a volume of an aqueous solution greater than the volume of the particles for more than 30 minutes, said aqueous solution containing at least 3 molar ammonium hydroxide; leaching the ammonium hydroxide treated particles with a volume of water greater than the volume of the particles; and drying the leached particles for at least 30 minutes at a temperature above 120° C. to provide catalyst particles consisting essentially of about 0.1 to about 1% platinum on eta alumina, and containing a quantity of halide less than 25% of the weight of the platinum.

3,189,560
IMPROVEMENT OF THE ACTIVITY OF PLATINUM HYDROGENATION CATALYSTS BY HIGH ENERGY IRRADIATION

Donald P. Graham, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 12, 1961, Ser. No. 82,172
2 Claims. (Cl. 252—447)

1. A process for increasing the activity of a hydrogenation catalyst consisting of platinum metal supported on activated carbon which comprises irradiating said catalyst with beta radiation above 3 million electron volts.

3,189,561
IMPROVEMENT OF THE ACTIVITY OF PALLADIUM HYDROGENATION CATALYSTS BY HIGH ENERGY IRRADIATION

Donald P. Graham, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 12, 1961, Ser. No. 82,173
5 Claims. (Cl. 252—447)

1. A process for increasing the activity of a carbon-supported palladium hydrogenation catalyst which comprises irrradiating said catalyst with a form of high energy irradiation selected from the group consisting of beta-radiation, X-radiation, neutron-radiation and deuteron-radiation, said beta-radiation consisting essentially of irradiating said catalyst with 1½ million electron volts of beta-radiation in dosage of 2000 to 30,000 watt-seconds per square centimeter, said X-radiation consisting essentially of irradiating said catalyst with 1½ to 3 million electron volts of X-radiation in dosage of 1×10^6 to 1×10^7 reps., said neutron-radiation consisting essentially of irradiating said catalyst in dosage of 1×10^{13} to 1×10^{17} neutrons per square centimeter, said deuteron-radiation consisting essentially of irradiating said catalyst with deuteron-radiation at 15 million electron volts and 20 microamperes for 20 to 40 seconds.

3,189,562
IMPROVEMENT OF THE ACTIVITY OF NICKEL HYDROGENATION CATALYSTS BY HIGH ENERGY IRRADIATION

Donald P. Graham, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 12, 1961, Ser. No. 82,171
3 Claims. (Cl. 252—459)

1. A process for increasing the activity of a nickel hydrogenation catalyst selected from the group consisting of Raney nickel and nickel supported on diatomaceous earth which comprises irradiating said catalyst with high energy irradiation selected from the class consisting of 1½ to 3 million electron volts of beta radiation in a dosage of 5 to 60 watt seconds per square centimeter and 1½ to 3 million electron volts of X-radiation in dosages of 1×10^5 to 1×10^7 REPS.

3,189,563
OPEN MESH GLASS FABRIC SUPPORTED CATALYST

Anna P. Hasel, West Orange, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Dec. 1, 1960, Ser. No. 72,842
13 Claims. (Cl. 252—460)

1. A supported catalyst comprising a catalyst carrier having an open mesh glass fabric base coated with an adherent solid refractory oxide selected from the group consisting of alumina, silica, titania, zirconia, porcelain and set air-setting and hot-setting bonding mortars and high alumina cements, and a material selected from the group consisting of metals of Group VIII of the Periodic Table and oxides thereof as catalyst on the refractory oxide.

3,189,564
PHOSPHORANES, ARSANES AND STIBANES, AND PROCESSES FOR PREPARING THE SAME

Robert M. Washburn and Roger A. Baldwin, Whittier, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

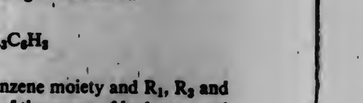
No Drawing. Filed Nov. 3, 1961, Ser. No. 149,888
42 Claims. (Cl. 260—2)

2. As new compositions of matter, compounds having the formula

$$R_{3-n}P(=Z)(N=YR'R''R''')_n$$

wherein R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, arylthio, and azide groups;
Z is selected from the group consisting of oxygen and sulfur;
Y is selected from the group consisting of phosphorous, arsenic and antimony;
R', R'', and R''' are selected from at least one of the group consisting of alkyl, aryl, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio groups; and *n* is a whole number of from 1 to 3.

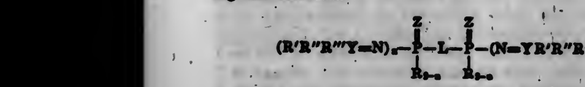
20. As new compositions of matter, compounds having the formula



wherein R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio groups;
Z is selected from the group consisting of oxygen and sulfur;

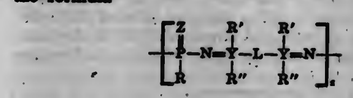
Y is selected from the group consisting of phosphorus, arsenic, and antimony;
L is chosen from the group consisting of arylene and alkylene;
R' and R'' are selected from at least one of the group consisting of alkyl, aryl, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio.

27. As new compositions of matter, compounds having the formula



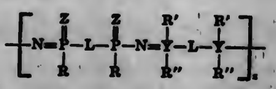
wherein R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio groups;
Z is selected from the group consisting of oxygen and sulfur;
Y is selected from the group consisting of phosphorus, arsenic, and antimony;
R', R'', and R''' are selected from the group consisting of alkyl, aryl, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio;
L is selected from the group consisting of arylene and alkylene; and *n* is a whole number of from 1 to 2.

32. As new compositions of matter polymers having the formula



wherein R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, arylthio, and azide groups;
Z is selected from the group consisting of oxygen and sulfur;
Y is selected from the group consisting of phosphorus, arsenic, and antimony;
L is selected from the group consisting of alkylene and arylene;
R' and R'' are selected from at least one of the group consisting of alkyl, aryl, aryloxy, alkoxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio groups; and
x indicates the degree of polymerization.

37. As new compositions of matter, polymers having the formula



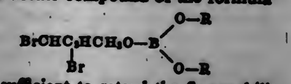
wherein R is selected from the group consisting of alkyl, aryl, halogen, alkoxy, aryloxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, arylthio, and azide groups;
Z is selected from the group consisting of oxygen and sulfur;
L is selected from the group consisting of arylene and alkylene groups;
Y is selected from the group consisting of phosphorus, arsenic, and antimony;
R' and R'' are selected from at least one of the group consisting of alkyl, aryl, aryloxy, alkoxy, dimethylamino, diethylamino, phenylmethylamino and phenylamino, alkylthio, and arylthio groups; and
x indicates the degree of polymerization.

3,189,565
NOVEL BORATE COMPOUNDS AND USE IN POLYURETHANE FOAM CONTAINING A 2,3-DIBROMOPROPYL BORATE COMPOUND AND PROCESS FOR PREPARING SAME

William G. Woods, Anaheim, Dominick Laruccia, Orange, and Irving S. Bengelsdorf, Santa Ana, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,845
12 Claims. (Cl. 260—2.5)

1. A polyurethane foam composition containing a 2,3-dibromopropyl borate compound of the formula



in an amount sufficient to retard the flammability of said composition, where R is selected from the group consisting of monovalent organic radicals and divalent alkylene radicals formed by both R's taken together, said radicals being substantially inert to the polyurethane-forming reactants.

3,189,566
LIQUID RESIN COMPOSITIONS FOR SHELL MOLDING AND METHODS FOR THEIR PRODUCTION

Akira Shinjo, Sobaki-gun, Hiroshima-ken, Japan, assignor to Toyo Kogyo Company Limited, Hiroshima-ken, Japan

No Drawing. Filed Dec. 9, 1959, Ser. No. 858,325
Claims priority, application Japan, Dec. 9, 1958, 33/35,644, 33/35,645, 33/35,646, 33/35,647
5 Claims. (Cl. 260—17.5)

1. A method for producing a liquid resin composition for use in shell molding, consisting essentially of
(1) heating formaldehyde and a phenol, in proportions sufficient for obtaining a novolak reaction, in the presence of an acid catalyst corresponding in strength to about 10 N-hydrochloric acid, at a temperature of about 30° to 70° C.,
(2) adjusting the pH of the resulting novolak resin to about 7, and
(3) adding an excess of formaldehyde thereto sufficient to obtain a resol reaction, and heating the mixture at a temperature of at most about 80° C., thereby effecting the resol reaction; and admixing with the reaction mixture at one of the aforesaid stages a member selected from the group consisting of rosin and cumarone.

3,189,567
PROCESS FOR VULCANIZATION OF BUTYL RUBBER

Arnold Giller, Wiesbaden, Germany, assignor to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed June 20, 1960, Ser. No. 37,111
Claims priority, application Germany, July 17, 1959, C 19,413
5 Claims. (Cl. 260—19)

1. In a method of compounding a vulcanizable composition of a rubbery copolymer of an isoolefin having from 4 to 7 carbon atoms with from 0.5 to 10% of an aliphatic conjugated diolefin having from 4 to 14 carbon atoms, said composition comprising in addition to said rubbery copolymer, as a vulcanizing agent, a substituted phenol resin obtained by condensation of a p-hydrocarbon substituted phenol with formaldehyde under alkaline conditions and, as vulcanization accelerators, a halogen donor and a metal compound selected from the group consisting of oxides and fatty acid salts of zinc and iron, the improvement which comprises incorporating said metal compound and said halogen donor into said rubbery copolymer, heating the resulting composition to a temperature above 120° C., and thereafter adding the substituted phenol resin.

3,189,568
OIL RESISTANT OVERLAY FOR ASPHALT

William J. Sparks, Westfield, and Albert M. Gessler, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 29, 1960, Ser. No. 25,518
9 Claims. (Cl. 260—22)

1. A light colored, oil resistant paving composition which comprises a mineral aggregate and from 1 to 10 weight percent of a flexible, oil insoluble polyester resinous binder prepared by the reaction of stoichiometrically balanced quantities of a dicarboxylic acid containing from about 4 to 12 carbon atoms per molecule and a glycol containing from 2 to 6 carbon atoms per molecule, said resin modified to have pendant long chain ester groups containing at least 6 carbon atoms and to have an ASTM penetration at 77° F. of from about 12 to 112, by the addition of a reactant selected from the class consisting of (a) a long chain fatty acid and glycerol, and (b) a glyceride, said resinous reactants being in stoichiometric balance and said resultant paving composition having a Marshall stability ratio measured at 70° F./140° F. of less than 10:1 and a Marshall flow at 70° F. greater than 8.

3,189,569
STABILIZATION OF STYRENE-ACRYLONITRILE POLYMERS WITH ALKYL-SUBSTITUTED PHENOLS AND VIC-EPOXY COMPOUNDS

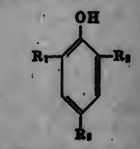
Arnold B. Finestone, Leominster, and James S. Pavlin, Fitchburg, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

No Drawing. Filed Oct. 7, 1960, Ser. No. 61,094
9 Claims. (Cl. 260—23)

1. A thermoplastic polymeric composition readily moldable to clear and substantially non-discolored uniform products, consisting essentially of the polymerization product resulting from the polymerization of from about 65 to 80% of at least one polymerizable compound of the formula



wherein R is selected from the group consisting of hydrogen and the methyl radical, R_1 is selected from the group consisting of chlorine and lower alkyl radicals and *n* is 0 to 2, and about 35% to about 20% by weight of acrylonitrile in the presence of and in contact with, based on the combined weight of said polymerizable compound and acrylonitrile, about 0.005% to 0.9% of at least one 2,4,6-tri-substituted phenol of the formula



wherein R_1, R_2 and R_3 are selected from the group consisting of saturated aliphatic and aromatic hydrocarbon radicals containing no more than 12 carbon atoms and about 0.005% to 0.75% of an epoxidized organic composition selected from the group consisting of (*a*) resinous complex reaction mixtures of from 1 to 4 moles of an epihalohydrin per mole of a member selected from the group consisting of polyhydric phenols and polyhydric aliphatic alcohols, (*b*) epoxidized oils resulting from the epoxidation of a member selected from the group consisting of (1) a glyceride reaction product of a fatty acid and glycerol and (2) a terpene oil and (*c*) low molecular weight epoxy compositions obtained by epoxidation of a cycloaliphatic compound other than a terpene oil, said cycloaliphatic compounds being free of vic-epoxy reactive substituents which interfere with the desired stabilization.

3,189,570
STABILIZATION OF STYRENE-ACRYLONITRILE POLYMERS WITH ORGANIC PHOSPHITES AND VIC-EPOXY COMPOUNDS

James S. Pavlin, Fitchburg, and Arnold B. Finestone, Leominster, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

No Drawing. Filed Oct. 7, 1960, Ser. No. 61,095
12 Claims. (Cl. 260—23)

1. A thermoplastic acrylonitrile-monovinyl aryl copolymer composition which is conventionally moldable to clear and substantially non-discolored uniform copolymer products, said copolymer composition provided by polymerization of a monomer mixture of from about 65 to about 80% by weight of a polymerizable monovinyl aryl compound and about 35 to about 20% by weight of acrylonitrile in the presence of and in contact with (A) about 0.005 to about 0.75% by weight, based on the monomer mixture, of an epoxy stabilizing agent selected from the class consisting of (a) resinous reaction products of from 1 to 4 moles of an epihalohydrin and a mole of a member selected from the group consisting of polyhydric phenols and polyhydric aliphatic alcohols; (b) oils resulting from the epoxidation of a member selected from the group consisting of (1) a glyceride reaction product of a fatty acid and glycerol and (2) a terpene oil; and (c) low molecular weight epoxy cycloaliphatic compounds other than epoxidized terpene oils, said cycloaliphatic compounds being free of vic-epoxy reactive substituents which interfere with the desired stabilization, and (B) about 0.005 to about 0.75% by weight, based on the monomer mixture, of an organic phosphite selected from the class consisting of aryl and alkylaryl di- and trisubstituted phosphites.

3,189,571
STABILIZATION OF ACRYLONITRILE POLYMERS WITH VIC-EPOXY COMPOUNDS

James S. Pavlin, Fitchburg, and Arnold B. Finestone, Leominster, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

No Drawing. Filed Oct. 7, 1960, Ser. No. 61,096
7 Claims. (Cl. 260—23)

1. A method of producing a thermoplastic acrylonitrile-monovinyl aryl copolymer composition which is capable of being conventionally molded to clear and substantially non-discolored uniform copolymer parts, said method comprises polymerization of a monomer mixture of from about 65 to about 80% by weight of a polymerizable monovinyl aryl compound and about 35 to about 20% by weight of acrylonitrile in the presence of and in contact with about 0.005 to about 0.75% by weight, based on the monomer mixture, of an epoxy stabilizing agent selected from the group consisting of (*a*) resinous reaction products of from 1 to 4 moles of an epihalohydrin and one mole of a member selected from the group consisting of polyhydric phenols and polyhydric aliphatic alcohols; (*b*) oils resulting from the epoxidation of a member selected from the group consisting of (1) a glyceride reaction product of a fatty acid and glycerol and (2) a terpene oil; and (*c*) low molecular weight epoxy cycloaliphatic compounds other than an epoxidized terpene oil, said cycloaliphatic compounds being free of vic-epoxy reactive substituents which interfere with the desired stabilization.

3,189,572
HIGH GLOSS RETAINING ASPHALTS CONTAINING PHENOL-FORMALDEHYDE RESIN

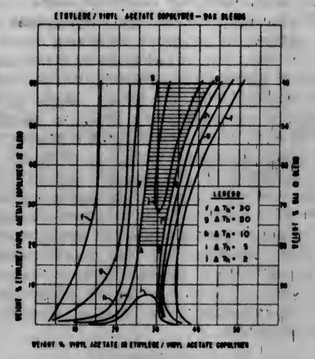
Alan Philip Crump, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed June 28, 1962, Ser. No. 205,834
2 Claims. (Cl. 260—28)

1. A coating composition consisting essentially of a cutback asphalt, derived from asphaltic crude and having

a penetration of from 0 to 50 at 77° F., a softening point of from 140 to 230° F., and from 3% to 20% by weight of a non-heat hardening phenolic-formaldehyde resin having a softening point of from 210 to 320° F., a specific gravity of about 1.05 to 1.10 and a Gardner color index of 7 to 12 in one to one ratio in toluene.

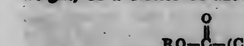
3,189,573
PETROLEUM WAX-ETHYLENE VINYL ACETATE COPOLYMER COMPOSITION
Aaron Oken, Kennett Township, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,356
21 Claims. (Cl. 260—28.5)



21. A heat-sealable flexible sheet material having on one surface thereof a thermoplastic wax composition coating having a melt viscosity of between 2000 and 15,000 centipoises measured at 290° F., said wax composition comprising between about 50% and 70% of a petroleum wax having a melting point between about 130° F. and 170° F., and between about 50% and 30% of a copolymer of ethylene and vinyl acetate, said copolymer being the copolymerization product of ethylene and vinyl acetate in ratio between about 2 to 1 and 4 to 1.

3,189,574
POLYPROPYLENE COMPOSITION CONTAINING AN AZELATE
Arthur H. Rogers, Jr., Longview, Tex., and James G. Stranch, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 7, 1962, Ser. No. 236,131
8 Claims. (Cl. 260—31.8)

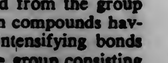
1. A composition consisting essentially of solid, crystalline polypropylene and about .5 to about 25%, by weight, of a diester of azelaic acid having the formula:



where R is a saturated aliphatic hydrocarbon radical containing 4–10 carbon atoms.

3,189,575
POLYAMIDES STABILIZED WITH ORGANO-TIN COMPOUNDS
Christian F. Horn, Charleston, and Harry Vineyard, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 4, 1959, Ser. No. 810,525
22 Claims. (Cl. 260—45.75)

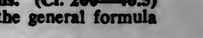
4. A composition of matter comprising a synthetic linear fiber-forming polyamide in which the —CONH— group is a recurring unit in the polymer chain and from about 0.025 to about 2 percent by weight of an organic tin compound characterized by the presence therein of at least one direct carbon to tin bond selected from the group consisting of (A) tin compounds having four carbon to tin bonds of the formula R_4Sn, wherein R is a member selected from the group consisting of hydrocarbon and substituted hydrocarbon radicals, (B) tin compounds having n carbon to tin bonds and $4-n$ intensifying bonds from tin to a member selected from the group consisting of halogen, hydrogen, and hydroxyl of the formula R_nSnX_{4-n} wherein X is a member selected from the group consisting of halogen, hydrogen, and hydroxyl, and n is an integer having a value of from 1 to 3, (C) tin compounds having two carbon to tin bonds and an intensifying double bond from tin to a member selected from the group consisting of oxygen and sulfur of the formula R_2SnY wherein Y is a member selected from the group consisting of oxygen and sulfur, (D) tin compounds having n carbon to tin bonds and $4-n$ intensifying bonds from tin to a member selected from the group consisting of oxygen, sulfur, nitrogen, and phosphorus linked organic radicals, (E) polystannic compounds having carbon to tin bonds and intensifying bonds from tin to a member selected from the group consisting of halogen, hydrogen, oxygen, sulfur, nitrogen, and phosphorus, and (F) stannonic acid compounds of the formula



wherein R'' is a member selected from the group consisting of hydrogen, a metal atom, a hydrocarbon radical, and substituted hydrocarbon radical, R' is a member selected from the group consisting of monovalent hydrocarbon and substituted monovalent hydrocarbon radicals, and y is an integer having a value of 1.

3,189,576
ORGANOSILICON INTERMEDIATES CONTAINING SILICON-BONDED OXIME RADICALS
Edward Sweet, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Sept. 7, 1962, Ser. No. 222,167
25 Claims. (Cl. 260—46.5)

1. A compound of the general formula

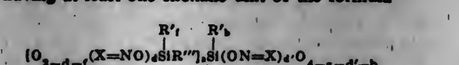


in which X is selected from the group consisting of radicals of the formula $R_2C=$ and



in which each R'' is selected from the group consisting of divalent hydrocarbon radicals and divalent halohydrocarbon radicals, each R is a radical selected independently from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, each R' is a substituent selected independently from the group consisting of R radicals, cyanoalkyl radicals and hydrogen atoms and a is a positive integer ranging in value from 1 to 4.

8. A composition consisting essentially of organosiloxane having at least one siloxane unit of the formula



which unit contains at least one (X=NO) group and at least one SiO group of a SiOSi linkage, any remaining siloxane units in said organosiloxane being essentially all of the general formula



in which X is selected from the group consisting of $R_2C=$ and



radicals in which each R is selected independently from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals and each R'' is selected independently from the group consisting of divalent hydrocarbon and divalent halohydrocarbon radicals, each R' is selected independently from the group consisting of R radicals, cyanoalkyl radicals and hydrogen atoms, R''' is a divalent aliphatic hydrocarbon radical, b is an integer from 0 to 2 inclusive, d and d' are each integers from 0 to 3 inclusive, f is an integer from 0 to 2 inclusive, z is an integer from 0 to 1 inclusive and c is an integer from 0 to 3 inclusive.

13. The method comprising mixing in the substantial absence of moisture (1) a polysiloxane containing silicon-bonded hydroxyl groups in which essentially all the remaining valences of the silicon atoms in said polysiloxane are satisfied by oxygen atoms of SiOSi linkages and substituents selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals, cyanoalkyl radicals and hydrogen atoms, there being an average of at least one said substituent per silicon atom, with (2) a silane of the formula $R'_bSi(ON=X)_{4-b}$ in which R' is selected from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals, X is selected from the group consisting of $R_2C=$ and



radicals in which R is selected from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals and R'' is selected from the group consisting of divalent hydrocarbon radicals and divalent halohydrocarbon radicals and b is an integer from 0 to 2 inclusive, in amount such that there is at least one mol of silane per mol of silicon-bonded hydroxyl groups in (1), whereby a product is obtained which is stable in the absence of moisture, but cures when exposed to moisture.

3,189,577
PROCESS FOR CONVERTING α,β-ETHYLENICALLY UNSATURATED ALDEHYDE POLYMERS TO WATER-SOLUBLE DERIVATIVES
Elliott E. Ryder, Jr., Alameda, and Philip Pezzaglia, El Cerrito, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,840
14 Claims. (Cl. 260—67)

1. A process for converting water-insoluble high molecular weight polymers of alpha,beta-ethylenically unsaturated aldehydes, which polymers contain at least 60% by weight of the unsaturated aldehyde units and are obtained by addition polymerization of the aldehyde through the ethylenic group, into a polymer which is soluble in water which comprises mixing the polymer with an aqueous medium which contains less than an equivalent amount of a material which releases sulfur dioxide when an acidified aqueous solution thereof is heated to 100° C., while maintaining the aqueous medium substantially neutral over a greater part of the reaction.

3,189,578
POLYMERS AND THEIR PRODUCTION
Henry R. Kuemmerer, Walhalla, S.C., assignor to Deering Milliken Research Corporation, near Pendleton, S.C., a corporation of Delaware
No Drawing. Filed Apr. 23, 1959, Ser. No. 808,310
6 Claims. (Cl. 260—77.5)

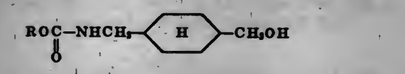
1. A water-soluble polyurethane which forms tough, flexible and strong films from water solutions thereof and which is a reaction product of an arylene diisocyanate and a polyethylene ether glycol of the formula



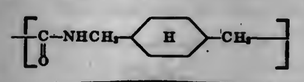
wherein n is an integer sufficient to provide a molecular weight of from 6,000 to 7,500, said arylene diisocyanate being present in a molar ratio of 1¼:1 to 1½:1 moles of arylene diisocyanate per mole of polyethylene ether glycol, said reaction having been terminated with at least one molar equivalent of an aliphatic monohydroxy alcohol per molar equivalent of said arylene diisocyanate when the reaction product had approached but not reached water-insolubility.

3,189,579
CARBAMATES AND POLYURETHANES BASED UPON 4-AMINOMETHYLCYCLOHEXANEMETHANOL
John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 18, 1961, Ser. No. 110,862
18 Claims. (Cl. 260—77.5)

18. A process for the preparation of polyurethane-type polymers which comprises heating a compound having the formula



wherein R is an alkyl group containing 1–4 carbon atoms in the presence of a polyesterification catalyst, thereby eliminating an alcohol and forming a polymer characterized by a polymer chain containing a repeating linkage having the formula



3,189,580
POLYHYDROPOLYBORATE GROUP-CONTAINING POLYMERS
James Wilkinson Dawes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 17, 1962, Ser. No. 189,236
10 Claims. (Cl. 260—78.4)

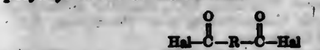
1. Polymers comprising recurring units of polyhydropolyborate groups containing n boron atoms wherein n is an integer selected from the group consisting of 10 and 12, joined by recurring polycarbacyl groups which are bonded to boron atoms of separate recurring polyhydropolyborate groups through the carbonyl carbons of the polycarbacyl groups, wherein each polyhydropolyborate group has a negative valence of 2, which valences are satisfied by a cation having a valence of 1–3.

6. Process which comprises reacting in the presence of an acid catalyst a compound of the formula



wherein M is a cation having a valence of 1–3, n is an integer selected from the class consisting of 10 and 12, and a and b are positive whole numbers of 1–3 and

whose values are determined by the valence of M, with a polyacyl halide of the formula



wherein Hal is a group selected from the class consisting of Cl and Br, and R is an aliphatically saturated hydrocarbon of 1–16 carbon atoms, and isolating the resulting product.

3,189,581

PRESSURE SENSITIVE ADHESIVES COMPRISING INTERPOLYMERS OF ALKYLACRYLATES, VINYL ESTERS AND N-ALKOXYALKYL ACRYLAMIDES

Donald P. Hart, Allison Park, and Roger M. Christenson, Gibsonia, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 5, 1961, Ser. No. 114,599
11 Claims. (Cl. 260—80.5)

1. A pressure-sensitive adhesive composition consisting essentially of an interpolymer of:

(a) from about 40 to about 99.9 percent by weight of at least one compound of the formula:



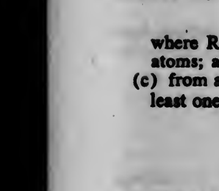
where R is an alkyl radical of from 4 to 18 carbon atoms;

(b) up to about 60 percent by weight of at least one compound of the formula:



where R_1 is an alkyl radical of from 1 to 5 carbon atoms; and

(c) from about 0.1 to about 5 percent by weight of at least one compound of the formula:



where R_2 is an alkyl radical of from 1 to 5 carbon atoms, R_3 is a member selected from the group consisting of hydrogen, alkyl radicals of from 1 to 6 carbon atoms, and furyl, and R_4 is a member selected from the group consisting of hydrogen and methyl.

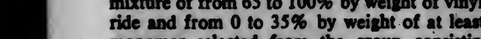
3,189,582

POLYMERIZATION PROCESS FOR POLYVINYLIDENE CHLORIDE AND COPOLYMERS THEREOF USING AN INSOLUBLE METALLIC SOAP AS SOLE EMULSIFIER

Frank J. Donat, Cleveland, and Edwin H. Baker, Cuyahoga Falls, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,312
17 Claims. (Cl. 260—85.5)

1. The method for preparing a uniform particle size polyvinylidene chloride resin comprising polymerizing a mixture of from 65 to 100% by weight of vinylidene chloride and from 0 to 35% by weight of at least one other monomer selected from the group consisting of vinyl chloride,



wherein R and R_1 are members of the class consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms and R_2 is a hydrocarbon group having from 1 to 12 carbon atoms in the presence of from 0.01 part to 3.0 parts per 100 parts of the monomers of a free-radical catalyst and from 0.01 to 5.0 parts per 100 parts of the monomers of an insoluble soap as the sole emulsifier having the structure $(A—COO)_nM$ wherein A represents an alkyl group having from 7 to 21 carbon atoms and M is a member selected from the group consisting of lithium, barium, calcium, magnesium, cadmium, zinc, lead, tin and aluminum and n is a whole number equal to the valence of M, with agitation in the substantial absence of oxygen at a temperature below about 100° C.

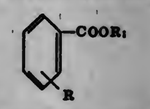
3,189,583

PREPARATION OF VINYL AROMATIC ESTER HOMOPOLYMERS AND COPOLYMERS, INCORPORATING A PRE-POLYMERIZATION HOMOGENIZATION STEP

Lowell E. McCaw, Rochester, N.Y., and Ellsworth C. McClenachan, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 6, 1962, Ser. No. 185,526
5 Claims. (Cl. 260—86.1)

1. A method for the production of an organic solvent soluble polymer having a molecular weight of at least about 50,000 of an aromatic ester having the formula



wherein R is a substituent selected from the group consisting of hydrogen and an alkyl radical having from about 1 to 8 carbon atoms, inclusive, and R_1 is an aliphatic radical containing one olefinic double bond having from about 2 to 8 carbon atoms, inclusive, which comprises homogenizing a mixture of an anionic emulsifier, water and at least 75%, by weight, based on the weight of the total mixture, of said aromatic ester, to form a stable, homogenized solution thereof, polymerizing the aromatic ester present in the resultant homogenized mixture by contacting said mixture with a slow-reaction catalyst having a half-life of at least about 10 minutes and selected from the group consisting of redox and free-radical generating catalysts, at a temperature of from about 50° C. to about 100° C. and in an inert atmosphere, the amount of water present in said homogenized mixture being such that the mixture contains from about 10% to about 30% solids of the monomer in the homogenized mixture, and recovering the resultant polymer.

3,189,584

3-VINYL-2,2-DIMETHYLNORCAMPHANE AND POLYMERS THEREOF

Newton H. Shearer, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,841
17 Claims. (Cl. 260—88.2)

3. Solid copolymers of 3-vinyl-2,2-dimethylnorcamphane with at least one α-olefin.

16. A solid polymer of 3-vinyl-2,2-dimethylnorcamphane having a molecular weight in the range of about 10,000 to about 250,000, a softening point in the range of about 250° to about 300° C. and a density in the range of about .88 to about .91.

3,189,585

2-VINYL-6,6-DIMETHYLNORPINANE AND POLYMERS THEREOF

Newton H. Shearer, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,851
17 Claims. (260—88.2)

3. Solid copolymers of 2-vinyl-6,6-dimethylnorpinane with at least one α-olefin.

16. A solid polymer of 2-vinyl-6,6-dimethylnorpinane having a molecular weight in the range of about 10,000 to about 250,000, a softening point in the range of about 200 to about 240° C. and a density in the range of about .87 to about .91.

3,189,586

DETERGENT COPOLYMER OF UNSATURATED POLYGLYCOL ETHER

Frank A. Stuart, Orinda, William T. Stewart, El Cerrito, and Warren Lowe and Frank W. Kavanagh, Berkeley, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Application June 22, 1959, Ser. No. 821,686, now Patent No. 3,073,807, dated Jan. 15, 1963, which is a division of application Ser. No. 729,560, Apr. 21, 1958. Divided and this application May 28, 1962, Ser. No. 197,839
3 Claims. (Cl. 260—89.5)

1. An oil-soluble polymer of (A) polymerizable oil-solubilizing compounds having a single ethylenic linkage and containing a monovalent hydrocarbon group of from 4 to 30 aliphatic carbon atoms and (B) at least one N-alkenyl amino alkyl ether of a polyalkylene glycol selected from the group consisting of polyalkylene glycols having a molecular weight between about 220 and 30,000 and from 2 to 7 carbon atoms in each alkylene group and monoalkyl ethers thereof, said alkenyl group having from 3 to 20 carbon atoms and said amino alkyl group having from 2 to 7 carbon atoms, said (A) component constituting from about 40 to 96% by weight and said (B) component constituting a total of from about 4 to 60% by weight of the polymer composition, there being present at least one monomer of said (B) component and said polymer being substantially saturated and having a molecular weight of at least 50,000 as determined by standard light scattering methods and a solubility in oil of at least 0.5% by weight, said polyglycols having at least 5 alkylene oxide units each and being attached by a single amino group to said polymer.

3,189,587

EMULSION POLYMERIZATION PROCESS USING SOLUBLE AND INSOLUBLE EMULSIFIERS

Frank J. Donat, Cleveland, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed June 18, 1962, Ser. No. 202,954
20 Claims. (Cl. 260—92.8)

1. The process comprising initiating a polymerization of monomer consisting of from 70 to 100% by weight of at least one vinyl monomer selected from the group consisting of vinyl chloride, vinylidene chloride, vinyl acetate, methyl methacrylate and styrene and from 0 to 30% by weight of at least one other monoolefinically unsaturated monomer copolymerizable with said vinyl monomer in an aqueous emulsion system, in an aqueous medium in admixture with a free-radical catalyst and at least one insoluble soap having the structure $(A—COO)_nM$ wherein A is an alkyl group having from 7 to 21 carbon atoms, M is a member selected from the group consisting of lithium, barium, calcium, magnesium, cadmium, zinc, tin and aluminum and n is a whole number equal to the valence of M, and subsequently adding, during the course of the polymerization and at some finite degree of conversion which is equivalent to at least about a 1% conversion of monomer to polymer, from about 2 to 50% by weight of a controlled excess of a soluble emulsifier over the amount sufficient to stabilize the existing polymer particles, thereby causing the nucleation of new polymer particles and the production of a stable polymer emulsion of at least two families of polymer particles, at least one of which is composed of particles of uniform size.

3,189,588

DENSIFICATION OF POLY-α-OLEFINS

David C. Hall, Hugh J. Hagemeyer, Jr., and Marvin R. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 1, 1960, Ser. No. 19,180
16 Claims. (Cl. 260—93.7)

1. A method for increasing the bulk density of a solid polymer which comprises slurrying a low bulk density poly-α-olefin in particulate form containing a small portion of an inert organic liquid solvent in water and heating the resulting slurry at a temperature within the range of about 5 to 15° C. below the Vicat softening point, for at least about 15 minutes, to form a poly-α-olefin of increased bulk density.

3,189,589

POLYMERIZATION OF OLEFINS WITH A TITANIUM HALIDE-TRANSITION METAL BOROHYDRIDE CATALYST

Donald R. Witt, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 1, 1960, Ser. No. 40,172
13 Claims. (Cl. 260—93.7)

1. A process for the polymerization of polymerizable 1-olefins containing a $CH_2=C=$ radical in the alkyl portion and having 2 to 8 carbon atoms, inclusive, comprising contacting said 1-olefin under polymerization conditions with a catalyst prepared by reacting (A) TiX_y and (B) $M(BH_4)_z$ at a temperature in the range of 0 to 250° F., wherein X is a halide selected from the group consisting of chloride, bromide and iodide, M is at least one transition metal selected from the group consisting of zirconium and hafnium, y is an integer from 2 to 4, and z is an integer equivalent to the valence of M, wherein the molar ratio of (B) to (A) is in the range of 0.2 to 3.0.

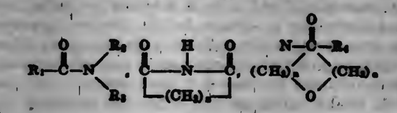
3,189,590

THREE-COMPONENT ALKYL ALUMINUM CATALYSTS FOR OLEFIN POLYMERIZATION

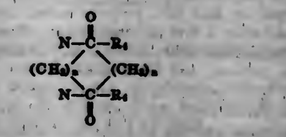
Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 1, 1961, Ser. No. 92,482
The portion of the term of the patent subsequent to September 1, 1981, has been disclaimed and dedicated to the Public
18 Claims. (Cl. 260—93.7)

1. In the polymerization of alpha-monoolefinic hydrocarbon material to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture containing an aluminum compound having the formula R_3Al wherein R is a hydrocarbon radical containing 1 to 12 carbon atoms selected from the group consisting of alkyl, aryl and aralkyl, a halide of a transition metal selected from the group consisting of titanium and vanadium, and a third component selected from the amides having the formulas:

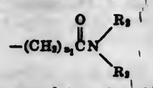


and

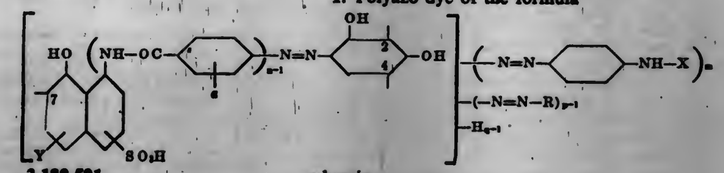


wherein R_1 is a radical selected from the group consisting of alkyl radicals containing 1 to 20 carbon atoms, phenyl,

carboxyl, alkoxy, $-N(R)_2$ wherein R is an alkyl radical containing 1 to 4 carbon atoms and



wherein n_1 is an integer of 1 to 4 and each or R_2 and R_3 is a radical selected from the group consisting of hydrogen, alkyl radicals containing 1 to 8 carbon atoms, phenyl and cyclohexyl, and wherein R_4 is a radical selected from the group consisting of alkyl radicals containing 1 to 4 carbon atoms and phenyl and n is an integer of 1 to 4.



3,189,591

PROCESS FOR POLYMERIZING ALPHA-OLEFINS WITH AN ORGANO ALUMINUM COMPOUND, TRANSITION METAL HALIDE, ORGANO NITROGEN BASE AND WATER CATALYST

Renato Serra and Ettore Giachetti, Milan, Italy, assignors to Montecatini, Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy

No Drawing. Filed Apr. 24, 1961, Ser. No. 104,851
Claims priority, application Italy, Apr. 28, 1960, 7,555/60
17 Claims. (Cl. 260—93.7)

1. A process for polymerizing higher alpha-olefins to polymers composed at least prevailingly of isotactic macromolecules in the presence of a catalyst comprising an aluminum trialkyl and a titanium trihalide, characterized in that a compound obtained by treating an organic nitrogen containing base selected from the group consisting of aliphatic diamines and pyridine, which base is present in an organic base/titanium trihalide ratio of from between 0.25:1 to 1:1, with an amount of water varying from 0.1 to 1 mole per mole of the nitrogen-containing base, is added to the catalyst prior to its use in said polymerization process.

3,189,592

PRODUCTION OF BIMODAL CIS-POLYBUTADIENE

Donald D. Norwood and Leo J. Dagley, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 23, 1962, Ser. No. 218,981
5 Claims. (Cl. 260—94.3)

1. A continuous two-stage polymerization process for the production of polybutadiene containing at least 85 percent cis-1,4,-addition in the presence of an initiator obtained by mixing at least one organometal compound as a first component and a second iodine containing component containing a titanium halide, comprising continuously introducing 1,3-butadiene, a hydrocarbon diluent, and initiator to a first polymerization zone, the amount of titanium charged to said first zone being in the range of 0.02 to 0.15 gram millimols per 100 grams of butadiene, polymerizing 50 to 80 percent of the butadiene charged in said first polymerization zone, continuously withdrawing a first polymerization effluent from said first polymerization zone, continuously adding additional butadiene, toluene, and initiator to said first effluent, continuously introducing the resulting mixture into a second polymerization zone, the amount of additional initiator being sufficient to provide an amount of titanium in said second polymerization zone of 0.2 to 2 gram millimols per 100 grams of butadiene charged thereto including that charged to said first zone, and continuing polymerization to an overall conversion of 60 to 90 percent, the amount of butadiene being fed to each of said zones being adjusted so that the final polymer product contains 2 to 45 percent by weight of material produced in said first zone.

3,189,593

POLYAZO DYES

Heinz Wicki, Allschwil, Basel-Land, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,888
Claims priority, application Switzerland, Feb. 28, 1962, 2,455/62; July 25, 1962, 8,929/62
6 Claims. (Cl. 260—144)

1. Polyazo dye of the formula

wherein

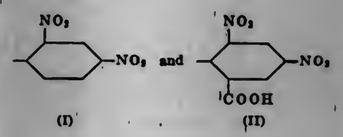
n is one of the integers 1 and 2,

m, p and q each is one of the integers 1, 2 and 3, the sum $m+p+q$ being 5,

a is a member selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy,

y is a member selected from the group consisting of hydrogen and a sulfonic acid group,

X is a member selected from the group consisting of the moieties



(I) (II)

diphenylamino which contains moiety I being attached to the 2-position of the resorcin nucleus and diphenylamino which contains moiety II being attached to one of the numbered free positions in the aforesaid formula, and

R is the radical of a diazo component selected from the group consisting of diazotized

4-amino-2',4'-dinitro-6'-carboxydiphenylamine,
1-aminonaphthalene-sulfonic acid,
2-aminonaphthalene-disulfonic acid,
4-amino-4'-nitro-2'-sulfo-diphenylamine,
1-amino-lower alkoxy-benzene,
1-amino-lower alkoxy-benzene-sulfonic-acid,
1-aminobenzene-monosulfonic-acid,
1-amino-mononitrobenzene,
1-amino-mononitrobenzene-sulfonic-acid,
1-amino-loweralkylbenzene-sulfonic acid,
4-amino-1,1'-azobenzene-sulfonic acid,
4-amino-1,1'-azobenzene-disulfonic acid,
1-amino-2-hydroxy-dinitrobenzene,
1-amino-2-hydroxy-mononitrobenzene-sulfonic acid,
1-amino-2-hydroxy-mononitrobenzene,
1-amino-di-loweralkylbenzene sulfonic acid,
2-(4'-amino)-phenyl-6-loweralkylbenzenethiazol-sulfonic acid,
4-nitro-4'-(4''-aminonaphthyl-1''-azo)-1,1'-diphenylamine-2,6''(7'')-disulfonic acid, and
4-nitro-4'-(2''-methyl-4''-nitro-5''-methoxy-phenyl-azo)-1,1'-diphenylamino-2-sulfonic acid.

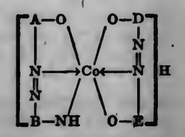
3,189,594

HETEROGENEOUS COBALT COMPLEX COMPOUNDS

Reinhard Neier, Basel, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,709
Claims priority, application Switzerland, Apr. 11, 1962, 4,432/62
6 Claims. (Cl. 260—145)

1. A 1:2-heterogeneous cobalt mixed complex of the formula



wherein

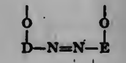
A is a member selected from the group consisting of radicals of diazotized

2-amino-1-hydroxy-5-nitrobenzene,
2-amino-1-hydroxy-4-nitrobenzene,
2-amino-1-hydroxy-5-nitro-chlorobenzene,
2-amino-1-hydroxy-4-nitro-lower alkyl-benzene,
2-amino-1-hydroxy-5-nitro-lower alkoxy-benzene, and
2-amino-1-hydroxy-4-nitro-bromobenzene,

B is a member selected from the group consisting of radicals of

2-amino-naphthalene-6-sulfonic acid-(2'-hydroxy)-propylamide,
1-aminonaphthalene-4-sulfonic acid (2'-hydroxy)-propylamide,
2-aminonaphthalene-5-sulfonic acid-(2'-hydroxy)-propylamide, and
1-aminonaphthalene-5-sulfonic acid-(2'-hydroxy)-propylamide,

and wherein the —O— group of the diazo component and the —NH— group of the coupling component each stands in the adjacent position to the —N=N— group, and the other monoazo radical being a monoazo dye radical of the ortho, ortho'-dihydroxybenzene-azonaphthalene series of the formula



wherein

D is a member selected from the group consisting of the radicals of diazotized

2-amino-1-hydroxy-nitrobenzene,
2-amino-1-hydroxy-chlorobenzene,
2-amino-1-hydroxybenzene-sulfonic acid-(carboxy)phenylamide,
2-amino-1-hydroxybenzene-sulfonic acid-(lower alkoxy)lower alkylamide,
2-amino-1-hydroxy-chloro-nitrobenzene,
2-amino-1-hydroxy-trichlorobenzene,
2-amino-1-hydroxybenzene,
2-amino-1-hydroxy-lower alkyl benzene,
2-amino-1-hydroxy-lower alkoxy benzene,
2-amino-1-hydroxy-bromobenzene,
2-amino-1-hydroxybenzene-sulfonic acid lower alkylamide,
2-amino-1-hydroxybenzene-sulfonic acid amide,
2-amino-1-hydroxy-chlorobenzene-sulfonic acid phenylamide,
2-amino-1-hydroxy-dinitrobenzene, and
2-amino-1-hydroxy-dichlorobenzene,

E is a member selected from the group consisting of the radicals of

2-hydroxynaphthalene,
7-hydroxy-1-acetylamino-naphthalene,
2-hydroxynaphthalene-3-carboxylic acid-(sulfamido)phenylamide,
2-hydroxynaphthalene-3-carboxylic acid-phenylamide,
2-hydroxynaphthalene-3-carboxylic acid-lower alkylamide,
2-hydroxynaphthalene-3-carboxylic acid amide,
2-hydroxynaphthalene-3-carboxylic acid-(hydroxy)-lower alkylamide,
2-hydroxy-6-lower alkoxynaphthalene, and
2-hydroxynaphthalene-3-carboxylic acid phenylamide-sulfonic acid

and wherein the —O— groups in the diazo and coupling component each stands in the adjacent position to the —N=N— group.

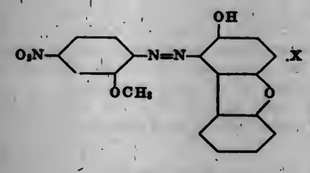
3,189,595

METAL COMPLEX DIES CONTAINING 2-DIBENZOFURANOL

Clemens Streck, Londonville, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 19, 1962, Ser. No. 167,433
2 Claims. (Cl. 260—146)

1. A metalized complex azo compound having the formula:



wherein X represents a metal selected from the group consisting of copper, cobalt and nickel.

3,189,596

METHOD FOR FRACTIONATING AQUEOUS EXTRACTS FROM BARKS OF TREES

David L. Brink, Berkeley, Calif., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,489
4 Claims. (Cl. 260—209)

1. The process of fractionating an aqueous extract derived by treating comminuted tree bark with water at elevated temperatures and containing in solution, aromatic substances including dihydroquercetin, polyphenols, phenols and phenolic polymers and carbohydrate substances including reducing sugars, comprising adjusting the pH of said extract to at least 10, and treating said extract with at least 20%, based on the weight of the dissolved solids, of a water dissociable alkaline earth metal compound, calculated as the oxide of the alkaline earth metal, under substantially non-oxidizing conditions to form a precipitate phase containing the aromatic substances and a solute phase containing the carbohydrate substances, and separating the respective phases.

3,189,597

3-GLYCOSIDES OF 17-AMINO-3-HYDROXY-5-ANDROSTENES

Harold Belding MacPhillamy, Madison, and Robert Armistead Lucas, Mendham, N.J., assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Mar. 4, 1959, Ser. No. 797,040
1 Claim. (Cl. 260—210.5)

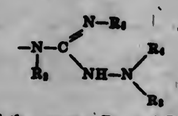
3-D-β-glycoside of 17-amino-3β-hydroxy-5-androstene.

3,189,598
FATTY ACID ESTERS OF RIBOFLAVIN
Kunio Yagi, 30 1-chome, Meigetsu-cho, Showa-ku, Nagoya-shi, Japan
No Drawing. Filed Apr. 10, 1962, Ser. No. 186,327
Claims priority, application Japan, Jan. 14, 1960, 35/1,097
1 Claim. (Cl. 260—211.3)

Riboflavin 2',3',4',5'-tetrabutyrate.

3,189,599
1-[2-(N,N-ALKYLENE-IMINO)-ALKYL]-3-AMINO-GUANIDINES AND INTERMEDIATES THEREFOR
Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, a corporation of Delaware
No Drawing. Filed June 12, 1961, Ser. No. 116,246
11 Claims. (Cl. 260—239)

1. A member selected from the group consisting of a 1-R-lower alkyl-3-amino-guanidine, in which R is N,N-alkylene-imino, in which alkylene has from four to ten chain carbon atoms, and the amino-guanidino group has the formula

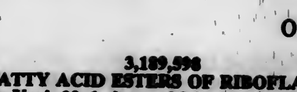


in which each of the groups R_3 and R_4 is a member selected from the group consisting of hydrogen, lower alkyl-phenyl and phenyl-lower alkyl, and each of the groups R_2 and R_5 stands for a member selected from the group consisting of hydrogen, lower alkyl, phenyl, phenyl-lower alkyl, and the acyl group of a lower alkanoic acid, and an acid addition salt of such compound.

10. A member selected from the group consisting of compound having one of the formulae:



and

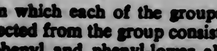


in which R' is a member selected from the group consisting of hydrogen and methyl, the letter *n* stands for one of the whole numbers 6, 7 and 8, and A is lower alkylene having from two to three carbon atoms and separating the nitro-guanidine and nitroso-guanidine groups from the N,N-alkylene-imino group by from two to three carbon atoms, and acid addition salts thereof.

3,189,600
ALPHA-HALOGEN-GAMMA TERTIARY AMINO-BUTYROPHENONES AND THE CORRESPONDING THIOPHENES
Charles Ferdinand Huebner, Chatham, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 3, 1963, Ser. No. 249,112
15 Claims. (Cl. 260—239)

10. α - Bromo - 4 - chloro-γ-(1-N,N-heptamethylene-imino)-butyrophenone.

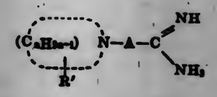
15. A member selected from the group consisting of a compound of the formula



in which R_1 is a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (mono-lower alkoxy)-phenyl, (di-lower alkoxy)-phenyl, (halogeno)-phenyl, (trifluoromethyl)-phenyl, and thienyl, Hal stands for a member selected from the group consisting of chloro and bromo, and the grouping —(N=R) is a member selected from the group consisting of N,N-di-lower alkyl-amino, N,N-alkylene-imino, in which alkylene has from four to eight carbon atoms, morpholino, thiamorpholino, and N,N-aza-alkylene-imino, in which alkylene has from four to six carbon atoms, and the acid addition salt of such compound.

3,189,601
N,N-ALKYLENE-IMINO-LOWER ALKANO-AMIDINE COMPOUNDS
Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 10, 1964, Ser. No. 336,881
8 Claims. (Cl. 260—239)

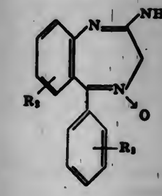
1. An N,N-alkylene-imino-lower alkano-amidine of the formula



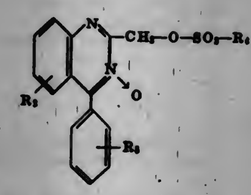
in which R' is a member selected from the group consisting of hydrogen and methyl, *n* stands for an integer selected from the group consisting of 5, 6, 7 and 8, and A is lower alkylene.

3,189,602
PROCESS FOR THE PRODUCTION OF 1,4-BENZODIAZEPINES
Heinz M. Wuest, New York, N.Y., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Mar. 27, 1964, Ser. No. 356,013
5 Claims. (Cl. 260—239)

1. Process for the production of a compound of the formula:



wherein R_1 is lower alkyl, and R_2 and R_3 is each a member of the group consisting of hydrogen, lower alkyl, halogen, and lower alkoxy which comprises reacting an intermediate of the formula:



in which R_4 is a member of the group consisting of lower alkyl and aryl with an amine of the formula R_1NH_2.

3,189,603
PROCESS FOR THE PRODUCTION OF 2-CYCLOALKYLAMINO DERIVATIVES OF 1,4-BENZODIAZEPINES
Heinz M. Wuest, New York, N.Y., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Original application Apr. 9, 1962, Ser. No. 204,301, now Patent No. 3,138,586, dated June 23, 1964. Divided and this application Mar. 27, 1964, Ser. No. 356,014
3 Claims. (Cl. 260—239)

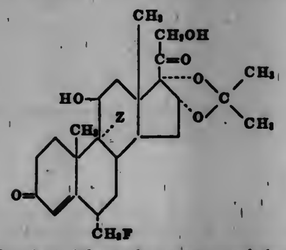
1. Process for the production of a compound of the formula:



wherein R_1 represents hydrogen; R_2 is a cycloparaffin group having 3 to 4 carbon atoms and R_4 and R_5 represent a member of the group consisting of hydrogen and halogen which comprises reacting 2-mesyloxymethyl-4-phenyl-6-R_4-quinazoline-3-oxide with an amine R_2—NH_2 wherein R_2 is as defined.

3,189,604
6-FLUOROMETHYL STEROID COMPOUNDS AND PROCESS
Phillip F. Beal III and John E. Pike, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed June 16, 1960, Ser. No. 36,471
19 Claims. (Cl. 260—239.55)

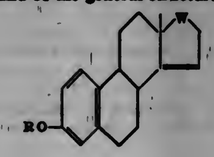
3. 6α - fluoromethyl - 11β,16α,17α,21 - tetrahydroxy - 4-pregnene-3,20-dione 16α,17α-acetonide represented by the formula:



wherein Z is selected from the group consisting of hydrogen and halogen with atomic weight from 19 to 80.

3,189,605
NOVEL STEROIDAL 17-KETALS AND RELATED COMPOUNDS
Herchel Smith, Wayne, Leland L. Smith, Malvern, and James F. Fisher, Villanova, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 24, 1962, Ser. No. 219,115
5 Claims. (Cl. 260—239.55)

1. A compound of the general structure:

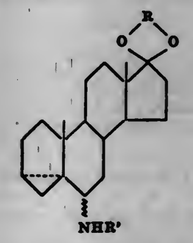


wherein R represents a substituent selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, cycloalkyl, of up to 6 carbon atoms, benzyl, lower alkanoyl and benzoyl; and W represents a member selected from the group consisting of lower alkylenedioxymethylene of up to 6 carbon atoms, lower alkylenedithiomethylene, of up to 6 carbon atoms and lower alkylenethioxymethylene of up to 6 carbon atoms.

3. 17,17-ethylenedioxy-3 - methoxyestra - 1,3,5(10),14-tetraene.

3,189,606
6α-AMINO-17-LOWERALKYLENEDIOXY-3,5-CYCLOANDROSTANES
John S. Tadanier, Chicago, and John Wayne Cole, Deerfield, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
No Drawing. Filed July 29, 1963, Ser. No. 298,459
9 Claims. (Cl. 260—239.55)

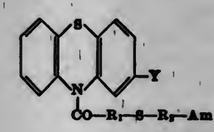
1. A steroid of the formula



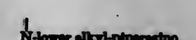
wherein R' is selected from the group consisting of hydrogen and lower fatty acid acyl, and wherein R is an alkylene group in which the valence bonds are separated by 2–3 carbon atoms.

3,189,607
NEW AMINOALKYLTHIOACYLPHENOTHIAZINES
Ernst Habicht and Hans Müller, Schaffhausen, Switzerland, assignors to Ciba-Chemie Limited, Schaffhausen, Switzerland, a Swiss company
No Drawing. Filed July 10, 1962, Ser. No. 208,931
Claims priority, application Switzerland, Aug. 11, 1961, 9,435/61
5 Claims. (Cl. 260—243)

1. A chemical compound selected from the group consisting of phenothiazine derivatives having the formula:



wherein R_1 and R_2 represent lower alkylene radicals which together contain not more than 6 carbon atoms; Am is selected from the group consisting of mono-lower alkylamino, di-lower alkylamino, pyrrolidino, piperidino and



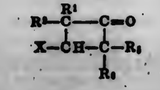
and Y is selected from the group consisting of hydrogen and chlorine atoms; and the pharmacetically acceptable acid addition salts thereof.

3,189,608
TERTIARYAMINOCYCLOBUTANONES AND THEIR PRODUCTION

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 26, 1961, Ser. No. 112,789
20 Claims. (Cl. 260—247.7)

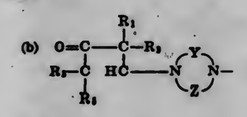
1. A cyclobutane derivative having the formula:



wherein X is a tertiaryamino group having the formula selected from the class consisting of:



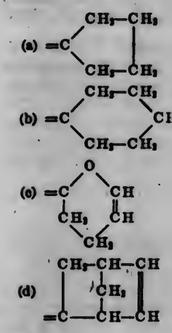
and



wherein Y and Z are each alkylene of 2 to 4 carbon atoms; wherein R_1, R_2, R_5 and R_6, when taken singly are each selected from the group consisting of:

(a) hydrogen,
(b) alkyl of 1 to 18 carbon atoms,
(c) phenyl,
(d) lower alkyl substituted phenyl,
(e) benzyl,
(f) allyl,
(g) carbalkoxy wherein the alkyl moiety is lower alkyl, and
(h) thienyl;

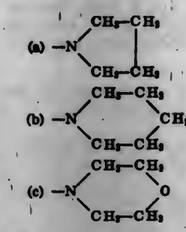
and wherein the substituents R_1 and R_2, and R_5 and R_6, when taken collectively with the carbon atom to which they are attached, represent a member selected from the group consisting of:



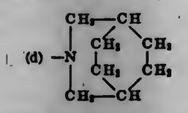
wherein R_3 and R_4, when taken singly, are each selected from the group consisting of:

(a) alkyl of 1 to 8 carbons,
(b) benzyl, and
(c) cyanoethyl,

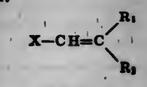
and wherein the substituents R_3 and R_4, when taken collectively with the nitrogen atom to which they are attached, represent a member selected from the group consisting of:



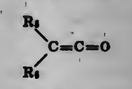
and



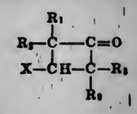
12. The process which comprises reacting a compound having the formula:



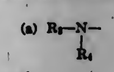
with a compound having the formula:



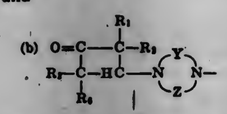
and forming a cyclobutane derivative having the formula:



wherein X is a tertiaryamino group having the formula selected from the class consisting of:



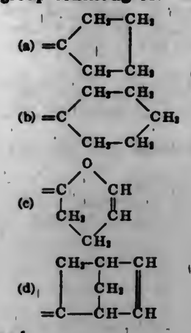
and



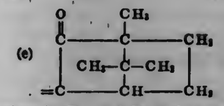
wherein Y and Z are each alkylene of 2 to 4 carbon atoms; wherein R_1, R_2, R_5 and R_6, when taken singly, are each selected from the group consisting of:

(a) hydrogen,
(b) alkyl of 1 to 18 carbon atoms,
(c) phenyl,
(d) lower alkyl substituted phenyl,
(e) benzyl,
(f) allyl,
(g) carbalkoxy wherein the alkyl moiety is lower alkyl, and
(h) thienyl;

and wherein the substituents R_1 and R_2, and R_5 and R_6, when taken collectively with the carbon atom to which they are attached, represent a member selected from the group consisting of:



and



wherein R_3 and R_4, when taken singly, are each selected from the group consisting of:

(a) alkyl of 1 to 8 carbons,
(b) benzyl, and
(c) cyanoethyl,

and wherein the substituents R_3 and R_4, when taken collectively with the nitrogen atom to which they are attached, represent a member selected from the group consisting of:

and

the reaction temperature being in the range of −80° C. to 200° C. when none of the substituents R_1, R_2, R_5 and R_6 are hydrogen and in the range of −80° C. to less than the temperature of thermal decomposition of the tertiaryamino cyclobutanone when at least one of the substituents R_1, R_2, R_5 and R_6 is hydrogen.

3,189,609
MANUFACTURE OF TRICHLOROCYANURIC ACID

Robert Léon Pierre Bécasse and Claude Jacques Henri Marie Pierre Ferrand, Haute-Garonne, France, assignors to Office National Industriel de l'Azote, Toulouse, Haute-Garonne, France

Filed Aug. 29, 1961, Ser. No. 134,759
Claims priority, application France, Dec. 19, 1960, 4,685
6 Claims. (Cl. 260—248)

1. In a process for the preparation of trichlorocyanuric acid by the multi-stage chlorination of an aqueous solution of cyanuric acid and alkaline hydroxide wherein the molar ratio of cyanuric acid to alkaline hydroxide is 1:3, the improvement of carrying out the chlorination at a temperature which is minimally 0° C. and maximally 16° C. and at a substantially constant average oxidation-reduction potential value in the reaction medium in the last chlorination stage, said value corresponding to a potential comprised between 1050 and 1150 millivolts, as measured between a platinum electrode and a 1.0 M KCl-calomel electrode.

3,189,610
PROCESS FOR PREPARING A PYRIDINE-METAL INTERACTION PRODUCT

Roy Duffy, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,334
Claims priority, application Great Britain, Mar. 20, 1962, 10,643/62; Oct. 19, 1962, 39,621/62
25 Claims. (Cl. 260—270)

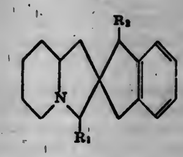
1. In a process for producing a metal-pyridine interaction product by the interaction of a reactive metal with a pyridine, the improvement which comprises utilizing a pyridinium salt to promote said interaction.

3,189,611
CERTAIN OXOSPIRO HYDROXYSPIRO INDAN-INDOLIZINES

Richard Joseph Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Apr. 2, 1963, Ser. No. 269,887
4 Claims. (Cl. 260—294.7)

1. The compound



wherein R_1 is a member selected from the group consisting of oxo and hydrogen, and R_2 is a member selected from the group consisting of hydrogen, oxo, hydroxy and lower alkylcarbonyloxy having 1 to 7 carbon atoms.

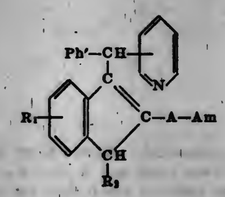
2. 1′,5′,6′,7′,8′,8a′-hexahydro-1-oxospiro(indan-2,2′-indolizine)3′(2′H)-one.

3,189,612
CERTAIN (ALPHA-INDENYL-BENZYL)-PYRIDINES

Charles Ferdinand Huebner, Chatham, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,518
14 Claims. (Cl. 260—296)

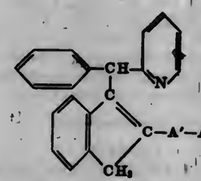
1. A member selected from the group consisting of a compound of the formula



in which A is lower alkylene, Am stands for a member selected from the group consisting of N,N-di-lower alkylamino, N-cycloalkyl-N-lower alkyl-amino, in which cycloalkyl has from five to seven ring carbon atoms, N-lower

alkyl-N-phenyl-lower alkyl-amino, 1-N,N-alkylene-imino, in which alkylene has from four to six carbon atoms, 4-morpholino and 4-lower alkyl-1-piperazino, R_1 is a member selected from the group consisting of hydrogen, lower alkyl, trifluoromethyl, lower alkoxy, halogeno, lower alkanoyl and N,N-di-lower alkyl-amino, R_2 stands for a member selected from the group consisting of hydrogen and lower alkyl, and Ph' stands for a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl and (trifluoromethyl)-phenyl, and pharmaceutically acceptable acid addition salts thereof.

3. A compound of the formula



in which A' is lower alkylene having from two to three carbon atoms, and Am' stands for N,N-di-lower alkyl-amino.

3,189,613

PRODUCT OF THE REDUCTIVE ALKYLATION OF 1,3-DIAMINO-2-PROPANOL AND A KETONE

Henryk A. Cyba, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,844
7 Claims. (Cl. 260—307)

1. The product resulting from the reductive alkylation of 1,3-diamino-2-propanol with a ketone selected from the group consisting of aliphatic ketones and cycloaliphatic ketones in the presence of hydrogen and a hydrogenation catalyst at a temperature of from about atmospheric to about 200° C.

3,189,614

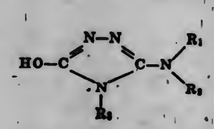
3-HYDROXY-4-HYDROCARBON-5-TERTIARY AMINO TRIAZOLES AND PROCESS FOR THEIR PREPARATION

Marcel Pesson, Paris, France, assignor to Société anonyme dite: Laboratoire Roger Bellon, Neuilly-sur-Seine, France, a French company

No Drawing. Filed Aug. 4, 1961, Ser. No. 129,231
Claims priority, application Great Britain, Aug. 16, 1960, 28,409/60; Jan. 23, 1961, 2,670/61
7 Claims. (Cl. 260—308)

1. 3-hydroxy-4-phenyl-5-diethylamino-1,2,4-triazole.

4. The triazole compound of the formula



wherein

R_1 and R_2 are members selected from the group consisting of lower alkyl and R_1 and R_2, together with the nitrogen atom to which they are attached, form the piperidine, pyrrolidine, and morpholine ring, while

R_3 is a member selected from the group consisting of phenyl, cyclohexyl, chloro, phenyl, and phenyl substituted by an alkoxy group with less than three carbon atoms.

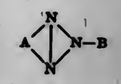
3,189,615

2-ARYL-4,5-ARYLO-1,2,3-TRIAZOLE

Hansjorg Heller, Basel, Ernst Keller, Basel-Land, and Hermann Gysling, Basel, Switzerland, and Fritz Mindermann, Baden, Germany, assignors to J. R. Geigy, A.-G., Basel, Switzerland, a Swiss firm

No Drawing. Original application Dec. 10, 1957, Ser. No. 701,719, now Patent No. 3,004,896, dated Oct. 17, 1961. Divided and this application Oct. 3, 1961, Ser. No. 142,537
Claims priority, application Switzerland, Dec. 14, 1956, 40,674/56
8 Claims. (Cl. 260—308)

1. An ultraviolet light-absorbing compound, capable of protecting materials sensitive to ultraviolet light, of the formula



wherein A is an o-phenylene group bound by two neighbouring carbon atoms to two nitrogen atoms of the triazole ring, said o-phenylene group being selected from the group consisting of unsubstituted o-phenylene, o-phenylene carboxylic acid(lower)alkyl ester, ethyl sulphonyl-o-phenylene, chloro-o-phenylene, lower alkoxy-o-phenylene, and lower alkyl-o-phenylene, and B is 2-hydroxyphenyl substituted by a member selected from the group consisting of lower alkyl, lower alkoxy, lower carbalkoxy, cyclohexyl, phenyl and chlorine.

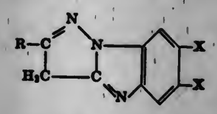
3,189,616

PROCESS FOR THE PREPARATION OF PYRAZOLINOBENZIMIDAZOLES

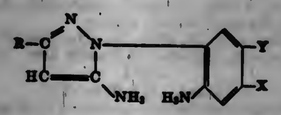
Karl Löffler, deceased, late of Leverkusen, Germany, by Beate Löffler, heir and legal representative; and Karl-Heinz Menzel, both of Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 1, 1962, Ser. No. 214,144
Claims priority, application Germany, Aug. 11, 1961, A 38,115
6 Claims. (Cl. 260—309.2)

1. A procedure for the preparation of a pyrazolinobenzimidazole having the following formula:



wherein R is a member of the group consisting of alkyl having from 9 to 17 carbon atoms, phenyl, dodecylmercaptophenyl, dodecylsulfonylphenyl and benzofuryl; X is a member of the group consisting of hydrogen, lower alkyl, lower alkoxy, carboxy, sulfo, trifluoromethyl and dimethylsulfonamido; and Y is a member selected from the class consisting of hydrogen and halogen; which comprises heating under atmospheric pressure at a temperature ranging from 100–120 C., and in the presence of a molar excess of a dilute inorganic acid, a compound having the following formula:



wherein R, X and Y have the values given above, for a time sufficient to split off ammonia and effect closure of the benzimidazole ring, wherein the heating time ranges from 2 to 3 hours.

3,189,617

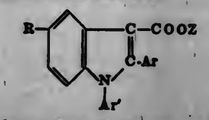
1-ARYLOXINDOLES AND THEIR PREPARATION

Sydney Archer and John W. Schulenberg, Bethlehem, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 3, 1961, Ser. No. 86,876
25 Claims. (Cl. 260—319)

16. 3-benzoyl-1-phenyloxindole.

21. A compound of the formula



wherein R is selected from the group consisting of hydrogen and lower-alkoxy, Ar and Ar' each is a member of the group consisting of phenyl and phenyl substituted by from one to three substituents selected from the group consisting of lower-alkyl, lower-alkoxy, lower-alkylmercapto, halogen, carboxy, carbo-lower-alkoxy, nitro and trifluoromethyl, and Z is a member of the group consisting of hydrogen and carbo-lower-alkoxy.

23. 1-(2-carbomethoxyphenyl)-2-phenylindole - 3 - carboxylic acid.

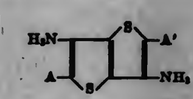
3,189,618

THIOPHTHENES

Wallace R. Brasen, Lyndfield, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 31, 1961, Ser. No. 135,116
12 Claims. (Cl. 260—329)

1. A compound of a formula selected from the group consisting of:





wherein each of A and A' is selected from the group consisting of —CN, —NO_2, perfluoroalkyl of up to 12 carbons, —CHO, —COR'', —SO_2R'', —COOR'', —$CONH_2$, —CONH(R''), —CON(Q)(Q') and —COOH, R'' being hydrocarbyl of up to 12 carbons, and Q and Q' being hydrocarbyl together totalling up to 12 carbons.

3,189,619

SYNTHESIS OF CAPRO LACTONE

Clyde Lee Aldridge and James Ryan Zackry, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 25, 1962, Ser. No. 226,151
6 Claims. (Cl. 260—343)

1. A process for the production of substantially pure caprolactone which comprises converting C_1–C_2 alkyl ω-hydroxy caproates to borate esters by reaction with at least an equimolar amount of a C_1–C_2 trialkyl borate at temperatures of from about 25 to 175° C. and heating the resultant diester under vacuum to convert the same to caprolactone and regenerate the trialkyl borate.

3,189,620

16-ACETYL PREGNANE DERIVATIVES

Pierre Crabbé, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,431
4 Claims. (Cl. 260—397.4)

1. 16α-acetyl-Δ^5-pregnene-3β,20β-diol.

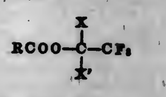
3,189,621

CONVERSION OF FLUORINATED ESTERS TO ETHERS

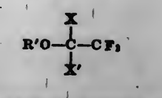
Marcel Hanak, Morristown, Tenn., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 26, 1962, Ser. No. 226,434
10 Claims. (Cl. 260—397.4)

1. A method for converting an ester of the following formula



to an ether of the following formula



wherein X and X' represents members of the group consisting of hydrogen and organic radicals and R and R' represent aliphatic organic radicals, which comprises reacting said ester with an excess of an alcohol of the formula R'OH in the presence of an excess of alkali and isolating the organic ether thus formed.

6. Method of converting a 21 - (2,2,2 - trifluoro-1-hydroxy ethyl)allopregnane-3β-ol-20-one diester of an aliphatic carboxylic acid containing 1 to 18 carbon atoms to a 21-(2,2,2-trifluoro-1-alkoxyethyl)allopregnane-3β-ol-20-one ester, wherein the alkyl radical contains 1 to 10 carbon atoms, which comprises reacting said diester with an alkanol containing 1 to 10 carbon atoms in the presence of alkali and isolating the ether thus formed.

3,189,622

PROCESS FOR THE PREPARATION OF 16α-BROMO- AND 16α-IODOPREGNANES

John M. Beaton, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,864
7 Claims. (Cl. 260—397.4)

1. A process for the production of 16α-halo-17α-hydroxypregnanes, wherein the halogen is selected from the group consisting of bromine and iodine, which comprises: treating with 0.1 to 10 parts of active nickel catalyst one part of a 16β-halo-17α-hydroxypregnane wherein the halogen is defined as above at a temperature between 0° and 125°, to obtain the corresponding 16α-halo-17α-hydroxypregnane, wherein the halogen is defined as above.

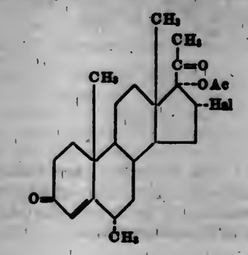
3,189,623

16α-BROMO- AND 16α-IODOPREGNANES AND PROCESS

Donald E. Ayer, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,865
18 Claims. (Cl. 260—397.4)

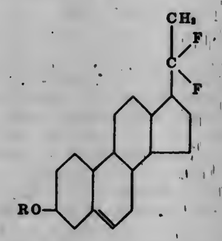
1. A 16α-halo-6α-methyl-17α-acyloxy - 4 - pregnene of the formula:



wherein Ac is the acyl radical of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms and wherein Hal is a halogen atom selected from the group consisting of bromine and iodine.

3,189,624
STEROID GEM DIFLUORIDES OF THE ANDROSTANE AND PREGNANE SERIES
John Fried, Plainfield, Glen E. Arth, Cranford, and William H. Jones, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 28, 1960, Ser. No. 45,793
6 Claims. (Cl. 260—397.5)

2. 20,20-difluoro-5-pregnene 3β-ol compounds having the following formula:



wherein R is selected from the group consisting of lower hydrocarbon acyl and hydrogen.

3,189,625
NOVEL 17-KETALS OF EQUILENIN AND METHOD FOR PREPARING
Peter B. Russell, Villanova, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 4, 1962, Ser. No. 221,324
1 Claim. (Cl. 260—397.5)

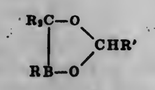
17,17-diethoxy-3-methoxyestra-1,3,5(10),6,8-pentaene.

3,189,626
16α-BROMO- AND 16α-IODO PREGNANES
Donald E. Ayer, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Dec. 11, 1963, Ser. No. 329,894
3 Claims. (Cl. 260—397.45)

1. 16α - bromo-9α-fluoro-11β,17α,21-trihydroxy-4-pregnene-3,20-dione, 21-acetate.

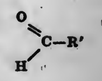
3,189,627
PRODUCT AND PROCESS FOR PREPARING 1,4,2-DIOXABOROLANES
Melville E. D. Hillman, Richmond, Calif., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 4, 1962, Ser. No. 199,585
7 Claims. (Cl. 260—462)

1. A compound of the formula



wherein R is a 1 to 12 carbon atom radical bonded to the ring through aliphatic carbon, and R' is selected from the group consisting of hydrogen, alkyl and chloralkyl radicals of up to 12 carbon atoms.

6. A process for preparing 1,4,2-dioxaborolanes which comprises heating a borane of the formula R_3B with an aldehyde of the formula



and carbon monoxide at a temperature of 25 to 125° C. and a carbon monoxide pressure of from about 1 to about 1000 atmospheres, R being a 1 to 12 carbon atom radical bonded to boron through aliphatic carbon, R' being selected from the group consisting of hydrogen, alkyl and chloroalkyl of up to 12 carbon atoms.

3,189,628
PHOSPHONATED OILS AND PHOSPHONATED ESTERS
Hogan B. Knight, Ambler, and Daniel Swern, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Feb. 27, 1962, Ser. No. 176,157
25 Claims. (Cl. 260—403)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A compound selected from the group consisting of the addition product of a dialkyl phosphonate to an alkyl ester of a polyunsaturated fatty acid, and the addition product of a dialkyl phosphonate to a glyceryl ester containing at least one polyunsaturated fatty acid moiety.

3,189,629
PROCESS FOR TREATING SYNTHETIC ESTER LUBRICANTS WITH AROMATIC ISOCYANATES OR AROMATIC THIOISOCYANATES
Dietrich F. Huttenlocher, Philadelphia, Pa., and William M. Sweeney, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 21, 1960, Ser. No. 70,370
6 Claims. (Cl. 260—404.8)

1. A method for reducing the acidity and hydroxyl content of a synthetic ester lubricating oil derived from the esterification of a hydrocarbyl carboxylic acid with a hydrocarbyl alcohol and containing unesterified substituent groups derived from said esterification, said substituent groups selected from the group consisting of unesterified free carboxylic acid groups, unesterified free alcohol groups and mixtures thereof comprising contacting said synthetic ester lubricating oil containing said unesterified free substituent groups with an aromatic compound of 7 to 30 carbons selected from the group consisting of phenyl monoisocyanate, phenylalkyl monoisocyanate, alkylphenyl monoisocyanate, phenyl monoisothiocyanate, phenylalkyl monoisothiocyanate, and alkylphenyl monoisothiocyanate at a temperature between about 50 and 250° C. so as to react said aromatic compound with said unesterified free substituent groups, said aromatic compound being present in a proportion between about 0.1 and 10 wt. percent of said ester lubricating oil.

3,189,630
LANTHANIDE ALKYLATED HYDROXY-BENZOATES
Edgar J. Smutny, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 18, 1962, Ser. No. 231,560
3 Claims. (Cl. 260—429.2)

1. Dysprosium 3,5-di-tert-butyl-4-hydroxybenzoate.
2. Samarium 3,5-di-tert-butyl-4-hydroxybenzoate.
3. Neodymium 3,5-di-tert-butyl-4-hydroxybenoate.

3,189,631
ORGANIC MERCURY COMPOUNDS
Herbert C. Stecher, 1 Bridle Way, Ho-Ho-Kus, N.J.
No Drawing. Filed Oct. 29, 1962, Ser. No. 233,861
3 Claims. (Cl. 260—431)

1. An ether type bridge linkage-containing organic compound reaction product of a mercuric anionic salt, a bare active-hydrogen-carrying compound having at least two active hydrogen atoms, and an aliphatic mono olefine carrying at least one labile substituent group, said reaction product having the formula:

$$E_m(H_n)_m(RX_dHg)_bA_c$$

wherein:
R represents a saturated hydrocarbon group carrying 2 to 30 carbon atoms,
X represents a labile substituent on R, selected from the radicals consisting of halogen, SCN, CNS, OCN and CNO,
E represents a bare element serving as a bridge and selected from the class consisting of right hand elements of Groups V and VI of the Periodic Table, other than oxygen,
H represents an unreacted active hydrogen atom remaining on E,
Hg represents an atom of divalent mercury,
A represents an anion salt portion attached to the mercury atom,
b represents the number of mercury atoms, and is a numeral from 2 to 6,
c represents the number of anions A, and is a numeral from 1 to 3,
d represents the number of labile substituents X, and is a numeral from 2 to 20.
m represents the number of E's reacting, and is a numeral from 1 to 3, and
n represents the number of unreacted active hydrogen atoms remaining on element E, and is a numeral from 0 to 1.

3,189,632
ALKYLSULPHONYLOXY ESTERS
Tibor Horváth, Endre Csányi, László Varga, and Boris Dumbovich, Budapest, Hungary, assignors to Chinoin Gyógyszer-és Vegyeszeti Termekek Gyára R.T., Budapest, Hungary
No Drawing. Filed Apr. 4, 1962, Ser. No. 184,918
11 Claims. (Cl. 260—456)

1. A compound selected from the group consisting of a 3–6 membered alkane substituted on its two end carbon atoms with the group

$$R—SO_2—O—CH_2—CH_2—NH—$$

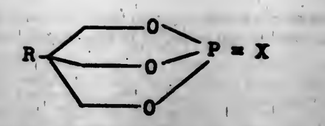
wherein R is an alkyl of 1–3 carbon atoms; a 4–6 membered hydroxyalkane substituted on its two end carbon atoms with the group

$$R—SO_2—O—CH_2—CH_2—NH—$$

wherein R has the same definition as above; acid addition salts of said substituted alkane; and acid addition salts of said substituted hydroxy alkane.

3,189,633
2,6,7-TRIOXA-1-PHOSPHABICYCLO[2.2.2]OCTANE SULFO-OXO, AND SELENO DERIVATIVES AND PROCESS FOR MAKING SAME
Wen-Hsuan Chang, Pittsburgh, and Marco Wismer, Richland Township, Gibsonia, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 20, 1960, Ser. No. 57,125
9 Claims. (Cl. 260—461)

1. A compound having the formula



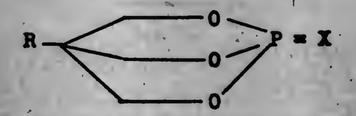
wherein R is a group selected from the class consisting of phenyl and benzyl and X is a group selected from the class consisting of oxygen, selenium, and sulfur.

2. A compound of the formula



wherein R is a group selected from the class consisting of phenyl and halophenyl and X is a group selected from the class consisting of oxygen, selenium, and sulfur.

3. The method of forming a compound of the formula

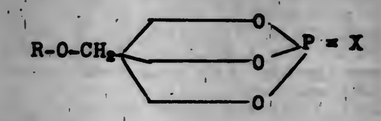


wherein R is a group selected from the class consisting of phenyl and benzyl and X is a group selected from the class consisting of oxygen, selenium, and sulfur, which comprises subjecting to reaction a compound of the formula: $XP(Cl)_3$, wherein X is of the above-indicated significance, and a compound of the formula:

$$R—C(CH_2OH)_3$$

wherein R has the previously given significance.

9. The method of forming a compound of the formula:

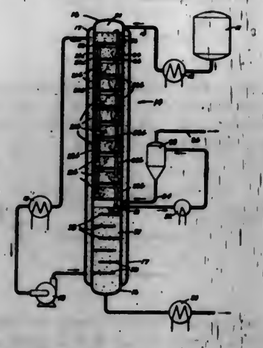


wherein R is an aryl group and X is a group selected from the class consisting of oxygen, selenium, and sulfur, which comprises subjecting to reaction a compound of the formula: $XP(Cl)_3$, wherein X is of the above-indicated significance, and a compound of the formula: $R—C(CH_2OH)_3$, wherein R is a group selected from the class consisting of phenyl and halophenyl.

3,189,634
PHOSPHORUS ESTER PRODUCTION
Edward N. Wheeler, Arthur W. Schnizer, and Porter L. Pickard, Corpus Christi, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed July 25, 1961, Ser. No. 126,647
7 Claims. (Cl. 260—461)

1. In the process for the production of esters by the reaction of a liquid mixture of phosphorus oxychloride and a phenol which is reactive with said phosphorus oxychloride to produce a monomeric ester of said phenol and said phosphorus oxychloride, with evolution of hydrogen chloride gas, the improvement which comprises passing the reaction mixture continuously through a series

of successive separate reaction chambers, and passing hydrogen chloride gas collected in one chamber under pressure into and through the liquid reacting mixture in a succeeding chamber.



3,189,635

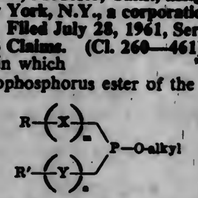
DIALKYL 1,2-DISUBSTITUTED-ETHYLPHOSPHONATES AND THEIR PREPARATION

Charles H. Tieman, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 28, 1961, Ser. No. 127,504
4 Claims. (Cl. 260—461)

1. A process in which

(a) an organophosphorus ester of the formula:

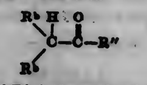


wherein R and R' each independently represents hydrocarbon containing up to 10 carbon atoms and of the group consisting of alkyl, cycloalkyl, phenyl, phenalkyl and alkyl-substituted phenyl and any of the above substituted by from one to a plurality of substituents of the group consisting of middle halogen and nitro, X and Y each independently represents a member of the group consisting of —O—, —S— and



wherein R_a represents a member of the group represented by R, *m* and *n* each represents an integer from zero to one, and "alkyl" represents lower alkyl, and

(b) a ketone of the formula



wherein each of R^b independently represents a member of the group consisting of hydrogen, a member of the group represented by R, middle halogen, cyano, amino of the formula $—N(H)_o(R)_p$ wherein *o* is an integer from zero to two and *o*+*p*=2, hydroxy, ether of the formula —O—R and ester of the formula —C(O)—R, and R'' represents a member of the group represented by R,

(c) an alcohol of the group consisting of methanol and ethanol are commingled at a temperature within the range of from about 0° C. to about 120° C., thereby effecting reaction between said organophosphorus ester, said ketone and said alcohol.

4. Methyl 2-chloro-3-(dimethoxyphosphinyl)-3-hydroxybutyrate.

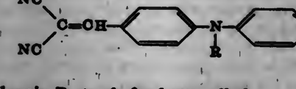
3,189,636

ALLENIC PHOSPHORUS COMPOUNDS

Armand Boiselle, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 8, 1961, Ser. No. 158,137
8 Claims. (Cl. 260—461)

1. An allenic phosphinyl compound having the structural formula



wherein

(a) Ar is a member selected from the group consisting of phenyl, napthyl, alkylphenyl, alkylnaphthyl, halophenyl, nitrophenyl and alkoxyphenyl;

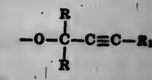
(b) R is a member selected from the group consisting of hydrogen, lower alkyl, and cycloalkyl;

(c) R_1 is a member selected from the group consisting of hydrogen, lower alkyl and



and

(d) R_2 is a member selected from the group consisting of Ar and



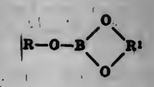
3,189,637

CYCLOALKENYL GLYCOL BORIC ACID ESTERS

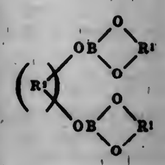
Irving S. Bengelsdorf, Santa Ana, William G. Woods, Anaheim, and William David English, Orange, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed May 24, 1962, Ser. No. 197,243
4 Claims. (Cl. 260—462)

1. A compound of a formula selected from the group consisting of



and



where

R is selected from the group consisting of tetrahydrobenzyl, lower alkyl substituted tetrahydrobenzyl, bicycloheptenyl, bicycloheptenylmethyl, and the chloro derivatives thereof;

R^2 is selected from the group consisting of bicycloheptenyl and bicycloheptenylmethyl radicals having two unsatisfied valences, and the chloro derivatives thereof; and

R^1 is an alkylene radical of from 2 to 3 carbon atoms in length and containing a total of from 2 to about 8 carbon atoms.

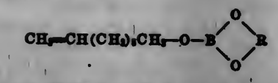
3,189,638

10-UNDECENYL ALKYLENE GLYCOL BORATES

Irving S. Bengelsdorf, Santa Ana, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed July 23, 1962, Ser. No. 211,800
4 Claims. (Cl. 260—462)

1. 10-undecenyl alkylene glycol borates having the formula



where R is an alkylene radical of 2 to 3 carbon atoms in length and containing a total of 2 to about 20 carbon atoms.

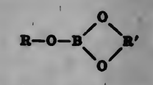
3,189,639

METHOD OF PRODUCING ALKYLENE GLYCOL BORATES

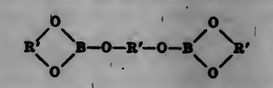
William G. Woods, Anaheim, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Sept. 13, 1962, Ser. No. 223,554
8 Claims. (Cl. 260—462)

1. The method of producing an alkylene glycol borate of the formula



which comprises reacting at a temperature of from about 35° to about 150° C. a tris glycol biborate of the formula



with an orthoborate of the formula $(RO)_3B$, where R is selected from the group consisting of alkyl, alkenyl, aralkyl and aryl and R' is an alkylene radical of 2 to 3 carbon atoms in length and containing a total of from 2 to about 20 carbon atoms.

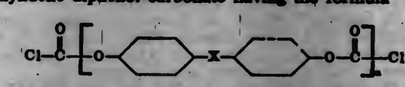
3,189,640

CHLOROFORMATES

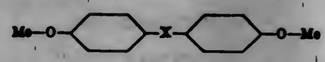
Joseph J. Dietrich, Copley, Andrew J. Kaman, Barberton, and Henry C. Stevens, Akron, Ohio, assignors, by mesne assignments, to Pittsburgh Plate Glass Company

No Drawing. Filed Dec. 23, 1958, Ser. No. 782,355
5 Claims. (Cl. 260—463)

1. A method of preparing a polychloroformate of an alkylidene diphenol carbonate having the formula



wherein *n* represents a value of from 2 to 9 and X is an alkylidene linking group which comprises adding a weakly alkaline salt to an aqueous solution of an alkylidene diphenol having the formula



wherein Me is an alkali metal and X is an alkylidene group, having a pH above 11 to buffer said solution to a pH of 9 to 11, maintaining said buffered solution at a temperature below about 35° C. and adding to said aqueous solution of water soluble said dialkali metal salt of an alkylidene diphenol buffered with a weakly alkaline salt to a pH of 9 to 11 at least about 2 moles of phosgene per mole of said diphenol.

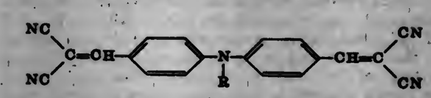
3,189,641

STYRYL DYESTUFFS

Alfred Brack, Leverkusen, and Werner Müller, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 4, 1960, Ser. No. 67,168
Claims priority, application Germany, Nov. 21, 1959, F 29,899
3 Claims. (Cl. 260—465)

1. A styryl dyestuff of the formula



wherein R stands for lower alkyl.

3,189,642

PROCESS FOR THE PRODUCTION OF ACRYLONITRILE

Melvin C. Baker, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 10, 1962, Ser. No. 165,400
4 Claims. (Cl. 260—465.3)

1. In the process for producing acrylonitrile by passing hydrogen cyanide and acetylene through a non-aqueous catalyst solution of cuprous chloride and a carboxamide promoter dissolved in an organic nitrile boiling above 78° C. at atmospheric pressure and thermally stable at 100° C. and maintained acid by addition of hydrochloric acid, the improvement which comprises incorporating a silver salt activator in said catalyst solution and maintaining the weight concentration of by-product tar in the catalyst solution within the range of 2% to 20% by at least partial replacement of catalyst solution said silver salt being present in said catalyst solution as a salt selected from the group consisting of silver cyanide and silver chloride.

3,189,643

ALKYL ESTERS OF 3,3'-(2,2,4,4-TETRAALKYLCYCLOBUTANE-1,3-DIOXY)BISPROPIONIC ACID

Edward U. Elam and James C. Martin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Sept. 22, 1960, Ser. No. 57,638, now Patent No. 3,099,679, dated July 30, 1963. Divided and this application Oct. 22, 1962, Ser. No. 237,781
2 Claims. (Cl. 260—468)

1. An ester of an alkanol having from two to eight carbon atoms per molecule with a 3,3'-(2,2,4,4-tetraalkylcyclobutane-1,3-dioxy)bispropionic acid of which the alkyl groups contain one to four carbon atoms.

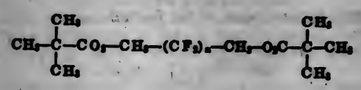
3,189,644

C_{4-6} PERFLUORINATED GLYCOL DIESTERS OF TRIMETHYLACETIC ACID

Jonathan L. Snead and Henry Glaser, Philadelphia County, Pa., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,922
4 Claims. (Cl. 260—488)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An oxidatively and thermally stable fluoroglycol ester having the structural formula:



wherein *n* has a value of 2 to 4.

3,189,645

N-HYDROXYCARBANILIDES AND THEIR USE AS BACTERICIDES AND FUNGICIDES

Peggy Pamela Hoffman, Somerville, and William Baptist Hardy, Bound Brook, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 8, 1961, Ser. No. 129,999
4 Claims. (Cl. 260—553)

1. An N-hydroxy carbanilide wherein the non-hydroxylated nitrogen atom is unsubstituted and the phenyl moieties of the carbanilide are substituted by "*m*" halo and "n" trihalomethyl groups wherein "*m*" is an integer less than eleven and "*n*" is an integer less than five and the total of "*m*" and "*n*" is greater than one and less than eleven wherein the halo groups have an atomic number less than 54 and the remaining valences of the phenyl moieties are satisfied by members selected from the group consisting of hydrogen, nitro, lower alkyl and lower alkoxy.

3,189,646

PROCESS FOR THE PREPARATION OF N-METHYLOL AMIDE DERIVATIVES

Norman B. Rainer, North Bellmore, N.Y., assignor to Coastal Interchemical Company, Brooklyn, N.Y.

No Drawing. Filed Apr. 26, 1962, Ser. No. 190,216
3 Claims. (Cl. 260—561)

1. A process for the production of N-methylol acetamido amine compounds comprising reacting a cyanomethylamine compound with formaldehyde and water in a reaction zone containing ammonia.

3,189,647

N-ACYL-DIAMINODIPHENYL ETHERS

Ted Symon, Lombard, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Original application Nov. 29, 1961, Ser. No. 155,795. Divided and this application Nov. 5, 1962, Ser. No. 235,913
4 Claims. (Cl. 260—558)

1. 2-(N-acetyl-N-isopropylamino)-4'-isopropylaminodiphenyl ether.

4. 2-(N-benzoyl-N-isopropylamino) - 4'-diisopropylaminodiphenyl ether.

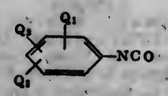
3,189,648

PROCESS FOR PREPARING N,N-DIALKYL-N'-ARYLAMIDINES

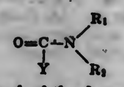
Henry J. Gerjovich, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,640
2 Claims. (Cl. 260—564)

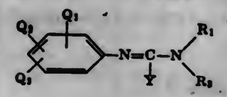
1. The process which comprises mixing under anhydrous conditions at atmospheric pressure at a temperature within the range from about 70° to 180° C. a compound of the formula:



with from 1 to 10 molar parts as much of a compound of the formula:



to produce a compound of the formula:



wherein:

Q_1 is selected from the group consisting of hydrogen, chlorine and nitro;

Q_2 and Q_3 are each separately selected from the group consisting of hydrogen, chlorine and methyl;

Y taken separately is selected from the group consisting of hydrogen and methyl;

R_1 and R_2 taken separately are each selected from the group consisting of methyl and ethyl;

and when R_1 and R_2 are joined they are together selected from the group consisting of pentamethylene, tetramethylene and oxydiethylene; and when R_2 and Y are joined they are together selected from the group consisting of trimethylene and tetramethylene.

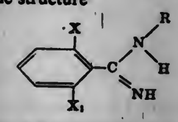
3,189,649

2,6-DICHLOROBENZAMIDINES

Herbert P. Rosinger, Tunstall, and Johannes T. Hackmann, Herne Bay, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,668
Claims priority, application Great Britain, Dec. 22, 1961, 45,980/61
5 Claims. (Cl. 260—564)

1. A compound selected from the group consisting of a compound of the structure



wherein X and X_1 each independently represents a middle halogen atom, and where R is selected from the group consisting of hydrogen and phenyl, and the hydrochloric, hydrobromic, nitric, sulfuric and phosphoric acid addition salts of said compound.

3,189,650

N,N'-BIS-(1,3-DIMETHYL-3-METHOXYLBUTYL)-p-PHENYLENEDIAMINE

Joseph A. Chenicek, Prairie View, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 19, 1960, Ser. No. 76,475
1 Claim. (Cl. 260—573)

N,N'-bis-(1,3-dimethyl - 3 - methoxybutyl)-p-phenylenediamine.

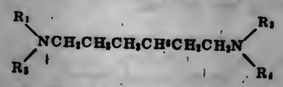
3,189,651

PROCESS FOR PREPARING HEXAMETHYLENEDIAMINE COMPOUNDS FROM 5-AMINOMETHYL-2-FURFURYLAMINE COMPOUNDS

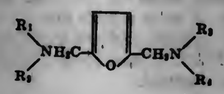
John D. Garber, Westfield, and Robert A. Gasser, North Plainfield, N.J., and Robert Ellery Jones, North Muskegon, Mich., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 16, 1962, Ser. No. 166,697
8 Claims. (Cl. 260—583)

1. The process for preparing acid addition salts of compounds having the structural formula



wherein R_1, R_2, R_3 and R_4 are selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl which comprises treating a furan compound of the formula



with hydrogen in the presence of a platinum catalyst, a lower aliphatic acid having less than 5 carbon atoms and a mineral acid selected from the group consisting of sulfuric acid, hydrochloric acid, hydrobromic acid, hydrofluoric acid, phosphoric acid, metaphosphoric acid, polyphosphoric acid and phosphorous acid at a temperature less than 150° C. and a pressure greater than atmospheric pressure and wherein said catalyst is present to the extent of at least 0.25 mole per mole of said furan compound.

3,189,652

POLYMERIC REACTION PRODUCTS OF AMINES AND EPIHALOHYDRINS

Ernest L. Pollitzer, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 14, 1960, Ser. No. 75,676
8 Claims. (Cl. 260—584)

1. The polymeric reaction product formed by reacting at a temperature of from 20° to 100° C. from 1 to 2 mol proportions of an aliphatic amine selected from the group consisting of primary amines and amines having at least two N—H groups, and consisting of carbon, hydrogen and amino nitrogen and having from 12 to 40 carbon atoms and a straight chain of from 3 to 40 carbon atoms attached to a nitrogen atom, with from 1 to 1.5 mol proportions of an epihalohydrin compound selected from the group consisting of epichlorohydrin, 1,2-epoxy-4-chlorobutane, 2,3 - epoxy - 4-chlorobutane, 1,2-epoxy-5-chloropentane, 2,3-epoxy-5-chloropentane, and corresponding bromo and iodo compounds in the presence of a hydroxylic solvent selected from the group consisting of monohydric alcohols, glycols and glycerols, thereafter reacting with an inorganic base at a temperature of from 55° to 100° C. to liberate the free amine, thereby forming an inorganic halide salt, further heating and reacting at a temperature of from 55° to 100° C. to form said polymeric reaction product containing from 3 to 20 recurring units, and filtering to remove said inorganic halide salt.

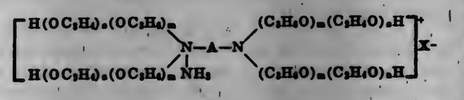
3,189,653

MONO HYDRAZINIUM HYDROXYPOLYALKOXY-ALKYLALKYLENE-DIAMINES

Bernard Rudner, Pittsburgh, Pa., and Aristotle G. Prapas, Edison, N.J., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Aug. 20, 1962, Ser. No. 218,091
2 Claims. (Cl. 260—584)

1. Compositions having a molecular weight up to about 27,000 and the general formula:



wherein A is an alkylene radical of two to four carbon atoms; *m* and *n* are integers other than zero; and X is an inorganic anion.

3,189,654

PROCESS FOR THE PREPARATION OF 1,2-CYCLOALKANEDIONES

Wilfred John Arthur, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,646
5 Claims. (Cl. 260—586)

1. A process for the preparation of a 1,2-cycloalkanedione which comprises dispersing 1-oxo-2-nitratocyclo-alkane in an aqueous solution of a strong base by vigorous agitation at a temperature in the range of 20°–25° C.

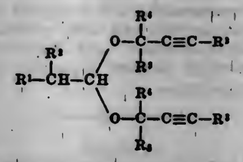
3,189,655

DIENALS

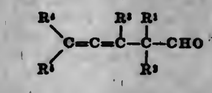
Benjamin Thompson, Box 511, Kingsport, Tenn.

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,352
10 Claims. (Cl. 260—601)

1. A process for the preparation of dienals which comprises cracking in the vapor phase at 200° C. to 400° C., in the presence of a solid metal-containing cracking catalyst and for a contact time up to about one minute, an acetylenic alcohol acetal of the formula:



and collecting a dienal of the formula:



wherein R^1, R^2, R^3, R^4 and R^5 are selected from the group consisting of hydrogen and lower alkyl and wherein R^4 and R^5 together with the carbon atom to which they are attached form a saturated carbocyclic ring selected from the group consisting of a saturated carbocyclic hydrocarbon ring having 5 carbon atoms and a saturated carbocyclic hydrocarbon ring having 6 carbon atoms.

3,189,656

MANUFACTURE OF HALOGENATED ALCOHOLS

Joseph Gordon and Cyril Woolf, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 4, 1961, Ser. No. 142,784
4 Claims. (Cl. 260—633)

1. The process for making $CClF_2.CH(OH).CClF_2$ which comprises subjecting $CClF_2.CO.CClF_2$ to the action of hydrogen at temperatures substantially in the range of 20–100° C. and in the presence of platinum oxide-platinum black catalyst in amount substantially in the range of 0.5–3.0% by weight based on the weight of the $CClF_2.CO.CClF_2$ charged, and at superatmospheric pressure substantially in the range of 60–150 lbs.; quantity of hydrogen and reaction time each being high enough to effect substantial reaction of $CClF_2.CO.CClF_2$ and hydrogen, temperature and pressure being correlated to maintain $CClF_2.CO.CClF_2$ and reaction product substantially in liquid phase, and recovering from the resulting reaction mass liquid material boiling substantially in the approximate range of 103–113° C. at substantially atmospheric pressure, and containing $CClF_2.CH(OH).CClF_2$.

3,189,657

5-(3-BROMOPROPYLIDENE)DIBENZO-[a,d] CYCLOHEPTA (1.4)DIENE

Jack Mills, Glenns Valley, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Nov. 3, 1960, Ser. No. 66,904
1 Claim. (Cl. 260—649)

5 - (3 - bromopropylidene)dibenzo[a,d]cyclohepta[1.4] diene.

3,189,658

USE OF COMPLEX FLUORO SALTS TO SEPARATE OLEFINS FROM PARAFFINS

Harold W. Quinn, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 18, 1961, Ser. No. 83,391
Claims priority, application Canada, Apr. 22, 1960, 797,333, Patent 691,251
5 Claims. (Cl. 260—666)

1. In a process of separating olefins from mixtures of paraffin hydrocarbons and olefins, wherein said mixture is contacted in the fluid state with a silver salt to effect formation of a silver olefin complex and said complex is separated from the non-complexed hydrocarbons and then substantially decomposed, thus forming the free olefin, the improvement which comprises contacting the mixture of hydrocarbons with solid, essentially anhydrous silver hexafluorophosphate, and separating the thus-formed silver-olefin complex from the non-complexed paraffin hydrocarbons.

3,189,659

MESITYLENE RECOVERY

Arthur Newton, Trinidad, West Indies, assignor to Texaco Trinidad, Inc., Pointe-a-Pierre, Trinidad, West Indies, a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,674
5 Claims. (Cl. 260—668)

1. The method of obtaining high purity mesitylene in good yields from a petroleum naphtha which comprises:

(1) passing a mixture of hydrogen and petroleum naphtha having a boiling point between about 66–260° C. over a hydroforming catalyst, at a temperature between about 260 and 538° C., at a pressure between 50 and 1500 p.s.i.g., a space velocity between about 0.1 and 10 volumes of naphtha per volume of said catalyst per hour, and a ratio of hydrogen to naphtha between about 1000 and 10,000 standard cubic feet per barrel of naphtha,

(2) fractionating the resultant hydroformed naphtha to separate a C_9 aromatic fraction having initial and final boiling points within the temperature range of between about 149 and 177° C. and a mesitylene content between about 25 and 40 wt. percent,

(3) agitating said separated C_9 fraction with sulfuric acid of an acid strength between about 90 and 100 wt. percent in a mole ratio of H_2SO_4 to non-mesitylene hydrocarbons in said separated C_9 fraction of at least about 1.8:1 and in a mole ratio of H_2SO_4 to said separated C_9 fraction of at least about 1.2:1, at a temperature between about 90 and 120° C. for a period of time effective to sulfonate aromatic hydrocarbons and to hydrolyze mesitylene sulfonic acid to mesitylene,

(4) allowing the reaction mixture to stratify into a top mesitylene layer of high purity, a middle mesitylene layer of a solution of aromaitc sulfonic acids, water and mesitylene and a bottom layer of sulfuric acid, and

(5) separating said layers and recovering mesitylene from said top mesitylene layer and middle sulfonic acid layer.

3,189,660

SYNTHETIC FLUIDS AS MULTIFUNCTIONAL LUBRICANTS

James J. Pappas, Elizabeth, and Alan Schriesheim, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 1, 1960, Ser. No. 53,382
10 Claims. (Cl. 260—671)

1. A method of preparing a fluid useful as a lubricant which comprises reacting to form a telomer a C_4 to C_{20} conjugated diolefin with a material selected from the group consisting of:

(a) an alkali-metalated alkyl aromatic having from 1 to 8 alkyl substituents of from 1 to 4 carbon atoms,

(b) an alkali-metalated C_1 to C_{20} aliphatic hydrocarbon, and

(c) a mixture of 0.2 to 1.5 molar proportions of an alkali metal and one molar proportion of an alkyl aromatic having from 1 to 8 alkyl substituents of from 1 to 4 carbon atoms;

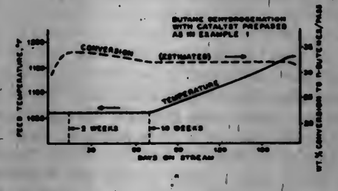
where the mole ratio of conjugated diolefin to metalate in (a) and (b) falls in the range of 4:1 to 11:1 and the mole ratio of conjugated diolefin to alkyl aromatic in (c) falls in the range of 0.8:1 to 1.6:1, and hydrogenating the resultant telomer at a temperature of about 60–250° F., at a pressure of about 15–600 p.s.i., and for a duration of about ½ to 6 hours in the presence of a hydrogenation catalyst.

3,189,661

DEHYDROGENATION PROCESS AND CATALYSIS THEREFOR

Bernard F. Mulaskey, El Sobrante, Robert H. Lindquist, Berkeley, and Hugh F. Hasenberger, San Anselmo, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed Nov. 25, 1960, Ser. No. 71,821
3 Claims. (Cl. 260—680)



1. A chromia-alumina dehydrogenation catalyst containing between 25 and 40 weight percent Cr_2O_3, having an active chromia surface area as measured by CO chemisorption of less than 15 micromoles CO per gram and an alumina surface area as measured by nitrogen adsorption of at least 50 square meters per gram, said catalyst having been produced by a method comprising impregnating alumina, which was prepared by heat treating a high surface area alumina at 1100–1600° F. for 2–24 hours to reduce its surface area to between about 60 and about 100 square meters per gram as measured by nitrogen adsorption, with a chromium compound decomposable to Cr_2O_3, and then heating the chromium-impregnated alumina in an oxygen-free atmosphere at 1100–1700° F. for 2–48 hours to obtain the first-mentioned chromia and alumina surface areas.

3. A process for the dehydrogenation of butane to butenes and butadiene which comprises passing alternately and repeatedly through a bed of a catalyst of claim 1, first, butane vapors at 900–1100° F. and 1–10 p.s.i.a. to dehydrogenate butane and to deposit coke on the catalyst, and second, an oxygen-containing gas at 900–1100° F. to remove deposited coke by combustion causing elevation of the bed temperature, whereby the dehydrogenation activity of said catalyst increases during an initial period of use, thereafter remains relatively stable, and ultimately declines slowly, maintaining the temperatures of butane vapors and oxygen-containing gas below about 1100° F. during said initial period of use and thereafter for at least ten weeks and until said activity has declined substantially, then increasing said temperatures gradually towards 1200° F., and continuing alternately and repeatedly passing butane vapors and oxygen-containing gas for a period in excess of five months at a per pass conversion of butane to butenes in excess of 25%.

3,189,662

ORGANOPOLYSILOXANE-POLYCARBONATE BLOCK COPOLYMERS

Howard A. Vaughn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 23, 1961, Ser. No. 83,927
6 Claims. (Cl. 260—824)

1. Block copolymers of (A) from 10 to 75 percent by weight of a polydiorganosiloxane composed of from about 5 to about 200 chemically combined diorganosiloxy units consisting essentially of dialkylsiloxy units which are connected to each other by silicon-oxygen-silicon linkages wherein each of the silicon atoms has two organo radicals attached through a carbon-silicon bond and (B) from 90 to 25 percent by weight of an intercondensation product of a dihydric phenol and a carbonyl halide, where said polydiorganosiloxane and said intercondensation product are joined by aryloxy-silicon linkages.

3,189,663

BLOCK COPOLYMERS

Kenzie Noguki, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 22, 1961, Ser. No. 118,771
13 Claims. (Cl. 260—879)

1. A new type of copolymer wherein the macrmolecules are made up of at least two different linear segments joined in an end to end arrangement, the first segment being a linear polymer of a member of the group consisting of ethylenically unsaturated monocarboxylic and dicarboxylic acids containing up to 8 carbon atoms, anhydrides thereof, their esters and amides, and the other segment being a polymer of at least one monomer selected from the group consisting of a dissimilar member of the aforementioned group of monomers, esters of unsaturated alcohols and saturated carboxylic acids, alkenes, alkadienes, vinyl halides, vinylidene halides, ethylenically unsaturated nitriles, alkenyl-substituted aromatic hydrocarbons and alkenyl ethers.

3,189,664

BLOCK COPOLYMERS

Kenzie Noguki, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 22, 1961, Ser. No. 118,772
16 Claims. (Cl. 260—881)

1. A new type of copolymer wherein the macromolecules are made up of at least two different linear segments joined in an end to end arrangement, the first segment being a linear polymer of a member of the group consisting of esters of ethylenically unsaturated alcohols and saturated monocarboxylic acids containing from 1 to 6 carbon atoms, alkenes, vinyl halides, vinylidene halides, ethylenically unsaturated nitriles, alkenyl ethers and alkenyl ketones, and the second segment being a polymer of a dissimilar monomer selected from the above-described group.

3,189,665

BLOCK COPOLYMERS

Kenzie Noguki, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 22, 1961, Ser. No. 118,789
11 Claims. (Cl. 260—881)

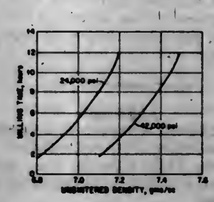
1. A new type of copolymer wherein the macromolecules are made up of at least two different linear segments joined in an end-to-end arrangement, the first segment being a linear polymer of an alkenyl-substituted aromatic compound, and the other segment being a polymer of a monomer of the group consisting of esters of unsaturated alcohols and saturated monocarboxylic acids containing 1 to 6 carbon atoms, alkenes, vinyl halides, vinylidene halides, ethylenically unsaturated nitriles, alkenyl ethers and alkenyl ketones.

3,189,666

METHOD OF PREPARING URANIUM DIOXIDE FUEL COMPACTS

Ralph P. Lovey, Jr., Oak Ridge, and Paul E. Trent, Norris, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 2, 1963, Ser. No. 313,403
4 Claims. (Cl. 264—21)



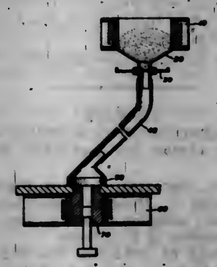
1. The method of preparing sintered UO_2 compacts which comprises intimately mixing high sintered UO_2 having a surface area of 6 to 8 square meters per gram, a particle size less than 40 microns, a tap density of 1.2 to 2.0 grams per cubic centimeter and an oxygen-to-uranium ratio of 2.08 to 2.17 with high-fired UO_2 having a surface area less than 1.5 square meters per gram, a particle size of 1 to 20 microns, a tap density of 4 to 6 grams per cubic centimeter and an oxygen-to-uranium ratio of 2.0 to 2.07 at a proportion of 1 to 10 weight per cent highly sinterable UO_2, compressing the resulting mixture into compacts at a pressure of at least 20,000 pounds per square inch and sintering said compacts in a reducing atmosphere at a temperature of at least 1700° C.

3,189,667

METHOD OF PRODUCING PRESSINGS TO FORM PERMANENT MAGNETS

Karl-Heinz Blittner, Dortmund, and Heinz Völler, Dortmund-Berghofen, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany

Filed Nov. 15, 1961, Ser. No. 152,659
Claims priority, application Germany, Nov. 23, 1960, D 34,796
5 Claims. (Cl. 264—24)

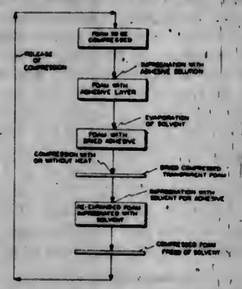


1. A method of producing pressings to form permanent magnets from ferromagnetic powders of such fineness as to be non-flowable which comprises the step of trapping the powder and magnetising the powder by the brief application of a field thereto while so trapped so that the particles cling lightly together and thereafter releasing the magnetised powder to flow solely by gravity into the cavity of a die and pressing it.

3,189,668
METHOD OF SLIP CASTING BASIC REFRACTORY MATERIALS
Eldon D. Miller, Jr., Bridgeville, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,492
7 Claims. (Cl. 264—56)

7. In a method of slip casting chemically basic refractory shapes from a batch of dead burned magnesite refractory and an aqueous tempering fluid, the improvement which comprises adding about 0.2 to 5%, by weight based on the total refractory batch, of finely divided sulphur to the batch.

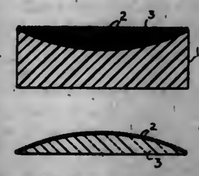
3,189,669
PROCESS FOR SHIPPING FLEXIBLE POLYURETHANE FOAM
Solomon Goldfein, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 1, 1962, Ser. No. 234,894
1 Claim. (Cl. 264—134)
(Granted under Title 35, U.S. Code (1952), sec. 266)



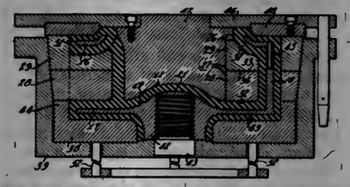
A method of compressing and re-expanding flexible polyurethane foam comprising the steps of:
(a) Impregnating flexible polyurethane foam with an adhesive solution of dimethyl hydantoin formaldehyde containing water as a solvent, said adhesive and solvent rendering said polyurethane transparent;
(b) Evaporating said solvent from said adhesive solution;
(c) Compressing the foam to a fraction of its original volume, said foam remaining in this compressed state for transport;
(d) Re-expanding said compressed polyurethane foam to its flexible state by immersing said foam in a solvent for said adhesive; and
(e) Squeezing out the excess solvent.

3,189,670
METHOD FOR PRODUCING A MOLD FOR USE IN THE FABRICATION OF BACKLIT PROJECTION SCREENS
Paul C. Robison, deceased, late of Pacific Palisades, Calif., by Elaine C. Robison, administratrix, Pacific Palisades, Calif., assignor to FMA, Inc., El Segundo, Calif., a corporation of California
Filed Sept. 10, 1962, Ser. No. 222,718
2 Claims. (Cl. 264—226)

1. A method of forming apparatus from which a rear illuminated projection screen may be produced, said method comprising the steps of: constructing a first female mold having a smooth surface of desired configuration from a suitable material; placing in said female mold a mixture consisting of a large number of tiny spherical bodies, together with an amount of adhesive solution to form a slurry of said spherical bodies, said slurry drying to form a male mold or prototype whose surface is covered with said spherical bodies; removing said male mold from said female mold and using a resilient material to mold a second female mold over said male mold; removing said male mold from said second female mold, said second female mold comprising a surface that is dimpled by the spherical bodies.

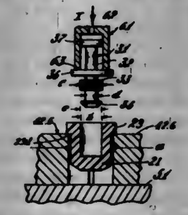


3,189,671
METHOD OF MAKING A RUBBER LINED IMPELLER
Charles L. Babb, Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Continuation of application Ser. No. 806,351, Apr. 14, 1959. This application Feb. 12, 1962, Ser. No. 174,654
4 Claims. (Cl. 264—247)



1. In the method of forming a rubber molded closed type impeller having a skeleton comprising an annular ring and a disk spaced therefrom by plurality of vane members the steps of: positioning said skeleton in a tank mold with a blade core between each vane member in spaced relation therefrom and from said ring and said disk, each blade core being composed of two sections in contact along a plane substantially parallel to the plane of said disk; introducing an amount of rubber into said tank mold to form an integral coating about said skeleton; curing said rubber; laterally withdrawing the core sections adjacent said disk from between said vane members; moving the remaining core sections to the positions originally assumed by the removed core sections for like lateral withdrawal and laterally withdrawing said remaining core sections from between said vane members.

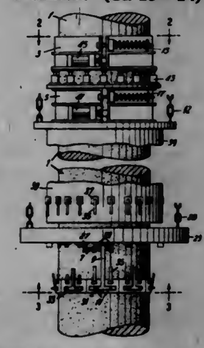
3,189,672
METHOD OF MAKING AN INSULATING MOUNT WITH A TERMINAL
Frank Lyman, Jr., Cambridge, Mass., assignor to Cambridge Thermionic Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Dec. 15, 1959, Ser. No. 859,726
3 Claims. (Cl. 264—249)



1. In manufacturing composite articles such as insulating mounts with a metal insert within a recessed body made of insulating material having physical properties characteristic of polyfluoroethylenes, the method which comprises the steps of:
holding said body without essential restraint of its outer surface;
forcibly placing said insert into said recess of said body while said body is unconstrained and free to be expanded by the insert placed therein;
after said inserting temporarily pressing said body around said insert substantially uniformly by cold working, such that the outside dimension of the body is uniformly reduced and said body recess is substantially closed around said insert; and
finally releasing the temporary pressure.

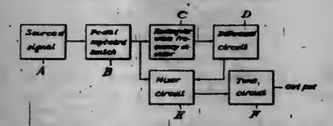
ELECTRICAL

3,189,673
ELECTRODE HOLDER
Arthur M. Killin, Ashtabula, Ohio, La Mont F. McClincy, Florence, Ala., and Oscar W. Graveley, Sanborn, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Continuation of abandoned application Ser. No. 92,643, Mar. 1, 1961. This application Sept. 19, 1962, Ser. No. 224,617
5 Claims. (Cl. 13—14)



1. An apparatus for contacting and supporting and slipping a vertically positioned electrode which comprises a plurality of metal bars symmetrically disposed about the electrode adjacent thereto and transverse to the longitudinal axis thereof; each said bar being fixedly held at only one portion thereof and extending to form an acute angle with the radius of the electrode passing through said fixed portion and extending to perpendicularly intersect a radius of said electrode; a plurality of rigid arms fixed respectively to each of said bars at the portion thereof perpendicularly intersecting a radius of the electrode each of said rigid arms extending downwardly and transverse to the bar affixed thereto; electrode contact means spaced downward from said metal bars and being in contact with the electrode and being disposed between said rigid arms and the electrode; a plurality of adjusting means engaged respectively to said rigid arms and engaging said contact means for increasing the distance therebetween to an extent whereby due to the resultant torsional deformation of said metallic bars said electrode contact means is caused to forcibly contact and support a portion of the weight of the electrode; means for connecting said electrode contact means to a suitable source of electrical energy; a first fixedly mounted clamp and a first spring engaging said first clamp normally maintaining said first clamp in forcible contact with the electrode, said first clamp being adapted to be capable of supporting, in conjunction with the electrode contacts, the full weight of the electrode; a second clamp adapted to be moved in a vertical direction and a second spring engaging said second clamp normally maintaining said second clamp in forcible contact with the electrode, said second clamp being adapted to be capable of supporting, in conjunction with the electrode contacts, the full weight of the electrode; a first hydraulic cylinder operably coupled to said first spring being adjustable to deform said first spring and thereby release said first clamp whereby the electrode is supported only by the second clamp and said electrode contact means; a second hydraulic cylinder operably coupled to said second spring and adjustable to deform said second spring and release said second clamp whereby the electrode is supported by only the first clamp and said electrode contact means; means operably connected between said clamps for lowering the second clamp and the electrode a predetermined distance when the electrode is supported only by the second clamp and said electrode contact means and for raising the second clamp a predetermined distance after the lowering thereof when the electrode is supported only by the first clamp and said electrode contact means; said electrode being forced through said electrode contact means during the lowering adjustment thereof.

3,189,674
APPARATUS FOR PRODUCING PEDAL SOUNDS IN ELECTRIC MUSICAL INSTRUMENTS
Shigeaki Mabuchi, Hamamatsu-shi, Japan, assignor to Nihon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan
Filed Sept. 26, 1960, Ser. No. 58,234
Claims priority, application Japan, Mar. 31, 1960, 35/10,392
2 Claims. (Cl. 84—1.17)



1. In an electrical musical instrument, an arrangement for producing pedal sounds, comprising in combination,
a source of signals for keyboard;
pedals designed to provide a sound of a certain frequency, each of the signals of said source corresponding to one of said pedals but being at a frequency one octave higher than that which said pedal is to provide;
a rectangular wave frequency divider, the input side of which is connected to said source;
a pedal switch between said frequency divider and said source;
a mixer circuit, the input side of which is connected to the output side of said switch and the outut side of said frequency divider so as to mix the signal from said source with the output of said frequency divider.

3,189,675
ELECTRICAL APPARATUS
Curtis L. Moore, Hickory Township, Mercer County, and Theodore R. Specht, Sharon, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 17, 1962, Ser. No. 217,583
4 Claims. (Cl. 174—11)

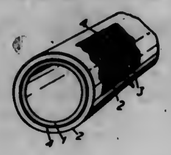
1. A self-reclosing pressure relief device for relieving the pressure in a sealed container upon the build-up of

pressure within said container to a predetermined value, said container having an aperture therein, said relief device comprising a sealing member positioned superjacent to the upper edges of the aperture in said container, said sealing member having a permanently magnetic material homogeneously distributed throughout said sealing member, a ferromagnetic closure movably mounted



above the aperture, spring means cooperating with said closure member to assist in holding said closure member against said sealing means until a predetermined pressure is reached in said container so that said closure member opens when the pressure in said container reaches said predetermined value to relieve said pressure and recloses upon relief of the pressure in the container to reseal the aperture in said container.

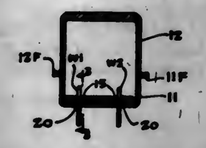
3,189,676
REINFORCED PIPES INCORPORATING A GROUND WIRE
Jacques Muller, 123 Ave. du General de Gaulle, La Garenne-Colombes, France
Filed Feb. 1, 1961, Ser. No. 86,427
Claims priority, application France, Mar. 17, 1960, 821,569
12 Claims. (Cl. 174—47)



1. A reinforced pipe comprising a base pipe of flexible material, a reinforcement made of a band of woven, braided material wound in a spiral around said base pipe, with the edges of the band contiguous, and means to retain together the contiguous edges of the spirally wound band, said means comprising a plurality of fasteners, each having a portion secured to one edge of said spiral band and another portion defining a tooth which extends through the contiguous edge of said spiral band and is bent over.

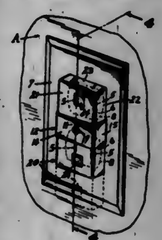
3,189,677
ALUMINUM ELECTRICAL ENCLOSURES HAVING A TITANIA LEAD GLASS SEAL CONTAINING A CERAMIC MATRIX
Myron L. Anthony and Robert F. Gill, Jr., La Grange, Ill., assignors to Scully-Anthony Corporation, La Grange, Ill., a corporation of Illinois
Filed July 17, 1961, Ser. No. 124,503
1 Claim. (Cl. 174—50.61)

In an electrical enclosure, a metallic base of aluminum having an opening therein, a conductor extended through said opening, and a seal between the conductor and the periphery of said opening, said seal being substantially devoid of bubble inclusions and voids adjacent the conductor and the periphery of the base opening, and to this end consisting essentially of a vitrified ceramic matrix obtained from a lead-type powdered glass vitrifying at a temperature less than the melting point of aluminum



and being substantially free of carbon and hydrogen-contain constituents, said matrix containing particles precipitated around titania nuclei.

3,189,678
SAFETY SHIELD FOR ELECTRICAL OUTLET BOXES
Robert J. Nelson, 4010 Merriam Road, Hopkins, Minn.
Filed Apr. 16, 1963, Ser. No. 273,345
2 Claims. (Cl. 174—67)



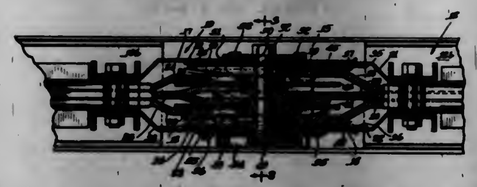
1. In combination with an electrical outlet box having a pair of laterally spaced female receptacle elements therein,
(a) a covering face plate for said outlet box having openings therein providing access to said receptacle elements,
(b) a generally rectangular band having aligned central openings in its inner and outer walls permitting passage therethrough of the shank portion of a headed anchoring screw,
(c) the opening in said outer wall permitting passage therethrough of the head of said screw, whereas the opening in said inner wall prohibits such passage,
(d) cooperating means on said band and face plate member for retaining said band in a position on said face plate intermediate the openings therein wherein the projected axis of the passage defined by said band intersects the projected axes of the openings in said face plate member,
(e) a barrier-acting hood frictionally snugly slidably received within the passage defined by said band and having longitudinal dimensions enabling it to overlie both of the openings in said face plate,
(f) the outer wall of said hood being resilient and being formed to define spaced stop means along its longitudinal axis,
(g) the resilience of the outer wall of said hood normally biasing the stop means associated therewith toward a position to selectively engage cooperating stop means defined by said band upon sliding movements of said hood within said band,
(h) deformation of said outer wall causing temporary disengagement of said stop means whereby to permit sliding movements of said hood and selective engagement of said axially spaced stop means with the stop means defined by said band whereby to cover both of the openings in said face plate or, alternatively, to expose either one of siad openings.

3,189,679
JOINT AND COVER ASSEMBLY FOR TROLLEY ELECTRIFICATION SYSTEM
Donald H. Scofield, Redwood City, Calif., assignor to Insul-8 Corp., San Carlos, Calif., a corporation of California
Filed Mar. 12, 1963, Ser. No. 266,132
5 Claims. (Cl. 174—84)



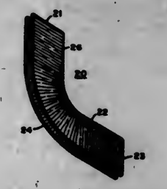
1. A member for covering the exposed ends of aligned sections of conductor bar joined in end-to-end relation comprising
an elongated member molded from resilient plastic and having open ends, said member having a cross-sectional configuration comprising a closed, generally circular end portion integral with tangential, generally planar side portions, said side portions converging towards one another to form a narrow gap, said member including
a first pair of inwardly extending integral bosses respectively located near the juncture of said side portions with said generally circular end portion, said bosses being formed at an angle with respect to said side portions and inclined toward said closed, generally circular end portion,
an integral boss located proximately at the center of said closed, generally circular end portion and extending downwardly, generally perpendicular to the interior surface of the cover member at this point, and
a second pair of inwardly extending integral bosses inclined with respect to said side portions toward said closed end and respectively located approximately half way between said first pair of bosses and the ends of said converging sides;
each of the said bosses comprising generally an elongated polyhedron.

3,189,680
BUS DUCT
Harris I. Stanbeck, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Apr. 2, 1963, Ser. No. 269,971
5 Claims. (Cl. 174—88)



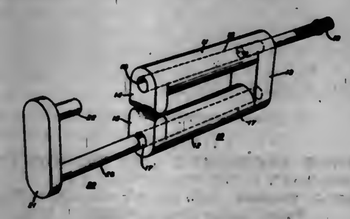
1. A bus bar assembly comprising an inner flat elongated bus bar having an end portion split longitudinally of the bus bar across the smaller cross sectional dimension thereof to form two separate end portions, said two separate end portions being offset in opposite directions parallel to said smaller cross sectional dimension to define a space therebetween of a width substantially equal to the thickness of the bus bar, and a pair of outer flat elongated bus bars disposed on opposite sides of said inner bus bar in relatively closely spaced flatwise relationship thereto, each of said outer bus bars having a pair of longitudinally opposite first and second end portions, the first end portion being outwardly offset a predetermined amount and the second end portion being outwardly offset an amount greater than said predetermined amount of offset of said first end portion by an amount substantially equal to the thickness of the bus bar.

3,189,681
ANGULAR CHANNEL-SHAPED COIL INSULATION
Landis E. Feather, Hickory Township, Mercer County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1960, Ser. No. 14,397
3 Claims. (Cl. 174—121)



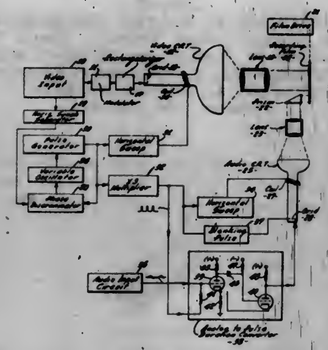
3. An angular channel-shaped electrically insulating member consisting essentially of a plurality of plies of high density creped kraft paper sheeting having about 30 to 40 crimps per inch, each of said plies having an original thickness of from about 40 mils to about 50 mils and a stretch of at least 200%, a polyvinyl acetate resin bonding the plies of creped paper into a unitary member, said member having side walls depending from a bottom wall thereby defining a U-shaped channel, said bottom wall curved to define an angle of about 40° to about 130°, and said crimps in each ply disposed essentially laterally with respect to said bottom wall.

3,189,682
WIRE SUPPORT
Carleton D. Irish, Neptune, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1962, Ser. No. 232,448
4 Claims. (Cl. 174—165)



2. A support for a plurality of insulated wires comprising spaced parallel side rods, an end piece interconnecting adjacent ends of the side rods, two juxtaposed end members projecting respectively from the other ends of the rods with their adjacent faces in close proximity, the space between these members being less than the diameter of the insulated wire to be supported, said rods, end pieces, and end members bounding a space sufficient to include a plurality of wires, a bore in at least one side rod, mounting means in this bore, and a keeper comprising a bar having projections fitted respectively to the end members to prevent them from spreading apart under the pressure of many wires within the support.

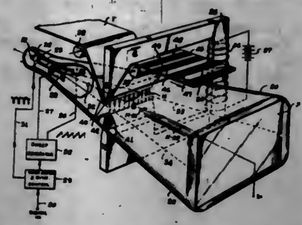
3,189,683
TRANSDUCING SYSTEM FOR PHOTOGRAPHICALLY RECORDING VIDEO IMAGES AND SOUND SIGNALS RELATED THERETO
John T. Mullin, Beverly Hills, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 9, 1960, Ser. No. 75,464
13 Claims. (Cl. 178—5.6)



1. A system for recording both primary signals having a relatively wide frequency band and auxiliary signals having a relatively narrow frequency band and being synchronized with the primary signals where the system is used with a movable recording medium, the system including: means operatively coupled to the medium for obtaining a movement of the medium, first line scanning means for recording the primary signals as a series of tracks partially across the movable recording medium in a direction transverse to the direction of movement of the recording medium and for obtaining such recording during the movement of the medium, means for sampling the auxiliary signals at a repetition rate related to the line repetition rate of said first line scanning means, and second line scanning means synchronized with said first line scanning means for recording the sampled auxiliary signals as a series of tracks partially across the movable recording medium in a direction aligned with the direction of the tracks recorded by said first line scanning means and for obtaining such recording during the movement of the medium whereby the primary signals are recorded in a first portion of the recording medium aligned in the direction of its movement and the auxiliary signals are recorded in a second such portion.

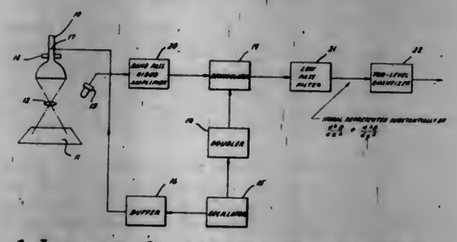
3,189,684
SYSTEM FOR RECORDING AND REPRODUCING SIGNALS WITH MAGNETIC TAPE
William A. Wootten, 1324 Palos Verdes Drive W., Palos Verdes Estates, Calif.
Continuation of application Ser. No. 397,570, Dec. 11, 1953. This application Dec. 8, 1959, Ser. No. 858,292
2 Claims. (Cl. 178—6.6)

1. Apparatus for recording an electrical signal current in magnetic tape comprising: a recording magnet including a gap for producing a single constant unidirectional magnetic field thereacross, means for guiding a travelling magnetic tape through said gap and generally transversely of said magnetic field, an electron gun for generating a pencil shaped electron beam and directing it transversely through said gap substantially at right angles to the field across said gap, and generally longitudinally of the direction of tape travel through said gap, and in close proximity to the portion of the tape within the gap, whereby the magnetic field surrounding said beam reacts with said magnetic field to produce a resultant angle modulated



magnetic field, and means for periodically sweeping said beam laterally of the tape.

3,189,685
TWO-LEVEL QUANTIZATION SYSTEM
James S. Bryan, Hatboro, and Francis P. Kelper, Jr., Oreland, Pa., assignors, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 21, 1961, Ser. No. 104,664
3 Claims. (Cl. 178—7.1)



1. In a system for producing a picture or image representative signal quantized to two levels representing black and white, means for producing a signal represented substantially by the sum of the second spatial derivatives of brightness of the picture or image in two directions, and means responsive to said last-named signal to provide a two-level signal whose levels respectively represent black and white areas of the picture or image.

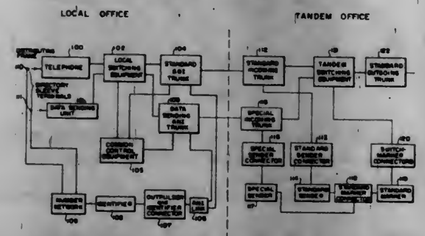
3,189,686
TRANSDUCER AND MOUNTING FOR MECHANICAL DELAY LINES
John B. Brombaugh, Cincinnati, Ohio, assignor to D. H. Baldwin Company, a corporation of Ohio
Filed Aug. 18, 1961, Ser. No. 132,329
16 Claims. (Cl. 179—1)



1. A reverberation system for electrically generated musical tones, comprising a source of electrical tone signals, a modulator, a supersonic carrier generator coupled to said modulator, said modulator generating a modulated carrier including said tone signals superposed on said carrier, a reverberator having a driver, a long mechanical delay line and a pick-up, a demodulator coupled to said pick-up, said demodulator being responsive to said modulated carrier to recover said tone signals, and means for acoustically transducing said tone signals, said driver and

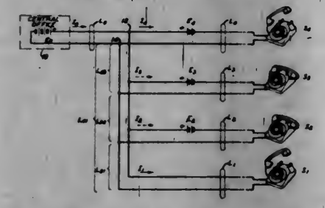
said pick-up each including an elongated transducer, said delay line including a long wire, and means providing a direct bond between said transducers and said wire along at least a major part of the transducers, said transducers being adapted to vibrate along the bond.

3,189,687
TELEPHONE SWITCHING SYSTEM
Charles G. Miller, 51 Aubrey Road, Upper Montclair, N.J.
Filed Feb. 2, 1962, Ser. No. 170,635
6 Claims. (Cl. 179—18)



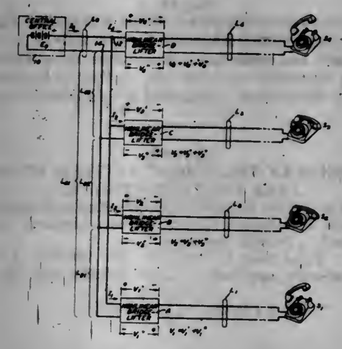
1. In a telephone switching system, subscriber stations having unique designations, each comprising a group of decimal digits, switching equipemnt adapted to be controlled by a dialed or keyed designation for connecting a calling station with a called station, means in the switching equipment having access to said calling station to identify and register the designation of said calling station, control means serving the switching equipment having access to said called station, means to record in said control means the designation of a station authorized to be connected with said called station, means to transmit the called station designation and the identified calling station designation to said control means, translator means accessible to said control means and means under the control of said translator means to cause said last mentioned switching equipment to complete the connection of said calling station with said called station effective only if said identified calling station designation is the same as said authorized station designation.

3,189,688
TRANSMISSION IMPROVEMENT IN PARTY-LINE TELEPHONE SYSTEMS
Lester Hochgraf, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 27, 1961, Ser. No. 141,199
3 Claims. (Cl. 179—35)



1. In a party-line telephone system, a central office including a common battery; a plurality of subscriber loops having direct-current resistances; a main transmission line having direct-current resistance; a telephone set terminating each of said subscriber loops, each of said subscriber loops being connected across said main line; said main line being connected to said central office and including said common battery; and a plurality of sources having electrolytes for producing direct-current voltage outputs, said sources being connected in said subscriber loops between said terminating sets and said main line and oriented to oppose the flow of current from said common battery, said sources having voltage outputs which are inversely related to the respective sums of said direct-current resistances of said connected subscriber loops and the portions of said direct-current resistance of said main line between said common battery and said connected subscriber loops.

3,189,689
TRANSMISSION IMPROVEMENT IN PARTY-LINE TELEPHONE SYSTEMS
Lester Hochgraf, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 27, 1961, Ser. No. 141,200
3 Claims. (Cl. 179—35)

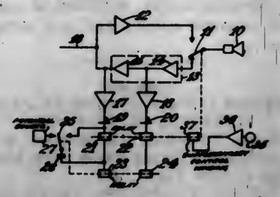


1. In a party-line telephone system for the transmission of voice signals, a central office that includes a common battery for the supply of direct current, a main transmission line connected to said common battery and having direct-current resistance, a plurality of subscriber loops each bridged across said main transmission line and each terminated by a telephone set, each of said subscriber loops having direct-current resistances and comprising a nonlinear bridge-lifting device that automatically differentiates between current levels to permit the transmission of said voice signals to said terminating telephone set when off-hook, and substantially to block said voice signals when said terminating telephone set is on-hook, said bridge-lifting devices having various direct-current resistances whenever current from said common battery flows in said comprised loops, said bridge-lifting direct-current resistances being proportioned to equalize the sums of said direct-current resistances of said comprised loops and the respective portions of said direct-current resistance of said main line between said common battery and said comprised loops to equalize the flow of common battery current in said comprised loops.

3,189,690
TWO-WAY TELEPHONE SYSTEMS WITH TALK-LISTEN SWITCHING
Michael Millett, London, England, assignor to Modern Telephones (Great Britain) Limited, London, England, a British company
Filed Apr. 26, 1961, Ser. No. 105,815
Claims priority, application Great Britain, Apr. 27, 1960, 14,811/60
11 Claims. (Cl. 179—81)

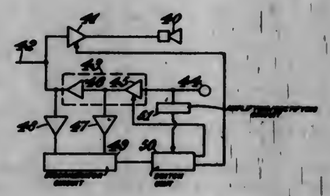
1. A telephone system for two-way speech communication over an interconnecting circuit between stations which circuit is common to speech signals in both directions

wherein there are provided at one of the stations separate speech channels with amplifiers for incoming and outgoing speech signals, control means at that station adapted to provide a control signal when there is a speech signal in either direction present in said interconnecting circuit,



switch means normally responsive to said control signal to condition the speech channels for passage of incoming signals only and inhibiting means responsive to speech for outgoing transmission from the station to prevent the switching means from responding to said control signal.

3,189,691
TWO-WAY TELEPHONE SYSTEMS WITH TALK-LISTEN SWITCHING
Arthur Ian Forbes Simpson, London, England, assignor to Modern Telephones (Great Britain) Limited, London, England, a British company
Filed May 1, 1961, Ser. No. 106,667
Claims priority, application Great Britain, Apr. 29, 1960, 15,185/60
3 Claims. (Cl. 179—81)



1. A telephone system for two-way speech communication over an interconnecting circuit between stations which circuit is common to speech signals in both directions wherein there are provided at one of the stations separate speech channels with amplifiers for incoming and outgoing speech signals, a loudspeaker connected to the output of the incoming speech amplifier, a microphone connected to the input of the outgoing speech amplifier, control means at that station adapted to provide a control signal when there is a speech signal in either direction present in said interconnecting circuit, switch means responsive to said control signal to condition the speech channels for passage of incoming signals only, inhibiting means responsive to speech for outgoing transmission from the station to prevent such outgoing speech signals from operating said switch means, and over-ride means to enable incoming speech to be interrupted, which over-ride means comprises a separate amplifier connected to said microphone for amplifying any sound signals at the station and arranged to provide an over-ride control signal, and means for applying said over-ride control signal to said switch means to condition the system for outgoing speech.

3,189,692
AUTOMATIC CALL TRANSMITTER
Ernest R. Andrega, Indianapolis, Ind., and William Pferd, Watchung, and Rembert R. Stokes, Springfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 8, 1962, Ser. No. 193,267
20 Claims. (Cl. 179—90)

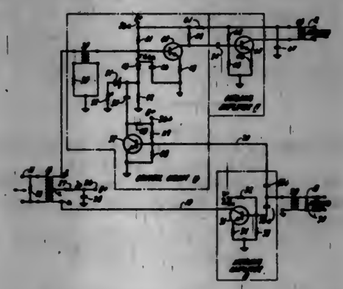


1. A call transmitter employing a code bearing medium having a plurality of digits encoded thereon, the call transmitter comprising:

means for translating the coding on the code bearing medium;

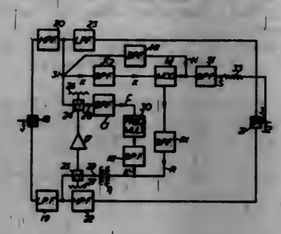
means under the control of the translating means for generating signals representing the encoded digits, the signal generating means comprising a pulsing relay connectable to a communication line, the pulsing relay being energized by the communication line when connected thereto, and the pulsing relay interrupting the communication line responsive to energization.

3,189,693
2-TO-4 WIRE CONVERTER
Solly L. Fedaley, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Sept. 1, 1960, Ser. No. 53,390
9 Claims. (Cl. 179—170)



1. A 2-to-4 wire converter comprising a two-way voice channel, a one-way outgoing voice channel, a one-way incoming voice channel, means including a first transistor for amplifying voice signals received over said two-way channel, means coupled to an output electrode of said first transistor for applying said amplified signals to said outgoing channel, means comprising a pair of parallel connected capacitors for splitting voice signals received over said incoming voice channel, means including one of said capacitors for applying a first of said split signals to said two-way channel, means including a second transistor coupled to control the bias on a control electrode of said first transistor, and means comprising the other of said capacitors for applying the other of said split signals to a control electrode of said second transistor for controlling said bias to prevent the transfer of voice signals from said incoming voice channel to said outgoing voice channel.

3,189,694
CARRIER CURRENT COMMUNICATION SYSTEMS INCORPORATING REPEATERS
William Jesse Frankton, London, England, assignor to International Standard Electric Corporation, New York, N.Y.
Filed Jan. 28, 1960, Ser. No. 5,253
Claims priority, application Great Britain, Feb. 5, 1959, 4,061/59
7 Claims. (Cl. 179—175.31)



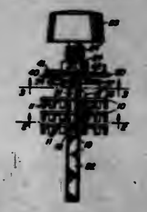
1. In a carrier current communication system for transmitting signals between a first station and a second station over a transmission line interconnecting said stations and including a plurality of serially related repeaters each having a separate indexing frequency assigned thereto, means in the first station for transmitting an indexing frequency and a test frequency over said line to a selected repeater having the corresponding indexing frequency assigned thereto, and means in the said selected repeater for responding to said transmitted frequencies to provide test information to said first station, the last-said means including means for amplifying said transmitted indexing frequency, means for frequency multiplying said amplified frequency, means for amplifying said multiplied frequency, means for modulating said amplified multiplied frequency with said transmitted test frequency, means for deriving a side band frequency of said modulated frequencies, and means for transmitting said side band frequency to said first station.

3,189,695
DEVICE FOR REGULATING MULTIPLE CONCURRENT ELECTRICAL PULSES
Albert M. Randolph, Shreveport, La., assignor to United Gas Corporation, a corporation of Delaware
Filed Oct. 12, 1962, Ser. No. 230,147
7 Claims. (Cl. 200—11)



1. A device for regulating multiple electric pulses comprising an operating shaft, means for rotatably supporting said shaft, a plurality of spaced multiple-contact wafer switches spaced axially of said shaft and each having an insulating support with a plurality of circumferentially spaced contacts thereon, corresponding contacts of all wafer switches being arranged in substantially axially aligned sets, each wafer switch also having a wiper contactor insulated from and drivingly mounted on said shaft substantially in axial alignment with the other of said wiper contactors and arranged to be operable to engage separately each contact of its respective multiple-contact wafer switch, means for resiliently biasing said wiper contactors into engagement with a contact on respectively associated wafers and resiliently opposing disengagement therewith, electric pulse regulating means mounted for operation by said wiper contactor resilient biasing means in accordance with operation of said wiper contactors and electrically connected in series with all of said wiper contactors and operable for providing a closed circuit through said regulating means subsequent to the making of contact by all of said wiper contactors with any one set of aligned contacts on associated wafers and for opening such circuit prior to the breaking of contact by any of said wiper contactors with any contact of such aligned set of contacts providing for simultaneously energizing and simultaneously deenergizing circuits through all said wiper contactors, and means for adjusting the duration of said closed circuit of said regulating means.

3,189,696
DEVICE FOR REGULATING MULTIPLE CONCURRENT ELECTRIC PULSES
Edwin D. Nuttall, Shreveport, La., assignor to United Gas Corporation, a corporation of Delaware
Filed Oct. 12, 1962, Ser. No. 230,148
12 Claims. (Cl. 200—11)



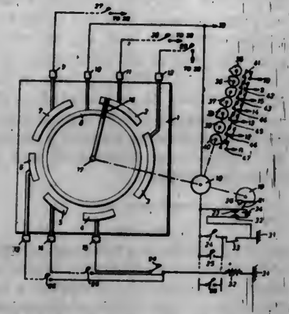
1. A multiple-pulse regulating device comprising a plurality of multiple-circuit making and breaking means simultaneously operable for substantially simultaneously making and substantially simultaneously breaking a corresponding plurality of electric circuit lines therethrough, each of said respective plurality of circuit making and breaking means having individual terminals each connectible in a separate one of the multiple-circuits and also having a common terminal separately connectible through the respective circuit making and breaking means to each of said individual terminals, a single circuit connecting together all of said common terminals, and a common electric pulse regulating means comprising a single circuit making and breaking element connected in series with said single connecting circuit for making and breaking said single circuit and concurrently making and concurrently breaking the electric circuit lines respectively closed and opened through all of said plurality of multiple-circuit making and breaking means.

ERRATUM
For Class 200—16 see:
Patent No. 3,188,697

3,189,697
PRINTED CIRCUIT TIMER WITH ARC-PREVENTING AUXILIARY CONTACTS
Walter Holzer, Schnaarerain, Meerabarg (Bodensee), Germany
Filed May 1, 1961, Ser. No. 106,648
Claims priority, application Germany, May 10, 1960, H 39,384
2 Claims. (Cl. 200—23)

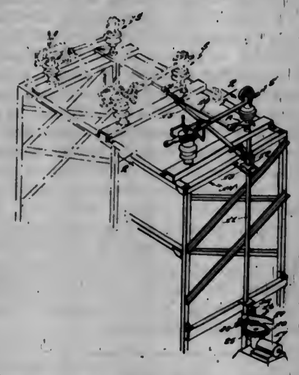
1. A control apparatus for a completely automatic washing machine comprising a printed circuit member having a plurality of contacts, a contact member, means

moving said contact member so as to slide over said plurality of contacts, pairs of heavy duty auxiliary contacts connected in parallel with said contacts on said printed circuit member, separate cam means operating each of said pairs of auxiliary contacts in accurately timed relationship with the moving contact member, said cam means operating to close each pair of auxiliary contacts



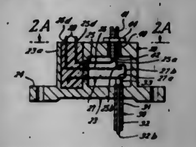
immediately before the moving contact member slides upon the corresponding contact on the printed circuit member and is opened while said moving contact member is intermediate the ends of said corresponding contact, and the next pair of auxiliary contacts is closed immediately before the moving contact member slides off said corresponding contact.

3,189,698
MOTOR MECHANISM FOR OPENING AND CLOSING ELECTRIC SWITCHES
Tomlinson F. Johnson, P.O. Box 10958, Atlanta 10, Ga.
Filed Sept. 5, 1962, Ser. No. 221,511
6 Claims. (Cl. 200—48)



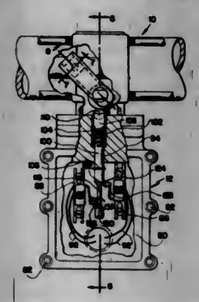
1. An apparatus for operating a group of high tension electrical switches of the movable insulator type comprising a vertical rotatable shaft having its upper end adapted to be connected to means for simultaneously opening and closing the group of high tension electric switches in response to rotation of said vertical shaft between first and second angular positions, a horizontally disposed operating arm fixedly secured to said rotatable shaft intermediate its ends, reversible means for moving said operating arm between first and second positions which correspond to the first and second angular positions for said vertical shaft, said moving means comprising a disk rotatably mounted in proximity to said operating arm, cam means rigidly secured to said rotatable disk for engaging said operating arm and moving said operating arm when said disk is rotated, and aligning means mounted on said disk positioned to contact said operating arm when said disk is rotated for moving said arm into proper initial alignment with said cam means.

3,189,699
VERY HIGH SPEED COMMUTATING SYSTEMS
Harold E. Harris, Jr., Old Bridge, and George J. Dubell, Hightstown, N.J., assignors to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Mar. 5, 1962, Ser. No. 177,328
19 Claims. (Cl. 200—31)



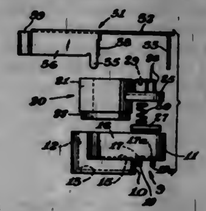
1. An electric switching unit comprising a hollow housing having on its outer periphery making and breaking switch means, said means including a first cantilever spring contact member, a second cantilever spring contact member, and a first cantilever spring bias member mounted adjacent to said second contact member for urging the engagement between said first and second contact members; and actuating means including yoke means movable in response to an actuating force, said yoke means normally disengaging said first and second contact members and freeing said second contact member for engagement with said first contact member upon being actuated by said force.

3,189,700
VALVE ACTUATOR AND SWITCH
Dennis L. Eidson, Windsor, Conn., assignor to Contromatics Corporation, Rockville, Conn., a corporation of Connecticut
Filed Dec. 6, 1962, Ser. No. 242,789
5 Claims. (Cl. 200—61.86)



1. An actuator for a valve of the type which is opened and closed by rotative movement, the said actuator comprising a housing supporting a cylinder, a piston reciprocable in the cylinder and having an extending rod, a shaft rotatably supported in the housing for engagement with such a valve to operate the same, a radially extending, elongated lever arm supported by and rotatable with said shaft, said lever arm being provided with a longitudinally extending channel therein, a member carried by said rod and engageable by said arm for longitudinal sliding movement within the channel responsive to piston movement to rotate the shaft whereby to open and close the valve, a switch assembly connected to the actuator housing and including a switch and a switch actuator, said switch actuator comprising a slidably disposed, elongated pin having a longitudinal axis extending transverse to the longitudinal axis of said shaft, and switch engaging means on one end portion of said pin for operating said switch responsive upon axial movement of said pin and cam means connected to said shaft engageable with the opposite end of said elongated pin for operating said switch actuator to open and close the switch in keeping with positions of the valve, the switch being operable to control remotely located means indicating positions of the valve, and means maintaining said pin in engagement with said cam.

3,189,701
ROTARY SWITCH ASSEMBLY
William L. Brown, Dearborn, Mich., assignor to Boyne Products, Inc., Boyne City, Mich., a corporation of Michigan
Filed Nov. 5, 1963, Ser. No. 321,640
27 Claims. (Cl. 200—61.88)



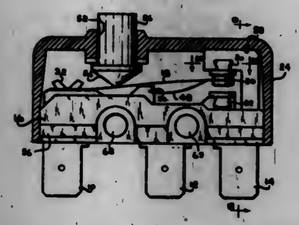
1. A switch construction comprising a first carrier member having an arcuate wall forming a socket therein and an electrical contact supporting portion adjacent said socket; a rotatable second carrier member having an arcuate wall forming a hub rotatably received in said socket and an electrical contact supporting portion secured to said wall and extending adjacent said portion of said first carrier member, the walls of said socket and said hub being concentric, each of said walls being interrupted to provide an opening therethrough, said openings being capable of being aligned with one another in one relative position of said carrier members; and mounting means secured to said first carrier member for mounting both of said members on a support.

3,189,702
PACKAGE AND METHOD OF MAKING
Thomas H. Wall, St. Paul, and Allen D. Pearson, Mahtomedi, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 218,212
7 Claims. (Cl. 206—63.2)



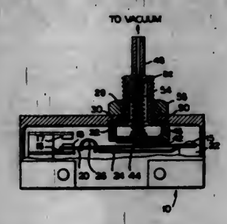
1. A package of aseptically clean contents enclosed between a first thin plastic film and a second thin plastic film at least as thick as said first film, hermetically sealed together along a continuous seal area openable by hand pulling without tearing of either of said films, said seal area including a central narrow uniform smooth-edged stripe of strongly radiation-absorptive thermally non-adherent ink on a surface of one of said films and said surface being autogenously sealed to the adjacent surface of the other of said films only along narrow fusion bands contiguous to the edges of said ink stripe, the width of said ink stripe being about one to about twenty times the thickness of the said first film.

3,189,703
SNAP-ACTION ELECTRICAL SWITCH HAVING PLANAR TERMINALS MOUNTED IN A COMMON PLANE
Howard R. Clagin, Park Ridge, and Joseph J. Kaleba, Roselle, Ill., assignors to Controls Company of America, Schiller Park, Ill., a corporation of Delaware
Continuation of application Ser. No. 816,189, May 27, 1959. This application Aug. 27, 1962, Ser. No. 219,790
6 Claims. (Cl. 200—67)



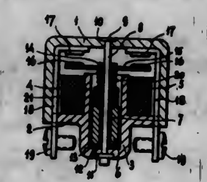
1. A snap action switch including a body, three planar terminal members molded in the body in a common plane, the first terminal member including a blade mount, the second and third terminal members each including a contact, and a blade mounted on the first terminal member and extending between the contacts on the second and third terminal members for making contact with one or the other of the contacts.

3,189,704
PNEUMATIC SWITCH ACTUATOR
Roland D. Beck, Anaheim, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Nov. 10, 1961, Ser. No. 151,475
3 Claims. (Cl. 200—83)



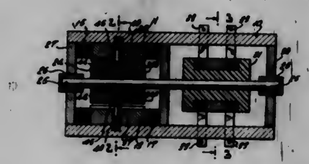
1. A pneumatic actuator for a switch mechanism comprising a switch casing, switching device in said casing, means defining an opening in said casing, a peripheral recess surrounding the opening, a cup-shaped flexible member having a bottom wall engaging said switching device for operating the same and having a rim portion disposed in said recess, an internal groove adjacent said rim portion, a tubular element having a flange portion disposed in said groove and a connecting portion extending through the opening, fastening means on said connecting portion engaging said casing whereby said flange portion seals said rim portion against said recess to define a pneumatic chamber in said flexible member, coil spring means mounted between said tubular element and said bottom wall to maintain said bottom wall in biased engagement with said switching device, and means on said tubular element for subjecting the pneumatic chamber to a pneumatic condition, said cup-shaped flexible member being flexed in response to the pneumatic condition whereby said bottom wall is moved to actuate said switching device.

3,189,705
RELAY WITH A CENTRAL, COAXIAL CORE MAGNETIZABLE WITH THE RELAY COIL CONDUCTOR
Wilhelm Johan Geeuwdam, Dordrecht, Netherlands, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 9, 1961, Ser. No. 108,904
9 Claims. (Cl. 200—87)



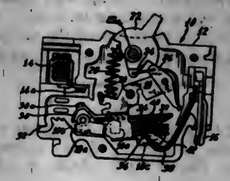
1. A bridging contact plunger type subassembly comprising stem means formed of electrically insulating material; a magnetic armature slidably mounted on said stem means; a bridging contact member mounted on said stem means adjacent one end thereof for rotation and limited oscillatory movement with respect to said stem means; spring means telescopically disposed about said stem means intermediate said armature and bridging contact member and a tubular sleeve member telescopically disposed about and frictionally engaging said spring means over a part of its length for at least partially damping the spring action of said spring means.

3,189,706
ROTATABLE LATCHING RELAY
Norman E. Helmstetter, Pine Brook, and Anthony Scala, Livingston, N.J., assignors to Tung-Sol Electric Inc., a corporation of Delaware
Filed Apr. 3, 1963, Ser. No. 270,343
6 Claims. (Cl. 200—87)



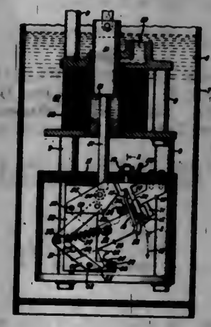
1. A latching relay comprising, a plurality of pole pieces having inner surfaces arranged around a central axial position, said pole pieces surrounded by electrical windings with terminals for connection to an operating source of electrical power, a rockable cylindrical armature in axial alignment with the pole pieces, the surface of the armature positioned adjacent to the inner surfaces of the pole pieces, selected portions of the armature made of ferromagnetic material for rocking the armature to either one of two positions when magnetic flux is applied to selected pole pieces, said armature having a plurality of slots formed in its outer surface, a rotatable contact maker coupled to the armature for opening and closing electrical contacts, and at least one mechanical latch mounted adjacent to a pole piece and resiliently stressed to move toward the armature for engaging either one of two slots, said latch formed with a ferromagnetic portion for actuation by the magnetic flux in the adjacent pole pieces.

3,189,707
COIL FORM ADAPTED FOR USE IN MAGNETIC-TRIP CIRCUIT BREAKERS
Alexander R. Nerden, New York, N.Y., and Feliks Tomczak, Newark, N.J., assignors to Federal Pacific Electric Company, a corporation of Delaware
Filed Apr. 3, 1962, Ser. No. 184,902
12 Claims. (Cl. 200—88)



1. In a circuit breaker including a release mechanism having a movable bimetal latch of magnetic metal, the combination of a coil form and a coil thereon spaced from said latch, said latch being magnetically attractable toward said coil to operate said release mechanism, a fixed terminal, means supporting said coil and said bimetal for operation as a unit in closing operation of the circuit breaker so that said coil moves relative to said terminal, said coil being formed of bare conductive braid extending continuously from said bimetal around said coil form and to said terminal, said coil form having ribs separating successive convolutions of the coil from each other and said ribs having projections overlying said convolutions for preventing the accidental unwinding thereof, said coil form having an endwise projection disposed lateral of said core and effective to insulate said conductor from a corresponding portion of said core.

3,189,708
ELECTRIC CIRCUIT RECLOSER
Milton L. Heintz, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York
Filed Mar. 28, 1963, Ser. No. 268,737
3 Claims. (Cl. 200—89)



1. A circuit recloser comprising:
(a) a first contact,
(b) a second contact movable into and out of engagement with said first contact,
(c) an arm coupled to said second contact and mounted for pivotal movement about a fixed axis,
(d) electromagnetic means comprising an actuating part movable from a normal position to a displaced position in response to energization of said electromagnetic means by overcurrents,

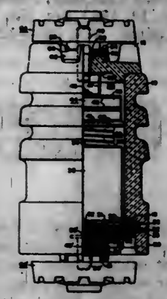
(e) means for moving said contact-coupled arm from a contact-closed position into a fully-open position in response to motion of said actuating part from its normal to its displaced position,
(f) means for moving said contact-coupled arm from its fully-open position to its contact-closed position in response to return of said actuating part of said normal position,
(g) said latter means comprising an overcenter spring coupled to said arm and biasing said arm in a contact-closing direction when its line of action is on one side of said axis and biasing said arm in a contact-opening direction when its line of action is on the other side of said axis,
(h) said overcenter spring being located on said other side of said axis when the second contact is in fully-open position and being shifted to said one side when said actuating member moves through an intermediate point in a closing stroke.
(i) latch means for holding said arm in approximately its fully-open position and effective to maintain said arm in said approximately fully-open position while said overcenter spring is on said one side of said axis during a closing operation,
(j) and means responsive to return of said actuating member toward its normal position for releasing said latch means when said actuating member has traveled a substantial distance beyond said intermediate point and has reached a point closely adjacent its normal position,
(k) the release of said latch means being postponed sufficiently during a closing operation to allow said actuating part to reach substantially its normal position before said contacts engage during closing.

3,189,709
SWITCHING DEVICE
Walter T. Ackermann, Millington, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,391
11 Claims. (Cl. 200—112)



1. A switching device comprising
(a) a pair of parallel, looped conductors having inner and outer peripheries,
(b) insulating means extending between said peripheries of said conductors and forming an endless, tubular chamber therewith,
(c) a movable quantity of mercury disposed in said chamber and adapted to engage said pair of conductors,
(d) means to apply a voltage between said conductors to cause current to flow through said mercury,
(e) means to apply a magnetic field in said chamber, said magnetic field having a direction transverse to the direction of said current, and
(f) at least one electrical contact extending to said chamber and adapted to be engaged by said mercury during its movement, whereby an electrical connection can be made between at least one of said conductors and said contact.

3,189,710
TERMINAL CONNECTOR
Robert J. Lawrence, Bean Blossom Township, Monroe County, and Charles H. Carothers, Bloomington Township, Monroe County, Ind., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 22, 1962, Ser. No. 181,686
4 Claims. (Cl. 200—115)



4. In a lightning arrester having a terminal stud for securing an electrical conductor thereto; the combination comprising a threaded terminal stud projecting from an insulated housing, said housing having a weakened annular portion adapted to break away from the housing to separate the terminal stud from the arrester under certain abnormal conditions, a hand wheel connector for securing a conductor to said stud, said hand wheel connector including a disc of insulating material having a threaded recess for receiving said stud, said disc having a diameter of a size effective to apply sufficient torque by hand to securely retain said conductor but of a size insufficient to apply sufficient torque by hand to fracture said annular weakened portion.

3,189,711
CURRENT LIMITING FUSE
Sidney R. Smith, Jr., Stockbridge, Mass., assignor to General Electric Company, a corporation of New York
Filed July 28, 1961, Ser. No. 127,608
4 Claims. (Cl. 200—120)



4. A current limiting fuse comprising an extruded fuse body, a plurality of parallel compartments formed in said body and extending therethrough, cushion disks mounted on opposite ends of said body, metal disks mounted on opposite ends of said body holding said cushion disks against said body, openings in said cushion disks and said metal disks, said openings being aligned with said compartments, a plurality of fusible wires, each of said fusible wires being threaded through one of said compartments and through said disks, opposite ends of said fusible wires being connected together exteriorly of said metal disks, metal end caps for said fuse body, said end caps being secured to opposite ends of said body and providing electrical contact with said connected opposite ends of

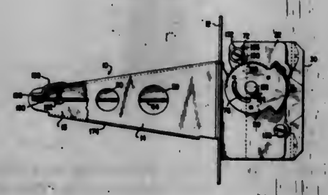
said fusible wires, an inert granular material filling each of said compartments, said cushion disks serving to retain said inert granular material in each of said compartments.

3,189,712
HIGH INTERRUPTING CAPACITY FUSE
Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Feb. 18, 1963, Ser. No. 259,019
9 Claims. (Cl. 200—120)



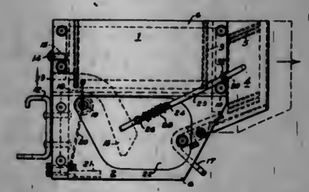
1. An electric fuse comprising in combination:
(a) a tubular casing of cellulosic insulating material;
(b) a pulverulent silicious high heat conductivity arc-quenching filler within said casing;
(c) a pair of metallic terminal elements closing the ends of said casing;
(d) a pair of fuse-link-severing elements of a relatively low fusing point metal; and
(e) a pair of ribbon fuse links of a relatively high fusing point metal arranged inside said casing, submersed in said filler, conductively interconnecting said pair of terminal elements and each supporting one of said pair of fuse-link-severing elements, each of said pair of link-severing elements extending transversely across one of said pair of fuse links, said pair of fuse links being bent to form a pair of eccentric substantially congruent substantially tubular structures extending in a direction substantially longitudinally of said casing, and the spacing between the axes of said pair of tubular structures being substantially less than the spacing between each of said axes and the inner surface of said casing.

3,189,713
DUAL ELEMENT THERMOSTATIC CONTROL HAVING CALIBRATION MEANS
Hollis Lee Randolph, Lakewood, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Feb. 5, 1962, Ser. No. 171,210
9 Claims. (Cl. 200—138)



7. A thermostatic control device comprising,
a frame,
a control element mounted on the frame having a movable operating plunger,
an actuating lever mounted on the frame pivotally movable for actuating the operating plunger,
a bimetal element having one end secured to the end of the frame remote from the actuating lever and extending in the direction of and terminating at a point spaced from said actuating lever,
a transmitting lever pivotally mounted on the frame intermediate its ends between said actuating lever and said bimetal element,
said transmitting lever having one end disposed in the path of the actuating lever for actuating the operating plunger and the other end pivotally connected to the free end of said bimetal element,
said bimetal element deflecting in response to temperature changes to cause rotation of the transmitting lever about its pivotal mounting to actuate the operating plunger.

3,189,714
CIRCUIT BREAKER WITH SLIDABLY REMOVABLE ARC EXTINCTION CHAMBER
Roger Bonnard and Gaston Orion, both of Grenoble, France, assignors to Etablissements Merlin & Gerin, Grenoble, France
Filed Apr. 17, 1961, Ser. No. 103,453
Claims priority, application France, Apr. 20, 1960, 4,238
4 Claims. (Cl. 200—144)

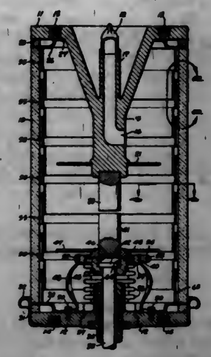


1. A circuit breaker including a fixed and a movable contact, said breaker having two superposed assemblies in horizontal rectilinear sliding relation with one another, the uppermost assembly including a removable arc extinction structure comprising two insulating sidewalls and a plurality of plates connected between said sidewalls, the lowermost assembly having mounted therein at least one of said contacts and including two insulating sidewalls respectively parallel to said first-mentioned pair of sidewalls, rabbeted edges on cooperating sidewalls supporting and guiding said first-mentioned sidewalls for horizontal removal of said arc extinction structure, and means for releasably securing the uppermost assembly upon the lowermost assembly.

3,189,715
INTERNAL SHIELD AND SEAL STRUCTURE FOR VACUUM SEALED SWITCH ENVELOPE
Jo Emmett Jennings, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,125
6 Claims. (Cl. 200—144)

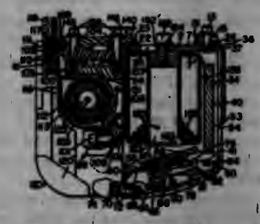
1. In a vacuum switch that includes a vacuumized envelope having a pair of opposite endwalls and a cylindrical sidewall between said endwalls and a pair of coaxial contacts extending into said envelope from said opposite endwalls, shielding means for shielding said sidewall from particles and vapor diffused from said contacts comprising:
a pair of cylindrical shielding members having overlapping portions concentric with and inwardly of said sidewall, and
a plurality of insulating elements interposed between said sidewall and said overlapping portions of said shielding members at circumferentially spaced points around the periphery of the latter for supporting said members relative to said sidewall,

said insulating elements being press-fitted between said sidewall and said members whereby the latter are



held in a predetermined position relative to said sidewall by the inherent resiliency of said members.

3,189,716
ELECTRICAL CONTACTOR
Frank R. Hugus, Franklin, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 15, 1961, Ser. No. 138,519
10 Claims. (Cl. 200—147)



1. An electrical contactor comprising, a support assembly having a plate portion, an elongated open ended slot extending inwardly from one side of said plate portion, an arc chute assembly having an outer surface with a boss portion extending outwardly therefrom said boss being closely slidably received within said slot with said outer surface of said chute assembly abuttingly engaging one side of said plate portion, a clamping plate abuttingly engaging the other side of said plate portion, releasable means having a portion thereof extending freely through said clamping plate and said slot into engagement with said chute assembly to secure said chute assembly to said mounting plate, an operating coil supported by said support assembly, and cooperable contact means supported by said assemblies, respectively.

3,189,717
COMPRESSED-GAS CIRCUIT INTERRUPTER HAVING COOPERABLE ARCING AND DISCONNECTING CONTACTS WITH DOWNSTREAM BLAST VALVE
Shotaro Tominaga, Kobe, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan, a company of Japan
Filed Mar. 24, 1961, Ser. No. 98,142
5 Claims. (Cl. 200—148)

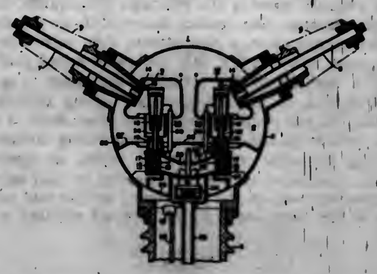
1. A compressed-gas circuit interrupter including a pressurized tank having an exhausting terminal bushing extending therewithin and at least partially supporting an arc-extinguishing assemblage, said terminal bushing having a hollow terminal stud through which compressed gas may exhaust out of the tank, said arc-extinguishing assemblage including a movable arcing contact with a nozzle exhaust opening therethrough cooperable with a movable disconnecting contact to establish an arc during the opening operation, a downstream blast valve disposed at the inner extremity of said hollow terminal stud and having a first piston for actuating the same, a second piston secured to the nozzle-shaped arcing contact for actuating the same upon opening the blast valve, a third piston secured to the movable disconnecting contact for actuating the same and operable within an operating cylinder, overcenter spring means acting on said movable disconnecting contact and functioning to bias said contact either in the closed or fully-open-circuit position, a perforated casing structure surrounding said contacts and providing free communication between the pressurized tank and the region immediately adjacent the contacts, pneumatic means for effecting opening and closing of said contacts, said pneumatic means operable first to reduce the pressure back of the first piston to open the blast valve to thereby reduce the pressure in back of said second piston to open the movable arcing contact, said pneumatic means having a delay device for delaying the reduction of pressure to one side of the third piston within the operating cylinder, whereby a delayed opening of the movable disconnecting contact is obtained, and means for equalizing the pressure on both sides of the third piston at the end of both the opening and closing operations to thereby speed up subsequent circuit-interrupter operations.



3,189,718
COMPRESSED-GAS CIRCUIT INTERRUPTER WITH HYDRAULIC OPERATING MEANS EXTENDING UPWARDLY THROUGH SUPPORTING INSULATING COLUMN MEANS
Shotaro Tominaga, Kobe, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan, a company of Japan
Filed Aug. 15, 1962, Ser. No. 217,038
Claims priority, application Japan, Aug. 16, 1961, 36/29,941
7 Claims. (Cl. 200—148)

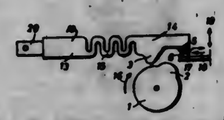
1. A compressed-gas circuit interrupter including a relatively low-pressure metallic exhaust tank disposed at high potential, hollow insulating supporting column means extending up in the air and supporting said high-potential metallic exhaust tank, a pair of terminal bushings extending into said metallic exhaust tank and carrying conducting structures at their interior ends, a high-pressure storage tank disposed at high-potential within said tank, a pair of serially-related gas-blast arc-extinguishing units disposed within the metallic exhaust tank, a pair of serially-

related movable contact means for conductively bridging said conducting structures, and hydraulic means extending



upwardly through said column means for actuating said movable contact means.

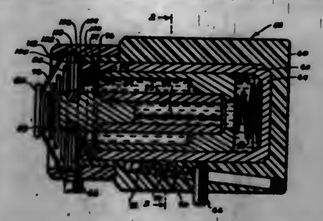
3,189,719
FLAT CONTACTING PIECE FOR SWITCHING
Walter Holzer, Meersburg (Bodensee), Germany
Filed Oct. 30, 1961, Ser. No. 148,538
Claims priority, application Germany, Oct. 29, 1960, H 40,813; June 27, 1961, H 42,965
9 Claims. (Cl. 200—166)



1. In a cam operated switching device, the combination comprising; a stationary contact; a contact member having a first flat portion arrested in a stationary support, having a second flat portion carrying a contact cooperating for contact making and breaking with said stationary contact in first and second directions being oppositely orientated to each other, said contact member further having a resilient meandered portion integral with and interconnecting said first and second portion, said meandered portion having flat serpentine-portions; means on said contact member defining an actuating surface facing a direction coinciding with said first direction; and a cam bodily movable in the second direction adjacent said contact member engaging said surface and urging it into said second direction, said cam moving said actuating surface in a direction substantially perpendicular to said first and second directions when said cam actuates said contact on said contact member by engaging said actuating surface.

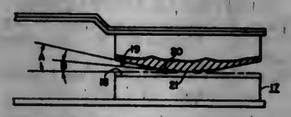
3,189,720
ELECTRIC CONTROL SWITCH WITH SELF LOCKING CONTACT
George Winteles, Carversville, Pa.
Filed Mar. 2, 1962, Ser. No. 176,939
11 Claims. (Cl. 200—166)

1. An electric switch including a first contact, a support for the first contact including a piston, a cylinder within which the piston slides with reciprocating movement within a limited range, end walls closing both ends of the cylinder and forming chambers on both sides of the piston for a confined fluid, means urging the piston support toward one end of its range of travel, a second contact movable toward and from the first contact and into position to displace the first contact against the pressure of the means urging the movable support toward one end of its range of travel, other means urging the second contact away from the first contact, a conductor permanently connected in the electric circuit with the first



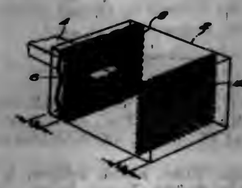
contact, and another conductor permanently connected in the electric circuit with the second contact.

3,189,721
THERMOSTAT CONTACT HAVING A DUAL ANNULAR INWARDLY SLOPED CONTACTING SURFACE THEREON
Paul R. Lee, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1963, Ser. No. 272,700
7 Claims. (Cl. 200—166)



1. In an electrical control, a pair of cooperating contacts
one of said contacts having a planar contact surface
the contact surface of the other of said contacts comprising an outer annular surface sloped inwardly toward said planar surface,
and an inner surface disposed adjacent the inner circumference of said outer surface and sloped inwardly toward said planar surface,
said outer surface forming an angle with said planar surface which is greater than the angle formed by said inner surface and said planar surface,
and the inner portion of said inner surface contacting said planar surface when said pair of contacts are in the closed position.

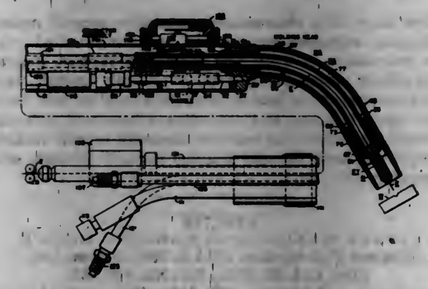
3,189,722
MICROWAVE OVEN APPARATUS
Karl Fritz, Freiburg im Breisgau, Germany, assignor to MIWAG Mikrowellen Aktien Gesellschaft, a corporation of the Swiss Confederation
Filed Sept. 21, 1962, Ser. No. 225,225
2 Claims. (Cl. 219—10.55)



1. In a microwave oven of the type having:
an enclosure for confining microwave energy, the enclosure having a pair of oppositely disposed wave energy reflecting walls;
a source of microwave energy;
apparatus for coupling energy from the source to the enclosure;

and a pair of polarizing grids in the enclosure, each grid reflecting wave energy polarized in a first plane and being transparent to wave energy polarized in a second plane perpendicular to the first plane; the grids being disposed at right angles to one another, the grids being spaced from the reflecting walls to cause the establishment in the enclosure of at least two, non-coincident, similar, standing wave patterns; the improvement comprising:
an antenna forming a part of the apparatus for coupling energy from the source to the enclosure, the antenna being of the type radiating linearly polarized waves;
means for rotating the antenna during operation of the oven;
and means for causing radiation from the antenna to be directed toward the polarizing grids.

3,189,723
ARC WELDING GUN
Floyd E. Adamson, Eggertsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1962, Ser. No. 230,975
8 Claims. (Cl. 219—130)



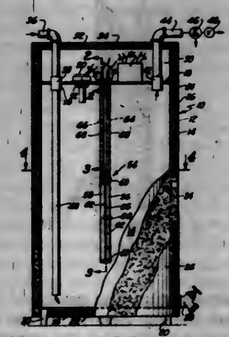
1. As an article of manufacture a consumable electrode guide-tube assembly for an arc welding gun including a tube of a highly electrically conducting material such as copper having an internal liner of lower electrically conducting wear-resistant material such as stainless steel, the thickness of said tube being substantially greater than the thickness of said liner.

3,189,724
ELECTRICAL WELDING APPARATUS
Hans Ulli, Zurich, Switzerland, assignor to Verwaltungsgesellschaft der Werkzeugmaschinenfabrik Oerlikon, Zurich, Switzerland, a Swiss firm
Filed Apr. 22, 1963, Ser. No. 274,464
Claims priority, application Switzerland, Apr. 27, 1962, 5,078/62
10 Claims. (Cl. 219—131)



1. Electric arc welding apparatus comprising, in combinatien, a source of A.C. potential; means connecting a workpiece to one terminal of said source; a transformer having a primary winding and a secondary winding; reactor means including a power winding and a control winding; a series welding circuit including the other terminal of said source, said primary winding, said power-winding, and an electrode operatively associated with the workpiece; an indicating meter connected across said secondary winding; a source of D.C. potential and a first adjustable impedance connected in series with said control winding to adjust the current flow therein to control the impedance of said power winding to control the current in said series welding circuit; a series control circuit, including a second adjustable impedance and a switch, connected in parallel with said meter; switch means connected across said electrode and the workpiece and effective, when closed, to short circuit said A.C. source; means interconnecting said switch and said switch means for conjoint closure; and means interconnecting said adjustable impedance for conjoint adjustment; said second adjustable impedance, upon closure of said switch and said switch means, shunting, around said meter, a current having a value substantially equal to the difference between the short circuit current through said switch means, when closed, and the actual welding current between said electrode and the workpiece, when said switch means is open, as adjusted by said first impedance; whereby upon closure of said switch means, prior to the start of welding, said meter will indicate the actual welding current as adjusted by said first impedance.

3,189,725
ELECTRIC WATER HEATING AND STORAGE DEVICE
Karl R. Anderson, 3536 Locksley Drive, Pasadena, Calif., and Ronald S. Fischer, 9702 E. Calista St., Arcadia, Calif.
Filed Nov. 6, 1963, Ser. No. 321,901
1 Claim. (Cl. 219—293)



A hot water heating and storage device, said hot water heating and storage device comprising:
a vessel adapted to contain water during heating and storage thereof, water inlet and water outlet means connected to said vessel to respectively permit the entry of water into said vessel and to permit the withdrawal of hot water from said vessel;
first and second spaced electrodes mounted within said vessel for the heating of water therein, said first and second electrodes being made of carbon, said first and second electrodes each being of rectangular configuration defined by side, top and bottom edges of said electrodes, said electrodes being of substantially the same size and having faces facing each other;
spacers mounted between said faces of said electrodes, said spacers being of high dielectric strength and extending substantially continuously along said side edges and along said top edges of said electrodes, the opening defined by said bottom edges of said electrodes being unimpeded, at least one opening in each of said spacers between said side edges and between said top edges of said electrodes so as to substantially limit circulation of water past said faces of said electrodes so that water between said electrodes is heated to a temperature substantially higher than the

temperature in the remainder of said vessel but below the boiling point of the water;

mounting means for mounting said first and second electrodes within said vessel, said mounting means being electrically insulated so that said first and second electrodes are insulated with respect to said vessel, said mounting means securing said electrodes within said vessel so that said faces extend in a substantially vertical direction within said vessel so that said top edge of said electrodes are positioned upward within said vessel; and

means adapted to supply an electric potential to said electrodes so as to be adapted to cause electric conductivity through water between said electrodes with the resultant heating thereof whereby water between the electrodes is heated substantially independently of the temperature of the remaining water within said vessel.

3,189,726
HIGH TEMPERATURE HEAT SOURCE
Alex Vary, North Olmsted, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 17, 1963, Ser. No. 252,259
2 Claims. (Cl. 219—347)
(Granted under Title 35, U.S. Code (1952), sec. 266)



2. In a high temperature heat source of the type having an apertured heating element curved to a helical configuration about a center post, the improvement comprising

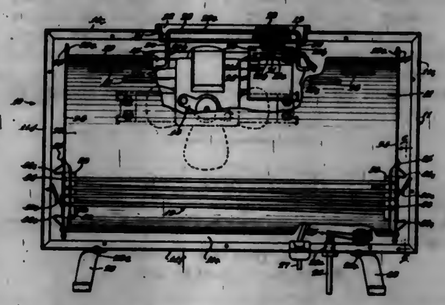
rigid members extending radially outward from the center post toward the heating element,

each of said rigid members having an outwardly directed tip portion extending through one of the apertures in the heating element for providing restraint against axial and circumferential displacement of the heating element while accommodating thermal expansion of the same by enabling the heating element to slide along said tip portion, and

each of said rigid members having a shoulder portion adjacent the innermost end of said tip portion for engaging the heating element to limit the sliding movement thereof toward the center post.

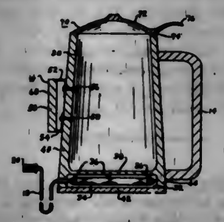
3,189,727
ELECTRIC SPACE HEATER
Ivar Jepson, Oak Park, James R. Cochrane, Chicago, and Robert D. Grahn, Hinsdale, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 27, 1961, Ser. No. 119,918
12 Claims. (Cl. 219—377)

8. A portable electric heater comprising an open front housing including a pair of spaced end walls, a reflector assembly in said housing for reflecting radiant energy through said open front, air passage means through said housing including openings in said reflector assembly for convection heating, said reflector assembly including a pair of spaced end portions, each of the said end portions being closely positioned to a respective one of said end walls, means defining an opening in each of said end portions, a pair of insulating support means one disposed in each of said openings, a pair of spring means one for each of said end portions, each spring



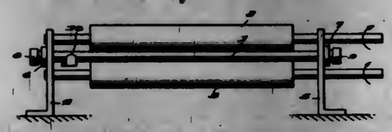
means supporting its associated insulating support means within its associated opening and permitting limited relative movement between said insulating support means, said spring means being disposed entirely outside said end portions, and a heating element wound around both said support means and extending across said reflector assembly whereby said reflector assembly reflects radiant energy produced by said heating element through said open front.

3,189,728
COFFEE MAKING AND WARMING DEVICE
Herbert P. Schneider, 1111 S. 7th, Goshen, Ind.
Filed Oct. 28, 1963, Ser. No. 319,483
2 Claims. (Cl. 219—438)



1. A device for making and warming coffee and tea in an automobile, comprising a receptacle having walls forming an upper water receiving chamber and a lower compartment, a partition between said chamber and said compartment in fluid-tight relation with the walls, a coiled electrical heating element in said lower compartment, an extension cord connected to said element and extending through the wall of said compartment near the bottom of said receptacle, a plug on the free end of said cord for plugging into the cigarette lighter outlet of an automobile, a bottom plate attached to the lower edge of the walls forming said compartment, a permanent magnet with a board flat outer face positioned along the side wall of said chamber directly above the point at which said cord extends through the wall, a fixture securing said magnet rigidly to the side wall of the chamber with its outer face outwardly directed and in substantially vertical position, a handle of U-shaped configuration positioned on said receptacle wall substantially diametrically opposite to said magnet, and a closure for said chamber pivoted on the receptacle wall directly above said handle and having a lever projecting outwardly to a position above said handle for pivoting said closure, whereby the receptacle can be manipulated by one hand to place the receptacle on and remove it from a vertical support and to open and close the closure.

3,189,729
PROCESS ROLL SYSTEM
Elmer Henry Luecbrink, New Shrewsbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,815
6 Claims. (Cl. 219—469)



1. A machine for heating sheets comprising

(a) a sealed hollow roll that is freely rotatable along its longitudinal axis, said roll

(1) containing means for generating infrared radiation,

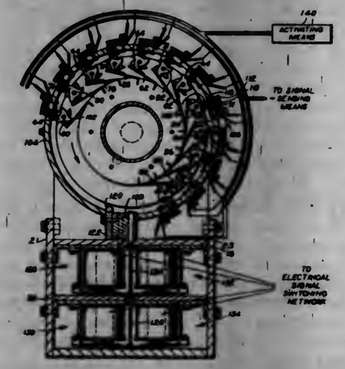
(2) containing an inert gas, and

(3) having on its surface means for absorbing infrared radiation; and

(b) means for controlling the amount of infrared radiation generated in the roll in response to the temperature of the surface of the roll; and

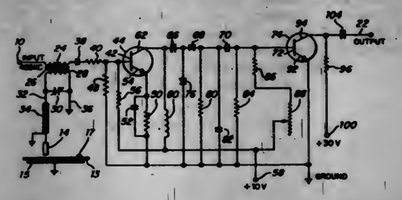
(c) driven rolls adjacent to said sealed roll having compressible surface in frictional engagement with the surface of the sealed roll for rotating said latter roll.

3,189,730
MECHANICAL STORAGE DEVICE FOR BUSINESS MACHINE CARD DATA
Ward Leathers, Stamford, Conn., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 29, 1960, Ser. No. 25,629
9 Claims. (Cl. 235—61.11)



2. A data storage device comprising a rotatable drum, a plurality of settable members each capable of assuming a first or a second state, said settable members being supported on the surface of said rotatable drum in a plurality of columns and rows, drive means for driving said rotatable drum in cycles of rotation, a row of elements fixedly positioned relative to said rotatable drum to contact said settable members during a rotational cycle of said drum to set said settable members to the first state, a plurality of first setting elements movable into and out of the path of alternate rows of said settable members during rotation of said drum, a plurality of second setting elements movable into and out of the path of the remaining alternate rows of said settable members during rotation of said drum, means for selectively actuating said first and second setting elements to move into the path of selected settable members to set same to the second state during the rotation of said drum, and means for sensing selectively the states of said settable members.

3,189,731
SYSTEM FOR SENSING
Charles P. Bowman, Dayton, Ohio, assignor to The Standard Register Company, a corporation of Ohio
Filed May 18, 1961, Ser. No. 111,066
2 Claims. (Cl. 235—61.11)



2. In combination, a sensing probe, a support plate, the support plate being connected to ground, a transformer having a first winding and a second winding, the first winding of the transformer having one terminal connected to ground and another terminal connected to the probe, an adjustable capacitor connected across the first winding of the transformer, a first transistor, a second transistor, a source of constant frequency energy, means providing a substantially constant current between the source of energy and the first transistor, said means including the second winding of the transformer so that the value of current flow through said means is adjusted by the value of the capacitance across the first winding of the transformer, the value of the capacitance across the first winding being dependent upon the value of the capacitance of adjustable capacitor and the value of the capacitance between the sensing probe and the support plate, connector means connecting the output of the first transistor to the second transistor, said connector means including pulse transmission means, and output means connected to the second transistor.

3,189,732
MEANS AND METHOD FOR PREPARING RECORD BEARING MEDIA
Edward W. C. Russell, 2601 Foxhall Road NW., Washington 7, D.C.
Filed May 2, 1962, Ser. No. 191,922
10 Claims. (Cl. 235—61.12)

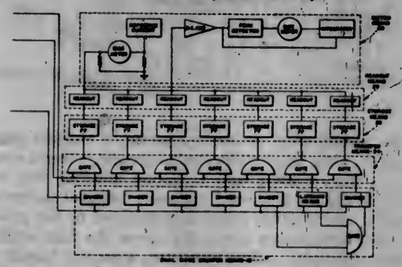


2. The method of making a magnetic record of a predetermined code pattern, comprising establishing said pattern as a pattern of projections on a carrier, providing a record sheet having at least a surface coating of magnetic material, and pressing said carrier and said sheet

together with a limited scuffing motion to locally displace coating material in a facsimile of said pattern.

4. Code recording apparatus for use with a coded graving die, comprising a support, guide means on said support for receiving and positioning a die in surface-defacing position relative to a sensitive record material carried by said support, pressure-applying means movable on said support for urging a die into facewise contact with such record material, and means automatically mechanically interconnected with said pressure applying means for feeding such record material in timed relation to the movements of said pressure-applying means.

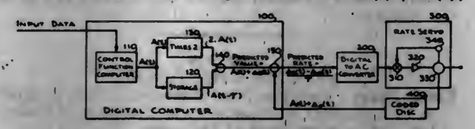
3,189,733
TELEGRAPH SIGNAL BIAS AND DISTORTION METER
William D. Cannon, Metuchen, N.J., and Domenick J. Bertuccio, Jamaica, N.Y., assignors to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed May 8, 1962, Ser. No. 193,201
4 Claims. (Cl. 235—92)



1. An indicating device comprising an oscillator means to generate clock pulse signals, switching means coupled to receive line pulse signals, gate means urged selectively by said switching means to pass clock pulse signals during the occurrence of a line pulse signal to be measured, dual mode counter means fed by said gate means to count clock pulse signals passed by said gate means, storage means to hold the count present in said dual mode counter means, transfer means interposed between said storage means and said dual mode counter means, transfer pulse generator means fed by said switching means coupled to urge said transfer means to feed the information in the dual mode counter means to the storage means, readout means fed by said storage means to transform the information present in said storage means to an analog potential, meter means fed by said readout means to indicate distortion present in the line pulse signal measured, and reset pulse generator means fed by said transfer pulse generator means coupled to urge said dual mode counter means to its zero state.

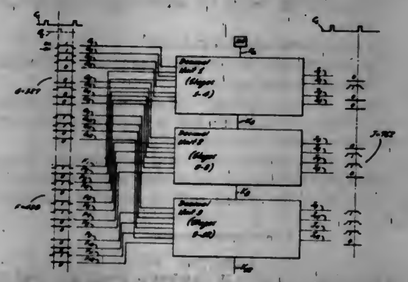
3,189,734
CONTROL SYSTEM WITH RATE PREDICTION
William E. Frady, Jr., Palos Verdes Estates, Elvin L. Woods, Torrance, and Robert M. MacIntyre, Gardena, Calif., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 4, 1958, Ser. No. 752,751
20 Claims. (Cl. 235—154)

1. A digital control system for effecting analogue variations in value as a predetermined function of digital input data, said system comprising: first means for receiving signals corresponding to said input data and computing previous and present desired analogue values representable as signal $A(t-\tau)$ and $A(t)$, respectively; second means responsive to signals $A(t-\tau)$ and $A(t)$, for producing a signal P_r representing the predicted rate of change in analogue value for the interval t to $t+\tau$; and third means responsive to signal P_r for changing the present analogue value representable as $A(t)+\Delta o(t)$,



where $\Delta o(t)$ represents the deviation between the present desired analogue value $A(t)$ and the actual analogue value, to approach or equal the desired next analogue value representable as $A(t+\tau)$.

3,189,735
PARALLEL CODED DIGIT ADDER
Robert O. Gunderson, Torrance, and Tom T. Tang, Los Angeles, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 4, 1961, Ser. No. 102,735
9 Claims. (Cl. 235—169)



5. A circuit for adding a first number comprised of a plurality of binary coded decimal digits to a second number comprised of a plurality of binary coded decimal digits whereby both the decimal and binary digits are added in parallel, said circuit comprising: a plurality of simultaneously operable adder units, there being one adder unit for each respective pair of binary coded decimal digits to be added, means for applying corresponding pairs of the binary coded decimal digits which are to be added to respective ones of said adder units, means for converting the binary coded decimal digits of one of said numbers to "excess 6" binary coded decimal form prior to feeding to said adder units, each adder unit comprising means for performing parallel binary addition on the binary digits of the respective pair of binary coded decimal digits applied thereto taking into account any carry signal applied thereto, means for applying any carry signal resulting from the binary addition in an adder unit to the next succeeding adder unit, and selectively operable means to which the resulting outputs from said adder units are fed in parallel for selective reconversion of the "excess 6" sum represented thereby, said reconversion means being responsive to carries produced by said adder units.

3,189,736
LIGHTING FIXTURE
Walter M. Waldbauer, North Olmsted, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 21, 1963, Ser. No. 281,916
7 Claims. (Cl. 240—3)

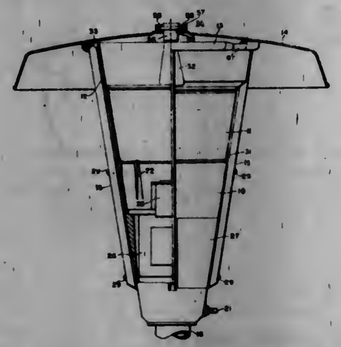
1. A luminaire for vertical mounting on a support, said luminaire comprising:

(a) a hollow housing terminating in upper and lower ends, connecting means disposed proximate the lower end of said housing for affixing said housing to said support, and refractor holding means proximate the upper end of said housing;

(b) a plurality of support means affixed to said housing and extending upwardly from said housing;

(c) a hollow refractor member terminating in upper and lower ends, the lower end of said refractor member resting on said refractor holding means, the outer surface of said refractor member interfitting between said plurality of upwardly extending support means to prevent substantial lateral movement of said refractor member;

(d) a hollow light diffuser terminating in upper and lower ends and supported at its lower end by the upper end of said refractor member, the outer surface



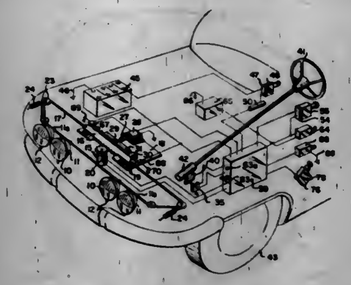
of said diffuser interfitting between said plurality of upwardly extending support means to prevent substantial lateral movement of said diffuser;

(e) a cover supporting means affixed to the upper ends of said upwardly extending support means and having an opening therein greater than the outside diameters of said diffuser and said refractor member; and

(f) a cover hingedly affixed to said cover supporting means and having a closed and an open position, when in said closed position said cover acting to block any substantial upward movement of said diffuser and refractor member, when said cover is in said open position said diffuser and said refractor member being readily removable from said luminaire by lifting them upwards through said cover supporting means.

3,189,737
HEADLIGHT POSITIONING APPARATUS
Merritt B. Lawless, R.D. 7, Rosenhayn Ave., Bridgeton, N.J.
Filed Mar. 26, 1963, Ser. No. 270,489
11 Claims. (Cl. 240—8.25)

1. In combination with a vehicle including a directional controlling apparatus, an electrical power source and at least one headlight mounted for rotational displacement; an automatic headlight positioning apparatus comprising a positioning mechanism mechanically coupled to said headlight for selective rotational displacement thereof, said positioning mechanism including electrically operated displacing means proportionally responsive to an applied voltage and counterbalancing means for limiting displacement of said headlight, and circuit means interconnecting said power source with said displacing means and including voltage control means for varying the voltage applied to said displacing means, said voltage control means being responsive to said vehicle directional controlling apparatus, an electrical relay device having a coil and a set of normally open contacts serially connected between said power source and said voltage control means for the selective operation thereof, and a selectively operable grounding system for connecting the coil of said relay device to said power source for the energization



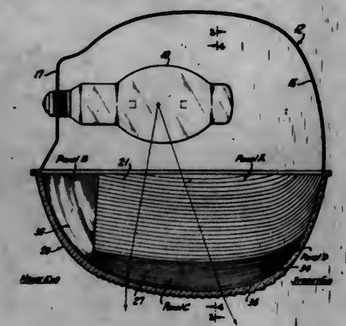
thereof and closing of the respective contacts, said grounding system including a two-position switch member having an open position and serially connected with a contactor having a set of normally closed contacts, said contactor being mechanically coupled to a speed-responsive member of said vehicle and operable to open said contacts when the vehicle is being operated in excess of a predetermined speed.

3,189,738
SIGNAL LAMP
David J. Dover, Chicago, Ill., assignor to Doray Lamp Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1962, Ser. No. 232,670
11 Claims. (Cl. 240—11.2)



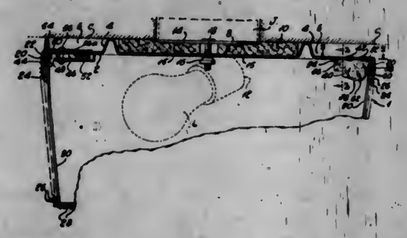
1. A signal lamp comprising a frame, a lens mounted on said frame, and means for supporting an electric light source within the frame in a manner to transmit light therefrom through said lens, said frame being a resilient member that integrally includes resilient peripheral projections that extend axially outwardly beyond the lens for supporting the lamp on a surface with the lens presented toward but spaced from said surface, the projections being circumferentially spaced about the lens and being relatively narrow as compared to the circumference of the lens.

3,189,739
STREET LIGHTING REFRACTOR
Robert G. McPhail, deceased, late of Newark, Ohio, by The Park National Bank of Newark, Ohio, executor, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of applications Ser. No. 690,093, Oct. 14, 1957, and Ser. No. 9,672, Mar. 3, 1960. This application Feb. 18, 1963, Ser. No. 259,781
20 Claims. (Cl. 240—25)



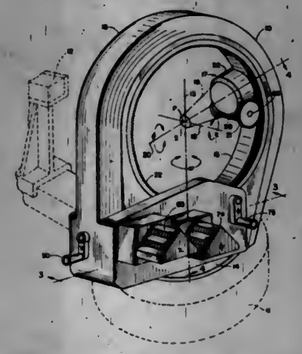
17. In a street lighting refractor for use with a large light source mounted high above one side of the street within a downwardly opened reflector which reflects light from the light source into downwardly and forwardly main reflected beams, said refractor being ovate and externally convex below its mouth and symmetrical about a vertical longitudinal median plane transverse of the street, the upper portion of the refractor from the mouth downwardly and along the major portion of the sides and along the entire street end having prism means for elevating the reflected main beams and direct light from the light source, said prism means consisting of vertically adjacent continuously formed prisms extending continuously horizontally along their entire length throughout the sides and entire street end of the refractor and prismatic elements covering substantially the entire bottom of the refractor for spreading the light along the street and transversely of the street.

3,189,740
LUMINAIRE
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 9, 1962, Ser. No. 229,330
10 Claims. (Cl. 240—78)



1. A luminaire for substantial flush mounting upon a mounting surface, comprising a fixture housing, said housing including a back plate with an outer surface for facing the mounting surface, spacing means extending outwardly of said outer surface and disposed inwardly of the edges of said back plate for contacting the mounting surface and for spacing said back plate a slight distance therefrom, light and heat generating means depending below said back plate and disposed adjacent the inner surface thereof, a light transmissive lens enclosure having sides, the upper edges of which oppose the inner surfaces of said back plate adjacent the edges thereof, the area of said back plate extending between the outer edges thereof and said spacing means being exposed to ambient temperatures when said luminaire is mounted on the mounting surface.

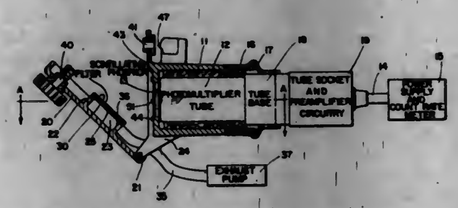
3,189,741
GONIOSTAT
George V. Pater, Willowick, Ohio, assignor to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio
Filed Sept. 6, 1963, Ser. No. 307,163
14 Claims. (Cl. 250—51.5)



1. A goniostat comprising:
(a) an annular frame structure having a mounting member including means for securing the structure to a diffractometer or the like for rotation of the goniostat about an omega axis;
(b) a chi rotating mechanism mounted on the structure and including a chi input member and an annular member journaled in the structure, said chi mechanism including means coupling the members, the annular member being rotatable about a chi axis substantially normal to the omega axis;
(c) a phi rotating member mounted on the annular member for rotation about a third axis normal to the chi axis;
(d) a phi rotation producing power train carried by said structure and coupled to the phi member;
(e) phi and chi output shafts journaled in said structure, the output shafts each being rotatable about its own axis in response to rotation of the chi and phi mechanisms respectively but otherwise stationary with respect to said structure, said chi mechanism and said phi member each being spaced from said output shafts; and,
(f) power transmission means coupling phi and chi output shafts respectively to the phi and chi mechanisms to cause rotation of the output shafts correlated to the rotation of the phi and chi mechanisms respectively.

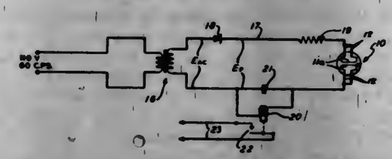
3,189,742
RADIOACTIVITY MEASUREMENT OF AIRBORNE PARTICULATE MATTER
Richard J. Loube, Richmond, Calif., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Nov. 22, 1961, Ser. No. 154,122
4 Claims. (Cl. 250—71.5)

1. Radiation measuring apparatus for indicating the radioactivity of particulate matter in a gaseous medium comprising a radiation detector having a radiation sensitive area; a housing enclosing said radiation detector, said housing having an opening at one end thereof, said radiation detector having said sensitive area exposed to said opening; a cover member hinged to said housing and adapted in one position to close said opening; a recess in said cover member with an inwardly projecting circular lip; a filter element adapted to pass said gaseous medium and to accumulate the said particulate matter on the surface thereof, said filter element being adapted to be supported on said lip, said lip being such that when said cover member is in said closed position, said filter element supported upon it is spaced apart from and close to said detector sensitive area; a flange projecting inwardly



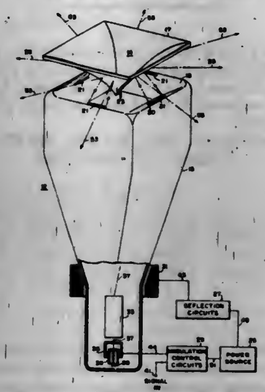
from the interior wall of said housing at said opening; a sealing element mounted on said flange member, said flange member and said sealing element being adapted to form a light-tight gas-tight seal with said lip and said filter element when said cover member is in said closed position; a gas intake inlet having an orifice external to said housing and communicating with the interior of said housing at a location intermediate said detector sensitive area and said filter element; exhaust pump means coupled to the interior of said recess for drawing said gaseous medium through said filter and exhausting said gas through said pump means; means coupled to said radiation detector and adapted to provide an indication of radiation incident upon said sensitive area.

3,189,743
ULTRAVIOLET DETECTOR SYSTEMS
John B. Johnson, Millburn Township, Essex County, and Albert Lees, West Caldwell, N.J., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Apr. 19, 1963, Ser. No. 274,272
4 Claims. (Cl. 250—83.6)



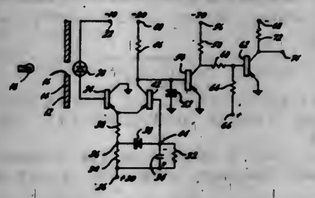
1. An ultraviolet detector system comprising a detector tube having electrodes with portions in an adjacent relationship forming a working region wherein the emission of an electron will trigger an avalanche discharge when a striking potential is applied across the electrodes, said detector tube being quenched when the applied potential across the tube falls below a sustaining value, an A.C. source of potential having a peak value exceeding said striking potential, a rectifier, an operating circuit serially connecting said A.C. source of potential across said detector tube via said rectifier without filtering whereby the detector tube is operated by a pulsating D.C. potential comprising distinct D.C. pulses of which each voltage pulse exceeds said striking potential and falls below said sustaining value to quench the tube, and a utilization device connected to said operating circuit and responsive to the flow of discharge current through said detector tube when the tube is fired.

3,189,744
OPTICAL COMMUNICATIONS TRANSMITTER
Jon W. Ogland, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1962, Ser. No. 235,285
13 Claims. (Cl. 250—199)



1. An optical communications transmitter comprising in combination: a cathode ray tube apparatus including an electron beam, a screen emitting a narrow spectrum of light radiation when bombarded by said electron beam and beam forming means for focusing and positioning said electron beam on said phosphor screen; means for modulating said electron beam in accordance with an intelligence signal to be transmitted whereby said radiation is amplitude modulated; optical means proximately located to said screen for directing said radiation outwardly from said screen, said optical means acting in combination with said electron beam to generate a substantially omnidirectional beam in a horizontal plane and simultaneously restricting the scattering of said light in the elevation plane to a predetermined acute angle.

3,189,745
PHOTO-ELECTRIC SENSING CIRCUIT
Joseph G. A. Van Reymersdal, Fairless Hills, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 27, 1961, Ser. No. 148,136
7 Claims. (Cl. 250—214)



1. A photo-electric sensing circuit comprising a first amplifier stage including an input terminal and a load impedance, a photodiode coupled to said input terminal for controlling the magnitude of the signal appearing across said load impedance as a function of the intensity of the illumination of said photodiode, signal storage means coupled to said load impedance and adapted to provide and maintain an output signal having a magnitude substantially proportional to a predetermined fraction of the magnitude of the signal appearing across said load impedance in response to one extreme of illumination of said photodiode, a second amplifier stage, means coupling said load impedance and said storage means to the input

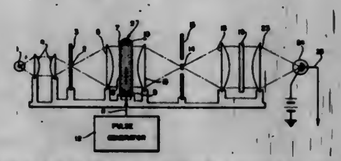
of said second amplifier stage to provide a net input signal to said second amplifier stage which is proportional to the difference between the instantaneous signal appearing across said load impedance and the signal provided by said signal storage means, and means for deriving an output signal from said second amplifier stage.

3,189,746

EXPANSION AND COMPRESSION OF ELECTRONIC PULSES BY OPTICAL CORRELATION

Leo Slobodin, Keyport, and Abraham Reich, South Plainfield, N.J., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Nov. 3, 1961, Ser. No. 150,071
6 Claims. (Cl. 250—216)



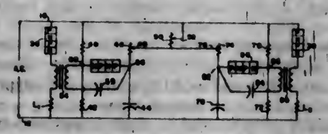
1. A device for width modulating electronic pulses of carrier energy comprising, a light transmissive medium adapted to transmit mechanical compressional waves and exhibit light diffractive properties dependent upon the intensities of compressional disturbances therein, a piezoelectric transducer responsive to applied electronic pulses of carrier energy and arranged on one side of said medium for exciting said medium with mechanical compressional waves, an energy absorber on the opposite side of said medium for damping said waves, a source of light, lens means collimating and directing light from said source through said medium transverse to the direction of propagation of waves therein, a light stop constructed and arranged to intercept at least a portion of the light emerging from said medium, the magnitude of the portion so intercepted varying in accordance with the degree of diffraction of said light in response to the compressional waves set up in the medium by said transducer, second lens means focusing diffracted light passing said stop to form an image of the compressional waves in said medium, a light transmissive correlator mask in the image plane of said second lens means having a diffraction grating of spaced substantially opaque lines presenting a replicated stationary wave form of said image in the full optical aperture of the lens means, photoelectric means, and third lens means focusing light emerging from the correlator mask onto said photoelectric means to provide a width modulated replica of the applied pulse of carrier energy.

3,189,747

CIRCUIT FOR CONTROLLING THYRATRON TYPE DEVICES EITHER INDIVIDUALLY OR AS A GROUP

Frederick B. Hoff, Jr., Richardson, Tex., assignor to Hunt Electronics Company, Dallas, Tex., a corporation of Texas

Filed June 5, 1962, Ser. No. 200,256
9 Claims. (Cl. 307—32)



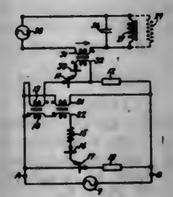
1. A switching circuit for controlling the effective power applied to a plurality of loads either individually or as a group that comprises an individual thyratron type switch means connected in series with each respective one of said loads, an individual phase shift means associated with each respective one of said loads for controlling the conduction time of the individual thyratron type switch means connected in series with said load, said individual phase shift networks each producing a firing signal, means for applying the firing signal produced by each of said individual phase shift means to switch the thyratron type switch means connected in series with the load associated with said individual phase shift means to its low impedance state responsive to the presence of a firing signal, each of said individual phase shift means including a variable element effective to vary the phase relationship between the applied line voltage and the firing signal produced by said individual phase shift means thereby controlling the conduction time of said thyratron type switch means, and means connected in circuit with each of the individual phase shift networks associated within a group of loads for simultaneously varying the phase relationship between the applied line voltage and the firing signals produced by each of said phase shift networks within said group to simultaneously control the conduction time of each of said thyratron type switch means connected in series with each of said loads in said group.

3,189,748

FREQUENCY RESPONSIVE POWER AMPLIFIER

William McMurray, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York

Original application Apr. 26, 1960, Ser. No. 24,743. Divided and this application May 26, 1961, Ser. No. 112,953
5 Claims. (Cl. 307—41)



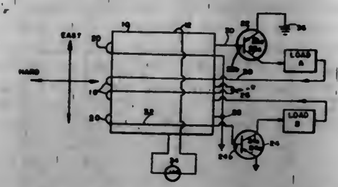
1. A control circuit including in combination a frequency reference circuit comprising a resonant circuit tuned to a desired reference frequency and adapted to be connected to an alternating current source, said resonant circuit including a first saturable transformer having inductively coupled primary and secondary windings with the primary winding being connected in series circuit relationship with the resonant circuit, a master-slave amplifier controlled by said reference circuit and comprising a master silicon controlled rectifier having its control gate element coupled to the secondary winding of the first saturable transformer, a first load device coupled in series circuit relationship with the master controlled rectifier with the series circuit thus formed being adapted to be connected across a source of alternating current, a second saturable transformer having inductively coupled primary and secondary windings with the primary winding being connected in series circuit relationship with said load and master controlled rectifier, a slave controlled rectifier and a second load device connected in series circuit relationship across the series circuit formed by said master controlled rectifier and said first load device, and a control element firing circuit connected in series circuit relationship with the secondary winding of said second saturable transformer to the control gate element of the slave controlled rectifier.

3,189,749

MAGNETIC BISTABLE CIRCUIT

Abraham Franck, Minneapolis, Minn., and Arthur V. Pohm, Ames, Iowa, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 4, 1960, Ser. No. 384
21 Claims. (Cl. 307—88)



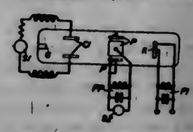
1. Magnetic switching apparatus comprising an anisotropic magnetic element having an easy axis of magnetization along which the remanent magnetization may lie in either of two directions representing two stable states and a difficult axis of magnetization oriented at an angle with said easy axis, both axes being fully within the element and said remanent magnetization being rotatable from either of its stable state directions to the other, means for applying to said element a magnetic field parallel to said difficult axis to cause rotation of the remanent magnetization from the easy axis toward the difficult axis, and means responsive to said rotation for effecting a magnetic field antiparallel to the direction the remanent magnetization was before said rotation to cause the rotated remanent magnetization to rotate further toward and to its opposite stable state.

3,189,750

PARAMETRIC FREQUENCY CONVERTING ELECTRON DISCHARGE TUBES

John Dain and Graeme Oliver Chalk, Chelmsford, England, assignors to English Electric Valve Company Limited, London, England, a British company

Filed Nov. 30, 1959, Ser. No. 856,277
Claims priority, application Great Britain, Apr. 27, 1959, 14,270/59
1 Claim. (Cl. 307—88.3)



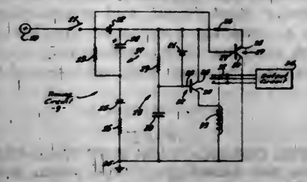
A frequency converter comprising an electron beam discharge tube having an electron gun, and, in the order stated starting with the gun, an input coupler, a quadrupole pump electrode system and a collector electrode system consisting of two separate electrodes, said two electrodes comprising a disc electrode at right angles to the tube axis and having its center on said axis and an annular electrode spaced a short distance from and concentrically surrounding the disc electrode so as differently to intercept a rotating beam leaving the pump system according to the momentary diameter of the path of beam rotation; means for applyig an input signal of frequency f_s to the input coupler of the tube, means for applying a pump frequency f_p to the quadrupole pump system of the tube, f_p being different in value from $2f_s$; means for subjecting the electron beam of the tube to a magnetic field with lines of force parallel to the axial direction of the tube and of such magnitude that the so-called cyclotron frequency of the electrons in said field is approximately equal to the input high frequency; and a resonant output circuit connected between the two electrodes of the collector electrode system of the tube, said output circuit being resonant at a frequency f_1 where $f_1=2f_s-f_p$.

3,189,751

TIMING CIRCUIT

Henry T. Wachel, Los Angeles, Calif., assignor to Consolidated Electronics Industries Corp., New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1960, Ser. No. 19,301
12 Claims. (Cl. 307—88.5)



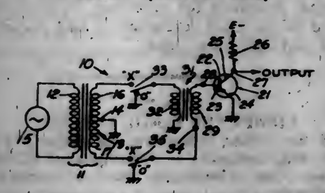
1. A timing circuit, including,
a pulse source,
a first capacitor having first and second terminals and having its first terminal coupled to said pulse source for providing a charge in the capacitor,
a first transistor having a first electrode coupled to the first terminal of said capacitor and having a second electrode and a third electrode, said first transistor having a normal high impedance condition and an operative low impedance condition and being responsive to a predetermined potential across said capacitor for operating to said low impedance condition,
an output device having a first terminal connected to the second electrode of said first transistor to become operative upon a low impedance in the first transistor, the output device having a second terminal connected to the second terminal of the capacitor,
a second transistor having a first electrode coupled to said third electrode of said first transistor and to said source, the second transistor having a second electrode connected to said source, and the second transistor having a third electrode connected to the second terminal of said output device, said second transistor having a normally nonconductive and an operative conductive condition, and
control means including said capacitor and coupled to said source for maintaining said second transistor in its nonconductive condition during the time a pulse is supplied from said source and for operating said second transistor to the conductive condition to discharge said capacitor at the end of a pulse from said source.

3,189,752

EXCLUSIVE OR LOGICAL ELEMENT

Myron L. Anthony, La Grange, Ill., assignor to Scully-Anthony Corporation, La Grange, Ill., a corporation of Illinois

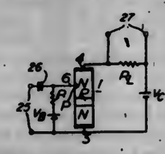
Filed Apr. 18, 1960, Ser. No. 23,071
1 Claim. (Cl. 307—88.5)



An A.C.-actuated coincidence device comprising: control signal means for developing first and second A.C. control signals having the same frequency; an amplitude detector having an input circuit and an output circuit; first and second coupling circuits, each coupling said control signal means to said detector input circuit, for individually applying said first and second control signals, respectively, to said detector, said coupling circuits

each including an independent means for varying the effective impedance of the circuit between a low-impedance condition and a high-impedance condition; and means intercoupling said first and second coupling circuits in parallel relation with each other to combine said first and second control signals in substantially opposed phase and equal amplitude, relative to each other, in said detector input circuit, said intercoupling means comprising a coupling transformer coupled in series in said first coupling circuit and having a secondary winding coupled in series with said second coupling circuit.

3,189,753
NEGATIVE CONDUCTANCE SWITCH CIRCUIT
Akihiko Sato and Akio Fujie, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 4, 1961, Ser. No. 120,808
1 Claim. (Cl. 307—88.5)

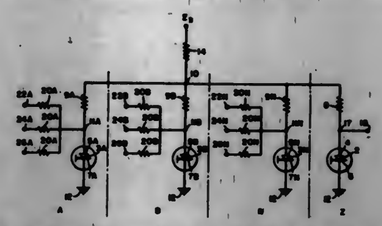


In a negative conductance switching circuit, the combination which comprises:

(A) a double base book constructed diode in which
(1) a zone of a first conductivity type material separate two zones of opposite conductivity type material;
(2) wherein a pocket of material of said first conductivity type material is included in one of said two zones; and
(3) leads are connected to each of said two zones and said pocket of material;
(B) a biasing arrangement for said diode consisting of:
(1) a first source of electrical potential connected across the junctions between said zones of opposite conductivity material to said leads connected to said pocket of material and to the other of said two zones;
(2) a second source of electrical potential connected between the leads connected to said two zones; and
(3) said first and second sources being similarly poled with respect to said leads connected to said pocket of material and said zone in which said pocket is included:
(C) load impedance means connected in series with said second source of potential between said leads,
(D) output means connected across said impedance means, and
(E) input terminals for receiving input signals connected to the leads connected to said pocket of material and said other zone.

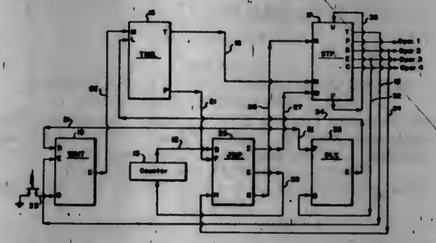
3,189,754
COMPUTER LOGIC CIRCUIT
Harold D. Austresser, Baltimore, and Richard D. French, Arnold, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 20, 1961, Ser. No. 125,504
11 Claims. (Cl. 307—88.5)

1. A double threshold gate circuit comprising, in combination; a plurality of input circuits connected in parallel circuit relationship and each including an input tunnel diode and an input biasing resistor connected in series circuit combination; an output circuit connected in parallel circuit relationship with said plurality of input circuits and including an output tunnel diode and an output biasing resistor connected in series circuit relationship; each said tunnel diode having a preselected current threshold level and exhibiting a characteristic current-voltage curve having a low voltage state and a high voltage state; means



for biasing each tunnel diode to its low voltage state; input means for each said input circuit for selectively exceeding the threshold current level of its respective tunnel diode, whereby the threshold level of said output tunnel diode is exceeded upon breakover of a predetermined number of said input tunnel diodes.

3,189,755
CONTROL MODULES AND CIRCUITS
Paul M. Kintner, Huntington Station, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Oct. 9, 1961, Ser. No. 143,925
16 Claims. (Cl. 307—88.5)

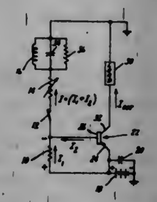


1. A modular electronic control circuit which comprises a timer module including means for producing a series of spaced stepper pulses, a stepper module having a plurality of step stages for producing control signal outputs at the corresponding steps and means for stepping from one stage to the next successively in sequence in response to successive stepper pulses applied thereto from the timer module, said stepper module including means for individually setting the stages to different steps in response to corresponding step set signals, a jump module including means for producing a step set signal output in response to a selectable control signal output from the stepper module means and means for inhibiting the production of the step set signal output in response to a jump inhibiting signal, and connections between said timer, stepper and jump modules for producing stepping and jump actions in a desired sequence.

3,189,756
WAVEFORM GENERATOR
Abram Hepenstal, Lafayette Hill, and Paul G. Wolfe, Oreland, Pa., assignors, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 19, 1961, Ser. No. 146,224
9 Claims. (Cl. 307—88.5)

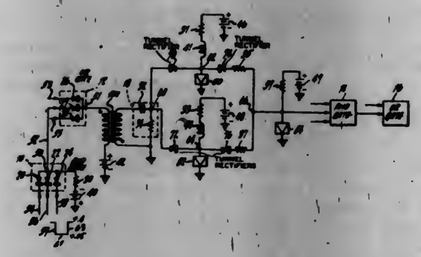
1. A waveform generator comprising: a transistor having an emitter, a collector and a base, the base-emitter path of said transistor having a resistance which changes

in response to a changing forward-biasing voltage applied between said emitter and said base and a current gain which changes in response to a change in the collector current of said transistor, a direct-current-conductive impedance element, means connecting said impedace element between said emitter and said base, a reactive element, a switch and means for supplying a unidirectional voltage, means connecting said impedance element, said switch, said reactive element, and said voltage-supplying means in series relationship, and a load coupled to the emitter-collector path of said transistor, said unidirectional voltage having such polarity as to supply to said impedance element, upon closure of said switch, a first current portion sensed to develop across said impedance element a voltage which forward-biases said base-emitter path of said transistor, thereby enabling a second cur-



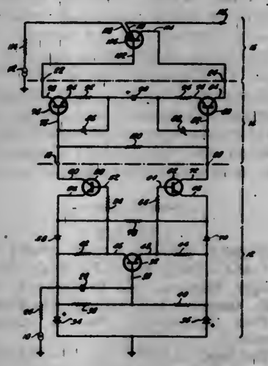
rent portion to flow from said voltage-supplying means through said base-emitter path of said transistor, said unidirectional voltage having a value sufficiently high that said forward-biasing voltage can change by an amount producing substantial changes respectively in said resistance of said base-emitter path, said collector current and said current gain of said transistor, said impedance element having an impedance value such that a substantial change in said resistance of said base-emitter path when forward biased causes a substantial change in the ratio of the respective intensities of said first and said second current portions, and means for closing said switch for a time sufficiently long for said forward-biasing voltage to change in value by an amount producing said respective substantial changes in said resistance of said base-emitter path, said collector current and said current gain of said transistor.

3,189,757
LOGIC CIRCUIT
Albert Feller, Riverton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,571
4 Claims. (Cl. 307—88.5)



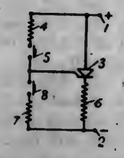
1. An electrical circuit comprising in combination,
first, second, and third tunnel diodes each exhibiting a high and a low voltage operating state,
means for biasing said first tunnel diode to operate monostably in said low voltage state,
means for biasing said second tunnel diode to operate monostably in said high voltage state,
means for biasing said third tunnel diode to operate bistably in both said high and said low voltage states,
means for switching, in succession, said first and second tunnel diodes to said high and low voltage states, respectively,
said biasing means returning said first and second tunnel diodes to said low and high voltage states, respectively, so that said first and second tunnel diodes produce a positive-going pulse and a negative-going pulse, respectively, and
means for coupling said first and second tunnel diodes to said third tunnel diode to apply, in succession, said positive-going pulse and said negative-going pulse to switch said third tunnel diode from said low voltage state to said high voltage state and back again.

3,189,758
ISOLATING AND PULSE-PRODUCING CIRCUIT
Brian H. Bell, Bethel, Conn., assignor to National Semiconductor Corporation, Danbury, Conn.
Filed July 23, 1962, Ser. No. 211,528
5 Claims. (Cl. 307—88.5)



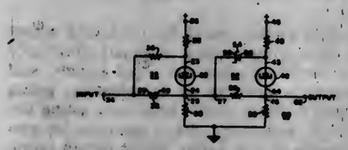
1. Electrical drive circuit means for producing output drive signals at drive circuit output terminals electrically isolated from a source of electrical input signals, said drive circuit means comprising, in combination, gating means having gating circuit output terminals, gating circuit input terminals, and gating circuit elements for presenting gating signals at said gating circuit output terminals when input signals of one polarity are applied to said gating circuit input terminals, and providing an essentially infinitely large impedance between each of said gating circuit output terminals and said gating circuit input terminals when input signals of said one polarity are not applied to said gating circuit input terminals, and control circuit means connected to said gating circuit output terminals and including said drive circuit output terminals and control circuit elements for providing an essentially infinitely large impedance between each of said drive circuit output terminals and said gating circuit output terminals and storing the electrical energy of said gating signals when said gating signals are present at said gating circuit output terminals, and delivering said stored electrical energy to said drive circuit output terminals when said gating signals are not present at said gating circuit output terminals.

3,189,759
POWER CONTROL CIRCUIT
Frederick Herbert Laishley, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Sept. 10, 1962, Ser. No. 222,378
Claims priority, application Great Britain, Sept. 18, 1961, 33,318/61
1 Claim. (Cl. 307—88.5)



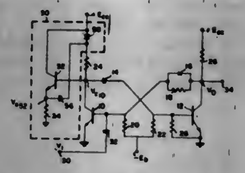
A power control circuit comprising in combination a positive supply terminal and a negative supply terminal, a semi-conductor switchable rectifier having an anode, a cathode and a gate, said switchable rectifier being switched on by a positive pulse supplied between its gate and cathode and being switched off by a negative pulse supplied between its gate and cathode, means connecting the anode of said switchable rectifier to said positive terminal, a resistive load through which the cathode of said switchable rectifier is connected to said negative terminal, a series circuit connected between the gate of said switchable rectifier and said positive terminal, said series circuit including a first normally open switch and a resistor, and a second series circuit connected between the gate of said switchable rectifier and said negative terminal, said second series circuit including a second normally open switch and a resistor, momentarily closing of said first normally open switch switching said switchable rectifier on, and momentarily closing of said second normally open switch switching said switchable rectifier off.

3,189,760
WAVEFORM GENERATOR EMPLOYING CASCADED TUNNEL DIODES
Vasil Uzunoglu, Hanover, and Frederick E. Shirk, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1962, Ser. No. 225,352
7 Claims. (Cl. 307—88.5)



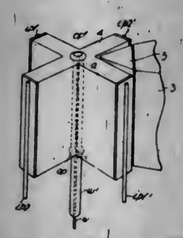
1. A function generator comprising in combination: a plurality of switching devices each operable in a high current and a low current stable state of operation; each of said switching devices having a high current operating point and a low current operating point different from the others of said plurality; means for placing each said switching device into one of said states of operation; input means for receiving sequential input pulses of like polarity to alternately switch states of operation of a first of said switching devices; a successive switching device of said plurality of switching devices operatively connected to said first of said switching devices to switch states of operation, in a predetermined sequence in response to the switching of states of said first switching device; and output means responsive to the current flowing through said plurality of switching devices to provide a step output signal, with each step of said signal determined by the states of operation of said plurality of switching devices.

3,189,761
MONOSTABLE MULTIVIBRATOR WITH JITTER REDUCTION MEANS
Joseph R. Kotlarski, Palos Verdes, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,990
4 Claims. (Cl. 307—88.5)



1. A monostable multivibrator comprising: first and second signal amplifying devices, each having a first electrode, a second electrode, and a control electrode; the first electrodes of said first and second amplifying devices being connected together; the second electrode of said second amplifying device being coupled to the control electrode of said first amplifying device; the second electrode of said first amplifying device being coupled to the control electrode of said second amplifying device; a first impedance element having first and second terminals, with said first terminal connected to the second electrode of said first amplifying device; a third signal amplifying device having a first electrode, a second electrode and a control electrode; the control electrode of said third amplifying device being connected to the second electrode of said first amplifying device; a second impedance element connected directly between the first electrode of said third amplifying device and the first electrodes of said first and second amplifying devices; the first electrode of said third amplifying device being coupled to said second terminal; and a unidirectionally conductive element connected directly between the second electrode of said third amylifying device and said second terminal.

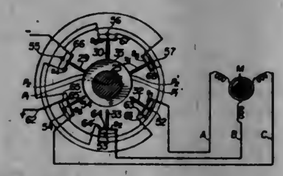
3,189,762
HALL EFFECT APPARATUS
Robert Keith Portway Galpin, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Mar. 19, 1963, Ser. No. 266,400
Claims priority, application Great Britain, Mar. 22, 1962, 1,158/62
6 Claims. (Cl. 307—88.5)



1. Hall effect apparatus comprising a magnetizing structure energizable to produce in a region bounded by the structure two intersecting magnetic fields substantially perpendicular to each other, which structure has two pairs of

salient pole-pieces disposed on lines normal to each other with the pole-pieces of each pair extending inwardly towards but terminating short of each other with their inner ends bounding said region, together with a Hall effect prism of cruciform cross-section located in said region and having two pairs of electrodes respectively located at the outer ends of opposite limbs of the prism and a further pair of electrodes located on opposite surfaces of the prism at intersection of the limbs.

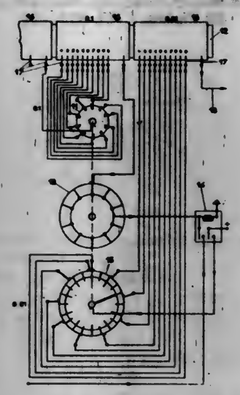
3,189,763
SWITCHING SYSTEMS FOR STEP-BY-STEP TRANSMISSION OF ANGULAR QUANTITIES
Bruce Farrell Chown, Ottawa, Ontario, Canada, assignor to Computing Devices of Canada Limited, Ottawa, Ontario, Canada, a company of Canada
Filed Jan. 3, 1961, Ser. No. 80,376
6 Claims. (Cl. 307—113)



3. A transmitter for an angular position information system comprising, a plurality of output terminals, a first group of a like plurality of single pole double throw switches having a normally open and a normally closed contact and having their poles connected with said terminals, a second group of a like plurality of switches having a single pole and a normally open contact, said groups comprising a consecutive series and being supported in said transmitter, means connecting the normally closed contacts of switches of said first group with poles of corresponding switches of said second group, a rotatable shaft journalled in said transmitter having cam actuator means for sequentially actuating said poles of said switches to closed contact position with their normally open contacts at predetermined angular positions of said shaft, each pole being actuated consecutively on rotation of said shaft, means connecting alternate normally open contacts of said switches for biasing with one polarity, and means connecting the normally open contacts of remaining switches for biasing with opposite polarity.

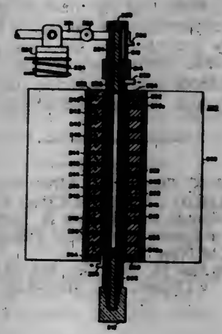
3,189,764
AUTOMATIC AND REMOTE-CONTROL SYSTEMS BY MECHANICAL SPEED-COUNTERS
Vladimir Gavreau, Albert Calaora, and Marcel Miane, Marseille, France, assignors to Centre National de la Recherche Scientifique, Paris, France
Filed May 29, 1961, Ser. No. 113,243
Claims priority, application France, June 1, 1960, 828,965, Patent 1,266,583
4 Claims. (Cl. 307—115)

1. In combination with a machine having a movable element, and with a rotating control member having, registered thereon, a program to be performed by said machine, a device for controlling the successive displacements of said machine movable element in accordance with said program which comprises, in combination, a step-by-step revolution counter operatively connected with said machine movable element, a precision marking member capable of controlling the operation of said machine, permanently operative means for mechanically coupling said marking member with said machine movable element and electrical switch means operative by said control member for automatically causing said precision marking member to control said machine shortly



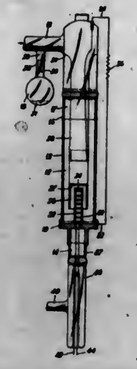
before the end of every displacement of said control member.

3,189,765
COMBINED THERMIONIC-THERMOELECTRIC CONVERTER
Joseph C. Danko, Pitcairn, and Peter J. McCoy, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 15, 1960, Ser. No. 36,269
7 Claims. (Cl. 310—4)



1. An energy converter comprising a generally tubular cathode, a generally tubular anode spaced outwardly of said cathode in heat transfer relationship therewith and forming an envelope for said converter, means for sealing the ends of said envelope and for coupling said cathode to a heat source in heat transfer relationship therewith, a pair of thermoelectric materials mounted adjacent said anode but outwardly thereof, conductive means for forming a hot junction between said thermoelectric materials at a position adjacent said anode in heat transfer relationship therewith and for forming a cold junction between said materials at a position relatively removed from said envelope, and means for making electric contact to said cathode, said anode, said hot junction, and said cold junction respectively.

3,189,766
THERMOELECTRIC CONVERSION PROCESS AND APPARATUS
Ralph Forman, Rocky River, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed May 5, 1961, Ser. No. 108,104
10 Claims. (Cl. 310—4)



1. A process for thermoelectric conversion comprising disposing a cathode and an anode in a gaseous medium which comprises a major amount of a rare gas and a minor amount of at least one ionizable gas selected from the group consisting of the alkali metal gases and the alkaline earth metal gases, said cathode having a thermionic work function greater than the thermionic work function of said anode and being electrically connected to said anode through an external load circuit; maintaining said rare gas at a pressure such that the mean free path therein for atoms of said ionizable gas is less than the distance between said cathode and anode; and increasing the temperature of said cathode and the pressure of said ionizable gas until the concentration of gas ions is sufficiently high to substantially neutralize the space charge surrounding said cathode, while continuously maintaining the temperature of said cathode above the temperature of said anode and sufficiently high to effect thermionic emission from said cathode.

3,189,767
ULTRASONIC TRANSMITTING MEANS AND METHOD OF PRODUCING SAME
Richard G. Goldman and William R. Marklein, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 28, 1963, Ser. No. 254,328
9 Claims. (Cl. 310—8.2)



1. For use with a piezoelectric element having two spaced surfaces, a transmitting means comprising a homogeneous ceramic block, said block having one end engaging one of said surfaces, said block having uniformly changing density from said one end to the other end of said block so that the acoustical impedance of said block varies uniformly whereby said block is rendered free from discontinuity of acoustical impedance.

3,189,768
MHD POWER GENERATOR
Edward F. Brill, Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 10, 1961, Ser. No. 94,782
1 Claim. (Cl. 310—11)



Apparatus for inductively converting energy in ionized gas into electrical energy comprising: a pressurized source of ionized gas; inner and outer hollow conical members coaxially nested and spaced a relatively constant distance from each other to define an annular passage therebetween, said passage having an increasing cross sectional area to maintain gas velocity constant, said annular passage being connected to said source of ionized gas; and means to provide a traveling magnetic field along said annular passage at a velocity less than the velocity of said ionized gas flowing through said passage, said means simultaneously inductively receiving said generated electrical energy, said means comprising a first magnetizable core along the inner periphery of said inner coaxial member and a second magnetizable core along the outer periphery of said outer coaxial member, and further comprising first windings spaced from each other along said first magnetizable core to provide a constant pole pitch and second windings disposed along said second magnetizable core in registry with said first windings.

3,189,769
DYNAMOELECTRIC MACHINE ROTOR COOLING
David M. Willyoung, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 1, 1961, Ser. No. 128,438
6 Claims. (Cl. 310—52)



1. In a dynamoelectric machine, the combination of a rotor defining a rotating substantially gas-tight chamber, an operatively connected electrical winding disposed in said chamber and having portions located in the radially outermost parts thereof, said chamber also containing a dielectric vaporizable fluid partially in a liquid state, rotating heat exchanger means disposed in said chamber and having portions located in a radially inner part thereof, and means circulating a secondary coolant fluid through said heat exchanger means at a temperature lower than the prevailing saturation temperature of said dielectric fluid, whereby the dielectric fluid acts as a thermal coupling between the winding and the heat exchanger to transfer heat evolved due to ohmic losses in the winding by boiling on the winding and condensing on the heat exchanger means.

3,189,770
AXIAL AIRGAP ELECTRIC ROTARY MACHINES
Jacques Henry-Baudot, Antony, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, Seine, France
Filed Aug. 12, 1960, Ser. No. 49,251
Claims priority, application France, Sept. 7, 1959, 804,744, Patent 1,203,503
17 Claims. (Cl. 310—156)



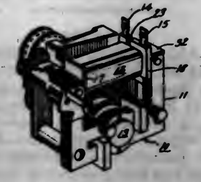
1. An electric motor comprising a stator winding unit including a thin disc of non-magnetic material having a winding formed thereon within an annular portion of the disc, said winding being formed of a series of half-turn conductors attached to one face of said annular portion and a second series of half-turn conductors attached to the other face of said annular portion, the ends of said half-turn conductors being connected to form a winding by interconnections passing from one face of said disc to the other, a first rotor member comprising a disc of magnetic material having a flat annular face mounted to cooperate with said winding through a narrow annular airgap, a squirrel-cage closed circuit winding carried by and distributed about the annular face of said rotor disc and inductively coupled with said stator winding, a shaft mounted for rotation on the axis of said stator winding, means connecting said rotor member in driving relation with said shaft, and a second rotor member formed of an annular ring of magnetic material arranged on the opposite side of said stator winding unit and being magnetically coupled to said first rotor member through said stator winding.

3,189,771
SYNCHRONOUS MOTOR INCLUDING ADDITIONAL ROTOR POLE TO FACILITATE STARTING
August J. Danek, Crystal Lake, Ill., assignor to Controls Company of America, Schiller Park, Ill., a corporation of Delaware
Filed Oct. 25, 1960, Ser. No. 64,775
4 Claims. (Cl. 310—156)



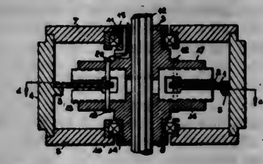
4. A rotor for a self-starting synchronous motor having electro-magnetic circuit elements of opposite polarity comprising, a rotatable permanent magnet member having a null position and a generally planar face, a ferrous metal arm positioned operatively adjacent said planar face and including a pole rotatable in the path of the periphery of said magnet member, a projection on one of said planar faces and metal arm and a slot on the other for receipt of said projection, said projection and slot arranged to hold said ferrous arm in a magnetically neutral position with respect to said rotatable permanent magnet member to initiate rotation of said rotatable permanent magnet member when it is in a null position.

3,189,772
COIL BOBBIN FOR AN ELECTRIC CLOCK
William C. Wingler, Northboro, and Chester B. Marble, Ashland, Mass., assignors to General Electric Company, a corporation of New York
Filed Nov. 28, 1962, Ser. No. 240,633
6 Claims. (Cl. 310—162)



6. In an electric clock, the combination comprising:
(a) a synchronous motor,
(b) a stator core for said motor,
(c) a one-piece molded plastic bobbin comprising:
(aa) a central portion surrounding said core,
(bb) a flange at one end of said central portion,
(cc) a first terminal-receiving opening in the periphery of said flange,
(dd) a second terminal-receiving opening in the periphery of said flange spaced from said first terminal-receiving opening,
(ee) a transverse slot through said flange between said first opening and said second opening and having first and second side walls,
(ff) a first channel disposed in the surface of said first side wall of said slot,
(gg) a second channel disposed in the outer surface of said flange extending from said first channel toward said first terminal-receiving opening,
(hh) a third channel disposed in the surface of said second side wall of said slot, and
(ii) a fourth channel disposed in the outer surface of said flange extending from said third channel toward said second terminal-receiving opening, and
(d) a coil wound about said central portion and having lead wires extending therefrom to transmit electrical energy thereto,
(e) said channels of said bobbin adapted to receive and protect the lead wires extending from said coil.

3,189,773
AXIAL AIRGAP ELECTRIC ROTARY DEVICE
Jacques Henry-Baudot, Antony, France, assignor to Printed Motors Inc., New York, N.Y.
Filed Mar. 3, 1961, Ser. No. 93,188
Claims priority, application France, Mar. 10, 1960, 821,154, Patent 1,259,057
11 Claims. (Cl. 310—268)



1. A rotary electric machine comprising, in combination, a hollow cylindrical member, means mounting said member for rotation about its cylindrical axis, a flat disc-type armature mounted within said member with its plane normal to the axis of said member and having a central opening therein, an annular winding carried by said armature between its inner and outer peripheries, means attaching the outer periphery of said armature to said cylindrical

member, an annular field structure located within said cylindrical member and mounted upon a fixed support co-axially with said cylindrical member, said field structure comprising two annular portions positioned on opposite sides of the winding of said armature with a small clearance between each annular portion and said armature.

3,189,774
IMAGE DISPLAY SCREEN WITH FLUORESCENCE EFFICIENCY REDUCING COATING
Lyle W. Evans, Seneca Falls, N.Y., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Original application Oct. 8, 1957, Ser. No. 688,846, now Patent No. 2,996,380, dated Aug. 15, 1961. Divided and this application Nov. 15, 1960, Ser. No. 69,279
3 Claims. (Cl. 313—89)

1. In an electron discharge device, a fluorescent image display screen, having reduced color de-saturation properties, bombarded by relatively high velocity primary electrons and lower velocity secondary electrons comprising: a plurality of discrete areas of electron excitable fluorescent materials adjacently disposed in a repetitive pattern relative to one another to form said screen, each of said adjacent areas comprising a different phosphor, each having a given electron excitable light output efficiency level, at least one of said phosphors having a fluorescent efficiency reducing salt coating forming a surface covering layer thereon to selectively lower the surface light output efficiency thereof and reduce said screen color desaturation upon bombardment by said lower velocity electrons, without substantially reducing the fluorescence efficiency of said phosphors under conditions of bombardment by said high velocity electrons.

3,189,775
ADJUSTABLE MOUNTING ASSEMBLY FOR CATHODE RAY TUBES
Norman F. Fyler, Menlo Park, Calif., assignor to Litton Electron Tube Corp., San Carlos, Calif.
Filed Sept. 11, 1961, Ser. No. 137,132
12 Claims. (Cl. 313—84)



1. In an electron beam focusing and alignment apparatus, a cathode ray tube, a support structure having a spherical convex outer surface at least partially encircling said cathode ray tube, means including a field producing component mounted on said support structure, and means for adjustably mounting said support structure for engaging it at at least three distinct locations on its convex spherical outer surface.

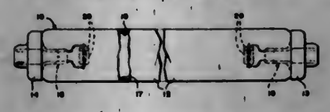
3,189,776
SHUTTER FOR SPUTTERED PARTICLES IN TIME-OF-USE INDICATOR
Albert Vahakn Bazarian, Springfield, and Keith William Olsen, Neptune, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed Feb. 19, 1960, Ser. No. 9,860
3 Claims. (Cl. 313—146)

1. An elapsed time of use indicator comprising an envelope, an ionizable gas filling for said envelope, an anode, a cathode spaced from said anode, said cathode being of a material having a predetermined sputtering rate when bombarded with ionized gaseous particles, an insulated collector spaced from said cathode, upper and lower spacers supporting said anode, cathode, and collector, and shielding means adapted for positioning by said



spacers between said cathode and said collector when processing said device and movable from between said cathode and said collector after processing.

3,189,777
LOW-PRESSURE ELECTRIC DISCHARGE LAMP, AND ELECTRODE ASSEMBLY THEREFOR, HAVING MARTENSITIC STAINLESS STEEL ANODE
Frederick W. Hoeh, Livingston, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 19, 1961, Ser. No. 118,111
7 Claims. (Cl. 313—218)



5. An electrode mount assembly for a fluorescent lamp or the like comprising, a vitreous body member, a pair of lead wires sealed through and extending beyond said body member, an elongated cathode attached to and located between said lead wires, and an enlarged anode of martensitic stainless steel attached to one of said lead wires and supported thereby in a position adjacent said cathode.

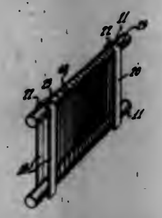
3,189,778
LAMP FILAMENT CONNECTION
William L. Brundige, Caldwell, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 29, 1962, Ser. No. 169,323
3 Claims. (Cl. 313—331)



1. In an electric incandescent lamp, the combination of a refractory wire filament having a coiled end section, and a lead-in conductor that is smaller in diameter than the inside diameter of said coiled end section and has a flat that is located proximate but inward from one end of said conductor and fits freely within said coiled end section, the rounded contour of said lead-in conductor being abruptly altered by said flat thereby providing an elongated recess that is terminated at each end by a transversely-extending sharply-defined shoulder, said flat being located within an intermediate portion of said coiled end section and of sufficient length to accommodate more than one turn of said coiled end section, the turns of said coiled end section overlying said flat being

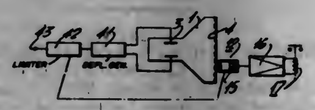
collapsed into said recess and seated between said shoulders thereby locking said conductor in mechanical and positive electrical engagement with said filament.

3,189,779
FRAME GRID AND METHOD OF FABRICATION
Gerard Samuels, Teaneck, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,226
6 Claims. (Cl. 313—350)



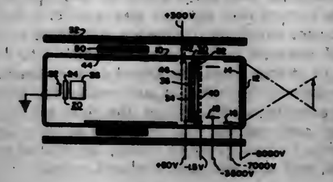
1. A grid for an electron discharge tube, said grid comprising a pair of spaced support members, a plurality of spacer members extending between said support members and having portions affixed to said support members, said spacer members having end lengths beyond said portions disposed partially around and in tightly clamped relation with surface portions of said support members, and a wire wound about said support members, the ends of said wire extending between said end lengths and said surface portions and being secured to said support members thereby.

3,189,780
CATHODE RAY TUBE CONTROLLED RELAY MEANS
Masao Takagi, Ukyo-ku, Kyoto, and Keizo Yamaji, Mishima-gun, Osaka-fu, Japan, assignors to Tateisi Denki Kabushikikaisha, Kyoto, Japan, a corporation of Japan
Filed Apr. 1, 1963, Ser. No. 269,475
Claims priority, application Japan, Apr. 7, 1962 (utility models), 37/17,755, 37/17,756
7 Claims. (Cl. 315—10)



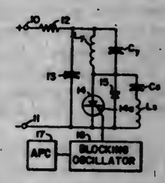
1. An electrical system for generating an output signal upon occurrence of a predetermined input signal value, comprising a cathode ray tube including means for generating an electron beam, a screen which luminesces at points of impingement of said beam thereon, and beam deflecting means coupled to the system input and operable to deflect said beam to different positions on said screen in response to different input signal values; light-sensitive means for receiving light from such luminescence and positioned adjacent said screen at a location corresponding to a predetermined input deflection signal value; a deflection limiter circuit interposed in said system input and coupled to said deflecting means, said limiter circuit including circuit means operable to stop beam deflection at the location of said light-sensitive means; and output means responsive to said light sensitive means including means for generating an output signal upon occurrence of an input signal value causing beam deflection to such location.

3,189,781
IMAGE TUBE UTILIZING TRANSMISSIVE DYNODE-TYPE TARGET
Joseph Lempert, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 19, 1962, Ser. No. 167,362
8 Claims. (Cl. 315—11)



1. An electron discharge device comprising a target electrode including a film of insulating material having the property of emitting secondary electrons from a first surface in response to electron bombardment of a second surface, said first and second surfaces being exposed over their active areas, means for directing a writing electron beam having electrons of a predetermined energy at said second surface of said insulating film to establish at said first surface a positive charge pattern due to emission of secondary electrons from said first surface from an equilibrium charge corresponding to said writing beam, means for directing electrons below said predetermined energy at said first surface of said film to restore said first surface to said equilibrium charge.

3,189,782
TELEVISION HORIZONTAL SCANNING CIRCUIT UTILIZING CONTROLLED RECTIFIERS
Charles B. Heffron, Metuchen, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 20, 1962, Ser. No. 238,874
17 Claims. (Cl. 315—27)



1. In a solid state horizontal scanning circuit for a television receiver or the like having, a source of direct current, a horizontal scanning yoke coil, a resonating capacitor connected in circuit with said coil, and a bi-directional current switch connected in series with said coil and said source to be periodically closed to clamp said coil to said source during passage of oscillating trace current through said coil from a high value of one polarity to a high value of the other polarity and to be periodically opened during passage of oscillating retrace current through said coil from the high value of other polarity to the high value of the one polarity, the bi-directional switch comprising, a solid state controlled rectifier and a diode connected in parallel and with reverse polarity to each other, gating pulse means connected to said controlled rectifier to enable said rectifier to become conductive only during passage of trace current through said coil, a resonant circuit operative to store energy when

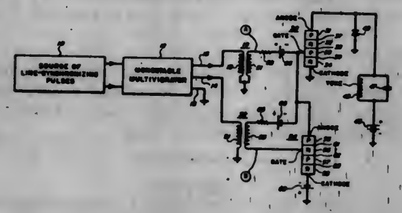
retrace current flows through said coil and to oscillate during passage of trace current through said coil, and means connecting said resonant circuit and said parallel connected diode and rectifier to apply the oscillating current thereto to cause said diode to become conductive at least once during the flow of trace current through said coil and to enable said rectifier to become non-conductive whenever said diode becomes conductive by reducing the current flow through said rectifier below its holding current value, the frequency and phase of oscillation of said resonant circuit being determined to enable said diode to change from conductive to non-conductive state as the current through said coil reaches the high value of other polarity at the end of the flow of trace current through said coil whereby both said rectifier and said diode remain non-conductive during the flow of retrace current in said coil and said resonant cricuit.

3,189,783

SWITCHING ARRANGEMENT FOR FAST ON-OFF SWITCHING OF HIGH AMPLITUDE CURRENT

Petrus A. van Berkum, Elmhurst, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware

Filed Mar. 25, 1963, Ser. No. 267,544
10 Claims. (Cl. 315—27)



1. A switching arrangement comprising:

a first switching device having first, second and control terminals and of the type which is initially rendered conductive to translate current between its first and its second terminals in response to the translation of triggering current in a predetermined direction between its control terminal and its first terminal, which remains conductive subsequent to the termination of the triggering current, and which is thereafter rendered nonconductive in response to reversing the current flow betwen its control terminal and its first terminal;

an output load coupled to said first and second terminals of said first switching device;

means for translating triggering current in said predetermined direction between said control terminal and said first terminal of said first switching device to render said first device conductive and to effect current flow between said first and said second terminals and through said output load;

a second switching device having first, second and control terminals;

means coupling said first and second terminals of said second device to said control and said first terminals of said first device;

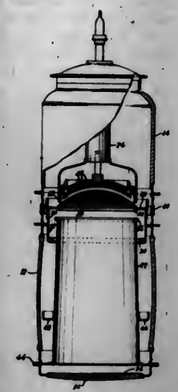
and means coupled to said control terminal of said second device for rendering said second device conductive, subsequent to the termination of the triggering current translated between said first terminal and said control terminal of said first device, to effect current flow between said control and said first terminals of said first device in a direction opposite to said predetermined direction to render said first device nonconductive and to effect termination of current flow through said load.

3,189,784

VERY HIGH INTENSITY LIGHT SOURCE USING A CATHODE RAY TUBE

Norman F. Fyler, Menlo Park, Calif., assignor to Litton Precision Products, Inc., a corporation of Delaware

Filed July 31, 1961, Ser. No. 127,984
5 Claims. (Cl. 315—30)



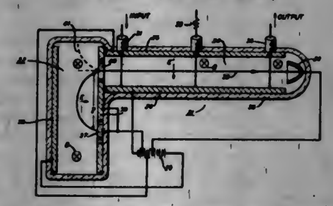
1. A broad area strobe type light source comprising a cathode ray tube having a faceplate of at least six square centimeters surface area, a phosphor coating on the inner surface of said faceplate having a persistency which is less than 50 nanoseconds for decay to the one-half brightness point, means including a broad area concave cathode for supplying an electron beam having a density of at least 5 amperes per square centimeter simultaneously to the entire surface area of said coating, a grid located between said cathode and said faceplate immediately adjacent said cathode, means for protecting the coating from the intense heat of said cathode, a thin conductive coating on the inner surface of said phosphor coating, an anode structure electrically coupled to said conductive coating, means for applying a potential of at least 10 kilovolts to said anode structure, means for normally biasing said grid to a negative potential, and means for applying brief positive gating pulses to said grid, said pulses having a duration of less than one-half microsecond.

3,189,785

PRE-INTERACTION CYCLOIDAL BEAM DEFLECTION IN CROSSED-FIELD TUBE

Johan Wilhelm Klüver, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 25, 1960, Ser. No. 24,424
4 Claims. (Cl. 315—39.3)



1. An electron beam device comprising a cathode for emitting electrons, a first electrode adjacent said cathode, a second electrode parallel to said cathode and said first electrode, means for biasing said second electrode positively with respect to said first electrode, a sole plate and an anode defining therebetween an interaction region, said interaction region being adjacent one end of said first electrode and extending away from said second electrode, and means for producing a magnetic field transverse to said electric field thereby causing the emitted electrons to follow substantially cycloidal trajectories, said electric field being of such a predetermined strength with respect to said magnetic field as to cause said electrons to enter said interaction region upon the completion of substantially only one cycloidal cycle.

3,189,786

LIGHTING DEVICE AND ELECTRICAL CONNECTION THEREFOR

William J. Knochel, West Orange, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 10, 1960, Ser. No. 48,661
5 Claims. (Cl. 315—71)



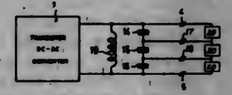
2. In an electroluminescent lighting device having a pair of electrodes, the combination comprising a contact integral with said lighting device and connected to one of said electrodes, a layer of electrically non-conductive material protectively covering said contact and a substantial adjoining portion of said light source, a lead-in conductor having one end embedded in said non-conductive protective layer and anchored thereby in close proximity to said contact, and a layer of electrically conductive material between and connecting the embedded end of said lead-in conductor and said contact, said layer of conductive material being firmly bonded to the contiguous surface of said non-conductive layer and thereby providing a sealed-in low-resistance juncture between said lead-in conductor and said contact.

3,189,787

IGNITION CIRCUIT FOR GAS DISCHARGE TUBES

Adrianus Joannes Henricus Josephus van Zon, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 10, 1960, Ser. No. 68,497
Claims priority, application Netherlands, Dec. 30, 1959, 246,930
11 Claims. (Cl. 315—96)



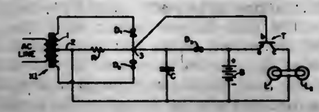
1. An electrical circuit comprising input means for connection to an alternating current source adapted to supply a plurality of load devices, said load devices comprising elements exhibiting a first load condition and a second load condition different from said first load condition, a frequency determining circuit connected across said input means and comprising a first inductive branch circuit and a capacitive branch circuit connected in parallel with said first branch circuit, one of said branch circuits comprising a plurality of series connected reactance elements, and means for selectively connecting said load devices in parallel with individual ones of said reactance elements.

3,189,788

POWER FAILURE RESPONSIVE CIRCUITS

Charles A. Cady, 42 Shaw Drive, Wayland, Mass.

Filed Jan. 3, 1961, Ser. No. 80,138
5 Claims. (Cl. 315—129)



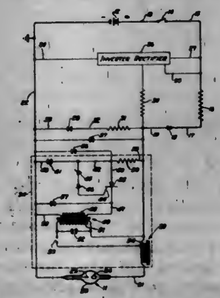
1. In combination, an impedance, a diode, and a source of unidirectional voltage connected in series, said diode being poled to oppose the flow of current from said source, means independent of said source for applying a unidirectional voltage across said impedance in a sense opposing said source voltage, and an electron control device having a control terminal, a load terminal, and a common terminal, said diode being connected in series with said control and common terminals and said source being connected in series with said load and common terminals.

3,189,789

IGNITION CIRCUIT FOR A DISCHARGE LAMP

Edward Keith Howell, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed July 2, 1962, Ser. No. 206,597
5 Claims. (Cl. 315—241)



1. A pulse generating circuit for a discharge lamp requiring a high voltage pulse for initiating conduction therein comprising, a discharge lamp, a controlled rectifier connected to a pulsating current source and having a control electrode, means for rendering said controlled rectifier conductive including a zener diode connected to the source and to the control electrode and means including an operating capacitor responsive to the controlled rectifier when it is rendered conductive for delivering a high voltage pulse to the lamp.

3,189,790

STARTING AND OPERATING CIRCUIT FOR GAS DISCHARGE LAMPS

Joe A. Nuckolls, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed July 2, 1962, Ser. No. 206,613
8 Claims. (Cl. 315—289)

1. A starting and ballasting circuit for operating a discharge lamp from a low voltage direct current source, said lamp requiring a very high ignition voltage followed by an intermediate voltage of magnitude greater than that of said source sustained for a time sufficient to assure cathode warm up in order for the arc drop across the lamp to fall below the value of the source voltage comprising: an operating circuit including a current limiting impedance, a high current rectifier and the lamp connected in series across the source terminals; means connected in parallel with said operating circuit for pro-

ducing a unidirectional pulsating current comprising a chopper circuit connected across said source terminals including an oscillator circuit and transforming means energized thereby; a secondary circuit connected to said transforming means including a rectifier and a first storage capacitor for charging up to said intermediate voltage during operation of said chopper circuit, said storage capacitor being connected across said lamp and said high current rectifier being poled to prevent inverse discharge thereof through said source; a pulse generating circuit connected across said storage capacitor for producing a damped oscillatory train of high voltage pulses including



an operating capacitor, a ringing transformer, a second storage capacitor, a spark gap and a pulse transformer, a first oscillating circuit being formed by said ringing transformer and said operating capacitor, and a second oscillating circuit comprising the primary of said pulse transformer, said second storage capacitor and said spark gap for inducing said high voltage pulses in said pulse transformer for igniting said lamp; the charge across said first storage capacitor serving to sustain current through said lamp at an intermediate voltage level during cathode warm up operable by said operating circuit; and means for disabling said chopper circuit when the current through said lamp rises above a predetermined level.

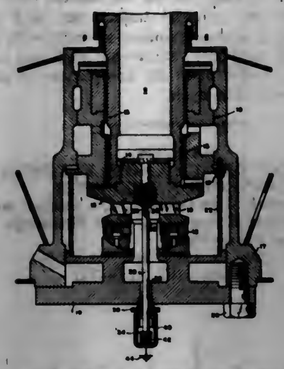
3,189,791

GROUNDING DEVICE FOR ROTATING MACHINERY, ESPECIALLY FOR BLOWERS

Thomas P. Kirkpatrick, Anne Arundel County, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 29, 1960, Ser. No. 72,537
2 Claims. (Cl. 317—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In a high speed rotary machine;
a hollow shaft;
a metallic end cap secured to an end of said shaft;
said end cap terminating in a conical point along the rotating axis of the said shaft;
a contact member having a recess at one end;
a flange just short of the other end of the said contact member;
a cup secured around the said contact member;
a spring between the said cup and flange maintaining the said conical point in engagement with the said contact member within the said recess whereby the end cap and contact member are in electrical contact; and



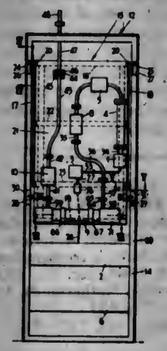
means for allowing the contact member to be connected to ground.

3,189,792

EQUIPMENT FRAME MOUNTING TRAVELLING WAVE TUBE AND RELATED APPARATUS

George William Sapsworth Griffith, Leamington Spa, and Bernard Wilson, Coventry, England, assignors to The General Electric Company Limited, London, England, a British company

Filed Mar. 1, 1962, Ser. No. 176,602
Claims priority, application Great Britain, Mar. 3, 1961, 7,851/61
3 Claims. (Cl. 317—99)



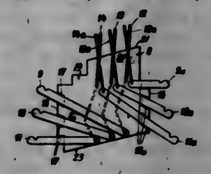
1. Apparatus comprising a framework with a back and sides defining a container with an open front, a structure, means supporting said structure only for pivotal movement in said framework about an axis parallel to the open front of the container between a first normal operative position and a second removing or replacing position, an elongated travelling wave tube and an associated focussing device, said tube being mounted to lie mainly within the focussing device and to be removable from said focussing device in a direction parallel to the longitudinal axis of the tube, means mounting said focussing device on said structure with the longitudinal axis of the tube parallel to the open front of the container and having a substantial component parallel to the axis of rotation of the pivotal mounting means, and means to provide electrical connection to the travelling wave tube, the travelling wave tube and the focussing device lying at least mainly within the framework when said structure is in said first position so that the travelling wave tube cannot then be withdrawn from the focussing device and said travelling wave tube being clear of said framework in said second position so that the travelling wave tube may readily be withdrawn from or replaced in the focussing device.

3,189,793

CONTACT SPRING CARRIER PLATES FOR INSULATING SOLDERING LUG STRIPS

Heinz Krone, Ludwigsburg, Wurttemberg, Germany, assignor to Krone G.m.b.H., Ludwigsburg, Wurttemberg, Germany

Filed Oct. 12, 1962, Ser. No. 230,177
Claims priority, application Germany, Oct. 20, 1961, K 44,967
2 Claims. (Cl. 317—112)



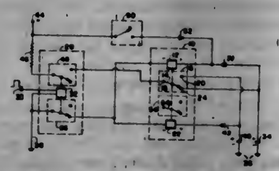
1. A contact spring device for separating soldering lug strips between incoming and outgoing lines, comprising an insulating carrier plate, two sets of straight contact strips arranged on the same first side of said carrier plate, the first set of said contact strips being connected at a first edge of the carrier plat with the incoming lines, whereas the second set of said contact strips are connected with the outgoing lines at a second edge of the carrier plate opposite the first edge, two sets of contact springs arranged in pairs forming break contacts at a third edge of the carrier plate, the first set of said contact springs extending at least part of their length on the second side of said carrier plate and being connected with the first set of said contact strips in an area between the first and the fourth edge of said carrier plate, whereas the second set of said contact springs are connected with the second set of said contact strips in an area between the second and the third edge of said carrier plate.

3,189,794

RELAY BINARY CIRCUIT

Roy E. Currie, Jr., Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 24, 1962, Ser. No. 197,548
11 Claims. (Cl. 317—140)
(Granted under Title 35, U.S. Code (1952), sec. 266)



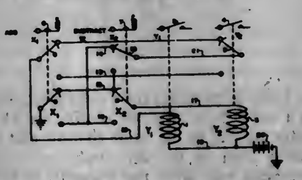
1. A relay binary circuit comprising:
(A) an input relay including an energizing coil for actuating a first and second movable contact,
(i) each of said movable contacts having two fixed contacts operatively associated therewith;
(B) a source of direct current having one terminal thereof connected to said first movable contact of said input relay and the other terminal thereof connected to a common terminal of said binary circuit;
(C) a double-throw relay having at least a movable contact and two fixed contacts,
(i) a first coil of said double-throw relay positioned to move said movable contact in circuit with one of said fixed contacts and a second coil of said double-throw relay positioned to move said movable contact in circuit with the other of said fixed contacts,
(ii) said movable contact being connected to one of said fixed contacts associated with said first movable contact of said input relay;
(D) first and second power storage capacitors connected via said common terminal through said second movable contact of said input relay and one of said fixed contacts associated therewith to a common terminal of said first and second double-throw relay coils,
(i) the remaining free terminal of said first capacitor being connected to one of said fixed contacts of said double-throw relay and the remaining free terminal of said second capacitor being connected to the other of said fixed contacts,
(ii) said storage capacitors being charged by said source of direct current when said first movable contact of said input relay and said movable contact of said double-throw relay are electrically connected;
(E) a first unidirectional conductor being connected in a first series circuit through said first coil between the uncommon terminal of said first capacitor and said common terminal of said double-throw relay coils;
(F) a second unidirectional conductor being connected in a second series circuit through said second coil between the uncommon terminal of said second capacitor and said common terminal of said double-throw relay coils,
(i) said unidirectional conductors being poled to pass current flow in the same direction through said common terminal of said relay coils,
(ii) said first and second capacitors, said fixed contacts, and said series circuits being poled to permit current flow to the capacitor which is in circuit to energize the said coil adapted to shift said movable contact to its other contact position.

3,189,795

BIDIRECTIONAL BINARY COUNTER SYSTEM

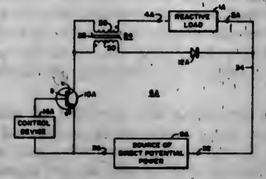
Alberto del Corral, Apartado Aereo 5240, Bogota, Colombia

Filed Oct. 29, 1964, Ser. No. 407,415
24 Claims. (Cl. 317—140)



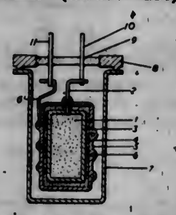
1. In a binary counter, a first and a second bi-stable device, each having a coil and an output contactor, said second bi-stable device having a control contactor, an add input means and a subtract input means each operating upon two contactors; circuit means for completing an energizing circuit for said first bi-stable device including two contactors of said add input means, one contactor of said subtract input means and said control contactor; and circuit means for completing an energizing circuit for said second bi-stable device including the other contactor of said subtract input means and one of said contactors of said add input means, both said circuit means being effective during the adding input to energize said second bi-stable device for each input pulse and to energize said first bi-stable device for every other input pulse.

3,189,796
APPARATUS FOR SUPPRESSING TRANSIENTS DURING SWITCHING
Lynn L. Tipton, Lima, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1961, Ser. No. 152,334
17 Claims. (Cl. 317—148.5)



1. In an electrical network, a pair of input terminals, a pair of output terminals, a switch, an inductive device having a magnetic material core and a first winding and a second winding, said first and second windings being magnetically coupled to said core, a current path interconnecting said pair of input terminals to said pair of output terminals and including said switch and said first winding, said core being proportioned to saturate within the operating range of current flow through said path, an asymmetric current controlling device, and means connecting said asymmetric device in series with said second winding to provide a first circuit, and means connecting said first circuit in series circuit with said output terminals and said first winding.

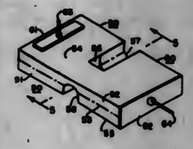
3,189,797
SOLID ELECTROLYTIC CONDENSER
Eiichi Okamoto, Seizo Suzuki, Takayuki Kurihara, and Yoso Sasaki, all of Tokyo, Japan; assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 20, 1960, Ser. No. 23,566
Claims priority, application Japan, Apr. 23, 1959, 34/23,598
6 Claims. (Cl. 317—230)



1. A cathode structure for a solid electrolytic capacitor; having a metal base, an oxide coating on the base, a semiconductor coating on the oxide coating, and an electrically conducting layer on the semiconductor coating; comprising a cathode lead wire, the majority of which is lightly wrapped in a plurality of turns in the form of a relatively open wound helix about said electrically conducting layer, and a metal over-layer having a maximum thickness of 1.2 mm. on said electrically conducting layer and said wire.

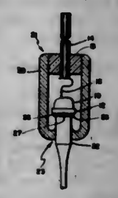
3,189,798
MONOLITHIC SEMICONDUCTOR DEVICE AND METHOD OF PREPARING SAME
Charles E. Benjamin, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1960, Ser. No. 72,341
15 Claims. (Cl. 317—234)

1. A monolithic semiconductor device comprising a thin body of semiconductor material having first and second opposed flat faces and made up of a plurality of layers of different conductivity types cooperating to form at least one p-n junction, the layers being generally parallel to the flat faces, at least one slot extending entirely through the body between the flat faces and through the p-n junction, a first trough extending only partially through said body of semiconductor material inwardly from said first flat face, said first trough being deep enough to penetrate at least through the layer lying immediately adjacent said first flat face and having one end terminating



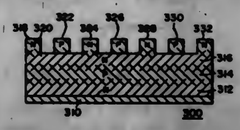
at said slot, a second trough extending only partially through said body of semiconductor material and inwardly from said second flat face, said second trough being sufficiently deep to penetrate at least through the layer lying immediately adjacent said second face and also having one end terminating at said slot, said slot and said first and second troughs cooperating to isolate regions comprised of said layers of said semiconductor material performing different functions within said monolithic semiconductor device.

3,189,799
SEMICONDUCTOR DEVICES AND METHOD OF FABRICATING THEM
William J. Moroney, Wenham, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts
Filed June 14, 1961, Ser. No. 117,034
7 Claims. (Cl. 317—234)



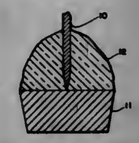
1. Semiconductor device comprising a body of electronic semiconductor material, first elongated resilient electrode means having one end in physical contact with a surface of said body, a glass housing intimately bonded to said surface and to the portion of said electrode means including said one end, said glass housing forming a hermetic seal around the region of said physical contact and constituting a rigid mass holding said one end of said first electrode means and said body in physical contact with each other, second elongated rigid electrode means connected at one end to said body, and second glass housing means surrounding and spaced from said first-named glass housing and said body, said second housing means being hermetically bonded to said first and second electrode means at intermediate portions of each with the free ends of said electrode means extending to the exterior of said second housing means, said second electrode means being of larger cross-section than said first electrode means and supporting said body firmly within said second housing, a resilient portion of said first electrode means extending between said glass housings, whereby said physical contact is stably independent of alterations in the physical dimensions of said second housing means.

3,189,800
MULTI-REGION TWO-TERMINAL SEMICONDUCTOR DEVICE
Gene Strull, Pikesville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1959, Ser. No. 859,191
9 Claims. (Cl. 317—235)



1. A monolithic semiconductor device comprised of at least three layers of semiconductor material, said layers being divided so that the device is comprised of at least one more region than layers, said layers of semiconductor material being disposed one upon the other, the bottom layer having an electrically conductive contact disposed upon its bottom surface, the top layer being divided into at least one region of first- and at least one region of second-type semiconductivity, a semiconductor transition region between each contiguous region of first and second type of semiconductivity and means for establishing electrical contact with one region of said first-type and one region of said second-type semiconductivity within the top layer.

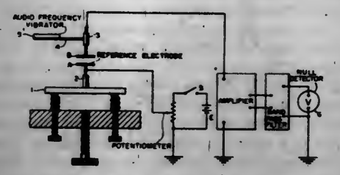
3,189,801
POINT CONTACT SEMICONDUCTOR DEVICES
Arthur Uhlir, Jr., Weston, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts
Filed Nov. 4, 1960, Ser. No. 67,293
6 Claims. (Cl. 317—236)



1. A semiconductor device comprising:
a body of electronic semiconductor material;
an elongated electrode having a pointed end thereof in rectifying point-contact with a substantially flat surface of said body; and
a housing of partially devitrified glass bonded to only said flat surface and to the surface of said electrode adjacent the point of contact, said housing constituting the sole mechanical support for holding said electrode and material in rectifying point-contact relation.

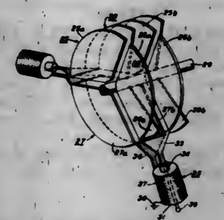
3,189,802
VIBRATING CAPACITOR WITH A COATED REFERENCE ELECTRODE
William A. Zisman, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1960, Ser. No. 72,535
3 Claims. (Cl. 317—250)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An apparatus for the measurement of contact potential differences between two metals which comprises in combination:
means for holding a plate electrode in stationary position,
a plate electrode of a reference metal in said holding means,
said reference metal electrode having the face thereof covered with a thin continuous layer of a fully fluorinated hydrocarbon polymer of low surface energy, means for holding a plate electrode of a second metal for vibratory movement at audio frequencies in closely spaced parallel relationship to said stationary reference electrode,



and means for imparting vibratory movement at audio frequencies to said holding means for the electrode of the second metal.

3,189,803
TRI-STATOR VARIABLE AIR-CAPACITOR
Stephen Doba, Jr., Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 28, 1961, Ser. No. 155,323
13 Claims. (Cl. 317—254)

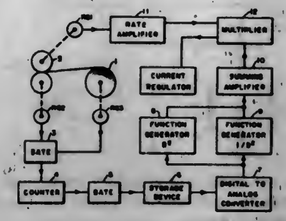


1. A variable capacitor comprising a stator including three sectors, each having an angular dimension of approximately 120 degrees, an external electrical terminal for each of said sectors, a rotor comprising a sector having an angular dimension of approximately 240 degrees and free from an external electrical terminal, said stator and rotor sectors assembled on a common axis, said rotor sector having a range of rotation limited approximately to 120 degrees on said axis in such a manner that said rotor sector overlaps a first of said stator sectors at all times and simultaneously therewith overlaps variably a second of said stator sectors in one sense and a third of said stator sectors in an opposite sense whereby said rotor sector provides a fixed amount of capacitance with said first stator sector at the external terminal connected thereto and differential amounts of capacitance with said second and third stator sectors at the respective external terminals connected thereto, the sum of said differential amounts of capacitance being a constant value.

3,189,804
STRIP REEL INERTIA COMPENSATION CONTROL SYSTEM
Thomas J. Dolphin, Clarence, and David M. Hawkins, Tonawanda, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 22, 1960, Ser. No. 77,593
8 Claims. (Cl. 318—6)

1. In control apparatus for a strip reeling system for achieving substantially constant strip tension between a pair of rolls driven by a first motor and a reel driven by a second motor, the combination of, signal generation means operative with each of said first and second motors and being capable of producing a first signal proportional

to the inertia compensation required by the strip reeling system for a predetermined acceleration of the strip, strip speed detecting means for providing a second signal proportional to the actual acceleration of the strip, signal multiplying means for obtaining a resultant output signal



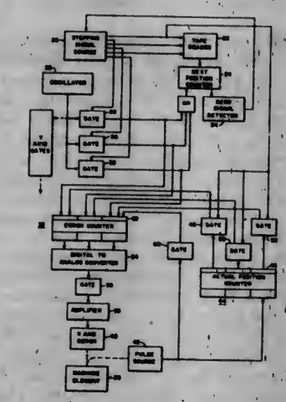
in accordance with said first signal proportional to the inertia compensation times said second signal proportional to the actual acceleration of the strip, and motor control means for controlling at least one of said motors in accordance with the output signal of said signal multiplying means.

3,189,805

DIGITAL CONTROL APPARATUS HAVING ACTUAL-POSITION AND ERROR COUNTERS FOR POSITIONING MACHINE MEMBERS

Donald A. Poepsel, Depew, and Charles A. Lauer, Eggertsville, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 20, 1960, Ser. No. 30,617
3 Claims. (Cl. 318—28)


OSCILLATOR
GATE
GATE
GATE

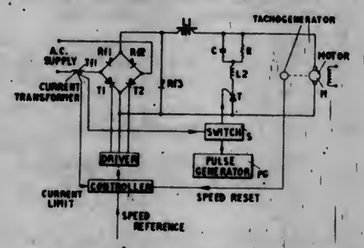
nected in each of said power lines for supplying power through the device to said motor; each said semiconductor device having switching characteristics responsive to a gating signal; a regulating means for each of said devices, each regulating means including a saturable core; means for driving said core towards saturation in a predetermined sense during alternate half cycles of voltage to said motor; each regulating means providing a gating signal to its associated semiconductor device at a time depending on the flux condition in said core at the beginning of said alternate half cycles; means for resetting said core during a portion of the intermediate half cycles; biasing means for biasing said core to saturation in said predetermined sense; and means responsive to current supplied to said motor for limiting motor current, the latter means including means for opposing said biasing means in response to motor current.

3,189,811

BRAKING CIRCUITS FOR D.C. MOTORS

Kenneth G. King, London, England, assignor to Westinghouse Brake and Signal Company Limited, London, England

Filed Oct. 31, 1961, Ser. No. 148,925
Claims priority, application Great Britain, Nov. 2, 1960, 37,632/60
3 Claims. (Cl. 318—269)



1. A variable speed D.C. motor control circuit comprising field means, an armature, a variable voltage rectified supply means to apply current to the armature, a control circuit for connection across the armature, said control circuit including in series a controllable semiconductor device, a resistance and an inductance, said resistance having a capacitor connected in parallel thereto for forming a self-oscillatory circuit, switch means for said controllable semiconductor means and connected to be operated by a fall in the supply from said supply means, and a source of highly repetitive triggering pulses connected by the switch means, when operated by said fall, to control the firing of the controllable semiconductor means, so that the control circuit passes current for the purpose of braking the motor.

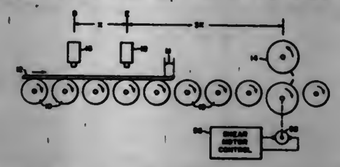
3,189,812

MOTOR CONTROL APPARATUS FOR CUTTING TRAVELING WORKPIECE

Marvin A. Davis, Clarence, and George Kemp, Depew, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1961, Ser. No. 99,423
6 Claims. (Cl. 318—445)

4. In control apparatus for a cutting device having a predetermined operational time period and being operative with a workpiece traveling along a work path, the combination of a source of reference pulse signals, first position sensing means for providing a first control signal when said workpiece is at a first position in said work path, second position sensing means for providing a second control signal when said workpiece is at a second position in said work path, reversible pulse signal counting means responsive to said first and second control signals and operative to count said pulse signals for the time duration between the provision of said first and second control signals, second pulse signal counting means responsive to a previous actual operational time period of said cutting device for counting said pulse signals and providing an operation calibration output signal in accordance with the latter said time period of said cutting



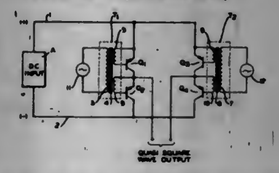
device, with said reversible pulse signal counting means being responsive to said output signal for counting said pulse signals after the provision of said second control signal until the resulting count of said reversible pulse counting means substantially corresponds to said calibration output signal and then being operative to control the operation of said cutting device.

3,189,813

D.C. TO QUASI-SQUARE WAVE TRANSISTOR INVERTER

Waldo J. Frierdich, Highland, Ill., assignor to Basler Electric Company, Highland, Ill., a corporation of Illinois

Filed Oct. 6, 1961, Ser. No. 143,352
5 Claims. (Cl. 321—45)



3. An inverter adapted for generating a quasi-square wave output current; said inverter comprising a source of direct current having a positive lead and a negative lead, a first pair of transistors connected in series with each other and connected across the positive and negative leads, a first transformer having a single primary winding and two secondaries, said secondaries being respectively connected across the emitters and bases of said transistors, first signal generating means connected across the primary of the first transformer, a second pair of transistors connected in series with each other and connected across the positive and negative leads, a second transformer having a single primary winding and two secondaries, said secondaries being respectively connected across the emitters and bases of said transistors, and second signal generating means connected across the primary of the second transformer, one of said first pair of transistors and one of said second pair of transistors being in a conductive state while the other of said first pair of transistors and the other of said second pair of transistors are in a non-conductive state during a portion of the current cycle.

3,189,814

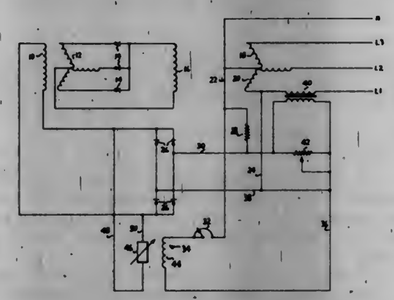
GENERATOR COMPENSATION SYSTEM

George M. Rosenberry, Schenectady, N.Y., and Thomas W. Salmon, Erie, Pa., assignors to General Electric Company, a corporation of New York

Filed Dec. 20, 1961, Ser. No. 160,755
3 Claims. (Cl. 322—25)

3. A generator for supplying power to a connected load comprising an exciter including field and armature windings and first rectifiers connected to the output of

the exciter for furnishing unidirectional current to a generator field winding, and a generator armature winding associated with the generator field winding for providing an alternating current at the generator terminals, a compensation system for the generator comprising a pair of leads connected at one end across one phase of the generator armature winding and including a series resistor between said phase and second rectifiers used for providing unidirectional power to the exciter field winding so that phase voltage taken from the generator armature winding after being rectified is capable of providing no load excitation in the exciter field winding, a current transformer having its primary connected in series with



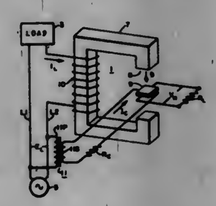
said phase of the generator winding and its secondary including a shunt resistor connected to said second rectifiers thereby permitting the application of power to the second rectifiers from the transformer for increasing the excitation in the exciter field winding to the extent necessary to satisfy the load requirements, and a voltage regulating element connected in parallel with the transformer secondary and said phase of the generator winding, said regulating element including a coil connected across said phase and thereby sensitive to changes in voltage in the generator, means controlled by said coil for inserting resistance between the second rectifiers and the exciter field winding in proportion to the phase voltage in the generator winding.

3,189,815

HALL-EFFECT DEVICE UTILIZING TRANSFORMER PHASE CONTROL MEANS

Theodore Barabutes, Morristown, and Bernard E. Lenehan, Bloomfield, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 27, 1961, Ser. No. 120,869
4 Claims. (Cl. 323—120)



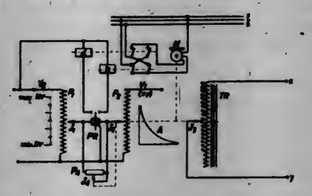
1. In a device responsive to an alternating quantity, a Hall-device including a magnetic structure having an air gap, a Hall plate disposed in the air gap, said magnetic structure providing a path for magnetic flux passing through the air gap and the Hall plate disposed in the air gap, winding means associated with the magnetic structure to link said path and effective when energized by alternating current for directing alternating magnetic flux through the magnetic structure and the Hall plate, a transformer having a secondary winding connected to direct a control current through the Hall plate which is incorrectly displaced in phase from the alternating flux when alternating current is applied to the winding means and when an alternating input is applied to the primary winding of the transformer, and phase-controlling means cooperating with the transformer to eliminate said incorrect displacement in phase.

3,189,816

AUTOMATIC ADJUSTMENT AND COMPENSATION OF THE SECONDARY VOLTAGE OF A TRANSFORMER

Mnata Brožek, Modrany, near Prague, Czechoslovakia, assignor to Chirana Praha, narodni podnik, Prague, Czechoslovakia

Filed May 3, 1961, Ser. No. 107,558
Claims priority, application Czechoslovakia, May 6, 1960, 2,988/60
6 Claims. (Cl. 323—43.5)



1. In a control system for automatically controlling the secondary voltage of a transformer by correctively adjusting the number of primary winding turns of the transformer responsive to deviation of the secondary voltage from a preset value as a result of variation in the supply voltage impressed across the transformer primary winding, the improvement comprising a first contact adjustable along said primary winding to vary the number of turns thereof effectively in circuit; a first linear potentiometer including a second contact adjustable therealong and mechanically coupled to said first contact; means for applying a stabilized D.C. voltage across said first potentiometer; scale means; second potentiometer means; a third contact adjustable along said second potentiometer means with reference to said scale means to preset said voltage value; a servo-system for conjointly adjusting said first and second contacts; means for impressing, across said second potentiometer means, a D.C. voltage proportional to the A.C. voltage impressed across the primary winding of said transformer, to provide a control voltage; and differential responsive control means for correctively operating said servo-system responsive to a difference in the adjusted D.C. voltages represented by said second contact and said third contact; at least one of said second potentiometer means and said scale means being hyperbolic.

3,189,817

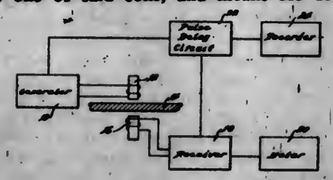
DEVICE FOR TESTING METAL SHEETS BY MEASURING THE TIME REQUIRED FOR ELECTROMAGNETIC PULSES TO PASS THERETHROUGH

Claus John Renken, Jr., Orland Park, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 26, 1960, Ser. No. 65,241
5 Claims. (Cl. 324—37)

1. A device for testing conductive metal sheet comprising a first coil on one side of said sheet and spaced therefrom, a second coil on the other side of said sheet

and spaced therefrom, means for applying a pulsed signal to one of said coils, and means for detecting the



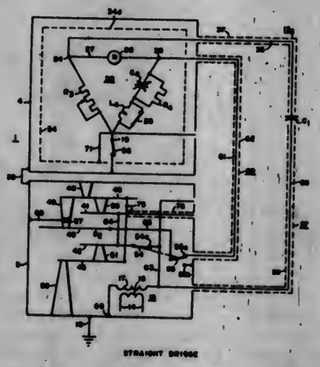
time delay of the signal received by the other coil due to the presence of said sheet.

3,189,818

PORTABLE INSULATION TESTING EQUIPMENT ADAPTABLE FOR CONVERSION FROM STRAIGHT TO INVERTED SCHERING-BRIDGE OPERATION

James H. Frakes, Penn Township, Allegheny County, Pa., assignor to Dielectric Instrument Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 14, 1962, Ser. No. 202,463
4 Claims. (Cl. 324—54)



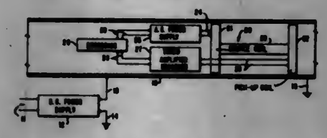
1. A portable testing device for measuring the power factor and capacitance of a grounded or ungrounded insulating specimen comprising, in combination, a Schering-bridge circuit including adjustable impedances, connected in first and second arms of the bridge circuit and joined at a first junction point, a current-balance indicator, said bridge circuit having a condenser of fixed capacity in the third arm thereof, said bridge circuit having cable-connecting means for connecting the insulating specimen in the fourth arm thereof, said third and fourth arms of the bridge circuit meeting at a second junction point, a high-voltage source for impressing high testing voltage across the first and second junction points, means including a control panel for adjusting said adjustable impedances for balancing the bridge circuit so that no current will flow through the current-balance indicator, a metallic shielding casing enclosing said first and second bridge arms together with the current-balance indicator and electrically connected to said first junction point, said condenser of fixed capacity having high- and low-voltage electrode plates, two-positional conversion switching means for adapting the testing device alternatively from straight to inverted Schering-bridge operation, the first position of said conversion switching means connecting high-testing voltage from said high-voltage source to the high-voltage electrode plates of the fixed-capacity condenser and also connecting the low-voltage plates of said condenser to the current-balance indicator, the second position of said two-positional conversion switching means connecting high testing voltage from said high-voltage source to said first junction point and the low-voltage electrode plates of the fixed-capacity condenser to ground, and means for grounding said metallic shielding casing in the first position of the two-positional conversion switching means.

3,189,819

METHOD FOR DETECTING THE PRESENCE OF CATHODIC PROTECTION CURRENTS ON PIPELINES

Thomas R. Schmidt, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 9, 1962, Ser. No. 186,106
5 Claims. (Cl. 324—72)



1. A method for determining the presence of a cathodic protection current on a pipeline wherein the cathodic protection current is a rectified unfiltered alternating current having a remaining ripple current, said method comprising:

generating an alternating electromagnetic field adjacent said pipeline, said alternating electromagnetic field having a frequency different than the frequency of the rectified alternating current, the difference between said frequencies being sufficient to cause a heterodyne effect between said frequencies;

detecting heterodyne beat frequencies resulting from said generated alternating electromagnetic field and the ripple current remaining from said rectified alternating frequency;

coupling said detected currents to an amplifier tuned to a frequency between said frequencies;

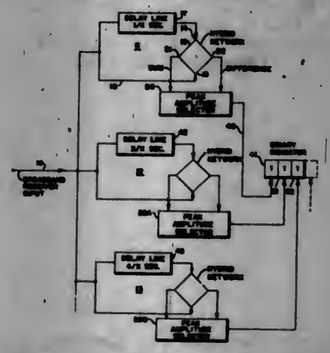
and recording the output signal of said amplifier with relation to the position at which said resulting current was detected.

3,189,820

PLURAL CHANNEL SIGNAL RECEIVER INCLUDING SIGNAL DELAY MEANS

Roderic V. Lowman, Greenlawn, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Apr. 26, 1961, Ser. No. 105,800
11 Claims. (Cl. 324—82)



1. In a broad-band signal receiver, apparatus for localizing an input signal in one of a plurality of frequency channels of said broad band which comprises a plurality

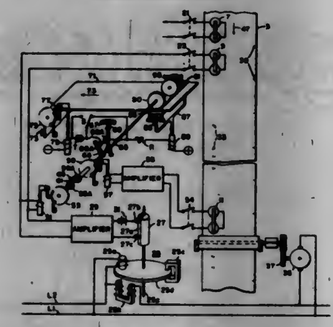
of coding channels supplied with input signals, one of said coding channels having a plurality of frequency channels within said broad band, the other coding channels having a plurality of sets of frequency channels spaced over said broad band with the channels of one set lying between the channels of another set, different of said other coding channels having a successively increasing number of narrower frequency channels in the sets thereof, means in said one coding channel for producing a distinctive output when an input signal is present in one frequency channel thereof, means in said other coding channels for producing respective distinctive outputs when an input signal is present in one set of channels thereof, and indicating means responsive to said distinctive outputs for localizing an input signal within the corresponding narrowest frequency channel of said sets of channels.

3,189,821

MAXIMUM-DEMAND MEASURING DEVICE INCLUDING MEANS FOR PRINTING ONLY THE MAXIMUM VALUES

Ambrose J. Petzinger, Glen Rock, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 15, 1961, Ser. No. 117,447
5 Claims. (Cl. 324—103)



1. In a maximum-demand measuring device for measuring the maximum demand of a variable quantity, pulse means effective when energized by the variable quantity for producing pulses at a rate dependent on the magnitude of the quantity, a counting device for counting said pulses, subtraction means responsive to said pulses after a predetermined time delay for operating said counting device subtractively, and recording means for printing a first reading of the counting device during a billing period, said recording means operating to print a second reading of the counting device only if such second reading is at least as large as the first reading of the counting device.

3,189,822

SWITCHOVER ARRANGEMENT IN A MOBILE RADIO COMMUNICATION SYSTEM

Masasuke Morita and Takaji Kuroda, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Aug. 1, 1962, Ser. No. 214,013
Claims priority, application Japan, Aug. 7, 1961, 36/28,583
6 Claims. (Cl. 325—4)

2. A mobile radio communication system comprising:

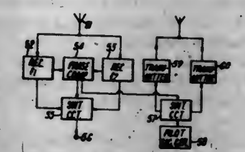
(A) first and second spaced apart fixed transmitters,

(1) said transmitters including means for transmitting pilot signals which have a predetermined phase relationship to each other, said phase relationship being selected such that an unambiguous phase relation exists between said pilot signals at each point between said transmitters;

(B) receiver means carried by a vehicle traveling along a route between said transmitters, said receiver means including:

(1) a separate receiver for receiving the signals transmitted from each of said transmitters;

(2) selection means for selecting only one of said received signals to be the output of said receiving means, said selecting means including:



(a) detecting means for detecting both pilot signals,

(b) comparing means connected to said detecting means for comparing the phases of the detected pilot signals and producing comparison output signals representative of said comparison, and

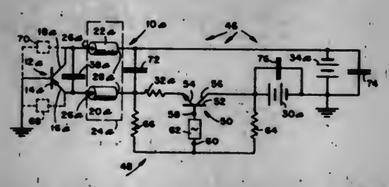
(c) switch means connected to said comparing means for switching the output of said receiving means to be one instead of the other of said received signals in response to a preselected comparison output signal.

3,189,823

TRANSISTORIZED TRANSMITTER EMPLOYING A TRANSMISSION LINE SECTION

James C. Mitchell, Jr., of China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 23, 1962, Ser. No. 168,290
6 Claims. (Cl. 325—126)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In an oscillator circuit for generating oscillations at a desired frequency and of the type employing a transistor and a parallel wire transmission line section, the combination, comprising;

(a) a transistor having base, emitter and collector electrodes and of a type adapted to have a sufficiently high beta cut off frequency to provide effective oscillation sustaining operation at said desired frequency, said base and emitter electrodes defining a transistor control path including an emitter current limiting resistive element in series circuit relationship,

(b) a transmission line section comprising first and second parallel spaced co-extensive conductor wires spaced by a conventional distance adapted to provide distributed constant transmission line network characteristics,

said transmission line section having a predetermined electrical length less than one-eighth of a wavelength at said desired frequency,

(c) said emitter electrode and said collector electrode, being connected to said first and second conductor wires, respectively, at one of their co-adjacent ends,

(d) a lumped constant capacitative circuit element connected between said emitter and collector electrodes,

(e) means operating as an effective short circuit at the frequency of oscillation inter-connecting the other co-adjacent ends of the conductor wires and the base electrode, and by-passing said emitter current limiting resistance element

whereby said first conductor wire, at the frequency of oscillation, has its opposite ends effectively connected directly to the base and emitter electrodes, respectively,

(f) said capacitative circuit element having such value of capacitance and said transmission line section being of such effective length that, in operation, feedback from the transmission line section, principally by way of the first conductor wire across the base and emitter electrode, is such as to sustain oscillations in the circuit.

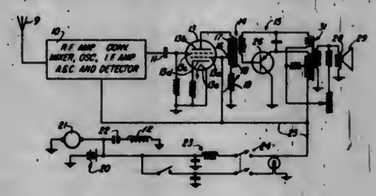
2. The oscillator circuit of claim 1 employed as a frequency modulation radio transmitter, the combination further including,

(l) an input for receiving a modulating signal, and

(m) variable impedance means responsive to said modulating signal and serially connected in said transistor control path,

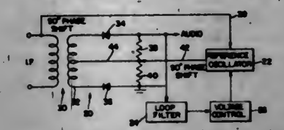
(n) said transmission line further serving as the transmitter radiating element.

3,189,824
NOISE SUPPRESSORS FOR RADIO RECEIVERS
Frederick P. Hill, Elgin, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 617,775, Oct. 23, 1956. This application Jan. 9, 1961, Ser. No. 81,635
4 Claims. (Cl. 325—319)



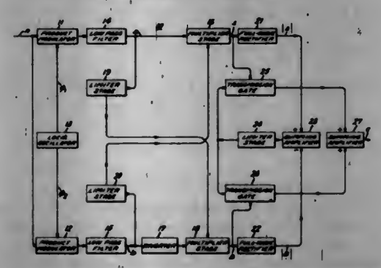
3. In a radio receiver, the combination including, an audio output stage including a transistor having output electrodes, a loudspeaker having first and second winding sections, potential supply means for providing a direct current potential, an output circuit connected to said potential supply means and including said first loudspeaker winding section and said output electrodes of said transistor and providing direct current from said potential supply means through said first winding section to said output electrodes of said transistor, said output circuit applying audio signals from said output electrodes of said transistor to said first winding section, and a second circuit connected to said potential supply means and including said second loudspeaker winding section, said second circuit providing direct current from said potential supply means through said second winding section, whereby said second winding section produces a field opposing the field produced by the direct current in said first winding section.

3,189,825
PHASE-LOCKED-LOOP COHERENT FM DETECTOR WITH SYNCHRONIZED REFERENCE OSCILLATOR
Abbott W. Lahti, 56 Aberdeen Ave., Cambridge, Mass., and Thomas E. Belieg, 9 Tortuli Circle, Saxonville, Mass.
Filed Mar. 29, 1962, Ser. No. 183,557
11 Claims. (Cl. 325—346)



11. A control system for synchronizing an oscillator with an alternating signal of varying frequency, comprising an oscillator adapted to generate an output signal, a device responsive to variations in the frequency of said alternating signal, said alternating signal constituting one input to said device and said oscillator output signal constituting another input to said device, feedback means connecting said device to said oscillator and connecting means for directly coupling said alternating signal to said oscillator.

3,189,826
METHOD AND APPARATUS FOR DEMODULATING MULTI-PHASE MODULATED SIGNALS
Edward E. Mitchell and Albert D. Perry, Jr., Ithaca, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 9, 1960, Ser. No. 27,665
7 Claims. (Cl. 325—418)

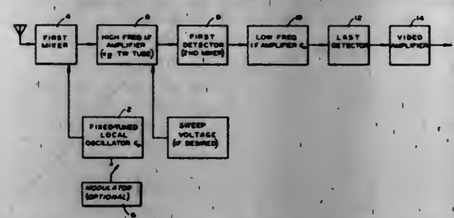


1. The method of producing a composite phase differential signal characterized by a number of zero-axis crossings equal to the number of permitted phase positions in a phase modulated carrier which comprises multiplying the incoming carrier by each of a pair of quadrature signals to form a pair of product signals, changing the polarity of portions of each of said product signals to provide zero crossover signals having slopes of the same polarity and generating a phase differential signal composed of parts of said crossover signals selected on the basis of lesser magnitude.

3,189,827
RAPID-SCAN INTERCEPT RECEIVER UTILIZING TRAVELING WAVE TUBES
William R. Rambo, San Jose, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 16, 1957, Ser. No. 659,734
4 Claims. (Cl. 325—431)

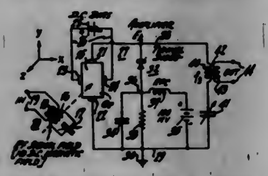
1. A radio receiver comprising means for receiving R-F microwave signal oscillations; a fix-tuned local oscillator; a first mixer for combining said signal oscillations with the local oscillator oscillations; a high frequency I-F amplifier for amplifying the output of said first mixer constituting

signals at the incoming signal frequency, at a frequency equal to sum of the incoming signal frequency and the local oscillator frequency, and at a frequency equal to the difference between the incoming signal frequency and the local oscillator frequency; said high frequency I-F amplifier excluding from its pass band the local oscillator



frequency; a second mixer for converting the output of said high frequency I-F amplifier into modulated oscillations at the local oscillator frequency; a low frequency I-F amplifier for amplifying the output of said second mixer; and detector means for detecting the output of said low frequency I-F amplifier.

3,189,828
SIGNAL TRANSLATING SYSTEM
Kern K. N. Chang, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 31, 1961, Ser. No. 124,253
18 Claims. (Cl. 325—451)

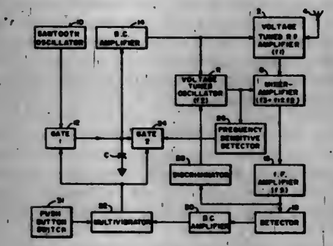


1. A semi-conductor nonreciprocal signal translating system comprising in combination, signal input circuit means, Hall-effect semi-conductor signal translating means magnetically coupled to said input circuit means along one of three substantially mutually-perpendicular axes, means for applying electrical energy to said Hall-effect signal translating means along a second one of said axes, semi-conductor diode signal-translating circuit means directly coupled in cascade with said Hall-effect means through and along a third one of said axes to provide in conjunction with said Hall-effect means an integrated four terminal network, and means for deriving an output signal from said semi-conductor diode circuit means at a predetermined frequency related to the frequency of an applied signal.

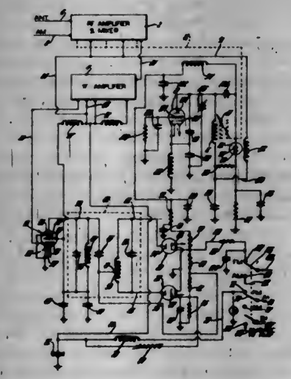
2. A semi-conductor nonreciprocal signal translating system as defined in claim 1, wherein the signal input circuit means includes a non-amplifying tunnel diode for circuit Q correction and enhanced Hall-effect efficiency.

3,189,829
SIGNAL SEEKING RECEIVING APPARATUS
Robert Bento, Tiverton, R.I., and Irving F. Barditch and Francis Rachal, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1961, Ser. No. 126,242
5 Claims. (Cl. 325—470)

1. In signal seeking receiving apparatus the combination of: search means operative to provide tuning signals; receiving means including tunable amplifying means operative to receive incoming signals and being tunable within a band of frequencies in response to said tuning signals, a tunable oscillator responsive to said tuning signals to provide local signals at a predetermined frequency with respect to the tuned frequency of said amplifying means, and mixing means operatively connected to said amplifying means and said oscillator to provide beat frequency signals; switching means operative to stop said search means from providing tuning signals to said amplifying means and said oscillator when said receiving means provides an output signal above a predetermined amplitude; frequency sensing means operative to provide substantially the same tuning signals to said amplifying means and said oscillator as said search means when said search means is stopped so that the respective tuned frequencies of said amplifying means and said oscillator are maintained; and discriminator means tuned to said intermediate frequency connected between said mixer means and said oscillator to provide fine tuning signal voltages to said oscillator in response to deviation of said local oscillator from said intermediate frequency.



3,189,830
AUTOMATIC FREQUENCY CONTROL WITH COMPENSATION FOR VARIABLE SUPPLY VOLTAGE
Richard L. Jenkins and Carleton D. Cory, Jr., Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,651
3 Claims. (Cl. 325—492)



1. In a radio receiver circuit, a source of frequency modulated waves, high frequency amplifying and mixing means for amplifying said frequency modulated waves

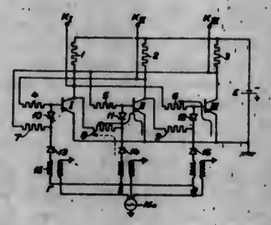
connected to said source, local oscillator means conpected to said high frequency amplifying and mixing means to create a resultant beat frequency of lower value, said local oscillator means having a tunable tank circuit to determine its frequency of oscillation, a source of electrical power whose voltage varies, a plurality of voltage divider means each having an intermediate reference point, said voltage divider means being connected to the source of electrical power and to ground and providing desired voltages at said intermediate reference points, a diode connected across the intermediate points of the voltage divider means so that the reference voltage across said diode remains the same regardless of the variation in the voltage of the source of electrical power, said diode being connected across the tunable tank circuit to regulate the capacity thereof and therefore control the frequency of the output.

3,189,831

MULTI-STABLE FLIP-FLOP CIRCUIT FOR GENERATING RECTANGULAR PULSES FROM AN ALTERNATING CURRENT CONTROL VOLTAGE SOURCE

Nils-Åke Björsten, Jonkoping, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed June 11, 1962, Ser. No. 201,732
Claims priority, application Sweden, June 15, 1961, 6,245/61
2 Claims. (Cl. 328—13)



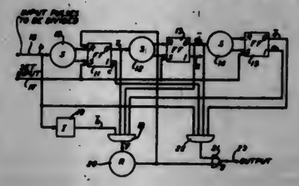
1. In combination with an alternating current control voltage source, a multi-phase switching circuit for generating rectangular pulses having the same frequency and phase number as, and a phase position corresponding to, said control voltage source, comprising a plurality of controlled switching devices, the number of switching devices being equal to the number of phases of the control voltage, each switching device having an output terminal and a control electrode, a common direct-current voltage source, first connecting means connecting the direct-current voltage source to the output terminals of each of the switching means, resistance means in said first connecting means beween the direct-current voltage source and the output terminals, second connecting means connecting the control voltage source to the control electrodes of each of said switching devices, diodes in said second connecting means between the control voltage source and each of the control electrodes, the output phase voltages of the connection being taken from the output terminals of the switching devices, third connecting means connecting the control electrode of each switching device to the output terminal of the switching device of the next succeeding phase, and fourth connecting means connecting the control electrode of each switching device to the output terminal of the next preceding phase, each of said fourth connecting means including the diode in the second connecting means of the later of the two connected phases and the impedance of the whole connection being substantially resistive.

3,189,832

PULSE TRAIN REPETITION RATE DIVIDER THAT DIVIDES BY N+½ WHERE N IS A WHOLE NUMBER

Charles W. Pugh, Burlington, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 18, 1962, Ser. No. 224,567
4 Claims. (Cl. 328—42)



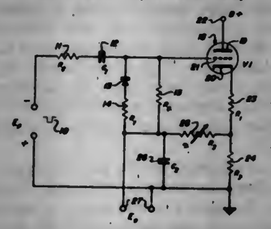
1. A pulse train repetition rate divider that divides by $N+½$, where N is a whole number, comprising
a pulse counter,
an input circuit connected to said pulse counter for applying input pulses thereto,
first means connected to the output of said input circuit and the output of said counter to produce a first output signal only upon the termination of one-half of a pulse period of said input pulses after said counter registers a first count equal to N greater than the initial count in said counter,
second means to apply said first output signal to said counter to reset said counter to a second count which is less than said first count by an amount equal to $2N+1$,
third means responsive to said counter to produce a second output signal when said counter registers a third count which is greater than said second count by an amount equal to $N+1$, and
fourth means making available said first and second output signals as the output of said combination.

3,189,833

VARIABLE TIME CONSTANT PULSE INTEGRATOR

George W. Rodgers, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 7, 1961, Ser. No. 101,606
2 Claims. (Cl. 328—58)



1. A pulse integrating circuit comprising input means for receiving unidirectional voltage pulses, an amplifier tube having at least an anode, a cathode and a control electrode, the anode being connected to a source of positive potential, a first and a second resistor connected in series between the cathode and ground potential, a pulse stretching capacitor having a first terminal connected to said control electrode and a second terminal connected to said input means, a pulse integrating capacitor, a diode and a third resistor connected in parallel between the first terminal of said pulse stretching capacitor and a first terminal of said pulse integrating capacitor, the second terminal of said pulse integrating capacitor being connected

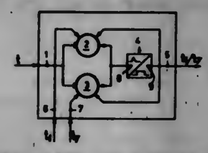
to ground, said diode being oriented with its positive current conducting direction from the first terminal of said pulse integrating capacitor to the first terminal of said pulse stretching capacitor, a fourth resistor connected between the first terminal of said pulse integrating capacitor and the junction of said first and second resistors, and voltage output means connected between said first terminal of said pulse integrating capacitor and ground.

3,189,834

CIRCUIT ARRANGEMENT FOR SHIFTING A PULSE OCCURRING AT AN ARBITRARY INSTANT TO ONE OF TWO GIVEN INSTANTS OF A PULSE CYCLE

Antonie Wijbe van 't Slot and Hans Kok, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 11, 1961, Ser. No. 82,096
Claims priority, application Netherlands, Jan. 21, 1960, 247,610
3 Claims. (Cl. 328—63)



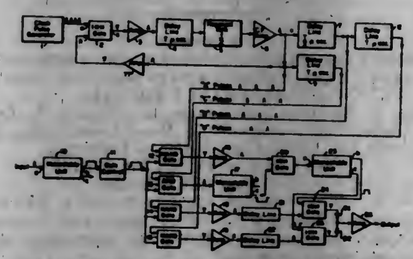
1. A circuit for shifting an input pulse to one of two predetermined instants of a pulse cycle, said circuit comprising a source of said input pulse, a source of clock pulses providing pulse cycles each having first and second clock pulses at first and second predetermined instants, respectively, first and second storing one-shot generators each having at least a setting terminal, an output terminal, and first and second input terminals, means applying said input pulse to the setting terminals of said first and second storing one-shot generators, means applying said first and second clock pulses to the first input terminals of said first and second storing one-shot generators, respectively, a third one-shot generator having a third input terminal and an output terminal, means connecting the output terminals of said first and second generators to said third input terminal, means connecting the output terminal of said third one-shot generator to the second input terminals of said first and second storing one-shot generators, and output circuit means connected to the output terminal of said third one-shot generator.

3,189,835

PULSE RETIMING SYSTEM

Lynn W. Marsh, Jr., Marblehead, Mass., assignor to Anelex Corporation, Boston, Mass., a corporation of New Hampshire

Filed May 1, 1961, Ser. No. 106,840
6 Claims. (Cl. 328—63)



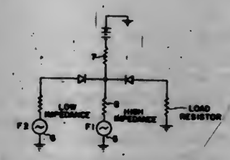
1. A pulse retiming system comprising, in combination, a source of clock pulses having a fixed period, means controlled by said clock pulses for generating a first train of pulses corresponding to odd clock pulses, a second train of pulses corresponding to even clock pulses, a third train of pulses having a period equal to the period of said first and second train and delayed with respect to said first train by one half of said fixed period, and a fourth train of pulses having a period equal to the period of said third train and delayed with respect to said second train by one half of said fixed period, a logic gate associated with each pulse train, each gate having a pair of input terminals and an output terminal producing a pulse when and only when pulses are simultaneously applied to both input terminals, means for applying each train to one input terminal of its associated gate, monostable circuit means for producing a pulse having a duration equal to one and one half times said fixed period in response to an applied input pulse, means connecting said monostable unit to the other input terminal of each of said gates, an output amplifier, means controlled by the gates associated with said first and third means for gating the output of the gate associated with said second train to said output amplifier when the gate associated with said first train produces a pulse, and means controlled by the gate associated with said first and third trains for gating the output of the gate associated with said fourth train to said output amplifier when the gate associated with said third train produces a pulse.

3,189,836

MIXER EMPLOYING DUAL DIODE CIRCUIT BIASED IN THEIR EXPONENTIAL OPERATING REGIONS

Allen F. Podell, Old Greenwich, Conn., assignor to Anzac Electronics, Incorporated, Stamford, Conn., a corporation of Connecticut

Filed May 22, 1962, Ser. No. 196,727
3 Claims. (Cl. 328—156)



1. A mixing circuit comprising
(a) two physically separate diodes connected in opposition,
(b) sources of signal at two different frequencies, one connected to the end of one diode of the pair, and the other to the junction of the diodes,
(c) an output circuit connected to the other end of the other diode, and
(d) means for maintaining forward biases on both diodes in their exponential operating regions.

3,189,837

PULSE GENERATOR EMPLOYING PLURAL PULSE FORMING NETWORKS PROVIDING OVERLAPPED PULSES TO EFFECT RIPPLE CANCELLATION

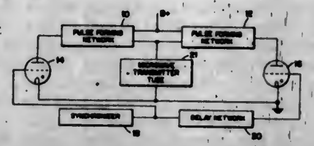
Glenn F. Grotz, Huntington Station, and Michael J. Coyle, Bay Shore, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Mar. 14, 1963, Ser. No. 265,600
3 Claims. (Cl. 328—162)

1. A pulse generating circuit for supplying an improved pulse to an electronic device comprising:
(a) a first pulse forming network connected to said electronic device,
(b) a second pulse forming network connected to said electronic device,
(c) means connected to said first and second pulse form-

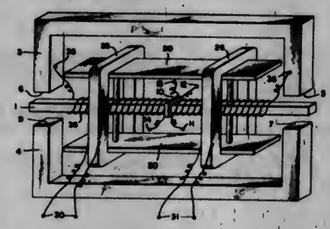
ing networks for charging said networks to a desired potential,

(d) means for triggering said first and second pulse forming networks for generating first and second pulses, and



(e) means applying said pulses to said electronic device in overlapping relationship whereby the wave form of the resulting pulse applied to said electronic device is substantially free of ripple.

3,189,838
HALL-EFFECT AMPLIFIERS
Alton Leger, Jr., Roslyn, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 22, 1961, Ser. No. 154,301
6 Claims. (Cl. 330—6)

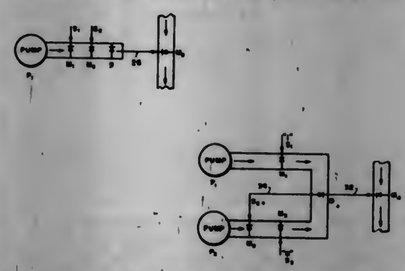


1. A Hall-effect amplifier comprising a Hall-plate having output signal terminals and current terminals, means for supplying a constant-current to said Hall-plate current terminals, magnetic field producing means for supplying a constant magnetic field, high magnetic permeability means pivotally suspended about a central transverse axis, and operatively associated with said magnetic field producing means to provide a diverting longitudinal magnetic path for said magnetic field in a displaced position of said permeability means said Hall-plate being mounted within said high permeability means transversely to a longitudinal magnetic flux in said permeability means and parallel to said magnetic field, input signal means mounted on said high permeability means for producing a magnetic field in response to an input signal to interact with said constant magnetic field to produce a torque on said permeability means, and feedback signal means mounted on said high permeability means and connected to said output signals terminals to produce a magnetic field in response to an output signal from said Hall-plate to interact with said constant magnetic field to produce a torque on said permeability means.

3,189,839
HIGH SPEED AMPLIFYING MODULATION-DEMODULATION LOGIC
Wilfried O. Eckhardt, Malibu, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 10, 1961, Ser. No. 102,966
5 Claims. (Cl. 330—10)

1. A high speed AND logic circuit comprising:
a waveguide transmission line having an input end and an output end;
a pump source of electrical waves connected to the input end of said transmission line;
first and second reactive modulation means coupled in series in said transmission line;
a first source of base band signals coupled to said first reactive modulation means;
a second source of baseband signals coupled to said second reactive modulation means; and
reactive demodulation means coupled to said output end and responsive to the output of said second modulator, for producing a baseband signal output when and only when both said reactive modulation means have simultaneous outputs.

4. A dynamic-memory logic circuit comprising:
a waveguide transmission line having first and second input legs connected by an output cross leg;
respective pump sources of electrical waves, one of said sources being connected to said first input leg and the other of said sources being connected to second input leg;
respective input reactive modulation means coupled to said first and second input legs;
a first source of baseband signals connected to the input modulation means in said first input leg and a

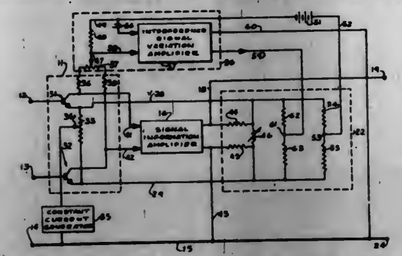


second source of baseband signals connected to the input modulation means in said second input leg;
said first source of baseband signals producing a signal distinctly different from said second source of baseband signals;
demodulation means coupled to said output cross leg for producing a baseband output;
further reactive modulation means coupled to said second input leg at a connection point thereof between its associated pump signal source and its said input reactive modulation means; and
electrically conductive feed back means connecting said demodulation means to said further modulation means for passing the demodulated output of a signal present on only one of said first and second legs to the further modulation means of said second leg, enabling recirculation and output utilization of said output signal via said second leg, output cross leg, demodulation means and feed back means until the appearance of the non-recirculated signal in the other of said legs.

3,189,840
DIRECT COUPLED AMPLIFIER FOR AMPLIFYING LOW LEVEL INFORMATION SIGNALS AND REJECTING INTERFERENCE SIGNALS
Noel B. Braymer, Costa Mesa, and Charles E. Eagle, Tustin, Calif., assignors to Dana Laboratories, Inc., Santa Ana, Calif., a corporation of California
Filed Feb. 8, 1963, Ser. No. 257,188
6 Claims. (Cl. 330—25)

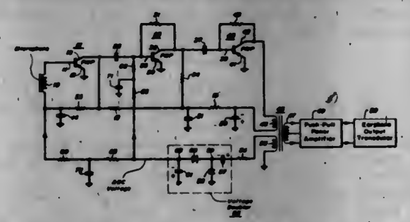
1. In a direct coupled amplifier having a differential first stage including a pair of transistors each having an emitter, a base and a collector, an interference signal rejection circuit including
amplifier means having first and second input terminals and first and second output terminals;
a source of potential;

means connecting said source of potential to said first input terminal of said amplifier;
means for detecting changes in the sum of the currents flowing through said transistors connected to said second input terminal of said amplifier thereby to apply a potential indicative of said sum of currents to said second input terminal; and
feedback means connected between said first output terminal of said amplifier means and said first stage;



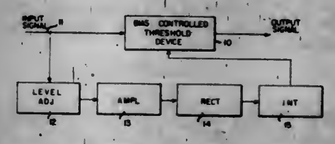
said second output terminal being connected to common,
said amplifier means being responsive only to differences between the potential applied to said input terminals to provide an output signal effective to change said sum of currents thereby to cause the potential at said first and second input terminals to become substantially equal.

3,189,841
HEARING AID AUTOMATIC GAIN CONTROL SYSTEM
Walter S. Druz, Bensenville, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,226
4 Claims. (Cl. 330—29)



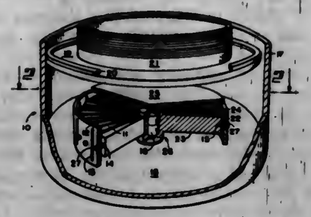
1. A hearing aid of the type which operates from a battery power supply of not over one and one-half volts comprising:
a transistorized amplifying system for developing, in response to received acoustic energy of varying loudness, an amplified audio signal representative of said acoustic energy and having saturation and cutoff levels defining a predetermined overload range;
an output transformer, included in said transistorized amplifying system, having one output winding for connection to an output transducer and having a second voltage step-up output winding;
voltage developing means, including a voltage doubler having a full wave rectifier for peak rectifying both the positive and negative half cycles of said amplified audio signal and also having an input coupled to said second output winding and having an output, storage condenser means, and charging circuitry for said storage condenser means coupled to the output of said voltage doubler for charging said storage condenser means in response to an increase in loudness of said incoming received acoustic energy to develop in said storage condenser means an automatic gain control voltage having a magnitude proportional to the peak-to-peak audio amplitude and determined by the instantaneous loudness of said received acoustic energy, said charging circuitry and storage condenser means collectively establishing an attack time of predetermined minimum duration;
discharging circuitry for discharging said storage condenser means in response to a decrease in loudness of said received acoustic energy to decrease the magnitude of said automatic gain control voltage;
and means for applying said automatic gain control voltage to said transistorized amplifying system to vary the gain thereof in a direction tending to maintain the operation of said amplifying system within said overload range and to maintain the output of said system at a constant amplitude in spite of variations in loudness of said received acoustic energy, said storage condenser means presenting a substantial load on said amplifying system during said attack time to prevent overdriving of said amplifying system beyond said overload range until said automatic gain control voltage reduces the gain of said system to a point within said range.

3,189,842
SELF ADJUSTING THRESHOLD CONTROL
George F. Quittner, Cleveland Heights, Ohio, assignor to Assembly Products, Inc., Chesterland, Ohio, a corporation of Ohio
Filed June 22, 1962, Ser. No. 204,317
3 Claims. (Cl. 330—51)



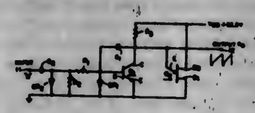
1. Apparatus for detecting a flaw in a sample with relative movement between sample and apparatus, said apparatus having,
a first electronic amplifier circuit having a first input connection and having a second input connection which is a threshold bias input connection and said first circuit comprising a push-pull arrangement of electronic devices and connected to be influenced by said connections to pass both positive and negative pulse signals derived from said first input connection when said signals exceed in absolute amplitude a voltage applied to said second input connection, said voltage constituting a threshold adjustment which either a positive or a negative incoming signal must exceed in order to pass through said amplifier,
a second amplifier circuit having an input connection which is a signal input connection,
parallel input circuitry having broad frequency pass band characteristics capable of passing random noise and connected to take input simultaneously in parallel to said first amplifier circuit first input connection and to said second amplifier circuit input connection,
manually adjustable means for regulating the gain of said second amplifier circuit,
means for rectifying the output of said second amplifier circuit,
means for integrating the rectified output of the second amplifier circuit,
means including connections for taking the rectified and integrated second amplifier circuit output to said first amplifier second input connection, and
connection means for deriving a useful output from the first amplifier circuit.

3,189,843
MULTIPLE TUNNEL DIODE RESONANT CAVITY OSCILLATOR
George Bruck, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Aug. 29, 1962, Ser. No. 220,275
6 Claims. (Cl. 331—107)



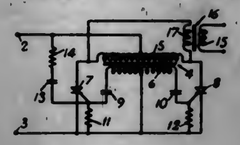
1. A microwave oscillator comprising, in combination:
a cylindrical master cavity resonator having a central axis,
a thermoelectric generator centered on said axis,
means including a plurality of metallic wings for defining a plurality of radially extending resonators,
the last-mentioned means further including a metallic partition formed with slots adjacent alternate ones of the radial resonators to couple the radial resonators to the master cavity resonator,
and a plurality of tunnel diodes individually mounted on the outer ends of said wings and energized by said thermoelectric generator for exciting said radially extending resonators.

3,189,844
SEARCH SWEEP OSCILLATOR COMPRISING ONE OR MORE THREE ELECTRODE TRANSISTORS AND A DOUBLE BASE DIODE
Merlin H. MacKenzie, Mountain View, Calif., assignor to the United States of America as represented by the Secretary of the Army
Filed June 7, 1962, Ser. No. 200,898
2 Claims. (Cl. 331—111)



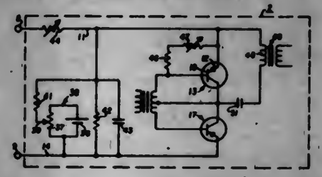
1. An automatic frequency control circuit comprising: a transistor having a collector, an emitter and a base; a common point; means to connect said emitter to said common point; a first resistor having two terminals; means to connect one terminal of said first resistor to said base; a second resistor connected between said common point and the second of said two terminals of said first resistor; a first diode connected across said second resistor; a first capacitor connected in series with said first resistor; means to apply an input signal to said first capacitor; a second diode connected between said base and said common point; a second capacitor connected between said base and said collector; a source of supply voltage; means to couple said source of voltage to said collector; a double base diode having a first base, a second base and an emitter; means to connect said first base to said common point; means to connect said emitter of said double base diode to said collector; means to couple said supply voltage to said second base; output circuit means; and means to couple said collector to said output circuit means.

3,189,845
INVERTER CIRCUITS FOR PRODUCING AN A.C. OUTPUT FROM A D.C. SOURCE USING SEMICONDUCTOR CONTROLLED RECTIFIERS
Peter David Jones, Hodgehill, Castle Bromwich, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Nov. 5, 1962, Ser. No. 235,266
Claims priority, application Great Britain, Nov. 22, 1961, 41,736/61
4 Claims. (Cl. 331—113)



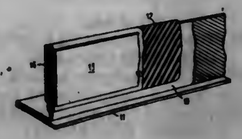
1. An inverter comprising in combination a D.C. source, first and second terminals connected to the D.C. source, a saturable core, first and second windings on the core and having points intermediate their ends connected to the first and second terminals respectively, a pair of switchable rectifiers through the anodes and cathodes of which the ends of said first winding are connected to the second terminal respectively, each of said switchable rectifiers being switched on by a positive pulse applied between its gate and cathode, and being switched off by a negative pulse applied between its gate and cathode, a pair of capacitors through which the ends of the second winding are connected to the gates of the switchable rectifiers respectively, a pair of resistors through which the gates of the switchable rectifiers are connected to the second terminal respectively and an output winding associated with said core, conduction of one of said switchable rectifiers serving to magnetise the core in one direction and maintain the other switchable rectifier non-conductive, and saturation of said core resulting in reversing the conductivities of said switchable rectifiers so that the core is magnetised in the opposite direction, an A.C. signal being produced in said output winding.

3,189,846
PUSH-PULL MODULATOR WITH ADJUSTABLE CONTROL MEANS
Edwin G. Millis and Robert A. Shearer, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application July 3, 1958, Ser. No. 746,464, now Patent No. 3,008,090, dated Nov. 7, 1961. Divided and this application Jan. 13, 1961, Ser. No. 88,592
2 Claims. (Cl. 332—37)



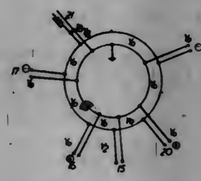
1. A modulator comprising two transistors each having collector, emitter and base electrodes, means for applying a direct voltage across said emitter electrodes, a center-tapped source of alternating signals connected between said base electrodes, said collector electrodes being connected together and to the center tap of said source, a load impedance connected between said collector electrodes and said emitter electrode of one of said transistors, and a variable resistor connected between the base electrode and the emitter electrode of said one transistor.

3,189,847
D.C. POWER DISTRIBUTION SYSTEM
Eugene J. Rymaszewski and Jacob Riesman, Poughkeepsie, and Leslie A. Harlow, Fishkill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 29, 1961, Ser. No. 113,516
12 Claims. (Cl. 333—1)



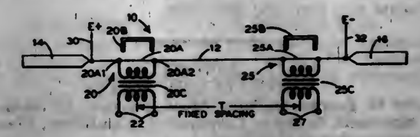
3. A transmission line for distributing energy from a source to a plurality of units, said line having high inherent decoupling characteristics for attenuating the high frequency resonant signal components of said energy, comprising a substratum for serving as a ground plane for said line and of a thickness sufficient to support said line, a dielectric affixed to at least a portion of said substratum, and means affixed to said dielectric for conducting said energy from said source for distribution to said units, said dielectric and said substratum being characterized by being lossy and formed of ferromagnetic material respectively, with the loss angle of the dielectric equal to or greater than the loss angle of the material of the substratum, permitting reduced amplitude and increased attenuation of said components to occur as the frequency of said resonant components increases.

3,189,848
PARALLEL PUSHPULL HYBRID CIRCUIT
Masahisa Miyagi, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Jan. 18, 1961, Ser. No. 83,436
6 Claims. (Cl. 333—11)



1. A parallel pushpull hybrid circuit consisting essentially of a ring circuit composed of signal transmission means, a first terminal connected to said ring circuit, a pair of second terminals and a pair of third terminals all connected to said ring circuit, each of said second terminals being located at each side of said first terminal and spaced therefrom along said ring circuit by a quarter wavelength of the signal in said ring circuit, each of said third terminals being located more remote from said first terminal than the second terminal and spaced from the second terminal along said ring circuit by half wavelength of said signal, a fourth terminal also connected to said ring circuit, said fourth terminal being located between said third terminals and spaced along said ring circuit from one of them by a quarter wavelength and from the other of said third terminals by substantially three quarters of the wavelength of said signal, one of said first and fourth terminals, being terminated by a terminating resistor.

3,189,849
TORSIONAL SONIC WIRE DELAY LINE
Jacob Tellerman, Bayside, N.Y., assignor to Tempo Instrument Incorporated, Plainview, N.Y., a corporation of New York
Filed Apr. 2, 1962, Ser. No. 184,141
6 Claims. (Cl. 333—30)



1. A torsional sonic delay line comprising
an elongated member of a material capable of transmitting a sonic disturbance;
means for supporting said elongated member at both ends as terminations to prevent reflections of any transmitted disturbance;
an individual ferromagnetic element supported at each end of and integrated with said elongated member for transferring a sonic pulse into or out of said elongated member;
means for axially magnetically energizing each ferromagnetic element;
means directly electrically connected to said elongated member for injecting a current pulse into one of said ferromagnetic elements to generate a flux field to react on said axially energized ferromagnetic element to create a sonic pulse to traverse said elongated member;
and electromagnetic means for detecting said pulse at the other of said ferromagnetic elements.

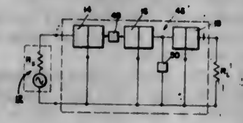
3,189,850
RECTANGULAR WAVEGUIDE BEND
Richard M. Walker, Newton, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts
Filed Nov. 23, 1962, Ser. No. 239,461
The portion of the term of the patent subsequent to January 8, 1980, has been disclaimed and dedicated to the Public
14 Claims. (Cl. 333—98)



1. For use in effecting a change in the axial direction of a rectangular waveguide, a bent rectangular waveguide section having a bent intermediate portion, and straight end portions axially disposed relative to each other at the desired angle of said change, each end portion meeting said intermediate bent portion in a plane substantially normal to the axis of said end portion, said planes intersecting each other at a second angle which is the trigonometric supplement of said desired angle, said intermediate portion having an inner arcuate wall curved on a first radius greater than zero and centered at a first point lying on the bisector of said angles, said inner arcuate wall joining first walls of each end portion to constitute the inner wall of said bent waveguide section, the outer wall of said intermediate portion between said planes mating with and joining the second walls of each end portion opposite said respective first walls and being arcuately curved on a second radius longer than the distance between said first and second walls in either of said end portions and centered at a second point lying on said

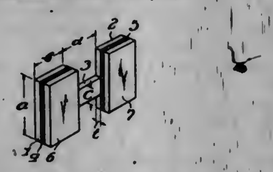
bisector, said second point being so located relative to said first point that the length of the portion of said second radius along said bisector, from said inner wall to said outer wall of said intermediate portion, is a length ranging from about 95% to about 98% of the distance between said first and second walls in either of said end portions, said second point being further from said inner arcuate wall than said first point.

3,189,851
PIEZOELECTRIC FILTER
Peter H. Fowler, Sudbury, Mass., assignor, by mesne assignments, to Sonus Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 4, 1962, Ser. No. 201,724
3 Claims. (Cl. 333—72)



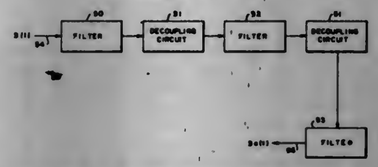
1. A filter comprising a series of at least two acoustical transformers, each of said transformers comprising first and second disc-shaped, axially polarized, piezoelectric transducers having opposite electroded faces, said transducers being juxtaposed in closely spaced face-to-face relation, thin bonding means including conducting means between said transducers, said bonding means covering substantially the entire opposing faces of said transducers, said bonding means effecting close acoustical coupling between said transducers, each of said transducers exhibiting an electrical resonance at a first frequency and a mechanical resonance at a second frequency, a signal source having a first impedance, said signal source delivering a signal at a selected frequency intermediate said mechanical and electrical resonant frequencies of said transducers, a load having a second impedance less than said first impedance, means connecting the opposite electroded faces of said first transducer of the first transformer of said series to said source, means for connecting the opposite electroded faces of said second transducer of the last transformer of said series to said load and means for electrically connecting in cascade the remaining transducers of the filter.

3,189,852
ELECTRO-MECHANICAL FILTERS
Hidetoshi Tsuchiya, Suzaka-shi, Japan, assignor to Kabushiki Kaisha Toko Radio Coil Kenkyusho, Suzaka-shi, Japan, a joint-stock company of Japan
Filed Apr. 9, 1963, Ser. No. 271,736
Claims priority, application Japan, Apr. 14, 1962, 37/14,980
1 Claim. (Cl. 333—72)



An electromechanical filter comprising a plate resonating element system including a plurality of spaced identical rectangular resonating elements and coupling elements interconnecting adjacent resonating elements to provide a chain, said resonating elements and coupling elements being formed from a single duralumin plate, an individual thin plate of a material selected from the group consisting of electrostrictive and piezoelectric materials bonded onto one surface of each of the resonating elements located at the respective ends of the chain, electrode plates respectively bonded on the outer surface of the individual thin plates, said resonating elements, individual thin plates and electrode plates being coextensive in length and width, and the ratio of the longitudinal length to the transverse width of the resonating elements being greater than 3.

3,189,853
FILTER FOR THE CANCELLATION OF DELAYED SIGNALS
Ellis Strick, Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 26, 1960, Ser. No. 58,569
2 Claims. (Cl. 333—76)



1. A passive circuit for removing undesired signals which appear as reflections of the desired seismic signal contained in a composite seismic signal, said circuit comprising:
a plurality of individual filter circuits coupled in series by decoupling circuits;
at least one of said individual filter circuits comprising a first branch having a resistance in parallel with an impedance filter and a second branch having a resistance in series with an impedance filter, said second branch being in series with said first branch;
at least another of said individual filters comprising a third branch having a resistance in series with an impedance filter and a fourth branch having a resistance in series with an impedance filter, said fourth branch being in parallel with said third branch;
the resistance of said first and second branches having a value equal to

$$\left(\frac{1-k}{1+k}\right)R_0$$

in which k is a constant having the value between plus 1 and minus 1 and R_0 is the resistance of high ohmic value and the resistance of said second and fourth branches has a value equal to

$$\left(\frac{1+k}{1-k}\right)R_0$$

in which k and R_0 have the above values.

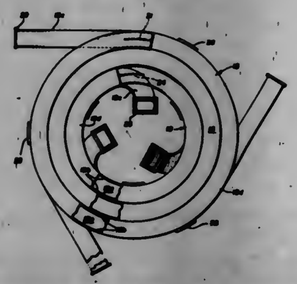
3,189,854
COUPLING ARRANGEMENT
John Q. Hubbard, South Pasadena, Calif., assignor to Purolator Products, Inc., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 189,002
9 Claims. (Cl. 333—98)

1. In a double ridged waveguide coupling arrangement, a receptacle assembly comprising:
a central segment-defining, energy-transmitting channel of determined configuration,
a plurality of inwardly-projecting, opposed ridges in said channel,
apertures in said ridges extending longitudinally of the receptacle assembly,
said central segment having a forwardly-projecting planar surface immediately surrounding said channel,
a plug assembly comprising a central member defining a channel having a configuration congruently complementing the configuration of said first mentioned channel,
a pair of opposed inwardly-projecting ridges in said second mentioned channel,
said ridges receiving a pair of forwardly-projecting aligning pins,
said member having a forwardly-projecting surface immediately surrounding said second mentioned channel,
said pins being receivable in said longitudinal apertures during closure of the assembly to effectuate precise alignment of the respective channels and ridges,
shoulder means on one of said assemblies,
clamp means on the other of said assemblies,



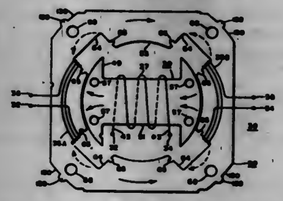
said clamp means comprising at least one lever pivotally mounted on the other of said assemblies and having at one end thereof a slot operable to receive said shoulder means during closure of said assemblies,
the slot in said lever being defined at one edge thereof by a pressure-applying portion of the lever,
a follower abutment at the other end of the lever,
and spring loaded cam means movably mounted on said other assembly and engageable with said follower abutment to induce pressured movement of the lever and pressure-engagement of said portion with said shoulder means to drive the respective assemblies together and bring the respective surfaces into intimate engagement with each other.

3,189,855
WAVEGUIDE ROTARY JOINT UTILIZING ANNULAR RESONANT WAVEGUIDE
Max P. Ferrer, Palo Alto, Calif., assignor to Kane Engineering Laboratories, Palo Alto, Calif., a corporation of California
Filed May 17, 1962, Ser. No. 195,507
9 Claims. (Cl. 333—98)



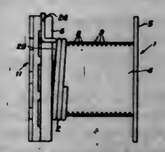
1. In a waveguide rotary joint, an annular resonant waveguide forming a transmission-type cavity, a pair of additional waveguides, each of said additional waveguides having a substantially annular portion, means forming an input directional coupling arrangement extending through substantially 360° between the annular portion of one of the additional waveguides and the annular waveguide, means forming an output directional coupling arrangement extending through substantially 360° between the annular portion of the other additional waveguide and the annular waveguide, and means for mounting the annular waveguide and the additional waveguides to permit rotation of one of the additional waveguides relative to the other of the additional waveguides.

3,189,856
INDUCTION VOLTAGE REGULATOR
Merrill G. Leonard, Brookfield, Ohio, and John Astleford, Jr., Hickory Township, Mercer County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 26, 1960, Ser. No. 32,018
7 Claims. (Cl. 336—120)



1. An induction voltage regulator comprising a laminated hollow stator core having at least four longitudinal slots therein, a rotor member disposed to be angularly positioned inside said stator core and having at least one pair of longitudinal slots therein, a primary winding disposed in the slots of said rotor member, said primary winding having only one magnetic axis, a secondary winding including at least first and second winding sections disposed in the slots of said stator core, said secondary winding having only one magnetic axis, one end of each of said secondary winding sections being connected to different ends of said primary winding, said rotor having a neutral position in which the magnetic axis of the primary winding is perpendicular to the magnetic axis of the secondary winding, the width of each of the slots in said rotor member being greater than the distance between the adjacent slots of said stator core to reduce the leakage reactance of each of said secondary winding sections in the neutral position of said rotor member.

3,189,857
TRANSFORMER BOBBIN
Howard T. Jones, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,656
2 Claims. (Cl. 336—198)



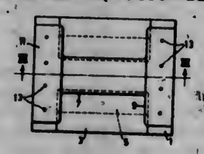
1. A coil winding bobbin adapted to closely surround a transformer core of rectangular cross-section comprising a tube of rectangular cross-section similar in shape to that of the transformer core and composed of electrical insulating material, said tube having flanges at opposite ends for constraining the coil winding within the extremities of the tube, said tube being formed on its outer surface only at the corners thereof with spaced grooves for receiving and positioning the turns of the coil winding, the bottoms of said grooves being rounded about the corners, whereby the bending radius of the winding at said corners is increased without reducing the minimum thickness of the tube walls.

3,189,858
MAGNETIC CORE STRUCTURES
Curtis L. Moore, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1961, Ser. No. 82,026
5 Claims. (Cl. 336—212)



1. A magnetic core structure comprising first and second leg portions spaced apart from one another, yoke portions connecting the ends of said leg portions, each of said yoke portions comprising a plurality of laminations formed from magnetic strip material and assembled in a rectangular configuration having first and second openings therethrough, each of said leg portions comprising a plurality of ring core sections, each of said ring core sections including a central opening and a radial gap extending axially thorugh said section, the ring core sections of each leg portion being assembled between the associated yoke portions along a common axis with the central openings substantially aligned with each other and with one of the openings in each of said yoke portions, annular electrically insulating members disposed between the adjacent ring core sections, each insulating member having an opening therethrough larger than the opening in each ring core section, fibrous reinforcing material disposed to pass through the aligned openings of each leg portion and the associated yoke portions, a thermosetting resin filling the balance of the aligned openings and the radial gaps of said ring core sections and the openings in the insulating members to bond said yoke and leg portions and said insulating members together in a unitary assembly, and said resin having projecting portions formed around its periphery in the openings in the insulating members.

3,189,859
COIL CORE OF CERAMIC FERROMAGNETIC MATERIAL
Eigil Olsen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,081
Claims priority, application Germany, Mar. 3, 1962, N 13,524
7 Claims. (Cl. 336—212)



1. A magnetic core for an inductance coil comprising an H-shaped member of ferromagnetic material, and ferromagnetic means defining an opening and comprising at least two legs which are arranged to mate with the limbs of said H-shaped member in close contact therewith over a substantial portion of said limbs.

3,189,860
LAMINATED TRANSFORMER CORE HAVING BUTT JOINTS STAGGERED ALONG A STRAIGHT LINE
Clarence G. Duenke, St. Louis, Mo., assignor to Core Manufacturing Company, Washington, Mo., a corporation of Missouri
Filed Sept. 5, 1963, Ser. No. 306,959
3 Claims. (Cl. 336—217)



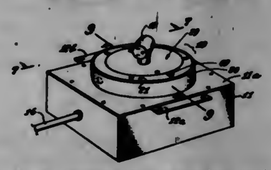
3. A transformer core comprising a plurality of groups of concentric laminations defining a closed rectangular loop having four legs, each lamination making a single turn about the loop and having ends abutting one another to define a single butt joint, the butt joints on each group of laminations being located on a first leg of the core and being staggered along the line in a substantially straight line, whereby when the ends of the laminations of a group are spread apart, each end is bounded on one side only by an adjacent lamination, at least one single turn locking lamination, the locking lamination having ends abutting one another to define a butt joint located on a leg of the core different from the first leg.

3,189,861
ROTARY CONTACT
John A. Masters and William M. Cooper, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 1, 1962, Ser. No. 170,527
6 Claims. (Cl. 339—8)



1. In a low-noise electrical rotary contact, the combination comprising,
(a) a first generally solid, right-cylindrical non-conducing member having a plurality of concentric annular channels formed into one of the planar surfaces thereof, said member also defining an axial bore extending along the axis of rotation thereof,
(b) a second generally solid, right-cylindrical non-conducting member having a plurality of concentric annular channels formed into one of the planar surfaces thereof, said member also defining an axial bore extending along the axis of rotation thereof, the channeled surface of said second cylindrical member being disposed in adjoining rotatable contact with the channeled surface of said first cylindrical member with respective annular channels registering to form closed annular conduits,
(c) mating tongue and groove means formed into the adjoining planar surfaces of said first and second cylindrical members concentrically to said annular channels,
(d) spring-loaded means including a bolt extending through said axial bores of said members, annular bearing races on the non-adjoining surfaces of said cylindrical members concentric to said bores, bearings positioned within said races, keeper means disposed about said bolt adjacent said bearings for maintaining said bearihgs in said races, and spring means disposed about said bolt, said bearings, keeper means, and spring means cooperating with said cylindrical members to maintain the registry of said channels,
(e) an electrically conductive fluid disposed within and filling said closed annular conduits, and
(f) a plurality of electrical terminals extending through each of said cylindrical members and contacting said fluid, said fluid being the only means of electrical communication between the terminals extending through the first cylindrical member and those terminals extending through the second cylindrical member.

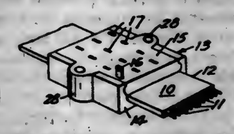
3,189,862
FLOOR RECEPTACLE MOUNT
Albert W. Vleerick, Downey, and Dana S. Longenecker, Arcadia, Calif., assignors to C. W. Cole & Co., Inc., El Monte, Calif., a corporation of California
Filed Dec. 3, 1962, Ser. No. 241,818
5 Claims. (Cl. 339—34)



1. In a floor receptacle mounting unit, a mounting device adapted to be secured in a recess provided in a floor, said device having an annular surface defining a central aperture; a cylindrical platform whose top or bottom flat circular surface is capable of substantially covering said central aperture when concentrically positioned therein; an electrical receptacle secured on one surface of said platform, said platform adapted to be rotatably supported within the central aperture of said device such that the top or bottom surface of said platform can be positioned flush with the annular surface of said mounting device whereby said receptacle can be positioned for exposure above the floor or concealment below the surface of the floor; and, means for limiting the movement of said platform to a semi-circular path between the said two positions.

3,189,863
CONNECTOR
Edward E. Leach, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 6, 1963, Ser. No. 286,890
10 Claims. (Cl. 339—99)

1. A connector contact element having two sets of oppositely facing contact arms each consisting of a pair of pointed spaced opposing jaw members having narrow work-engaging surfaces including substantially parallel holding portions and gradually diverging accepting portions forming a work-engaging opening, said jaw members being interconnected at the ends opposite said opening by resilient holding means yieldingly resistant to stresses tending to separate said surfaces, said two sets



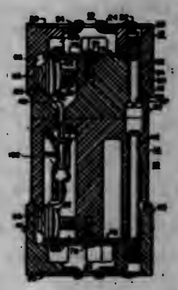
being resiliently interconnected centrally of one side of each set in a generally U-shaped configuration, the arms of the U being resiliently divergent.

3,189,864
ELECTRICAL CONNECTOR FOR FLAT CABLES
Wilhelm Angele and Hans G. Marthaeck, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 12, 1961, Ser. No. 109,789
12 Claims. (Cl. 339—176)
(Granted under Title 35, U.S. Code (1952), sec. 266)



6. An electrical insert connector comprising: an electrical cable having a longitudinal axis and a terminus, said cable comprising a plurality of electrical conductors extending along said longitudinal axis and a dielectric sheet material embedding said electrical conductors except for an area adjacent said terminus wherein said electrical conductors have completely bare portions; a spacer strip of dielectric material positioned between and in direct contact with said bare portions; and a dielectric material connector body having an insert portion, said dielectric material connector body confining said spacer strip and said terminus, and said bare portions being located within said insert portion and adapted to serve as electrical contact surfaces for said insert portion.

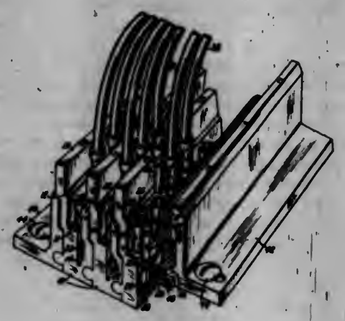
3,189,865
WIRING DEVICE
George F. Hawkes, Jr., Bridgeport, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1961, Ser. No. 145,309
7 Claims. (Cl. 339—176)



1. An elongated wiring device comprising an insulative body having at least one blade opening through a frontal end surface thereof and an insulative cover having a rearward end surface longitudinally spaced from said frontal end surface of said body, said cover having an opening therethrough for entry of a wire, at least one elon-

gated conductive member supported on an inner surface of said body, a threaded fastener extending in the device in a lateral direction through a terminal end portion of said conductive member for engaging the wire, an insulative retaining member disposed on said body and cooperatively forming therewith a generally enclosed pocket in which at least said conductive member terminal portion is supportedly disposed, said retaining member secured to said body so as to secure said conductive member in place and further having an opening therethrough in alignment with said terminal end portion for wire insertion in the device in a longitudinal direction, a channel extending from said pocket in the device in an outward lateral direction for operating access to said threaded fastener, the outermost lateral contour of said retaining member and the outer limit of said channel contained within the outermost lateral contour of said body, said cover disposed in longitudinally mating engagement with said body so as to enclose said retaining member and said channel, and means for holding said body and said cover in secured relation.

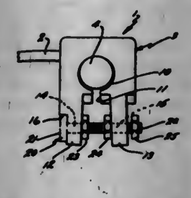
3,189,866
TERMINAL BLOCK CONNECTOR
Michael Lazar, White Plains, N.Y., and Robert G. Knowles, Norwalk, Conn., assignors to Burndy Corporation, a corporation of New York
Filed Sept. 21, 1962, Ser. No. 225,219
5 Claims. (Cl. 339—198)



1. A terminal block connector for electrically joining two or more conductors, comprising: a plurality of longitudinally extending strips of conductive metal, each strip having a plurality of seat portions offset from the plane of said strip and a plurality of transversely positioned contact portions each adapted to engage a conductor thereto; a plurality of longitudinally extending dielectric housings, each having a uniform transverse cross-section along the length thereof; each said housing including a longitudinal slot adapted to receive one of said strips, and a longitudinal channel substantially normal to the central plane of and opening onto said slot for receiving the offset seat portions of a strip longitudinally inserted into said slot; each housing being provided with longitudinally extending interlocking means on opposite sides thereof for securing adjacent housings in side-by-side relationship into a unitary assembly.

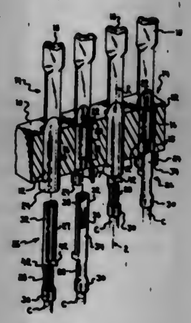
3,189,867
BATTERY CABLE CONNECTOR
Roy E. Kassbook, 1322 Sigsbee SE., Grand Rapids, Mich.
Filed July 25, 1963, Ser. No. 297,519
1 Claim. (Cl. 339—226)

A battery cable clamp for operably connecting a battery cable to the terminal post of a battery, comprising: a clamping element, said element having an opening for receiving a battery terminal post; said element being split and having a pair of legs extending therefrom on opposite sides of said split, the positioning of said legs determining the size of said opening; a bolt having a head with flat sides and a threaded shaft extending through openings in both of said legs proximate their ends; said shaft of said bolt threaded along a substantial portion



of its length; a first nut for preventing movement of said bolt with respect to one of said legs, said one leg held between said head and said first nut; a shoulder on said one leg adjacent and engaging a flat side of said head, said shoulder shaped to prevent rotation of said bolt; and second and third nuts on said bolt on both sides of said other leg for moving said other leg in either direction along said bolt.

3,189,868
PLUG AND SOCKET CONTACTOR
John G. Hatfield, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 23, 1962, Ser. No. 232,424
3 Claims. (Cl. 339—252)



1. A device of the character described including: a socket member adapted to be secured to an aperture in a plugboard, said socket being circular throughout a portion of its length, and non-circular throughout the remaining portion of its length, said non-circular portion having a minor axis which is less than the diameter of the circular portion and an aperture in the socket separating the circular and the non-circular portions, and a pin member adapted to fit into said socket, said pin member having an arcuate cross-sectional configuration adapted to fit into said socket and match the circular portion of said socket to provide good electrical conductivity, and locking means on said pin adapted to engage the non-circular portion of the socket to lock the pin member in the socket but permit unlocking to disengage the pin from the socket, and the pin member and socket each having an open seam longitudinally disposed therein to permit radial flexure.

3,189,869
ELECTRICAL CONNECTORS
John P. Avery, Indianapolis, Ind., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,447
6 Claims. (Cl. 339—258)



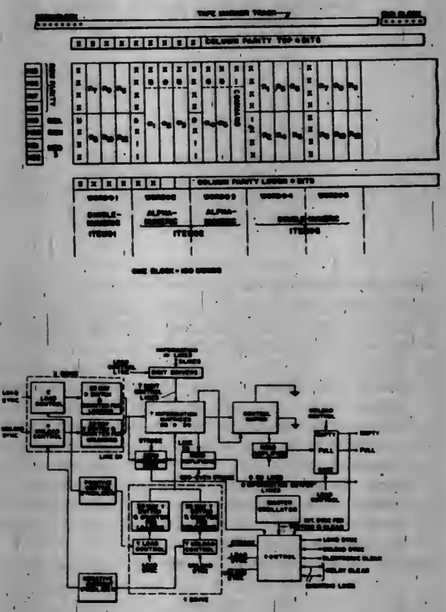
1. An electrical connector capable of nesting similarly shaped connectors, comprising:
a blank fabricated of sheet metal and formed into a base with a plurality of nest-defining legs extending outwardly therefrom, said legs being bent through substantial angles to one side of said base to positions wherein they are circumferentially spaced from one another and resiliently yieldable to engage frictionally an electrical terminal to which connection is to be made,
at least one of said legs having a receptacle integrally formed at the free end thereof and extending outwardly at a substantial angle from said nest-defining legs for making external connection to a conductor,
said connector, while frictionally engaged with a terminal, forming a nest for receiving similarly shaped connectors as a result of the spatial interrelation of said base, said legs and said receptacle, the legs of the nested connectors being accommodated in interleaved fashion in the spaces defined between the legs of the nesting connector.

3,189,870
GEOPHONE SPREAD FOR SEISMIC SYSTEMS
William L. Roever, Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1960, Ser. No. 79,842
2 Claims. (Cl. 340—7)



1. A marine seismic exploration system comprising:
(a) a generator of acoustical impulses;
(b) an elongated composite detector adapted to be towed through water comprising a supporting cable and a plurality of individual seismic transducers having electrical outputs carried by said cable and distributed along the length thereof, groups of longitudinally adjacent transducers having their outputs interconnected to provide at least three individual groups of transducers;
(c) a recording means having a signal input circuit;
(d) a circuit for each said group of transducers for separately connecting to said signal input circuit the outputs of the respective groups;
(e) switch means for opening at least two of said circuits; and
(f) time-delay means operable in response to the operation of said acoustical impulse generator for closing said switches in succession after the generation of a pulse, said time-delay means being connected to increase progressively the number of transducers connected to said input circuit and the overall length of the connected transducers.

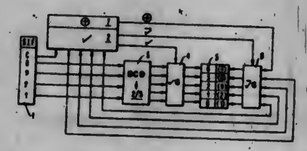
3,189,871
INFORMATION CHECKING APPARATUS FOR DATA TRANSFER SYSTEM
Michael G. Hurley, Burlingame, Calif., assignor to General Electric Company, a corporation of New York
Filed Feb. 15, 1960, Ser. No. 8,870
13 Claims. (Cl. 340—146.1)



11. In a high speed printing system including printing apparatus, information storage means for simultaneously storing first and second quantities of data, data input means including a recording medium moving in a given direction for transmitting quantities of data from said recording medium to said information storage means, controllable transfer means for transmitting quantities of data from said information storage means to said printing apparatus whereby said data is printed out, checking means for checking each quantity of data transmitted by said data input means for errors and for producing an error signal upon detection of an error in one of said quantities, means for applying each quantity of data to said checking means, control means responsive to an error signal from said checking means indicating an error in said second quantity of data including first means for disabling said transfer means, second means for stopping the movement of said recording medium in said given direction, third means for deleting said first and said second quantities of data from said information storage means, fourth means for immediately restoring said first quantity of data to said information storage means, fifth means for reversing the direction of movement of said recording medium for a length of said medium containing said second quantity of data, sixth means for initiating movement of said recording medium in said given direction to cause said data input means to re-transmit only said second quantity of

data from said recording medium to said information storage means, and means for selectively inhibiting said control means whereby said transfer means is effective to transfer said first and said second quantities of data to said printing apparatus even though an error occurs in said second quantity.

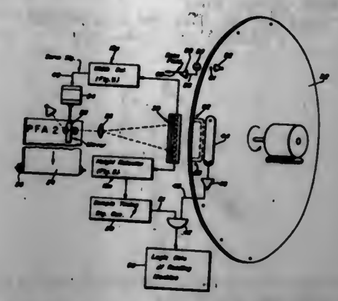
3,189,872
DATA HANDLING MECHANISM
William F. Beausoleil, Poughkeepsie, and Dominick J. Galage, Newburgh, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 20, 1962, Ser. No. 181,027
3 Claims. (Cl. 340—146.1)



3. A data handling mechanism comprising;
input means for receiving a first coded plural channel signal combination including a plural channel data signal in combination with a validity signal;
a translator responsive to said input means for translating from said first code to a second code, said second code characterized by the fact that only certain predetermined plural channel signal combinations represent valid characters in said second code;
a supplementary-signal generator responsive to said input means for generating a supplementary signal which, when combined with said plural channel data signal, comprises an invalid signal combination in said second code;
check means responsive to said input means for generating a check signal if said first coded combination is valid and a no-check signal if said first coded combination is invalid;
a check gate responsive to the output of said translator and said check means for gating the second coded signals to a utilization device upon the occurrence of a check signal; and
a no-check gate responsive to said input means, said generated supplementary signal, and said check means, for gating said plural channel data signals and said generated supplementary signal to the utilization device upon the occurrence of a no-check signal.

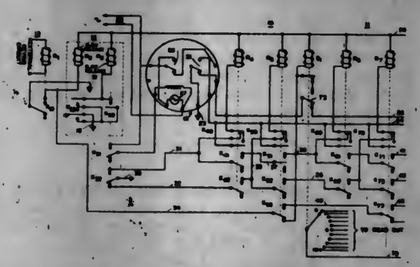
3,189,873
SCANNING PATTERN NORMALIZER
Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 9, 1962, Ser. No. 215,878
7 Claims. (Cl. 340—146.3)

7. In a scan system for characters where an unknown character is examined along adjacent lines and at discrete points of each line, the improvement comprising means to measure the height of an unknown character and provide a height signal corresponding to the actual height of the image of the character, means to provide sample timing signals, means responsive to said height signal for adjusting said sample-timing-signals-providing means to correspond thereto, means to measure the width of the unknown character and provide a width signal, and means responsive to said width signal for providing a pre-determined number of said lines to correspond to the width of the unknown character so that each unknown character is



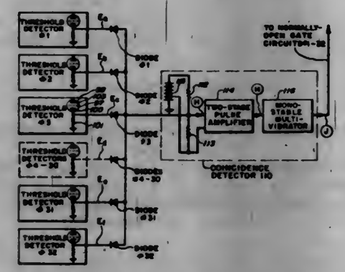
examined with the same number of lines and with the same number of samples in each line.

3,189,874
CODE RESPONSIVE RECEIVER HAVING MEANS FOR IGNORING REPEATED TRANSMISSIONS OF THE SAME DIGITAL CODE
Byron E. Miller and Darrell D. Dahlstrom, Houston, Tex., assignors to Shell Oil Company, a corporation of Delaware
Filed July 20, 1959, Ser. No. 828,282
2 Claims. (Cl. 340—147)



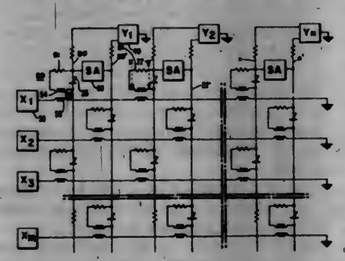
1. A translator for converting a sequential digital code having a uniform pulse duration and uniform time spacing between pulses, digits and groups, to a useful output comprising:
(a) a separate accumulating means for each digit of the digital code;
(b) a keying means actuated by each of said pulses, said keying means being coupled to each of said accumulating means in sequence;
(c) a timing means coupled to said keying means, said timing means having a time delay longer than the time spacing between pulses and shorter than the time spacing between digits, said timing means being disposed to transfer said keying means from the first of said accumulating means to the succeeding accumulating means in response to the time spacing between the pulses of individual digits;
(d) means coupled to said accumulating means and actuated by said first timing means in response to the time spacing after the last digit to actuate an external circuit of an external readout means;
(e) and second timing means coupled to said first timing means and actuated by the time spacing between the pulses of each individual group of digits for coupling said keying means to a bypass means for bypassing said accumulating means for each succeeding digital code, said second timing means in addition having a reset means, said reset means being actuated by a time spacing longer than the normal time spacing between the pulses of each individual group of digits to reset all of said accumulating means.

3,189,875
PULSE AMPLITUDE TO PULSE SEQUENCE CONVERSION APPARATUS
Melvin C. Hendrickson, Elmhurst, and Richard C. Herrmann, Chicago, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware
Filed July 23, 1959, Ser. No. 829,104
8 Claims. (Cl. 340—167)



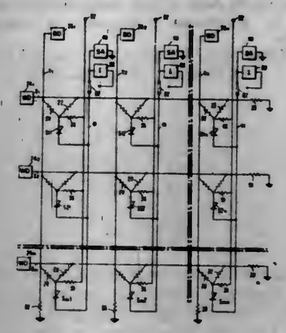
1. Detecting apparatus comprising: means for simultaneously developing several different control signals each of which has a unique, unknown, amplitude-polarity condition; a source of a reference signal of either polarity and having a fixed amplitude; means coupled to said developing means and to said reference signal source for selecting the one of said different control signals having an amplitude closest to that of said reference signal but of opposite polarity with respect thereto; and means coupled to said selecting means for providing information representing the selected control signal.

3,189,876
TRANSFORMER-COUPLED BISTABLE SEMICONDUCTOR DEVICE MEMORY
Wilbur David Pricer, Wappingers Falls, and Hermann P. Wolff, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 20, 1961, Ser. No. 104,274
16 Claims. (Cl. 340—173)



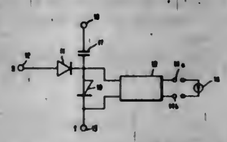
1. A memory circuit comprising a bistable semiconductor device connected to a current supply, said bistable device having first and second positive resistance regions and being biased to operate in one or the other of the two regions, a transformer having primary and secondary windings, an impedance element, said impedance element and secondary winding being connected in parallel with said bistable device, a first unipolar driver connected to the bistable device, and a second unipolar driver connected to the transformer primary, said device being in series with both drivers.

3,189,877
ELECTRONIC MEMORY WITHOUT COMPENSATED READ SIGNAL
Wilbur David Pricer, Wappingers Falls, and Hermann P. Wolff, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 28, 1961, Ser. No. 134,284
6 Claims. (Cl. 340—173)



6. An electronic memory comprising
an m number of x lines and an n number of y lines connected together to form an mn number of cross-points where m and n are any integer,
a bistable semiconductor device connected to each cross-point as a storage element,
means for biasing the storage element to operate in one of two stable states,
means providing driving signals to the storage elements,
means generating a disturb signal as an output signal when the device is in the first stable state and substantially nullifying the disturb signal as an output signal when the device is in the second stable state,
means for integrating the current-time interval of the disturb signal and the substantially nullified disturb signals as output signals from the storage element, and
a sense amplifier for receiving output signals from the integrating means.

3,189,878
NEGATIVE RESISTANCE MEMORY CIRCUIT
Wilbur D. Pricer, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 11, 1962, Ser. No. 209,163
10 Claims. (Cl. 340—173)



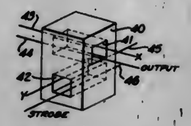
1. A circuit for storing a plurality of bits of coded information manifested as the excursions of a signal from a quiescent level comprising
a two terminal device having a negative resistance region bounded by positive resistance regions and normally biased in the negative resistance region for producing pulsations,
first and second drive means connected respectively to the terminals of said device for providing read-write access to said circuit,
said pulsations being coded into said excursions manifesting said information through said drive means,

and delay means connected across said device for acting as the transmission media for said excursions during storage of said information.

3,189,879
ORTHOGONAL WRITE SYSTEM FOR MAGNETIC MEMORIES

Robert M. MacIntyre, Newport Beach, and Cravens L. Wanlass, Santa Ana, Calif., assignors, by mesne assignments, to Raytheon Company, a corporation of Delaware

Filed Mar. 27, 1961, Ser. No. 98,496
11 Claims. (Cl. 340—174)

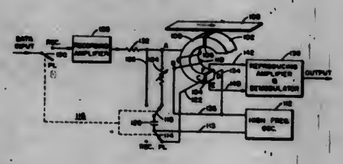


9. In a magnetic memory element, the combination of:
a piece of magnetic material having first and second openings therethrough perpendicular to each other with a flux zone therebetween, a first flux path about said first opening, and a second flux path about said second opening intersecting and perpendicular to said first flux path in said flux zone;
first means for generating a first pulse of current in said first opening to produce a flux in said first path to write information into the element, with the magnitude of the current less than that capable of switching the polarity of the remanent flux in the first path, and with the polarity of the current being a function of the information to be stored;
second means for generating a second oscillating bipolar current in said second opening to produce a flux in said second path, with the second current coinciding with and oscillating a plurality of times during the duration of the first current;
strobe means for generating a strobe current pulse in said second opening to produce a flux in said second path for reading stored information from the element;
and output means for determining flux changes occurring in said first path during said strobe current pulse, with the polarity of such flux changes being a function only of the polarity of the preceding first current and independent of the polarity of the strobe current.

3,189,880
FLUX-RESPONSIVE RECORD-REPRODUCE SYSTEM

Joseph Warren Gratian, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Mar. 14, 1960, Ser. No. 14,911
8 Claims. (Cl. 340—174.1)

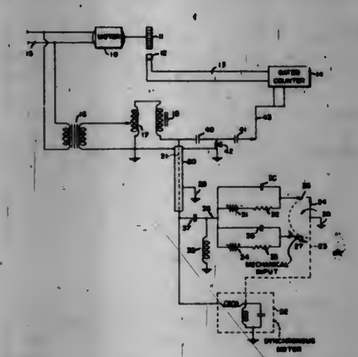


1. In a magnetic recording system comprising a magnetic head including a magnetic core having a front gap and a back gap, and a Hall cell situated within said back gap, a current source, a record-playback switch having a record position and a playback position, first means responsive to said record-playback switch being in its playback position for appling excitation current from said current source to said Hall cell, electromagnetic means in cooperative relationship with said magnetic core, second means responsive to said record-playback switch being in its playback position for applying current from said current source through said electromagnetic means to produce a magnetic field in the vicinity of said front gap which substantially cancels that portion of the magnetic field due to said excitation current which exists in the vicinity of said front gap, third means responsive to said record-playback switch being in its record position for applying a data signal through said electromagnetic means, and fourth means responsive to said record-playback switch being in its record position for applying a record bias from said current source through said electromagnetic means.

3,189,881
PULSE PRODUCING MEANS FOR TELEMETERING SYSTEM

Tom R. Reinhart, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 28, 1961, Ser. No. 162,820
4 Claims. (Cl. 340—206)

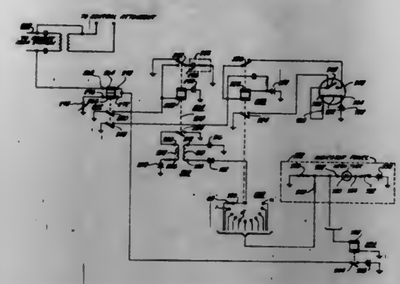


1. A system for telemetering a magnitude of a measurement made at a remote location to a measuring system located at a convenient location, said system comprising:
a remote instrument having a fixed reference contact and a movable contact said fixed and reference contacts disposed along a common path, said movable contact in addition being mounted to be displaced with respect to said reference contact an amount related to the magnitude of the measurement to be telemetered;
a sweep contact disposed to be driven by a motor means along said common path to cyclically contact both said reference and movable contacts;
a first capacitor coupled to said reference contact, a second capacitor coupled to said movable contact;
a source of direct current potential located at said remote location and coupled to both said first and second capacitors to charge said capacitors in electrical opposition to each other;
said sweep contact being coupled to ground and said reference and movable contacts being coupled to a cable, said cable coupling said remote instrument to the measuring system at said convenient location to transmit over said cable the equal and opposite pulses produced when said sweep contact contacts said reference and movable contacts.

3,189,882
ALARM SYSTEM WITH SYNCHRONOUS SCANNING

Emmett J. Ward, Sylmar, Calif., assignor, by mesne assignments, to Westinghouse Electric Corporation, a corporation of Pennsylvania

Filed May 15, 1961, Ser. No. 110,191
17 Claims. (Cl. 340—213)



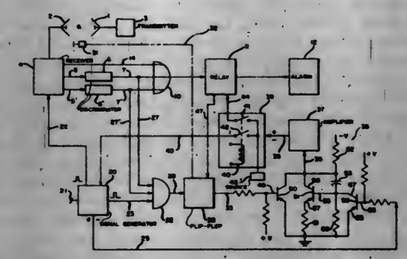
2. A security alarm system comprising: a plurality of remote stations, each station including a plurality of detection elements operable for sensing particular alarm conditions, a remote station stepping switch having a wiper arm and a plurality of contact points, a separate contact point being connected to each detection element, means responsive to the operation of a detection element for energizing said stepping switch, such that said wiper arm steps in search of the contact point associated with said operated detection element, means for deenergizing said stepping switch when said wiper arm impinges upon the contact point associated with said operated detection element, means for generating a pulse signal for each step of said wiper arm of said remote station stepping switch, a pair of wires, and means for transmitting said pulse signals over said pair of wires; and a central control center connected to each of said remote stations by the pair of wires associated with each remote station, said central control center including for each remote station means for receiving each of said pulse signals from the associated remote station, a central stepping switch, said central stepping switch including a wiper arm and a plurality of contact points, each of said contact points denoting a particular detection element at the associated remote station, means for energizing said central stepping switch in response to each pulse signal from the associated remote station such that said wiper arm of said central stepping switch steps in synchronism with said wiper arm of the associated remote station stepping switch, indicator means connected to said contact points of said central stepping switch for providing a particular indication of the operation of said operated detection element at said associated remote station, and means responsive to such indication by said indicator means for generating a signal to the associated remote station, said signal reenergizing said remote station stepping switch thereby allowing its wiper arm to step in search of other operated detection elements.

3,189,883
TEST AND RESET CIRCUIT FOR INTRUSION ALARM SYSTEM

Raymond D. Lucas and George C. Byrne, Mountain View, and John C. McDonald, Los Altos, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 18, 1961, Ser. No. 160,116
8 Claims. (Cl. 340—214)

3. In combination,
intrusion alarm apparatus responsive to condition for giving an alarm,
a test and reset circuit comprising a test generator having first, second and third outputs,
means to actuate said generator to generate signals at said three outputs,
the first output being connected to said apparatus to simulate the condition and give the alarm,
an AND gate having an output and having a first input connected to an output of said apparatus and a second input connected to the second output of the generator,

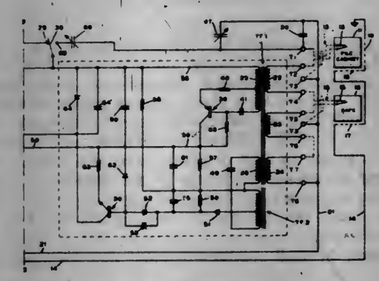


a bi-stable flip-flop having an input connected to the output of said AND gate and having an output,
and a delay network having a first input connected to the output of said flip-flop and a second input connected to the third output of said generator,
said network having an output connected to said apparatus for resetting same a predetermined time after said test generator is actuated,
and means connecting said flip-flop to said apparatus for resetting the flip-flop simultaneously with the alarm apparatus.

3,189,884
ALARM SYSTEM

Peter Laakmann, Staten Island, N.Y., assignor to American District Telegraph Company, Jersey City, N.J., a corporation of New Jersey

Filed May 25, 1960, Ser. No. 31,609
5 Claims. (Cl. 340—258)



1. An electrical protection system for signalling the approach of a foreign body to a protected object having a capacity to ground which varies with the approach of foreign bodies, comprising an oscillator having a frequency determining circuit including as a variable element the capacity to ground of said object, a resonant circuit having a predetermined resonant frequency slightly higher than and bearing a predetermined relationship to the operating frequency of said oscillator in the absence of a foreign body in the region of said object, means to supply oscillatory energy from said oscillator to said resonant circuit whereby substantially a predetermined

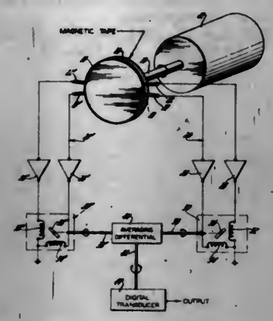
signal voltage is produced across at least a portion of said resonant circuit when said predetermined relationship exists and a lower signal voltage is produced across said portion of said resonant circuit when said predetermined relationship is altered by the presence of a foreign body in the region of said object, an impedance element, means coupled to said impedance element and to said resonant circuit to rectify said signal voltage and to produce across said impedance element a detector voltage whose magnitude is proportional to the magnitude of said signal voltage, a source of a supervisory voltage, means to apply said supervisory voltage across said impedance element with the polarity of said supervisory voltage being opposite to the polarity of said detector voltage, alarm signalling apparatus, a capacitive element coupled to said impedance element, a charging circuit for said capacitive element including said impedance element whereby said capactive element is charged by said detector voltage, a discharging circuit for said capacitive element, means responsive to the current flow in said discharging circuit to operate said alarm signalling apparatus when said discharge current of said capacitive element exceeds a predetermined value, and a rectifier element connected in parallel with said capacitive element and poled so as to pass a current flow in said discharging circuit when said detector voltage is less than said supervisory voltage thereby to operate said alarm signalling apparatus.

3,189,885
CODED DETECTING SYSTEMS
Charles B. Shields, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 10, 1961, Ser. No. 123,062
9 Claims. (Cl. 340—258)

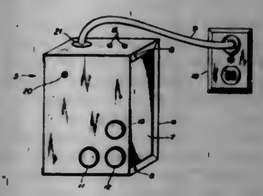
6. A detecting system for objects traversing a detection zone and comprising, an oscillator, a plurality of inductors arranged in a return energy path for said oscillator and being so inductively coupled with each other that normally said oscillator is quiescent, said inductors being arranged in said detection zone and having their coupling increased by objects in the zone to a degree sufficient to induce oscillation in said oscillator, and inductor means for inductively coupling said first and second coils alternately at a recurring rate whereby the oscillation in said oscillator occurs at a corresponding rate.

3,189,886
DISPLACEMENT AMPLIFIER
George E. Sonntag, Milwaukee, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 6, 1961, Ser. No. 87,432
3 Claims. (Cl. 340—271)

1. A rotation amplifier comprising a rotatable element having simple sine pulses recorded thereon, pickup means associated with said element for generating signals corresponding to said pulses, a plurality of motors driven by said signals, each having an output rotation substantially proportional to the rotation of said element and a differential means driven by said motors for averaging the rotation of said motors.

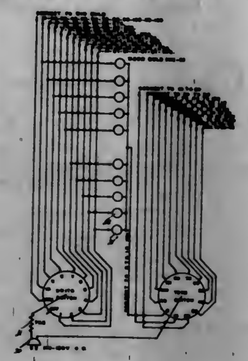


3,189,887
WARNING SIGNAL DEVICE RESPONSIVE TO PLURAL INTERRUPTIONS OF POWER LINE CURRENT
Alfred Barry, Battle Creek, Mich., assignor to Clayton D. Kelly, Battle Creek, Mich.
Filed Dec. 26, 1961, Ser. No. 161,869
3 Claims. (Cl. 340—310)



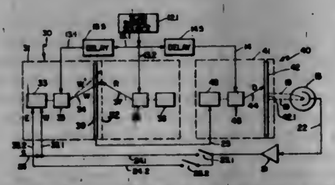
1. An automatic warning apparatus for use in connection with the conventional electric power system of a many customer power service area, and wherein said warning apparatus is operatable by temporary interruption of the electric current being delivered through said power system, said apparatus comprising in combination an electromagnetic coil including an armature member, an electric connector for operably electrically connecting said coil to said electric power system, a multiple position electric switch having at least three operating positions, one of which is the starting position, means electrically connecting said switch to said electric power system, means connecting said armature of said coil to said switch for operating the latter each time said coil is actuated by interrupting the electric current delivered thereto, a signaling means which is in constant operation when electric current is being operably delivered from said power system to said warning apparatus, said signal showing that the apparatus is in operation, an electric circuit means connected to and through said switch for actuating an initial electrical warning signal emitting means upon first operation of said switch from its starting position, and a main alarm signal emitting means actuatable upon a further operation of said switch, with the final actuation of said coil armature restoring said switch to its starting position.

3,189,888
ELECTRONIC CRIBBAGE BOARD
William A. Bradley, 1301 12th St. E., Saskatoon, Saskatchewan, Canada
Filed Sept. 9, 1963, Ser. No. 307,709
6 Claims. (Cl. 340—323)



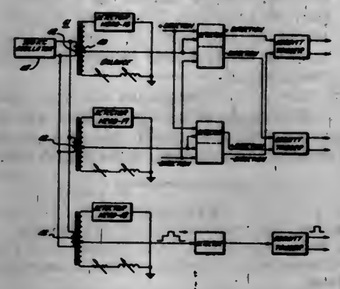
1. An electronic cribbage board comprising in combination with a source of electrical energy, a supporting board, an indicating lamp holder recessed within said board, a plurality of indicator lamps corresponding to the conventional two-player scoring tracks, there being one indicator lamp for each of said 120 scoring positions on each of said tracks, a multiple units switch mounted on said board for each of said tracks and a multiple tens switch mounted on said board for each of said tracks, and electrical wiring extending from said source of electrical energy, through said switches, to said indicator lamps whereby sequential movement of said units and said tens switches will illuminate said indicator lamps sequentially.

3,189,889
SYSTEM FOR MODIFYING STORED DATA
Argyle W. Bridgett, Newton, Mass., assignor to Image Instruments Inc., Newton, Mass., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,400
19 Claims. (Cl. 340—324)



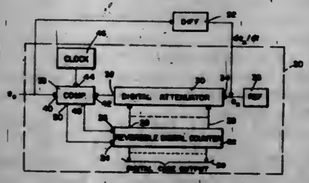
1. A system for modifying stored data comprising, signal storage means having a plurality of signal storage loci, signal write means adapted to scan said loci in a time sequence, write signal input terminal means and erase signal input terminal means, a two-dimensional visual display device having a display area and display-scanning means adapted to scan increments of said area in a time sequence, means operatively interconnecting said storage means with said display-scanning means, detector means adjustable to detect the presence of said display-scanning means at a discrete element of said display area, and means operatively interconnecting said detector means optionally directly with one or the other of said write signal input terminal means or said erase signal input terminal means whereby optionally to establish or erase a signal in said storage means in one or more loci corresponding to said discrete element.

3,189,890
SHAFT POSITION TRANSDUCER
Lynford W. Gilbert, Palos Verdes Estates, and Anthony J. Budden, Torrance, Calif., assignors, by mesne assignments, to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 10, 1961, Ser. No. 101,964
7 Claims. (Cl. 340—347)



1. An incremental displacement detector comprising a supporting housing having a substantially equilateral triangular cross section and a central circular aperture of a diameter extending through the side walls of said housing to allow access to the central aperture, electromagnetic detector heads mounted on said housing on at least a pair of said side walls, a shaft mounted in said central aperture defined with an integral magnetic gear hobbed thereon of a predetermined number of teeth whereby a scale increment includes the circumferential distance between the corresponding edges of successive teeth, means for supporting said shaft in the housing to allow relative movement between the shaft and housing, each of said detector heads including a three legged magnetic detector structure and a single turn detecting coil coupled to the center leg, said magnetic legs being spaced from said gear and defined relative to the gear teeth whereby they are all located opposite successive corresponding points thereof in flux linking relationship to cause the impedance of the head to vary in a binary fashion when said coil is energized in accordance with the location of the legs of the detector structure over successive teeth or between successive teeth.

3,189,891
ANALOG-TO-DIGITAL CONVERTERS
Herbert Karsh, Lexington, Mass., assignor to Epsco, Incorporated, Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 6, 1961, Ser. No. 150,568
3 Claims. (Cl. 340—347)



3. In information translating apparatus for converting an input signal into digital form, the apparatus being of the type having:
a reversible counter;
a converter connected to the counter for continuously converting the digital count of the counter to an analog signal;
a comparator for comparing the input signal with the analog signal;

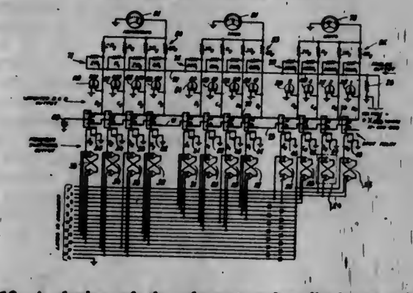
and clock means for causing the comparator to intermittently compare the input signal and the analog signal and provide an ouput causing the counter to alter its count in the direction equalizing the compared signals;

the improvement

wherein the converter employs a source of a fixed reference voltage coupled to a digital attenuator, the attenuator causing the reference voltage to be attenuated in accordance with the count in the reversible counter to provide the analog signal;

and means for differentiating the input signal and combining the differentiated signal with the reference voltage to modify the value of the reference voltage applied to the digital attenuator.

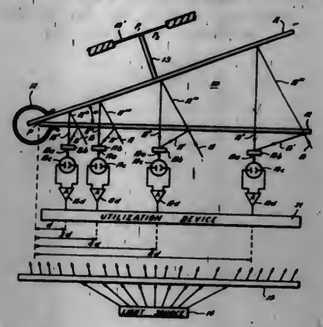
3,189,892
ANALOG-TO-DIGITAL CONVERTER
Larkin B. Scott, Fort Worth, Tex., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Nov. 8, 1961, Ser. No. 150,996
14 Claims. (Cl. 340—347)



13. A device of the character described comprising means to receive an analog input signal, digital storage means adapted to assume a plurality of predetermined conditions in accordance with the analog input signal, means whereby command signals representative of said analog input signal are operable to selectively determine the condition of the digital storage means, means to encode said command signals whereby each encoded signal contains the same number of similar binary conditions, a plurality of transmission channels in operable relation with said digital storage means, means to apply said encoded signals to the transmission channels, means to decode said encoded signals to provide command signals for the storage means whereby the condition of the storage means is determined in accordance with the analog input.

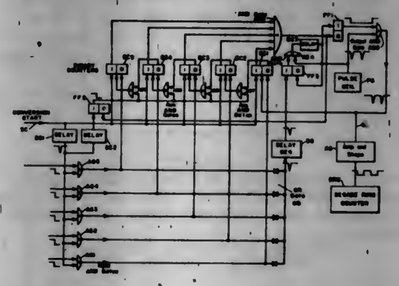
3,189,893
ENCODER SYSTEMS
Kenneth M. Uglow, Jr., Sarasota, Fla., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Jan. 11, 1962, Ser. No. 165,701
5 Claims. (Cl. 340—347)

1. An analog-to-digital converter comprising in combination: a wedge-shaped member having two reflecting flat surfaces pivotally joined to allow for their relative displacement about a pivotal line, energizing means impinging radiant energy waves upon said surfaces, actuating means coupled to said member to vary the relative displacement between said surfaces in dependence upon the amplitudes of received analog signals, output means including radiant energy sensing devices disposed adjacent to one of said surfaces, and focussing means placed between said surfaces and said sensing devices to direct the combined reflected radiant energy waves from said surfaces upon said sensing devices, the distance between each of said sensing devices and said pivotal line being



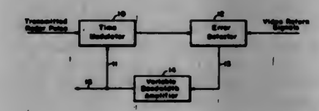
dependent upon a predetermined digital code whereby said sensing devices provide output digital signals corresponding to said analog signals.

3,189,894
BINARY-TO-DECIMAL CONVERTER
Ralph Townsend, Darien, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 22, 1962, Ser. No. 204,555
10 Claims. (Cl. 340—347)



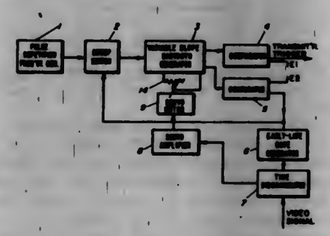
9. A circuit for converting a number in pure binary code to the decimal form comprising a plurality of input AND gates each having a single output and two inputs one of which is supplied with a binary ZERO or ONE signal representing a different digit of the number to be converted, an equal number of series-connected binary counters each having an output and a plurality of inputs one of which is respectively connected to the output of a different one of said input gates, means for continuously generating a series of equal pulses, an output line, an output AND gate feeding said output line and having one input fed with the continuously generated pulses from said generating means, a flip-flop for controlling said output gate which is normally in the OFF condition so as to inhibit said output gate and prevent said series of pulses from passing therethrough to said output line, means for initiating the conversion cycle by a start pulse which first is applied to another input of each of said binary counters to clear them all to the ZERO condition and then with a predetermined amount of delay to the other input of each of said input gates causing their operation to pass the applied binary coded signal to its single output only if it is a ONE and no pulse to pass if the applied binary-coded signal is a ZERO, means for causing the resulting output pulses of said input gates to pass to said one input of said binary counters causing said number in pure binary form to be entered therein, means responsive to the starting pulse after an additional predetermined amount of delay to cause said flip-flop to be turned ON to open said output gate so as to allow the continuously generated pulses to be passed therethrough to said output line, and simultaneously to pass to and be counted up in said series-connected binary counters, another AND gate having its single output connected to the input of said flip-flop and a plurality of outputs respectively connected to the ONE output of a different one of said binary counters and responsive thereto when all of them pass a ONE output signal to shut off said flip-flop to again inhibit said output gate and stop the transmission of said series of pulses to said output line, the number of pulses passing to said output line during a conversion cycle representing said binary number in decimal form.

3,189,895
AUTOMATIC RANGE TRACKING DEVICE
Daniel J. Healey III, Cockeysville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 13, 1955, Ser. No. 514,804
13 Claims. (Cl. 343—7.3)



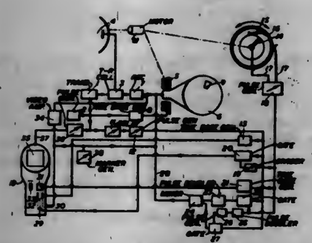
1. In a radar system adapted to receive reflected pulses of transmitted energy from a distant object, an automatic range tracking device including an error detector adapted to produce an output current which varies as a function of the range of said distant object, a time modulator responsive to a control current for producing spaced output pulses having a pulse repetition frequency equal to the transmitted pulse recurrence frequency of the radar system and a phase position relative to said transmitted pulses which is a function of said control current, a variable bandwidth amplifying device for applying the output of said error detector to said time modulator as a control current, and means for selectively varying the bandwidth of said amplifying device.

3,189,896
RANGE AND TRACKING CIRCUIT
Charles J. Schmidt, Bergenfield, N.J., and Constantine Andricos, New York, N.Y., assignors to Maxson Electronics Corporation, a corporation of New York
Filed June 27, 1960, Ser. No. 39,852
9 Claims. (Cl. 343—7.3)



1. In a radar range measuring apparatus the combination of means for generating a first electrical quantity which varies in intensity with time and has a slope of a given sign, means for generating an electrical reference quantity, means connected to both of said generating means for generating a first pulse when said reference quantity and said first electrical quantity reach a predetermined ratio, means for generating a second electrical reference quantity, means connected to both said last-named means and said first electrical quantity means for generating a second pulse when said second reference quantity and said first electrical quantity reach a predetermined ratio, and means connected to the output of said second pulse generating means for controlling the slope of said first electrical quantity.

3,189,897
RADAR SYSTEMS
Ian Robertson Sinclair, Chelmsford, England, assignor to English Electric Valve Company Limited, London, England
Filed July 26, 1961, Ser. No. 126,968
Claims priority, application Great Britain, Nov. 28, 1960, 40,811/60
15 Claims. (Cl. 343—11)



1. A radar set comprising means for scanning space with periodic radio pulses to derive echoes from targets within said space, a receiver for receiving said echoes, a first display screen portion, means responsive to said receiver for displaying on said first display screen portion echo signals from said targets in positions having bearings in relation to the origin of the display and having distances from said origin corresponding respectively to the bearings and ranges of the targets from which said echoes are received, a second display screen portion, means comprising an electron beam and responsive to said receiver for displaying on said second display screen portion echo signals from targets within a relatively small portion of the coverage of said radar set, first time-base means for deflecting said electron beam in one coordinate direction of a planar coordinate system, means actuated at the repetition frequency of said radio pulses and including an adjustable time delay for actuating said time-base means, second time-base means for deflecting said electron beam in the other coordinate direction of said coordinate system, actuating means actuated at the bearing repetition frequency of the scanning performed by said radio pulses and at an adjustable phase relation thereto for actuating said second time-base means, means for producing range pulses of predetermined length simultaneously with actuation of said first time-base means, means for producing bearing pulses of predetermined length simultaneously with actuation of said second time-base means, means for selecting certain ones of said bearing pulses, gating means for giving an output when coincidence exists between the selected bearing pulses and the range pulses, and modulating means for modulating said electron beam in accordance with the output from the gating means and with the video signals from the receiver, the extent of said relatively small portion being determined in range by the length of the range pulses and in bearing by the length of the bearing pulses, the position of the relatively small portion being determined

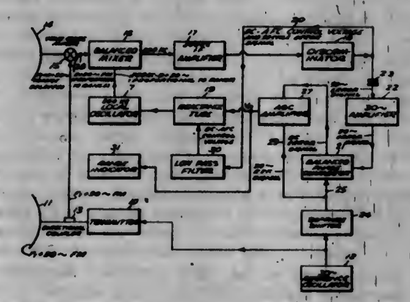
radially by the adjustment of said time delay and circumferentially by the adjustment of said phase relation produced by said actuating means.

3,189,898
PLOTTING DEVICES FOR USE WITH RADAR APPARATUS
Maurice Henry Easy, John Harold Turner Fairhurst, Charles Freeman Robinson, and Thorleif Oscar Vendel Palmqvist, all of London, England, assignors to Decca Limited, a British company
Filed Sept. 22, 1961, Ser. No. 144,899
Claims priority, application Great Britain, Sept. 22, 1960, 32,634/60
6 Claims. (Cl. 343—11)



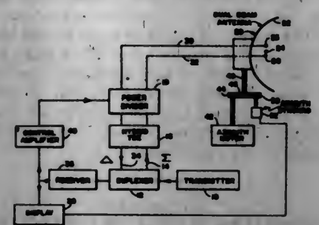
1. A plotting device comprising a display screen on which plan position radar information is displayed in combination with a transparent plotting member mounted on a parallel motion linkage for movement freely without rotation over the surface of the display screen, pivot means being provided enabling the plotting member to be swung away from the display screen when not required.

3,189,899
CONTINUOUS WAVE RADAR SYSTEMS
Arthur B. Slater, Lexington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Apr. 30, 1958, Ser. No. 733,229
9 Claims. (Cl. 343—14)



6. A radar system comprising a frequency modulated transmitter adapted to radiate frequency modulated signals to a moving reflecting surface, a mixer fed by Doppler frequency signals reflected from said surface, a local oscillator energizing said mixer to produce a beat frequency difference signal, a reactance tube adapted to vary said local oscillator over a predetermined frequency band, a closed loop circuit including a discriminator adapted to produce a control voltage in response to said difference signal, a phase comparator fed by a signal synchronized to said transmitter frequency to produce direct current error signal, and an amplifier responsive to said direct current error signal to change the shunt reactance of said reactance tube in a manner adapted to null out said beat frequency difference signal.

3,189,900
AIRBORNE RADAR WITH SEA CLUTTER SUPPRESSION
Herbert P. Raabe, North Oak, St. Paul, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Sept. 18, 1959, Ser. No. 841,661
6 Claims. (Cl. 343—16)



4. An airborne radar system for suppressing clutter return from the earth's surface comprising means forming at least two individual beams at different elevation angles and having overlapping portions, control means for relatively attenuating the gain of said individual beams, means for subtracting the signals received via these beams to form a notch in the elevation response, and feed-back means connected between said subtracting means and said control means for causing said control means to affect the vertical position of the notch to cause said notch to follow the elevation angle of the ground clutter echo during the entire range sweep.

3,189,901
METHOD OF PRODUCING IONIZATION AND LUMINOUS EMISSION IN A GAS OR VAPOR AND APPARATUS FOR USE THEREIN
Mario Cutolo, Naples, Italy, assignor, by direct and mesne assignments, to Giovanni Lanza, Lexington, Mass.
Continuation of application Ser. No. 701,493, Dec. 9, 1957. This application Nov. 4, 1963, Ser. No. 322,005
Claims priority, application Italy, Dec. 15, 1956, 563,365
21 Claims. (Cl. 343—100)



1. A method for producing luminosity and ionization locally in the ionosphere which comprises propagating into a portion of the ionosphere a radio wave having a frequency between about 30 and about 3000 megacycles/sec. and modulated at about the local gyrofrequency.

3,189,902
PULSE ENCODER
Paul M. Kintner, Huntington Station, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 23, 1962, Ser. No. 181,854
17 Claims. (Cl. 343—102)

1. An encoder for producing coding pulses whose spacings progressively vary in accordance with the angle of a scanning beam antenna which repeatedly scans through a predetermined angle range, which comprises

(a) means for generating angle increment pulses corresponding to successive positions of the scanning antenna during a scanning cycle,

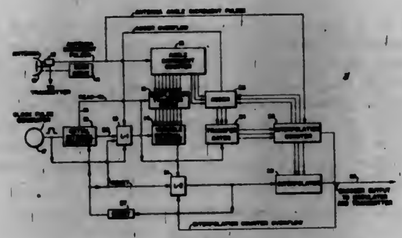
(b) a pulse counter having a plurality of different order stages for counting said pulses from a predetermined reference beam angle position,

(c) a source of timing pulses recurring at regular intervals,

(d) a variable interval counter,

(e) transfer means for transferring a count corresponding to the count in a predetermined number of higher order stages of said pulse counter to said variable interval counter,

(f) means for applying said timing pulses to said variable interval counter to change the count therein to a predetermined count and produce a corresponding variable time interval,

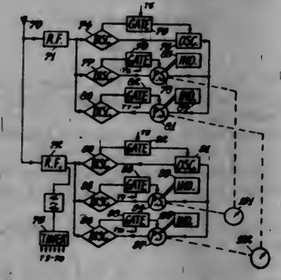


(g) means for utilizing the count in the lower order stages of said pulse counter to produce an interpolation time interval,

(h) means for adding said variable time interval and said interpolation time interval to produce an output encoding pulse,

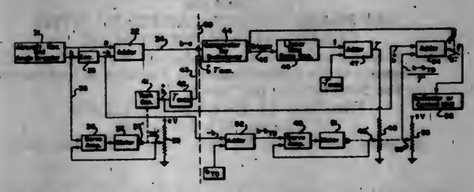
(i) and means for utilizing said output encoding pulse to produce a corresponding modulation of said scanning beam.

3,189,903
RADIO NAVIGATION SYSTEMS
Wilfred St. John White, London, England, assignor to Decca Limited, London, England, a British company
Filed June 18, 1962, Ser. No. 203,276
Claims priority, application Great Britain, June 19, 1961, 22,019/61
6 Claims. (Cl. 343—105)



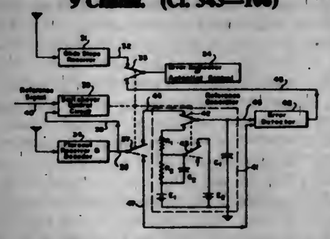
1. A radio navigation system wherein a plurality of signals of different frequencies are radiated from each of a number of spaced transmitting stations, signals of each frequency being radiated from one station at a time in a time-sharing sequence and a mobile receiver having an oscillator for each radiated frequency with control means controlling the phase of the oscillator output in response to the difference of phase between the oscillator ouput and one received signal of that frequency to provide at a mobile receiver, for each pair of stations used to obtain position line information, two pairs of simultaneously available comparison signals, the effective frequency of the comparison signals of one pair differing from the effective frequency of the comparison signals of the other pair by a frequency difference small compared with either of the two effective comparison frequencies and wherein, at the mobile receiver, there are provided phase determining means for producing rotational outputs in accordance with phase comparisons between the other signals from the two stations and oscillator outputs at each of said effective frequencies a first indicating means responsive to the output of one of said phase determining means, two digital encoders driven by said phase determining means to give two digital outputs in digital form representative of said phase comparisons, a difference unit for obtaining, from said two digital outputs, a difference signal in digital form and a second indicating means responsive to said difference signal.

3,189,904
AIRCRAFT LANDING SYSTEMS
Abraham Tatz, Levittown, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 22, 1961, Ser. No. 140,134
12 Claims. (Cl. 343—108)



1. In an aircraft landing system utilizing guidance signals corresponding to elevation guidance beam transmissions from a plurality of sites adjacent a runway and spaced therealong, at least the signal corresponding to a rearward beam transmission representing a function of the elevation angle of the aircraft from the site thereof as the angle changes during landing, a flare-out path computer which comprises means for establishing a switch-over point from glide to flare-out portions of the landing path, computing means utilizing the rearward site angle signal for computing angle and angular rate of change relationships for a flare-out path from the switch-over point to a substantially constant shallow terminal angle with respect to the rearward site, and means for producing an error signal representing departures of the aircraft from the computed relationships and terminal angle to touchdown.

3,189,905
AIRCRAFT LANDING SYSTEMS
Frederick H. Battle, Jr., Seaford, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Jan. 16, 1962, Ser. No. 166,643
9 Claims. (Cl. 343—108)



1. In an aircraft landing receiver producing guidance signals corresponding to elevation guidance beam trans-

missions from a plurality of sites adjacent a runway and spaced therealong, at least the signal corresponding to a rearward site beam transmission representing a function of the elevation angle of the aircraft from the site thereof as the angle changes during landing, a flare-out path computer which comprises

(a) a circuit for producing a reference signal component gradually decreasing from an initial value during flare-out,

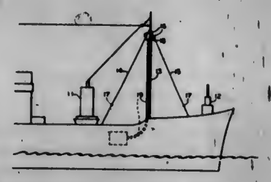
(b) a circuit for producing a modifying signal component gradually decreasing from a corresponding initial value during flare-out,

(c) said circuits being interconnected to cause said modifying signal component to modify the rate of decrease of the reference signal component and produce a resultant reference signal,

(d) means for establishing said initial values to produce an initial value of the resultant reference signal which corresponds to the rearward-site angle signal at the beginning of the flare-out,

(e) and means for utilizing the reference signal and the rearward-site angle signal to produce an error signal for guiding the aircraft during flare-out.

3,189,906
SHIPBOARD CONICAL ANTENNA WITH CONDUCTIVE SUPPORT MAST
John J. Kulik and Richard F. Schmidt, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 24, 1961, Ser. No. 112,476
7 Claims. (Cl. 343—710)
(Granted under Title 35, U.S. Code (1952), sec. 266)



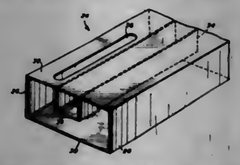
1. An antenna suitable for radiation over a broad band of frequencies and having a selected ground plane, comprising an electrically conductive elongated section disposed in substantially perpendicular relation with respect to said ground plane, said elongated section being electrically connected in common with said ground plane; at least two electrical conductors mechanically connected to said ground plant and to said elongated section to form a tapered cross section approximating a triangle of any two of said electrical conductors with said ground plane, said elongated section dividing the angle at the apex of said triangle; means for electrically isolating the center section of each of said electrical conductors from said ground plane, said center section having a length proportional to the wavelength at a center frequency within said band of frequencies; means for electrically connecting each of said center sections of said electrical conductors in common, the last said means being electrically connected to each of said center sections at the end closest to said apex; said elongated section including a transmission line for the transmission of electrical wave energy to said antenna, and means for applying said electrical wave energy from said transmission line to said means electrically connecting each of said center sections of said electrical conductors in common such that wave energy to be radiated is distributed to said center sections in substantially equal proportions via the ends thereof closest to said apex.

3,189,907
ZONE PLATE RADIO TRANSMISSION SYSTEM
Lyman F. Van Buskirk, 211-A Byrnes, China Lake, Calif.
Filed Aug. 11, 1961, Ser. No. 131,025
6 Claims. (Cl. 343—753)
(Granted under Title 35, U.S. Code (1952), sec. 266)



2. In a two-way communication system adapted for transmission and simultaneous reception, a zone plate, an antenna feed on one side of said zone plate for transmitting high frequency energy beamed at a remote station, said zone plate being disposed at an angle of 45° with respect to the direction of transmission, and an antenna feed on the other side of said zone plate for simultaneously receiving high frequency energy beamed at the zone plate from the remote station.

3,189,908
RIDGED WAVEGUIDE SLOT ANTENNA
Joseph H. Provencher, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 22, 1962, Ser. No. 167,983
19 Claims. (Cl. 343—771)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An antenna comprising; a rectangular waveguide; a loading ridge mounted on and projecting internally from a wall of said rectangular waveguide; at least one radiating slot located adjacent to the ridge in the same wall that the loading ridge is mounted on.

3,189,909
TACHOMETER
Oswald Suter, Los Angeles, Calif., assignor to Technical Oil Tool Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 4, 1961, Ser. No. 156,779
10 Claims. (Cl. 346—18)

1. In a recording tachometer including a stylus means movable relative to a recording surface, apparatus comprising:

a fluid pump having a fluid inlet connection and a fluid outlet connection;

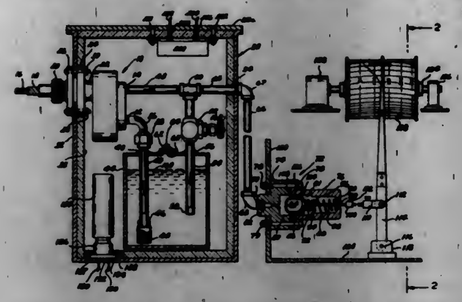
means for drivingly coupling said pump to a rotating body, the rate of rotation of which is to be measured;

fluid supply means connected to said inlet connection and said outlet connection, whereby fluid may be circulated by said pump through a continuous circulatory system which includes said supply means, said inlet connection, said pump, and said outlet connection;

fluid flow resistance means connected in said circulatory system;

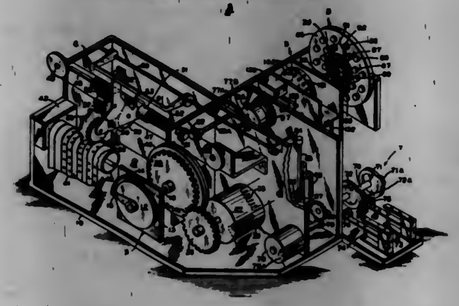
means for maintaining the temperature of said fluid pump, said fluid inlet connection, said fluid outlet connection, and fluid supply means at substantially constant temperature;

and means connected to said circulatory system and actuated in response to fluid pressure differential across said flow resistance means for moving said stylus relative to said recording surface in accord-



ance with a given predetermined function of such pressure differential, thereby to make a record on said recording surface which is indicative of said rate of rotation.

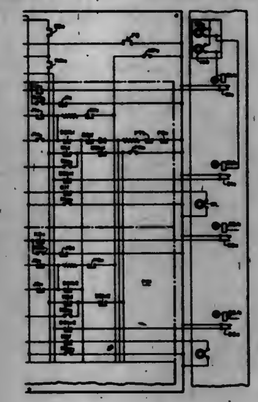
3,189,910
MULTIPLE-POINT MEASURING INSTRUMENT
Clinton Alfred Blakeslee, Middlebury, Conn., assignor to The Bristol Company, Waterbury, Conn., a corporation of Connecticut
Filed July 13, 1961, Ser. No. 123,901
18 Claims. (Cl. 346—32)

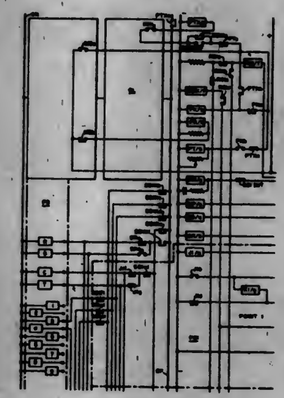


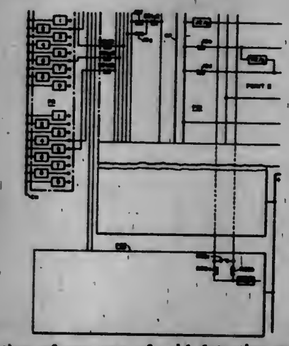
1. In a multiple-point measuring instrument, in combination, a plurality of elements at least some of which are respectively associated with sources of magnitudes to be measured, means for mechanically programming preselected ones of said elements corresponding with the magnitudes to be measured, a balanceable measuring network, switching means for successively connecting said network to all of said elements, and means for balancing said network only in correspondence with the magnitudes associated with said selected elements.

3,189,911
OPERATIONS INDICATING AND RECORDING APPARATUS
William E. Furniss, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 15, 1963, Ser. No. 295,622
5 Claims. (Cl. 346—33)

1. Operations recorder apparatus for use with supervisory control apparatus for remotely and selectively operating different ones of a plurality of multi-condition devices, said recorder apparatus comprising: a plurality of detecting means each individual to a different one of said plurality of multi-condition devices and cooperating with the supervisory control apparatus to detect a change in the operating condition of the associated device from any one condition to another; scanning means responsive



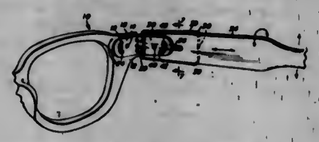




to the operation of any one of said detecting means and operable to scan a plurality of positions, each position corresponding to a different one of said detecting means; means responsive to the operated one of said detecting means for stopping the scanning means on the position corresponding to the operated detecting means; means responsive to the operated one of said detecting means

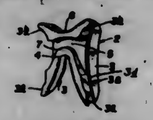
and the position of the stopped scanning means operable to provide a recorded identification of the operated device and the nature of the operation; interlocking means preventing operation of said detecting means during a recording operation; reset means responsive to completion of a recording operation for releasing said interlocking means, and said scanning means remaining at its last stopped position after operation of the reset means until the detecting means is again operated.

3,189,912
ADJUSTABLE TEMPLE MEMBERS FOR SPECTACLES AND METHOD OF ASSEMBLY
Willard T. Miller, Silver Spring, Md., assignor of one-half to Crawford Maddox, Washington, D.C.
Filed Mar. 10, 1961, Ser. No. 94,852
3 Claims. (Cl. 351—118)



2. A spectacle mounting comprising a frame and a temple, a hinge including side and front plates for the temple and frame, respectively, each of said plates having an aperture near the hinge axis and having an arcuate slot further away from the hinge axis, a pivot in each of said apertures, passing into engagement with the adjacent temple and frame, respectively, a locking member passing through each arcuate slot into engagement with the adjacent temple and frame, respectively, whereby the temple may be variably positioned with respect to said side plate about the pivot therein, about a horizontal transverse axis, and whereby the frame may be variably positioned with respect to said front plate about the pivot therein, about a horizontal fore and aft axis; the forward end of said temple being slotted at its forward end for longitudinal adjustment, and wherein said pivot and said locking member for the side plate pass through the slot in the end of the temple.

3,189,913
DETACHABLE NOSE BRIDGE
George R. Hoffmaster, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Nov. 29, 1960, Ser. No. 72,496
1 Claim. (Cl. 351—130)



A detachable nose bridge element for spectacles of different sizes, said nose bridge element being of plastic material having at least a small amount of flexibility and being of substantially H shape with four legs curved outwardly to closely confront the rim portions of the spectacles adjacent the nose bridge thereof, said element having, on one side, a lateral and substantially central groove which is upwardly curved at the center and flared outwardly at the ends so that said nose bridge and those of other sizes will freely fit therein, two of said legs forming an upper wing shaped portion whose extremities comprise cradle portions which engage the top portions of the spectacle rims well above the nose bridge, and the remaining two legs forming a lower wing shaped portion whose extremities comprise cradle portions which engage the portions of the spectacle rims below the nose bridge to provide a four point support which enables use on spectacles of various lens diameters and nose bridge sizes, all four of said cradle portions being partially formed of short flanges, compared with the length of said legs, on the grooved side of said element, of relatively reduced cross-section compared with the remainder of said element and which short flanges are substantially spaced from said groove so as to provide sufficeint moment arms so as to readily yield and snap onto said confronting rim portions as said element is attached to the spectacles, said flanges serving as cams to effect springing and as stop elements after said legs have been sprung and attached to the rim portions of said spectacles.

3,189,914
FLUORESCENT CONTACT LENS AND METHOD OF LOCATING SAME
Lorraine Gusewitch, Los Angeles, and Ruth M. Chevalier, Hollywood, Calif., assignors of fifteen percent to Berry D. Locke, Los Angeles, Calif.
Filed July 31, 1961, Ser. No. 127,992
4 Claims. (Cl. 351—160)



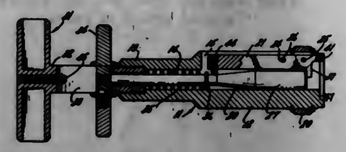
3. A contact lens comprising a light refracting element having a first optically curved surface and a second concave surface of a size to fit the human eye, said element having 4-aminonaphthalimide thereon, whereby said lens may be located when out of a human eye by scanning with ultra-violet light.

3,189,915
SINGLE PROJECTOR STEREOSCOPIC SYSTEM
Albert W. Tondreau, Los Angeles, Calif., assignor to Warner Bros. Pictures, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,077
15 Claims. (Cl. 352—60)



1. A stereoscopic projection system for a single film having alternate right and left hand images thereon and having substantially no color and spherical aberration comprising an aperture plate having a pair of apertures in which a pair of said images is positioned at any one time, a pair of image beam separating prisms, means for projecting light through said film onto the entrance faces of said prisms, said prisms separating said image beams and transmitting said beams in parallel paths, a pair of projection lens assemblies for projecting said images in parallel light beams, a pair of negative lenses having concave spherical entrance surfaces positioned toward said projection lens assemblies, said pair of light beams being projected on said concave surfaces, an observation medium, and a pair of polarizing units, said prisms, projection lens assemblies, negative lenses, and polarizing units being positioned in that order, said negative lenses being laterally adjustable perpendicularly to the optical axes of said light beams to super-impose said images on said observation medium while maintaining the central light rays of said light beams substantially parallel.

3,189,916
HAND CRIMPING TOOL
Carl W. Magee, Randallstown, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 13, 1964, Ser. No. 359,530
2 Claims. (Cl. 72—409)

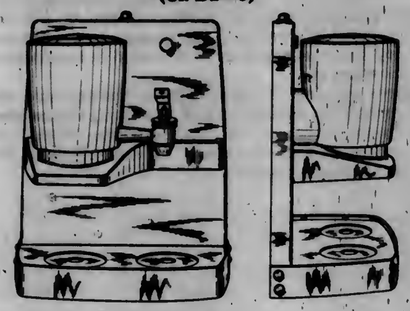


1. A crimping tool comprising:
a body having a bore therein and at least one kerf extending through the wall of said body and communicating with said bore,
at least one crimping lever having a crimping tip on one end and a plurality of mounting holes for selectively pivotally mounting said crimping lever in said kerf at different fulcrum points whereby said crimping lever can be pivotally moved to an unactuated position and an actuated position, said crimping lever having a downwardly extending lip positioned between said crimping tip and the mounting hole nearest said crimping tip,
an adjustable screw threadedly attached to said crimping lever near the end opposite the end having said crimping tip,
a shaft slidably mounted in said bore of said body and having a tapered section engageable with said adjustable screw attached to said crimping lever,
spring means normally biasing one end of said shaft against said downwardly extending lip thereby causing said crimping lever to be moved to an unactuated position, and
means attached to said shaft for moving said shaft against the biasing force of said spring means whereby movement of said tapered section of said shaft causes pivotal movement of said crimping lever to an actuated position.

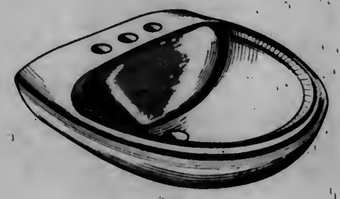
DESIGNS

JUNE 15, 1965

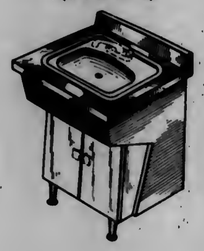
201,343
BEVERAGE BREWER
Milton Immermann, River Road, Piermont, N.Y.; Robert H. Ensign, 8 Custer Place, Bronxville, N.Y.; Charles W. Fromm, 726 Delavan St., Teaneck, N.J.; and Gilford Jackson, 400 E. 57th St., New York, N.Y.
Filed Mar. 19, 1964, Ser. No. 79,084
Term of patent 14 years
(Cl. D2—3)



201,344
LAVATORY
Henry M. Stairs, Jr., Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed June 26, 1963, Ser. No. 75,534
Term of patent 14 years
(Cl. D4—2)



201,345
COMBINED LAVATORY AND VANITY
August Felcan, 6N683 Harvey Road, Medinah, Ill.
Continuation of design applications Ser. Nos. 74,072 and 74,073, Mar. 21, 1963. This application July 29, 1964, Ser. No. 81,403
Term of patent 14 years
(Cl. D4—2)



201,346
ELECTRIC TOOTHBRUSH KIT
Frederick W. Perl, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1964, Ser. No. 81,424
Term of patent 14 years
(Cl. D4—3)



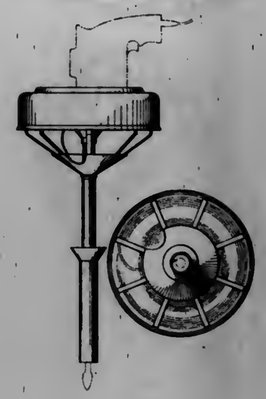
201,347
WATER CLOSET
Gerard D. Phillips, Jr., Prospect, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 82,141
Term of patent 14 years
(Cl. D4—5)



201,348
COMBINED CRIB AND STORAGE UNIT
John W. Tapert, 2381 Earhart Road, Ann Arbor, Mich.
Filed Feb. 27, 1964, Ser. No. 78,795
Term of patent 14 years
(Cl. D5—5)



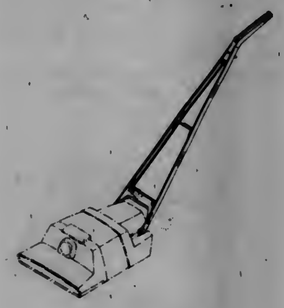
201,349
CONDUIT CLEANER
Burton J. Bollinger, 10232 Tinker Ave., Tujunga, Calif.
Filed June 1, 1964, Ser. No. 80,217
Term of patent 14 years
(Cl. D9—2)



201,350
COMBINATION TOOTHBRUSH AND CUP
Lindsey Taylor, 4150 Mockingbird Lane, Dallas, Tex.
Filed June 23, 1964, Ser. No. 80,525
Term of patent 14 years
(Cl. D9—2)



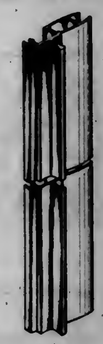
201,351
VACUUM CLEANER HANDLE OR THE LIKE
George H. Frost, Ashland, and Robert S. Waters, Lexington, Ohio, assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Aug. 28, 1964, Ser. No. 81,484
Term of patent 14 years
(Cl. D9—2)



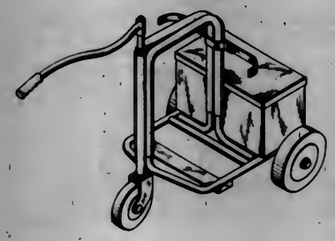
201,352
EXTRUSION FOR SASH MEMBERS OR THE LIKE
Harry M. Riegelman, 27012 Woodbrook Road, Rolling Hills, Calif.
Filed Sept. 29, 1964, Ser. No. 82,210
Term of patent 14 years
(Cl. D13—6)



201,353
EXTRUSION FOR SASH MEMBERS OR THE LIKE
Harry M. Riegelman, 27012 Woodbrook Road, Rolling Hills, Calif.
Continuation of design applications Ser. No. 79,786, May 4, 1964 and Ser. No. 76,181, Aug. 12, 1963. This application Sept. 29, 1964, Ser. No. 82,211
Term of patent 14 years
(Cl. D13—6)



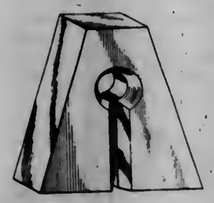
201,354
UTILITY CART FOR GOLF BAGS AND SIMILAR ARTICLES
William D. Jones, E. Club Drive, Thomasville, Ga.
Filed Nov. 2, 1964, Ser. No. 82,428
Term of patent 14 years
(Cl. D14—3)



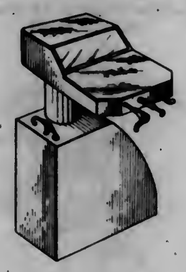
201,355
EASY CHAIR
Pompeo Cavalli, 4 Via Don Minzoni, Bologna, Italy
Filed Mar. 21, 1962, Ser. No. 69,366
Claims priority, application Italy Sept. 23, 1961
Term of patent 7 years
(Cl. D15—1)



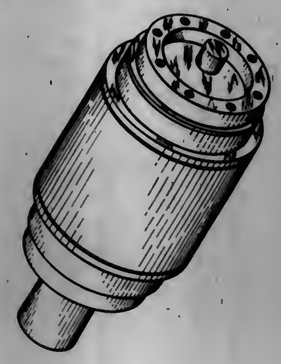
201,356
CLOTHESPIN
James N. Howard, R.R. 2, Box 279, Edwardsburg, Mich.
Continuation of design application Ser. No. 67,330, Nov. 1, 1961. This application Mar. 14, 1963, Ser. No. 74,629
Term of patent 3½ years
(Cl. D17—6)



201,357
DENTAL EQUIPMENT STAND
Norman Horowitz, New York, N.Y. (107—21 Queens Blvd., Forest Hills, Queens, N.Y.), and Philip Spigner, New York, N.Y. (1460 Park St., Atlantic Beach, N.Y.)
Filed Dec. 21, 1962, Ser. No. 72,920
Term of patent 14 years
(Cl. D24—1)



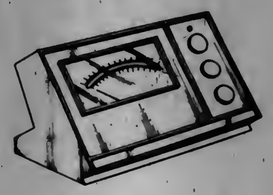
201,358
MOTOR DRIVEN HERMETICALLY SEALED VARIABLE CAPACITOR
David D. Robertson, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 72,416
Term of patent 14 years
(Cl. D26—1)



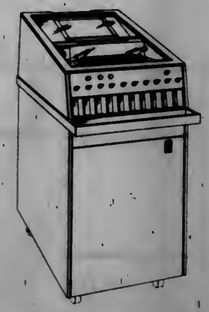
201,359
PORTABLE PLUG-IN ELECTRIC METER FOR REMOTELY READING METERS IN BUILDINGS OR SIMILAR ARTICLE
Harry Ehrensaft, Skokie, Ill., assignor to Muntz TV, Inc., Wheeling, Ill., a corporation of Illinois
Filed May 8, 1963, Ser. No. 74,805
Term of patent 14 years
(Cl. D26—1)



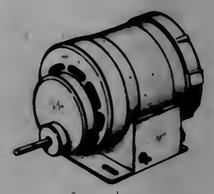
201,360
ELECTROMETER OR SIMILAR ARTICLE
Charles M. Dole, Jr., 288 Lexington Ave., New York, N.Y., and Robert S. Quandt, 41 Red Berry Road, Levittown, Pa.
Filed July 7, 1964, Ser. No. 80,739
Term of patent 14 years
(Cl. D26—1)



201,361
COMBINED DATA CONVERTER AND PRINTING APPARATUS
Edward R. Wiener, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 4, 1963, Ser. No. 77,265
Term of patent 14 years
(Cl. D26—5)



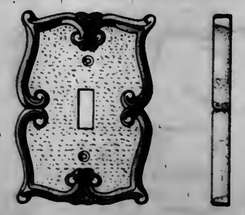
201,362
COMBINED ELECTRIC MOTOR AND BASE THEREFOR
Charles H. Crouse and Timothy W. Hennessey, Springfield, Ohio, assignors to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio
Filed Jan. 17, 1964, Ser. No. 78,243
Term of patent 3½ years
(Cl. D26—5)



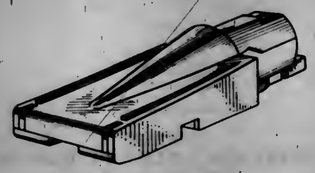
201,363
REEL TYPE TAPE UNIT
Franciscus M. Michiels, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 78,316
Term of patent 14 years
(Cl. D26—5)



201,364
SWITCH PLATE
Ralph L. Du Bois, 6126 S. Lewis, Tulsa, Okla.
Filed May 8, 1964, Ser. No. 79,886
Term of patent 14 years
(Cl. D26—13)



201,365
HOUSING FOR A PHONOGRAPH CARTRIDGE
Donald G. Haines, 226 Grace Ave., Elmhurst, Ill.
Filed Nov. 2, 1964, Ser. No. 82,414
Term of patent 14 years
(Cl. D26—14)



201,366
FIREARM
Howard L. Chambers and Wayne E. Leek, Ilion, and Andrew Slaboc, Little Falls, N.Y., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 74,496
Term of patent 14 years
(Cl. D30—1)



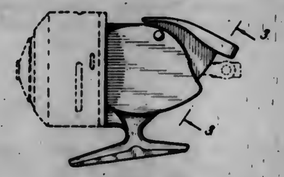
201,367
FIREARM
Michael J. Sobran, Woodbridge, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Aug. 3, 1964, Ser. No. 81,126
Term of patent 14 years
(Cl. D30—1)



201,368
LEAD SIGHT FOR GUNS
Lawrence F. Erskine, 3440 46th Avenue S., Minneapolis, Minn.
Filed Aug. 26, 1964, Ser. No. 81,454
Term of patent 14 years
(Cl. D30—1)



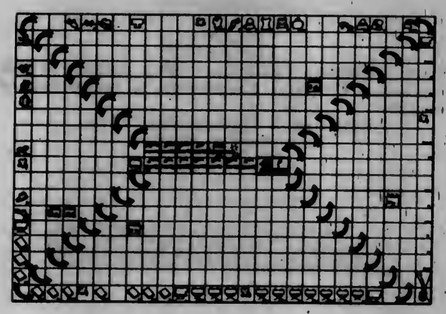
201,369
SPINNING REEL
Carl J. Velte, Jr., Grand Rapids, Mich., assignor to Shakespeare Company, Kalamazoo, Mich., a corporation of Michigan
Filed Dec. 17, 1963, Ser. No. 77,830
Term of patent 14 years
(Cl. D31—4)



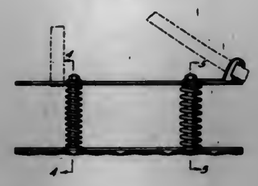
201,370
SHELF FOR A ROOM DIVIDER OR SIMILAR ARTICLE
E. Burton Benjamin, Highland Park, Ill., assignor to Queen Manufacturing Co. Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 6, 1964, Ser. No. 79,345
Term of patent 14 years
(Cl. D33—3)



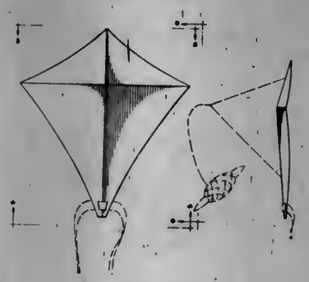
201,371
GAME BOARD
Paul G. Lowell, Fort Hill, Biddeford, Maine
Filed July 29, 1963, Ser. No. 76,021
Term of patent 3½ years
(Cl. D34—5)



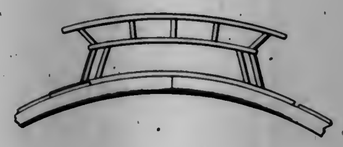
201,372
TOY SPRING SHOE
Kenneth V. Dobson, 3135 W. 1st Ave., Denver, Colo.
Filed Feb. 24, 1964, Ser. No. 78,752
Term of patent 7 years
(Cl. D34—14)



201,373
KITE
Herbert P. Dunne, 1707 NW. 13th St., Fort Lauderdale, Fla.
Filed Jan. 28, 1963, Ser. No. 73,346
Term of patent 14 years
(Cl. D34—15)



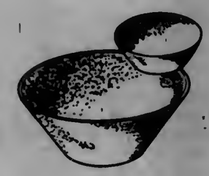
201,374
TOY BALL GYRATOR OR SIMILAR ARTICLE
Robert C. Kloack, Revere, Mass., assignor to Pleasant Toy Corporation, Inc., Revere, Mass., a corporation of Massachusetts
Filed Mar. 20, 1964, Ser. No. 79,140
Term of patent 3½ years
(Cl. D34—15)



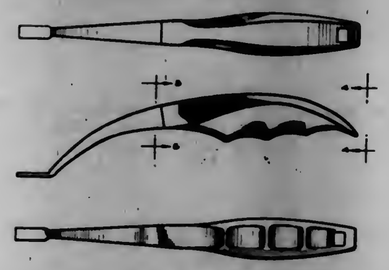
201,375
SAFETY CAP FOR PREVENTING UNINTENTIONAL FIRING IN GASOLINE POWERED LAWN MOWERS AND THE LIKE
Robert F. Herring, 1111 S. Ridge Road, Lake Forest, Ill.
Filed May 20, 1964, Ser. No. 80,086
Term of patent 14 years
(Cl. D40—1)



201,376
SERVING BOWL
Clarence J. Schroeder, Box 68, Murphy, N.C.
Filed July 26, 1963, Ser. No. 75,991
Term of patent 14 years
(Cl. D44—15)



201,377
KITCHEN UTENSIL HANDLE
Richard G. Furness, Colebrook, Conn. (R.F.D. 2, Winsted, Conn.)
Filed Oct. 8, 1964, Ser. No. 82,102
Term of patent 14 years
(Cl. D44—29)



201,378
FINGER RING
Adolph Katz, Providence, R.I., assignor to Coro, Inc. of Rhode Island, Providence, R.I., a corporation of Rhode Island
Filed Jan. 13, 1964, Ser. No. 78,170
Term of patent 3½ years
(Cl. D45—10)



201,379
COMBINED ELECTRIC LAMP BASE AND SHADE SUPPORT THEREFOR
Meyer W. Tomkin, Highland Park, Ill. (1430 W. Wrightwood, Chicago, Ill.)
Filed Dec. 6, 1963, Ser. No. 77,701
Term of patent 3½ years
(Cl. D48—20)



201,380
LIGHTING FIXTURE
Norbert H. Schwenkler, Chicago, Ill., assignor to Patent License Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 14, 1963, Ser. No. 73,563
Term of patent 14 years
(Cl. D48—23)



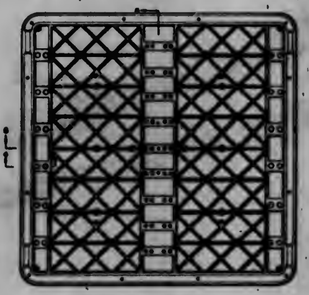
201,381
HOODED PORTABLE LIGHT
William J. Flett, Drexel Hill, Pa., assignor to Turnsignal Co., Philadelphia, Pa.
Filed Sept. 18, 1964, Ser. No. 81,775
Term of patent 14 years
(Cl. D48—24)



201,382
LANTERN POST
Buell Moore, Houston, Tex., assignor to Wide-Lite, a division of Esquire, Inc., Houston, Tex., a corporation of Texas
Filed June 24, 1964, Ser. No. 80,549
Term of patent 14 years
(Cl. D48—31)



201,383
COMMERCIAL DISH WASHER RACK
Sol Kestlman, 7930 Oak Hill Drive, Cheltenham, Pa.; Hyman B. Penn, 435 Twickenham Road, Glenside, Pa.; and Milton Kravitz, 6710 Large St., Philadelphia, Pa.
Filed Jan. 30, 1964, Ser. No. 78,426
Term of patent 14 years
(Cl. D49—1)



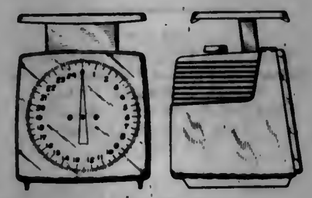
201,384
BUILDING AIR MONITOR
Howard C. Eberline, Santa Fe, N. Mex., assignor to Eberline Instrument Corporation, Santa Fe, N. Mex.
Filed June 3, 1964, Ser. No. 80,271
Term of patent 3½ years
(Cl. D52—6)



201,385
NAVIGATIONAL PLOTTING INSTRUMENT
Jack E. Pelletier, Jr., 364 1st St., Oakland, Calif.
Filed Aug. 3, 1964, Ser. No. 81,107
Term of patent 14 years
(Cl. D52—6)



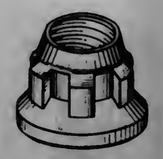
201,386
HOUSEHOLD SCALE
Dana W. Mox, Glenview, Ill., assignor to Hanson Scale Company, Northbrook, Ill., a corporation of Illinois
Filed Dec. 6, 1963, Ser. No. 77,703
Term of patent 14 years
(Cl. D52—10)



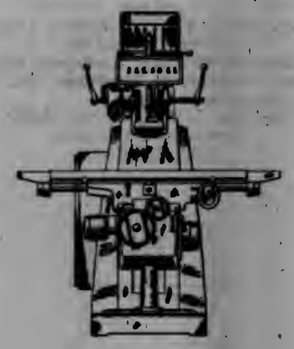
201,387
STREET SIGN BRACKET
Jack W. Reeves, 3120 NW. 36th, Oklahoma City, Okla.
Filed Apr. 13, 1964, Ser. No. 79,461
Term of patent 14 years
(Cl. D54—1)



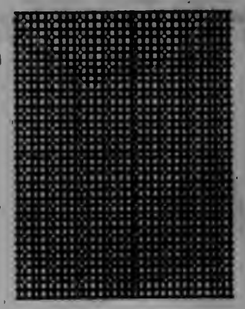
201,388
NUT
Paul F. Pick, West Hartford, Conn., assignor to The Allen Manufacturing Company, Hartford, Conn., a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 78,507
Term of patent 14 years
(Cl. D54—9)



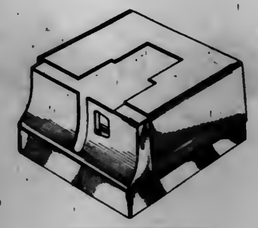
201,389
VERTICAL MILLING MACHINE
Allen D. Gunderson, Racine, Wis., assignor to George Gorton Machine Co., Racine, Wis., a corporation of Wisconsin
Filed June 17, 1963, Ser. No. 75,473
Term of patent 14 years
(Cl. D54—14)



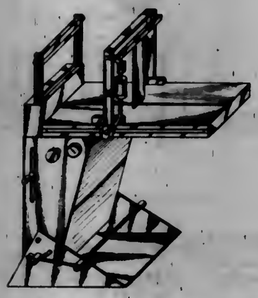
201,390
GRID FOR DRUM FILTER
John E. Krynski, East Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed July 31, 1962, Ser. No. 71,116
Term of patent 14 years
(Cl. D55—1)



201,391
CASING FOR A MACHINE FOR PINNING TAGS TO MERCHANDISE
Richard Hollerith, Jr., Upper Montclair, N.J., assignor to Kimball Systems, Inc., a corporation of New York
Filed Mar. 24, 1964, Ser. No. 79,158
Term of patent 14 years
(Cl. D55—1)



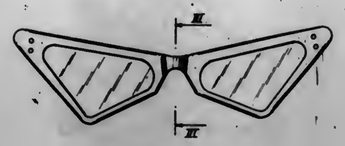
201,392
HEAT SEALING MACHINE
Kermit H. Cooper, New Rochelle, N.Y., assignor to Engineered Packaging Associates, New Rochelle, N.Y., a firm
Filed Apr. 15, 1964, Ser. No. 79,499
Term of patent 14 years
(Cl. D55—1)



201,393
PAIR OF SPECTACLES
Robert R. Thomas, Kansas City, Mo., assignor to Parmelee Plastics Company, Kansas City, Mo., a corporation of Missouri
Filed Aug. 19, 1963, Ser. No. 76,271
Term of patent 14 years
(Cl. D57—1)



201,394
PAIR OF SUNGLASSES
Jack N. Simpson, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Jan. 16, 1964, Ser. No. 78,216
Term of patent 14 years
(Cl. D57—1)



201,395
BOTTLE
Dell Schmidt, New York, N.Y., assignor to Houbigant, Inc., New York, N.Y., a corporation of New York
Filed July 10, 1964, Ser. No. 80,789
Term of patent 14 years
(Cl. D58—6)



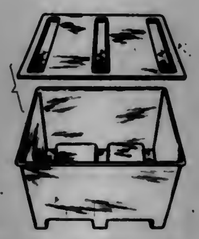
201,396
BOTTLE
Richard L. Matthews, Washington Valley Road, Morristown, N.J.
Filed Jan. 15, 1965, Ser. No. 83,452
Term of patent 14 years
(Cl. D58—8)



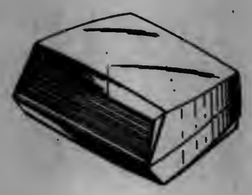
201,397
BOTTLE OR SIMILAR ARTICLE
George J. Utz, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 83,237
Term of patent 14 years
(Cl. D58—9)



201,398
COMBINED STACKING BOX AND COVER THEREFOR
Atwill B. Burns and William G. Lachapelle, both of Portland, Oreg., assignors to Playthings, Inc., Portland, Oreg., a corporation of Oregon
Filed Mar. 3, 1964, Ser. No. 78,857
Term of patent 14 years
(Cl. D58—12.6)



201,399
BOX
Jerome Shiffman, 128 Cartage Road, Scarsdale, N.Y.
Filed Mar. 31, 1964, Ser. No. 79,262
Term of patent 7 years
(Cl. D58—12.7)



201,400
PLASTIC CAN OR SIMILAR ARTICLE
Lloyd Edward Kneeland, Elgin, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 8, 1964, Ser. No. 80,332
Term of patent 14 years
(Cl. D58—17)



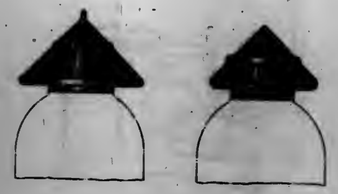
201,401
BOTTLE CLOSURE
Bernard T. E. Picot, Paris, France, assignor to Christian Dior Perfumes Corp., New York, N.Y., a corporation of New York
Filed July 19, 1962, Ser. No. 70,979
Term of patent 14 years
(Cl. D58—26)



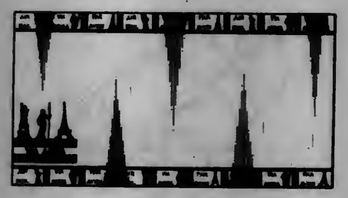
201,402
DISPENSER FOR BOTTLE
Peter P. Bazarnic, 12200 Granais Road, Cleveland, Ohio
Filed June 22, 1964, Ser. No. 80,521
Term of patent 14 years
(Cl. D58—26)



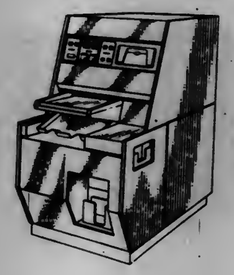
201,403
CLOSURE CAP OR SIMILAR ARTICLE
George J. Utz, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 83,238
Term of patent 14 years
(Cl. D58—26)



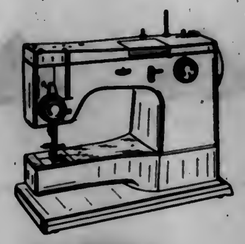
201,404
AIRMAIL ENVELOPE
Rodolfo B. Antelo, 68-02 Dartmouth St., Forest Hills 75, N.Y.
Filed Oct. 9, 1963, Ser. No. 76,917
Term of patent 14 years
(Cl. D59—8)



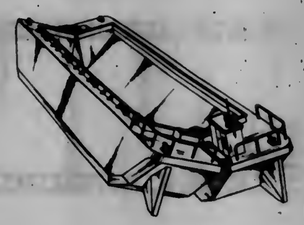
201,405
XEROGRAPHIC PRINTER
Robert G. Plantholt, Rochester, Mich., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 30, 1964, Ser. No. 82,394
Term of patent 14 years
(Cl. D61—1)



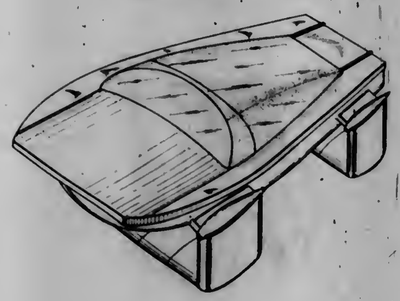
201,406
FREE ARM SEWING MACHINE
Marcel Freuerd, Petit-Lancy, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Nov. 21, 1963, Ser. No. 77,535
Claims priority, application Switzerland May 28, 1963
Term of patent 14 years
(Cl. D70—1)



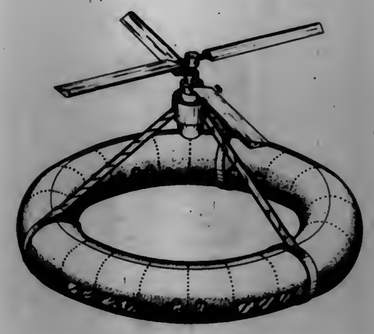
201,407
DUMP SCOW
Robert H. Miller, 1404 Arden Lane, Manitowoc, Wis.
Filed May 6, 1964, Ser. No. 79,836
Term of patent 14 years
(Cl. D71—1)



201,408
HYDROFOIL CRAFT
Paul A. Scherer, "Marietta," Bell Station Road, Glenn Dale, Md.
Filed June 23, 1964, Ser. No. 80,532
Term of patent 14 years
(Cl. D71—1)



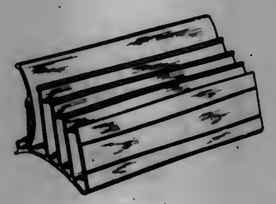
201,409
AIRCRAFT
William J. Flett, 3711 Marshall Road, Drexel Hill, Pa.
Filed Sept. 1, 1964, Ser. No. 81,550
Term of patent 14 years
(Cl. D71—1)



201,410
PATIO BELL
Lorence O'Rason, 5311 Prospect, Peoria, Ill.
Filed June 25, 1964, Ser. No. 80,583
Term of patent 14 years
(Cl. D72—1)



201,411
DESK RACK OR THE LIKE
Max Tucker, Waterloo, Iowa, assignor to Waterloo Idea Companies, Waterloo, Iowa, a corporation of Iowa
Filed Dec. 14, 1964, Ser. No. 83,029
Term of patent 14 years
(Cl. D74—9)



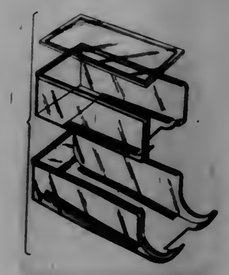
201,412
INK MARKING INSTRUMENT OR THE LIKE
Walter J. De Greft, Glen Ellyn, Ill., assignor to Sanford Research Company, Bellwood, Ill., a corporation of Illinois
Filed Nov. 29, 1963, Ser. No. 77,602
Term of patent 14 years
(Cl. D74—17)



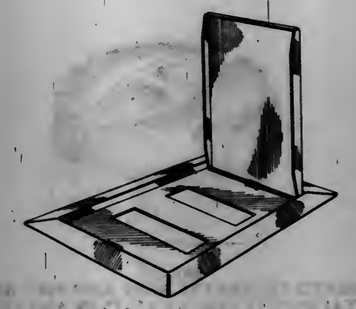
201,413
INTERNAL COMBUSTION ENGINE
Kiyoshi Kemiya, Tokyo, Japan, assignor to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Saitama-ken, Japan, a corporation of Japan
Filed Dec. 9, 1963, Ser. No. 77,728
Claims priority, application Japan June 20, 1963
Term of patent 14 years
(Cl. D77—1)



201,414
COMBINED DISPLAY AND DISPENSING STAND
Lester S. Johns, 12881 Charloma Drive, Tustin, Calif.
Filed May 11, 1964, Ser. No. 79,903
Term of patent 14 years
(Cl. D60—9)



201,415
COUNTER TOP MOUNTING FOR BUILT-IN TOASTER
Ulysses S. Grant V, Rte. 1, Box 659, Escondido, Calif.
Filed Dec. 9, 1963, Ser. No. 77,710
Term of patent 3½ years
(Cl. D61—10)



201,416
COMBINED BARBECUE GRILL AND SMOKER
Farhad Sazegar, 15413 Cordary Ave., Lawndale, Calif.
Filed Aug. 7, 1964, Ser. No. 81,193
Term of patent 14 years
(Cl. D61—10)



201,417
HEATER
Allan E. Krauss, Centralia, Ill., assignor to Lear Siegler, Inc., Centralia, Ill., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 77,510
Term of patent 14 years
(Cl. D61—19)



201,418
ASH TRAY OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Aug. 4, 1964, Ser. No. 81,158
Term of patent 14 years
(Cl. D65—2)



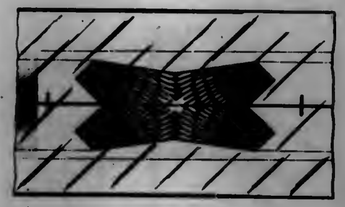
201,419
COMBINED CIGARETTE REST AND PIPE HOLDER ATTACHMENT FOR A CAN-TYPE ASH TRAY OR SIMILAR ARTICLE
Aloc Thompson Miller, 4825 Chatham St., Vancouver, British Columbia, Canada
Filed Mar. 16, 1964, Ser. No. 79,031
Term of patent 14 years
(Cl. D65—8)



201,420
COMBINED LIPSTICK AND CONTAINER THEREFOR
Evelyn Bernard, Teaneck, N.J., assignor to Lehn & Fink Products Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 79,495
Term of patent 14 years
(Cl. D86—10)



201,421
PLASTIC SHEET MATERIAL
David Lyon, New Britain, Conn., assignor to Rowland Products, Inc., Kensington, Conn., a corporation of Connecticut
Filed Apr. 13, 1964, Ser. No. 79,477
Term of patent 14 years
(Cl. D87—3)

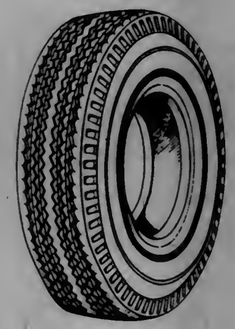


201,422
PLASTIC SHEET MATERIAL
David Lyon, New Britain, Conn., assignor to Rowland Products, Inc., Kensington, Conn., a corporation of Connecticut
Filed Apr. 13, 1964, Ser. No. 79,478
Term of patent 14 years
(Cl. D87—3)

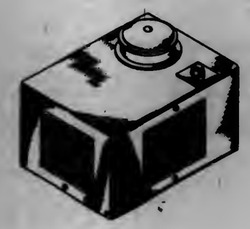
201,423
CARRYING CASE
Donald E. Leman, Glen Ellyn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 9, 1963, Ser. No. 77,744
Term of patent 14 years
(Cl. D87—5)



201,424
TIRE
Walter Humphries, Sutton Coldfield, England, assignor to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York
Filed Nov. 24, 1964, Ser. No. 82,758
Claims priority, application Great Britain June 25, 1964
Term of patent 14 years
(Cl. D90—20)



201,425
COMBINED WATER COOLER AND FILTER FOR DOMESTIC USE
Donald H. Topel, 3741 W. Kelm Drive, Phoenix, Ariz.
Filed Dec. 5, 1963, Ser. No. 77,677
Term of patent 14 years
(Cl. D91—1)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 15TH DAY OF JUNE, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Esco Corp.: *See*—
Perdue, Benton L. Re. 25,799.
Esso Research and Engineering Co.: *See*—
Mirviss, Stanley B., and Inchalik. Re. 25,797.
Frank, William H.: *See*—
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Anthony, Myron L., and R. F. Gill, Jr., to Scully-Anthony Corp. Aluminum electrical enclosures having a titania lead glass seal containing a ceramic matrix. 3,189,677, 6–15–65, Cl. 174—50.61.
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Atlas-Werke Aktiengesellschaft: *See*—
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Attebo, Kurt A. G., N. J. Björnberg, and K.-E. Qvarnström, to Atlas Copco Aktiebolag. Hydraulic drill feed control. 3,189,103, 6–15–65, Cl. 173—8.

Ausfresser, Harold D., and R. D. French, to Westinghouse Electric Corp. Computer logic circuit. 3,189,754, 6–15–65, Cl. 307—88.5.

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Autrey, Harry S., and L. Lyan, to River Brand Rice Mills, Inc. Process for the preparation of precooked rice. 3,189,-462, 6–15–65, Cl. 99—80.

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Avery, John P., to Western Electric Co., Inc. Electrical connectors. 3,189,663, 6–15–65, Cl. 339—258.

Ayer, Donald E., to The Upjohn Co. 16a-bromo- and 16a-iodopregnanes and process. 3,189,623, 6–15–65, Cl. 260—397.4.

Ayer, Donald E., to The Upjohn Co. 16a-bromo- and 16a-iodopregnanes. 3,189,626, 6–15–65, Cl. 260—397.45.

Ayres, Walter D., Jr., to B. H. Bunn Co. Apparatus for tying moving bundles. 3,189,163, 6–15–65, Cl. 198—167.

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Neugebauer, Wilhelm, Tomanek, and Behmenburg. 3,189,447.
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Babb, Charles L., to Allis-Chalmers Mfg. Co. Method of making a rubber lined impeller. 3,189,671, 6–15–65, Cl. 264—247.

Babb, William J. Piston groove cleaner. 3,188,670, 6–15–65, Cl. 15—104.01.

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Bachmann, Paul A., to Danfoss A/S. Encapsulated motor compressor for refrigerating machines. 3,189,256, 6–15–65, Cl. 230—58.

Bade, Heinz E., to Joh. Friedrich Behrens. Pneumatic apparatus for driving connecting means, especially staples. 3,188,921, 6–15–65, Cl. 91—399.

Baderak, Seymour. Violin teaching aid. 3,188,901, 6–15–65, Cl. 84—283.

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Bailey, Charles S., to General Motors Corp. Thermostatic valve for liquid cooled engine. 3,189,276, 6–15–65, Cl. 236—34.

Bailys, Carl L., to Borg-Warner Corp. Method of making a heat exchanger. 3,188,725, 6–15–65, Cl. 29—157.3.

Bajars, Harry D., M. Pope, E. G. Barth, and R. J. Newman, to General Mills, Inc. Metal film resistor and method of its formation. 3,189,482, 6–15–65, Cl. 117—212.

Baker, Donald H., J. W. Colton, and D. R. Kuelbs, to Sperry Rand Corp. Flux valve compensator. 3,188,749, 6–15–65, Cl. 33—224.

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Baker, Melvin C., to E. I. du Pont de Nemours and Co. Process for the production of acrylonitrile. 3,189,642, 6–15–65, Cl. 260—465.3.

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Balkema, Elmer H., and P. A. Marchant, to Consolidated Thermoplastics Co. Flexible dispensing container assemblies. 3,189,071, 6–15–65, Cl. 150—.5.

Ballal, Ruth J. Plant support. 3,188,771, 6–15–65, Cl. 47—47.

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Barabutes, Theodore, and B. E. Lenehan, to Westinghouse Electric Corp. Hall-effect devices utilising transformer phase control means. 3,189,815, 6–15–65, Cl. 323—120.

Bard, Charleton C., and G. P. Varlan, to Eastman Kodak Co. Color-forming photographic process utilising a bleach-fix followed by a bleach. 3,189,452, 6–15–65, Cl. 96—55.

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Barrett, Herbert, to The Oliver Machinery Co. Ltd. Folder brakes for forming corners in sheet material. 3,188,848, 6–15–65, Cl. 72—320.

Barry, Alfred, to C. D. Kelly. Warning signal device responsive to plural interruptions of power line current. 3,189,-887, 6–15–65, Cl. 340—310.

Barten, Henry J. Air propeller attachment for marine engines. 3,188,995, 6–15–65, Cl. 115—.5.

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Bates, William F., G. D. Johnson, and B. J. Watkins, to Shell Oil Co. Method and apparatus of drilling underwater wells. 3,189,105, 6–15–65, Cl. 175—5.

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Bauer, Josef. Overflow prevention device. 3,189,039, 6–15–65, Cl. 137—434.

Bauerlein, Carl C., to The Dole Valve Co. Automatic ice maker having a thermally sensitive power unit. 3,188,827, 6–15–65, Cl. 62—137.

Bauermeister, Ernest E. Vertical casket. 3,188,712, 6–15–65, Cl. 27—6.

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Baxter, Robert W., to Sonitrol Corp. Jet resonator. 3,188,-999, 6–15–65, Cl. 116—137.

Basarian, Albert V., and K. W. Olson, to The Bendix Corp. Shutter for sputtered particles in time-of-use indicator. 3,189,776, 6–15–65, Cl. 313—146.

Beal, Philip F., III, and J. E. Pike, to The Upjohn Co. 6-fluoromethyl steroid compounds and process. 3,189,604, 6–15–65, Cl. 260—239.55.

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Bean, Frederic R., to Eastman Kodak Co. Developing compositions used in photographic transfer processes. 3,189,-448, 6–15–65, Cl. 96—28.

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Beatty, Eugene F., to The Bendix Corp. Actuator and control systems therefor. 3,188,916, 6–15–65, Cl. 91—165.

Beau, Raymond, to Societe Anonyme les Produits Semi-Conducteurs. Countercurrent liquid-liquid extraction apparatus. 3,189,414, 6–15–65, Cl. 23—270.5.

Beausoleil, William F., and D. J. Galage, to International Business Machines Corp. Data handling mechanism. 3,189,-872, 6–15–65, Cl. 340—146.1.

Becanne, Robert L. P., and C. J. H. M. P. Ferrand, to Office National Industriel de l'Azote. Manufacture of trichlorocyanuric acid. 3,189,609, 6–15–65, Cl. 260—248.

Beck, Frank J., to Phillips Petroleum Co. Expansible means for loading a shot hole. 3,188,906, 6–15–65, Cl. 86—20.

Beck, Lawrence J. Cleaning tool or the like. 3,188,675, 6–15–65, Cl. 15—244.

Beck, Roland D., to Robertshaw Controls Co. Pneumatic level control. 3,189,317, 6–15–65, Cl. 251—75.

Beck, Roland D., to Robertshaw Controls Co. Pneumatic switch actuator. 3,189,704, 6–15–65, Cl. 200—83.

Becker, Willi, to Arthur Pfeiffer Co. (GmbH). Vacuum pump drive and seal arrangement. 3,189,264, 6–15–65, Cl. 230—207.

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Beldecos, Frank A., and R. O. Brown, to Westinghouse Electric Corp. Method of cooling turbine rotors and discs. 3,189,320, 6–15–65, Cl. 253—39.15.

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Bell, Brian H., to National Semiconductor Corp. Isolating and pulse-producing circuit. 3,189,758, 6–15–65, Cl. 307—88.5.

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Irish, Carleton D. 3,189,682.
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Bell, Robert W. Aerating device. 3,189,334, 6–15–65, Cl. 261—93.

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Bengelsdorf, Irving S., to United States Borax & Chemical Corp. 10-undecenyl alkylene glycol borates. 3,189,638, 6–15–65, Cl. 260—462.

Bengelsdorf, Irving S., W. G. Woods, and W. D. English, to United States Borax & Chemical Corp. Cycloalkenyl glycol boric acid esters. 3,189,637, 6–15–65, Cl. 260—462.

Benjamin, Charles E., to Westinghouse Electric Corp. Monolithic semiconductor device and method of preparing same. 3,189,796, 6–15–65, Cl. 317—234.

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Bergen, James W., and E. F. Cove, to ACF Industries Inc. Drive mechanism for collapsible trailer hitches on railway cars. 3,188,982, 6–15–65, Cl. 105—368.

Bergstein, Frank D., and A. B. Kleingers, Jr., to Bergstein Packaging Trust. Cast coating of paper and board. 3,189,-503, 6–15–65, Cl. 156—231.

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Bianchi, Renato, A. S. Will, and N. C. Butler, to United States of America, Navy. Arming device for a fire bomb fuse. 3,188,953, 6–15–65, Cl. 102—2.

Bilancin, Raymond A., to Coach and Car Equipment Corp. Adjustable vehicle seat. 3,189,312, 6–15–65, Cl. 248—394.

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Black, Robert L., Jr., to Parks-Cramer Co. Traveling suction cleaner for textile mills. 3,188,680, 6–15–65, Cl. 15—312.

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Blair, Boyd C., to Brackett Stripping Machine Co., Inc. Vibratory impression producing apparatus and film holder therefor. 3,188,687, 6–15–65, Cl. 18—1.

Blair, John W., to The Bendix Corp. Means to seal a movable tubular member. 3,189,258, 6–15–65, Cl. 277—58.

Blake, Leslie E., to United Kingdom Atomic Energy Authority. Nuclear reactor fuel elements. 3,189,101, 6–15–65, Cl. 176—72.

Blakeslee, Clinton A., to The Bristol Co. Multiple-point measuring instrument. 3,189,910, 6–15–65, Cl. 346—32.

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Williams, Ralph E., and Nowak. 3,189,109.

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Bodine, Albert G., Jr. Sonic pile driver. 3,189,106, 6–15–65, Cl. 175—56.

Bodine, Albert G. Acoustic method for extracting hydrocarbon from oil-sands. 3,189,536, 6–15–65, Cl. 208—11.

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Bohr, Alexander H., to Thiokol Chemical Corp. Helical-type turbojet engine. 3,188,800, 6–15–65, Cl. 60—35.6.

Boissele, Armand, to The Lubrizol Corp. Allenic phosphorus compounds. 3,189,636, 6–15–65, Cl. 260—461.

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Boswell, George T. Toy projectile which converts to space platform during flight. 3,188,768, 6–15–65, Cl. 46—75.

Botton, Roger, J. P. Delgrange, and A. Steinmetz, to Compagnie de Saint-Gobain. Method of recovering lithium from lepidolite. 3,189,407, 6–15–65, Cl. 23—32.

Boucrant, Michel, to Institut de Recherches de la Siderurgie Francaise. Process for roasting by fluidisation, more particularly for magnetising roasting. 3,189,437, 6–15–65, Cl. 75—9.

Bowell, Fred A. Buckets for grain sampling. 3,188,868, 6–15–65, Cl. 73—421.

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Bradley, William A. Electronic cribbage board. 3,189,888, 6–15–65, Cl. 340—323.

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Brainard, Wallace E., to Kearney & Trecker Corp. Apparatus for automatically setting up a program in a multiple spindle machine tool. 3,188,892, 6–15–65, Cl. 77—24.

Brainard Wallace E., and H. J. Baechle, to Kearney & Trecker Corp. Multiple spindle tool changer. 3,188,736, 6–15–65, Cl. 29—568.

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Braseu, Wallace R., to E. I. du Pont de Nemours and Co. Thiophthenes. 3,189,618, 6–15–65, Cl. 260—329.

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Bredtschneider, Kurt B., to Crane Co. Renewable valve seat construction. 3,189,319, 6–15–65, Cl. 251—328.

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Brichard, Edgard, and J. A. Marchand, to Union des Verreries Mecaniques Belges Societe Anonyme. Automatic cutting and discharging of a continuous vertically drawn glass ribbon. 3,189,424, 6–15–65, Cl. 65—160.

Bridgett, Argyl W., to Image Instruments Inc. System for modifying stored data. 3,189,889, 6–15–65, Cl. 340—324.

Briggs, Stephen F. Valve actuating mechanism with mechanical means for self-adjustment. 3,189,011, 6–15–65, Cl. 123—90.

Bright, Samuel A.: *See*—
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Brombaugh, John B., to D. H. Baldwin Co. Transducer and mounting for mechanical delay lines. 3,189,686, 6–15–65, Cl. 179—1.

Brooker, Eva. Safety net for diaper tables. 3,188,984, 6–15–65, Cl. 108—26.

Brothers, Abe R. Cigar with reinforced head. 3,189,062, 6–15–65, Cl. 131—11.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Plust, Heinz-Günther. 3,189,440.

Brown, Chester J., Jr., and D. E. Carney, to Libbey-Owens-Ford Glass Co. Mixing glass batch materials. 3,189,326, 6–15–65, Cl. 259—15.

Brown, Charles W.: *See*—
Sprayberry, Bryce I., and Brown. 3,188,975.

Brown, Harry W., Sr., and G. Markevich, to The National Acme Co. Taper threading device. 3,188,666, 6–15–65, Cl. 10—96.

Brown, John R. Implement cultivating shank mounting. 3,189,102, 6–15–65, Cl. 172—266.

Brown, William E., to The Western Co. of North America. Explosive charge assemblies. 3,188,955, 6–15–65, Cl. 102—24.

Brown, William F.: *See*—
Thoma, Albert J., Bogert and Brown. 3,189,001.

Brown, William L., to Boyne Products, Inc. Rotary switch assembly. 3,189,701, 6–15–65, Cl. 200—61.88.

Brownscombe, Philip J., and M. Delgado, to Eugene Dietzgen Co. Projector viewer and image scanning assembly therefor. 3,188,910, 6–15–65, Cl. 88—24.

Brozek, Mnata, to Chirana Praha, narodni podnik. Automatic adjustment and compensation of the secondary voltage of a transformer. 3,189,816, 6–15–65, Cl. 323—43.5.

Bruck, George, to Avco Corp. Multiple tunnel diode resonant cavity oscillator. 3,189,843, 6–15–65, Cl. 331—107.

Bruder, Edward A.: *See*—
Szuba, Walter D., and Bruder. 3,188,993.

Brumbaugh, Robert M., to Midwestern Instruments, Inc. Digital tape transport. 3,189,239, 6–15–65, Cl. 226—95.

Brundage, Robert W. Hydraulic pump or motor. 3,188,969, 6–15–65, Cl. 103—126.

Brundell, Per G., and K.-E. A. Jonsson, to Söderhamns Verkstader AB. Log debarking machine. 3,189,068, 6–15–65, Cl. 144—208.

Brundell, Per G., and K.-E. A. Jonsson, to Söderhamns Verkstader AB. Roller conveyor. 3,189,162, 6–15–65, Cl. 198—127.

Brundige, William L., to Westinghouse Electric Corp. Lamp filament connection. 3,189,778, 6–15–65, Cl. 313—331.

Brunswick Corp.: *See*—
La Vigne, Eugene E. 3,188,986.

Bryan, Chester L., and B. P. McDonnell, to Westinghouse Electric Corp. Strip thickness control apparatus. 3,188,842, 6–15–65, Cl. 80—56.

Bryan, James S., and F. P. Keiper, Jr., to Philco Corp. Two-level quantization system. 3,189,685, 6–15–65, Cl. 178—7.1.

Buchler, Waldemar, to Bopp & Reuther G.m.b.H. Rotary meters for fluids. 3,188,863, 6–15–65, Cl. 73—261.

Buckelew, Thomas A. Swimming pool cleaning devices. 3,188,688, 6–15–65, Cl. 15—1.7.

Buckingham, Arthur G., T. P. Haney, J. W. Knight, and D. W. Roese, to Westinghouse Electric Corp. Control apparatus for spacecraft. 3,189,298, 6–15–65, Cl. 244—1.

Bucyrus-Erie Co.: *See*—
Baer, Josef. 3,188,756.

Budd Co., The: *See*—
Herbert, Thomas M. 3,189,128.

Budden, Anthony J.: *See*—
Gilbert, Lynford W., and Budden. 3,189,890.

Buergin, Rodney G.: *See*—
Schneller, Joseph W., Harris, and Buergin. 3,188,773.

Bullinger, Emanuel A. Torque-compensation apparatus for helicopters. 3,189,302, 6–15–65, Cl. 244—17.21.

Bunn, B. H., Co.: *See*—
Ayres, Walter D., Jr. 3,189,163.

Bured, Inc.: *See*—
Parker, Robert B. 3,188,898.

Burgess, Frank H.: *See*—
Morningstar, Otto, Burgess, and Mathus. 3,189,294.

Burgess, James F.: *See*—
Gaynor, Joseph, Burgess, and Wagner. 3,189,481.

Burke, James D., R. J. Parks, and R. M. Stewart, to United States of America, Army. Range control for a ballistic missile. 3,188,958, 6–15–65, Cl. 102—50.

Burkhardt, Walter L. Circular saw holding jig. 3,188,889, 6–15–65, Cl. 76—78.

Burnbaum, Jack, to Bradford Novelty Co., Inc. Artificial ornamental fruit. 3,189,508, 6–15–65, Cl. 161—25.

Burndy Corp.: *See*—
Lazar, Michael, and Knowles. 3,189,866.

Burness, Donald M., to Eastman Kodak Co. Sensitised photographic emulsions containing quaternary ammonium compounds. 3,189,457, 6–15–65, Cl. 96—107.

Burness, Donald M., to Eastman Kodak Co. Photographic composition containing epoxy hardening agents. 3,189,459, 6–15–65, Cl. 96—111.

Burnett, Richard T., to The Bendix Corp. Brake shoe retainer. 3,189,129, 6–15–65, Cl. 188—73.

Burns Aero Seat Co., Inc.: *See*—
Burns, Stephen J., and Howell. 3,189,313.

Burns, Stephen J., and R. B. Howell, to Burns Aero Seat Co., Inc. Track supported mounting device. 3,189,313, 6–15–65, Cl. 248—429.

Burroughs Corp.: *See*—
Kelly, Robert. 3,188,950.
Leathers Ward. 3,189,730.
Paige, Walter G. 3,188,947.

Burstlein, Eugene M. Process for the agglomeration of pulverulent metalliferous materials. 3,189,436, 6–15–65, Cl. 75—5.

Butler, James W. Vacuum cold trap. 3,188,785, 6–15–65, Cl. 55—269.

Butler, Norman C.: *See*—
Bianchi, Renati, Will, and Butler. 3,188,953.

Butter-Pak, Inc.: *See*—
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Büttner, Karl-Heinz, and H. Völler, to Deutsche Edelstahlwerke Aktiengesellschaft. Method of producing pressings to form permanent magnets. 3,189,667, 6–15–65, Cl. 264—24.

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Byberg, Jonas J. Feed grinder. 3,189,287, 6–15–65, Cl. 241—275.

Byggeriets Maskinstationer Aktieselskab: *See*—
Waerum, Julius N. M., and Krex. 3,189,189.

Byrer, Thomas G.: *See*—
Frost, Paul D., and Byrer. 3,189,441.
Frost, Paul D., and Byrer. 3,189,442.

Byrne, George C.: *See*—
Lucas, Raymond D., Byrne, and McDonald. 3,189,883.

Cady, Charles A. Power failure responsive circuits. 3,189,788, 6–15–65, Cl. 315—129.

Caine, Frank A., to Humber Ltd. Steering columns for motor vehicles. 3,188,880, 6–15–65, Cl. 74—493.

Caines, James F.: *See*—
Dyer, Richard F., and Caines. 3,188,713.

Calaora, Albert: *See*—
Gavreau, Vladimir, Caleora, and Miane. 3,189,764.

Calderwood, Robert H., H. R. Sheppard, C. R. Ruffing, and E. A. Moreland, to Westinghouse Electric Corp. Track resistant self-extinguishing composition. 3,189,513, 6–15–65, Cl. 161—195.

Caldwell, John R., to Eastman Kodak Co. Carbamates and polyurethanes based upon 4-aminomethylcyclohexanemethanol. 3,189,579, 6–15–65, Cl. 260—77.5.

Calhoun, George M., to Shell Oil Co. Lubricating compositions. 3,189,547, 6–15–65, Cl. 252—48.6.

California Research Corp.: *See*—
Cramp, Alan P. 3,189,572.
Criddle, Dean W. 3,189,543.
Kozlowski, Robert H., and Jacobson. 3,189,540.
Mulaskey, Bernard F., Lindquist, and Harnsberger. 3,189,661.
Sieg, Robert P. 3,189,539.
Stuart, Frank A., Stewart, Lowe, and Kavanagh. 3,189,586.

Calkins, Vincent P., E. S. Funston, and J. A. McGurty, to United States of America, Atomic Energy Commission. Binary nickel base alloys. 3,189,445, 6–15–65, Cl. 75—170.

Calkins, Vincent P., E. S. Funston, and J. A. McGurty, to United States of America, Atomic Energy Commission. Ternary nickel base alloys. 3,189,446, 6–15–65, Cl. 75—171.

Callahan, Francis J., and B. J. Gallagher, to Nuclear Products Co. Poppet check valve. 3,189,046, 6–15–65, Cl. 137—515.7.

Callejo, Modesto. Backflow preventer vacuum breaker. 3,189,037, 6–15–65, Cl. 137—218.

Calleson, Donald A., and W. R. Weidlich, to Liggett & Myers Tobacco Co. Article sorting machine. 3,189,178, 6–15–65, Cl. 209—121.

Calmar, Inc.: *See*—
Corsette, Douglas F. 3,189,282.

Calogero, Orlando J. Article gripping and handling device. 3,188,684, 6–15–65, Cl. 16—114.

Camarata, Frank J.: *See*—
Wiener, Charles, and Camarata. 3,188,778.

Cambridge Thermionic Corp.: *See*—
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Campbell, Ian P.: *See*—
Seymour, Raymond E., Riedl, and Campbell. 3,189,270.

Canada, Frank A. Brake shoe truing machine. 3,188,851, 6–15–65, Cl. 72—415.

Canfield, Carl. Animal tether devices. 3,189,003, 6–15–65, Cl. 119—120.

Cannon, William D., and D. J. Bertuccio, to The Western Union Telegraph Co. Telegraph signal bias and distortion meter. 3,189,733, 6–15–65, Cl. 235—92.

Cantrall, Edward W., S. Bernstein, and W. P. Cekleniak, to American Cyanamid Co. Anti-hypercholesterol steroids. 3,189,522, 6–15–65, Cl. 167—65.

Cape, Arthur T., to Coast Metals, Inc. Brazed structure. 3,189,421, 6–15–65, Cl. 29—196.

Caraccioli, Walter A.: *See*—
Pizzarello, Roy A., Caraccioli, and Poltersdorf. 3,189,398.

Carbert, Ralph E., and H. R. Larson, to Tel-E-Lect Products, Inc. Utility equipment. 3,189,194, 6–15–65, Cl. 214—3.

Carborundum Co., The: *See*—
Shaffer, Peter T. B. 3,189,477.
Taylor, Kenneth M. 3,189,472.

Carl, Wellington C., and H. A. Zollinger, to Westinghouse Electric Corp. Load maneuvering apparatus. 3,189,196, 6–15–65, Cl. 214—14.

Carlisle Tire and Rubber Division of Carlisle Corp.: *See*—
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Carlson, Carl M. Multi-channel valve. 3,189,049, 6–15–65, Cl. 137—625.24.

Carlson, Fred O. Closure operator. 3,189,142, 6–15–65, Cl. 189—47.

Carlton, Robert H., to Universal Oil Products Co. Retarding corrosion of heat exchangers. 3,189,537, 6–15–65, Cl. 208—47.

Carney, Delmar E.: *See*—
Brown, Chester J., Jr., and Carney. 3,189,326.

Carothers, Charles H.: *See*—
Lawrence, Robert J., and Carothers. 3,189,710.

Carpenter, Robert E.: *See*—
Marquis, John E., and Carpenter. 3,189,475.

Carpigiani, Poerlo, to A.P.A.W., S.A. Apparatus for automatically controlling the hardness of ice cream in continuous ice cream machines. 3,188,826, 6–15–65, Cl. 62—136.

Carrier Corp.: *See*—
Leonard, Louis H., Jr. 3,188,832.
Linthicum, Harley E. and W. A. 3,188,850.
Siewert, Herbert G., and Gilman. 3,188,829.

Carroll, John L., R. W. Wingard, and E. R. Baxter, to Quikut Inc. Insulated pitcher. 3,189,229, 6–15–65, Cl. 222—183.

Carter, Lloyd G., to Halliburton Co. Method of accelerating the set of a cement slurry in well cementing operations. 3,189,089, 6–15–65, Cl. 166—25.

Cease Central, Inc.: *See*—
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Cease, William W., to Cease Central, Inc. Food dispensing apparatus. 3,189,217, 6–15–65, Cl. 221—69.

Cédérleaf, Robert H., to Niagara Machine & Tool Works. Automatic die clamping mechanism for power presses. 3,188,899, 6–15–65, Cl. 83—399.

Cekleniak, Walter P.: *See*—
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Fortess, Fred, Warner, and Ward. 3,189,400.
Wheeler, Edward N., Schnizer, and Pickard. 3,189,634.

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Gavreau, Vladimir, Calaora, and Miane. 3,189,764.

Chalk, Graeme O.: *See*—
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Chambers, Bynom L., to Belindco, Inc. Apparatus for serging and fringing. 3,188,990, 6–15–65, Cl. 112—64.

Chambers, Robert B., to Belt-Scales Corp. Temperature compensating means for closed hydraulic system. 3,189,051, 6–15–65, Cl. 138—30.

Chang, Kern K. N., to Radio Corp. of America. Signal translating system. 3,189,828, 6–15–65, Cl. 325—451.

Chang, Wen-Hsuan, and M. Wismer, to Pittsburgh Plate Glass Co. 2,6,7-trioxa-1-phosphabicyclo[2.2.2]octane sulfo-oxo, and seleno derivatives and process for making same. 3,189,633, 6–15–65, Cl. 260—445.

Chapin, Howard R., and J. J. Kaleba, to Controls Co. of America. Snap-action electrical switch having planar terminals mounted in a common plane. 3,189,703, 6–15–65, Cl. 200—67.

Chapman, Everett, to Nordberg Mfg. Co. Magnetic clutch. 3,189,150, 6–15–65, Cl. 192—84.

Chapman, Ronald W., and R. M. Dille, to Texaco Inc. Novel catalyst for the preparation of acetaldehyde from acetylene. 3,189,556, 6–15–65, Cl. 252—428.

Chase Manhattan Bank, The: *See*—
Ozal-Durrani, Ataullah K. 3,189,461.

Chase, Perry J. Nail clipper attachment to receive the cut clippings. 3,188,737, 6–15–65, Cl. 30—124.

Chase-Shawmut Co., The: *See*—
Kozacka, Frederick J. 3,189,712.

Check, Mathias M., to Yale & Towne, Inc. Spiral spring door closer. 3,188,683, 6–15–65, Cl. 16—69.

Check, Mathias M., and R. W. Schmid, to Yale & Towne, Inc. Mounting for door closer. 3,189,682, 6–15–65, Cl. 16—49.

Chellis, Fred F., to Arthur D. Little, Inc. Pneumatically-operated refrigerator with self-regulating valve. 3,188,821, 6–15–65, Cl. 62—6.

Chelminski, Zygmunt R., and E. H. Wagner. Carburetor control safety linkage. 3,188,878, 6–15–65, Cl. 74—470.

Chemagro Corp.: *See*—
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Chemetron Corp.: *See*—
Harnik, Marcel. 3,189,621.

Chemische Werke Albert: *See*—
Giller, Arnold. 3,189,567.

Chen, Charles W., to Westinghouse Electric Corp. Processes for producing ductile cobalt-iron-vanadium magnetic alloys. 3,189,493, 6–15–65, Cl. 148—143.

Chenicek, Joseph A., to Universal Oil Products Co. N,N'-bis-(1,3-dimethyl-3-methoxybutyl)-p-phenylene-diamine. 3,189,650, 6–15–65, Cl. 260—573.

Cherry-Burrell Corp.: *See*—
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Chicago United Products Co., Inc.: *See*—
Meyer, Engelbert A. 3,188,730.
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Chinoin Gyogyszer-és Vegyeszeti Termekek Gyára R.T.: *See*—
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Chow, Eric T. K., and H. L. Watkins, to The National Cash Register Co. Process for making conductive-core magnetic device. 3,189,532, 6–15–65, Cl. 204—28.

Chown, Bruce F., to Computing Devices of Canada Ltd. Switching systems for step-by-step transmission of angular quantities. 3,189,763, 6–15–65, Cl. 307—113.

Christensen, Willard R. Marine propulsion system. 3,188,997, 6–15–65, Cl. 115—11.

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Huebner, Charles F. 3,189,612.
MacPhillamy, Harold B., and Lucas. 3,189,597.
Mull, Robert P. 3,189,599.
Mull, Robert P. 3,189,601.

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Clarke, John S., and S. R. Jackson, to Joseph Lucas (Industries) Ltd. Exhaust gas combustion apparatus. 3,189,416, 6–15–65, Cl. 23—277.

Clausen, Mads, to Danfoss A/S. Motor compressor with external welding flange. 3,189,257, 6–15–65, Cl. 230—58.

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Coastal Interchemical Co.: *See*—
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Coats, Raymond E., R. W. Phillips, and R. V. Jones, to Noble Mfg. Co. Drive for auger elevator. 3,189,168, 6–15–65, Cl. 198—213.

Cobb, Phara L., Jr., and M. R. Hargrave, to Eastman Kodak Co. Method and apparatus for forming continuous filament filter rods. 3,189,506, 6–15–65, Cl. 156—296.

Cochrane Furniture Co., Inc.: *See*—
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Cochrane, James R.: *See*—
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Cochrane, Jerry W., and R. H. Costner, to Cochrane Furniture Co., Inc. Multiple drilling apparatus. 3,189,065, 6–15–65, Cl. 144—112.

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Conley, Eugene W., to Radio Corp. of America. Micromanipulator. 3,188,879, 6–15–65, Cl. 74—471.

Conrad, William A. Upholstery construction. 3,188,963, 6–15–65, Cl. 5—353.2.

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Long, Fleming D. 3,189,507.

Continental Aviation and Engineering Corp.: *See*—
Isley, Walter F. 3,189,010.

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Henchert, John. 3,189,214.
Continental Color Corp.: *See*—
Matison, Nicholas W. 3,188,908.
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Contromatics Corp.: *See*—
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Cooper, Carl M., W. B. Sulmonetti, and C. A. Renfro. Harness for control of upper extremity prosthesis. 3,188,655, 6–15–65, Cl. 3—12.1.
Cooper, James, Jr., to General Electric Co. Conductive silver coating of resins having amine groups at the surface. 3,189,478, 6–15–65, Cl. 117—47.
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Coover, Harry W., Jr., and F. B. Joyner, to Eastman Kodak Co. Three-component alkyl aluminum catalysts for olefin polymerization. 3,189,590, 6–15–65, Cl. 260—93.7.
Coppick, Sydney, and R. L. Beal, to Scott Paper Co. Modified resin foams and process of manufacture thereof. 3,189,479, 6–15–65, Cl. 117—98.
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Stong, Guy E. 3,189,512.
Corsette, Douglas F., to Calmar, Inc. Atomizing device having an annular aspirating zone. 3,189,282, 6–15–65, Cl. 239—327.
Cortina, Anthony. Replaceable heel for shoes. 3,188,755, 6–15–65, Cl. 36—42.
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Cosmos, William J. One piece industrial wheel. 3,188,775, 6–15–65, Cl. 51—141.
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Crooks, William R., to The Cooper-Bessemer Corp. Gas turbine thrust compensating device. 3,188,806, 6–15–65, Cl. 60—39.16.
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Robinson, William W., Jr., and Camp. 3,189,164.
Currie, Grover C., Jr., to Weyerhaeuser Co. Article carrier and package. 3,189,215, 6–15–65, Cl. 220—115.
Currie, Roy E., Jr., to United States of America, National Aeronautics and Space Administration. Relay binary circuit. 3,189,794, 6–15–65, Cl. 317—140.
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Kintner, Paul M. 3,189,902.
Lowman, Roderic V. 3,189,820.
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Cutolo, Mario, to G. Lansa. Method of producing ionisation and luminous emission in a gas or vapor and apparatus for use therein. 3,189,901, 6–15–65, Cl. 343—100.
Cyba, Henryk A., to Universal Oil Products Co. Product of the reductive alkylation of 1,3-diamino-2-propanol and a ketone. 3,189,613, 6–15–65, Cl. 260—307.
Daech, Alfred F., to Kalvar Corp. Vesicular photographic materials containing a polyamide vehicle. 3,189,455, 6–15–65, Cl. 96—91.
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Holland, Edward T., Jr. 3,189,160.
Dagley, Leo J., Jr.: *See*—
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Dahl, Walter L., to E. I. du Pont de Nemours and Co. Explosive release ignition assembly. 3,188,914, 6–15–65, Cl. 89—1.
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Noorlander, Daniel O. 3,189,002.
Dalen, Sten G., and S. Mogensen, to Svenska Aktiebolaget Gasaccumulator. Method for the production of a rigid mass for acetylene gas accumulators. 3,189,474, 6–15–65, Cl. 106—86.
Dana Laboratories, Inc.: *See*—
Braymer, Noel B., and Engle. 3,189,840.
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Daunt, John G., to Malaker Laboratories, Inc. Remotely-located cold head for stirling cycle engine. 3,188,822, 6–15–65, Cl. 62—6.
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Davidsson, Tage A. Oil burner apparatus. 3,189,078, 6–15–65, Cl. 158—36.3.
Davies, Harold, to Thiokol Chemical Corp. Solid propellant grain. 3,188,802, 6–15–65, Cl. 60—35.6.
Davis, John E., to Bio-Science Laboratories. Spot and stripe applicator for chromatography. 3,189,413, 6–15–65, Cl. 23—253.
Davis, Julius M., and R. A. Pfluger, to General Foods Corp. Combined air drying-freeze drying process. 3,188,750, 6–15–65, Cl. 34—5.
Davis, Marvin A., and G. Kemp, to Westinghouse Electric Corp. Motor control apparatus for cutting traveling workpiece. 3,189,812, 6–15–65, Cl. 318—445.
Davis, Michael, to United Kingdom Atomic Energy Authority. Nuclear reactor fuel elements. 3,189,525, 6–15–65, Cl. 176—81.
Davis, Raymond T., Jr., to United States Steel Corp. Method of making container stock. 3,188,734, 6–15–65, Cl. 29—528.
Davis, Thomas E., to American Home Products Corp. Needle-ferrule cannula cover assembly apparatus. 3,188,727, 6–15–65, Cl. 29—208.
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Dawes, James W., to E. I. du Pont de Nemours and Co. Polyhydropolyborate group-containing polymers. 3,189,580, 6–15–65, Cl. 260—78.4.
Dawson, Leonard B. Automatic bilge drain stopper. 3,188,994, 6–15–65, Cl. 114—197.
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Dean, Derek J., to Sangamo Electric Co. Water depth gauges. 3,188,864, 6–15–65, Cl. 73—300.
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Dega, Robert L., to General Motors Corp. Seal lip force gauge and method. 3,188,855, 6–15–65, Cl. 73—37.
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Little, Randel Q., Jr., and Deluga. 3,189,545.
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Denton, Bryce A., to General Electric Co. Steam and dry flatiron. 3,188,757, 6–15–65. Cl. 38—77.
Denton, Bryce A., to General Electric Co. Liquid spray iron. 3,188,758, 6–15–65, Cl. 38—78.
De Rochemont, John F., to Baker Oil Tools, Inc. Hydraulically set well packers. 3,189 095, 6–15–65, Cl. 166—120.
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Devillard, Georges, and L. Coriat, to Codeco, Etablissements. New nozzle and its applications especially for the supply of turbines. 3,189,321, 6–15–65, Cl. 253—78.
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Dietrich, Joseph J., A. J. Kaman, and H. C. Stevens, to Pittsburgh Plate Glass Co. Chloroformates. 3,189,640, 6–15–65. Cl. 260—463.
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Dixon, Farris E., to American Radiator & Standard Sanitary Corp. Ventilated water closet. 3,188,659, 6–15–65, Cl. 4—215.
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Dodge, Adiel Y. Jet pump. 3,188,976, 6–15–65, Cl. 103—262.
Dodge, Peter W. Gymnastic apparatus. 3,189,347, 6–15–65, Cl. 272—81.
Doedens, James D., H. P. Cordts, and D. F. Wisniewski. Bis (phenyltolyl)ether chromatographic adsorption media. 3,189,558, 6–15–65,., Cl. 252—428.
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Donat, Frank J., to The B. F. Goodrich Co. Emulsion polymerization process using soluble and insoluble emulsifiers. 3,189,587, 6–15–65, Cl. 260—92.8.
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Kelly, James A., and Scoles. 3,189,430.
Mussell, Dorsey R. 3,189,428.
Quinn, Harold W. 3,189,658.
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Robbins, Frank E. 3,189,491.
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Duffy, Roy, to Imperial Chemical Industries Ltd. Process for preparing a pyridine-metal interaction product. 3,189,610, 6–15–65, Cl. 260—270.
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Baker, Melvin C. 3,189,642.
Brasen, Wallace R. 3,189,618.
Breen, Alvin L. 3,188,689.
Crawford, William A. 3,189,393.
Dahl, Walter L. 3,188,914.
Dawes, James W. 3,189,580.
Gerjovich, Henry J. 3,189,648.
Graham, Donald P. 3,189,560.
Graham, Donald P. 3,189,561.
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Hebeler, Harold H. 3,188,790.
Hillman, Melville E. D. 3,189,627.
Hunt, Heman D. 3,189,456.
Lasebrink, Elmer H. 3,189,729.
Oken, Aaron. 3,189,573.
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Dusing, Leon F. and C. F., and Gerhardt. 3,189,141.
Dusing, Leon F. and C. F., and C. F. Gerhardt., to Dusing and Hunt, Inc. Fire door construction. 3,189,141, 6–15–65, Cl. 189—46.
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Dyer, Richard F., and Caines. 3,188,713.
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Elliott, Carmon M., Jr. 3,189,170.
Herz, Arthur H., and Kaleuda. 3,189,453.
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Shearer, Newton H., Jr. 3,189,585.
Spangler, Gordon W. 3,188,714.
Yost, Richard G. 3,189,449.
Easy, Maurice H., J. H. T. Fairhurst, C. F. Robinson, and T. O. V. Palmqvist, to Decca Ltd. Plotting devices for use with radar apparatus. 3,189,898, 6–15–65, Cl. 343—11.
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Eidson, Dennis L., to Contromatics Corp. Valve actuator and switch. 3,189,700, 6–15–65, Cl. 200—61.86.
Eisenberg, Robert M., and W. P. Jameson, to ACF Industries, Inc. Method of preparing a simulated ground contour map. 3,188,911, 6–15–65, Cl. 88—24.
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Ellithorpe, Clarence D., to The Mosler Safe Co. Pneumatic tube conveyer system. 3,189,297, 6–15–65, Cl. 243—19.
Emeis, Reimer, to Siemens-Schuckertwerke Aktiengesellschaft. Device for crucible-free zone melting. 3,189,415, 6–15–65, Cl. 23—273.
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Erpenbach, Hubert: *See*—
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Escher, William J. D. Method of making a composite multiwalled pressure vessel. 3,189,500, 6–15–65, Cl. 156—155.
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Evans, George S., to Westinghouse Electric Corp. Method for processing discharge devices. 3,189,396, 6–15–65, Cl. 316—25.
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Finefield, Kenneth F. Signalling device for fishing rods. 3,188,767, 6–15–65, Cl. 43—17.
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Fisher, Hugh L., to General Motors Corp. Transmission. 3,188,885, 6–15–65, Cl. 74—688.
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Flamant, Pierre L. V., and M. J.-M. Linares, to Sertum. Apparatus for producing uniform wood chips. 3,189,066, 6–15–65, Cl. 144—172.
Fletcher, William N. to Ternee Steel Co. Windshield visor hinge. 3,188,685, 6–15–65, Cl. 16—140.
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Forrer, Max P., to Kane Engineering Laboratories. Waveguide rotary joint utilising annular resonant waveguide. 3,189,855, 6–15–65, Cl. 333—98.
Fortess, Fred, J. S. Warner, and G. C. Ward, to Celanese Corp. of America. Polyolefin textile dyeing with solvent and dye heated thereon. 3,189,400, 6–15–65, Cl. 8—55.
Fortier, J. Paul. Collapsible backrest. 3,189,382, 6–15–65, Cl. 297—351.
Fortriede, Charles J., to The Mead Corp. Carton assembling machine. 3,188,926, 6–15–65, Cl. 93—44.1.
Foster, Boutwell H., and H. F. Miller, to United States Rubber Co. Article and process for wave damping. 3,188,813, 6–15–65, Cl. 61—5.
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Foster, Harry C., to Olin Mathieson Chemical Corp. Magazine and target feeding apparatus. 3,189,015, 6–15–65, Cl. 124—47.
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Fox, Elton B., to Amot Controls Corp. Temperature responsive safety control valve. 3,189,277, 6–15–65, Cl. 236—101.
Frady, William E., Jr., E. L. Woods, and R. M. MacIntyre, to Thompson Ramo Wooldridge Inc. Control system with rate prediction. 3,189,734, 6–15–65, Cl. 235—154.
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Freeman, Edward, K. Tyas, H. Firestein, and B. Greene, to Louis Hand, Inc. Thread cutter. 3,188,992, 6–15–65, Cl. 112—252.
Freismuth, John S., to Sterling Automotive Mfg. Co. Power element. 3,188,867, 6–15–65, Cl. 73—368.3.
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Frierdich, Waldo J., to Basler Electric Co. D.C. to quasi-square wave transistor inverter. 3,189,813, 6–15–65, Cl. 321—45.
Fritz, Kurt, to MIWAG Mikrowellen Aktien Gesellschaft. Microwave oven apparatus. 3,189,722, 6–15–65, Cl. 219—10.55.
Frost, Gerard C., and J. P. Grynkiewicz, to Pyrofax Gas Corp. Integrated apparatus for measuring the level of liquids. 3,188,865, 6–15–65, Cl. 73—304.
Frost, Paul D., and T. G. Byrer, to United States of America, Army. Magnesium-lithium-thorium alloys. 3,189,441, 6–15–65, Cl. 75—122.7.
Frost, Paul D., and T. G Byrer, to United States of America, Army. Magnesium-lithium-yttrium alloys. 3,189,442, 6–15–65, Cl. 75—122.7.
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Calkins, Vincent P., Funston, and McGurty. 3,189,446.
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Fyler, Norman F., to Litton Precision Products, Inc. Very high intensity light source using a cathode ray tube. 3,189,784, 6–15–65, Cl. 315—30.
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Gabriel, Martin G., to Ford Motor Co. Hydrokinetic torque converter mechanism with dual performance range. 3,189,144, 6–15–65, Cl. 192—3.2.
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Galpin, Robert K. P. to Associated Electrical Industries Ltd. Hall effect apparatus. 3,189,762, 6–15–65, Cl. 307—88.5.
Garber, John D., R. A. Gasser, and R. E. Jones, to Merck & Co., Inc. Process for preparing hexamethylenediamine compounds from 5-aminomethyl-2-furfurylamine compounds. 3,189,651, 6–15–65, Cl. 260—583.
Gardner, Edward M., to Merrill Bros. Steel plate lifting clamps. 3,189,377, 6–15–65, Cl. 294—101.
Garner, Howell D., and H. J. E. Reid, Jr., to United States of America, National Aeronautics and Space Administration. Dynamic precession damper for spin stabilized vehicles. 3,189,299, 6–15–65, Cl. 244—1.
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Geller, Richard, and J. Leroy. Shutter opening at high speed. 3,188,932, 6–15–65, Cl. 95—53.
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Gerstorfer, Wilhelm G. Machine for the manufacture of compression spring strips. 3,188,845, 6–15–65, Cl. 72—138.
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Goldfein, Solomon, to United States of America, Army. Process for shipping flexible polyurethane foam. 3,189,669, 6–15–65, Cl. 264—134.
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Holsworth, Henry A., Wark, and Schladermundt. 3,189,219.

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Johnson, Raymond D. Illuminated chain and links thereof. 3,188,794, 6–15–65, Cl. 59—78.3.

Johnson, Tomlinson F. Motor mechanism for opening and closing electric switch. 3,189,698, 6–15–65, Cl. 200—48.

Johnston, Douglas, to Decatur Foundry & Machine Co. Applicator knife. 3,188,989, 6–15–65, Cl. 111—7.

Jones Gordon H.: *See*—
McFerren, Edgar L., McCann, and Jones. 3,188,891.

Jones, Hobert B. Flexible chain extension or shank for tools with lock link features. 3,188,895, 6–15–65, Cl. 81—177.

Jones, Howard T., to General Electric Co. Transformer bobbin. 3,189,557, 6–15–65, Cl. 336—198.

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Jones, Peter D., to Joseph Lucas (Industries) Ltd. Inverter circuits for producing an A.C. output from a D.C. source using semi-conductor controlled rectifiers. 3,189,845, 6–15–65, Cl. 331—113.

Jones, Robert E.: *See*—
Garber, John D., Gasser, and Jones. 3,189,651.

Jones, Robert V.: *See*—
Coats, Raymond E., Phillips, and Jones. 3,189,168.

Jones, W. Bartlett. Process for producing compressed frozen slices of baked cellular products. 3,189,463, 6–15–65, Cl. 99—86.

Jones, William H.: *See*—
Fried, John, Arth and Jones. 3,189,624.

Jonsson, Karl-Erik A.: *See*—
Brundell, Per G., and Jonsson. 3,189,068.
Brundell, Per G., and Jonsson. 3,189,162.

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Kalmar, Arthur F., to FMC Corp. Preservation of perishable products. 3,189,467, 6–15–65, Cl. 99—168.

Kalmar, Arthur F., to FMC Corp. Process for preserving fruits and vegetables and preservative coating therefor. 3,189,468, 6–15–65, Cl. 99—168.

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Kaman, Andrew J.: *See*—
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Kane, Robert D., to Braham Laboratories, Inc. Convertible dust and floor mop. 3,188,671, 6–15–65, Cl. 15—147.

Kapeller, James J., Jr.: *See*—
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Karnow, Paul, and B. S. Hutchins, to United States of America, Navy. Universal wheel chock. 3,189,127, 6–15–65, Cl. 188—32.

Karsh, Herbert, to Epsco, Inc. Analog-to-digital converters. 3,189,891. 6–15–65, Cl. 340—347.

Kasten, Walter, to The Bendix Corp. Fuel filter water separator element. 3,189,182, 6–15–65, Cl. 210—492.

Kavanagh, Frank W.: *See*—
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Brainard, Wallace E. and Baechle. 3,188,736.
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Kerley, Bernard J., Jr., and D. F. 3,189,042.

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King, Kenneth G., to Westinghouse Brake and Signal Co. Ltd. Braking circuits for D.C. motors. 3,189,811, 6–15–65, Cl. 318—269.

King, William R., and J. C. Lang, to Jas. H. Mathews & Co. Rotary embossing device for screw machines or the like. 3,188,943, 6–15–65, Cl. 101—7.

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Klüver, Johan W., to Bell Telephone Laboratories, Inc. Pre-interaction cycloidal beam deflection in crossed-field tube. 3,189,785, 6–15–65, Cl. 315—39.3.

Kniebes, Duane V., to Institute of Gas Technology. Gas control mechanism. 3,188,636, 6–15–65, Cl. 67—119.

Knight, Hogan B., and D. Swern, to United States of America, Agriculture. Phosphonated oils and phosphonated esters. 3,189,628, 6–15–65, Cl. 260—403.

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Knirsch, Hermann, to Escher Wyss Aktiengesellschaft. Emergency shut-down device for gas-turbine power plant. 3,188,-812, 6–15–65, Cl. 60—59.

Knochel, William J., to Westinghouse Electric Corp. Lighting device and electrical connection therefor. 3,189,786, 6–15–65, Cl. 315—71.

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Shriver, Ellsworth H., and Knowles. 3,189,514.

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Kochey, Edward L., Jr., to Combustion Engineering, Inc. Apparatus and method for starting a vapor generating power plant. 3,189,006, 6–15–65, Cl. 122—406.

Kocsuta, Michael. Pretreatment of iron containing base plates and their use in photoengraving. 3,189,450, 6–15–65, Cl. 96—36.

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Kozacka, Frederick J., to The Chase-Shawmut Co. High interrupting capacity fuse. 3,189,712, 6–15–65, Cl. 200—120.

Koslowski, Robert H., and R. L. Jacobson, to California Research Corp. Production of lubricating oils by catalytic hydrogenation. 3,189,540, 6–15–65, Cl. 208—264.

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Kulik, John J., and R. F. Schmidt, to United States of America, Navy. Shipboard conical antenna with conductive support mast. 3,189,906, 6–15–65, Cl. 343—710.

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Laske, Hans. Device for evaporating coatings from extremely thin metal elements. 3,188,726, 6–15–65, Cl. 29—200.

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Laudenslager, Harry B., Jr., and E. W. Hale, to Blackstone Corp. Iron founding. 3,189,443, 6–15–65, Cl. 75—123.

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Lundgren, Nils V. G., and S. B. S. Pettersson, to Kirurgiska Instrument Fabrika Aktiebolaget KIFA. Medical treating table equipment. 3,188,659, 6–15–65, Cl. 5—86.

Lupfer, Dale E.: *See*—
Vesper, Daniel M., and Lupfer. 3,188,857.

Lusebrink, Elmer H., to E. I. du Pont de Nemours and Co. Process roll system. 3,189,729, 6–15–65, Cl. 219—469.

Luss, Gerald, to Designs for Business, Inc. Partitioning system. 3,189,140, 6–15–65, Cl. 189—41.

Luttrell, Howard M.: *See*—
Wrighton, Robert J., and Luttrell. 3,189,296.

Lux, John H., to Haveg Industries, Inc., a wholly owned subsidiary of Hercules Powder Co. Containers made from plastic foam sheet. 3,189,243, 6–15–65, Cl. 229—3.5.

Lydard, Martin L.: *See*—
Znamirowski, Henry, and Lydard. 3,189,189.

Lyman, Frank, Jr., to Cambridge Thermionic Corp. Method of making an insulating mount with a terminal. 3,189,672, 6–15–65, Cl. 264—249.

Lynn, Lawrence: *See*—
Autrey, Harry S., and Lynn. 3,189,462.

Mabuchi, Shigeaki, to Nihon Gakki Seizo Kabushiki Kaisha. Apparatus for producing pedal sounds in electric musical instruments. 3,189,674, 6–15–65, Cl. 84—1.17.

MacGregor, Dean J., to Westinghouse Electric Corp. Motor controller. 3,189,810, 6–15–65, Cl. 318—227.

Machida, Haruo: *See*—
Yamada, Koichi, and Machida. 3,189,529.

MacIntyre, Robert M.: *See*—
Frady, William E., Jr., Woods, and MacIntyre. 3,189,-734.

MacIntyre, Robert M., and C. L. Wanlass, to Raytheon Co. Orthogonal write system for magnetic memories. 3,189,-879, 6–15–65, Cl. 340—174.

Mack Trucks, Inc.: *See*—
May, Walter M. 3,189,126.

Mackal, Henry H., to Halkey-Roberts Corp. Liquid dispensing device. 3,189,223, 6–15–65, Cl. 222—1.

MacKay, Donald M.: *See*—
Miller, Morrow C., Lundell, and MacKay. 3,188,760.

MacKenzie, Merlin H., to United States of America, Army. Search sweep oscillator comprising one or more three electrode transistors and a double base diode. 3,189,844, 6–15–65, Cl. 331—111.

MacPhillamy, Harold B., and R. A. Lucas, to Ciba Corp. 3-glycosides of 17-amino-3-hydroxy-5-androstenes. 3,189,597, 6–15–65, Cl. 260—210.5.

Maddox, Crawford: *See*—
Miller, Willard T. 3,189,912.

Magee, Carl W., to United States of America, Navy. Hand crimping tool. 3,189,916, 6–15–65, Cl. 81—15.

Magnachase Corp.: *See*—
Hollerith, Charles. 3,188,951.

Magor Car Corp.: *See*—
Tearpock, Daniel J., and Lunde. 3,188,980.

Magrauth, Andrew G. Wall recessed toothbrush holder. 3,189,391, 6–15–65, Cl. 312—206.

Maguire, Addison C., to Rolls-Royce Ltd. Jet engines. 3,188,803, 6–15–65, Cl. 60—35.6.

Malaker Laboratories, Inc.: *See*—
Daunt, John G. 3,188,822.

Malinofsky, Walter W., to United States of America, Army. Process of making ferrite magnetic core material. 3,189,-550, 6–15–65, Cl. 252—62.5.

Mandelko, Melvin A. Pneumatic cylinder structure. 3,188,-923, 6–15–65, Cl. 92—165.

Mandy, Robert R., and E. E. Lovell, to The Delman Co. Control assembly for windshield clearing system. 3,188,678, 6–15–65, Cl. 15—250.02.

Marbach, Karl: *See*—
Fischer, Kurt, and Marbach. 3,188,948.

Marble, Chester B.: *See*—
Wingler, William C., and Marble. 3,189,772.

Marchand, Jean A.: *See*—
Brichard, Edgard, and Marchand. 3,189,424.

Marchant, Paul A.: *See*—
Balkema, Elmer H., and Marchant. 3,189,071.

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Goldman, Richard G., and Marklein. 3,189,767.

Marland, Joseph A., and C. W. Hill; said Hill, assor. to said Marland. One way clutch with electromagnetic brake controlled back stop. 3,189,145, 6–15–65, Cl. 192—12.

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Moreno, Emil F., Marquardt, and Domes. 3,189,119.

Marquis, John E., and R. E. Carpenter, to The Glidden Co. Pink ceramic stain and process. 3,189,475, 6–15–65, Cl. 106—299.

Marsh, Lynn W., Jr., to Anelex Corp. Pulse retiming system. 3,189,835, 6–15–65, Cl. 328—63.

Marshall, Don J., to Dixon Valve & Coupling Co. Hose coupling connection for wire reinforced elastomeric cables. 3,189,370, 6–15–65, Cl. 285—27.

Martin, Herbert, to J. Eberspacher. Muffler with dual pairs of curved and perforated chamber defining walls. 3,189,-122, 6–15–65, Cl. 181—56.

Martin, James C., to Eastman Kodak Co. Tertiaryamino cyclobutanones and their production. 3,189,608, 6–15–65, Cl. 260—247.7.

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Elam, Edward U., and Martin. 3,189,643.

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Angele, Wilhelm, and Martineck. 3,189,864.

Martin-Marietta Corp.: *See*—
Podlaseck, Stanley E., Jr. 3,189,211.

Maryland Glass Corp.: *See*—
Shea, Donald P., and Reed. 3,189,422.
Mascaro, John A.: *See*—
Rosa, Prisco, Haskell, Mascaro, and Tringali. 3,188,853.
Masters, John A., and W. M. Cooper, to United States of America, Atomic Energy Commission. Rotary contact. 3,189,861, 6–15–65, Cl. 339—8.
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Theijsmeijer, Frederik. 3,189,165.
Mathews, Jas. H., & Co.: *See*—
King, William R., and Lang. 3,188,943.
Mathieson Chemical Corp.: *See*—
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Mattison, Nicholas W. to Continental Color Corp. Color enlarger. 3,188,908, 6–15–65, Cl. 88—24.
Matsuoka, Yoshinori, to Toho Koki Kabushiki Kaisha. Pipe wrench having a holding plate for a rockably mounted traveling outer jaw. 3,188,804, 6–15–65, Cl. 81—101.
Mauro, Richard G. Roller type die cutter. 3,188,900, 6–15–65, Cl. 83—663.
Maurus, John. Carpenter's wood framing tool. 3,189,841, 6–15–65, Cl. 269—153.
Maxey, Alexander R., to Ampex Corp. Tape transport. 3,189,289, 6–15–65, Cl. 242—55.11.
Maxson Electronics Corp.: *See*—
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Maxwell, Stewart A., to Fisher & Ludlow Ltd. Hot water supply apparatus for a beverage dispensing machine. 3,189,225, 6–15–65, Cl. 222—64.
May, Walter M., to Mack Trucks, Inc. Engine crankcase. 3,189,126, 6–15–65, Cl. 184—6.
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Sloan, Edward C., Eberman, and Jensen. 3,189,505.
Mayer, Robert, to Honeywell Inc. High speed temperature sensing device. 3,188,866, 6–15–65, Cl. 73—362.
Mayer, Werner, and E. Hanel, to Schubert & Salzer Maschinenfabrik Aktiengesellschaft. Thread clamping device. 3,188,835, 6–15–65, Cl. 66—145.
Mays, Howard D., D. C. Bennett, and H. G. Ansuini, to The Mosaic Tile Co. Sorter. 3,189,177, 6–15–65, Cl. 209—74.
McBride, Byron V.: *See*—
Trigg, Warren M., and McBridge. 3,189,483.
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McFerren, Edgar L., McCann, and Jones. 3,188,891.
McCarty, Lourden V.: *See*—
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McCaw, Lowell E., and E. C. McClenachan, to American Cyanamid Co. Preparation of vinyl aromatic ester homopolymers and copolymers, incorporating a pre-polymerization homogenization step. 3,189,583, 6–15–65, Cl. 260—86.1.
McClanachan, Ellsworth C.: *See*—
McCaw, Lowell E., and McClenachan. 3,189,583.
McClincy, La Mont F.: *See*—
Killin, Arthur M., McClincy, and Gravely. 3,189,673.
McCloud, Simon. Automatic well head flow control. 3,189,045, 6–15–65, Cl. 137—505.13.
McCorkle, Carl. Metal siding structure. 3,188,774, 6–15–65, Cl. 50—221.
McCoy, Peter J.: *See*—
Danko, Joseph C., and McCoy. 3,189,765.
McCulloch Corp.: *See*—
Frederickson, Robert E. 3,189,064.
McDonald, John C.: *See*—
Lucas, Raymond D., Byrne, and McDonald. 3,189,883.
McDonnell, Bernard P.: *See*—
Bryan, Chester L., and McDonnell. 3,188,842.
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McDuff, Leon E., to Johns-Manville Corp. Cutting tool. 3,188,738, 6–15–65, Cl. 30—289.
McFarland, William W., to International Paper Co. Container. 3,189,251, 6–15–65, Cl. 229—51.
McFerren, Edgar L., W. L. McCann, and G. H. Jones, to Giddings & Lewis Machine Tool Co. Machine tool. 3,188,891, 6–15–65, Cl. 77—3.
McGraw, George P., Jr., to Western Electric Co., Inc. Methods of making capacitors. 3,188,716, 6–15–65, Cl. 29—25.42.
McGraw-Edison Co.: *See*—
Johnson, John B., and Leen. 3,189,743.
McGurty, James A.: *See*—
Calkins, Vincent P., Funston, and McGurty. 3,189,445.
Calkins, Vincent P., Funston, and McGurty. 3,189,446.
McGrory, James A., to The Procter & Gamble Co. Anti-sticking composition for frying and baking. 3,189,466, 6–15–65, Cl. 99—123.
McIntyre, Kenneth R. Core box vent. 3,188,701, 6–15–65, Cl. 22—13.
McMahan, Kenton D. Centrifugal pumps. 3,188,968, 6–15–65, Cl. 103—109.
McMichael, John D., to General Motors Corp. Replaceable filter cartridge for a dry cleaner. 3,189,179, 6–15–65, Cl. 210—238.
McMurray, William, to General Electric Co. Frequency responsive power amplifier. 3,189,748, 6–15–65, Cl. 307—41.
McNeil Laboratories, Inc.: *See*—
Mohrbacher, Richard J. 3,189,611.
McPhail, Robert G., deceased, by Park National Bank, executor, to Holophane Co., Inc. Street lighting refractor. 3,189,739, 6–15–65, Cl. 240—25.
Mead Corp., The: *See*—
Fortriede, Charles J. 3,188,926.
Kistner, Oscar J. 3,189,245.
Shriver, Ellsworth H., and Knowles. 3,189,514.
Mead, Harry A., to Butter-Pak, Inc. Method of and apparatus for forming items of deformable material. 3,188,780, 6–15–65, Cl. 53—25.
Meblig, Herman E., Jr., and C. Torp, to Allied Chemical Corp. Security device for filing cabinets. 3,189,392, 6–15–65, Cl. 312—216.
Meito Sangyo Kabushiki Kaisha: *See*—
Yamada, Koichi, and Machida. 3,189,529.
Melenric, John A. Turbo supercharged valveless pulse jet engine. 3,188,804, 6–15–65, Cl. 60—35.6.
Melsky, Thomas J. Method and apparatus for premelting thermoplastic adhesive materials. 3,189,022, 6–15–65, Cl. 126—343.5.
Mentzer, Everett K., to Cleveland Trust Co. Bowling alley pin-spotter control. 3,189,349, 6–15–65, Cl. 273—54.
Mentzer, Robert E., to Philco Corp. Tuning device. 3,188,871, 6–15–65, Cl. 74—10.
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Merck & Co., Inc.: *See*—
Fried, John, Arth. and Jones. 3,189,624.
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Lange, Henry B. 3,189,553.
Rogers, Edward F., and Davida. 3,189,520.
Merit Products, Inc.: *See*—
Block, Aleck. 3,188,777.
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Bonnard, Roger, and Orion. 3,189,714.
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Mertes, Paul M. Push release latch. 3,189,374, 6–15–65, Cl. 292—80.
Metallurgical Engineers Ltd.: *See*—
Esser, Ludwig H., and White. 3,189,086.
Metal-Matic, Inc.: *See*—
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Mommsen, Adolph C. 3,189,385.
Metcalf, Joe S., and C. Y. Shen, to Monsanto Co. Heat-dried detergent processes. 3,189,531, 6–15–65, Cl. 252—135.
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Romano, Salvatore. 3,188,843.
Meyer, Engelbert A., to Chicago United Products Co., Inc. Method of finishing automobile panel and securing trim thereto. 3,188,730, 6–15–65, Cl. 29—430.
Meyer, Richard L.: *See*—
Fox, Edgar C., Jr., and Meyer. 3,189,195.
Meyers, Douglas C., to Shell Oil Co. Submerged oil storage system. 3,189,224, 6–15–65, Cl. 222—23.
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Microwave Associates, Inc.: *See*—
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Uhlir, Arthur, Jr. 3,189,801.
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Midland-Ross Corp.: *See*—
Montagino, Joseph. 3,189,336.
Midwestern Instruments, Inc.: *See*—
Brumbaugh, Robert M. 3,189,239.
Mieczkowski, Robert W. Air control apparatus. 3,188,937, 6–15–65. Cl. 98—43.
Mignot, Roland, to F. Fillod, F.S.A. Quick-connection assembly for metal structures. 3,189,373, 6–15–65, Cl. 287—54.
Migues, Jose, to Laforest S. Saulsbury. Jumping sticks. 3,189,346, 6–15–65, Cl. 272—74.
Milburn, Frank L.: *See*—
Pearce, George C., Evans, Fry, and Milburn. 3,189,019.
Miles Laboratories, Inc.: *See*—
Lockwood, Lewis B., and Batti. 3,189,527.
Miller, Byron E., and D. D. Dahlstrom, to Shell Oil Co. Code responsive receiver having means for ignoring repeated transmissions of the same digital code. 3,189,874, 6–15–65, Cl. 340—147.
Miller, Charles G. Telephone switching system. 3,189,687, 6–15–65. Cl. 179—18.
Miller, Dale L. Calculator device. 3,189,272, 6–15–65, Cl. 235—61.
Miller, Donald J., to Addressograph-Multigraph Corp. Holding and adjusting means for printing members. 3,188,952, 6–15–65, Cl. 101—415.1.
Miller, Dorr W.: *See*—
Bates, Max H., Miller, and Woveris. 3,188,724.
Miller, Earle C., to Riley Stoker Corp. Ball mill. 3,189,285, 6–15–65. Cl. 241—171.
Miller, Eldon D., Jr., to Harbison-Walker Refractories Co. Method of slip casting basic refractory materials. 3,189,668, 6–15–65. Cl. 264—66.
Miller, Harry, to Sperry Rand Corp. Aircraft performance indicating apparatus. 3,188,861, 6–15–65, Cl. 73—178.
Miller, Henry F.: *See*—
Foster, Boutwell H., and Miller. 3,188,813.
Miller, Morrow C., W. T. Lundell, and D. M. MacKay, to Johns-Manville Corp. Viewer for floor and ceiling tile or other covering. 3,188,760 6–15–65, Cl. 40—63.
Miller, Ruth S. Compact drinking straw. 3,189,171, 6–15–65, Cl. 206—47.
Miller, Theodore A., to Unimed Inc. Plastic self-sealed valved container. 3,189,252, 6–15–65, Cl. 229—62.5.
Miller, Warren S., to Intermountain Research & Development Corp. Method of producing soda ash from trona. 3,189,408, 6–15–65, Cl. 23—63.
Miller, Willard T.: ½ to Crawford Maddox. Adjustable temple members for spectacles and method of assembly. 3,189,912, 6–15–65. Cl. 351—118.
Miller, William J. Non-refillable closure for a bottle. 3,189,206 6–15–65, Cl. 215—22.
Millet, David I. Fastening device with pivotal locking means. 3,188,905, 6–15–65, Cl. 85—84.

Millett, Michael, to Modern Telephones (Great Britain) Ltd. Two-way telephone systems with talk-listen switching. 3,189,690, 6–15–65, Cl. 179—81.
Millis, Edwin G., and E. A. Shearer, to Texas Instruments Inc. Push-pull modulator with adjustable control means. 3,189,846, 6–15–65, Cl. 332—37.
Mills, George A.: *See*—
Doelp, Louis C., Jr., and Mills. 3,189,559.
Mills, Jack, to Eli Lilly and Co. 5-(3-bromopropylidene) dibenzo-[a,d]cycloheptа (1.4)diene. 3,189,657, 6–15–65, Cl. 260—649.
Mindermann, Frita: *See*—
Heller, Hanajorg, Keller, Gysling, and Mindermann. 3,189,618.
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Pierson, Edward D., and Wright. 3,189,274.
Minnesota Mining and Mfg. Co.: *See*—
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Mullin, John T. 3,189,683.
Wall, Thomas H., and Pearson. 3,189,702.
Minnesota Rubber Co.: *See*—
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Haberkorn, Robert W. 3,189,360.
Mitch, Francis J., and R. B. Perry, to Texaco Inc. Treatment of an underground formation. 3,189,090, 6–15–65, Cl. 166—32.
Mitchell, Edward E., and A. D. Perry, Jr., to General Electric Co. Method and apparatus for demodulating multi-phase modulated signals. 3,189,826, 6–15–65, Cl. 325—418.
Mitchell, James C., Jr., to United States of America, Navy. Transistorised transmitter employing a transmission line section. 3,189,823, 6–15–65, Cl. 325—126.
Mitchell, John D., and R. F. Fimser, Jr., to Eastman Kodak Co. Drive mechanism. 3,188,876, 6–15–65, Cl. 74—203.
Mitsubishi Denki Kabushiki Kaisha: *See*—
Tominaga, Shotaro. 3,189,717.
Tominaga, Shotaro. 3,189,718.
MIWAG Mikrowellen Aktien Gesellschaft: *See*—
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Miyagi, Masahisa, to Nippon Electric Co., Ltd. Parallel push-pull hybrid circuit. 3,189,848, 6–15–65, Cl. 333—11.
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Scott, Paul E., and Misenko. 3,189,180.
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Simpson, Arthur I. F. 3,189,691.
Mogensen, Sten: *See*—
Dalen, Sten G., and Mogensen. 3,189,474.
Mohrbacher, Richard J., to McNeil Laboratories, Inc. Certain oxospiro hydroxyspiro indan-indolisines. 3,189,611, 6–15–65, Cl. 260—294.7.
Mojonnier, Albert B. Method of making bag structure. 3,188,925, 6–15–65, Cl. 93—35.
Mojonnier, Albert B. Bag structure. 3,189,253, 6–15–65, Cl. 229—66.
Molins, Desmond W., to Molins Machine Co. Ltd. Method of and apparatus for feeding cut tobacco in a machine for making tobacco products. 3,189,034, 6–15–65, Cl. 131—84.
Molins Machine Co. Ltd.: *See*—
Molins, Desmond W. 3,189,034.
Moller, Waldemar, to Bodenseewerk Perkin-Elmer & Co., G.m.b.H. Test device for flight controls. 3,188,852, 6–15–65. Cl. 73—1.
Mommensen, Adolph C., to Metal-Matic, Inc. Lock assemblage for adjustable leg rest. 3,189,385, 6–15–65, Cl. 297—429.
Monsanto Co.: *See*—
Metcalf, Joe S., and Shen. 3,189,551.
Monsanto Research Corp.: *See*—
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Wilson, Glenn E., and Stemniski. 3,189,548.
Monson Research Co., Inc.: *See*—
Monson, Donald L. 3,189,318.
Monson, Donald L., to Monson Research Co., Inc. Faucet and valve structure therefor. 3 189.318, 6–15–65, Cl. 251—174.
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Moody, Willard B. Bricklayer's level. 3,188,748, 6–15–65, Cl. 33—207.
Moore, Curtis L., to Westinghouse Electric Corp. Magnetic core structures. 3,189,858, 6–15–65, Cl. 336—212.
Moore, Curtis L., and T. R. Specht, to Westinghouse Electric Corp. Electrical apparatus. 3,189,675, 6–15–65, Cl. 174—11.
Moore, George C., Co.: *See*—
Siciliano, Samuel F. 3,188,057.
Moore, Harry W. Winding machine. 3,189,059, 6–15–65, Cl. 140—92.1.
Moore, John R. Spray head. 3,189,283, 6–15–65, Cl. 239—383.
Moreland, Ben A.: *See*—
Calderwood, Robert H., Sheppard, Ruffing, and Moreland. 3,189,513.
Moreno, Emil F., J. F. Marquardt, and E. A. Domes, to International Harvester Co. Fluid power steering system. 3,189,119. 6–15–65, Cl. 180—79.2.
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Morita, Masasuke, and T. Kuroda, to Nippon Electric Co. Ltd. Switchover arrangement in a mobile radio communication system. 3,189,822, 6–15–65, Cl. 325—4.
Morningstar Corp.: *See*—
Morningstar, Otto,, Burgess, and Mathus. 3,189,294.
Morningstar, Otto, F. H. Burgess, and G. Mathus, to Morningstar Corp. Reel with automatically closing and locking window means. 3,189,294, 6–15–65, Cl. 242—71.6.
Moroney, William J., to Microwave Associates, Inc. Semiconductor devices and method of fabricating them. 3,189,799, 6–15–65, Cl. 317—234.
Morrill, Philip. Embellished photo-mounts. 3,188,762, 6–15–65, Cl. 40—158.
Morway, Arnold J., and H. G. Vesterdal, to Esso Research and Engineering Co. Lubricating compositions containing 1,3,5-triazine compound and metal salt of fatty acid. 3,189,542, 6–15–65, Cl. 252—17.
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Ellithorpe, Clarence D. 3,189,297.
Mossey, Joseph L., to The Bendix Corp. Automatic adjuster. 3,189,132, 6–15–65, Cl. 188—79.5.
Motorola, Inc.: *See*—
Hill, Frederick P. 3,189,824.
Salners, Edward A. 3,189,000.
Mowatt-Larssen, Rolf, to ACF Industries, Inc. Railway car. 3,188,981, 6–15–65, Cl. 105—368.
Moyroud, Louis M.: *See*—
Higonnet, Rene A., and Moyroud. 3,188,929.
Mueller, Edwin: *See*—
Lieser, Ernst, and Mueller. 3,188,935.
Mulaskey, Bernard F., R. H. Lindquist, and H. F. Harnsberger, to California Research Corp. Dehydrogenation process and catalysts therefor. 3,189,661, 6–15–65, Cl. 260—680.
Mull, Robert P., to Ciba Corp. 1-[2-(N,N-alkylene-imino)-alkyl] - 2 - amino - guanidines and intermediates therefor. 3,189,599, 6–15–65, Cl. 260—239.
Mull, Robert P., to Ciba Corp. N,N-alkylene-imino-lower alkano amidine compounds. 3,189,601, 6–15–65, Cl. 260—239.
Mullaney, Frank W., to Fastener Corp. Fastener feed construction. 3,189,220, 6–15–65, Cl. 221—176.
Müller, Hans: *See*—
Habicht, Ernst, and Müller. 3,189,607.
Muller, Jacques. Reinforced pipes incorporating a ground wire. 3,189,676, 6–15–65, Cl. 174—47.
Müller, Werner: *See*—
Brack, Alfred, and Müller. 3,189,641.
Mullin, John T., to Minnesota Mining and Mfg. Co. Transducing system for photographically recording video images and sound signals related thereto. 3,189,683, 6–15–65, Cl. 178—5.6.
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Musell, Dorsey R., to The Dow Chemical Co. Method for inhibiting plant growth. 3,189,428, 6–15–65, Cl. 71—2.2.
Myers, Birdie L. Manufacture of concrete piling. 3,188,817, 6–15–65, Cl. 61—53.64.
Nachman, Joseph F.: *See*—
Olds, Leonard E., and Nachman. 3,189,444.
Nalco Chemical Co.: *See*—
Braithwaite, David G., and Hansel. 3,189,534.
Nara, Takashi: *See*—
Kinoshita, Shukuo, Samejima, Fujita, and Nara. 3,189,526.
National Acme Co., The: *See*—
Brown, Harry W., Sr., and Markevich. 3,188,866.
National Aeronautics and Space Administration: *See*—
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National Cash Register Co., The: *See*—
Chow, Eric T. K., and Watkins. 3,189,532.
Gunderson, Robert O., and Tang. 3,189,735.
National Engineering Science Co.: *See*—
Williams, Robert E. 3,189,497.
National Gypsum Co.: *See*—
Elden, Howard S. 3,188,779.
Harris, David A. 3,189,137.
Schneller, Joseph W., Harris, and Buergin. 3,188,773.
Slowinski, Robert H. 3,189,135.
White, George H. 3,189,511.
National Machinery Co., The: *See*—
Wisebaker, Robert E., and Eakin. 3,188,849.
National Semiconductor Corp.: *See*—
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National Steel Corp.: *See*—
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Needham, Frank L. Patch for metal panel. 3,189,509, 6–15–65, Cl. 161—39.
Neier, Reinhard, to Sandoz Ltd. Heterogeneous cobalt complex compounds. 3,189,504, 6–15–65, Cl. 260—145.
Nelson Chemical Co.: *See*—
Jamison, John C., Jr. 3,188,677.
Nelson, Robert J. Safety shield for electrical outlet boxes. 3,189,678, 6–15–65, Cl. 174—67.
Neugebauer, Wilhelm, M. Tomanek, and H. Behmenburg, to Azoplate Corp. Electrophotographic material and method. 3,189,447, 6–15–65, Cl. 96—1.
Newman, Joel E., to Pro-Phy-Lac-Tic Brush Co. Toothbrush. 3,188 673, 6–15–65, Cl. 15—167.
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Newman, Ottis E., to ACF Industries Inc. Carburetor. 3,189,330, 6–15–65, Cl. 261—34.
Newman, Richard J.: *See*—
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Cederleaf, Robert H. 3,188,899.

Nicholls, John, to White Fish Authority. Trawl gear. 3,188,766, 6–15–65, Cl. 43—9.

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Nilsson, Vilgot R., to Separator, Aktiebolaget. Device for determining the position of the interface between two separated components in a centrifugal separator. 3,189,268, 6–15–65, Cl. 232—27.

Nimmo, Harry W., to General Motors Corp. Manual reset relief valve closure. 3,189,213, 6–15–65, Cl. 220—44.

Nippon Electric Co., Ltd.: *See*—
Miyagi, Masahisa. 3,189,848.
Morita, Masasuke, and Kuroda. 3,189,822.
Okamoto, Eiichi, Susuki, Kurihara, and Sasaki. 3,189,797.
Sato, Akihiko, and Fujie. 3,189,753.

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Nodolf, Keith M., to Honeywell Inc. Electrostatic precipitators. 3,188,784, 6–15–65, Cl. 55—105.

Noorlander, Daniel O., to Dairy Equipment Co. Vacuum stabilising unit for milking systems. 3,189,002, 6–15–65, Cl. 119—14.07.

Nordberg Mfg. Co.: *See*—
Chapman, Everett. 3,189,150.

Norden, Alexander R., and F. Tomczak, to Federal Pacific Electric Co. Coil form adapted for use in magnetic-trip circuit breakers. 3,189,707, 6–15–65, Cl. 200—88.

Nordstrom, Karl T. and R. A. Production of an air curtain. 3,188,936, 6–15–65, Cl. 98—36.

Nordstrom, Rosa A.: *See*—
Nordstrom, Karl T. and R. A. 3,188,936.

Norf, Ernest. Sealing device for a control pusher passage through a casing wall. 3,188,793, 6–15–65, Cl. 58—90.

North American Aviation, Inc.: *See*—
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North American Philips Co., Inc.: *See*—
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Van Zon, Adrianus J. H. J. 3,189,787.
Van't Slot, Antonie W., and Kok. 3,189,834.

North, John W., to Glasrock Products, Inc. Amorphous silica refractory structures. 3,189,337, 6–15–65, Cl. 266—2.5.

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Whitehouse, John H. 3,188,882.

Northwestern Corrugated Box Co.: *See*—
Boeye, Paul F., and Bright. 3,189,176.

Norwood, Donald D., and L. J. Dagley, Jr., to Phillips Petroleum Co. Production of bimodal cis-polybutadiene. 3,189,592, 6–15–65, Cl. 260—94.3.

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Nowak, Leon J., Jr.: *See*—
Williams, Ralph E., and Nowak. 3,189,106.
Williams, Ralph E., and Nowak. 3,189,109.

Nozaki, Kenzie, to Shell Oil Co. Block copolymers. 3,189,663, 6–15–65, Cl. 260—879.

Nozaki, Kenzie, to Shell Oil Co. Block copolymers. 3,189,664, 6–15–65, Cl. 260—881.

Nozaki, Kenzie, to Shell Oil Co. Block copolymers. 3,189,665, 6–15–65, Cl. 260—881.

Nuckolls, Joe A., to General Electric Co. Starting and operating circuit for gas discharge lamps. 3,189,790, 6–15–65, Cl. 315—289.

Nuclear Products Co.: *See*—
Callahan, Francis J., and Gallagher. 3,189,046.

Nuttall, Edwin D., to United Gas Corp. Device for regulating multiple concurrent electric pulses. 3,189,696, 6–15–65, Cl. 200—11.

Nye, Wladimir. Self tracking toy vehicle. 3,188,770, 6–15–65, Cl. 46—243.

Oak Mfg. Co., Inc.: *See*—
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Oakley, Henry B., and T. J. Guffick, to Lever Brothers Co. Cool tasting margarine. 3,189,465, 6–15–65, Cl. 99—122.

Oatley, Arthur F. Grilling appliance. 3,188,940, 6–15–65, Cl. 99—421.

O'Connor, James E., to Document Disintegration, Inc. Document disintegrating mechanism. 3,189,286, 6–15–65, Cl. 241—186.

O'Dor, Martin E.: *See*—
Vowell, Kennison L., and O'Dor. 3,188,873.

Office National Industriel de l'Azote: *See*—
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Ogland, Jon W., to Westinghouse Electric Corp. Optical communications transmitter. 3,189,744, 6–15–65, Cl. 250—199.

O'Hara, Janvier F., to United States of America, Army. Support for reaction motor. 3,188,806, 6–15–65, Cl. 60—35.6.

O'Haver, Homer W. Slip assembly for parallel tubing strings. 3,188,708, 6–15–65, Cl. 24—263.

Ohio Brass Co., The: *See*—
Herbert, Donald L. 3,189,190.

Ohira, Atsuo, to Aichi Kogyo Kabushiki-Kaisha. Cam controlling mechanism in a pattern stitch sewing machine. 3,188,991, 6–15–65, Cl. 112—158.

Okamoto, Eiichi, S. Susuki, T. Kurihara, and Y. Sasaki, to Nippon Electric Co., Ltd. Solid electrolytic condenser. 3,189,707, 6–15–65, Cl. 317—230.

Oken, Aaron, to E. I. du Pont de Nemours and Co. Petroleum wax-ethylene vinyl acetate copolymer composition. 3,189,573, 6–15–65, Cl. 260—28.5.

Okito, Juta: *See*—
Takizaki, Iwao, and Okito. 3,189,404.

Olds, Leonard E., and J. F. Nachman, to Colorado Seminary. Metallic composition and method of making. 3,189,444, 6–15–65, Cl. 75—148.

Olin, John F., to Pennsalt Chemical Corp. Method of controlling plant growth. 3,189,428, 6–15–65, Cl. 71—2.5.

Olin, John F., to Pennsalt Chemical Corp. Method of controlling plant growth. 3,189,429, 6–15–65, Cl. 71—2.5.

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Pryor, Michael J., Keir, and Sperry. 3,189,486.

Oliver Machinery Co. Ltd., The: *See*—
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Olsen, Eigil, to North American Philips Co., Inc. Coil core of ceramic ferromagnetic material. 3,189,859, 6–15–65, Cl. 336—212.

Olsen, Joseph C., and O. K. Percy, to Lockheed Aircraft Corp. Multi-directional optical target. 3,188,739, 6–15–65, Cl. 33—74.

Olson, Keith W.: *See*—
Basarian, Albert V., and Olson. 3,189,776.

Olson, Raymond G., to Power Control Products, Inc. Strip feed mechanism. 3,188,709, 6–15–65, Cl. 24—263.

Orcutt, Paul C. Butts and/or hinges. 3,188,686, 6–15–65, Cl. 16—169.

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Bonnard, Roger, and Orion. 3,189,714.

Orley, Bud: *See*—
Womack, Archer L., Blaine, and Orley. 3,189,714.

Ormond Inc.: *See*—
Roberts, Charles W. 3,188,860.

Orr, Harold W., to Phillips Petroleum Co. Solvent monitor. 3,189,530, 6–15–65, Cl. 202—39.5.

Orr, John B., to Sheffield Plastics, Inc. Coated expanded resin container. 3,189,242, 6–15–65, Cl. 229—3.1.

O'Shei, William E., J. R. Amphlett, and G. C. Bell, executor of said W. E. O'Shei, deceased. Rear viewing mirrors. 3,188,913, 6–15–65, Cl. 88—98.

Otteman, Lloyd G., and N. B. Newman, to Shell Oil Co. Wellhead closure. 3,189,099, 6–15–65, Cl. 166—66.5.

Overcashier, Robert H., and C. E. Sanborn, to Shell Oil Co. Circulating solids dispersed in a liquid. 3,189,080, 6–15–65, Cl. 159—26.

Owen, Charles, ¼ to Simplex Nail & Mfg. Corp. Anchor nail fastener. 3,188,904, 6–15–65, Cl. 85—23.

Owens, Edward W., to Thatcher Glass Mfg. Co., Inc. Closure for containers. 3,189,209, 6–15–65, Cl. 215—40.

Owens-Illinois Glass Co.: *See*—
Heyne, Clarence A., and Johnson. 3,189,207.
Schinn, Heilmut T. 3,189,427.
Smalley, Ned J. 3,189,222.
Stenger, Hans G. 3,188,691.
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Ozai-Durrani, Ataullah K., J. R. Cherry, and The Chase Manhattan Bank, executors of said A. K. Ozai-Durrani, deceased. Process for producing quick-cooking rice. 3,189,461, 6–15–65, Cl. 99—80.

Pacific Scientific Co.: *See*—
Wrighton, Robert J., and Luttrell. 3,189,296.

Packard-Bell Electronics Corp.: *See*—
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Page, Phyllis D., to Automatic Timing & Controls, Inc. Motor operated positional control for a shaft. 3,189,806, 6–15–65, Cl. 318—31.

Paige, Walter G., to Burroughs Corp. Platen actuating means in high speed belt printer. 3,188,947, 6–15–65, Cl. 101—93.

Palone, Angelo, to Paragon Glass Works, Inc. Glass bulb cut off method. 3,189,423, 6–15–65, Cl. 65—105.

Palant, Irwin. Holder for smoking pipes. 3,189,186, 6–15–65, Cl. 211—60.

Palmqvist, Fredrik T. E., to Separator, Aktiebolaget. Centrifugal countercurrent extraction apparatus. 3,189,266, 6–15–65, Cl. 233—15.

Palmqvist, Thorleif O. V.: *See*—
Easy, Maurice H., Fairburst, Robinson, and Palmqvist. 3,189,898.

Pan America Petroleum Corp.: *See*—
Bearden, William G., and Spurlock. 3,189,091.

Pannozzo, Michael L. Handicap golf score punch. 3,189,269, 6–15–65, Cl. 234—45.

Panzer, Richard E., to United States of America, Navy. Electrochemical power producing battery cell. 3,189,485, 6–15–65, Cl. 136—93.

Pappas, James J., and A. Schriesheim, to Esso Research and Engineering Co. Synthetic fluids as multifunctional lubricants. 3,189,660, 6–15–65, Cl. 260—671.

Par Engineering Co.: *See*—
Michalsen, Roy H. 3,188,715.

Paragon Glass Works, Inc.: *See*—
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Parco, Oresto J. Niagara Falls toy. 3,188,769, 6–15–65, Cl. 46—91.

Park National Bank: *See*—
McPhail, Robert G. 3,189,739.

Park Plastics Co., Inc.: *See*—
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Parker, Frank H., and V. C. Becks, to S. C. Peplin. Balanced mixing valve. 3,189,048, 6–15–65, Cl. 137—625.17.

Parker, Robert B., to Bured, Inc. Lace manufacturing and feeding mechanism for lace packaging machine. 3,188,898, 6–15–65, Cl. 83—267.

Parkes, Arthur, to Westland Aircraft Ltd. Flotation device for helicopter. 3,189,301, 6–15–65, Cl. 244—17.17.

Parks, Robert F., to Steel Heddle Mfg. Co. Textile reed. 3,189,056, 6–15–65, Cl. 139—192.

Parks, Robert J.: *See*—
Burke, James D., Parks, and Stewart. 3,188,958.

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Parr, Russell D., to Carlisle Tire and Rubber Division of Carlisle Corp. Flexible hose. 3,189,053, 6–15–65, Cl. 138—133.

Parris, Cyril W., to E. Green & Son Ltd. Tubular heat exchangers. 3,189,087, 6–15–65, Cl. 165—181.

Partridge, Donald E., to Universal Steel Strapping, Inc. Fastenerless splice and method of forming same. 3,188,706, 6–15–65, Cl. 24—20.

Patrick, Richard M., to Avco Corp. Means for producing high temperature plasma. 3,189,523, 6–15–65, Cl. 176—6.

Patser, George V., to Picker X-Ray Corp., Waite Mfg. Division, Inc. Gonlostat. 3,189,741, 6–15–65, Cl. 250—51.5.

Pattishall, Leonard J. Remailable greeting card or stationery set. 3,189,254, 6–15–65, Cl. 229—92.8.

Pavlin, James S.: *See*—
Finestone, Arnold B., and Pavlin. 3,189,569.

Pavlin, James S., and A. B. Finestone, to Foster Grant Co., Inc. Stabilization of styrene-acrylonitrile polymers with organic phosphites and vic-epoxy compounds. 3,189,570, 6–15–65, Cl. 260—23.

Pavlin, James S., and A. B. Finestone, to Foster Grant Co., Inc. Stabilization of acrylonitrile polymers with vic-epoxy compounds. 3,189,571, 6–15–65, Cl. 260—23.

Pearce, George C., J. L. Evans, M. E. Fry, and F. L. Milburn, to General Motors Corp. Oven door structure. 3,189,019, 6–15–65, Cl. 126—190.

Pearl, Curtis F., to Pentapco, Inc. Tool adaptable to aid in the making of pleats and the like. 3,188,742, 6–15–65, Cl. 33—143.

Pearson, Allen D.: *See*—
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Peck, Alvin W., to Phillips Petroleum Co. Apparatus for applying agricultural chemicals to the soil. 3,188,988, 6–15–65, Cl. 111—7.

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Olin, John F. 3,189,429.

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Peplin, Stephen C.: *See*—
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Peplinski, Desmond M., to Dominion Magnesium Ltd. Method of producing magnesium. 3,189,439, 6–15–65, Cl. 75—67.

Percy, Oran K.: *See*—
Olsen, Joseph C., and Percy. 3,188,789.

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Scott, Larkin B. 3,189,892.

Perkins Pipe Linings Inc.: *See*—
Perkins, Warren E. 3,188,710.

Perkins, Warren E., to Perkins Pipe Linings Inc. Trowel for pipe lining material. 3,188,710, 6–15–65, Cl. 25—38.

Perner, Raymond F.: *See*—
Haeber, John A., Perner, and Poorman. 3,189,100.

Perrin, Joe F. Retainer ring removing tool. 3,188,728, 6–15–65, Cl. 29—229.

Perry, Albert D., Jr.: *See*—
Mitchell, Edward E., and Perry. 3,189,826.

Perry, Reeves B.: *See*—
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Pesson, Marcel, to Laboratoire Roger Bellon, Societe anonyme dite. 3-hydroxy-4-hydrocarbon-5-tertiary amino triazoles and process for their preparation. 3,189,614, 6–15–65, Cl. 260—306.

Peterson, James F. Wheel chair driver attachment. 3,189,368, 6–15–65, Cl. 280—242.

Peterson, Svend A., to Johns-Manville Corp. Apparatus for winding strand material. 3,189,288, 6–15–65, Cl. 242—37.

Peterson, William H., to Pullman Inc. Collapsible fifth wheel stand assemblies. 3,189,307, 6–15–65, Cl. 248—119.

Petrasy, Frank J., to Westinghouse Electric Corp. Arrangement and method for retaining a fastener on a wiring or other device. 3,189,058, 6–15–65, Cl. 140—92.

Petre, Philip C., to Aerojet-General Corp. Ring stabilizer. 3,188,957, 6–15–65, Cl. 102—50.

Pettersson, Stig B. S.: *See*—
Lundgren, Nils V. G., and Pettersson. 3,188,659.

Petzinger, Ambrose J., to Westinghouse Electric Corp. Maximum-demand measuring device including means for printing only the maximum values. 3,189,821, 6–15–65, Cl. 324—103.

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Ryder, Elliott E., Jr., and Pezzaglia. 3,189,577.

Pfeifer, Gordon D.: *See*—
Scruggs, David M., and Pfeifer. 3,188,961.

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Pfluger, Richard A.: *See*—
Davis, Julius M., and Pfluger. 3,188,750.

Phenix, Fladger, to Halliburton Co. Retrievable bridge plug or packer with sleeve valve. 3,189,096, 6–15–65, Cl. 166—133.

Philco Corp.: *See*—
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Hopengarten, Abram, and Wolfe. 3,189,756.
Hubbard, James R. 3,188,838.
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Van Reymersdal, Joseph G. A. 3,189,745.

Phillips, Howard M., to Taylor Fibre Co. Vulcanized fibre. 3,189,315, 6–15–65, Cl. 161—269.

Phillips Petroleum Co.: *See*—
Beck, Frank J. 3,188,906.
Hebard, Glen G. 3,189,036.
Norwood, Donald D., and Dagley. 3,189,592.
Orr, Harold W. 3,189,530.
Peck, Alvin W. 3,188,988.
Vesper, Daniel M., and Lupfer. 3,188,857.
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Wheeler, Edward N., Schnizer, and Pickard. 3,189,634.

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Pickles, Joseph, to Ferro Stamping Co. Vehicle seat. 3,189,314, 6–15–65, Cl. 248—429.

Pierrat, Michel A., to Precitec Co., Inc. Mobility adapters. 3,189,363, 6–15–65, Cl. 280—35.

Pierson, Edward D., and J. C. Wright, to Miner Machine Co. Variable kicker for newspaper counting mechanisms. 3,189,274, 6–15–65, Cl. 235—136.

Pinard, Clarence F. Cigarette holder and dispenser. 3,189,216, 6–15–65, Cl. 221—24.

Pittsburgh Plate Glass Co.: *See*—
Chang, Wen-Hsuan, and Wismer. 3,189,633.
Dietrich, Joseph J., Kaman, and Stevens. 3,189,640.
Hart, Donald P., and Christenson. 3,189,581.

Pizzarello, Roy A., W. A. Caraccioli, and O. Poltersdorf, to Interchemical Corp. Anthraquinone dye. 3,189,398, 6–15–65, Cl. 8—39.

Plotzker, Aaron H.: *See*—
Schaefer, Seymour. 3,189,074.

Plust, Heinz-Günther, to Brown, Boveri & Cie, Aktiengesellschaft. Process for the preparation of pure bismuth. 3,189,440, 6–15–65, Cl. 75—70.

Podell, Allen F., to Ansac Electronics, Inc. Mixer employing dual diode circuit biased in their exponential operating regions. 3,189,836, 6–15–65, Cl. 328—156.

Podlaseck, Stanley E., Jr., to Martin-Marietta Corp. Ultra-high vacuum chamber. 3,189,211, 6–15–65, Cl. 220—9.

Poepsel, Donald A., and C. A. Lauer, to Westinghouse Electric Corp. Digital control apparatus having actual-position and error counters for positioning machine members. 3,189,805, 6–15–65, Cl. 318—28.

Pogue, Barney E., Jr., and O. C. Wilson, Jr., ½ to O. C. Wilson, Jr., and ½ to W. E. Dowden. Impact hammer crimping attachment. 3,188,729, 6–15–65, Cl. 29—243.58.

Pohlens, Jack B., and D. H. Belden, to Universal Oil Products Co. Combination of hydrogen producing and hydrogen consuming units. 3,189,538, 6–15–65, Cl. 208—58.

Pohm, Arthur V.: *See*—
Franck, Abraham, and Pohm. 3,189,749.

Pollitzer, Ernest L., to Universal Oil Products Co. Polymeric reaction products of amines and epihalohydrins. 3,189,652, 6–15–65, Cl. 260—584.

Poltersdorf, Otto: *See*—
Pizzarello, Roy A., Caraccioli, and Poltersdorf. 3,189,398.

Poorman, Frank, Jr.: *See*—
Haeber, John A., Perner, and Poorman. 3,189,100.

Pope, Martin: *See*—
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Potter, Harvey W. Combination bench and table set. 3,189,379, 6–15–65, Cl. 297—157.

Power Control Products, Inc.: *See*—
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Prager, George J., to Beloit Eastern Corp. Radial flying splice mechanism. 3,189,293, 6–15–65, Cl. 242—58.3.

Prapas, Aristotle G.: *See*—
Rudner, Bernard, and Prapas. 3,189,653.

Precitec Co., Inc.: *See*—
Pierrat, Michel A. 3,189,363.

Preston, Dan C., Jr., to Baker Oil Tools, Inc. Subsurface apparatus for inducing flow of fluids in well formations. 3,189,316, 6–15–65, Cl. 251—74.

Price, Earl R., to The Bendix Corp. Automatic shoe retractor. 3,189,131, 6–15–65, Cl. 188—78.

Pricer, Wilbur D., to International Business Machine Corp. Negative resistance memory circuit. 3,189,878, 6–15–65, Cl. 340—173.

Pricer, Wilbur D., and H. P. Wolff, to International Business Machines Corp. Transformer-coupled bistable semiconductor device memory. 3,189,876, 6–15–65, Cl. 340—173.

Pricer, Wilbur D., and H. P. Wolff, to International Business Machines Corp. Electronic memory without compensated read signal. 3,189,877, 6–15–65, Cl. 340—173.

Priestman Brothers Ltd.: *See*—
Brocklebank, Norman, Wardill, and Scott. 3,189,208.

Printed Motors Inc.: *See*—
Henry-Baudot, Jacques. 3,189,773.
Henry-Baudot, Jacques. 3,189,808.

Procter & Gamble Co., The: *See*—
Lucas, Malcolm B. 3,189,158.
McGrory, James A. 3,189,466.

Producers Creamery Co.: *See*—
Heinemann, Burdet. 3,189,464.

Produits Semi-Conducteurs, Societe Anonyme les: *See*—
Beau, Raymond. 3,189,414.

Pro-Phy-Lac-Tic Brush Co.: *See*—
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Prosser, Joe C., to General Motors Corp. Cooled nozzle construction. 3,188,801, 6–15–65, Cl. 60—35.6.

Protex Industries Inc.: *See*—
Wilson, Donald J., and Lorensen. 3,189,233.

Provencher, Joseph H., to United States of America, Navy. Ridged waveguide slot antenna. 3,189,908, 6–15–65, Cl. 343—771.

Prutton Corp.: *See*—
Prutton, Howard D. 3,189,191.
Prutton, Howard D., to Prutton Corp. Transfer means in an article forming machine. 3,189,191, 6-15-65, Cl. 214—1.
Pryor, Michael J., D. S. Keir, and P. R. Sperry, to Olin Mathieson Chemical Corp. Primary electric cell. 3,189,-486, 6-15-65, Cl. 136—100.
Pugh, Charles W., to Bell Telephone Laboratories, Inc. Pulse train repetition rate divider that divides by N+½ where N is a whole number. 3,189,832, 6-15-65, Cl. 328—42.
Pullman Inc.: *See*—
Borger, Jack W., Vander Linden, and Green. 3,189,388.
Knippel, Willis H. 3,189,506.
Peterson, William H. 3,189,807.
Purolator Products, Inc.: *See*—
Hubbard, John Q. 3,189,854.
Puryear, David B., to The Bendix Corp. Control system for a pump. 3,188,971, 6-15-65, Cl. 103—162.
Pusch, Robert A., to General Electric Co. Rotary switch actuator. 3,188,881, 6-15-65, Cl. 74—504.
Puster, Louis M., to Robertshaw Controls Co. Pneumatic lockout relay for engine safety control system or the like. 3,189,047, 6-15-65, Cl. 137—614.21.
Putsch, H., & Co.: *See*—
Bittner, Hans J. 3,189,425.
Pyrofax Gas Corp.: *See*—
Frost, Gerard C., and Grynkiewicz. 3,188,865.
Quayle, George F., to Yale & Towne, Inc. Telescoping lift ram. 3,188,917, 6-15-65, Cl. 91—168.
Quayle, George F. to Yale & Towne, Inc. Stacking mechanism. 3,189,205, 6-15-65, Cl. 214—670.
Quikut Inc.: *See*—
Carroll, John L., Wingard, and Baxter. 3,189,229.
Quinn, Harold W., to The Dow Chemical Co. Use of complex fluoro salts to separate olefins from paraffins. 3,189,-658, 6-15-65, Cl. 260—666.
Quittner, George F., to Assembly Products, Inc. Self adjusting threshold control. 3,189,842, 6-15-65, Cl. 330—51.
Qvarbstrim, Karl-Erik: *See*—
Attebo, Kurt A. G., Bjornberg, and Qvarbstrim. 3,189,-103.
Raabe, Herbert P., to Litton Systems, Inc. Airborne radar with sea clutter suppression. 3,189,900, 6-15-65, Cl. 343—16.
Rabinow, Jacob, to Control Data Corp. Scanning pattern normaliser. 3,189,873, 6-15-65, Cl. 340—146.3.
Race, William F. Truck aligner. 3,188,747, 6-15-65, Cl. 33—203.18.
Rachal, Francis: *See*—
Bento, Robert, Barditch, and Rachal. 3,189,829.
Radio Corp. of America: *See*—
Ackermann, Walter T. 3,189,709.
Chang, Kern K. N. 3,189,828.
Conley, Eugene W. 3,188,879.
Feller, Albert. 3,189,767.
Fitzpatrick, John B., and Zvonik. 3,189,397.
Husni, Saleem Y., Jr. 3,188,720.
Lindsley, Charles W., and Larson. 3,188,723.
Samuels, Gerard. 3,189,779.
Radtke, Otto T., to Glenolt Mills, Inc. Means for feeding fibers to a pile fabric knitting machine. 3,188,934, 6-15-65, Cl. 66—9.
Rafowitz, Samuel, and C. Bonk. Cap. 3,188,654, 6-15-65, Cl. 2—172.
Rainer, Norman B., to Coastal Interchemical Co. Process for the preparation of N-methylol amide derivatives. 3,189,646, 6-15-65, Cl. 260—561.
Rambo, William R., to United States of America, Navy. Rapid-scan intercept receiver utilising traveling wave tubes. 3,189,827, 6-15-65, Cl. 325—431.
Randall, Kenneth W., to Insley Mfg. Corp. Brake assemblies for heavy traveling machines. 3,189,130, 6-15-65, Cl. 188—77.
Randolph, Albert M., to United Gas Corp. Device for regulating multiple concurrent electrical pulses. 3,189,695, 6-15-65, Cl. 200—11.
Randolph, Hollis L., to Robertshaw Controls Co. Dual element thermostatic control having calibration means. 3,189,713, 6-15-65, Cl. 200—138.
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Schneider, Donald A., and Falcon. 3,189,161.
Rapisarda, Edward D., to Gilbert & Barker Mfg. Co. Variable speed drive. 3,189,271, 6-15-65, Cl. 233—61.
Rapp, Harry M. Roofing method. 3,189,498, 6-15-65, Cl. 156—71.
Rasch, Arthur A.: *See*—
Luckey, George W., and Rasch. 3,189,454.
Rateau, Marcel. Ladder. 3,189,124, 6-15-65, Cl. 182—170.
Ratner, Hyman, and R. F. Bergstrom, to Shell Oil Co. Non-ash-containing lubricating oil composition. 3,189,544, 6-15-65, Cl. 252—33.
Raytheon Co.: *See*—
MacIntyre, Robert M., and Wauiass. 3,189,879.
Slater, Arthur B. 3,189,899.
Rederi AB Soya: *See*—
Bjorklund, Gustaf E. 3,188,918.
Redman Industries, Inc.: *See*—
Hammar, Herbert G. 3,188,694.
Reed, Roscoe G.: *See*—
Shea, Donald P., and Reed. 3,189,422.
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Hansen, Charles C. 3,189,041.
Regiitti, Aristide. Clothes stand with folding seat. 3,189,-380, 6-15-65, Cl. 297—191.
Rehmus, Frederick H., to Jones & Laughlin Steel Corp. Variable orifice gas washer. 3,189,352, 6-15-65, Cl. 261—62.
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Reichel, Maximilian K., to Asoplate Corp. Light sensitive reproduction material comprising a colloid containing an aldehyde and a diazotised phenyl amine compound and use thereof. 3,189,451, 6-15-65, Cl. 96—49.
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Garner, Howell D., and Reid. 3,189,299.
Reinhart, Tom E., to Shell Oil Co. Pulse producing means for telemetering system. 3,189,881, 6-15-65, Cl. 340—206.
Rena Buromaschinen-Fabrik G.m.b.H. & Co.: *See*—
Renauer, Anton. 3,188,945.
Renauer, Anton, to Rena Buromaschinen-Fabrik G.m.b.H. & Co. Plate feed and storage means in an addressing machine. 3,188,945, 6-15-65, Cl. 101—47.
Renfro, Clarence A.: *See*—
Cooper, Carl M., Sulmonetti, and Renfro. 3,188,635.
Renken, Claus J., Jr., to United States of America, Atomic Energy Commission. Device for testing metal sheets by measuring the time required for electromagnetic pulses to pass therethrough. 3,189,817, 6-15-65, Cl. 324—37.
Rethorst, Scott C. Aqua-track G.E.M. 3,189,115, 6-15-65, Cl. 180—7.
Re-Trac Mfg. Corp.: *See*—
Hager, Albert P. 3,189,309.
Rettig, Erik, to The Dow Chemical Co. Embankment dam with interior membrane. 3,188,814, 6-15-65, Cl. 61—31.
Rexall Drug and Chemical Co.: *See*—
Grasso, Philip. 3,189,165.
Richter, Sidney B., to Velsicol Chemical Corp. Method of destroying growing weeds. 3,189,432, 6-15-65, Cl. 71—2.6.
Richterkessing, Frank H., and W. M. Ingold, to W. M. Ciuseli Mfg. Co. Trouser topping apparatus and pleat-setter therefor. 3,189,235, 6-15-65, Cl. 223—72.
Rickard, Clyde E., to McDowell Mfg. Co. Torque joint. 3,188,733, 6-15-65, Cl. 29—523.
Riedl, Frank E.: *See*—
Seymour, Raymond E., Riedl, and Campbell. 3,189,270.
Rieth, Harold F., to Packard-Bell Electronics Corp. Method and apparatus for making an electrical resistor. 3,188,688, 6-15-65, Cl. 18—5.
Riley Stoker Corp.: *See*—
Kuhner, Max H. 3,189,007.
Miller, Earle C. 3,189,285.
Ringler, Heinz, to Telefonbau und Normalzeit G.m.b.H. Magnetic core memories. 3,188,721, 6-15-65, Cl. 29—155.5.
Riseman, Jacob: *See*—
Rymaszewski, Eugene J., Riseman, and Harlow. 3,189,847.
Rittershausen, Ernst F.: *See*—
Littler, Frank W., Rittershausen, Smith, and Hammer. 3,189,469.
River Brand Rice Mills, Inc.: *See*—
Autrey, Harry S., and Lynn. 3,189,462.
Roach, Paul G., and H. C. Weingartner, to United States of America, Army. Gas ejection bomb for dispersing solid particulates. 3,188,954, 6-15-65, Cl. 102—6.
Robbins, Frank E., to The Dow Chemical Co. Aluminum flux. 3,189,491, 6-15-65, Cl. 148—26.
Robert, André C., to Sud-Aviation Societe Nationale de Constructions Aeronautiques. System for the self-guidance of a missile to a moving target. 3,189,300, 6-15-65, Cl. 244—14.
Roberts, Charles W., to Ormond Inc. Angular position indicating device. 3,188,860, 6-15-65, Cl. 73—88.5.
Robertshaw Controls Co.: *See*—
Beck, Roland D. 3,189,317.
Beck, Roland D. 3,189,704.
Puster, Louis M. 3,189,047.
Randolph, Hollis L. 3,189,713.
Robinson, Charles F.: *See*—
Easy, Maurice H., Fairhurst, Robinson, and Palmqvist. 3,189,898.
Robinson, Russell I., to The Louis Allis Co. Electric motor with improved cooling means. 3,188,833, 6-15-65, Cl. 62—505.
Robinson, William J.: *See*—
Guyer, Reynolds W., Jr., and Robinson. 3,189,187.
Robinson, William W., Jr., and D. C. Camp, to Cumberland Case Co. Chain construction. 3,189,184, 6-15-65, Cl. 198—168.
Robison, Elaine C.: *See*—
Robison, Paul C. 3,189,670.
Robison, Paul C., deceased, by E. C. Robison, administratrix, to FMA, Inc. Method for producing a mold for use in the fabrication of backlit projection screens. 3,189,670, 6-15-65, Cl. 264—226.
Rocca forte, Harry I., to Weyerhaeuser Co. Carton. 3,189,-248, 6-15-65, Cl. 229—31.
Rodgers, George W., to United States of America, Atomic Energy Commission. Variable time constant pulse integrator. 3,189,833, 6-15-65, Cl. 328—58.
Roese, David W.: *See*—
Buckingham, Arthur G., Haney, Knight, and Roese. 3,189,298.
Roever, William L., to Shell Oil Co. Geophone spread for seismic systems. 3,189,870, 6-15-65, Cl. 340—7.
Rogers, Arthur H., Jr., and J. G. Stranch, to Eastman Kodak Co. Polypropylene composition containing an acetate. 3,189,574, 6-15-65, Cl. 260—31.8.
Rogers, Edward F., and D. Davida, to Merck & Co., Inc. Fungicidal phenylhydnones. 3,189,520, 6-15-65, Cl. 167—33.
Rogers, Francis R., to The Bendix Corp. Variable torque transmitting mechanism for a re-expansion gas turbine. 3,188,807, 6-15-65, Cl. 60—39.16.
Roller, Harvey F., to Eastman Kodak Co. Simulated lens mount. 3,188,930, 6-15-65, Cl. 95—11.
Rolls-Royce Ltd.: *See*—
Maguire, Addison C. 3,188,803.
Romano, Salvatore, to Metgal Novelty Co., Inc. Channel spreading apparatus adaptable for use in the manufacture of pocketbooks. 3,188,843, 6-15-65, Cl. 72—22.

Ross, John, and E. P. Ross, to Westinghouse Electric Corp. Plural motor current limit regulator. 3,189,807, 6-15-65, Cl. 318—98.
Ross, Prisco, E. C. Haskell, J. A. Mascaro, and A. M. Tringali, to Interchemical Corp. Apparatus for determining the temperature of a coating during curing. 3,188,853, 6-15-65, Cl. 73—15.
Rossen, Borje, to The Rossen Filter Co. Fluid systems. 3,188,974, 6-15-65, Cl. 103—203.
Rossen Filter Co., The: *See*—
Rossen, Borje. 3,188,974.
Rosenberry, George M., and T. W. Salmon, to General Electric Co. Generator compensation system. 3,189,814, 6-15-65, Cl. 322—25.
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Ross, Gilbert W.: *See*—
Fotsch, Arthur H., Finley, Ross, and Fischer. 3,188,890.
Ross, Gilbert W.: *See*—
Fotsch, Arthur H., Ross, and Fischer. 3,189,154.
Roth, Wilfred. Flowmeters. 3,188,862, 6-15-65, Cl. 73—194.
Rucka, Edward L., and H. R. Grant, to Aerojet-General Corp. Laminate structure of alternate layers of metal and glass fiber tapes. 3,189,034, 6-15-65, Cl. 138—143.
Rudner, Bernard, and A. G. Prapas, to W. R. Grace & Co. Monohydrazinium hydroxy - polyalkoxyalkylalkylene - diamines. 3,189,653, 6-15-65, Cl. 260—584.
Rudy, Stephen J. Knockdown structure for use with a child's enclosure such as a crib. 3,188,661, 6-15-65, Cl. 5—97.
Ruffing, Charles R.: *See*—
Calderwood, Robert H., Sheppard, Ruffing, and Moreland. 3,189,513.
Rupp, Otto. Inhaling device. 3,189,030, 6-15-65, Cl. 128—186.
Russell, Edward W. C. Means and method for preparing record bearing media. 3,189,732, 6-15-65, Cl. 235—61.12.
Russell, Peter B., and K. W. Ledig, to American Homes Products Corp. Novel 17-ketals of equilenin and method for preparing. 3,189,625, 6-15-65, Cl. 260—397.5.
Ryder, Elliott E., Jr., and P. Pesnaglia, to Shell Oil Co. Process for converting α,β-ethylenically unsaturated aldehyde polymers to water-soluble derivatives. 3,189,577, 6-15-65, Cl. 260—67.
Rymaszewski, Eugene J., J. Riseman, and L. A. Harlow, to International Business Machines Corp. D.C. power distribution system. 3,189,847, 6-15-65, Cl. 333—1.
SCM Corp.: *See*—
Lorch, James R. 3,188,722.
S.S.S. Patents Ltd.: *See*—
Sinclair, Harold, and Clements. 3,189,148.
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Sackett, A. J., & Sons Co., The: *See*—
Sackett, Walter J., Sr. 3,189,197.
Sackett, Walter J., Sr. 3,189,434.
Sackett, Watler J., Sr., to The A. J. Sackett & Sons Co. Multi-compartment bulk station. 3,189,107, 6-15-65, Cl. 214—16.
Sackett, Walter J., Sr., to The A. J. Sackett & Sons Co. Method for the manufacture of granular fertilizer. 3,189,-434, 6-15-65, Cl. 71—64.
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Botton, Roger, Delgrange, and Steinmetz. 3,189,407.
St. Regis Paper Co.: *See*—
Stockel, Ivar H., and Titchenal. 3,189,061.
Salmon, Thomas W.: *See*—
Rosenberry, George M., and Salmon. 3,189,814.
Salners, Edward A., to Motorola Inc. Signal generator. 3,189,000, 6-15-65, Cl. 116—137.
Sala, Paul, M. B. Bacaner, and N. W. Yanni, to United States of America, Atomic Energy Commission. Blood pressure indicating device. 3,189,023, 6-15-65, Cl. 128—2.05.
Salsberg, Paul L., to E. I. du Pont de Nemours and Co. Method for the control of undesirable plant growth. 3,189,431, 6-15-65, Cl. 71—2.6.
Samburoff, Serge N., to United States of America, Navy. Impact switch for missile warhead. 3,188,960, 6-15-65, Cl. 102—70.2.
Samejima, Hirotoshi: *See*—
Kinoshita, Shukuo, Samejima, Fujita, and Nara. 3,189,-526.
Sammet, Aaron F. Agricultural implement. 3,188,786, 6-15-65, Cl. 56—21.
Samuels, Gerard, to Radio Corp. of America. Frame grid and method of fabrication. 3,189,779, 6-15-65, Cl. 313—350.
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Overcashier, Robert H., and Sanborn. 3,189,060.
Sandoz Ltd.: *See*—
Meier, Reinhard. 3,189,594.
Wicki He'ss. 3,189,593.
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Dean, Derek J. 3,188,864.
Sasaki, Yoso: *See*—
Okamoto, Eiichi, Susuki, Kurhara, and Sasaki. 3,189,-797.
Sass, Hans G., and H. Hanke, to Industrie-Companie Kleinewefers Konstruktions- und Handelsgesellschaft m.b.H. Air heater with a plurality of tubes positioned coaxially within one another. 3,189,018 6-15-65, Cl. 126—116.
Sato, Akihiko, and A. Fujie, to Nippon Electric Co., Ltd. Negative conductance switch circuit. 3,189,753, 6-15-65, Cl. 307—88.5.
Saulsbury, Laforest S.: *See*—
Migues, Jose. 3,189,346.
Sauter, August. K.G.: *See*—
Ast, Adolf. 3,189,111.
Savage, William E., to Shell Oil Co. Discharging powder from high-pressure vessels. 3,188,783, 6-15-65, Cl. 55—20.
Sax, George, to Delsdeal Ltd. Abrasion deflashing partially tanned fur-skins. 3,189,402, 6-15-65, Cl. 8—94.14
Scala, Anthony: *See*—
Helmstetter, Norman E., and Scala. 3,189,706.
Scalera, Frank T., to General Electric Co. Anti-skate device. 3,188,352, 6-15-65, Cl. 274—10.
Schacht, Gunter H., to International Business Machines Corp. Hammer control mechanism for record marking machine. 3,188,946, 6-15-65, Cl. 101—93.
Schaefer, Edward E. Fishing reel displayer. 3,189,306, 6-15-65, Cl. 248—214.
Schaefer, Seymour, to Aaron H. Plotzker. Containers for storing goblets, glasses and other similar products. 3,189,-074, 6-15-65, Cl. 150—52.
Schenck, Carl, Maschinenfabrik G.m.b.H.: *See*—
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Schierman, Joseph H.: *See*—
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Schiffman, Louis, to Amchem Products, Inc. Solutions and method for coating metal surfaces. 3,189,488, 6-15-65, Cl. 148—6.2.
Schiffman, Louis, to Amchem Products, Inc. Method and solutions for treating metal surfaces. 3,189,489, 6-15-65, Cl. 148—6.2.
Schink, William N., to Indak Mfg. Corp. Lever action switch with embedded compression coil spring and staggered contact means. 3,188,697, 6-15-65, Cl. 200—16.
Schirm, Helmut T., to Owens-Illinois Glass Co. Baffle mechanism for glass mold assembly. 3,189,427, 6-15-65, Cl. 65—328.
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Schmid, Raymond W.: *See*—
Check, Mathias M., and Schmid. 3,188,682.
Schmidt, Benjamin F. Remotely releasable safety belt buckle. 3,188,707, 6-15-65, Cl. 24—75.
Schmidt, Charles J., and C. Andricos, to Maxson Electronics Corp. Range and tracking circuit. 3,189,896, 6-15-65, Cl. 343—7.3.
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Schneider, Charles F., to Armstrong Cork Co. Sheet positioning device. 3,188,856, 6-15-65, Cl. 73—37.7.
Schneider, Donald A., and C. J. Falcon, to The Rapids-Standard Co. Powered roller curve. 3,189,161, 6-15-65, Cl. 198—127.
Schneider, Herbert P. Coffee making and warming device. 3,189,728, 6-15-65, Cl. 219—438.
Schneller, Joseph W., D. A. Harris, and R. G. Buergin, to National Gypsum Co. Wall construction. 3,188,773, 6-15-65, Cl. 50—146.
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Welsh, Herbert F., Schreiner, Mock, and Eckert. 3,189,-200.
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Schroedter, Willburt W., and R. D. Hottenstine, to Combustion Engineering, Inc. Method and apparatus for controlling a vapor generator operating at supercritical pressure. 3,189,008, 6-15-65, Cl. 122—451.1.
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Schultz, Harold B.: *See*—
French, Charlie N., and Schultz. 3,188,796.
Schwartz, Herbert S., to United States of America, Air Force. Method for making porous composite materials. 3,189,499, 6-15-65, Cl. 156—155.
Schwinghamer, Robert J., to United States of America, National Aeronautics and Space Administration. Electrical discharge apparatus for forming. 3,188,844, 6-15-65, Cl. 72—56.
Scofield, Donald H., to Insul-8 Corp. Joint and cover assembly for trolley electrification system. 3,189,679, 6-15-65, Cl. 174—94.
Scoles, George W.: *See*—
Kelly, James A., and Scoles. 3,189,430.
Scott Elmer M.: *See*—
Webb, John E., and Scott. 3,188,893.
Scott, Gordon: *See*—
Brockelbank, Norman, Wardill, and Scott. 3,189,203.
Scott, James A., to United States Steel Corp. Method and apparatus for quenching pipe. 3,189,490, 6-15-65, Cl. 148—18.
Scott, Larkin B., to The Perkin-Elmer Corp. Analog-to-digital converter. 3,189,892, 6-15-65, Cl. 340—347.
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Conpick Sydney, and Beal. 3,189,479.
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Scruggs, David M., and O. D. Pfeifer, to The Bendix Corp. Means for cooling structures that are periodically heated to elevated temperatures. 3,188,961, 6-15-65, Cl. 102—92.5.
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Sedlmayr, Carl J., Jr.: *See*—
Beirer, Friedrich K., Jr. 3,189,343.
Seline, Seaver A., Jr. Gable top container. 3,189,246, 6–15–65, Cl. 229—17.
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Palmqvist, Fredrik T. E. 3,189,266.
Thylefors, Henric W. 3,189,267.
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Seymour, Raymond E., F. E. Riedl, and I. Campbell, to Sperry Rand Corp. Card punching device. 3,189,270, 6–15–65, Cl. 234—115.
Shaffer, Peter T. B., to The Carborundum Co. Oxidation-resistant ceramics and methods of manufacturing the same. 3,189,477, 6–15–65, Cl. 117—46.
Shaler, Richard G., to American Tansul Co. Method of treatment of ore and product. 3,189,557, 6–15–65, Cl. 252—426.
Shatterproof Glass Corp.: *See*—
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Shea, Donald P., and R. G. Reed, to Maryland Glass Corp. Production of multi-cavity containers. 3,189,422, 6–15–65, Cl. 65—46.
Shearer, Newton H., Jr., to Eastman Kodak Co. 3-vinyl-2,2-dimethylnorcamphane and polymers thereof. 3,189,584, 6–15–65, Cl. 260—88.2.
Shearer, Newton H., Jr., to Eastman Kodak Co. 2-vinyl-6,6-dimethylnorpinane and polymers thereof. 3,189,585, 6–15–65, Cl. 260—88.2.
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Wood, Anthony A. R., and Shears. 3,189,412.
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Shell Oil Co.: *See*—
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Miller, Byron E., and Dahlstrom. 3,189,874.
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Shields, Charles B., to Westinghouse Air Brake Co. Coded detecting systems. 3,189,885, 6–15–65, Cl. 340—258.
Sields, Paul E., to Cherry-Burrell Corp. Case inverter. 3,189,159, 6–15–65, Cl. 198—33.
Shinjo, Akira, to Toyo Kagyo Co. Ltd. Liquid resin compositions for shell molding and methods for their production. 3,189,566, 6–15–65, Cl. 260—17.5.
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Shriver, Ellsworth H., and S. E. Knowles, to The Mead Corp. Composite board. 3,189,514, 6–15–65, Cl. 161—250.
Siciliano, Iginio. Closure operator. 3,189,339, 6–15–65, Cl. 268—111.
Siciliano, Samuel F., to George C. Moore Co. Weft detectors for looms. 3,188,057, 6–15–65, Cl. 139—370.
Sieg, Robert P., to California Research Corp. Removal of nitrogen compounds from hydrocarbon oils by adsorption on cracking catalyst. 3,189,539, 6–15–65, Cl. 208—254.
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Höcker, Karl H., and Wagner. 3,189,524.
Siwert, Herbert G., and S. F. Gilman, to Carrier Corp. Conditioning apparatus. 3,188,829, 6–15–65, Cl. 62—160.
Sills, Joseph M. Windshield wiper. 3,188,919, 6–15–65, Cl. 91—264.
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Simpson, Arthur I. F., to Modern Telephones (Great Britain) Ltd. Two-way telephone systems with talk-listen switching. 3,189,691, 6–15–65, Cl. 179—81.
Simpson, Walter M., to Seven E. Corp. Walker and lifting device. 3,189,345, 6–15–65, Cl. 272—70.4.
Sims, Leslie L., to Ethyl Corp. Stable solvent composition. 3,189,552, 6–15–65, Cl. 252—153.
Sinclair, Fred. Animal tether. 3,189,004, 6–15–65, Cl. 119—124.
Sinclair, Harold, and H. A. Clements, to S.S.S. Patents Ltd. Synchronous self-shifting clutch arrangements. 3,189,148, 6–15–65, Cl. 192—67.
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Turner, Edgar P. 3,189,146.
Sizer, Phillip S. Pressure differential operated safety valve. 3,189,044, 6–15–65, Cl. 137—498.
Skinner, Florence. Wig drying lamp. 3,188,752, 6–15–65, Cl. 34—104.
Slater, Arthur B., to Raytheon Co. Continuous wave radar systems. 3,189,899, 6–15–65, Cl. 343—14.
Sloan, Edward C., A. H. Eberman, and H. A. Jensen, to Oscar Mayer & Co., Inc. Method and apparatus for forming a package. 3,189,505, 6–15–65, Cl. 156—244.
Slobodin, Leo, and A. Reich, to Lockheed Aircraft Corp. Expansion and compression of electronic pulses by optical correlation. 3,189,746, 6–15–65, Cl. 250—216.
Slowinski, Robert H., to National Gypsum Co. Demountable partition. 3,189,135, 6–15–65, Cl. 189—34.
Smalley, Ned J., to Owens-Illinois Glass Co. Dispensing closure having resilient fingers. 3,189,222, 6–15–65, Cl. 221—220.
Smith, Arthur D., and A. A. Beard, to Fluor Products Co. Cooling tower air inlet for cold climates. 3,189,329, 6–15–65, Cl. 261—28.
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Smith, Horace L., Jr., to Hupp Corp. Roasting and heating methods. 3,189,460, 6–15–65, Cl. 99—68.
Smith, Jean G., and F. T. Fitch, to W. R. Grace & Co. Process for preparing uranous oxide sols. 3,189,555, 6–15–65, Cl. 252—301.1.
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Smith Leland L. G. Greenspan, and T. J. Foell, to American Home Products Corp. Resolution of racemic-Δ^4-3-keto-13β-alkyl steroids by using corynebacterium simplex. 3,189,528, 6–15–65, Cl. 195—51.
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Smith, Paul E., to Morgan Construction Co. Apparatus for controlling buckle in heated steel billets. 3,189,338, 6–15–65, Cl. 266—5.
Smith, Peter, to Dynamics Corp. of America. Blood pressure transducer. 3,189,024, 6–15–65, Cl. 128—2.05.
Smith, Sidney R., Jr., to General Electric Co. Current limiting fuse. 3,189,711, 6–15–65, Cl. 200—120.
Smurthwaite, John W., to United Kingdom Atomic Energy Authority. Apparatus for vacuum melting and casting metals. 3,188,702, 6–15–65, Cl. 22—73.
Smutny, Edgar J., to Shell Oil Co. Lanthanide alkylated hydroxylbenzoates. 3,189,630, 6–15–65, Cl. 260—429.2.
Snead, Jonathan L., and H. Gisser, to United States of America, Army. C_{6-8} perfluorinated glycol diesters of trimethylacetic acid. 3,189,644, 6–15–65, Cl. 260—488.
Snyder, Harry M., to Snyder Paper Corp. Cushion structure. 3,188,065, 6–15–65, Cl. 5—355.
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Spangenberg, Robbert E., to Hunter Douglas International (Quebec) Ltd. Ceiling panel support and edge closure assembly. 3,188,695, 6–15–65, Cl. 20—4.
Spangler, Gordon W., to Eastman Kodak Co. Process of producing self-crimping fibers. 3,188,714, 6–15–65, Cl. 28—72.
Sparks, William J., and A. M. Gessler, to Esso Research and Engineering Co. Oil resistant overlay for asphalt. 3,189,568, 6–15–65, Cl. 260—22.
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Seymour, Raymond E., Riedl, and Campbell. 3,189,270.
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Stalker, Edward A. to Stalker Development Co. Bladed rotor for fluid machines. 3,189,261, 6–15–65, Cl. 230—122.
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Stowell, Austin L. 3,189,069.
Starr, Anthony J. Container outlet and closure therefor. 3,189,072, 6–15–65, Cl. 150—.5.
Stecker, Herbert C. Organic mercury compounds. 3,189,631, 6–15–65, Cl. 260—431.
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Parks, Robert F. 3,189,056.
Steffen, Egon, to Saarbergtechnik G.m.b.H. Leveling mechanism for endless track type vehicles. 3,189,116, 6–15–65, Cl. 180—9.5.
Steinbart, Hiltrude. Mechanism for the delivery by a box, of cottonwool, sprinkled with disinfectants. 3,189,228, 6–15–65, Cl. 222—129.
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Stockel, Ivar H., and O. R. Titchenal, to St. Regis Paper Co. Low head torce flow packer. 3,189,061, 6–15–65, Cl. 141—68.
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Storp, Klaus, and H. Kleemann, to Laboratorium fuer Adsorptionstechnik G.m.b.H. Process for the removal of organic sulphur compounds from gases. 3,189,406, 6–15–65, Cl. 23—2.
Stowell, Austin L., to The Stanley Works. Tool handle with resilient gripping means. 3,189,069, 6–15–65, Cl. 145—61.
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Strick, Ellis, to Shell Oil Co. Filter for the cancellation of delayed signals. 3,189,853, 6–15–65, Cl. 333—76.
Strull, Gene, to Westinghouse Electric Corp. Multi-region two-terminal semiconductor device. 3,189,900, 6–15–65, Cl. 317—235.
Strzala, Kazimer A., to Owens-Illinois Glass Co. Gauging apparatus. 3,188,743, 6–15–65, Cl. 33—174.
Stuart, Frank A., W. T. Stewart, W. Lowe, and F. W. Kavanagh, to California Research Corp. Detergent copolymer of unsaturated polyglycol ether. 3,189,586, 6–15–65, Cl. 260—89.5.
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Robert, André C. 3,189,300.
Sueker, Keith H., to Westinghouse Electric Corp. Generator-fed motor control with bi-stable field control of generator and motor. 3,189,809, 6–15–65, Cl. 318—145.
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Sweet, Edward, to Dow Corning Corp. Organosilicon intermediates containing silicon-bonded oxime radicals. 3,189,576, 6–15–65, Cl. 260—46.5.
Swenson, Eskil W., and C. B. Strang, Jr., to Swenson Spreader & Mfg. Co. Truck spreader apparatus. 3,189,355, 6–15–65, Cl. 275—8.
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Szwargiuski, Jesse L., to ACF Industries, Inc. Carburetor. 3,189,331, 6–15–65, Cl. 261—60.
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Tadanier, John S., and J. W. Cole, to Abbott Laboratories. 6α - amino - 17 - loweralkylenedioxy - 3,5 - cycloandrostanes. 3,189,606, 6–15–65, Cl. 260—239.55.
Takagi, Masao, and K. Yamaji, to Tateisi Denki Kabushikikaisha. Cathode ray tube controlled relay means. 3,189,780, 6–15–65, Cl. 315—10.
Takizaki, Iwao, and J. Okito, to Toyo Boseki Kabushiki Kaisha. Treatment of cellulosic fibre fabrics. 3,189,404, 6–15–65, Cl. 8—116.4.
Talamonti, John, to Borg-Warner Corp. Annular seal with keyed sealing ring. 3,189,357, 6–15–65, Cl. 277—42.
Taleff, Alexander, and H. P. Kipple, to Westinghouse Electric Corp. Automatic high temperature soldering machine. 3,189,241, 6–15–65, Cl. 228—37.
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Tearpock, Daniel J., and E. O. Lunde, to Magor Car Corp. Pneumatically actuated hopper closure latching and operating device. 3,188,980, 6–15–65, Cl. 105—240.
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Davies, Harold. 3,188,802.
Thoma, Albert J., Bogert, and Brown. 3,189,001.
Thoma, Albert J., C. J. Bogert, Jr., and W. F. Brown, to Thiokol Chemical Corp. Apparatus for flame spraying surfaces of varying diameters. 3,189,001, 6–15–65, Cl. 118—315.
Thoma, Jean U. Axial piston hydraulic unit. 3,188,972, 6–15–65, Cl. 103—162.
Thomas, David F., and R. A. Hill, to Waterous Co. Electric shift for clutch. 3,189,149, 6–15–65, Cl. 192—82.
Thomas, George L., to The B. F. Goodrich Co. High tensile strength magnesium aluminum silicate glass compositions. 3,189,471, 6–15–65, Cl. 106—50.
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Thompson, John W., to Owens-Illinois Glass Co. Venting-type containers. 3,189,284, 6–15–65, l. 222—542.
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Tominaga, Shotaro, to Mitsubishi Denki Kabushiki Kaisha. Compressed-gas circuit interrupter having cooperable arcing and disconnecting contacts with downstream blast valve. 3,189,717, 6–15–65, Cl. 200—148.
Tominaga, Shotaro, to Mitsubishi Denki Kabushiki Kaisha. Compressed-gas circuit interrupter with hydraulic operating means extending upwardly through supporting insulating column means. 3,189,718, 6–15–65, Cl. 200—148.
Tondreau, Albert W., to Warner Bros. Pictures, Inc. Single projector stereoscopic system. 3,189,915, 6–15–65, Cl. 352—60.
Topps Chewing Gum Co., Inc.: *See*—
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Mehlig, Herman R., Jr., and Torp. 3,189,292.
Torres, Joseph, to Hamilton Watch Co. Take-up mechanism for foil slitting machine. 3,189,292, 6–15–65, Cl. 242—56.9.
Toth, Michael, Jr., to De Laval Turbine Inc. Protection system for turbochargers. 3,188,797, 6–15–65, Cl. 60—13.
Townsend, Ralph, to American Machine & Foundry Co. Binary-to-decimal converter. 3,189,884, 6–15–65, Cl. 240—347.
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Trampel, Kurt M., and H. H. Jensen, to International Business Machines Corp. Opto-electrical scanning system for gray level detection. 3,188,907, 6–15–65, Cl. 88—14.
Travis, Horace F., to Illinois Tool Works, Inc. Gear testing apparatus. 3,188,746, 6–15–65, Cl. 33—179.5.
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3 : 3,188,772 3,189,461
4 : Re.25,802 3,188,655 3,188,656 3,188,668 3,188,688 3,188,696 3,188,701 3,188,706 3,188,707 3,188,722 3,188,738 3,188,739 3,188,743 3,188,749 3,188,757 3,188,758 3,188,770 3,188,777 3,188,783 3,188,806 3,188,814 3,188,816 3,188,825 3,188,830 3,188,851 3,188,854 3,188,860 3,188,873 3,188,908 3,188,912 3,188,928 3,188,947 3,188,949 3,188,957 3,188,958 3,188,967 3,189,023 3,189,038 3,189,040 3,189,042 3,189,054 3,189,064 3,189,080 3,189,092
4 : 3,189,095 3,189,105 3,189,106 3,189,110 3,189,115 3,189,142 3,189,152 3,189,153 3,189,184 3,189,185 3,189,198 3,189,216 3,189,234 3,189,255 3,189,277 3,189,282 3,189,286 3,189,289 3,189,296 3,189,302 3,189,313 3,189,316 3,189,317 3,189,334 3,189,335 3,189,348 3,189,367 3,189,369 3,189,371 3,189,372 3,189,374 3,189,408 3,189,413 3,189,418 3,189,419 3,189,421 3,189,467 3,189,468 3,189,470 3,189,485 3,189,497 3,189,532 3,189,536 3,189,539 3,189,540 3,189,543 3,189,547 3,189,556 3,189,564 3,189,565 3,189,572 3,189,577 3,189,586 3,189,596
4 : 3,189,627 3,189,630 3,189,635 3,189,637 3,189,638 3,189,639 3,189,661 3,189,663 3,189,664 3,189,665 3,189,670 3,189,679 3,189,683 3,189,684 3,189,704 3,189,713 3,189,715 3,189,725 3,189,734 3,189,735 3,189,742 3,189,751 3,189,761 3,189,775 3,189,784 3,189,819 3,189,823 3,189,827 3,189,839 3,189,840 3,189,844 3,189,854 3,189,855 3,189,861 3,189,862 3,189,871 3,189,879 3,189,882 3,189,883 3,189,890 3,189,907 3,189,908 3,189,909 3,189,914 3,189,915
5 : 3,188,780 3,189,206 3,189,238 3,189,276 3,189,444
6 : 3,188,735 3,188,791 3,188,839 3,188,862
6 : 3,188,882 3,188,884 3,188,984 3,189,005 3,189,008 3,189,058 3,189,069 3,189,175 3,189,269 3,189,391 3,189,435 3,189,486 3,189,700 3,189,730 3,189,758 3,189,836 3,189,865 3,189,894 3,189,910 7 : 3,188,689 3,188,790 3,189,072 3,189,210 3,189,393 3,189,431 3,189,560 3,189,561 3,189,562 3,189,580 3,189,618 3,189,648 8 : 3,188,785 3,189,171 3,189,500 3,189,535 3,189,732 3,189,906 9 : 3,188,686 3,188,787 3,188,827 3,188,995 3,189,011 3,189,077 3,189,223 3,189,339 3,189,433 3,189,487 3,189,494 3,189,893 10 : 3,188,674 3,188,904 3,188,975 3,188,990 3,189,357
10 : 3,189,698 12 : 3,188,661 3,188,676 3,188,681 3,188,697 3,188,709 3,188,711 3,188,715 3,188,716 3,188,746 3,188,767 3,188,775 3,188,786 3,188,828 3,188,836 3,188,867 3,188,878 3,188,881 3,188,919 3,188,925 3,188,976 3,188,979 3,189,000 3,189,014 3,189,015 3,189,026 3,189,041 3,189,043 3,189,074 3,189,108 3,189,109 3,189,119 3,189,145 3,189,163 3,189,167 3,189,212 3,189,214 3,189,220 3,189,230 3,189,248 3,189,253 3,189,254 3,189,306 3,189,307 3,189,308 3,189,312 3,189,319 3,189,333 3,189,351 3,189,355 3,189,357 3,189,366 3,189,388 3,189,394
12 : 3,189,432 3,189,463 3,189,507 3,189,509 3,189,534 3,189,537 3,189,538 3,189,606 3,189,613 3,189,647 3,189,650 3,189,652 3,189,677 3,189,693 3,189,703 3,189,727 3,189,738 3,189,752 3,189,771 3,189,783 3,189,813 3,189,817 3,189,824 3,189,841 3,189,875
13 : 3,188,657 3,188,679 3,188,712 3,188,724 3,188,761 3,188,776 3,188,792 3,188,795 3,188,796 3,188,801 3,188,807 3,188,811 3,188,874 3,188,916 3,188,920 3,188,961 3,188,962 3,188,963 3,188,985 3,188,999 3,189,088 3,189,112 3,189,120 3,189,129 3,189,130 3,189,131 3,189,132 3,189,147 3,189,224

13 : 3,189,238 3,189,345 3,189,358 3,189,495 3,189,496 3,189,510 3,189,527 3,189,545 3,189,657 3,189,692 3,189,710 3,189,728 3,189,830 3,189,869
14 : 3,188,799 3,188,923 3,189,159 3,189,168 3,189,202 3,189,209 3,189,272 3,189,305
15 : 3,188,667 3,188,687 3,188,877 3,188,909 3,189,390 3,189,519
16 : 3,188,658 3,188,926 3,189,020 3,189,235 3,189,375 3,189,680
17 : 3,188,662 3,188,729 3,188,759 3,189,093 3,189,455 3,189,531 3,189,552 3,189,619 3,189,695 3,189,696
18 : 3,189,423
19 : 3,188,762 3,188,911 3,188,953 3,188,960 3,188,997 3,189,027 3,189,138 3,189,139 3,189,197 3,189,211 3,189,243 3,189,298 3,189,340 3,189,350 3,189,370 3,189,405 3,189,422 3,189,434 3,189,475 3,189,521 3,189,555 3,189,744 3,189,754 3,189,760 3,189,791 3,189,800 3,189,802 3,189,873 3,189,895 3,189,912 3,189,916
20 : 3,188,673 3,188,740 3,188,818 3,188,819 3,188,820 3,188,821 3,188,823 3,188,929 3,188,992 3,189,007 3,189,021 3,189,022 3,189,193 3,189,218 3,189,221 3,189,242 3,189,247 3,189,271 3,189,285 3,189,294 3,189,338 3,189,363 3,189,382 3,189,410 3,189,420
21 : Re.25,798 3,188,663 3,188,677 3,188,678 3,188,685 3,188,691 3,188,703 3,188,705 3,188,725 3,188,730 3,188,731 3,188,763 3,188,840 3,188,855 3,188,869 3,188,883 3,188,885 3,188,886 3,188,887 3,188,939 3,188,950 3,188,951 3,188,970 3,188,971 3,188,974 3,189,010 3,189,012 3,189,025 3,189,035 3,189,062 3,189,063 3,189,079 3,189,118 3,189,144 3,189,151 3,189,161 3,189,179 3,189,182 3,189,213 3,189,261 3,189,280 3,189,281 3,189,304 3,189,314 3,189,341 3,189,364 3,189,383 3,189,426 3,189,428 3,189,430 3,189,491 3,189,558 3,189,576 3,189,604 3,189,622 3,189,623 3,189,626 3,189,701 3,189,867 3,189,887 3,188,654 3,188,784 3,189,149 3,189,176 3,189,187 3,189,194 3,189,252 3,189,309 3,189,359 3,189,360 3,189,384 3,189,385 3,189,678 3,189,702 3,189,749 3,189,863 3,189,900
22 : 3,188,809 3,188,922 3,188,969 3,188,981 3,188,986
24 : 3,189,236 3,189,249 3,189,262 3,189,330 3,189,331 3,189,429 3,189,464 3,189,544 3,189,551 3,189,860 3,189,246 3,189,368 3,189,557 3,188,745 3,189,712 3,189,797 3,188,675 3,188,684 3,188,720 3,188,723 3,188,742 3,188,760 3,188,771 3,188,778 3,188,800 3,188,802 3,188,813 3,188,838 3,188,870 3,188,879 3,188,901 3,188,910 3,188,914 3,188,938 3,188,944 3,188,954 3,188,980 3,188,993 3,189,001 3,189,024 3,189,049 3,189,071 3,189,081 3,189,104 3,189,146 3,189,231 3,189,232 3,189,273 3,189,323 3,189,325 3,189,352 3,189,365 3,189,381 3,189,392 3,189,395 3,189,396 3,189,397 3,189,401 3,189,456 3,189,482 3,189,520 3,189,542 3,189,550 3,189,553 3,189,563 3,189,568 3,189,597 3,189,599 3,189,600 3,189,601 3,189,612 3,189,624 3,189,631 3,189,645 3,189,651 3,189,656 3,189,660 3,189,682 3,189,687 3,189,688 3,189,689 3,189,699 3,189,706 3,189,709 3,189,729 3,189,733 3,189,737 3,189,743 3,189,746 3,189,757 3,189,776 3,189,778 3,189,779 3,189,782 3,189,785 3,189,786 3,189,803 3,189,815 3,189,821 3,189,828
29 : 3,189,896
30 : 3,189,387 3,189,476 3,189,833
31 : Re.25,800 3,188,660 3,188,664 3,188,672 3,188,710 3,188,719 3,188,750 3,188,752 3,188,773 3,188,779 3,188,782 3,188,829 3,188,832 3,188,842 3,188,843 3,188,853 3,188,865 3,188,872 3,188,876 3,188,899 3,188,903 3,188,905 3,188,907 3,188,927 3,188,930 3,188,968 3,188,983 3,189,031 3,189,032 3,189,037 3,189,061 3,189,073 3,189,084 3,189,135 3,189,137 3,189,140 3,189,141 3,189,169 3,189,170 3,189,186 3,189,217 3,189,219 3,189,276 3,189,303 3,189,310 3,189,322 3,189,346 3,189,347 3,189,353 3,189,377 3,189,378 3,189,399 3,189,443 3,189,448 3,189,449 3,189,452 3,189,453 3,189,454 3,189,457 3,189,458 3,189,459 3,189,469 3,189,472 3,189,477 3,189,481 3,189,483 3,189,492 3,189,504 3,189,511 3,189,512 3,189,518 3,189,522 3,189,583 3,189,595 3,189,602 3,189,603 3,189,617 3,189,642 3,189,646 3,189,662 3,189,707 3,189,723 3,189,748 3,189,755 3,189,767 3,189,769 3,189,774 3,189,804 3,189,805 3,189,810 3,189,812 3,189,814 3,189,820 3,189,826 3,189,837 3,189,847
31 : 3,189,849 3,189,866 3,189,872 3,189,876 3,189,877 3,189,878 3,189,880 3,189,884 3,189,902 3,189,904 3,189,905
32 : 3,188,665 3,188,680 3,188,748 3,188,834 3,188,941 3,188,994 3,189,055 3,189,065 3,189,075 3,189,172 3,189,178 3,189,215 3,189,400 3,189,789 3,189,790 3,189,832 3,189,857
34 : 3,188,666 3,188,669 3,188,737 3,188,808 3,188,822 3,188,849 3,188,850 3,188,895 3,188,952 3,188,965 3,189,019 3,189,046 3,189,048 3,189,059 3,189,076 3,189,085 3,189,123 3,189,136 3,189,143 3,189,158 3,189,173 3,189,177 3,189,190 3,189,191 3,189,192 3,189,207 3,189,222 3,189,226 3,189,229 3,189,237 3,189,245 3,189,251 3,189,283 3,189,288 3,189,297 3,189,326 3,189,336 3,189,349 3,189,376 3,189,427 3,189,441 3,189,442 3,189,445 3,189,446 3,189,450 3,189,466 3,189,471 3,189,473 3,189,499 3,189,502 3,189,503 3,189,514 3,189,549 3,189,582 3,189,587 3,189,636 3,189,640 3,189,673 3,189,686 3,189,721 3,189,726 3,189,731 3,189,736 3,189,739 3,189,740 3,189,741 3,189,766 3,189,796 3,189,842 3,189,843 3,189,856
35 : 3,188,670 3,188,857
35 : 3,188,988 3,189,036 3,189,088 3,189,089 3,189,091 3,189,094 3,189,183 3,189,239 3,189,589 3,189,592
36 : Re.25,799 3,188,764 3,189,287 3,189,344
37 : 3,188,671 3,188,682 3,188,683 3,188,699 3,188,727 3,188,732 3,188,733 3,188,734 3,188,769 3,188,774 3,188,797 3,188,805 3,188,834 3,188,841 3,188,846 3,188,856 3,188,859 3,188,866 3,188,871 3,188,900 3,188,917 3,188,937 3,188,942 3,188,943 3,188,982 3,189,003 3,189,017 3,189,033 3,189,053 3,189,125 3,189,126 3,189,127 3,189,128 3,189,150 3,189,160 3,189,188 3,189,195 3,189,196 3,189,205 3,189,227 3,189,240 3,189,241 3,189,270 3,189,290 3,189,291 3,189,292 3,189,293 3,189,295 3,189,315 3,189,320 3,189,332 3,189,403 3,189,417 3,189,478 3,189,479 3,189,488 3,189,489 3,189,490 3,189,493 3,189,513 3,189,515 3,189,528 3,189,559 3,189,573 3,189,581 3,189,605 3,189,611 3,189,625 3,189,628 3,189,629 3,189,633 3,189,644 3,189,653 3,189,668 3,189,675 3,189,681 3,189,685 3,189,708 3,189,716 3,189,720 3,189,745 3,189,756 3,189,765 3,189,781 3,189,798 3,189,806 3,189,807

37	3,189,809	41	3,189,164	42	3,188,906	42	3,189,530	45	3,189,299	48	3,188,892
	3,189,818		3,189,506		3,188,955		3,189,554		3,189,460		3,188,996
	3,189,838		3,189,579		3,189,044		3,189,588		3,189,669		3,189,002
	3,189,858		3,189,584		3,189,045		3,189,634	46	3,188,765		3,189,154
	3,189,868		3,189,585		3,189,090		3,189,747		3,188,794		3,189,155
	3,189,885		3,189,590		3,189,096		3,189,846		3,188,893		3,189,156
	3,189,911		3,189,608		3,189,097		3,189,853		3,189,134		3,189,200
	3,189,913		3,189,621		3,189,098		3,189,870		3,189,199		3,189,204
38	3,188,898		3,189,643		3,189,099		3,189,874	47	3,189,284		3,189,250
	3,189,057		3,189,655		3,189,100		3,189,881		3,189,575		3,189,318
	3,189,278		3,189,666		3,189,107		3,189,892		3,189,654		3,189,328
	3,189,829	42	3,188,694		3,189,121	43	3,189,005	48	3,188,736		3,189,505
39	3,189,056		3,188,708		3,189,180		3,189,574		3,188,756		3,189,671
	3,189,578		3,188,728		3,189,311	44	3,189,157		3,188,833		3,189,768
41	3,188,713		3,188,754		3,189,379	45	3,188,698		3,188,889		3,189,886
	3,188,714		3,188,804		3,189,462		3,188,751		3,188,890	49	3,188,753
	3,189,047		3,188,817		3,189,498		3,188,768		3,188,891		3,189,051
	3,189,052										

DESIGN PATENTS

1	201,354	6	201,388	12	201,400	21	201,369	31	201,392	35	201,364
2	201,425		201,421		201,410		201,405		201,395		201,387
4	201,349		201,422		201,412	22	201,361		201,399	36	201,398
	201,352	9	201,373		201,417		201,368		201,404	37	201,381
	201,353	12	201,345		201,423	24	201,393	32	201,376		201,383
	201,358		201,359	14	201,411	29	201,391	34	201,346		201,394
	201,385		201,365	16	201,344		201,396		201,351		201,409
	201,414		201,370		201,347		201,420		201,362	38	201,378
	201,415		201,375	18	201,371	30	201,384		201,397	42	201,350
	201,416		201,379	19	201,408	31	201,343		201,402		201,382
5	201,372		201,380	20	201,374		201,357		201,403	48	201,389
6	201,367		201,386	21	201,348		201,360		201,418		201,407
	201,377		201,390		201,356		201,366				

PLANT PATENTS

4	2,535	4	2,536	4	2,537	4	2,538

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

June 15, 1965 Volume 815 Number 3

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Adherence of U.S.S.R. to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective July 1, 1965, of the Union of Soviet Socialist Republics to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 17, 1965.

DEPARTMENT OF COMMERCE

Patent Office

[37 CFR Parts 2, 4]

RULES OF PRACTICE AND FORMS FOR TRADEMARK CASES

Miscellaneous Amendments

Notice is hereby given that the United States Patent Office proposes to amend several of its rules, to add a new § 2.20, and to provide additional forms relating to trademarks. The amendments are proposed pursuant to the authority contained in Title 35, U.S.C. section 6.

In a variety of occasions the rules of trademark practice presently require a document supported by an oath or affidavit. The rules presently refer to verifications in many instances when requiring an oath in support of a document.

Public Law 88-292 of March 26, 1964, authorized the Commissioner of Patents to prescribe instances when documents to be filed in the Patent Office and which are required by any law, rule, or other regulation to be under oath might be accepted if, in lieu of the required document under oath, the party filing the document were to provide a written declaration in proper form setting forth the required information. Such a declaration may not be used unless it includes a warning statement that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001).

The new § 2.20 would set forth the form of the declaration and announce its acceptability in connection with the filing of documents when prescribed in individual rules. In general, the amendments of the rules are intended to prescribe the acceptability of the declaration in lieu of the oath in cases of all documents except the acknowledgment of an assignment and except in the case of the oaths or verifications presently

CONDITION OF TRADEMARK APPLICATIONS AS OF APRIL 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,093
Date of oldest new application	Sept. 21, 1964
Date of oldest amended application	August 17, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-21-64	8-17-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	10-6-64	10-1-64
Renewals (All Classes)	4-12-65	4-26-65
Sec. 12 (c) Publications (All Classes)	4-14-65	-------

Applications filed during the month of April 1965—2,447

Registrations Issued ---------- 377—No. 790,857 to No. 791,233
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

required in testimony and contested actions described in §§ 2.128 through 2.145.

An alternative form (§ 4.1a) is provided to the present form (§ 4.1) for a *Trademark application by an individual; Principal Register.*, as illustrative of the required form of a written declaration.

Two important points must be remembered in connection with these changes: (1) The use of the declaration is an alternative to the use of the oath. Either in proper form is acceptable. (2) The declaration may only be used in those instances where the Commissioner of Patents has provided that it will be an acceptable alternative.

All persons who desire to submit written data, views, arguments, or suggestions for consideration in connection with the proposed amendments are invited to forward the same to the Commissioner of Patents, Washington, D.C., 20231, within 45 days of publication of these proposed changes in the FEDERAL REGISTER. An oral hearing is not scheduled.

The changes proposed follow:

Section 2.15 is amended by deletion from the first paragraph of the parenthetical phrase "(such as the application itself and verifications required of applicants, registrants or others)."

A new § 2.20 is added, reading as follows:

DECLARATIONS

§ 2.20 *Declarations in lieu of oaths.*

The applicant or member of the firm or an officer of the corporation or association making application for registration or filing a document in the Patent Office relating to a trademark may, in lieu of the oath, affidavit, verification or sworn statement required from him, in those instances prescribed in the individual rules, file a declaration that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true, if, and only if, the declarant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001), and may jeopardize the validity of the application or document or any registration resulting therefrom.

Section 2.32 is amended by inserting the phrase "or include a declaration" after the phrase "sworn to" in the title of the section; by inserting in paragraph (a) thereof the phrase "or include a declaration in accordance with § 2.20" after the parenthetical phrase "(sworn to)"; and by substituting in paragraph (b) thereof the phrase "statement which is verified or which includes a declaration in accordance with § 2.20," for the phrase "verified statement."

Section 2.33(b) is amended by inserting the phrase "or declaration in accordance with § 2.20," after the two occurrences of the phrase "the verification."

Section 2.41 is amended by inserting the phrase "or declarations in accordance with § 2.20," after the two occurrences of the word "affidavits"; and by substituting in paragraph (b) thereof the phrase "statements which are verified or which include declarations in accordance with § 2.20" for the phrase "verified statements."

Section 2.42(b) is amended by inserting the phrase "or declaration in accordance with § 2.20" after the word "verification."

Section 2.66 is amended by substituting the phrase "showing which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified showing."

Section 2.71 is amended in paragraphs (a) and (b) by inserting the phrase "or declaration in accordance with § 2.20" after the two occurrences of the word "affidavit"; and in paragraph (c) by inserting the phrase "or declaration" after the first occurrence of the word "verification," and by inserting the phrase "or declaration in accordance with § 2.20" after the second occurrence of the word "verification."

Section 2.72 is amended by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit."

Section 2.97 is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.101 is amended to read as follows:

§ 2.101 *Time for filing opposition.*

Any person who believes that he would be damaged by the registration of a mark upon the Principal Register may, upon payment of the required fee, oppose the same by filing an opposition, which is verified or which includes a declaration in accordance with § 2.20, in the Patent Office within 30 days after the publication (§ 2.81) of the mark sought to be registered.

Section 2.103 is amended to read as follows:

§ 2.103 *Opposition filed by attorney or agent.*

An opposition which is unverified or not accompanied by a declaration in accordance with § 2.20 may be filed by a duly authorized attorney or agent. Such opposition and the required fee must be filed in the Patent Office within 30 days after publication (§ 2.81) of the mark sought to be registered but the opposition will be null and void unless confirmed by the opposer either by verification or declaration in proper form filed in the Patent Office within 30 days after such filing, or within such further time as may be fixed by the Commissioner upon request made before the expiration of the 30 days.

Section 2.106(b) is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.112 is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.114(b) is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.122(b) is amended by inserting the phrase "or declarations" after the two occurrences of the word "affidavits."

Section 2.145(a) is amended by substituting the phrase "an affidavit or declaration" for the phrase "and affidavit."

Section 2.146(b) is amended by inserting the phrase "or declarations in accordance with § 2.20" after the word "affidavits."

Section 2.151 is amended by inserting the phrase "or declaration" after the word "affidavit."

Section 2.153 is amended by inserting the phrase "or declaration in accordance with § 2.20" after the two occurrences of the word "affidavit."

Section 2.155 is amended by inserting the phrase "or declaration" after the word "affidavit."

Section 2.156 is amended by inserting the phrase "or declaration" after the word "affidavit."

The title preceding §§ 2.161–2.166 is amended by inserting the phrase "OR DECLARATION" after the word "AFFIDAVIT."

Section 2.161 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit."

Section 2.162 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the word "affidavit" in paragraphs (a) and (b).

Section 2.163 is amended by inserting the phrase "or declaration" after the three occurrences of the word "affidavit."

Section 2.164 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the word "affidavit."

Section 2.165 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (a), and after the two occurrences of the word "affidavit" in paragraph (b).

Section 2.166 is amended by inserting the phrase "or declaration" after the two occurrences of the word "affidavit."

The title preceding §§ 2.167 and 2.168 is amended by inserting the phrase "OR DECLARATION" after the word "AFFIDAVIT."

Section 2.167 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit" in the first paragraph thereof; and by inserting the phrase "or declaration" after the word "affidavit" in the last sentence thereof.

Section 2.168 is amended by inserting the phrase "or declarations" after the word "affidavits" in the title thereof; by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (a) thereof; and by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (b) thereof.

Section 2.173(a) is amended by substituting the phrase "by the registrant and verified or include a declaration in accordance with § 2.20" for the phrase "and verified by the registrant."

Section 2.175(b) is amended by substituting the phrase "by the applicant and verified or include a declaration in accordance with § 2.20" after the phrase "and verified by the applicant."

Section 2.183 is amended by substituting the phrase "statement which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified statement" in paragraph (a) thereof; by inserting the phrase "declaration or" before the word "verified" in paragraph (b) thereof; by inserting the phrase "declaration or" before the word "verified" in paragraph (c) thereof; and by substituting the phrase "showing which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified showing" in paragraph (d)(3) thereof.

The note in Part 4—Forms for Trademark Cases, immediately preceding § 4.1 is amended by the addition of the following paragraph:

In using these forms, the applicant or member of the firm or officer of the corporation or association making application or filing the form may, in lieu of making the oath, affirmation, or verification required, set forth in the body of the statement required his written declaration that all statements made on information and belief are believed to be true, if, and only if, the declarant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001), and may jeopardize the validity of the application or document or any registration resulting therefrom.

For illustrative purposes, § 4.1 would be modified in the use of such a declaration as an alternative to the form as used with the oath or verification as follows:

§ 4.1a *Trademark application by an individual; Principal Register.*

Mark _____
(Identify the mark)
Class No. _____
(If known)

* * * * *

The mark is used by applying it to _____ (5) and five specimens showing the mark as actually used are presented herewith.

The undersigned applicant _____ declares: That he believes himself to be the owner of the trademark sought to be registered; that to the best of his knowledge and belief no other person, firm, corporation, or association has the right to use said mark in commerce, either in the identical form or in such near resemblance thereto as may be likely, when applied to the goods of such other person, to cause confusion, or to cause mistake, or to deceive; that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or document or any registration resulting therefrom.

_____
(Signature of applicant)
Date _____

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6; P.L. 88–292, 35 U.S.C. 25, 78 Stat. 171)

EDWARD J. BRENNER,
Commissioner.

Approved: May 7, 1965.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 65–5156; Filed, May 14, 1965; 8:46 a.m.]

Published in 30 F.R. 6687–6688, May 18, 1965

Annual Index of Trademarks

The 1964 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.50.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 170,047. Davis Electronics Corporation, Austin, Tex. Filed May 31, 1963.

Foto+trol

Class 21—Electrical Apparatus, Machines, and Supplies

For Floodlighting Equipment.

Class 26—Measuring and Scientific Appliances

For Electronic Controls To Regulate the Intensity of Lighting, Light Sensing Controls To Automatically Turn On and Off Lights Upon Predetermined Conditions and Controls Using Timing Mechanisms To Activate Lighting.

First use Apr. 15, 1963.

SN 179,121. Cockle Shell, Ltd., Westhampton Beach, N.Y. Filed Oct. 16, 1963.

cockle shell

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Women's Handbags.

Class 28—Jewelry and Precious-Metal Ware

For Women's Jewelry—Namely, Earrings, Necklaces, Bracelets, and Rings Not in the Shape of a Cockle Shell.

Class 39—Clothing

For Women's Coats, Jackets, Slacks, Underwear, Gloves, Hats, and Shoes; Men's Coats, Suits, Slacks, and Jackets; Children's Coats, Suits, and Dresses.

First use Apr. 16, 6.

SN 190,649. School House Products, Inc., New York, N.Y. Filed Apr. 8, 1964.



Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Book Straps and Zipper Pockets.

Class 11—Inks and Inking Materials

For Stamp Pads.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Staples.

Class 21—Electrical Apparatus, Machines, and Supplies

For Table Lamps.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stamps, Paper Punch, Staple Removers, and Staplers.

Class 26—Measuring and Scientific Appliances

For Rulers, Slide Rules, Magnifying Glasses, Drawing Compasses, and Adding and Calculating Machines.

Class 29—Brooms, Brushes, and Dusters

For Paint Brushes.

Class 32—Furniture and Upholstery

For Book Rests.

Class 37—Paper and Stationery

For Felt Tip Markers, Coloring Sticks, Telephone Index Holders, Photo Albums, Address and Telephone Books, Loose-leaf Rings, Paper Clamps, Pencil Sharpeners, Check and Recipe Files, Erasers and Diaries.

First use Feb. 28, 1964.

SN 193,744. Fred Braun Workshops, Inc., New York, N.Y. Filed May 19, 1964.



Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Ladies' Handbags.

Class 39—Clothing

For Leather Garments—Namely, Shoes, Coats, Jackets, Skirts, Blouses, Jerkins, Slacks, and Shorts.

First use Oct. 22, 1963.

SN 193,890. Mark Morris Associates, Inc., Topeka, Kans. Filed May 20, 1964.



"Mark Morris" is the name of a living individual, whose consent is of record.

Class 12—Construction Materials

For Prefabricated Animal Houses.

Class 38—Prints and Publications

For Publications in the Form of Newsletters and Books Issued From Time-To-Time to Veterinarians.

Class 46—Foods and Ingredients of Foods

For Therapeutic Foods and Supplements for Small Animals—Namely, Dogs and Cats.

First use May 23, 1963.

SN 194,057. Matsushita Electric Industrial Co., Ltd., Kodoma-shi, Osaka, Japan. Filed May 22, 1964.



Priority claimed under Sec. 44(d) on Japanese application filed Dec. 12, 1963; Reg. No. 666,972, dated Feb. 11, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Television Sets, and Dry Cell Batteries.

Class 36—Musical Instruments and Supplies

For Magnetic Tape Recorders.

SN 204,942. U.S. Industries, Inc., New York, N.Y. Filed Oct. 28, 1964.



Owner of Reg. No. 736,713.

Class 26—Measuring and Scientific Appliances

For Visual Education Apparatus, Components Thereof and Accessories Therefor, Including Portable Electro-Mechanical Teaching Devices and Film Strips Used for Visual Education Purposes.

Class 38—Prints and Publications

For Programs for Visual Education Apparatus; Educational Texts, Pamphlets and Other Publications for Instructional Purposes; and Units Comprising All of the Above Listed Goods.

First use Mar. 31, 1960; 1954 as to the letters "USI" in a different form.

SN 206,336. Uni-Tech Chemical Manufacturing Company, Panorama City, Calif. Filed Nov. 17, 1964.

SEP-AR-AID

Class 6—Chemicals and Chemical Compositions

For Chemical Aid in the Separation of Blood.

Class 26—Measuring and Scientific Appliances

For Dispenser.

First use Sept. 25, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 190,914. The Franklin Chemical Company, Columbus, Ohio. Filed Apr. 13, 1964.

COVINAX

For Synthetic Resinous Polyvinyl Acetate Copolymer Compound Furnished as a Liquid Dispersion for General Use in the Industrial Arts.

First use Apr. 2, 1960.

SN 193,003. Eastman Kodak Company, Rochester, N.Y. Filed May 8, 1964.

EPOLENE

Owner of Reg. No. 630,676.

For Synthetic Resins and Waxes.

First use May 19, 1955.

SN 197,342. Societe Rhovyl, Paris, France. Filed July 7, 1964.

MAILLISETTE

Priority claimed under Sec. 44(d) on French Reg. No. 514,405, dated June 27, 1963 (Paris); Natl Inst. No. 208,044. (Claim based on co-pending application Ser. No. 179,954, filed in United States on Oct. 28, 1963.) Owner of U.S. Reg. Nos. 779,515 and 779,524.

For Fibers and Fibrous Materials, Used for Thermal and Sonic Insulation, Stuffing and Padding, for Mattresses, Bolsters and Pillows, Padded Jackets and Anoraks, Padded Wrappers and Bedjackets.

SN 198,016. Wood Charcoal Briquet Producers Association, Chicago, Ill. Filed July 16, 1964. COLLECTIVE MARK. Applicant hereby disclaims the words "Certified Pure Wood Charcoal Briquets" apart from the mark as shown.



For Wood Charcoal Briquets.
First use Mar. 1, 1964.

SN 201,691. International Paper Company, New York, N.Y. Filed Sept. 11, 1964.



The mark consists of a fanciful design of the letters "IP" within a circle. Owner of Reg. Nos. 744,083 and 771,492.
For Wood Pulp.
First use Dec. 1, 1962.

Class 2—Receptacles

SN 168,569. Beach Products, Inc., Kalamazoo, Mich. Filed May 10, 1963.



For Plates and Cups of Fibrous Material or Plastic-Coated Fibrous Material and Coasters of Fibrous Material or Plastic-Backed Fibrous Material for Either Hot or Cold Substances or Both.
First use Feb. 25, 1941.

SN 185,120. Flexigrip, Inc., New York, N.Y. Filed Jan. 22, 1964.



Owner of Reg. No. 756,618.
For Small Plastic Bags With Integral Reclosable Plastic Fasteners.
First use Dec. 28, 1963.

SN 187,771. The Mead Corporation, Dayton, Ohio. Filed Mar. 2, 1964.

MEAD COLOR-CORR

Owner of Reg. Nos. 443,716 and 444,538.
For Preprinted Liner Board and Corrugated Boxes Produced Therefrom.
First use about Aug. 30, 1962.

SN 190,665. United-Greenfield Corporation, Chicago, Ill. Filed Apr. 8, 1964.

VULCAN

Owner of Reg. Nos. 34,562, 42,226, and 88,987.
For Receptacles—Namely, Containers for Wrench Kits, Metal Tool Boxes, Chests and Cabinets, and Hand Oilers.
First use Mar. 30, 1962, on wrench kits.

SN 191,206. Thomas G. Peterson, Des Moines, Iowa. Filed Apr. 15, 1964.

Sling'Bin

The expression "Bin" in the trademark "Sling Bin" is disclaimed.
For Collapsible Portable Paper Shipping and Storage Containers for Bulk Materials.
First use Apr. 13, 1963.

SN 197,239. Aktiebolaget Jönköpings Vacuumindustri, Jonkoping, Sweden. Filed July 7, 1964.



For Vacuum Bottles and Insulating Bottles.
First use 1959; in commerce July 17, 1962.

SN 198,173. Conley E. House, d.b.a. House Manufacturing Company, Hasen, Ark. Filed July 20, 1964.

BATTERY-SERV

For Racks for Holding, Dispensing, and Storing Battery Acid.
First use Jan. 19, 1964.

SN 200,311. American Can Company, New York, N.Y. Filed Aug. 21, 1964.

Sheath-Pak

For Plastic Bags for Food Products.
First use July 6, 1964.

SN 200,870. Sal-Fax Corporation, Hot Springs, Ark. Filed Aug. 28, 1964.



The representation of a container is disclaimed apart from the mark as shown.
For Insulated Shipping Containers for Frozen, Iced, and All Refrigerated Food Products.
First use May 24, 1963.

SN 201,802. Borg-Warner Corporation, Chicago, Ill. Filed Sept. 14, 1964.

NORGE

Owner of Reg. Nos. 255,970, 744,567, and others.
For Garment Bags.
First use in or prior to September 1962.

SN 207,167. Trina, Inc., Fall River, Mass. Filed Nov. 30, 1964.

TRINA

Owner of Reg. No. 610,842.
For Curler Bags and Tissue Containers.
First use on or about Jan. 3, 1950.

Class 4—Abrasives and Polishing Materials

SN 181,588. J. Goddard & Sons Limited, Leicester, England. Filed Nov. 20, 1963.

GODDARD'S LONG SHINE

Priority claimed under Sec. 44(d) on British Reg. No. 851,478, dated July 11, 1963. Applicant disclaims "Long Shine" apart from the trademark as a whole. Owner of U.S. Reg. Nos. 260,103, 778,908, and others.
For Combined Silver Cleaning and Polishing Preparations.
First use Sept. 11, 1963; in commerce Sept. 11, 1963.

SN 206,543. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,603, 555,557, and others.
For Metal Polishes.
First use August 1947.

Class 5—Adhesives

SN 192,720. Tenneco Chemicals, Inc., New York, N.Y., by change of name from Heyden Newport Chemical Corporation, New York, N.Y. Filed May 5, 1964.

POLY-TAC

For Additives for Adhesives.
First use on or about Apr. 16, 1964.

SN 196,713. Shell Oil Company, New York, N.Y. Filed May 18, 1964.

KRATON

For Base Polymer for Industrial Use for Pressure Sensitive Tapes and Labels, Adhesives and Sealants.
First use Apr. 3, 1964.

SN 196,511. Canadian Technical Tape, Ltd., Montreal, Quebec, Canada. Filed June 12, 1964.



The word "Brand" is disclaimed apart from the mark as shown.
For Adhesives for Home and Industrial Use for Joining Leather, Paper, Glass, Metal, and Similar Materials to One Another.
First use February 1962; in commerce February 1962.

SN 197,635. Western Fibrous Glass Products Company, San Francisco, Calif. Filed July 10, 1964.

WESTGLAS

For Laminating Resin, Resin Adhesive, Polyurethane Adhesive, and Rubber Adhesive.
First use May 1956.

SN 203,213. Templar Oil Products Company, Inc., Brooklyn, N.Y. Filed Oct. 2, 1964.

ASBESTIK

For Flooring Adhesive for the Installation of Asbestos-Backed Floor Coverings.
First use May 21, 1964.

Class 6—Chemicals and Chemical Compositions

SN 157,985. F & M Scientific Corporation, Avondale, Pa. Filed Nov. 27, 1962.



For Chemical Compositions Adapted for Use as a Chromatographic Column Packing Material and Treated Column Support.
First use May 1950.

SN 172,313. Ilford, Limited, Ilford, Essex, England. Filed July 2, 1963.

ILFOPRINT

Owner of British Reg. No. 834,766, dated May 17, 1962; and U.S. Reg. Nos. 757,116 and 757,117.
For Chemical Preparations for Use in Photography.

SN 180,218. Lockheed Aircraft Corporation, Burbank, Calif. Filed Oct. 31, 1963.

LOCKSPRAY-GOLD

For Gold-Plating Chemicals.
First use July 24, 1963.

SN 192,886. Armour and Company, Chicago, Ill. Filed May 7, 1964.

ARQUAMEEN

For Chemicals and Chemical Compositions for Control of Organisms in Oil Wells.
First use July 12, 1963.

SN 194,056. Martin-Marietta Corporation, New York, N.Y. Filed May 22, 1964.

DYKOSOL

For Dyestuffs for Dyeing and Printing Textile Fabrics.
First use Sept. 13, 1963.

SN 194,252. Sterling Drug Inc., New York, N.Y. Filed May 25, 1964.

MARATAX

For Dyestuffs, Specifically Lakes.
First use March 1941.

SN 194,944. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed June 5, 1964.

PALIOFAST

For Dyestuffs.
First use May 4, 1964; in commerce May 4, 1964.

SN 196,663. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 29, 1964.

REVERSAN

For Tanning Auxiliary.
First use May 18, 1964.

SN 197,042. The Stamford Chemical Company, Stamford, Conn. Filed July 3, 1964.

VIVIGUARD

For Stain and Water Repellent Chemical Preparation.
First use Apr. 15, 1964.

SN 208,123. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Liquid Chemical Compound for Detecting Leaks.
First use Feb. 9, 1959.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 181,466. Falcon International, Inc., Chicago, Ill. Filed Nov. 19, 1963.

CLASSIC

For Smoking Pipes and Bowls.
First use June 11, 1963.

Class 12 — Construction Materials

SN 173,864. Conver Steel & Wire Co., Inc., Bronx, N.Y., assignee of William H. Kenney, Middletown, Ohio. Filed July 19, 1963.



Applicant disclaims the wording "Compo Forms" and the representation of the goods apart from the mark as shown.
For Prefabricated Forms for Pouring Concrete.
First use July 5, 1963.

SN 187,382. American Cyanamid Company, Wayne, N.J. Filed Feb. 25, 1964.

ACRYLITE

Owner of Reg. No. 649,582.
For Skylights.
First use Dec. 10, 1963.

SN 187,646. Charles E. Barnes, Arlington Heights, Ill. Filed Feb. 28, 1964.

DIMENSION-ALL

For Clamps for Concrete Wall Form.
First use Dec. 30, 1963.

SN 188,189. Blumcraft of Pittsburgh, Pittsburgh, Pa. Filed Mar. 9, 1964.

OVAL-LINE

For Ornamental Railings.
First use Jan. 9, 1964.

SN 188,750. Amsted Industries Incorporated, Chicago, Ill., assignee of Griffin Pipe Products Co., Wheaton, Ill. Filed Mar. 16, 1964.

POLYTITE

For Vitrified Clay Pipe With a Plastic Ring-Type Joint.
First use Oct. 5, 1963.

SN 190,119. Shakertown Corporation, Cleveland, Ohio. Filed Apr. 1, 1964.

ECONO-PLY

For Panels of Shakes or Shingles for Use in the Building or Construction Industry.
First use Feb. 27, 1964.

SN 191,519. Dowman Products, Inc., Long Beach, Calif. Filed Apr. 20, 1964.

DOWPLUG

Owner of Reg. No. 670,819.
For Masonry Cement.
First use Feb. 1, 1964.

SN 191,569. Paul R. Kubly, d.b.a. Color Putty Co., Monroe, Wis. Filed Apr. 20, 1964.



The drawing is lined for the color orange. The word "Putty" is disclaimed apart from the mark as shown.
For Hole and Crack Filling Material, Similar to Putty, but Colored to Match the Background Wherever It Is Used.
First use Feb. 15, 1962.

SN 194,083. Union Carbide Corporation, New York, N.Y. Filed May 22, 1964.

UCAR

Owner of Reg. Nos. 696,264 and 699,274.
For Glass Beads and Like Spheres for Use as Fracture Propping Filling Materials in Underground Drilling Operations.
First use on or about May 8, 1964.

SN 194,397. Luger Industries, Inc., Minneapolis, Minn. Filed May 27, 1964.

MIRA-MAR

For Synthetic Marble Sheets and Other Synthetic Marble Shapes.
First use Jan. 15, 1964.

SN 196,428. Harry T. Campbell Sons' Corporation, Towson, Md. Filed June 25, 1964.

TOP 'N BOND

For Cement Mix.
First use June 12, 1964.

SN 196,693. Herman Miller, Inc., Zeeland, Mich. Filed June 29, 1964.

ECS

Owner of Reg. No. 772,918.
For Construction Materials—Namely, Rails, Brackets, Panels, and Like Components for Modular Systems of Storage, Sleeping, and Study Units.
First use During September 1960.

SN 197,156. National Gypsum Company, Buffalo, N.Y. Filed July 29, 1964.

KAL-KORNER BEAD

Applicant disclaims the word "Bead" apart from the mark as shown. Owner of Reg. No. 749,297.
For Metal Structural Bead for Reinforcing Wall Corner Construction.
First use May 17, 1962.

SN 197,495. Johns-Manville Corporation, New York, N.Y. Filed July 9, 1964.



Owner of Reg. No. 179,902.
For Joint Sealing Compounds.
First use at least about 1935; 1923 in a different form.

SN 198,741. Johns-Manville Corporation, New York, N.Y. Filed July 29, 1964.

TEMP-TITE

Owner of Reg. No. 569,641.
For Insulated Pipe and Couplings Therefor.
First use at least on or about July 3, 1964.

SN 198,774. Reliance Universal Inc., Louisville, Ky. Filed July 29, 1964.



For Precast Concrete Bridge Elements—Namely, Seats, Deck Slabs, Channels, Beams, and the Like, and Reinforced Concrete Cribbing and Pipe.
First use Nov. 15, 1963.

SN 199,078. Laurence-David, Inc., Eugene, Oreg. Filed Aug. 3, 1964.

CELO-SET

For Wood Putty and a Putty-Like Compound for Use Particularly as a Sealer and Filler on Plywood Products for Filling Cracks and Holes in Veneer Sheets and Wooden Laminations.
First use May 9, 1961.

SN 199,531. Bestile Manufacturing Company, Ontario, Calif. Filed Aug. 10, 1964.

Theme Line

For Maintenance and Construction Materials—Namely, Wall, Ceiling and Partition Panels, Metal Molding for Supporting, Finishing and Decorating Such Panels, Cements for Fastening Such Panels, and Calking Compounds for Sealing Panel Joints.
First use July 15, 1964.

SN 199,564. Ideal Cement Company, Denver, Colo. Filed Aug. 10, 1964.

NEBRASKA CEMENT COMPANY SUPERIOR

No claim is made to the word "Superior" apart from the mark shown.
For Portland Cement.
First use June 21, 1917.

SN 199,675. International Paper Company, New York, N.Y. Filed Aug. 11, 1964.

INTERNATIONAL PAPER

The word "Paper" is hereby disclaimed apart from the mark as shown. Owner of Reg. Nos. 50,974 and 771,900.
For Wood Structural Products Including Plywood, Composition Board, Particle Board, Flakeboard, and Cabinets.
First use Jan. 31, 1898.

SN 200,652. Manhattan Terrazzo Brass Strip Co., Inc., Norwalk, Conn. Filed Aug. 26, 1964.

LIGHT-TOP

For Metal Dividing Strip for Use in Terrazzo and Other Cement or Concrete Floors and Pavements.
First use on or about June 17, 1964.

SN 200,703. The Cleveland Fabricating Company, Inc., Cleveland, Ohio. Filed Aug. 27, 1964.

CF 1250

For Building Insulation for Application to Walls, Roofs, Ducts, and Pipes.
First use Aug. 5, 1964.

SN 201,923. Certain-Teed Products Corporation, Ardmore, Pa. Filed Sept. 15, 1964.

IDEAL

Owner of Reg. Nos. 400,288, 771,706, and others.
For Ready-Cut, Machined, and Partly Assembled Materials Intended for Use in the Final Construction and Completion of Buildings, Household Fixtures, and Conveniences—Namely, Fabricated Complete Window Units, Mantels, Window Sash, Interior and Exterior Doors, French Doors, Mirror Doors, Louver Doors, Colonial Entrances, Window Screens, Screen Doors, Mouldings, Window Frames, Door Frames, Interior Trim for Windows and Doors, Base Moulding, and Decorative Blinds.
First use Oct. 1, 1920.

SN 202,089. Kolbe & Kolbe Millwork Co., Wausau, Wis. Filed Sept. 17, 1964.

K/K

For Double Hung Windows, Slide by Windows, Awning Windows, Casement Windows, Picture Windows, Window Frames, and Interior and Exterior Doors and Frames.
First use Feb. 1, 1964.

SN 202,986. Dominion Tar & Chemical Company, Limited, Montreal, Quebec, Canada. Filed Sept. 30, 1964.

GYPROC

Owner of Canadian Reg. No. 125/28,930, dated Aug. 3, 1921.
For Wallboard, Plaster Board and Other Composition Boards, Plaster, Lath, Gypsum Cement Composition Used To Fill and Finish Joints Between Sheets of Wallboard or Like Units, Tape for Use With Said Cement Composition for Reinforcing Joints Between Sheets of Wallboard or Like Units, Acoustic Tiles or the Like to a Backing or Support, Rock Wool Used for Sound and Thermal Insulating Purposes, and Sealing Compounds.
First use fall of 1921; in commerce March 1955.

SN 204,747. B.B.B. Manufacturing Company, Burbank, Calif. Filed Oct. 26, 1964.

JIGTIME
PRECISION DOOR WAYS

Applicant disclaims the words "Precision Door Ways."
For Prefit Precision Door Frames.
First use June 24, 1959.

SN 205,873. Triodetic Structures Limited, Ottawa, Ontario, Canada. Filed Nov. 9, 1964.

TRI-O-DOCK

For Demountable Boat Docks and Parts Thereof.
First use Mar. 31, 1958; in commerce July 7, 1961.

SN 207,799. Doughboy Industries, Inc., New Richmond, Wis. Filed Dec. 9, 1964.

Silverline

For Swimming Pools.
First use June 15, 1956.

SN 207,873. The Duraflex Co., Miami, Fla. Filed Dec. 10, 1964.

TRI-SEAL

For Weatherstripping for Doors, Windows or Like Closures.
First use June 15, 1964.

SN 207,890. Johns-Manville Corporation, New York, N.Y. Filed Dec. 10, 1964.

MITER-SEAL

For Metal Bands for Use as Fittings or Closures for Joints Between Adjacent Ends of Lengths of Pipe Insulation.
First use Oct. 27, 1960.

SN 208,124. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Caulking Compounds.
First use Apr. 27, 1964.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 171,116. Fisher Governor Company, Marshalltown, Iowa. Filed June 17, 1963.

VEE-BALL

For Industrial Valves for Throttling Service on Fluids Containing Suspended Solids or Fibrous Materials.
First use October 1962.

SN 176,194. Illinois Tool Works Inc., Chicago, Ill. Filed Sept. 3, 1963.

"REMEMBER, YOU'RE NEVER MORE THAN A FEW FEET AWAY FROM A PRODUCT OF ITW"

Owner of Reg. No. 730,653.
For Lockwashers, Preassembled Screws and Washers, Preassembled Nuts and Washers; Thread Cutting and Drilling Screws, Terminals, Locknuts, Metal and Plastic Fastening Components.
First use Apr. 26, 1963.

SN 189,454. Enterprise Wire Co., Blue Island, Ill. Filed Mar. 24, 1964.



For Wire Products—Namely, Stranded High Carbon Wire, Cold Heating Wire, Stitching Wire, Tying Wire, Stapling Wire, and Spiral Binding Wire.
First use Mar. 1, 1960.

SN 199,936. The West Bend Company, West Bend, Wis. Filed Aug. 14, 1964.

ROYAL QUEEN

Owner of Reg. No. 780,126.
For Stainless Steel Kitchen and Cooking Hollow Ware.
First use July 30, 1963.

SN 200,305. Vitreous Steel Products Company, Cleveland, Ohio. Filed Aug. 20, 1964.

VITREO

Owner of Reg. Nos. 190,584 and 555,006.
For Baked Enamel and Porcelain Enameled Metal Products, Particularly, Shower Cabinets, Bathtubs, Lavatories, Shower Receptors, Table Tops, Signs, Chemical Pans (for Evaporating, Drying, etc.), Washtub Covers, Serving Trays, and Combination Top and Back Splashers for Covering Kitchen Equipment and Providing a Working Surface.
First use Feb. 15, 1923.

SN 203,304. The Lamson & Sessions Co., Cleveland, Ohio. Filed Oct. 5, 1964.

SILVERLINE

For Rope Clamps, Bolts, Screws, Nuts, and Washers.
First use February 1959.

SN 203,305. The Lamson & Sessions Co., Cleveland, Ohio. Filed Oct. 5, 1964.

SAFE-LINE

For Threaded Fasteners—Namely, Rope Clamps.
First use 1940.

SN 208,307. The Lamson & Sessions Co., Cleveland, Ohio. Filed Oct. 5, 1964.

STOVER

For Threaded Fasteners—Namely, Lock Nuts.
First use 1941.

SN 206,008. Dieter Haubold, d.b.a. Dieter Haubold Industrielle Nagelgerate, Hannover, Germany. Filed Nov. 12, 1964.

QUADRATED

Owner of German Reg. No. 723,545, dated Mar. 31, 1959.
For Staples, Nails, and Pins for Use With Nailing and Stapling Machines.

SN 206,367. Ajax Hardware Corporation, City of Industry, Calif. Filed Nov. 17, 1964.

VARIATION

For Cabinet and Drawer Knobs and Pulls.
First use Oct. 21, 1964.

SN 206,713. General Valve Company, Inc., Long Beach, Calif. Filed Nov. 23, 1964.

GV

The mark consists of the letters "GV."
For Rotary Plug Valves and Rotary Gate Valves.
First use Oct. 28, 1964.

SN 206,540. Calumet & Hecla, Inc., Allen Park, Mich. Filed Dec. 21, 1964.

UTILICOIL

For Long Length Level-Wound Coils of Copper Tubing.
First use Oct. 19, 1964.

SN 206,567. Graber Manufacturing Company, Inc., Middleton, Wis. Filed Dec. 21, 1964.

CONTRACK

For Drapery Hardware Including Drapery Rods, Poles, Tubing and Track, Ornamental Ends, Brackets, Supports, Pole Rings, Slides, and Cord Pulleys.
First use on or about Sept. 26, 1964.

SN 209,015. Kinkead Industries, Incorporated, Chicago, Ill. Filed Dec. 29, 1964.

DeVILLE

For Bathroom Fittings—Namely, Shower Floors and Receptors.
First use Oct. 23, 1964.

SN 209,126. Waldes Kohinoor, Inc., Long Island City, N.Y. Filed Dec. 30, 1964.

DUO-ZIP

For Slide Fasteners.
First use Dec. 21, 1964.

SN 210,352. The Powers Regulator Company, Skokie, Ill. Filed Jan. 21, 1965.

HYDROPANEL

For Shower Controls, Mixers, Fittings, and Valves.
First use Dec. 8, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 199,162. Alabama Metallurgical Corporation, Selma, Ala. Filed Aug. 4, 1964.

PRIMAG

For Magnesium Ingots.
First use July 16, 1964.

SN 203,584. The Eastern Company, Portland, Maine. Filed Oct. 8, 1964.

SURE-RING

For Quick-Release Marine Anchors.
First use Jan. 3, 1964.

SN 211,333. American Brake Shoe Company, New York, N.Y. Filed Feb. 4, 1965.

ABEX

Owner of Reg. No. 384,700.
For Metal Castings, Both Ferrous and Non-Ferrous.
First use Dec. 8, 1964.

SN 212,976. The Colorado Fuel and Iron Corporation, Denver, Colo. Filed Mar. 1, 1965.

BLACK SATIN

For Wire.
First use 1958.

SN 213,041. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 1, 1965.

STAY/PREME

For Stainless Steel Powder.
First use Feb. 4, 1965.

Class 15—Oils and Greases

SN 183,106. The Preservation Society of Newport County, Newport, R.I. Filed Dec. 16, 1963.



For Candles.
First use at least as early as Nov. 3, 1961.

SN 200,550. Curt's Oil Co., Inc., Lawton, Okla. Filed Aug. 25, 1964.



For Motor Oil.
First use on or about Jan. 1, 1963.

SN 204,092. Quaker State Oil Refining Corporation, Oil City, Pa. Filed Oct. 15, 1964.

QUAKER STATE
De Luxe

Applicant disclaims any rights in the word "De Luxe" apart from the mark as shown. Owner of Reg. Nos. 145,778, 750,389, and others.
For Motor Oil.
First use February 1962.

Class 16—Protective and Decorative Coatings

SN 158,657. Seaboard Plywood and Lumber Corporation, Watertown, Mass., by merger, change of name, and assignment from Scott's Wholesale Company, Baltimore, Md. Filed Dec. 4, 1962.

SCOTT'S
SCOTTIE

For Exterior and Vinyl Latex Interior Paints.
First use Nov. 1, 1962.

SN 187,629. Thompson and Company, Oakmont, Pa. Filed Feb. 27, 1964.



For Industrial Coatings—Namely, Vinyl Finishes for Use on Protected Metal Sheets, Fluorescent Light Fixtures, Air Conditioning Cooling Towers, and Other Metal Surfaces, Both Interior and Exterior; Pattern Lacquers To Be Sprayed on Wooden Pattern Forms Used in Making Castings and Molds in the Steel Industry; Lacquers for Metal and Wood, Especially for Use on Caskets; Street Traffic Paints; Rubber Base Enamels for Use on Machinery Exposed to Strong Acid or Alkali Substances; Both Air Dry and Baking Enamels for Use on Power and Distribution Transformers; Production Primers Used in the Production of Metal Products; Baking Enamels for Use on Metal Doors, Space Heaters, and Other Metal Objects; Resinous Powder Coatings for Application to Metal Objects Such as Television Condensers, Conduit Tubing, Pipe and Distribution Type Transformer Covers; and Conduction Coatings for Use on Electronic Parts, Such as Exterior of TV Tubes, so as to Conduct an Electric Charge.
First use on or about Dec. 18, 1963.

SN 190,380. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Apr. 6, 1964.

PARKERIZING

Owner of Reg. No. 766,570.
For Corrosion Resistant Coatings for Industrial Application to Iron and Steel Products, for Example, Braces, Frames, Plates, and Rods.
First use Apr. 19, 1962.

SN 196,208. The S. Obermayer Company, Chicago, Ill. Filed May 11, 1964.

QUIC-SEAL

For Protective Coating for the Core and Mold Used in Foundry Operation and Refractory Coating for Foundries and Steel Mills.
First use Feb. 28, 1964.

SN 196,771. Essex Chair Company, Union, N.J. Filed May 19, 1964.

MICA-WOOD

For Transparent Plastic Protective Coating Which Produces a Hard Durable Scratch Resistant Finish Only as a Component Part of Home Furniture.
First use Feb. 11, 1964.

SN 194,810. Kristal Kraft, Inc., Palmetto, Fla. Filed June 3, 1964.

MIRA-DIP

For High Gloss, Clear Protective Coating Which Produces a Durable Finish for Wood Golf Club Heads.
First use Nov. 2, 1963.

SN 197,667. Western Fibrous Glass Products Company, San Francisco, Calif. Filed July 10, 1964.

WESTGLAS

For Epoxy Paint and Synthetic Resinous Paint.
First use May 1956.

Class 17—Tobacco Products

SN 199,592. Moss & Lowenhaupt Cigar Company, St. Louis, Mo. Filed Aug. 10, 1964.

DELHI

Owner of Reg. No. 166,755.
For Cigars.
First use January 1905.

SN 203,961. Camacho Cigars, Inc., Miami, Fla. Filed Oct. 13, 1964.

KALAVA

For Cigars.
First use Nov. 21, 1960.

SN 204,130. Casa Blanca Cigar Company, Inc., York, Pa. Filed Oct. 16, 1964.

WM. ALLEN

The name "Wm. Allen" is fanciful.
For Cigars.
First use May 1965.

Class 19—Vehicles

SN 177,945. Anchor Industries, Inc., Cleveland, Ohio. Filed Sept. 30, 1963.

RIVIERA

For Flexible Protective Floor Mats for Automobiles.
First use July 24, 1963.

SN 190,659. Star Tank and Boat Co., Inc., Goshen, Ind. Filed Apr. 8, 1964.

STARCRAFT

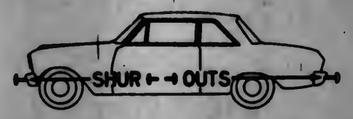
Owner of Reg. No. 761,578.
For Boats.
First use during 1952.

SN 194,982. Irving Air Chute Company, Inc., Lexington, Ky. Filed June 5, 1964.

IRVIN Para Space Center
IRVING AIR CHUTE COMPANY, INC.

The words "Irving Air Chute Company, Inc.," and the representation of a parachute as applied to parachute goods, are disclaimed apart from the mark as shown, without waiver of common law rights. Owner of Reg. Nos. 223,084, 755,863, and others.
For Parachutes, Parachute Canopy Containers, Parachute Harnesses and Parts Thereof.
First use March 1964; March 1926 as to the mark "Irvin" and an opened parachute canopy.

SN 196,960. Le Vert Harrison, Jr., d.b.a. Harrison, Los Angeles, Calif. Filed July 2, 1964.



The representation of the automobile and representation of the goods are disclaimed apart from the mark as shown.
For Motor Vehicle Parking Space Protectors, Which Are Adapted To Be Attached to Corresponding Motor Vehicles.
First use June 10, 1964.

SN 197,489. Haabe Mfg. Co., De Soto, Mo. Filed July 9, 1964.

THE CONTENTED CAMPER

Without prejudice to common law rights applicant disclaims the term "Camper."
For Camping Trailer Units.
First use Apr. 9, 1964.

SN 199,964. Vista Liner Coach & Trailer, Inc., Tooele, Utah. Filed Aug. 14, 1964.

VistaCraft

For Wheel Trailers—Namely, Travel Trailers and Mobile Homes.
First use Sept. 1, 1963.

SN 200,360. Les Industries Bouchard Inc., La Pocatiere, Quebec, Canada. Filed Aug. 21, 1964.

MOTO-SKI

For Snow Going Motor-Driven Vehicles.
First use Oct. 28, 1963; in commerce November 1963.

SN 200,678. Tomahawk Boat Manufacturing Corporation, Tomahawk, Wis. Filed Aug. 26, 1964.

TOMAHAWK

The drawing is lined for the color red. Owner of Reg. Nos. 715,344 and 757,640.
For Wooden, Metal, and Fiberglass Boats.
First use Aug. 18, 1964.

SN 203,550. Ward Body Works, Inc., Conway, Ark. Filed Oct. 7, 1964.

SUNELITE

For Plate and Sheet Glass for Use on Buses and Other Vehicles.
First use Aug. 15, 1964.

SN 204,296. Sailmasters, Inc., Shelter Island, N.Y. Filed Oct. 19, 1964.

Sailmaster

For Sailboats.
First use February 1963.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 180,401. Italcrem, S.A., Barcelona, Spain. Filed Nov. 4, 1963.

ITALCREM

Owner of Spanish Reg. No. 319,785, dated Aug. 28, 1957.
For Electric Coffee Grinding Machines, Manually Operated Coffee Grinding Machines, and Electric Mixers and Beaters.

SN 182,014. Varo, Inc., Garland, Tex. Filed Nov. 27, 1963.

THE CIRCUITS

Applicant disclaims any rights to the word "Circuits" per se.
For Various Thin Film Microcircuits.
First use on or about Nov. 20, 1963.

SN 191,454. Sun Chemical Corporation, New York, N.Y. Filed Apr. 17, 1964.

ELECTRO TECHNICAL

Owner of Reg. No. 421,285.
For Fabrics Coated With Varnishes and Similar Resinous Products, Sold in Rolls and Packages and Used for Electrically Insulating Motors, Transformers, Cables, and the Like.
First use Aug. 24, 1925.

SN 193,751. Clark Metal Products, Inc., Fairfield, Conn. Filed May 19, 1964.

TRANSFERMATIC

For Workpiece-Actuated Control Devices.
First use Apr. 17, 1964.

SN 194,280. FMC Corporation, San Jose, Calif. Filed May 27, 1964.

AVR

For Audio Visual Response Teaching Machines Utilizing Audio Visual Tape Recordings.
First use Mar. 16, 1964.

SN 194,846. Weston Instruments, Inc., Newark, N.J. Filed June 3, 1964.

WESTON

Owner of Reg. No. 708,926 and others.
For Electrical Relays, Meter Relays, Electrical Switch Equipment Controlled by Relays, Light Sensitive Cells, Transformers; Electronic Amplifiers and Controllers; and Electrolysis Instruments.
First use 1920.

SN 195,387. Federal Sign and Signal Corporation, Blue Island, Ill. Filed June 11, 1964.

VIBRATONE

For Electrically Operated Audible Signal and Alarm Devices—Namely, Horns.
First use at least as early as July 1958.

SN 196,078. The Teleminder Co., Philadelphia, Pa. Filed June 19, 1964.

ROBOTGUARD

For Electrical Systems Protection Devices for Protecting Against Burglaries, Fires and General Systems Failures.
First use June 11, 1964.

SN 198,705. E. W. Bliss Company, Newton Upper Falls, Mass. Filed July 29, 1964.

GAMEWELL

For Electrically Actuated Municipal Fire Alarm Systems; Police Signal Systems; Industrial Fire Alarm Systems; Supervisory Systems; Central Office Fire Alarm Control Switchboards; Fire Alarm Master Box Trip Cabinets; Smoke Detector Alarm Systems and Miscellaneous Ancillary Equipment Associated With and in Support of Said Fire and Smoke Alarm Systems.
First use in or about August 1954.

SN 198,706. E. W. Bliss Company, Newtown Upper Falls, Mass. Filed July 29, 1964.

GAMEWELL ALARM SYSTEM TRANSISTORIZED

The words "Alarm Systems" and "Transistorized" are disclaimed apart from the mark as a whole.
For Electrically Actuated Municipal Fire Alarm Systems; Police Signal Systems; Industrial Fire Alarm Systems; Supervisory Systems; Central Office Fire Alarm Control Switchboards; Fire Alarm Master Box Trip Cabinets; Smoke Detector Alarm Systems and Miscellaneous Ancillary Equipment Associated With and in Support of Said Fire and Smoke Alarm Systems.
First use on or about Dec. 4, 1963.

SN 202,841. Perrott Engineering Labs., Inc., Arlington, Va. Filed Sept. 28, 1964.

MINICHARGER

For Battery Chargers.
First use on or about Nov. 1, 1958.

SN 202,844. Polytronics Laboratories, Inc., West Caldwell, N.J. Filed Sept. 28, 1964.

POLY-COMPACT

For Radio Transceivers.
First use May 16, 1963.

SN 202,965. The Standard Transformer Company, Warren, Ohio. Filed Sept. 29, 1964.

Standard

Owner of Reg. No. 433,140.
For Electrical Transformers.
First use on or about Jan. 1, 1920.

SN 203,107. McGraw-Edison Company, Elgin, Ill. Filed Oct. 1, 1964.

VBC

For Electrical Apparatus and Equipment—Namely, Transformers; Fuse Cutouts; Fuse Links; Lightning Arresters; Conduit; Capacitors; Voltage Regulators; Insulators; Switchgear; Reclosers; and Lighting Equipment.
First use May 6, 1964.

SN 203,336. Ritchie Manufacturing Company, Conrad, Iowa. Filed Oct. 5, 1964.

HOT-SCOT

For Electrical Space and Contact Heaters.
First use Sept. 24, 1964.

SN 203,473. Channel Master Corporation, Ellenville, N.Y. Filed Oct. 7, 1964.

TWINSTAR

For Antenna Signal Amplifier.
First use Aug. 31, 1964.

SN 203,668. Magic Hostess Corporation, Kansas City, Mo. Filed Oct. 9, 1964.

MAGIC HOSTESS

Owner of Reg. Nos. 587,315 and 624,084.
For Electrical Appliances—Namely, Heaters for Igniting Solid Fuel, Food Slicers, Can Openers, Combined Can Openers and Knife Sharpeners, Combined Can Openers and Timers, Ice Crushers, Food Grinders and Choppers, Juice Extractors, Food Blenders, and Electrically Operated Carving Knives.
First use April 1956 on heaters for igniting solid fuel.

SN 203,668. Rival Manufacturing Company, Kansas City, Mo. Filed Oct. 9, 1964.

Rival

Owner of Reg. Nos. 326,973 and 656,045.
For Electrical Appliances—Namely, Can Openers, Combined Can Openers and Knife Sharpeners, Combined Can Openers and Timers, Food Grinders and Choppers, Food Blenders, Juice Extractors, and Carving Knives.
First use October 1957 on electrically operated can openers.

SN 205,739. Matthew J. Thomas, Los Angeles, Calif. Filed Nov. 6, 1964.

GODDESS OF HEALTH MODERN

For Electric Food Blenders for Domestic Use.
First use Oct. 19, 1964.

SN 206,131. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Nov. 13, 1964.
Owner of Reg. Nos. 286,109 and 612,180.

CINCINNATI

For Induction Heating Machine for the Heat-Treating of Metal Parts.
First use July 9, 1957.

SN 208,125. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Portable Electric Machines for Mixing Compounds.
First use December 1959.

SN 208,129. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Portable Electric Machines for Mixing Chemical Compounds.
First use January 1960.

Class 22—Games, Toys, and Sporting Goods

SN 178,912. Globe-Union Inc., Menomonee Falls, Wis. Filed Oct. 14, 1963.

SCOOT-KIT

For Equipment Sold in Kit Form for Making a Skate-Scooter, Board, Cart, or Similar Type Toy.
First use on or about Apr. 9, 1963.

SN 181,318. Carl Buddig & Co., Chicago, Ill. Filed Nov. 18, 1963.

Buddi Bull

Applicant disclaims the term "Bull" apart from the mark as shown.
For Inflatable Toy Formed of Plastic Material and in the Representation of a Bull.
First use Sept. 10, 1963.

SN 196,665. The Hettrick Manufacturing Company, Statesville, N.C. Filed June 29, 1964.

LITTLE CHIEF

For Children's Play Tents.
First use during 1958.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 160,568. Sweetheart Paper Products Company Inc., Chelsea, Mass., assignee of Sweetheart Plastics, Inc., Wilmington, Mass. Filed Jan. 11, 1963.

SWEETHEART

Owner of Reg. No. 652,696.
For Plastic Spoons, Knives, and Forks.
First use July 16, 1962.

SN 175,236. American Machine & Foundry Company, New York, N.Y. Filed Aug. 19, 1963.

FLEXIMAN

For Electronically Controlled Automatic Manipulators and Transfer Devices Including Parts and Components Therefor as Embodied in a Programmed "Hand" Designed To Perform Repetitive Work Operations Such as the Pick-Up, Transfer, Orientation, Positioning and Placement of Objects of Any Description.
First use as early as October 1961.

SN 186,753. Owatonna Tool Company, Owatonna, Minn. Filed Feb. 14, 1964.

POWER-TWIN

For Twin-Cylinder Hydraulic Rams.
First use February 1951.

SN 190,667. United-Greenfield Corporation, Chicago, Ill. Filed Apr. 8, 1964.

VULCAN

Owner of Reg. Nos. 84,562, 42,226, and 88,967.
For Tools and Parts Thereof—Namely, Detachable Sockets and Drivers, Wrenches, Power Driven Sockets, Screw Drivers, Ring Compressors, Valve Lifters, Brake Service and Adjusting Tools, Wheel Pullers, Bench Vises, Hammers, Spoons, Dolly Blocks, Bench Grinders, Bushing Drivers, Hand and Power Driven Cutting Tools Consisting of Pliers, Snips, Chisels, Punches, Twist Drills, Carbide Masonry Drills, Reamers, Taps, Dies, Rethreaders, Glass Breakers, Ring Groove Cleaners, Ridge Reamers, Gasket Punches, Carbon Scrapers, Brake Cylinder Hones, Hole Saws, Hack Saw Blades and Holders, Putty Knives, Files, Tail Pipe and Muffler Cutters, and Tubing Tools.
First use Jan. 24, 1962, on bushing drivers.

SN 191,364. The Cleveland Vibrator Company, Cleveland, Ohio. Filed Apr. 17, 1964.

VIBRA-MIGHT

For Vibrators.
First use November 1963.

SN 191,764. Geon International Corporation, Great Neck, N.Y. Filed Apr. 22, 1964.

ULTRA

For Automobile Parts—Namely, Pistons and Pins, Valves, Water Pumps, Oil Pumps, Universal Joints, Timing Gears, Differential and Transmission Gears, Axle Shafts, Hydraulic Brake Parts, Automatic Transmission Repair Kits and Parts, Engine Bearings, and Mechanical and Hydraulic Jacks.
First use Mar. 31, 1964.

SN 193,464. The Grav-I-Flo Corporation, Sturgis, Mich. Filed May 14, 1964.

SPIN-FINISH

For Machine for Mechanically Finishing Work Pieces as by Buffing and Polishing.
First use on or about May 1, 1960.

SN 194,119. B & J Manufacturing Company, Glenwood, Ill. Filed May 25, 1964.

ROCKET JET

For Tire Rasp Blades.
First use June 25, 1959.

SN 194,739. The Ohio Brass Company, Mansfield, Ohio. Filed June 2, 1964.

BRONCO

For Aerial Towers.
First use Mar. 16, 1964.

SN 194,740. The Ohio Brass Company, Mansfield, Ohio. Filed June 2, 1964.

CHARGER

For Aerial Towers.
First use Apr. 28, 1964.

SN 194,741. The Ohio Brass Company, Mansfield, Ohio. Filed June 2, 1964.

MUSTANG

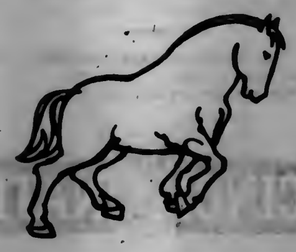
For Derricks.
First use Mar. 31, 1964.

SN 194,742. The Ohio Brass Company, Mansfield, Ohio. Filed June 2, 1964.

PACK HORSE

For Truck Bodies.
First use Apr. 7, 1964.

SN 194,743. The Ohio Brass Company, Mansfield, Ohio, Filed June 2, 1964.



For Truck Bodies, Aerial Towers, and Derricks.
First use Mar. 16, 1964.

SN 194,744. The Ohio Brass Company, Mansfield Ohio. Filed June 2, 1964.



For Truck Bodies, Aerial Towers, and Derricks.
First use Mar. 16, 1964.

SN 196,287. The Diversey Corporation, Chicago, Ill. Filed June 10, 1964.

HYDRO-THRUST

For Pressure Spray Cleaning Unit.
First use May 22, 1964.

SN 195,562. Atlas Lift Truck Rentals & Sales, Inc., d.b.a. Atlas Material Handling Equipment Center, Schiller Park, Ill. Filed June 15, 1964.



Owner of Reg. Nos. 753,867 and 777,995.
For Rebuilt Material Handling Equipment.
First use Feb. 7, 1963; prior to 1953 as to the mark "Atlas."

SN 195,805. Portable Electric Tools, Inc., Geneva, Ill. Filed June 15, 1964.

E-Z LOK

For Tool Combination Composed of an Electrical Power Unit and at Least One of the Following Attachments: Drill, Rotary, Jig or Saber Saw, Sander, Hedge Trimmer, Horizontal Drill Stand or Vertical Drill Stand.
First use Dec. 31, 1963.

SN 195,806. Portable Electric Tools, Inc., Geneva, Ill. Filed June 16, 1964.

WORKHORSE

For Electrically Powered Drills, Sanders, Circular, Sabre, Jig, and Reciprocating Saws, Grinders, Belt Sanders, Sprayers, and Screwdrivers.
First use June 26, 1963.

SN 196,191. Pivot Punch Corporation, North Tonawanda, N.Y. Filed June 22, 1964.

PPC

For Punches.
First use on or about Jan. 15, 1961.

SN 196,414. American Brake Shoe Company, New York, N.Y. Filed June 25, 1964.

DENISON

Owner of Reg. Nos. 569,488, 729,372, and others.
For Constant Displacement Hydraulic Pumps; Hydraulic Motors; Hydraulic Transmissions; Custom Built Hydraulic Machinery for Specialized Industrial Purposes; Hydraulic Presses, Attachments and Accessories Therefor, Such as Cabinets Used in Conjunction Therewith, Work Feeding Attachments and Accessories Used Therewith, Indexing Attachments, Bolsters, Foil Feeding and Marking Attachments, Straightening Attachments, Electric Time Delay Control Attachments, Dial Feed Attachments, and Lever and Switch Operating Control Attachments; and Parts Therefor.
First use December 1940.

SN 196,701. Nebraska Engineering Co., Omaha, Nebr. Filed June 29, 1964.

NECO

For Farm Machinery—Namely, Grain Bin Unloaders, Grain Levelers, Grain Augers, Dump Feeders, Bunk Feeders, Tube Feeders, and Grain Roller Mills.
First use Jan. 31, 1959.

SN 196,763. Cindaco, Inc., Dayton, Ohio. Filed June 30, 1964.

SC

For Machinery for Processing Aggregates, Concrete, and Asphalt, Including Belt Conveyors, Vertical Bucket Elevators, Storage Bins, Feeders, Control Units, Hydrodynamic Classifiers, Crushers, Dehydrators, Washing Screens, Finishing Screens, Towers, and Parts Therefor.
First use Mar. 3, 1959.

SN 196,872. Lord, Clark and Co., Inc., Boston, Mass. Filed July 1, 1964.

AIR-AID

For Systems and Apparatus for Storing, Distributing and Dispensing Chemicals for Clearing Air of Odors and Smoke.
First use prior to 1952.

SN 197,182. Seiki Kogyosho Company Limited, Amagasaki-shi, Hyogo-ken, Japan. Filed July 6, 1964.

SKK

Owner of Japanese Reg. No. 462,057, dated Mar. 10, 1955.
For Reduction Gear, Speed Reduction Apparatus and Parts Thereof.

SN 197,265. The Cleveland Vibrator Company, Cleveland, Ohio. Filed July 7, 1964.

VIBRA-BALL

For Vibrators.
First use June 1964.

SN 199,348. Bell Eastern Corporation, Yonkers, N.Y. Filed Aug. 6, 1964.

BELL EASTERN CORPORATION

For Cranes as Well as for Other Construction and Materials Handling Equipment.
First use Aug. 17, 1961.

SN 201,146. Reed Electromech Corp., Rockford, Ill. Filed Sept. 2, 1964.



For Coin and Currency Controlled Merchandising and Dispensing Machines; Cup Rings; Cup Dispensers; Coin and Currency Handling Devices, Including Rejectors, Coin Chutes, and Accumulators.
First use Sept. 25, 1963, on rejectors.

SN 203,905. Washington Forge, Incorporated, Englishtown, N.J. Filed Oct. 13, 1964.

PROVINCIAL WHEAT

For Kitchen Tools—Namely, Ladles, Mashers, Turners, Spatulas, and Basting Spoons; Kitchen Knives; Steak Knives; Table Knives, Forks, and Spoons.
First use on or about Feb. 1, 1964.

SN 204,067. AAA Industrial Corporation, Cleveland, Ohio. Filed Oct. 15, 1964.

Owner of Reg. No. 671,496.
For Foundry Machinery, Foundry Tools, and Parts Thereof.
First use Apr. 12, 1957.

SN 206,504. Huyck Corporation, Rensselaer, N.Y. Filed Nov. 4, 1964.



For Machinery for Use in Papermaking.
First use May 1962.

SN 205,572. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Nov. 5, 1964.



Owner of Reg. Nos. 266,109 and 612,130.
For Machine for Forming Metal by Application of Fluid Pressure to the Workpiece Blank Through a Flexible Diaphragm, the Source of the Fluid Pressure Being a Hydraulic Piston Motor or a Hydraulic Pump.
First use during 1950.

SN 206,134. Continental Products Corporation, Milwaukee, Wis. Filed Nov. 13, 1964.

ROLLO-MIXER

For Machines Incorporating a Rotating Drum for Mixing or Blending Particulate Materials.
First use May 3, 1963.

SN 206,135. Continental Products Corporation, Milwaukee, Wis. Filed Nov. 13, 1964.



The mark consists of a stylised "C."
For Machines Incorporating a Rotating Drum for Mixing or Blending Particulate Materials.
First use May 3, 1963.

SN 206,328. The Jos. M. Zamoiski Co., Baltimore, Md. Filed Nov. 16, 1964.

DESOTO

Owner of Reg. No. 769,448.
For Power Lawn Mowers.
First use Oct. 14, 1964.

SN 206,686. Bekum Berliner Kunststoff Verarbeitung GmbH, Berlin, Germany. Filed Nov. 23, 1964.

BEKUM

For Plastic Processing Machines—Namely, Extruding Machines and Plastic Blowing Machines, and Parts Thereof.
First use 1958; in commerce Oct. 28, 1959.

SN 206,817. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Nov. 24, 1964.



Owner of Reg. Nos. 266,109 and 612,130.
For High Speed Revolving Die Swaging Machine.
First use June 13, 1950.

SN 207,225. Pacific Pumpers, Inc., Seattle, Wash. Filed Dec. 1, 1964.

PACIFIC PUMPER

For Portable Pump, Fixed Pump, Accessories for the Pump, and Carrying Equipment for the Portable Pump and Accessories.
First use on or about Feb. 6, 1924.

SN 207,248. United States Plywood Corporation, New York, N.Y. Filed Dec. 1, 1964.

CONVOY

For Machines for Treating, Coating, or Impregnating Wood, Lumber, Metal, Fabric, or Other Types of Materials.
First use June 28, 1963.

SN 207,295. Hughes Corporation, Minneapolis, Minn. Filed Dec. 2, 1964.

STAMP SENTRY

For Apparatus for Dispensing Predetermined Quantities of Stamps From Rotary Coils of Stamps.
First use Nov. 24, 1964.

SN 207,319. The National Acme Company, Cleveland, Ohio. Filed Dec. 2, 1964.

SHALCO-HUTCHINSON

Owner of Reg. Nos. 607,906 and 733,734.
For Shell Molding Apparatus, Fonndry Molding Machines and Parts Thereof.
First use on or about Oct. 29, 1964.

SN 207,683. Weber Marking Systems, Inc., Mount Prospect, Ill. Filed Dec. 7, 1964.

STENMARK

Owner of Reg. No. 786,824.
For Stencil Cutting Machines.
First use on or about Oct. 6, 1964.

SN 207,790. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Dec. 9, 1964.



Owner of Reg. Nos. 266,109 and 612,130.
For Metal Spinning Machine.
First use December 1954.

SN 207,949. Dafin Corporation, Hopkins, Minn. Filed Dec. 11, 1964.

RANCH-HAND

Owner of Reg. No. 673,825.
For Mobile Power Sprayer Equipment, Hay Handling Equipment (Loose and Baled), Tractor-Mounted Hydraulic Loaders, and Mobile Irrigation Dams.
First use Apr. 15, 1957, on mobile power sprayer equipment.

SN 208,503. The Torrington Company, Torrington, Conn. Filed Dec. 18, 1964.

ROTOFORMER

For Metal Swaging Machines.
First use Oct. 9, 1964.

SN 208,590. Lear Siegler, Inc., Cleveland, Ohio. Filed Dec. 21, 1964.



For Hydraulic Couplings, Motor, and Pumps.
First use Nov. 24, 1964.

SN 208,814. Clarek Industries, Inc., Cincinnati, Ohio. Filed Dec. 24, 1964.

HYDRO BLITZ

For High Pressure Fluid Cleaning Equipment.
First use Dec. 11, 1964.

SN 209,101. Lee Wilson Engineering Company, Inc., Cleveland, Ohio. Filed Dec. 30, 1964.

VERTOHORT

For Strip Handling Apparatus for Feeding Metal Strip for Coiling or Other Processing.
First use about May 12, 1964.

SN 209,193. Jack L. Quinn, d.b.a. Jack's Sheet Metal Products, Lamar, Colo. Filed Dec. 31, 1964.

AIR-REEL

For Blower Attachment for Combines, Haying Machines, and Grain Harvesting Machines, and Component Parts for Said Attachment.
First use on or about Dec. 1, 1964.

SN 210,283. Draper Corporation, Hopedale, Mass. Filed Jan. 21, 1965.

K-A

For Stop Motions for Looms and Warping Machines, Drop Wires, and Other Parts Thereof.
First use Mar. 19, 1915.

SN 210,293. GK Industries, Inc., Atlanta, Ga. Filed Jan. 21, 1965.

GK

For Machinery for Packaging and for Transferring Liquids and Vapors and Especially for Machinery for Filling Pressurized Containers of the Type Generally Referred to as Aerosol.
First use Mar. 8, 1963.

SN 210,311. International Harvester Company, Chicago, Ill. Filed Jan. 21, 1965.

VIBRA SHANK

For Cultivators.
First use Dec. 16, 1964.

SN 210,510. American Brakeshoe Company, New York, N.Y. Filed Jan. 26, 1965.

ABEX

Owner of Reg. No. 384,700.
For Machinery—Namely, Pumps and Parts Thereof, Powered Hydraulically.
First use Dec. 15, 1964.

SN 210,745. Conforming Matrix Corporation, Toledo, Ohio. Filed Jan. 27, 1965.



For Spray Painting Machines; Masks and Stencils for Spray Painting.
First use April 1964.

SN 211,208. Swingline Inc., Long Island City, N.Y. Filed Feb. 2, 1965.

PICK

For Staple Removers.
First use Sept. 1, 1964.

Class 24—Laundry Appliances and Machines

SN 210,994. John B. Simrell, d.b.a. Jiffy Steamer Co., Fulton, Ky. Filed Jan. 29, 1965.

JIFFY

For Portable Steam Generators for Use in Pressing Garments, Blocking Hats, etc.
First use on or about Jan. 9, 1941.

SN 212,974. Colmac Industries, Inc., Colville, Wash. Filed Mar. 1, 1965.

COLMAC

For Commercial Laundry Machines, Garment and Fabric Waterproofing and Sizing Machines, Coverall Finishing Machines, Trouser Finishing Machines, Garment Drying Machines and Combination Wash and Finish Machines for Wash and Wear Garments.
First use Jan. 10, 1950.

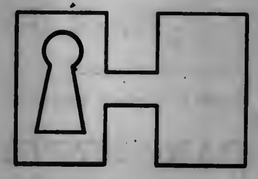
SN 212,975. Colmac Industries, Inc., Colville, Wash. Filed Mar. 1, 1965.

PANT-A-MATIC

For Trouser Finishing Machines.
First use July 15, 1960.

Class 25—Locks and Safes

SN 212,728. Avis Industrial Corporation, Greeneville, Tenn. Filed Feb. 25, 1965.



Owner of Reg. No. 688,256.
For Locks and Keys.
First use Jan. 1, 1965.

Class 26—Measuring and Scientific Appliances

SN 166,308. Monroe International Corporation, Orange, N.J., by change of name from Monroe Calculating Machine Company, Orange, N.J. Filed Apr. 8, 1963.

THE MONEY MACHINE

The word "Machine" is disclaimed apart from the mark as shown.
For Business Machines—Namely, Computing Machines and Accounting Machines.
First use in or about December 1962.

SN 175,351. Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany. Filed Aug. 19, 1963.

IKOLUX

Owner of German Reg. No. 688,712, dated Feb. 28, 1963; and U.S. Reg. No. 823,118.
For Slide Projectors and Motion Picture Projectors, Calculating Machines, Recording, and Cash Registers.

SN 176,699. Trans-World Eyewear Corp., New York, N.Y. Filed Aug. 23, 1963.



Owner of Reg. No. 664,704.
For Eyeglass Frames.
First use Nov. 23, 1959.

SN 178,458. Kewaunee Manufacturing Company, Adrian, Mich. Filed Oct. 7, 1963.

KEMMETAL

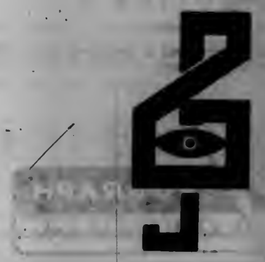
For Laboratory Apparatus, Furniture, Fittings and Fixtures, All for Laboratory Use.
First use June 1, 1963.

SN 180,344. Federal Systems, Inc., Atlanta, Ga., assignee of James D. Wilshire, Decatur, Ga. Filed Nov. 1, 1963.

ELECTRO-WITNESS

For Photo-Surveillance System, Consisting of 16 mm. Cameras, Electrically Operated by Remote Control Switches, Control Boxes (Containing Transformers, an Elapsed-Time Indicator, Rectifiers, and Filter System) for Installation in Banks, Saving and Loan Institutions, Supermarkets, and Similar Buildings.
First use Oct. 7, 1963.

SN 184,260. Societa Internazionale Fonovisione S.p.A., Milan, Italy. Filed Jan. 8, 1964.



Owner of Italian Reg. No. 160,389, dated Oct. 23, 1962.
For Device for Selectively Exhibiting One of a Number of Films.
First use on or about Aug. 1, 1961; in commerce on or about Aug. 1, 1961.

SN 188,893. Mamiya Koki Kabushiki Kaisha, d.b.a. Mamiya Camera Co., Ltd., Bunkyo-ku, Tokyo-to, Japan. Filed Mar. 17, 1964.

MAMIYA-SEKOR

For Lenses for Cameras and Projectors; Cameras Including Cine-Cameras and Fundus Cameras; Slide-Projectors and Cine-Projectors; Exposure Meters, Range Finders, Tripods, Shutters for Cameras, Filters, Flash Gun Apparatuses, Lens-Hood, Lens Brushes and Cleaning Cloths; Photographic Instruments for Developing, Printing and Enlarging Films, Developing Tanks, Darkroom Timers, Film Dryers, Safe Light and Filters, Print Boxes, Print Washers, Print Rollers, Print Dryers, Trays, Printing Masks, Magazines, Print-Editing Machines, and Portable Screens.
First use January 1951; in commerce October 1957.

SN 190,668. United-Greenfield Corporation, Chicago, Ill. Filed Apr. 8, 1964.

VULCAN

Owner of Reg. Nos. 34,562, 42,226, and 88,987.
For Measuring and Scientific Appliances—Namely, Measuring Tapes, Calipers, Micrometers, Stethoscopes, Valve Spring Testers; Gauges, Consisting of Feeler, Compression, Vacuum and Tire Gauges; Wheel Alignment Equipment Consisting of Angle Comparator Gauges, Caster-Camber Gauges and Turntables, Generator Current Indicators, Battery Condition Testers, Starter Current Indicators, Cam-Angle Testers, Primary Tachometers, Ignition Testers, Low Voltage Testers, Spark Plug and Cable Testers, Growler and Armature Testers, Automotive Engine Testing Equipment Consisting of D.C. Ammeters and D.C. Voltmeters.
First use Jan. 24, 1962, on micrometers.

SN 191,801. Scott Aviation Corporation, Lancaster, N.Y. Filed Apr. 22, 1964.

TRAIN-AIR

For Breathing Mask Leak Detector and Training Aid for Demonstrating the Proper Utilization of Protective Breathing Equipment.
First use on or about Oct. 21, 1963.

SN 192,261. BBN Corp., d.b.a. Data Equipment Company, Santa Ana, Calif. Filed Apr. 29, 1964.



The mark consists of a fanciful design of the letters "DE."
For Data Output Devices.
First use Feb. 12, 1964.

SN 194,544. Zylo Ware Corp., Long Island City, N.Y. Filed May 28, 1964.

ALL SEASONS

For Eye Glasses, Eye Glass Frames, and Sun Glasses.
First use in or before April 1964.

SN 194,847. Weston Instruments, Inc., Newark, N.J. Filed June 3, 1964.

WESTON

Owner of Reg. No. 703,925 and others.
For Electrical Measuring and Indicating Instruments; Electronic Counter and Timer Instruments; Instruments and Apparatus for Determining Humidity and the Moisture Content of Materials; Thermometers; Light-Measuring Instruments; Standard Cells; Electrical Circuit Analysers; Tachometers, Tachometer Generators, A.C., D.C. and Frequency Generators, Electrical Resistors and Potentiometers; Electrical Apparatus for Testing Radio and Television Equipment; and Instrument Calibrators.
First use 1888 on electrical measuring instruments.

SN 196,465. Thermotron Corporation, Holland, Mich. Filed June 11, 1964.

For Environmental Test Equipment—Namely, Cabinet Structures With Associated Equipment for Maintaining Selected Conditions of Temperature, Pressure, and Gaseous Liquid Environment.
First use May 19, 1962.

SN 196,111. Compagnie Francaise Thomson-Houston, Paris, France. Filed June 22, 1964.

PYROES

Priority claimed under Sec. 44(d) on French Reg. No. 518,478, dated Jan. 8, 1964 (Seine); Natl. Inst. No. 221,497.
For Electro-Nuclear Generators, Thermo-Ionic Generators, Particularly Thermo-Ionic Nuclear Reactors.

SN 196,362. Gregory S. Dolgorukov, d.b.a. Dolgorukov Manufacturing Company, Detroit, Mich. Filed June 24, 1964.

DOLGORUKOV
DETROIT
"THE DISTINCTIVE GREEN TINT"

Applicant disclaims the word "Detroit" as well as the words "Green" and "Tint" apart from the trademark and taken separately.
For Drafting Instruments and Drafting Equipment—Namely, Lettering Guides and Lettering Instruments, Drafting Triangles, Irregular Curves and Sweeps, Drafting Templates, T-Squares, Drafting Pads or Tablets, Straight Edges, Drafting Machine Edges, and the Like.
First use on or about Sept. 10, 1962.

SN 196,798. New Brunswick Scientific Co., Inc., New Brunswick, N.J. Filed June 30, 1964.

MICROFERM

For Small, Bench-Top Fermentation Apparatus for Mass Cultivation of Microbial Cells and Particularly Suited to Microbiological and Biochemical Research.
First use Sept. 26, 1963.

SN 196,839. Belock Instrument Corporation, New York, N.Y. Filed July 1, 1964.

SCOPUS

For Dynamic Display Film Projectors, Recorders and Components Thereof, for Plotting, Reference and Spotting Purposes.
First use June 20, 1964.

SN 197,549. Fisba Optische Präzisions-Instrumente AG, Sankt Gallen, Switzerland. Filed July 10, 1964.

PLEOPTOPHOR

For Ophthalmic Instruments for the Treatment of All Degrees of Amblyopia.
First use August 1958; in commerce Sept. 16, 1959.

SN 198,382. Testing Machines, Inc., Mineola, N.Y. Filed July 22, 1964.

OPTI-SCAN

For Photometers for Measuring Light Photoelectrically.
First use June 19, 1964.

SN 198,480. Jered Industries, Inc., Birmingham, Mich. Filed July 24, 1964.

For Pneumatic Leak Test Indicator.
First use June 9, 1964.

SN 198,617. Wilkens Instrument & Research, Inc., Walnut Creek, Calif. Filed July 27, 1964.

Owner of Reg. No. 672,789.
For Steam and Hydrogen Gas Generators for Use With Gas Chromatographic Instruments.
First use November 1961 on hydrogen gas generators.

SN 199,265. J. & A. Braun KG, Stuttgart, Germany. Filed Aug. 5, 1964.

MOVIPORT

For Electronic r.p.m. Meters, Electronic Tachometers, and Digital Indicating Devices.
First use January 1958 on electronic r.p.m. meters; in commerce June 14, 1963.

SN 201,285. Gardner Laboratory, Inc., Bethesda, Md. Filed Sept. 4, 1964.

GARDNER INSTRUMENTS

The word "Instruments" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 638,209, 746,771, and 749,073.
For Scientific and Physical Testing Equipment for Laboratory Use—Namely, Multi-Purpose Reflectometers, Gonio Photometers, Bubble Viscometers, Sand Abrasers, Water Baths, Film Applicators, Hardness Rockers, Impact Testers, Abrasion Testing Machines, Drying Time Recorders, Film Thickness Gages, Color Difference Meters, Gloss Recorders, Clarity Meters, Haze Meters, and Photometric Units.
First use June 15, 1959.

SN 201,828. The Electric Storage Battery Company, Philadelphia, Pa. Filed Sept. 14, 1964.

CHEM-TOUGH

For Lenses for Safety Protective Spectacles, Goggles and Shields.
First use Aug. 20, 1964.

SN 202,739. Basic Products Corporation, Chicago, Ill. Filed Sept. 28, 1964.

CARBOCHEK

For Analysing Apparatus for Furnace Atmosphere Gas.
First use Aug. 18, 1964.

SN 203,037. Spiratone, Inc., Flushing, N.Y. Filed Sept. 30, 1964.

TWINBAR

For Device for Attachment to Camera for Mounting Thereon Electronic Flash Units and Providing Electrical Connections for Operating the Flash Units From the Camera.
First use May 14, 1964.

SN 203,781. Saburo Matsumoto, d.b.a. Asahi Optical Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Oct. 12, 1964.

JUPITER

For Binoculars and Telescopes.
First use Dec. 1, 1948; in commerce Dec. 1, 1948.

SN 204,062. O. & W. Electronics Limited, Don Mills, Ontario, Canada. Filed Oct. 15, 1964.

PHOTOCHEM 1335

Owner of Canadian Reg. No. 135,702, dated May 8, 1964.
For Aircraft Instrument Panels.

SN 205,261. Eastman Kodak Company, Rochester, N.Y. Filed Nov. 2, 1964.

EKTAMATIC

Owner of Reg. Nos. 566,843, 770,765, and others.
For Sensitized Photographic Paper.
First use Oct. 14, 1964.

SN 205,307. Masten, Masten & Bryan, Inc., Denver, Colo. Filed Nov. 2, 1964.

ASPEN

For Contact Lenses.
First use on or about Oct. 22, 1964.

SN 205,449. Olympus Optical Company Limited, Shibuya-ku, Tokyo, Japan. Filed Nov. 3, 1964.

PEN

For Photographic Cameras and Parts and Accessories for the Same—Namely, Lenses, Auto-Up Attachments of Lenses for Close-Ups, Lens Hoods, Filter Sets, Flash Units, Film Magazines, Exposure Meters, Caps; Cine Cameras and Parts and Accessories for the Same—Namely, Filters, Hoods, Hand Grips, Straps, Faders, Titlers, Anamorphic Lenses, Self-Timers, Tripods, Dark Bags, Wipers, Remote Control Devices, Caps; Cine Projectors and Parts and Accessories for the Same—Namely, Rewinders, Editors, Anamorphic Lenses, Daylight Projecting Apparatuses, Splicers, Endless Projecting Apparatuses, Reels; Still Projectors and Parts and Accessories for the Same—Namely, Screens, Slide Carriers (or Changers), Coolers; Hand Viewers and Stereo Viewers; Leather Cases and Vinyl Cases for Photographic Cameras, Cine Cameras, Cine Projectors, Still Projectors, Hand Viewers and Stereo Viewers.
First use Oct. 20, 1959; in commerce Mar. 20, 1960.

SN 205,505. Huyck Corporation, Rensselaer, N.Y. Filed Nov. 4, 1964.

HUYCK EQUIPMENT COMPANY

For Apparatus for Measuring the Physical Characteristics of Fabrics Used on Papermaking Machinery.
First use May 1962.

SN 205,568. Branson Instruments Incorporated, Stamford, Conn. Filed Nov. 5, 1964.

SONODUR

For Apparatus for Investigating and Measuring the Physical Property of Material, Particularly Hardness, Including Adaptors, Accessories, and Parts Therefor.
First use October 1964.

SN 206,762. B-D Laboratories, Inc., Rutherford, N.J. Filed Nov. 9, 1964.

OPTILUX

For Petri Dishes.
First use on or about Dec. 13, 1963.

SN 206,829. Loenco, Inc., Altadena, Calif. Filed Nov. 9, 1964.

LOENCO

For Gas Chromatographs, Ionization Detectors, Thermal Conductivity Detectors, Electrometers, Ion Chamber Oven Detection Systems, Temperature Controllers, Temperature Programmers, Valves for Use in Measuring and Scientific Instruments, Power Supplies for Measuring and Scientific Instruments, Detector Circuit Systems and Automatic Signal Attenuators.
First use 1956.

SN 206,834. Mastereel Industries, Inc., New York, N.Y. Filed Nov. 9, 1964.

MASTEREEL MI INDUSTRIES

For Motion-Picture Film Flanges, Film Cores, Film Reels and Film Containers.
First use Oct. 26, 1964.

SN 206,835. Mastereel Industries, Inc., New York, N.Y. Filed Nov. 9, 1964.



For Motion-Picture Film Flanges, Film Cores, Film Reels and Film Containers.
First use Oct. 26, 1964.

SN 206,868. Sigmamotor, Inc., Middleport, N.Y. Filed Nov. 9, 1964.

SIGMAMOTOR

For Peristaltic Metering Pumps.
First use on or about Dec. 20, 1949.

SN 206,924. The Fotomatic Corporation, Indianapolis, Ind. Filed Nov. 12, 1964.

PLANATROL

For Microfilm Camera Automatic Exposure Controls.
First use Oct. 30, 1964.

SN 206,120. Ames Lab-Tek, Inc., Billerica, Mass. Filed Nov. 13, 1964.

THYRIMETER

For Radio Active Measuring Apparatus for Determining Thyroid Uptake in People.
First use on or before Sept. 28, 1964.

SN 206,214. Beattie-Coleman, Inc., Anaheim, Calif. Filed Nov. 16, 1964.

POLEXA

For Camera Adapter for Cathode-Ray Oscilloscopes.
First use Sept. 9, 1964.

SN 206,245. Electrostatic Records, Inc., Saratoga, Fla. Filed Nov. 16, 1964.

ELECTROCORDER

For Photocopying Machine.
First use June 12, 1964.

SN SN 206,283. Parade Publications, Inc., New York, N.Y. Filed Nov. 16, 1964.

PARADE

For Dress Patterns.
First use August 1954.

SN 206,297. Sears, Roebuck and Co., Chicago, Ill. Filed Nov. 16, 1964.

SOUNDSTAGE

For Projectors.
First use on or about Aug. 12, 1964.

SN 206,632. Liberty Optical Manufacturing Co. Inc., Newark, N.J. Filed Nov. 20, 1964.



For Sunglasses.
First use Oct. 21, 1964.

SN 206,768. Stamford Chemical Industries, Inc., Stamford, Conn. Filed Nov. 26, 1964.

VIVITROL

For Control Instrument Regulating and Measuring Moisture in Dry-Cleaning Systems.
First use May 14, 1956.

SN 206,951. L. F. Motl & Son, Inc., Madison, Wis. Filed Nov. 25, 1964.

GOLFYARDER

For Distance Gauges.
First use Apr. 4, 1964.

SN 207,086. The Seeburg Corporation, Chicago, Ill. Filed Nov. 27, 1964.

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For Recording Income Totaliser for Coin-Operated Machines.
First use Oct. 20, 1964.

SN 207,648. Parke, Davis & Company, Detroit, Mich. Filed Dec. 7, 1964.

MEDICAMENTA PD VERA

Owner of Reg. Nos. 702,136, 749,850, and others.
For Dosage Calculator for Antibiotic Product.
First use on or before Oct. 15, 1964.

SN 207,705. The Budd Company, Philadelphia, Pa. Filed Dec. 8, 1964.

FLEXAGAGE

For Resistance Strain Gauge Devices.
First use at least as early as Nov. 29, 1960.

SN 207,854. Adtrol Electronics, Inc., d.b.a. Adtrol Electronics Inc. and Adtrol Electronics Incorporated, Philadelphia, Pa. Filed Dec. 10, 1964.

PHOTOCORDER

For Photographic Printing Mechanism.
First use on or about Oct. 22, 1962.

SN 208,090. The Lufkin Rule Company, Saginaw, Mich. Filed Dec. 14, 1964.

KEEPSAKE

For Measuring Tapes.
First use Aug. 24, 1964.

SN 208,131. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Sealant Compound Metering and Proportionate Mixing Devices.
First use January 1960.

SN 209,698. American Brake Shoe Company, New York, N.Y. Filed Jan. 14, 1965.

ABEX

Owner of Reg. No. 384,700.
For Strain Gauges.
First use Dec. 4, 1964.

Class 27 — Horological Instruments

SN 201,057. Sunbeam Corporation, Chicago, Ill. Filed Sept. 1, 1964.

VERMONT

For Clocks.
First use June 30, 1964.

SN 204,685. Lunesa Watch S.A., Bettlach, Switzerland. Filed Oct. 23, 1964.

Lunesa

Owner of Swiss Reg. No. 115,686, dated Mar. 7, 1946.
For Watches.

SN 210,025. Manufacture d'Horlogerie Favre-Leuba S.A., Lancy-Geneva, Switzerland. Filed Jan. 15, 1965.

DEEP BLUE

For Watches and Parts Thereof.
First use Aug. 27, 1963; in commerce Aug. 27, 1963.

SN 211,401. World Wide Watch Co. Inc., New York, N.Y. Filed Feb. 4, 1965.

SKEL O FLEX

For Watches.
First use Nov. 1, 1964.

SN 212,016. Lonnie E. Largen, Sr., d.b.a. International Importers, Winston-Salem, N.C. Filed Feb. 15, 1965.

K N D

For Watch Movement Parts, Including Balance Staffs, Winding Stems, Wheels, Click Springs, Setting Springs, Main Springs, Hands, etc.
First use March 1958.

SN 213,259. Syracuse Ornamental Co. Inc., Syracuse, N.Y. Filed Mar. 3, 1965.



For Clocks.
First use on or about July 15, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 205,817. Hickok Manufacturing Co., Inc., Rochester, N.Y. Filed Nov. 9, 1964.

Count Velanté

Count Velanté is not the name of a particular living individual.
For Articles of Jewelry for Personal Adornment, Such as Clasps, Cuff Buttons, Cuff Links, Shirt Studs, Tie Tacks, Tie Bars, All Made in Whole or in Part of Plated or of Precious Metal.
First use Oct. 5, 1964.

SN 210,855. Sydney W. Prague, Bay St. Louis, Miss. Filed Jan. 21, 1965.

JEWELMONT

For Ladies' Jewelry—Namely, Charms, Charm Bracelets, Neckchains, Rings, and Pins; Men's Jewelry—Namely, Cuff Links, Tie Holders, and Rings.
First use June 1, 1963.

SN 212,769. Gorham Corporation, Providence, R.I. Filed Feb. 25, 1965.

ALENCON

For Sterling Silver Flatware and Table Cutlery.
First use Jan. 21, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 203,804. Pellon Corporation, New York, N.Y. Filed Oct. 12, 1964.

PAK

For Unimpregnated Polishing Pads, Sheets and Discs.
First use January 1960.

SN 203,805. Pellon Corporation, New York, N.Y. Filed Oct. 12, 1964.

PAW

For Unimpregnated Polishing Pads, Sheets, and Discs.
First use Jan. 18, 1960.

SN 203,806. Pellon Corporation, New York, N.Y. Filed Oct. 12, 1964.

PAN

For Unimpregnated Polishing Pads, Sheets, and Discs.
First use January 1960.

SN 203,807. Pellon Corporation, New York, N.Y. Filed Oct. 12, 1964.

PANK

For Unimpregnated Polishing Pads, Sheets, and Discs.
First use July 27, 1960.

Class 31 — Filters and Refrigerators

SN 206,025. Frick Company, Waynesboro, Pa. Filed Nov. 12, 1964.

ROTA-CHILL

For Fluid Temperature Conditioning Apparatus.
First use Oct. 23, 1964.

SN 206,026. Frick Company, Waynesboro, Pa. Filed Nov. 12, 1964.

FREEZ-PAK

For Refrigerating Apparatus Having Continuous, Automatic Feed and Parts Therefor.
First use June 26, 1964.

Class 32 — Furniture and Upholstery

SN 185,596. Harter Corporation, Sturgis, Mich. Filed Jan. 29, 1964.

HARTER

For Office, Lobby, Reception Room, Lounge, and Institutional Furniture.
First use March 1960; 1927 in a different form.

SN 189,516. Ward Furniture Manufacturing Company, Fort Smith, Ark. Filed Mar. 24, 1964.

WARDITE

For Laminated Plastic Coating Sold Incorporated as Part of the Top and Other Surfaces of Furniture.
First use on or about Dec. 31, 1963.

SN 206,799. William T. Woodhouse, Washington, D.C. Filed Nov. 23, 1964.

HORIZ-O-FILE

For Filing Cabinets.
First use Sept. 30, 1964.

SN 206,906. Haskell, Inc., Verona, Pa. Filed Nov. 24, 1964.

STYLE MAGIC

For Kits of Substitute Legs and Drawer Pulls To Change the Appearance of Office Desks, Tables, Credenzas, and the Like.
First use Oct. 8, 1964.

SN 207,006. Carolina Wood Turning Company, d.b.a. Cherokee Furniture Company, Bryson City, N.C. Filed Nov. 27, 1964.

Cherokee

For Bedroom, Dining Room, and Living Room Furniture.
First use November 1962.

SN 207,044. Gordon Harston, Golden, Colo. Filed Nov. 27, 1964.

MARVEL-O SPINE-LINE

For Pillows.
First use Oct. 5, 1964.

SN 207,109. Burgess-Day, Inc., Libertyville, Ill., assignee of Burgess-Manning Company, Dallas, Tex. Filed Nov. 30, 1964.

Revenooer

For Telephone Booths and Telephone Shelves.
First use Sept. 21, 1964.

SN 207,554. Atlantic Alloy Industries, Inc., Union, N.J. Filed Dec. 7, 1964.

MEDI-CENTER

For Medicine Storage and Preparation Cabinets.
First use June 1, 1964.

SN 207,804. The B. F. Goodrich Company, Akron, Ohio. Filed Dec. 9, 1964.

5L

For Seat Cushioning.
First use Oct. 23, 1964.

SN 208,207. Restronics, Inc., Jersey City, N.J. Filed Dec. 15, 1964.

CORA

For Pillows and Cushions.
First use January 1963.

Class 33 — Glassware

SN 184,742. Moosbrunner Glasfabriks-Aktiengesellschaft, Vienna, Austria, assignee, by mesne assignments, of Moosbrunner Glasfabriks-Aktiengesellschaft, Vienna, Austria. Filed Jan. 16, 1964.

PROFILIT

Owner of Austrian Reg. No. 38,625, dated Apr. 2, 1958; and U.S. Reg. No. 702,083.
For Cast, Rolled, and Drawn Glass.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 156,713. International Heater Company, Utica, N.Y. Filed Dec. 7, 1962.

INTERNATIONAL OF UTICA

Owner of Reg. Nos. 111,827, 111,828, and 650,531.
For Heating and Air Conditioning Equipment and Appurtenances Therefor—Namely, Warm Air Furnaces and Air Conditioners, Low Pressure Steam and Hot Water Cast Iron Heating Boilers, Summer Air Conditioners, Controls and Appurtenances Therefor for Heating, Humidifying, Filtering Air in Winter, and Cooling, Filtering and Dehumidifying Air in Summer for Residential, Commercial and Industrial Applications.
First use February 1958.

SN 174,744. The Candle Man, Inc., Chicago, Ill. Filed Aug. 9, 1963.

THE CANDLE MAN INC.

The word "Candle" is disclaimed apart from the mark as shown.
For Candle Lamps and Holders, Shades, and Candles Therefor.
First use Apr. 25, 1960.

SN 197,782. Henry S. Rondeau, d.b.a. Henry S. Rondeau Company, Cleveland, Ohio. Filed July 18, 1964.

GALVAWIRE

For Metal Coating Supplies in Wire Form for Replacing Metal Coatings Damaged as by Welding.
First use on or about July 7, 1964.

SN 203,076. Champion Heater Company, Inc., St. Louis, Mo. Filed Oct. 1, 1964.

Mr. Heat

For Oil Burning Portable Space Heaters.
First use July 15, 1964.

SN 205,687. Goodrid Incinerator Co. Pty. Limited, Sydney, New South Wales, Australia. Filed Nov. 6, 1964.

GOODRID

Owner of Australian Reg. No. 47,801, dated July 8, 1927.
For Incinerators.

SN 205,948. Joseph G. Kadison, d.b.a. Quaker Marine Supply Co., Philadelphia, Pa. Filed Nov. 10, 1964.

THE SEA CHEST

For Lamps.
First use Dec. 15, 1955.

SN 206,315. Union Carbide Corporation, New York, N.Y. Filed Nov. 16, 1964.

LINDE

Owner of Reg. Nos. 520,607, 609,607, and 751,730.
For Machines for Flame-Working of Metals—Namely, Welding and Cutting Machines, Torches and Parts Thereof, Metallurgical Burners, and Electric Arc Heaters.
First use at least 1929 on welding machines.

SN 207,569. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Dec. 7, 1964.

CINCINNATI

Owner of Reg. Nos. 286,109 and 612,130.
For Machine for the Heat-Treating of Metal Parts.
First use on or about Dec. 1, 1946.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 206,192. Mattco, Inc., Houston, Tex. Filed Oct. 2, 1964.

SUR-SAN

For Packing for Oilfield Slush Pumps.
First use Dec. 17, 1963.

SN 206,780. The Dayton Tire & Rubber Company, Dayton, Ohio. Filed Nov. 9, 1964.

SUPER CARRIER

For Resilient Vehicle Tires.
First use July 15, 1964.

SN 205,890. VTR, Incorporated, New York, N.Y. Filed Nov. 9, 1964.

POWERBILT

For Pneumatic Tires for Vehicles.
First use Oct. 2, 1964.

Class 36—Musical Instruments and Supplies

SN 165,350. Mercury Record Productions, Inc., Chicago, Ill. Filed Mar. 25, 1963.

CONNOISSEUR

For Grooved Phonograph Records.
First use Feb. 7, 1963.

SN 169,696. Franz Manufacturing Company, Inc., New Haven, Conn. Filed Mar. 26, 1964.

FRANZ

For Tempo Indicating Devices—Namely, Metronomes.
First use November 1946.

SN 200,596. Radio Corporation of America, New York, N.Y. Filed Aug. 26, 1964.

MEMOPLAY

For Tape Cartridge Recorders.
First use at least as early as or on about Mar. 5, 1956.

Class 37—Paper and Stationery

SN 168,570. Beach Products, Inc., Kalamazoo, Mich. Filed May 10, 1963.



For Paper Tableware—Namely, Paper Napkins, Placemats, and Table Covers, and Combinations of Paper Napkins, Placemats, or Table Covers With Coasters of Paper or Plastic-Backed Paper, Plates or Cups of Paper or Plastic-Coated Paper; Also Paper Towels, Crepe Paper, and Crepe Paper Streamers.
First use Feb. 25, 1941.

SN 170,418. Oxford Paper Company, New York, N.Y. Filed June 5, 1963.

METALON

For Metallized Papers for Packaging, Labelling, Decorative Printing, and Other Purposes.
First use May 13, 1963.

SN 172,761. Norcross, Inc., New York, N.Y. Filed July 10, 1963.

SYMBOL OF ELEGANCE

Owner of Reg. No. 779,917.
For Wrapping Paper, Writing Paper, and Decorative Letter and Note Paper.
First use May 23, 1963.

SN 190,024. The Parker Pen Company, Janesville, Wis. Filed Mar. 31, 1964.

DURAFILL

Owner of Reg. No. 724,227.
For Ball Point Pens and Refills Therefor.
First use Jan. 5, 1962.

SN 193,012. Hunt Manufacturing Co., Camden, N.J. Filed May 8, 1964.

PRINTMASTERS

For Absorbent Paper Specially Made for Printing With Blocks.
First use Oct. 18, 1963.

SN 193,362. The J. C. Hall Company, Pawtucket, R.I. Filed May 13, 1964.

HALLCO MEDALLION

Owner of Reg. Nos. 210,472 and 533,640.
For Check Book Covers.
First use Apr. 21, 1964; April 1921 as to "Hallco."

SN 193,363. The J. C. Hall Company, Pawtucket, R.I. Filed May 13, 1964.

HALLCO EMBLEM

Owner of Reg. Nos. 210,472 and 533,640.
For Check Book Covers.
First use Apr. 21, 1964; April 1921 as to "Hallco."

SN 195,867. W. Koreska, Vienna, Austria. Filed June 17, 1964.

LUXOTHERM

Owner of Austrian Reg. No. 44,306, dated Aug. 1, 1960.
For Copying Papers of All Kinds.

SN 197,721. International Paper Company, New York, N.Y. Filed July 13, 1964.

SPRINGHILL

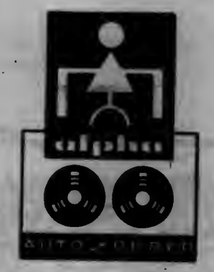
Owner of Reg. No. 576,053.
For Writing and Printing Papers.
First use Oct. 4, 1939.

SN 199,571. International Paper Company, New York, N.Y. Filed Aug. 10, 1964.

SUPREME IMPERIAL

Owner of Reg. No. 427,295.
For Food Wrapping Paper.
First use Jan. 23, 1964.

SN 199,787. Auto-Order, Inc., New York, N.Y. Filed Aug. 13, 1964.



For Business Stationery Forms.
First use May 1, 1964.

SN 210,507. Access Corporation, Cincinnati, Ohio. Filed Jan. 26, 1965.

ACCESS

For Cards Adapted To Be Notched and Used in Conjunction With Record Retrieval Equipment.
First use Nov. 18, 1963.

SN 211,209. Swingline Inc., Long Island City, N.Y. Filed Feb. 2, 1965.

PICK

For Rubber Bands.
First use Dec. 15, 1961.

Class 38—Prints and Publications

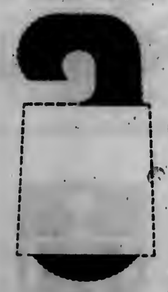
SN 199,450. Dale Carnegie & Associates, Inc., Garden City, N.Y. Filed Aug. 7, 1964.

THE Dorothy Carnegie COURSE

For Printed Books and Bulletins Issued at Irregular Intervals.
First use Oct. 18, 1957.

Class 39 — Clothing

SN 144,778. Superba Cravats, Inc., Rochester, N.Y. Filed May 16, 1962.



The mark comprises a hook-on-band or hand tag.
For Neckties.
First use May 1958.

SN 171,199. Teenform, Inc., New York, N.Y. Filed June 17, 1963.

SHEER ENCHANTMENT

For Brassieres.
First use June 1, 1960.

SN 172,071. The Jackfin Company, Inc., New York, N.Y. Filed June 28, 1963.

ELASTRON

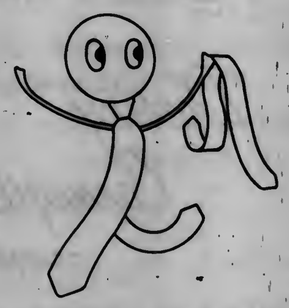
For Ladies' Sportswear—Namely, Shirts, Jackets, Skirts, and Slacks.
First use July 11, 1962.

SN 175,956. Vaisey Bristol Shoe Company Incorporated, Monett, Mo. Filed Aug. 28, 1963.

J J SENIORS

Applicant disclaims the word "Seniors" apart from the mark as shown. Owner of Reg. Nos. 442,147, 529,925, and others.
For Shoes.
First use in or about October 1962.

SN 179,871. Superba Cravats, Inc., Rochester, N.Y. Filed Oct. 18, 1963.



For Neckwear and More Particularly for Neckties.
First use October 1951.

SN 181,865. Sol Duchownay & Sons, Inc., Philadelphia, Pa. Filed Nov. 26, 1963.

ΦB
TRADITIONALS

The term "Traditionals" is disclaimed apart from the trademark as shown.
For Boys', Students', and Men's Clothing—Namely, Jackets, Pants, and Suits, or Any Combination Thereof.
First use June 1954.
Subj. to Intf. with SN 182,649.

SN 183,000. Bregstein Undergarment Co., Inc., New York, N.Y. Filed Dec. 18, 1963.

WONDER Val

For Slips, Petticoats, and Panties.
First use July 13, 1963.

SN 186,510. Horace H. Blair, d.b.a. Cotswold, Ltd., Greensboro, N.C. Filed Feb. 12, 1964.

COTSWOLD LTD.

For Shirts and Sweaters.
First use Aug. 31, 1963, on sweaters.

SN 190,615. Hickok Manufacturing Co., Inc., Rochester, N.Y. Filed Apr. 8, 1964.

Heritage
COLLECTION
Pioneer
1877

For Men's Apparel Belts.
First use Jan. 7, 1963.

SN 190,616. Hickok Manufacturing Co., Inc., Rochester, N.Y. Filed Apr. 8, 1964.

Heritage
COLLECTION
HICKOK

For Men's Apparel Belts.
First use Jan. 7, 1963.

SN 191,516. Defender Supporter Company, Philadelphia, Pa. Filed Apr. 20, 1964.

Swim Star

For Tank Suits.
First use on or about Jan. 15, 1962.

SN 192,117. Youthcraft Creations, Inc., New York, N.Y. Filed Apr. 27, 1964.

HAND CUFF

For Girdles.
First use Apr. 1, 1964.

SN 192,125. Endicott Johnson Corporation, Endicott, N.Y. Filed Apr. 14, 1964.

Astro
JETS

For Boys' Shoes.
First use Jan. 31, 1964.

SN 194,301. Frank F. Idestone, Baltimore, Md. Filed May 26, 1964.

Bel-Bra

For Ladies' Brassieres, Girdles, and Garter Belts.
First use Dec. 1, 1963.

SN 196,016. Casual Corner Associates, Inc., Washington, D.C. Filed June 19, 1964.

CASUAL CORNER

Owner of Reg. No. 645,435.
For Women's and Girls' Dresses, Skirts, Pants, Shorts, Suits, Blouses, Shirts, Dress Coats, Car Coats, Raincoats, Sweaters, and Gloves.
First use Dec. 14, 1945.

SN 198,875. Phoenix, Inc., New York, N.Y. Filed July 30, 1964.

ERNESTO BELLINI

The name "Ernesto Bellini" is fictitious.
For Men's Suits and Sport Coats.
First use October 1956.

SN 199,000. Aris Gloves, Incorporated, New York, N.Y. Filed Aug. 3, 1964.

DITTO KIDDO

For Ladies' Gloves Made of Leather or Fabric.
First use June 14, 1964.

SN 200,883. Wright Manufacturing Company, Toccoa, Ga. Filed Aug. 28, 1964.

WINFIELD

For Men's Slacks.
First use Aug. 25, 1964.

SN 201,085. Alexander S. Bowers, New York, N.Y. Filed Sept. 2, 1964.

FLIP

For Reversible Skirts and Dresses.
First use Aug. 19, 1964.

SN 201,655. Raymond W. Bush and Theresa E. Bush, Denver, Colo. Filed Sept. 11, 1964.

PATEE

Owner of Reg. No. 696,219.
For Cloth Bootees for Infants and Children.
First use July 20, 1964.

SN 201,812. Chaussures Carel, Paris, Seine, France. Filed Sept. 14, 1964.



Applicant disclaims the representation of the shoe apart from the mark as shown. Owner of French Reg. No. 520,294, dated Mar. 11, 1964 (Seine); Natl. Inst. No. 221,590.
For Shoes.
First use June 29, 1959; in commerce Mar. 11, 1964.

SN 202,592. HK Corporation, Atlanta, Ga., Filed Sept. 24, 1964.

Male

For Casual Slacks, Trousers, and Pants of All Descriptions.
First use on or about Sept. 18, 1964.

SN 202,749. Blue Bell, Inc., Greensboro, N.C. Filed Sept. 28, 1964.



Owner of Reg. Nos. 429,760 and 608,371.
For Men's and Boys' Jeans and Jackets.
First use Sept. 24, 1964.

SN 202,750. Blue Bell, Inc., Greensboro, N.C. Filed Sept. 28, 1964.



Owner of Reg. Nos. 429,760, 776,661, and others.
For Ladies' and Girls' Sweaters, Blouses, Slacks, Shorts, Jackets; and Men's and Boys' Shorts, Shirts, and Jackets.
First use July 6, 1964.

SN 203,270. Endicott Johnson Corporation, Endicott, N.Y. Filed Oct. 5, 1964.

PERMASOLE

Owner of Reg. No. 556,737.
For Soles for Shoes.
First use Aug. 24, 1964.

SN 203,768. Key Work Clothes, Inc., Fort Scott, Kans. Filed Oct. 12, 1964.

CIRCLE K BRAND

Applicant disclaims the word "Brand" apart from the mark as shown.
For Jeans.
First use Sept. 30, 1964.

SN 203,870. Hanes Corporation, Winston-Salem, N.C., assignee of P. H. Hanes Knitting Company, Winston-Salem, N.C. Filed Oct. 13, 1964.

NEW U

For Underwear Shirts.
First use Aug. 5, 1964.

SN 204,095. Philip H. Radel & Co., Inc., New York, N.Y. Filed Oct. 15, 1964.

VELPORT

For Ladies' Cotton Velour Blouses, Shirts, Cardigans, and Dresses.
First use Sept. 15, 1964.

SN 204,237. Joseph H. Cohen & Sons, Inc., New York, N.Y. Filed Oct. 19, 1964.

MAKER'S MARK

Applicant disclaims the word "Mark" as used herein apart from the trademark as shown.
For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests.
First use Oct. 8, 1964.

SN 204,303. Sport-Wear Hosiery Mills, Inc., Etowah, Tenn. Filed Oct. 19, 1964.

Lycrew

For Hosiery.
First use June 29, 1964.

SN 204,765. City Products Corporation, Chicago, Ill. Filed Oct. 26, 1964.

VALOR

Owner of Reg. Nos. 121,754 and 561,060.
For Men's, Women's, and Children's Shoes.
First use Sept. 16, 1964.

SN 204,859. United States Rubber Company, New York, N.Y. Filed Oct. 26, 1964.

ROYAL

Owner of Reg. Nos. 630,051 and 658,573.
For Shoes With Canvas Uppers.
First use 1950–51 season or earlier.

SN 205,047. Sol Duchovnay & Sons, Philadelphia, Pa. Filed Oct. 29, 1964.



LOOK LIKE A PRO...WEAR ONE

The phrase "Look Like a Pro . . . Wear One" is disclaimed as part of the trademark.
For Boys', Students', and Men's Clothing—Namely, Jackets, Pants, and Suits, or Any Combination Thereof.
First use July 1964.

SN 205,685. Geist & Geist, Inc., New York, N.Y. Filed Nov. 6, 1964.

SWASHBUCKLER

For Ladies' Slacks, Dresses, Sweaters, and Suits.
First use Mar. 10, 1964.

SN 205,765. Bess Art, Inc., New York, N.Y. Filed Nov. 9, 1964.

STARACRIL

For Knitted Garments—Namely, Sweaters, Blouses, Dresses, Skirts, Slacks, and Jackets.
First use Oct. 9, 1964.

SN 205,916. Boss Manufacturing Company, Kewanee, Ill. Filed Nov. 10, 1964.

HAND-EASE

For Work Gloves of Fabric.
First use Oct. 30, 1964.

SN 206,030. The Grand Union Company, East Paterson, N.J. Filed Nov. 12, 1964.

BABY GRAND

Owner of Reg. Nos. 666,060, 765,176, and others.
For Infants' Underwear.
First use on or about June 1, 1964.

SN 206,217. Blouse-Land Fashions, Brooklyn, N.Y. Filed Nov. 16, 1964.

BLOUSELAND

For Children's Blouses.
First use July 9, 1964.

SN 206,309. E. E. Taylor Corporation, Freeport, Maine. Filed Nov. 16, 1964.

CASTILLOS

For Men's Shoes.
First use Nov. 4, 1964.

SN 206,343. Bonneterie Cevenole, Societe Anonyme, Granges Les Valence, Ardeche, France. Filed Nov. 17, 1964.

MONTAGUT

Owner of French Reg. No. 665, dated Dec. 7, 1955 (Annonay); Natl. Inst. No. 68,135.
For Coats, Suits, Trousers, Tights, Pull-Overs, Knitted Jackets, Gloves, Stockings, and Socks.

SN 206,410. Blair Fashions, Inc., Chicago, Ill. Filed Nov. 18, 1964.

THE END

For Panty Girdles.
First use Oct. 2, 1964.

SN 206,437. Fun Farms, Inc., Milwaukee, Wis. Filed Nov. 18, 1964.

OL' MCDONALDS LITTLE FARM

For Hats, T-Shirts, and Sweatshirts.
First use July 3, 1964.

SN 206,441. Fun Farms, Inc., Milwaukee, Wis. Filed Nov. 18, 1964.



For Hats, T-Shirts, and Sweatshirts.
First use July 3, 1964.

SN 206,644. J. C. Penney Company, New York, N.Y. Filed Nov. 20, 1964.

SURF BREAKER

For Men's and Boys' Jackets.
First use Oct. 21, 1964.

SN 206,663. Swirl, Inc., Easley, S.C. Filed Nov. 20, 1964.

PARK EAST

For Dresses.
First use Apr. 15, 1964.

SN 206,781. Doncaster Collar and Shirt Company, Inc., Rutherfordton, N.C. Filed Dec. 28, 1964.

DONCASTER

Owner of Reg. Nos. 359,995, 686,018, and 690,982.
For Ladies' and Misses' Slips, Nightgowns, Peignoirs, Robes, Bed Jackets, Dusters, and Shifts.
First use Jan. 29, 1966, on Nightgowns and Shifts.

SN 209,253. Fly Manufacturing Company, Inc., Shelbyville, Tenn. Filed Jan. 4, 1965.



The drawing is lined for red and blue.
For Work Clothing—Namely, Overalls, Coats, Work Pants, and Work Shirts.
First use Jan. 1, 1926.

SN 209,254. The Fly Manufacturing Company, Inc., Shelbyville, Tenn. Filed Jan. 4, 1965.

FLY'S

For Work Clothing—Namely, Overalls, Coats, Work Pants, and Work Shirts.
First use Jan. 1, 1926.

SN 209,268. House of Worsted-Tex, Inc., Philadelphia, Pa. Filed Jan. 4, 1965.

TEMPI-THERM

For Men's and Young Men's Suits, Topcoats, and Overcoats.
First use on or about Feb. 18, 1959.

SN 209,549. Societe Rhodiaceta, Paris, France. Filed Jan. 7, 1965.

RHODIANYL

Owner of French Reg. No. 426,125, dated Feb. 26, 1953 (Paris); Natl. Inst. No. 266,144; and U.S. Reg. Nos. 179,750, 779,525, and others.
For Clothing for Men, Women, and Children—Namely, Robes, Two-Piece Suits, Coats, Underwear, Cardigans, Vests and Waist Coats, Including Boots, Shoes, and Slippers.

SN 209,936. Maidenform, Inc., New York, N.Y. Filed Jan. 14, 1965.

DELECTABLE

For Foundation Garments.
First use Dec. 21, 1964.

SN 209,990. Burlington Industries, Inc., New York, N.Y. Filed Jan. 15, 1965.

4
4
3

For Women's Hosiery.
First use Nov. 30, 1964.

SN 210,028. Metro Pants Co. Inc., New York, N.Y. Filed Jan. 15, 1965.

METRO-PRESS

For Men's and Boys' Trousers.
First use Nov. 5, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 186,022. Reeves Brothers, Inc., New York, N.Y. Filed Feb. 4, 1964.

HI-D

For Fabrics Used in the Manufacture of All Types of Clothing, Draperies, and Other Textile Products, and Lining and Interlining Materials for Such Goods.
First use Oct. 11, 1963.

SN 189,870. Reeves Brothers, Inc., New York, N.Y. Filed Mar. 26, 1964.

CURONELLE

Owner of Reg. No. 639,185.
For Fabrics Used in the Manufacture of All Types of Clothing, Draperies, and Other Textile Products, and Lining and Interlining Materials for Such Goods.
First use Mar. 3, 1964.

SN 189,871. Reeves Brothers, Inc., New York, N.Y. Filed Mar. 23, 1964.

CURONEL

Owner of Reg. No. 639,185.
For Fabrics Used in the Manufacture of All Types of Clothing, Draperies, and Other Textile Products, and Lining and Interlining Materials for Such Goods.
First use Mar. 3, 1964.

SN 191,457. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Apr. 17, 1964.

MIRACLET

Priority claimed under Sec. 44(d) on Japanese application filed Oct. 18, 1963; Reg. No. 665,600, dated Feb. 3, 1965.
For Textile Piece Goods for Making Into Dresses, Blouses, Skirts, Shirts, Gowns, Saris, Scarves, Shawls, Table Covers, Bedspreads, Draperies, Curtains, Slipcovers, and the Like.

SN 192,163. The Eagle-Picher Company, Cincinnati, Ohio. Filed Apr. 28, 1964.

ORVEL

For Electrostatically Flocked Carpeting.
First use Apr. 8, 1964.

SN 194,521. I. J. Saks & Company, Los Angeles, Calif. Filed May 28, 1964.

DONNA MILLS

Applicant disclaims proprietorship of the word "Mills" used alone.
For Rugs and Carpets.
First use February 1965.

SN 197,027. Callaway Mills Company, Lagrange, Ga. Filed July 8, 1964.

VIBRONIC

For Apparel Fabrics for Making Into Sports Jackets, Coats, Skirts, Vests, and the Like.
First use on or about Apr. 21, 1964.

SN 201,654. Burlington Industries, Inc., d.b.a. Hess, Goldsmith & Co., New York, N.Y. Filed Sept. 11, 1964.

VISTAGLASS

For Textile Fabrics in the Piece Composed of Glass Fibers Suitable for Use in Draperies, Curtains, and the Like.
First use March 1962.

SN 203,402. Turner Jones Company, Inc., New York, N.Y. Filed Oct. 6, 1964.



For Piece Goods of Cotton, Wool, Synthetic Fibers, and Combinations Thereof.
First use July 12, 1963.

SN 203,482. College Hall Fashions, Inc., Philadelphia, Pa. Filed Oct. 7, 1964.



Applicant disclaims the name of the goods "Cloth."
For Cloth Which Is Used for Making Into Men's Suits.
First use Sept. 1, 1964.

SN 203,494. Genesco Inc., d.b.a. Kingsboro Mills, Nashville, Tenn. Filed Oct. 7, 1964.

KINGSPAN

For Elastic Fabrics Used in Making Lingerie, Underwear, and the Like.
First use Apr. 4, 1964.

SN 203,499. W. R. Grace & Co., New York, N.Y. Filed Oct. 7, 1964.

DAWBAC

For Carpet Backing Fabric.
First use Sept. 15, 1964.

SN 203,740. Celanese Corporation of America, New York, N.Y. Filed Oct. 12, 1964.

STARSET

For Fabrics for Making Into Home Furnishings Such as Draperies, Bedspreads, Slip Covers, and the Like and Into Apparel Such as Dresses, Blouses, Lingerie, Shirts, and the Like.
First use Oct. 1, 1964.

SN 203,896. Sponge-Cushion, Inc., Morris, Ill. Filed Oct. 13, 1964.



For Sponge Rubber Carpet Cushion.
First use December 1962.

SN 204,194. Rayflex Fabrics, Inc., New York, N.Y. Filed Oct. 16, 1964.

"COMMA"

For Woven Elastic Fabrics in the Piece.
First use July 1, 1964.

SN 204,858. Crompton Company, New York, N.Y. Filed Oct. 20, 1964.

CUSTER TWILL

The term "Twill" is disclaimed apart from the mark as shown.
For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Sept. 10, 1964.

SN 204,862. Crompton Company, New York, N.Y. Filed Oct. 20, 1964.

MOUNTIE

Owner of Reg. No. 506,276.
For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Sept. 21, 1964.

SN 204,627. Allen Knitting Mills, Inc., New York, N.Y. Filed Oct. 23, 1964.

PRO LEAGUER

For Knitted Cotton Fabrics.
First use Sept. 1, 1964.

SN 204,891. Crown Rubber Company, Fremont, Ohio. Filed Oct. 27, 1964.

SCULPTAFIL

Owner of Reg. No. 776,675.
For Padding Material Consisting of Latex Foam Bonded to Fabric Which Is Used in the Manufacture of Brassieres.
First use Sept. 22, 1964.

SN 209,674. Danside Fabrics Inc., New York, N.Y. Filed Jan. 11, 1965.

EARLY MORN

For Water and Stain Resistant Fabrics Made of Cotton and Nylon.
First use Nov. 17, 1964.

SN 209,678. Duracote Corporation, Ravenna, Ohio. Filed Jan. 11, 1965.

DURA-TUFF

For Vinyl Laminated Fabric Used for Industrial Cover Type Materials.
First use Dec. 11, 1964.

Class 43 — Thread and Yarn

SN 187,557. Chatillon Societa Anonima Italiana per le Fibre Tessili Artificiali S.p.A., Milan, Italy. Filed Feb. 27, 1964.

CHATILAN

Owner of Italian Reg. No. 168,446, dated July 8, 1963.
For Threads and Yarns.
First use July 8, 1963; in commerce about July 8, 1963.

SN 198,952. Heberlein & Co. AG, Wattwil, Switzerland. Filed July 31, 1964.

HECONDA

Owner of Swiss Reg. No. 93,088, dated May 11, 1938; and U.S. Reg. No. 519,276.
For Yarns and Threads of Acetate Rayon or Ply-Yarn of Acetate Rayon and Synthetic Threads.

SN 203,847. Emile Bernat & Sons Co., Uxbridge, Mass. Filed Oct. 9, 1964.

Hänsele

For Yarns.
First use Sept. 24, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

SN 193,049. Scott Aviation Corporation, Lancaster, N.Y. Filed May 8, 1964.

I R PAK

For Combination Inhalator-Resuscitator Equipment.
First use on or about Nov. 13, 1963.

SN 197,343. Societe Rhovyl, Paris, France. Filed July 7, 1964.

MAILLISETTE

Priority claimed under Sec. 44(d) on French Reg. No. 514,405, dated June 27, 1963 (Paris); Natl. Inst. No. 208,044. (Claim based on co-pending application Ser. No. 179,953, filed in U.S. on Oct. 28, 1963.) Owner of U.S. Reg. Nos. 779,524 and 779,515.
For Textile Articles for Use in Physiotherapy, Such as Dressings, Bandages, Knee-Pieces, Girdles, Belts, and Waistbands.

SN 200,502. The Songrand Corporation, Kansas City, Mo. Filed Aug. 24, 1964.

CURLATRON

For Hair Curling Tubes and Heating Cases Therefor, Principally for Home Use.
First use on or about Jan. 2, 1963.

SN 210,166. Standard Products Corporation, Brockton, Mass. Filed Jan. 18, 1965.

VALMOR

For Combination Electric Hair Brush and Massager, and a Cordless Electric Manicure Set.
First use on or about Oct. 19, 1963.

Class 46 — Foods and Ingredients of Foods

SN 190,385. E. Cherry Sons & Co. Inc., Philadelphia, Pa. Filed Apr. 6, 1964.

HADDINGTON FARMS

For Candies and Salted Nuts.
First use as early as Apr. 1, 1964.

SN 191,943. Nalley's, Inc., Tacoma, Wash. Filed Apr. 24, 1964.

XLNT Hacienda

Owner of Reg. Nos. 218,877, 684,106, and others.
For Frozen Packaged Spanish-Type Food Products—Namely, Mexican Style Dinners Containing the Following: Cheese Enchilada, Refried Beans, Spanish Rice, Beef Tamale and Chili Con Carne; Dinners Containing Beef Enchilada, Refried Beans and Small Tacos; Dinners Containing Cheese Enchilada, Spanish Rice and Refried Beans; Beef Enchilada in Sauce; Cheese Enchilada in Sauce; and Large and Small Beef Tacos.
First use Dec. 17, 1963.

SN 194,043. Gertrude H. Ford Tea Co., Inc., Poughkeepsie, N.Y. Filed May 22, 1964.



For Tea (in Bulk and in Individual Filled Bags).
First use July 14, 1919.

SN 194,926. Standard Brands Incorporated, d.b.a. Clinton Corn Processing Company, New York, N.Y. Filed June 4, 1964.

CLINHI

Owner of Reg. Nos. 701,943, 749,880, and 761,680.
For Corn Syrup for Food.
First use Apr. 17, 1964.

SN 206,548. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,603, 555,557, and others.
For Chemical Food Additives and Preservatives.
First use at least as early as December 1932.

Class 48 — Malt Beverages and Liquors

SN 197,195. S. S. Steiner, Inc., New York, N.Y. Filed July 6, 1964.

ISO +

For Converted Hop Extract for Use in Preparation of Malt Beverages.
First use May 25, 1964.
Subj. to Intf. with SN 198,766.

Class 52 — Detergents and Soaps

SN 204,149. Economics Laboratory, Inc., St. Paul, Minn. Filed Oct. 16, 1964.

OMNI-SPRAY

For Automatic Spray Cleaner for Exclusive Use in the Dairy and Food Processing Industries for Cleaning, Sanitizing and Acidified Rinsing of Floors, Walls, Food, and Bus Carts, and Other General Cleaning and Sanitizing Purposes.
First use Aug. 28, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 178,995. Tourists International Establishment, Vaduz, Liechtenstein. Filed Oct. 14, 1963.



Applicant disclaims the word "Tourists" apart from the mark as shown.
For Services Including Mail Order Retailing to United States Tourists Abroad of Items Including Duty-Free Items, Said Duty-Free Items Being Shipped to the Purchaser's Residence in the United States, and the Operation of Shopping Centers for the Display and Sale of Said Items.
First use September 1962; in commerce September 1962.

SN 193,470. Holiday Inns of America, Inc., Memphis, Tenn. Filed May 14, 1964.

HOLIDAY INN, JR.

Owner of Reg. Nos. 592,539, 742,490, and others.
For Motel and Restaurant Services.
First use Aug. 15, 1963.

SN 196,471. Holiday Inns of America, Inc., Memphis, Tenn. Filed May 14, 1964.



Owner of Reg. Nos. 592,539, 742,490, and others.
For Motel and Restaurant Services.
First use Aug. 15, 1963.

Class 101 — Advertising and Business

SN 196,794. Keystone Readers' Service, Inc., Philadelphia, Pa. Filed June 16, 1964.

FIRESIDE READERS' SERVICE

No claim of exclusive right is made to the words "Readers' Service" apart from the mark as shown.
For Acting as Subscription Agent for Various Magazine Publishing Houses.
First use Apr. 10, 1961.

Class 102 — Insurance and Financial

SN 196,871. Pension Life Insurance Company of America, Newark, N.J. Filed July 30, 1964.



For Insurance Business, Including Management, Brokerage, Agency, Underwriting, and All Other Related Phases of the Insurance Business Except Marine Insurance and Title Insurance.
First use Feb. 20, 1964.

Class 103 — Construction and Repair

SN 178,255. Carpet Engineers Inc., Beverly Hills, Calif. Filed Oct. 8, 1963.

CEi

For Custom Fabrication and Installation of Carpeting.
First use Nov. 1, 1962.

SN 199,613. Regal Systems, Kansas City, Kans. Filed Aug. 10, 1964.

REGAL

For Providing Facilities for Self-Service Vehicle Washing.
First use Mar. 1, 1964.

Class 105 — Transportation and Storage

SN 179,240. Erma M. Knight, d.b.a. Knight Travel Service, West Jefferson, Ohio. Filed Oct. 17, 1963.



For Travel Agency Services.
First use June 15, 1962.

SN 194,561. Airways Rent-A-Car System, Los Angeles, Calif. Filed June 1, 1964.

AIRWAYS RENT-A-TRUCK

Applicant disclaims the words "Rent-A-Truck" apart from the mark as a whole; applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof. Owner of Reg. Nos. 713,970 and 757,918.
For Truck Rental Service.
First use Feb. 1, 1961.

Class 106 — Material Treatment

SN 180,008. Galeski Photo Center, Incorporated, Richmond, Va. Filed Oct. 29, 1963.



For Processing of Photographic Film.
First use November 1962.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

790,857. CULLIGAN. Culligan, Inc. MULTIPLE CLASS (Classes 1, 6, and 31). SN 178,781. Pub. 3–30–65. Filed 10–11–63.

790,858. C AND DESIGN. Culligan, Inc. MULTIPLE CLASS (Classes 1, 6, and 31). SN 178,783. Pub. 3–30–65. Filed 10–11–63.

790,859. RIGIPAX. Hampshire Manufacturing Corporation. SN 187,579. Pub. 3–30–65. Filed 2–27–64.

790,860. DIMENSIONAL AND DESIGN. S. Ronald Barnette, assignee of Dimensional Plastics Corp. SN 189,770. Pub. 3–30–65. Filed 3–27–64.

790,861. JOHNSON'S. S. C. Johnson & Son, Inc. MULTIPLE CLASS (Classes 1, 4, 6, 15, 16, 21, 29, and 52). SN 193,072. Pub. 3–30–65. Filed 4–23–64.

790,862. SHEPHERD OF THE HILLS. Keeter Charcoal Company. SN 193,964. Pub. 3–30–65. Filed 5–21–64.

790,863. OAK GLO. Charcoal Industries, Inc. SN 194,575. Pub. 3–30–65. Filed 6–1–64.

790,864. COBS. The Charles River Breeding Laboratories Incorporated. SN 196,762. Pub. 3–30–65. Filed 6–30–64.

790,865. MV AND DESIGN. McGregor Angus Corporation, by change of name from McGregor-Vantress Corporation. SN 201,131. Pub. 3–30–65. Filed 9–2–64.

790,866. TYRIAN GLO. United Mink Producers Association. SN 201,158. COLLECTIVE MARK. Pub. 3–30–65. Filed 9–2–64.

790,867. CONCORD. Morton Salt Company. SN 201,726. Pub. 3–30–65. Filed 9–11–64.

Class 2—Receptacles

790,868. MARATHON. American Can Company. SN 188,500. Pub. 3–30–65. Filed 3–12–64.

790,869. KEEP GREENE AND GROW. E. Greene and Company, Inc. SN 197,568. Pub. 3–30–65. Filed 7–10–64.

790,870. TUPPERCRAFT. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 198,220. Pub. 3–30–65. Filed 7–20–64.

790,871. PIPE DREAM. Sweetheart Plastics, Inc. SN 198,986. Pub. 3–30–65. Filed 7–31–64.

790,872. FEATHER TOUCH. American Can Company. SN 199,436. Pub. 3–30–65. Filed 8–7–64.

790,873. PARTY SUSAN. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 199,614. Pub. 3–30–65. Filed 8–10–64.

790,874. STRIP KLEEN. American Paper & Plastic Products, Inc. SN 201,355. Pub. 2–16–65. Filed 9–8–64.

Class 4—Abrasives and Polishing Materials

790,861. (See Class 1 for this trademark.)

790,875. GF AND DESIGN. General Foods Corporation. MULTIPLE CLASS (Classes 4, 6, 45, and 46). SN 180,500. Pub. 3–30–65. Filed 11–5–63.

790,876. RENT-A-MAID AND DESIGN. Dial-A-Maid Service Inc., assignee of Rent-A-Maid Service, Inc. SN 200,033. Pub. 3–30–65. Filed 8–17–64.

790,877. RONDELLE. S. C. Johnson & Son, Inc. SN 201,534. Pub. 3–30–65. Filed 9–9–64.

Class 6—Chemicals and Chemical Compositions

790,857. (See Class 1 for this trademark.)

790,858. (See Class 1 for this trademark.)

790,861. (See Class 1 for this trademark.)

790,875. (See Class 4 for this trademark.)

790,878. LUBRIZOL AND DESIGN. The Lubrizol Corporation. SN 173,664. Pub. 3–30–65. Filed 7–24–63.

790,879. HOUSE OF VARLEY. James Varley & Sons, Inc. MULTIPLE CLASS (Classes 6 and 52). SN 175,528. Pub. 1–19–65. Filed 8–21–63.

790,880. DIMACIDE. Etablissements Kuhlmann, Societe Anonyme. SN 175,892. Pub. 1–5–65. Filed 8–26–63.

790,881. OCTAGONAL DESIGN. Produits Chimiques Pechiney-Saint-Gobain. SN 183,789. Pub. 3–30–65. Filed 12–30–63.

790,882. DIGLYCOLAMINE. Jefferson Chemical Company, Inc. SN 184,825. Pub. 3–30–65. Filed 1–17–64.

790,883. PALLAMERSE. Technic, Inc. SN 185,455. Pub. 3–30–65. Filed 1–27–64.

790,884. SEALEX. Berryman Products, Inc., assignee of Waldo B. Berryman, d.b.a. Berryman Products. SN 185,556. Pub. 3–30–65. Filed 1–29–64.

790,885. ALBERT CHEMICALS AND DESIGN. Albert Chemical Corporation, assignee of Albert Hirson, d.b.a. Albert Photographic Products Company. SN 185,673. Pub. 3–30–65. Filed 1–30–64.

790,886. PALLABAR. Technic, Inc. SN 185,745. Pub. 3–30–65. Filed 1–27–64.

790,887. VERSENET. The Dow Chemical Company. SN 186,707. Pub. 3–30–65. Filed 2–14–64.

790,888. RADIOL. Novocol Chemical Mfg. Co., Inc. SN 187,791. Pub. 3–30–65. Filed 3–2–64.

790,889. CORT. Cort Cosmetics, Inc. MULTIPLE CLASS (Classes 6, 51, and 52). SN 190,599. Pub. 3–30–65. Filed 4–8–64.

790,890. QUATRAMINE. Puritan Chemical Company. SN 192,631. Pub. 3–30–65. Filed 5–4–64.

790,891. URACRIT. Ames Company, Inc. SN 192,779. Pub. 3–30–65. Filed 5–6–64.

790,892. DIGESTALL. R. & E. Martin (partnership). SN 193,482. Pub. 3–30–65. Filed 5–14–64.

790,893. COLLACRAL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 193,634. Pub. 3–30–65. Filed 7–28–64.

790,894. AROMADERM. Taconic Natural Oils Co., Inc. SN 199,134. Pub. 3–30–65. Filed 8–3–64.

790,895. BUTOXYNE. General Aniline & Film Corporation. SN 199,899. Pub. 3–30–65. Filed 8–14–64.

790,896. HY-CY. American Cyanamid Company. SN 199,946. Pub. 3–30–65. Filed 8–17–64.

790,897. BUCKINGHAM. Drug Fair-Community Drug Co. Inc., d.b.a. Drug Fair. MULTIPLE CLASS (Classes 6 and 22). SN 200,557. Pub. 3–30–65. Filed 8–25–64.

790,898. TOUCHE. Vanelba Corporation. SN 200,610. Pub. 3–30–65. Filed 8–25–64.

790,899. VANELBA. Vanelba Corporation. SN 200,611. Pub. 3–30–65. Filed 8–25–64.

790,900. INSECT AND DESIGN. Vanelba Corporation. SN 200,612. Pub. 3–30–65. Filed 8–25–64.

790,901. RAMROD. Monsanto Company. SN 200,655. Pub. 3–30–65. Filed 8–26–64.

790,902. MANAGE. Monsanto Company. SN 200,656. Pub. 3–30–65. Filed 8–26–64.

790,903. SCREEN. Monsanto Company. SN 200,687. Pub. 3–30–65. Filed 8–26–64.

790,904. TOPOPRIM. Geigy Chemical Corporation. SN 200,715. Pub. 3–30–65. Filed 8–27–64.

790,905. CIPOMIL. Geigy Chemical Corporation. SN 200,716. Pub. 3–30–65. Filed 8–27–64.

790,906. CAMPABAL. Geigy Chemical Corporation. SN 200,717. Pub. 3–30–65. Filed 8–27–64.

790,907. AZOSTIX. Ames Company, Inc. SN 201,640. Pub. 3–30–65. Filed 9–11–64.

Class 9—Explosives, Firearms, Equipments, and Projectiles

790,908. MISCELLANEOUS DESIGN. Aerojet-General Corporation. SN 189,843. Pub. 3–9–65. Filed 3–30–64.

Class 10—Fertilizers

790,909. SYLVAN SHIELD NATURE'S FINEST MULCH AND DESIGN. David D. Showalter, d.b.a. Cove Dehydrating Plant. SN 160,724. Pub. 3–30–65. Filed 1–15–63.

Class 12—Construction Materials

790,910. NP. Hexcel Products Inc. SN 142,512. Pub. 3–30–65. Filed 4–18–62.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

790,911. DEGNA. Pfaudler Permutit Inc. SN 184,176. Pub. 3–30–65. Filed 1–7–64.

790,912. RL. The Hansen Manufacturing Company. SN 189,468. Pub. 3–30–65. Filed 3–24–64.

790,913. RAIN GUN. Rain Bird Sprinkler Manufacturing Corp. SN 190,645. Pub. 3–30–65. Filed 4–8–64.

790,914. DOT (DESIGN). Moline Malleable Iron Company. SN 197,973. Pub. 3–30–65. Filed 7–16–64.

790,915. PANAPLUG. Expancol-Sociedade de Expansão Commercial de Plasticos, Limitada. SN 202,990. Pub. 3–30–65. Filed 9–30–64.

790,916. MARINIUM AND G. Gorham Corporation. SN 203,365. Pub. 3–30–65. Filed 10–5–64.

Class 14—Metals and Metal Castings and Forgings

790,917. NELCO. Chas. Pfizer & Co., Inc. SN 192,680. Pub. 3–30–65. Filed 5–5–64.

Class 15—Oils and Greases

790,861. (See Class 1 for this trademark.)

790,918. SOHIWAY. The Standard Oil Company. SN 195,562. Pub. 3–30–65. Filed 6–12–64.

790,919. COLOR GAUGE. Crown Industrial Products Company. SN 204,454. Pub. 3–30–65. Filed 10–21–64.

790,920. GAS MASTER. Rust Master Chemical Corporation. SN 205,351. Pub. 3–30–65. Filed 11–2–64.

Class 16—Protective and Decorative Coatings

790,861. (See Class 1 for this trademark.)

790,921. THRUSTGARD. Iowa Paint Manufacturing Company, Inc. SN 143,398. Pub. 3–30–65. Filed 4–30–62.

790,922. KEEPER-3. Carldon Hall Finishes, Inc. SN 162,140. Pub. 3–30–65. Filed 2–6–63.

790,923. KEEPER-3 FOR FINE WOODS. Carldon Hall Finishes, Inc. SN 162,141. Pub. 3–30–65. Filed 2–6–63.

790,924. MASKERAID. Products Techniques, Inc. SN 167,317. Pub. 3–30–65. Filed 4–22–63.

790,925. TUF-KOTE. Sol E. Snitz, d.b.a. Power Industries Inc. SN 200,038. Pub. 3–30–65. Filed 8–17–64.

Class 17—Tobacco Products

790,926. AGIO. Agio Sigarenfabrieken N.V. SN 198,921. Pub. 3–30–65. Filed 7–31–64.

790,927. EDGAR. Agio Sigarenfabrieken N.V. SN 198,922. Pub. 3–30–65. Filed 7–31–64.

790,928. LA INSULAR. Compania Insular Tabacalera, S.A. SN 201,522. Pub. 3–30–65. Filed 9–9–64.

Class 18—Medicines and Pharmaceutical Preparations

790,929. ISCADOR. Weleda A.G. (Weleda Co. Ltd.) SN 137,099. Pub. 3–30–65. Filed 2–1–62.

790,930. PERINEZE. Garrett Laboratories, Inc. SN 144,370. Pub. 4–9–63. Filed 5–11–62.

790,931. APPETONE. Merrill's Turf Supplies Co. Ltd. SN 178,948. Pub. 3–30–65. Filed 10–14–63.

790,932. LEPTINOL. The Vale Chemical Company, Inc. SN 179,749. Pub. 3–30–65. Filed 10–24–63.

790,933. DANALAX. Waite Pharmacal Company. SN 182,850. Pub. 3–30–65. Filed 12–11–63.

790,934. NOCTAGETIC. Olin Mathieson Chemical Corporation. SN 184,736. Pub. 3–30–65. Filed 1–16–64.

790,935. DU-AIDS. Colgate-Palmolive Company. SN 185,110. Pub. 1–12–65. Filed 1–22–64.

790,936. AQUATAG. S. J. Tutag & Company. SN 185,956. Pub. 3–30–65. Filed 2–3–64.

790,937. VATENSOL. Chas. Pfizer & Co., Inc. SN 188,392. Pub. 3–30–65. Filed 3–10–64.

790,938. SYNCUMA. Philips Roxane, Inc. SN 188,560. Pub. 3–30–65. Filed 3–12–64.

790,939. FUR-TON. George V. Kinzel, d.b.a. Fur Animal Institute. SN 196,282. Pub. 3–30–65. Filed 5–12–64.

790,940. FUN-A-MINS. Kasar Company. SN 196,678. Pub. 1–19–65. Filed 6–29–64.

790,941. BSMOPAL. Mattox and Moore, Inc. SN 196,687. Pub. 3–30–65. Filed 6–29–64.

790,942. TURF CHAMPION. The Salerno Co., Inc. SN 199,226. Pub. 3–30–65. Filed 8–4–64.

790,943. UNIVERSITY. The Salerno Co., Inc. SN 199,227. Pub. 3–30–65. Filed 8–4–64.

790,944. CRISTALOXINE. Manufacture de Produits Pharmaceutiques A. Christiaens. SN 199,683. Pub. 3–30–65. Filed 8–11–64.

790,945. HEPAGRUME. L'Equilibre Biologique Association Technique Pharmaceutique et Equilibre Biologique Reunis, Societe Anonyme. SN 200,650. Pub. 3–30–65. Filed 8–26–64.

790,946. PARENABOL. Ciba Limited. SN 201,102. Pub. 3–30–65. Filed 9–2–64.

790,947. BONDAL. American Home Products Corporation. SN 201,172. Pub. 3–30–65. Filed 9–3–64.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

790,857. CULLIGAN. Culligan, Inc. MULTIPLE CLASS (Classes 1, 6, and 21). SN 178,761. Pub. 3-30-65. Filed 10-11-63.

790,859. C AND DESIGN. Culligan, Inc. MULTIPLE CLASS (Classes 1, 6, and 21). SN 178,782. Pub. 3-30-65. Filed 10-11-63.

790,859. RIGIPAX. Hampshire Manufacturing Corporation. SN 187,979. Pub. 3-30-65. Filed 2-27-64.

790,860. DIMENSIONAL AND DESIGN. S. Donald Barnette, assignee of Dimensional Plastics Corp. SN 189,770. Pub. 3-30-65. Filed 3-27-64.

790,861. JOHNSON'S. S. C. Johnson & Son, Inc. MULTIPLE CLASS (Classes 1, 4, 6, 15, 16, 21, 29, and 52). SN 193,072. Pub. 3-30-65. Filed 4-23-64.

790,862. SHEPHERD OF THE HILLS. Keeter Charcoal Company. SN 198,964. Pub. 3-30-65. Filed 5-21-64.

790,863. OAK GLO. Charcoal Industries, Inc. SN 194,575. Pub. 3-30-65. Filed 6-1-64.

790,864. CORS. The Charles River Breeding Laboratories Incorporated. SN 196,762. Pub. 3-30-65. Filed 6-30-64.

790,865. MV AND DESIGN. McGregor Angus Corporation, by change of name from McGregor-Vantress Corporation. SN 201,181. Pub. 3-30-65. Filed 9-8-64.

790,866. TYRIAN GLO. United Mink Producers Association. SN 201,158. COLLECTIVE MARK. Pub. 3-30-65. Filed 9-8-64.

790,867. CONCORD. Morton Salt Company. SN 201,736. Pub. 3-30-65. Filed 9-11-64.

Class 2—Receptacles

790,868. MARATHON. American Can Company. SN 188,599. Pub. 3-30-65. Filed 3-13-64.

790,869. KEEP GREENS AND GROW. R. Grysons and Company, Inc. SN 197,562. Pub. 3-30-65. Filed 7-10-64.

790,870. TUPPERCRAFT. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 198,220. Pub. 3-30-65. Filed 7-20-64.

790,871. PIPE DREAM. Sweetheart Plastics, Inc. SN 198,906. Pub. 3-30-65. Filed 7-31-64.

790,872. FEATHER TOUCH. American Can Company. SN 199,496. Pub. 3-30-65. Filed 8-7-64.

790,873. PARTY SUSAN. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 199,614. Pub. 3-30-65. Filed 8-10-64.

790,874. STRIP KLEEN. American Paper & Plastic Products, Inc. SN 201,255. Pub. 3-16-65. Filed 9-3-64.

Class 4—Abrasives and Polishing Materials

790,861. (See Class 1 for this trademark.)

790,875. GF AND DESIGN. General Foods Corporation. MULTIPLE CLASS (Classes 4, 6, 45, and 46). SN 190,590. Pub. 3-30-65. Filed 11-5-63.

790,876. RENT-A-MAID AND DESIGN. Rent-A-Maid Service Inc., assignee of Rent-A-Maid Service, Inc. SN 200,682. Pub. 3-30-65. Filed 8-17-64.

790,877. BONDERITE. S. C. Johnson & Son, Inc. SN 201,524. Pub. 3-30-65. Filed 9-9-64.

Class 6—Chemicals and Chemical Compositions

790,857. (See Class 1 for this trademark.)

790,858. (See Class 1 for this trademark.)

790,861. (See Class 1 for this trademark.)

790,875. (See Class 4 for this trademark.)

790,878. LUBRIZOL AND DESIGN. The Lubrizol Corporation. SN 173,004. Pub. 3-30-65. Filed 7-24-63.

790,879. HOUSE OF VARLEY. James Varley & Sons, Inc. MULTIPLE CLASS (Classes 6 and 52). SN 175,528. Pub. 1-19-65. Filed 8-21-63.

790,880. DIMACIDE. Etablissements Kuhlmann, Societe Anonyme. SN 175,892. Pub. 1-5-65. Filed 8-26-63.

790,881. OCTAGONAL DESIGN. Produits Chimiques Pechiney-Saint-Gobain. SN 186,789. Pub. 3-30-65. Filed 12-30-63.

790,882. DIGLYCOLAMINE. Jefferson Chemical Company, Inc. SN 184,825. Pub. 3-30-65. Filed 1-17-64.

790,883. PALLAMERSE. Technic, Inc. SN 185,455. Pub. 3-30-65. Filed 1-27-64.

790,884. SBALEX. Berryman Products, Inc., assignee of Waldo B. Berryman, d.b.a. Berryman Products. SN 185,536. Pub. 3-30-65. Filed 1-29-64.

790,885. ALBERT CHEMICALS AND DESIGN. Albert Chemical Corporation, assignee of Albert Hirson, d.b.a. Albert Photographic Products Company. SN 185,672. Pub. 3-30-65. Filed 1-30-64.

790,886. PALLABAR. Technic, Inc. SN 185,745. Pub. 3-30-65. Filed 1-27-64.

790,887. VERSENEX. The Dow Chemical Company. SN 186,707. Pub. 3-30-65. Filed 2-14-64.

790,888. RADIOL. Novocol Chemical Mfg. Co., Inc. SN 187,701. Pub. 3-30-65. Filed 3-2-64.

790,889. CORT. Cort Cosmetics, Inc. MULTIPLE CLASS (Classes 6, 51, and 52). SN 190,590. Pub. 3-30-65. Filed 4-3-64.

790,890. QUATRAMINE. Puritan Chemical Company. SN 190,691. Pub. 3-30-65. Filed 5-4-64.

790,891. URACRIT. Ames Company, Inc. SN 192,779. Pub. 3-30-65. Filed 5-6-64.

790,892. DIGESTALL. E. & B. Martin (partnership). SN 196,462. Pub. 3-30-65. Filed 5-14-64.

790,893. COLLACRAL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 196,684. Pub. 3-30-65. Filed 7-22-64.

790,894. AROMADERM. Tucsonic Natural Oils Co., Inc. SN 199,134. Pub. 3-30-65. Filed 8-3-64.

790,895. BUTOXYNE. General Aniline & Film Corporation. SN 199,999. Pub. 3-30-65. Filed 8-14-64.

790,896. HY-CY. American Cyanamid Company. SN 199,946. Pub. 3-30-65. Filed 8-17-64.

790,897. BUCKINGHAM. Drug Fair-Community Drug Co. Inc., d.b.a. Drug Fair. MULTIPLE CLASS (Classes 6 and 32). SN 200,557. Pub. 3-30-65. Filed 8-25-64.

790,898. TOUCHE. Vanelba Corporation. SN 200,610. Pub. 3-30-65. Filed 8-25-64.

790,899. VANELBA. Vanelba Corporation. SN 200,611. Pub. 3-30-65. Filed 8-25-64.

790,900. INSECT AND DESIGN. Vanelba Corporation. SN 200,612. Pub. 3-30-65. Filed 8-25-64.

790,901. RAMROD. Monsanto Company. SN 200,665. Pub. 3-30-65. Filed 8-26-64.

790,902. MANAGE. Monsanto Company. SN 200,666. Pub. 3-30-65. Filed 8-26-64.

790,903. SCREEN. Monsanto Company. SN 200,687. Pub. 3-30-65. Filed 8-26-64.

790,904. TOPOPRIM. Geigy Chemical Corporation. SN 200,715. Pub. 3-30-65. Filed 8-27-64.

790,905. CIPOMIL. Geigy Chemical Corporation. SN 200,716. Pub. 3-30-65. Filed 8-27-64.

790,906. CAMPABAL. Geigy Chemical Corporation. SN 200,717. Pub. 3-30-65. Filed 8-27-64.

790,907. AZOSTIX. Ames Company, Inc. SN 201,640. Pub. 3-30-65. Filed 9-11-64.

Class 9—Explosives, Firearms, Equipments, and Projectiles

790,908. MISCELLANEOUS DESIGN. Aerojet-General Corporation. SN 189,843. Pub. 3-9-65. Filed 3-30-64.

Class 10—Fertilizers

790,909. SYLVAN SHIELD NATURE'S FINEST MULCH AND DESIGN. David D. Showalter, d.b.a. Cove Dehydrating Plant. SN 160,724. Pub. 3-30-65. Filed 1-15-63.

Class 12—Construction Materials

790,910. NP. Hexcel Products Inc. SN 142,512. Pub. 3-30-65. Filed 4-18-62.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

790,911. DEGNA. Pfaudler Permutit Inc. SN 184,176. Pub. 3-30-65. Filed 1-7-64.

790,912. RL. The Hansen Manufacturing Company. SN 189,466. Pub. 3-30-65. Filed 3-24-64.

790,913. RAIN GUN. Rain Bird Sprinkler Manufacturing Corp. SN 190,645. Pub. 3-30-65. Filed 4-3-64.

790,914. DOT (DESIGN). Moline Malleable Iron Company. SN 197,973. Pub. 3-30-65. Filed 7-16-64.

790,915. PANAPLUG. Expancol-Sociedade de Expansão Commercial de Plasticos, Limitada. SN 202,990. Pub. 3-30-65. Filed 9-30-64.

790,916. MARINIUM AND G. Gorham Corporation. SN 203,365. Pub. 3-30-65. Filed 10-5-64.

Class 14—Metals and Metal Castings and Forgings

790,917. NELCO. Chas. Pfizer & Co., Inc. SN 192,680. Pub. 3-30-65. Filed 5-8-64.

Class 15—Oils and Greases

790,861. (See Class 1 for this trademark.)

790,918. SOHIWAY. The Standard Oil Company. SN 195,562. Pub. 3-30-65. Filed 6-12-64.

790,919. COLOR GAUGE. Crown Industrial Products Company. SN 204,454. Pub. 3-30-65. Filed 10-21-64.

790,920. GAS MASTER. Rust Master Chemical Corporation. SN 205,251. Pub. 3-30-65. Filed 11-3-64.

Class 16—Protective and Decorative Coatings

790,861. (See Class 1 for this trademark.)

790,921. THRUSTGARD. Iowa Paint Manufacturing Company, Inc. SN 143,898. Pub. 3-30-65. Filed 4-30-62.

790,922. KEEPER-3. Caridon Hall Finishes, Inc. SN 162,140. Pub. 3-30-65. Filed 3-6-63.

790,923. KEEPER-3 FOR FINE WOODS. Caridon Hall Finishes, Inc. SN 162,141. Pub. 3-30-65. Filed 3-6-63.

790,924. MASKERAID. Products Techniques, Inc. SN 167,317. Pub. 3-30-65. Filed 4-23-63.

790,925. TUF-KOTE. Sol E. Saits, d.b.a. Power Industries Inc. SN 200,038. Pub. 3-30-65. Filed 8-17-64.

Class 17—Tobacco Products

790,926. AGIO. Agio Sigarenfabrieken N.V. SN 198,921. Pub. 3-30-65. Filed 7-31-64.

790,927. EDGAR. Agio Sigarenfabrieken N.V. SN 198,922. Pub. 3-30-65. Filed 7-31-64.

790,928. LA INSULAR. Compania Insular Tabacalera, S.A. SN 201,522. Pub. 3-30-65. Filed 9-9-64.

Class 18—Medicines and Pharmaceutical Preparations

790,929. ISCADOR. Weleda A.G. (Weleda Co. Ltd.) SN 187,099. Pub. 3-30-65. Filed 2-1-63.

790,930. PERINEZE. Garrett Laboratories, Inc. SN 144,370. Pub. 4-9-63. Filed 5-11-62.

790,931. APPETONE. Merrill's Turf Supplies Co. Ltd. SN 178,943. Pub. 3-30-65. Filed 10-14-63.

790,932. LEPTINOL. The Vale Chemical Company, Inc. SN 179,749. Pub. 3-30-65. Filed 10-24-63.

790,933. DANALAX. Waite Pharmacal Company. SN 182,850. Pub. 3-30-65. Filed 12-11-63.

790,934. NOCTAGETIC. Olin Mathieson Chemical Corporation. SN 184,736. Pub. 3-30-65. Filed 1-16-64.

790,935. DU-AIDS. Colgate-Palmolive Company. SN 185,110. Pub. 1-12-65. Filed 1-22-64.

790,936. AQUATAG. S. J. Tutag & Company. SN 185,956. Pub. 3-30-65. Filed 2-3-64.

790,937. VATENSOL. Chas. Pfizer & Co., Inc. SN 186,893. Pub. 3-30-65. Filed 2-10-64.

790,938. SYNCUMA. Philips Roxane, Inc. SN 188,560. Pub. 3-30-65. Filed 3-13-64.

790,939. FUR-TON. George V. Kinzel, d.b.a. Fur Animal Institute. SN 196,282. Pub. 3-30-65. Filed 5-12-64.

790,940. FUN-A-MINS. Kasar Company. SN 196,678. Pub. 1-19-65. Filed 6-29-64.

790,941. REMOPAL. Mattox and Moore, Inc. SN 196,687. Pub. 3-30-65. Filed 6-29-64.

790,942. TURF CHAMPION. The Salerno Co., Inc. SN 199,236. Pub. 3-30-65. Filed 8-4-64.

790,943. UNIVERSITY. The Salerno Co., Inc. SN 199,237. Pub. 3-30-65. Filed 8-4-64.

790,944. CRISTALOXINE. Manufacture de Produits Pharmaceutiques A. Christiaens. SN 199,683. Pub. 3-30-65. Filed 8-11-64.

790,945. HEPAGRUMIN. L'Equilibre Biologique Association Technique Pharmaceutique et Equilibre Biologique Reunis, Societe Anonyme. SN 200,950. Pub. 3-30-65. Filed 8-28-64.

790,946. PARENABOL. Ciba Limited. SN 201,102. Pub. 3-30-65. Filed 9-2-64.

790,947. BONDAL. American Home Products Corporation. SN 201,172. Pub. 3-30-65. Filed 9-3-64.

790,948. ALKOATSIN. Transcience Investment Company, d.b.a. Transcience Laboratories. SN 201,765. Pub. 3-30-65. Filed 9-11-64.

790,949. ORBIFERHOUS. Orbit Pharmaceutical, Inc. SN 205,921. Pub. 3-30-65. Filed 11-3-64.

790,950. MAXITROL. Alcon Laboratories, Inc. SN 205,882. Pub. 3-30-65. Filed 11-3-64.

790,951. ETHIFASTON. N.V. Philips-Duphar. SN 205,442. Pub. 3-30-65. Filed 11-3-64.

790,952. GENTZ. Philips Roxane, Inc. SN 206,454. Pub. 3-30-65. Filed 11-3-64.

790,953. FORTE-TOPICAL. The Upjohn Company. SN 205,622. Pub. 3-30-65. Filed 11-5-64.

790,954. BLUE RIBBON. National Laboratories, Inc. SN 206,640. Pub. 3-30-65. Filed 11-20-64.

790,955. CITRISUN. Bristol-Myers Company. SN 206,694. Pub. 3-30-65. Filed 11-23-64.

790,956. BOVIBORT. American Home Products Corporation. SN 206,808. Pub. 3-30-65. Filed 11-24-64.

790,957. RMA-PLEX. American Home Products Corporation. SN 206,809. Pub. 3-30-65. Filed 11-24-64.

Class 19—Vehicles

790,958. INSTA-VISOR. L-F-L Industries, Inc. SN 187,587. Pub. 3-30-65. Filed 2-27-64.

790,959. VW AND DESIGN. Volkswagenwerk Aktiengesellschaft. SN 198,811. Pub. 3-30-65. Filed 7-24-64.

790,960. HC AND DESIGN. Hydro-Cushion Incorporated. SN 199,903. Pub. 3-30-65. Filed 8-14-64.

790,961. "SLIK CHIK." Arnold, Schwinn & Co. SN 201,177. Pub. 3-30-65. Filed 9-3-64.

Class 21—Electrical Apparatus, Machines, and Supplies

790,962. (See Class 1 for this trademark.)

790,963. MISCELLANEOUS DESIGN. Hamilton Watch Company. SN 155,412. Pub. 3-30-65. Filed 10-18-62.

790,964. T-JET AND DESIGN. Associated C-A-E, Inc. SN 161,456. Pub. 3-30-65. Filed 1-28-63.

790,965. LIQUID-LECTRIC HEAT AND DESIGN. Dual Electric Heater Corporation. SN 168,230. Pub. 3-30-65. Filed 2-26-63.

790,966. CENTRICORES. Magnetic Metals Company. SN 186,005. Pub. 3-30-65. Filed 3-20-63.

790,967. WIEGAND C AND DESIGN. Edwin L. Wiegand Company. SN 191,207. Pub. 3-30-65. Filed 11-15-63.

790,968. QUENSUR. James R. Kearney Corporation. SN 191,263. Pub. 3-30-65. Filed 11-18-63.

790,969. DOMINATOR. Dominator Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 196,600. Pub. 3-30-65. Filed 2-13-64.

790,970. SAMOX. Briscoe Manufacturing Company. SN 197,005. Pub. 3-30-65. Filed 2-19-64.

790,970. PROJECT G. Clairtone Sound Corporation, Limited. SN 197,580. Pub. 3-30-65. Filed 2-27-64.

790,971. DATA SWITCH. Wheelock Signals, Inc. SN 198,828. Pub. 3-30-65. Filed 3-16-64.

790,972. DIAL-O-MATIC. Seal-O-Matic Dispenser Corporation. SN 191,661. Pub. 3-30-65. Filed 4-14-64.

790,973. TOUCH 'N BREW ETC. AND DESIGN. S. Hickman, Inc. SN 194,122. Pub. 3-30-65. Filed 5-26-64.

790,974. MARKET-VU. Ultronic Systems Corp. SN 196,508. Pub. 3-30-65. Filed 7-24-64.

790,975. POLIVOLT. General Electric Company. SN 199,197. Pub. 3-30-65. Filed 8-4-64.

790,976. HEA. Adage, Inc. SN 199,864. Pub. 3-30-65. Filed 8-14-64.

790,977. COLORAY. Channel Master Corporation. SN 200,536. Pub. 3-30-65. Filed 8-21-64.

790,978. VIMCO. Victory Metal Manufacturing Company. SN 200,800. Pub. 3-30-65. Filed 8-27-64.

Class 22—Games, Toys, and Sporting Goods

790,979. (See Class 6 for this trademark.)

790,979. IT'S KENNER IT'S FUN! Kenner Products Company. SN 150,951. Pub. 3-30-65. Filed 8-10-62.

790,980. ESPIONAGE. Transogram Company, Inc. SN 165,550. Pub. 3-30-65. Filed 2-27-63.

790,981. GM. Calzaturificio di Sante Tessaro, d.b.a. Calzaturificio di Sante Tessaro. SN 189,483. Pub. 3-30-65. Filed 5-22-63.

790,982. MAGNA-SLIDE. Kelton Corporation Limited. SN 180,371. Pub. 3-30-65. Filed 11-1-63.

790,983. CHOOL. Phillip N. Legg. SN 194,580. Pub. 3-30-65. Filed 1-14-64.

790,984. STILL FISH. Still Fish Reel Company. SN 192,005. Pub. 3-30-65. Filed 4-27-64.

790,985. U NAME EM. C. L. Cleak. SN 198,782. Pub. 3-30-65. Filed 5-19-64.

790,986. U NAME MR. C. L. Cleak. SN 198,783. Pub. 3-30-65. Filed 5-19-64.

790,987. U NAME IT. C. L. Cleak. SN 198,784. Pub. 3-30-65. Filed 5-19-64.

790,988. POWER 4. Manning Manufacturing Corporation. SN 194,895. Pub. 3-30-65. Filed 6-4-64.

790,989. NIMBLE WORDS. Kohner Bros., Inc. SN 195,419. Pub. 3-30-65. Filed 6-11-64.

790,990. EASY ADDER. Kohner Bros., Inc. SN 195,582. Pub. 3-30-65. Filed 6-12-64.

790,991. MISS MARY. Irwin Corporation. SN 196,650. Pub. 3-30-65. Filed 7-23-64.

790,992. QWIK-WAM. The Hettrick Manufacturing Company. SN 199,061. Pub. 3-30-65. Filed 8-3-64.

790,993. GREENSMAN. Dunlop Tire and Rubber Corporation. SN 199,184. Pub. 3-30-65. Filed 8-4-64.

790,994. CLASSIC. Dunlop Tire and Rubber Corporation. SN 199,185. Pub. 3-30-65. Filed 8-4-64.

790,995. CASTILE. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 199,200. Pub. 3-30-65. Filed 8-6-64.

790,996. COLOMBO. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 199,202. Pub. 3-30-65. Filed 8-6-64.

790,997. BALI. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 199,204. Pub. 3-30-65. Filed 8-6-64.

790,998. CORONADO. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 199,206. Pub. 3-30-65. Filed 8-6-64.

790,999. NORTHWESTERN. Northwestern Golf Company. SN 199,600. Pub. 3-30-65. Filed 8-11-64.

791,000. HOPKINS. Tirrah U. Hopkins, d.b.a. Hopkins Fishing Company. SN 199,742. Pub. 3-30-65. Filed 8-13-64.

791,001. TRAVELITE. Beverly Douglas. SN 199,976. Pub. 3-30-65. Filed 8-17-64.

791,002. DANIEL BOONE. Louis Marx & Co., Inc. SN 201,004. Pub. 3-30-65. Filed 9-10-64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

791,003. SANDYDANCER. Jacuzzi Whirlpool, Inc. SN 181,143. Pub. 3-30-65. Filed 11-14-63.

791,004. HI-V. Ozark Industries, Inc. SN 189,926. Pub. 3-30-65. Filed 3-30-64.

791,005. LO-V. Ozark Industries, Inc. SN 189,926. Pub. 3-30-65. Filed 3-30-64.

791,006. JET-START AND DESIGN. Jet-Start Corporation. SN 196,877. Pub. 3-30-65. Filed 5-29-64.

791,007. H AND DESIGN. American Metal Climax, Inc., d.b.a. Hunter Engineering Co. SN 197,244. Pub. 3-30-65. Filed 7-7-64.

791,008. IMPERIAL. B & B Machinery Co. SN 199,816. Pub. 3-30-65. Filed 8-5-64.

791,009. MINUTE BRAKE. Rotex Punch Company, Inc. SN 199,899. Pub. 3-30-65. Filed 8-6-64.

791,010. GYRUTO. Huret et ses Fils, Societe Anonyme Francaise. SN 201,942. Pub. 3-30-65. Filed 9-15-64.

791,011. TRU CUT. Starlite Manufacturing Co. SN 202,322. Pub. 3-30-65. Filed 9-21-64.

791,012. EQUALINE LEVELER. Turbo Machine Company. SN 202,336. Pub. 3-30-65. Filed 9-21-64.

791,013. BARRY B CONTROLS AND DESIGN. Barry Wright Corporation. SN 202,048. Pub. 3-30-65. Filed 9-30-64.

791,014. MON-STERS. Zoo-Piks. SN 204,114. Pub. 3-30-65. Filed 10-15-64.

Class 24—Laundry Appliances and Machines

791,015. ATLAS. Ametek, Inc. SN 195,282. Pub. 3-30-65. Filed 5-26-64.

791,016. ME METAL SPINNERS AND DESIGN. Metal Spinners, Inc. SN 204,180. Pub. 3-30-65. Filed 10-16-64.

Class 26—Measuring and Scientific Appliances

790,968. (See Class 21 for this trademark.)

791,017. REGU-GAGE. Stile-Craft Manufacturers, Inc. SN 196,787. Pub. 3-30-65. Filed 5-14-64.

791,018. RUE DES ENFANTS AND DESIGN. Linda Goldberg. SN 196,600. Pub. 3-30-65. Filed 6-15-64.

791,019. MATHATRON. Mathatronics, Inc. SN 196,285. Pub. 3-30-65. Filed 7-21-64.

791,020. KEM-KLAMP. Kontes Glass Company. SN 202,508. Pub. 3-30-65. Filed 10-7-64.

Class 27—Horological Instruments

791,021. MONOREX AND DESIGN. Eriksmann-Schins S.A. SN 172,295. Pub. 3-30-65. Filed 7-2-63.

Class 28—Jewelry and Precious-Metal Ware

791,022. MAPPIN. Mappin & Webb Limited. SN 198,286. Pub. 3-30-65. Filed 5-12-64.

791,023. THE CLASSIC LINE. General Classics, Incorporated. SN 205,588. Pub. 3-30-65. Filed 11-5-64.

Class 29—Brooms, Brushes, and Dusters

790,981. (See Class 3 for this trademark.)

Class 31—Fibers and Refrigerators

790,957. (See Class 1 for this trademark.)

790,958. (See Class 1 for this trademark.)

Class 32—Furniture and Upholstery

791,024. FAB-LOK. Conco Engineering Works, Inc. SN 195,972. Pub. 3-30-65. Filed 6-11-64.

791,025. YOUNG FAMILY. Basic-Witz Furniture Industries, Inc. SN 199,247. Pub. 3-30-65. Filed 8-6-64.

Class 33—Glassware

791,026. EBA AND DESIGN. Abilities, Inc. SN 195,939. Pub. 3-30-65. Filed 6-8-64.

Class 34—Heating, Lighting, and Ventilating Apparatus

791,027. HERITAGE. Integrated Ceilings Inc. SN 202,483. Pub. 3-30-65. Filed 9-22-64.

791,028. CONTOURA. Integrated Ceilings Inc. SN 202,484. Pub. 3-30-65. Filed 9-22-64.

791,029. ACRYGLO. Integrated Ceilings Inc. SN 202,927. Pub. 3-30-65. Filed 9-24-64.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

791,030. ROTO CORD. The Goodyear Tire & Rubber Company. SN 188,102. Pub. 3-30-65. Filed 3-6-64.

791,031. CHEM-O-PLUG. Better Monkey Grip Company. SN 189,048. Pub. 3-30-65. Filed 3-30-64.

Class 36—Musical Instruments and Supplies

791,032. TRAVEL-MASTER. Distaphone Corporation. SN 172,570. Pub. 3-30-65. Filed 7-3-63.

791,033. BASF. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 196,033. Pub. 3-30-65. Filed 7-23-64.

791,034. MHS. The Musical Heritage Society, Inc. SN 196,053. Pub. 3-30-65. Filed 7-23-64.

791,035. KK. Kamaka & Sons Enterprises. SN 196,576. Pub. 3-30-65. Filed 8-10-64.

791,036. K KEIKI. Kamaka & Sons Enterprises. SN 196,580. Pub. 3-30-65. Filed 8-10-64.

Class 37—Paper and Stationery

791,037. FLUFF OUT. Marcal Paper Mills, Inc., by change of name from Marcalus Manufacturing Co., Inc., SN 83,112. Pub. 12-8-60. Filed 10-12-59.

791,038. KEEP GREENS AND GROW. H. Greene and Company, Inc. SN 197,562. Pub. 3-30-65. Filed 7-10-64.

791,039. CARBONETTES AND DESIGN. Mantois Supplies Company. SN 196,781. Pub. 3-30-65. Filed 7-30-64.

791,040. STONE MOUNTAIN BOND. Thomas F. Rybert, d.b.a. Rybert Printing Company. SN 190,497. Pub. 3-30-65. Filed 3-7-64.

791,041. DURA-STIK. C. L. Barkley & Co. SN 190,955. Pub. 3-30-65. Filed 3-17-64.

791,042. ROLEV AND DESIGN. Michigan Carton Co. SN 201,538. Pub. 3-30-65. Filed 9-9-64.

791,043. IP AND DESIGN. International Paper Company. SN 203,397. Pub. 3-30-65. Filed 10-6-64.

791,044. ALLIGATOR (DESIGN). International Paper Company. SN 203,398. Pub. 3-30-65. Filed 10-6-64.

791,045. ASPEN AND DESIGN. Phillips Petroleum Company. SN 203,806. Pub. 3-30-65. Filed 10-12-64.

Class 38—Prints and Publications

791,046. FOOD MARKETER. Clover Farm Stores Corporation. SN 178,736. Pub. 3-30-65. Filed 7-25-63.

791,047. RESEARCH/DEVELOPMENT. F. D. Thompson Publications, Inc. SN 176,585. Pub. 3-30-65. Filed 9-9-63.

791,048. CATHOLIC BOOK ANNUAL. The Thomas More Association. SN 179,742. Pub. 3-30-65. Filed 10-24-63.

791,049. AVIATION DAILY. American Aviation Publications, Inc. SN 181,946. Pub. 3-30-65. Filed 11-27-63.

791,050. THE PROMENADER. The Advertiser Company. SN 184,598. Pub. 3-30-65. Filed 1-15-64.

791,051. SCENT-A-MEANT. Loretta Rosenthal and Jack Y. Diamore (joint venture). SN 184,967. Pub. 3-30-65. Filed 1-20-64.

791,052. LIGHTING CLASSICS. Thomas Industries Inc. SN 186,976. Pub. 3-30-65. Filed 2-18-64.

791,053. THE MARKET PLACE. The Market Place, Inc. SN 188,252. Pub. 3-30-65. Filed 3-9-64.

791,054. TV DIAL. John T. McGinnis. SN 190,403. Pub. 3-30-65. Filed 4-6-64.

791,055. TV TIME TAB AND DESIGN. John T. McGinnis. SN 190,404. Pub. 3-30-65. Filed 4-6-64.

791,056. LEATHERNECK MAGAZINE OF THE MARINES. The Leatherneck Association, Incorporated. SN 191,320. Pub. 3-30-65. Filed 3-18-64.

791,057. EVERYWOMAN'S SHOPPING CIRCLE ETC. AND DESIGN. The Family Circle, Inc. SN 192,167. Pub. 3-30-65. Filed 4-28-64.

791,058. METAGE. Estimating Services Inc. MULTIPLE CLASS (Classes 38 and 101). SN 193,005. Pub. 3-30-65. Filed 5-5-64.

791,059. MMD AND DESIGN. Marketing Manpower Development, Inc. SN 193,972. Pub. 3-30-65. Filed 5-21-64.

791,060. TIPS FROM THE TACKLE BOX. E. F. Gladding & Co., Inc. SN 190,277. Pub. 3-30-65. Filed 3-5-64.

791,061. TILE TALK. United States Ceramic Tile Company. SN 201,248. Pub. 3-30-65. Filed 9-3-64.

791,062. PASTEL POODLES. Norcross, Inc. SN 202,705. Pub. 3-30-65. Filed 9-25-64.

791,063. VIBRATIONS AND DESIGN. Illinois Tool Works Inc. SN 203,871. Pub. 3-30-65. Filed 10-12-64.

Class 39—Clothing

791,064. OCEANAIRE. Standard Garments, Inc. SN 184,164. Pub. 3-30-65. Filed 2-28-62.

791,065. THE CLOTHES TREE AND DESIGN. The Clothes Tree, Inc. SN 186,793. Pub. 3-30-65. Filed 12-10-62.

791,066. CONTI. Continental Gummi-Werke Aktiengesellschaft. SN 172,872. Pub. 3-30-65. Filed 7-12-63.

791,067. AUTUMN LEAVES. Hat Corporation of America. SN 185,287. Pub. 3-30-65. Filed 1-24-64.

791,068. THE MAN AT BASE ETC. AND DESIGN. The Man at Base, Inc. SN 189,602. Pub. 3-30-65. Filed 3-25-64.

791,069. DROPGAL. Association Pour la Difusion, la Recherche l'Organisation et la Promotion de Fils Textures. SN 190,484. Pub. 3-30-65. Filed 4-7-64.

791,070. DROPNYL. Association Pour la Difusion, la Recherche l'Organisation et la Promotion de Fils Textures. SN 190,487. Pub. 3-30-65. Filed 4-7-64.

791,071. MART-I-FINO. Mister Marty. SN 194,816. Pub. 3-30-65. Filed 6-2-64.

791,072. JUBO AND DESIGN OF STAG HEAD. Jubo—Schuhfabrik Julius Bock K.G. SN 197,124. Pub. 3-30-65. Filed 7-6-64.

791,073. SUZY BROOKS. Martin Rogen, Inc., assignee of Suzy Brooks, Inc. SN 196,234. Pub. 3-30-65. Filed 7-30-64.

791,074. NOUVELLE. Gelabu Inc. SN 201,118. Pub. 3-30-65. Filed 9-2-64.

791,075. CORFLEX. Genesco Inc. SN 201,681. Pub. 3-30-65. Filed 9-11-64.

791,076. DINKY. Max Koch & Sons, Inc. SN 202,157. Pub. 3-30-65. Filed 9-18-64.

791,077. DEB CEE. Washington Manufacturing Company. SN 202,835. Pub. 3-30-65. Filed 9-21-64.

Class 40—Fancy Goods, Furnishings, and Notions

791,078. CHARM-ETTE. B & H Supply Company, Inc. MULTIPLE CLASS (Classes 40, 51, and 52). SN 177,750. Pub. 3-30-65. Filed 9-26-63.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

791,079. SHRINK NIX. United Elastic Corporation. SN 170,501. Pub. 3-30-65. Filed 6-6-63.

791,080. MAY LING. Sears, Roebuck and Co. SN 185,162. Pub. 3-30-65. Filed 1-22-64.

791,081. DROPGAL. Association Pour la Difusion, la Recherche l'Organisation et la Promotion de Fils Textures. SN 190,485. Pub. 3-30-65. Filed 4-7-64.

791,082. DROPNYL. Association Pour la Difusion, la Recherche l'Organisation et la Promotion de Fils Textures. SN 190,488. Pub. 3-30-65. Filed 4-7-64.

791,083. GRIZZLY. Levi Strauss & Co. SN 196,167. Pub. 3-30-65. Filed 6-22-64.

791,084. GRIZZLY AND DESIGN. Levi Strauss & Co. SN 196,168. Pub. 3-30-65. Filed 6-22-64.

791,085. PRES-FAB. Huyck Corporation. SN 201,501. Pub. 3-30-65. Filed 9-10-64.

791,086. CRESCENDO. West Point-Pepperell, Inc., by merger and change of name from Pepperell Manufacturing Company. SN 202,425. Pub. 3-30-65. Filed 10-6-64.

Class 43—Thread and Yarn

791,087. DROPGAL. Association Pour la Difusion, la Recherche l'Organisation et la Promotion de Fils Textures. SN 190,486. Pub. 3-30-65. Filed 4-7-64.

791,088. DROPNYL. Association Pour la Difusion, la Recherche l'Organisation et la Promotion de Fils Textures. SN 190,489. Pub. 3-30-65. Filed 4-7-64.

Class 44—Dental, Medical, and Surgical Appliances

791,089. UBI FLECTOR. Rexfax Laboratory, assignee, by mesne assignments, of Double D Plastic Co. SN 188,040. Pub. 3-30-65. Filed 12-16-63.

791,090. DOSOLATOR. Boehringer Ingelheim G.m.b.H. SN 191,121. Pub. 3-30-65. Filed 4-15-64.

791,091. TAN-O-MATIC. The Tan-O-Matic Corporation of America. SN 193,421. Pub. 3-30-65. Filed 5-12-64.

791,092. LITTMANN. Cardiosonics Medical Instruments Corporation. SN 194,062. Pub. 3-30-65. Filed 5-22-64.

791,093. PORCEL X. Rothstein Dental Laboratories, Inc. SN 196,205. Pub. 3-30-65. Filed 7-21-64.

791,094. STEPHENSON SCOUT RESUSCITATOR. Stephenson Corporation. SN 201,241. Pub. 3-30-65. Filed 9-3-64.

791,095. STERI-STIK. Propper Manufacturing Company, Inc. SN 201,615. Pub. 3-30-65. Filed 9-10-64.

791,096. MUCOLIZER. Mead Johnson & Company. SN 202,606. Pub. 3-30-65. Filed 9-24-64.

Class 45—Soft Drinks and Carbonated Waters

790,875. (See Class 4 for this trademark.)

Class 46—Foods and Ingredients of Foods

790,875. (See Class 4 for this trademark.)

791,097. HORSE KRUNCH. Allied Mills, Inc. SN 185,552. CONCURRENT USE. Pub. 3-30-65. Filed 1-11-62.

791,098. METROCLOT. Chas. Pfizer & Co., Inc. SN 175,667. Pub. 3-30-65. Filed 8-27-63.

791,099. SUTTER'S—STATE FAIR ETC. AND DESIGN. Edward W. Sutter, d.b.a. Sutter Candy Company. SN 182,976. Pub. 3-30-65. Filed 12-13-63.

791,100. SUTTER'S—STATE FAIR. Edward W. Sutter, d.b.a. Sutter Candy Company. SN 182,977. Pub. 3-30-65. Filed 12-13-63.

791,101. CONDETTA. Condetta Gesellschaft m.b.H. SN 186,156. Pub. 3-30-65. Filed 12-17-63.

791,102. "TEN PENNY" TATERS. Taterstate Frozen Foods. SN 194,322. Pub. 3-30-65. Filed 1-9-64.

791,103. CEY. Manfred Kombrecht, d.b.a. Ceylon Import G.m.b.H. & Co. SN 195,045. Pub. 3-30-65. Filed 1-21-64.

791,104. CAP'N PRIDE. Seapak Corporation. SN 188,065. Pub. 3-30-65. Filed 3-13-64.

791,105. SURE-TEND. The Sugardale Provision Company. SN 190,036. Pub. 3-30-65. Filed 3-31-64.

791,106. SALEM HILL. Noramco, Inc. SN 190,279. Pub. 3-30-65. Filed 4-3-64.

791,107. TASTY TREAT. George F. Joseph. SN 190,522. Pub. 3-30-65. Filed 4-7-64.

791,108. EARLY CALIFORNIA. Early California Foods, Inc., assignee of Pacific Olive Company, d.b.a. Pacific Olive Co. SN 194,210. Pub. 3-30-65. Filed 5-25-64.

791,109. PAGE-GLENCLIFF. The Page Milk Company. SN 196,899. Pub. 3-30-65. Filed 7-1-64.

791,110. TINY TIM. Tiny Tim (Potfoods) Limited. SN 197,857. Pub. 3-30-65. Filed 7-14-64.

791,111. WIN SCHULER'S AND DESIGN. Win Schuler's, Inc. SN 198,692. Pub. 3-30-65. Filed 7-15-64.

791,112. BREAKFAST CLUB. The Coca-Cola Company. SN 200,527. Pub. 3-30-65. Filed 8-28-64.

791,113. KING VALLEY. General Foods Corporation. SN 201,685. Pub. 3-30-65. Filed 9-1-64.

791,114. REDI-TEA. Francis H. Leggett & Company. SN 202,081. Pub. 3-30-65. Filed 9-10-64.

791,115. SUN-GLO. Mendelson-Zeller Co., Inc. SN 204,179. Pub. 3-30-65. Filed 10-16-64.

791,116. POLAR SPEARS. Malley's, Inc. SN 204,185. Pub. 3-30-65. Filed 10-16-64.

791,117. COWBOY. The Arkansas Rice Growers Cooperative Association, d.b.a. Riceland Rice. SN 204,238. Pub. 3-30-65. Filed 10-19-64.

791,118. MR. DUNDERBAK'S BAVARIAN PANTRY. Mr. Dunderbak, Inc. SN 204,459. Pub. 3-30-65. Filed 10-21-64.

791,119. FIESTA. Hygrade Food Products Corporation. SN 204,576. Pub. 3-30-65. Filed 10-22-64.

791,120. JOLENE. J. (Bud) Vukasovich. SN 204,618. Pub. 3-30-65. Filed 10-22-64.

791,121. KATHY ANNE AND DESIGN. J. (Bud) Vukasovich. SN 204,619. Pub. 3-30-65. Filed 10-22-64.

791,122. PLENTI GRAND. J. (Bud) Vukasovich. SN 204,620. Pub. 3-30-65. Filed 10-22-64.

791,123. J-B-V AND DESIGN. J. (Bud) Vukasovich. SN 204,621. Pub. 3-30-65. Filed 10-22-64.

791,124. BYCO. Stanley Byrd, d.b.a. Byrd Produce Co. SN 205,147. Pub. 3-30-65. Filed 10-30-64.

791,125. ROSE GARDEN. Stanley Byrd, d.b.a. Byrd Produce Co. SN 205,148. Pub. 3-30-65. Filed 10-30-64.

Class 47—Wines

791,126. MUSTANG. E. & J. Gallo Winery. SN 192,585. Pub. 3-9-65. Filed 5-4-64.

791,127. SENATOR'S ETC. AND DESIGN. H. Sichel & Sons Limited. SN 194,822. Pub. 3-30-65. Filed 5-26-64.

791,128. CORVETTE. E. & J. Gallo Winery, d.b.a. Grape Valley Wine Co. SN 200,092. Pub. 3-30-65. Filed 8-18-64.

791,129. CABARET. E. & J. Gallo Winery. SN 200,432. Pub. 3-30-65. Filed 8-24-64.

Class 48—Malt Beverages and Liquors

791,130. HOPSTRACT. Hops Extract Corporation of America. SN 199,908. Pub. 3-30-65. Filed 3-17-64.

Class 49—Distilled Alcoholic Liquors

791,131. CANADA STAR. Jas. Barclay & Co. Limited. SN 196,099. Pub. 3-30-65. Filed 6-22-64.

791,132. GLENMAVIS. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited. SN 198,640. Pub. 3-30-65. Filed 7-28-64.

Class 50—Merchandise Not Otherwise Classified

791,133. WORRY BOX. Laurance A. McCabe. SN 177,714. Pub. 3-30-65. Filed 9-25-63.

791,134. TENNA TAGS. Frank G. Ajello and Margaret M. Ajello (joint owners), d.b.a. Mini Auto Plates. SN 186,499. Pub. 3-30-65. Filed 2-12-64.

791,135. GREENSLEEVES AND DESIGN. Ambalitter Corporation. SN 194,566. Pub. 3-30-65. Filed 6-1-64.

791,136. C AND DESIGN. The Cincinnati Milling Machine Co. SN 200,910. Pub. 3-30-65. Filed 8-21-64.

791,137. "F". Minnesota Mining and Manufacturing Company. SN 201,126. Pub. 3-30-65. Filed 9-3-64.

791,138. "J". Minnesota Mining and Manufacturing Company. SN 201,127. Pub. 3-30-65. Filed 9-3-64.

791,139. GLAD. Union Carbide Corporation. SN 203,721. Pub. 3-30-65. Filed 9-25-64.

791,140. ELEGANCE. The Fibre-Metal Products Company. SN 204,468. Pub. 3-30-65. Filed 10-21-64.

791,141. ABCAST. A-B Sign Service of California, Inc. SN 205,757. Pub. 3-30-65. Filed 11-9-64.

Class 51—Cosmetics and Toilet Preparations

790,889. (See Class 6 for this trademark.)

790,978. (See Class 40 for this trademark.)

791,142. COUNT-DOWN. Bronislawa W. Moore, d.b.a. Bronislawa. SN 182,426. Pub. 10-6-64. Filed 3-30-62.

791,143. ALTRET. Allied Stores Corporation. SN 174,485. Pub. 3-30-65. Filed 6-6-62.

791,144. ANITA LEWIS ETC. AND DESIGN. Neimor Brothers, Inc. SN 184,101. Pub. 3-30-65. Filed 1-6-64.

791,145. SATIN TAN. Mead Johnson & Company. SN 195,882. Pub. 3-30-65. Filed 1-28-64.

791,146. YOUTH FACE MAGIC AND DESIGN. Cinema Enterprises, Inc., d.b.a. Klayton's. SN 185,564. Pub. 3-30-65. Filed 1-29-64.

791,147. ANCIENNE. Nerda Essential Oil & Chemical Company, Inc. SN 185,867. Pub. 3-30-65. Filed 2-12-64.

791,148. SUNTAMER. Jay Kay Company. SN 189,502. Pub. 3-30-65. Filed 3-25-64.

791,149. TANSUM. Hudson National, Inc., by change of name from Hudson Vitamin Products, Inc. SN 197,297. Pub. 3-30-65. Filed 7-7-64.

791,150. CONFORM. The Gillette Company, d.b.a. The Toni Company. SN 197,699. Pub. 3-9-65. Filed 7-13-64.

791,151. GOOD LUCK. Lucky Heart Laboratories, Inc., d.b.a. American Chemical Co. SN 198,061. Pub. 3-30-65. Filed 7-17-64.

791,152. T-K. Walter L. Schwartz, d.b.a. Evenique Company. SN 198,206. Pub. 3-30-65. Filed 7-21-64.

791,153. JADE EAST. Swank, Inc. SN 198,906. Pub. 3-30-65. Filed 7-30-64.

791,154. DAYBREAK. "42" Products, Ltd., Inc. SN 199,005. Pub. 3-30-65. Filed 8-17-64.

791,155. MOONLIT MINK. Clairol Incorporated. SN 200,167. Pub. 3-30-65. Filed 8-19-64.

791,156. BABY BLUSH. Clairol Incorporated. SN 200,169. Pub. 3-30-65. Filed 8-19-64.

791,157. NTM-4. American Home Products Corporation. SN 201,509. Pub. 3-30-65. Filed 9-8-64.

791,158. LITTLE LADY. Helene Pearl, Inc. MULTIPLE CLASS (Classes 51 and 53). SN 206,118. Pub. 3-30-65. Filed 11-12-64.

Class 52—Detergents and Soaps

790,861. (See Class 1 for this trademark.)

790,976. (See Class 6 for this trademark.)

790,889. (See Class 6 for this trademark.)

791,078. (See Class 40 for this trademark.)

791,158. (See Class 51 for this trademark.)

791,159. EVASION. Bourjois, Inc. SN 186,148. Pub. 3-30-65. Filed 2-6-64.

791,160. PENNICO. Pennsalt Chemicals Corporation. SN 189,270. Pub. 3-30-65. Filed 2-7-64.

791,161. SU-TBC. Birko Chemical Corporation. SN 191,117. Pub. 3-23-65. Filed 4-15-64.

791,162. BI-TBC. Birko Chemical Corporation. SN 191,118. Pub. 3-23-65. Filed 4-15-64.

791,163. META-TBC NO. 9-C. Birko Chemical Corporation. SN 191,119. Pub. 3-23-65. Filed 4-15-64.

791,164. REVIEW. Edward S. Johnson. SN 195,862. Pub. 3-30-65. Filed 6-17-64.

791,165. CARLEY. Carley, Inc. SN 196,015. Pub. 3-30-65. Filed 6-19-64.

791,166. RANGE. The Procter & Gamble Company. SN 196,600. Pub. 3-30-65. Filed 6-10-64.

791,167. TALENT. Wyandotte Chemicals Corporation. SN 200,181. Pub. 3-30-65. Filed 8-18-64.

791,168. CLEMET. Cleanmetal Process Company, Inc. SN 200,548. Pub. 3-30-65. Filed 8-25-64.

791,169. NO MORE TEARS AND DESIGN. Johnson & Johnson. SN 201,063. Pub. 3-30-65. Filed 9-1-64.

791,170. PUFFY. Demcorp Inc. SN 201,360. Pub. 3-30-65. Filed 9-8-64.

Service Marks

Class 100—Miscellaneous

791,171. AAU AND DESIGN. Amateur Athletic Union of the United States. SN 178,575. Pub. 3-30-65. Filed 10-9-63.

791,172. BONANZA SIRLOIN PIT. International Franchise Corporation. SN 189,478. Pub. 3-30-65. Filed 3-24-64.

791,173. BBF BURGER BOY FOOD-O-RAMA AND DESIGN. Food & Fixture Co. of Ohio. SN 191,949. Pub. 3-30-65. Filed 4-24-64.

791,174. FRANKSVILLE. Franksville, Inc. SN 194,785. Pub. 3-30-65. Filed 6-3-64.

Class 101—Advertising and Business

791,063. (See Class 28 for this trademark.)

791,175. REPRESENTATION OF TWO CATS' HEADS. Xerographic Copy Service, Inc. SN 183,444. Pub. 3-30-65. Filed 2-26-63.

791,176. MALE FIGURE (DESIGN). Container Advertising Co. SN 175,171. Pub. 3-30-65. Filed 8-16-63.

791,177. NATIONAL AUCTION SERVICE ETC. AND DESIGN. Robert Etherton. SN 192,579. Pub. 3-30-65. Filed 5-4-64.

791,178. DISKAY. W. T. Grant Company, d.b.a. Diskay Discount Mart. SN 194,051. Pub. 3-30-65. Filed 5-22-64.

Class 102—Insurance and Financial

791,179. A THE ASSOCIATES AND DESIGN. Associates Investment Company. SN 184,871. Pub. 3-9-65. Filed 1-30-64.

791,180. A. Associates Investment Company. SN 184,872. Pub. 3-9-65. Filed 1-30-64.

791,181. THRIFTY PAY. Fred Meyer, Inc. SN 193,003. Pub. 3-30-65. Filed 5-19-64.

Class 104—Communication

791,182. KOCH-FM AND DESIGN. Socoss Broadcasting Company. SN 196,462. Pub. 3-30-65. Filed 6-11-64.

Class 105—Transportation and Storage

791,183. SUNPAK MOVERS INC. AND DESIGN. Sunpak Movers, Inc. SN 189,635. Pub. 3-30-65. Filed 3-25-64.

Class 107—Education and Entertainment

791,184. PIXIE INSIGNIA. Harvey Emerson Enterprises, Inc., d.b.a. Candy and Cake Craft Institute and Candle Institute. SN 156,589. Pub. 3-30-65. Filed 11-5-63.

791,185. FANCIFUL DESIGN. San Antonio Fair, Inc., d.b.a. Hemis Fair. SN 196,218. Pub. 3-30-65. Filed 5-11-64.

Collective Membership Marks

Class 200

791,186. DIVINE SCIENCE FEDERATION ETC. AND DESIGN. Divine Science Federation International. SN 181,138. Pub. 3-30-65. Filed 11-14-63.

791,187. INDIANENSIS ETC. AND DESIGN. The Trustees of Indiana University. SN 184,990. Pub. 3-30-65. Filed 1-30-64.

791,188. INTERNATIONAL ASSOCIATION ETC. AND DESIGN. International Association of Electrical Inspectors. SN 196,762. Pub. 3-30-65. Filed 6-16-64.

791,189. WRITING INSTRUMENT ETC. AND DESIGN. Writing Instrument Manufacturers Association, Incorporated. SN 196,985. Pub. 3-30-65. Filed 6-19-64.

791,190. JUNIOR EXCHANGE CLUB ETC. AND DESIGN. The National Exchange Club. SN 196,977. Pub. 3-30-65. Filed 7-2-64.

791,191. NATIONAL EXCHANGE CLUB ETC. AND DESIGN. The National Exchange Club. SN 196,976. Pub. 3-30-65. Filed 7-2-64.

791,192. JUNIOR EXCHANGETTE ETC. AND DESIGN. The National Exchange Club. SN 196,979. Pub. 3-30-65. Filed 7-2-64.

791,193. CIRCLE AND OVAL DESIGN. Association of College Unions. SN 197,366. Pub. 3-30-65. Filed 7-15-64.

Certification Mark

Class A—Goods

791,194. SL. Security Lithographers Section of Printing Industries of America, by change of name from Security Lithographers Division of Lithographers and Printers National Association Inc. SN 184,289. Pub. 3-30-65. Filed 1-6-64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

791,196. Semco Industries, Inc., Boston, Mass. SN 191,082. Filed P.R. 4-14-64; Am. S.R. 3-25-65.

COPY CENTER

Class 5—Adhesives

For Rubber Cement, Rubber Cement Thinner, Drafting Tape and Mending Tape.
First use August 1961.

Class 6—Chemicals and Chemical Compositions

For Liquid Ammonia and Pen Cleaner Solution for Dissolving and Removing Drawing Ink From Drafting Pens.
First use August 1961.

Class 11—Inks and Inking Materials

For Ink, Diazo Typewriter Ribbons, and Carbon Paper.
First use August 1961.

Class 20—Linoleum and Oiled Cloth

For Drawing Board Linoleum.
First use August 1961.

Class 21—Electrical Apparatus, Machines, and Supplies

For Lamps and Erasing Machines.
First use August 1961.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Semi-Automatic and Automatic Collators, Jogger Stackers, Electric Staplers and Parts, Plastic Bindings, Diazo Whiteprint Machines, Diazo Machine Parts and Accessories for Diazo White Print Machines, Drafting Machines, and Anhydrous Ammonia Kits Including Valves and Meter Units Which Are Attached to Diazo Whiteprint Machines for the Purpose of Controlling the Feeding of Ammonia Gas Into the Developing Section.
First use Apr. 30, 1963, on anhydrous ammonia kits.

Class 26—Measuring and Scientific Appliances

For Cleaning Pads Used To Clean the Surface of Engineering Drawings, Drawing Instruments, Templates, Straightedges, Triangles, Lettering Guides and Accessories, Bronsters To Bronsents the Diazo Dye Image on Diazo Type Whiteprints, Transparentizers Which Are Applied to the Surface of Original Documents or Original Drawings To Make the Paper More Transparent, Metal Braid for Straight Edges, Photocopy Supplies and Equipment—Namely, Photocopy Machine, Transfer Negative and Positive Paper, Transfer Developers, Platemakers, Developers and Fixers, Diazo Sensitized Paper, Cloth and Film.
First use August 1961.

Class 32—Furniture and Upholstery

For Drafting Furniture—Namely, Drafting Tables, School Drawing Tables, Drawing Files and Accessories, Drafting Stools, Desks and Stands.
First use August 1961.

Class 37—Paper and Stationery

For Tracing Paper, Cloth and Film and Tracing Paper Pads, Drafting Forms, Drawing Kits, Erasers, Pencils, Leads, Lead Holders, Pencil Pointers, Erasing Shields, Pens, Metal and Plastic Labels, and Cover Paper.
First use July 30, 1962, on metal and plastic labels.

Class 50—Merchandise Not Otherwise Classified

For Offset Plates and Spirit and Offset Masters.
First use August 1961.

SECTION 2

Class 1—Raw or Partly Prepared Materials

791,193. Dubinsky Plastics Corporation, Los Angeles, Calif. SN 184,207. Filed P.R. 9-30-64; Am. S.R. 4-19-65.

BRONZE WOOD

For Liquid Synthetic Resin Compositions for Use in Industry.
First use to be about September 1965.

Class 5—Adhesives

791,195. See Section 1 (Combined Certificate).

Class 6—Chemicals and Chemical Compositions

791,196. See Section 1 (Combined Certificate).

Class 11—Inks and Inking Materials

791,197. See Section 1 (Combined Certificate).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

791,197. United Manufacturing Company, d.b.a. Wheeling Brake Fastener Company, Wheeling, W. Va. SN 180,048. Filed P.R. 10-30-63; Am. S.R. 4-19-65.



For Brass Bolts, Brass Rivets for Brake Linings.
First use Sept. 16, 1960.

791,198. Hold-A-Drink, Inc., Salisbury, Md. SN 183,871. Filed P.R. 6-30-64; Am. S.R. 4-30-65.

HOLD-A-DRINK

For Cup Holding Bracket.
First use Feb. 14, 1964.

Class 15—Oils and Greases

791,199. Harold S. Hilton, d.b.a. Hilton Products Company, Seattle, Wash. SN 207,046. Filed P.R. 11-27-64; Am. S.R. 4-16-65.

HILTON

For Lubricating Oils and Greases.
First use Aug. 29, 1963.

Class 20—Linoleum and Oiled Cloth

791,200. See Section 1 (Combined Certificate).

Class 21—Electrical Apparatus, Machines, and Supplies

791,200. See Section 1 (Combined Certificate).

791,209. The Bunker Hill Company, Seattle, Wash. SN 184,350. Filed P.R. 1-10-64; Am. S.R. 4-9-65.

ZINC-A-LINE

For Corrosion Preventive Devices for Cathodic Protection of Submerged Metals on Boats and Parts of Such Devices—Namely, Metal Anodes, Mounting Brackets, Protective Caps, and Mounting Bolts.
First use Nov. 30, 1963.

791,201. Kwik-Lite Manufacturing Corporation, Peekskill, N.Y. SN 187,942. Filed P.R. 3-4-64; Am. S.R. 1-22-65.

KWIK-LITE

For Lighting Fixtures—Namely, Residential Interior Lighting Fixtures, Portable and Permanently Mounted.
First use Jan. 15, 1964.

Class 22—Games, Toys, and Sporting Goods

791,202. The Lionel Corporation, New York, N.Y. SN 178,662. Filed P.R. 7-24-63; Am. S.R. 4-7-65.

STANDARD SCALE

For Toy Automobile Racing Sets and Accessories Therefor.
First use Feb. 26, 1963.

791,203. Donald F. Duncan, Inc., Evanston, Ill. SN 189,689. Filed P.R. 9-28-64; Am. S.R. 4-6-65.

TOURNAMENT

For Spinning Tops.
First use Oct. 8, 1962.

791,204. Arcadia Knitting Mills, Inc., Philadelphia, Pa. SN 190,775. Filed P.R. 4-10-64; Am. S.R. 4-7-65.

TROLL TOGS

For Dolls' Clothing and Accessories.
First use Mar. 31, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

791,194. See Section 1 (Combined Certificate).

Class 24—Laundry Appliances and Machines

791,205. The Ironrest Company, Philadelphia, Pa. SN 192,182. Filed P.R. 4-23-64; Am. S.R. 4-19-65.

E-Z IRON

For Ironing Board Pads and Covers.
First use Apr. 3, 1964.

Class 26—Measuring and Scientific Appliances

791,196. See Section 1 (Combined Certificate).

791,206. StripPrinter, Inc., Oklahoma City, Okla. SN 188,220. Filed P.R. 4-5-63; Am. S.R. 3-31-65.

Strip Printer

For Photo Composing Machines and Supplies Therefor.
First use July 20, 1961.

791,207. Sea Maid, Inc., New York, N.Y. SN 186,496. Filed P.R. 4-10-63; Am. S.R. 3-30-65.

San Remo

For Sun Glasses.
First use Mar. 14, 1963.

791,208. Sea Maid, Inc., New York, N.Y. SN 186,496. Filed P.R. 4-10-63; Am. S.R. 3-30-65.

SAN TROPEZ

For Sun Glasses.
First use Mar. 14, 1963.

Class 27—Horological Instruments

791,209. Hamilton Watch Company, Lancaster, Pa. SN 184,289. Filed P.R. 1-9-64; Am. S.R. 4-19-65.

HUGUENIN

For Watches, Watch Movements, and Parts Thereof.
First use Dec. 10, 1963.

Class 32—Furniture and Upholstery

791,198. See Section 1 (Combined Certificate).

Class 37—Paper and Stationery

791,198. See Section 1 (Combined Certificate).

791,210. Kim-Kraft, Inc., Erie, Pa. SN 181,806. Filed P.R. 11-18-63; Am. S.R. 3-30-65.

KARB-IN-SNAP

Applicant disclaims the word "Snap" apart from the mark as shown.
For Printed Manifold Forms Prepared Together at One End Which Are Interleaved With and Without Carbon Paper.
First use about May 15, 1963.

791,211. Abernathy G. Bell, d.b.a. Statewide Economy Systems, Sterling, Ill. SN 186,662. Filed P.R. 12-30-63; Am. S.R. 11-30-64.

FAMILY AND HOME BUDGETER

For Account Books, Forms and Schedules for Bookkeeping and Accounting Systems, and Tax Schedules.
First use Nov. 9, 1963.

791,212. The Standard Register Company, Dayton, Ohio. SN 187,253. Filed P.R. 2-24-64; Am. S.R. 2-25-65.

MACHINE MATED

For Business Forms.
First use Jan. 20, 1964.

791,213. Whiting & Company, Inc., Holyoke, Mass. SN 190,079. Filed P.R. 4-8-64; Am. S.R. 4-8-65.

LYMAN

For Ledger Paper.
First use July 8, 1963.

Class 38—Prints and Publications

791,214. Howard W. Sams & Co., Inc., Indianapolis, Ind. SN 181,664. Filed P.R. 1-29-63; Am. S.R. 4-9-65.

HOME SHOPPING SERVICE

For Periodic Catalog.
First use Oct. 1, 1962.

791,215. Chilton Company, Philadelphia, Pa. SN 203,969. Filed P.R. 9-30-64; Am. S.R. 4-19-65.

GAS ENERGY SYSTEMS

For Section to a Periodic Publication, Also Being Distributed as a Separate Magazine.
First use Jan. 7, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

791,216. Dan River Mills, Incorporated, Danville, Va. SN 176,170. Filed P.R. 9-8-64; Am. S.R. 3-12-65.

MALAYA

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use June 7, 1963.

791,217. A. J. Grutzmann & Son, Inc., Philadelphia, Pa. SN 210,672. Filed 1-30-65.



For Textile Fabrics in the Piece, Made of Cotton, Silk, Wool and Synthetic Fibers and Blends Thereof.
First use Jan. 2, 1964.

Class 44—Dental, Medical, and Surgical Appliances

791,218. Zimmer Manufacturing Company, Warsaw, Ind. SN 196,849. Filed P.R. 6-10-64; Am. S.R. 4-27-65.

KNODT

For Bone Grafting Metal Rods, Pins and the Like Used in the Surgical Mending, Repairing and Healing of Bone Separations.
First use Oct. 15, 1962.

791,219. Zimmer Manufacturing Company, Warsaw, Ind. SN 196,850. Filed P.R. 6-10-64; Am. S.R. 4-27-65.

KNODT DISTRACTION RODS

For Bone Grafting Metal Rods, Pins and the Like Used in the Surgical Mending, Repairing and Healing of Bone Separations.
First use Oct. 15, 1962.

Class 46—Foods and Ingredients of Foods

791,220. The Borden Company, New York, N.Y. SN 189,960. Filed P.R. 12-27-63; Am. S.R. 4-19-65.

NUTSY BANANA

For Frozen Confection on a Stick.
First use on or about Oct. 15, 1962.

791,221. Showell Poultry, Inc., Showell, Md. SN 197,239. Filed 7-7-64.

SHOWELL POULTRY, INC. MARYLAND'S FINER POULTRY SHOWELL - MARYLAND

For Fresh Dressed Poultry.
First use May 14, 1963.

Class 47—Wines

791,222. The Stellenbosch Farmers' Winery Limited, Stellenbosch, Cape Province, Republic of South Africa. SN 197,919. Filed P.R. 7-15-64; Am. S.R. 4-20-65.

LIEBERSTEIN

Owner of South African Reg. No. 0021/60, dated Jan. 5, 1960.
For Wines.

Class 50—Merchandise Not Otherwise Classified

791,196. See Section 1 (Combined Certificate).

Class 51—Cosmetics and Toilet Preparations

791,223. Nethercutt Laboratories, d.b.a. Cosgenic Labs., Hollywood, Calif. SN 151,425. Filed P.R. 8-17-62; Am. S.R. 9-9-64.

SETTING SUN

For Cosmetics—Namely, Lipstick.
First use July 31, 1962.

791,224. Richardson-Merrell Inc., New York, N.Y., assignee of The J. Bird Moyer Company, Inc., Philadelphia, Pa. SN 179,723. Filed P.R. 10-24-63; Am. S.R. 3-22-65.

ASEPTICLEAN

For Artificial Dentures Cleaner.
First use Apr. 1, 1959.

791,225. Clairol Incorporated, New York, N.Y. SN 185,570. Filed P.R. 1-29-64; Am. S.R. 4-9-65.

SNOW WHEAT

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Oct. 22, 1963.

791,226. Clairol Incorporated, New York, N.Y. SN 185,575. Filed P.R. 1-29-64; Am. S.R. 4-9-65.

PLATINUM PUFF

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Oct. 22, 1963.

791,227. Clairol Incorporated, New York, N.Y. SN 185,576. Filed P.R. 1-29-64; Am. S.R. 4-9-65.

QUIET WHITE

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Oct. 9, 1963.

791,228. Revlon, Inc., New York, N.Y. SN 191,816. Filed P.R. 4-16-64; Am. S.R. 4-16-65.

'TAN/TAN'

For Nail Enamel.
First use Apr. 2, 1964.

791,229. Revlon, Inc., New York, N.Y. SN 191,817. Filed P.R. 4-16-64; Am. S.R. 4-15-65.

'PINK SAND'

For Nail Enamel.
First use Apr. 2, 1964.

Service Marks

Class 101—Advertising and Business

791,230. British Publications, Inc., New York, N.Y. SN 174,825. Filed P.R. 8-12-63; Am. S.R. 4-2-64.

BRITISH MAGAZINE-OF-THE-MONTH CLUB

For Providing Lists of British Periodicals, Obtaining Subscriptions for Selected British Periodicals and Arranging for Their Delivery in the United States.
First use Oct. 14, 1961.

791,231. The National Space Club, Washington, D.C. SN 197,892. Filed P.R. 7-6-64; Am. S.R. 4-6-65.

NATIONAL SPACE CLUB

For Dissemination of Information Through Discussions, Conferences, Meetings, Luncheons, Dinners and Dances, Relating to the Business and Scientific Aspects of Aerospace Technology.
First use Oct. 25, 1962.

Class 102—Insurance and Financial

791,232. Walter E. Heller & Company, Chicago, Ill. SN 190,566. Filed P.R. 11-5-63; Am. S.R. 4-20-65.

TRANSFERCREDIT

For Financial Services for Others in the Nature of Securing Credits, Debt Collection, and Accounts Receivable Factoring.
First use May 6, 1963.

Class 107—Education and Entertainment

791,233. Rexall Drug Company, Kansas City, Mo. SN 190,660. Filed P.R. 4-1-64; Am. S.R. 4-15-65.

BEAUTY FORUM

For Educational Services—Namely, Lectures and Demonstrations Relating to the Use and Application of Cosmetic Preparations.
First use at least as early as May 8, 1959.

TRADEMARK REGISTRATIONS RENEWED

26,528.	VICTOR ETC. AND DESIGN. Cl. 25. 5-7-1895.	411,350.	KLEENZOID. Cl. 30. 1-14-45.
44,522.	LA CATHEDRALE. Cl. 52. 7-26-05.	411,666.	ADLER ROCHESTERING AND DESIGN. Cl. 89. 1-30-45.
45,745.	RHINE. Cl. 51. 8-29-05.	412,000.	1-4-3. Cl. 51. 2-13-45.
45,757.	ERGOAPIOL. Cl. 16. 8-29-05.	412,286.	PACRITE. Cl. 22. 2-27-45.
46,383.	DIAMOND CRYSTAL SALT. Cl. 46. 9-19-05.	412,594.	THERMKING. Cl. 12. 2-20-45.
197,020.	BROOKMORE. Cl. 39. 4-7-25.	412,167.	TILO. Cl. 22. 2-13-45.
197,304.	TOASTMASTER. Cl. 21. 4-14-25.	412,271.	KLEEN-N-WAX AND DESIGN. Cl. 4. 2-27-45.
197,307.	BARCO AND DESIGN. Cl. 53. 4-14-25.	412,454.	EAGLE CLOTHES AND DESIGN. Cl. 39. 4-24-45.
197,308.	SUNNY BARCO AND DESIGN. Cl. 4. 4-14-25.	412,545.	"PERMACOTE." Cl. 50. 3-6-45.
197,652.	TECCO BRAND AND DESIGN. Cl. 14. 4-21-25.	412,561.	COMPANIONS OF QUALITY. Cl. 46. 3-6-45.
197,809.	BUDDS AND DESIGN. Cl. 46. 4-28-25.	412,577.	STIFLEX. Cl. 1. 3-6-45.
197,995.	RAY AND DESIGN. Cl. 34. 4-28-25.	412,596.	HYDEN TEX. Cl. 42. 3-6-45.
198,350.	TEMPRITE. Cl. 26. 5-12-25.	412,697.	VENUE. Cl. 4. 3-6-45.
199,028.	COLONIAL. Cl. 21. 6-2-25.	412,664.	HYDEN TEX. Cl. 42. 3-6-45.
199,029.	COLONIAL AND DESIGN. Cl. 21. 6-2-25.	412,690.	ALPAK. Cl. 22. 3-20-45.
199,194.	TECCO BRAND AND DESIGN. Cl. 13. 6-2-25.	412,699.	DUMORE. Cl. 4. 3-20-45.
200,025.	CALLAWAY AND DESIGN. Cl. 42. 6-23-25.	412,968.	ARROW AND DESIGN. Cl. 39. 3-27-45.
200,201.	GLOBAR. Cl. 21. 6-30-25.	414,061.	OMEGA AND DESIGN. Cl. 26. 4-24-45.
200,227.	RADWAY RRR AND DESIGN. Cl. 18. 6-30-25.	414,040.	AEOCRAT. Cl. 39. 3-20-45.
200,285.	GRANITINE. Cl. 24. 6-30-25.	414,379.	DUMORE. Cl. 22. 3-6-45.
200,501.	TRUFAST FABRICS. Cl. 42. 7-7-25.	412,696.	MULCINE. Cl. 16. 3-13-45.
200,701.	COLLATONE. Cl. 5. 7-7-25.	414,567.	BOOTS AND SADDLE RIDING TIGHT AND DESIGN. Cl. 39. 3-13-45.
202,008.	TELETYPE. Cl. 21. 8-11-25.	414,650.	CARBOTRONIC. Cl. 4. 3-13-45.
202,231.	GRIT AND DESIGN. Cl. 38. 8-18-25.	415,095.	LATEX LUBE. Cl. 6. 7-10-45.
202,436.	SEA GULL. Cl. 46. 8-25-25.	415,216.	IDEAL. Cl. 22. 7-31-45.
206,194.	GARDEN GUARD. Cl. 6. 9-15-25.	415,261.	SKP. Cl. 37. 7-31-45.
206,242.	OPEX. Cl. 16. 9-15-25.	415,377.	VERONICA. Cl. 39. 8-7-45.
206,294.	MASTER BUILDERS. Cl. 16. 9-15-25.	415,569.	NANCY JO. Cl. 46. 8-7-45.
206,631.	MOUNT OF OLIVE. Cl. 46. 9-22-25.		
206,637.	DUM-DUMS. Cl. 46. 9-22-25.		
206,679.	DIAMOND H AND DESIGN. Cl. 2. 9-22-25.		

416,709. YATROLIN. Cl. 51. 8-24-65.
416,015. CTW (IN OVAL). Cl. 23. 8-31-65.
416,122. CHEVRON. Cl. 15. 8-26-65.
416,125. CHEVRON AND DESIGN. Cl. 15. 8-26-65.
416,290. HONEGGERS' EGG POPPER AND DESIGN. Cl. 46. 9-4-65.
416,455. POISE. Cl. 44. 9-11-65.
416,499. HONEGGERS' PIG POPPER AND DESIGN. Cl. 46. 9-18-65.
416,676. GLOBO. Cl. 51. 9-25-65.
416,716. SINTERGENT. Cl. 52. 9-25-65.
416,735. BLUE LABEL. Cl. 43. 9-25-65.
416,757. COPOTEX. Cl. 6. 9-25-65.

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662,264. EYECTAIRE. Cl. 34. 5-27-58.
662,362. DEBORAH. Cl. 46. 5-27-58.
662,718. BASSTONE. Cl. 28. 6-3-58.
662,760. DRIFTEX. Cl. 12. 6-10-58.
662,846. MAGIC-WAY. Cl. 29. 6-10-58.
663,186. ELEGANTE. Cl. 39. 6-17-58.
663,193. PICK-A-MOOC. Cl. 29. 6-17-58.
663,236. PLYTILE. Cl. 12. 6-24-58.
664,284. ENGIN-SURANCE. Cl. 15. 7-15-58.
664,420. HALO AND DESIGN. Cl. 28. 7-15-58.
665,426. LANGDALE. Cl. 39. 8-5-58.
665,525. FLORIDA FLOWER ASSN. ETC. AND DESIGN. Cl. A. 8-5-58.
666,861. ALIZACHROME. Cl. 6. 10-21-58.

The following registrations issued Apr. 18, 1959

677,510. PENNINGTON GREEN AND DESIGN. Cl. 1.
677,518. CAMBI-RIKRAK. Cl. 1.
677,516. DESIGN OF STONE MOUNTAIN. Cl. 1.
677,517. RTV. Cl. 1.
677,519. CORABRITE. Cl. 2.
677,520. TRIDE. Cl. 2.
677,523. TP TEXAS PLASTICS AND DESIGN. Cl. 2.
677,525. CARAVAN AND DESIGN. Cl. 2.
677,534. LIL SQUIRT AND DESIGN. Cl. 4.
677,539. GRITWELD. Cl. 6.
677,540. CORBOND. Cl. 6.
677,543. MCR. Cl. 6.
677,546. LIDWELL. Cl. 6.
677,550. CERA-CIRCUIT. Cl. 12.
677,556. FIBER-STONE. Cl. 12.
677,563. R-W HABCHROME. Cl. 12.
677,567. STILE-TREND. Cl. 12.
677,568. HEMNO-PLY. Cl. 12.
677,569. CASTLEWOOD. Cl. 12.
677,570. IMPALA. Cl. 12.
677,572. KOFFEEMYSER. Cl. 13.
677,573. STAR BRAND AND DESIGN. Cl. 13.
677,576. KWEE-VEE AND DESIGN. Cl. 13.
677,578. YSC SAFE CARGO ETC. AND DESIGN. Cl. 13.
677,588. CHEMLUBE. Cl. 15.
677,592. GALLOWAY'S ETC. AND DESIGN. Cl. 16.
677,595. GRAYGUARD. Cl. 16.
677,596. MULTICHROME. Cl. 16.
677,597. VANGUARD. Cl. 16.
677,598. LOWB-POXY. Cl. 16.
677,608. VANGUARD. Cl. 19.
677,610. TOUR-A-HOME. Cl. 10.
677,611. CUSHMAN GOLFER. Cl. 19.
677,612. SNORKLE. Cl. 19.
677,616. SKY-TOP. Cl. 21.
677,620. ALCO. Cl. 21.
677,621. VELUX. Cl. 21.
677,622. McINTOSH LECTOUR AND DESIGN. Cl. 21.
677,630. R & M HUNTER AND DESIGN. Cl. 21.
677,633. AQUASCOPE AND DESIGN. Cl. 22.
677,635. PERKY POODLE. Cl. 22.
677,636. STAX. Cl. 22.
677,639. HANDIANGLER. Cl. 22.
677,641. MASTER. Cl. 22.
677,645. IDEAL'S CREAM PUFF. Cl. 22.
677,646. HUSH PUPPY. Cl. 22.
677,651. SAF-T-BOOM. Cl. 26.
677,658. DIPLOMAT. Cl. 23.
677,663. RENCO-AIRE AND DESIGN. Cl. 23.
677,664. LAWN BARBER ETC. AND DESIGN. Cl. 23.
677,669. FORECASTER AND DESIGN. Cl. 26.
677,675. OCULETTES. Cl. 26.
677,678. METROTYPE. Cl. 26.
677,680. WINSTON. Cl. 27.
677,682. TELOLITH. Cl. 26.
677,689. TITAN. Cl. 29.
677,692. JUNKERS. Cl. 31.
677,696. BOLT KING. Cl. 32.
677,706. MAGIC GLASS. Cl. 34.
677,710. GENERAL. Cl. 34.
677,711. KOLDBOND. Cl. 34.
677,713. GENERALAIRE. Cl. 34.
677,715. IL. Cl. 34.
677,716. INSPIRATION LIGHTING. Cl. 34.
677,723. FENAPLAST. Cl. 35.
677,724. SOOTY. Cl. 37.
677,727. PEN PRIDE. Cl. 37.
677,728. PEN-UP. Cl. 37.
677,740. EVERRITE. Cl. 37.
677,744. POLARIS. Cl. 37.
677,748. EVE. Cl. 38.
677,753. AMERICAN SPORTSMAN. Cl. 38.
677,765. CLEON OF CORINTH. Cl. 38.
677,756. COTTON-PRETTY. Cl. 39.
677,761. SKINNY. Cl. 39.
677,771. CHARMERETTE. Cl. 39.
677,772. MISS FREDERICS OF JOHN FREDERICS. Cl. 39.
677,777. DURA SEAL. Cl. 40.
677,778. SHADY LADY ETC. AND DESIGN. Cl. 41.
677,779. ADMIRAL. Cl. 42.
677,782. CORROBORNE. Cl. 42.
677,787. TEMP-KIT. Cl. 44.
677,797. KING-O-BEANS REY DE HABS AND DESIGN. Cl. 46.
677,798. DESIGN OF VEGETABLES, HUMANS, ETC. Cl. 46.
677,803. HENRIS AND DESIGN. Cl. 46.
677,804. DARI-BOX. Cl. 46.
677,805. TEEN AGE. Cl. 46.
677,806. SUPREME CREMA MONDESE AND DESIGN. Cl. 47.
677,807. HOROWITZ MARGARETEN. Cl. 47.
677,814. MARK-ONE. Cl. 50.
677,817. FREEDOM. Cl. 52.
677,835. READ RESERVE ETC. AND DESIGN. Cl. 102.
677,836. WOODY & BUZZ AND DESIGN. Cl. 103.
677,881. JEWELRY OF THE SEA. Cl. 12.
677,885. FOWLER LOADER. Cl. 23.
677,841. POND'S LOTION FACIALE ETC. AND DESIGN. Cl. 51.

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JUNE 15, 1965

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

A-B Sign Service of California, Inc., Wilmington, Calif. 791,141, pub. 3-30-65. Cl. 50.
A-1 Industries, Inc., Redwood City, Calif. 677,560, canc. Cl. 12.
Abilities, Inc., Albertson, N.Y. 791,026, pub. 3-30-65. Cl. 33.
Abraham & Straus, Inc., New York, to Federated Department Stores, Inc., Brooklyn, N.Y. 197,020, ren. 6-15-65. Cl. 39.
Ace Exterminators, Inc., Fairmont, W. Va. 677,326, canc. Cl. 103.
Acme Quality Paints, Inc.: *See*—
Acme White Lead & Color Works.
Acme White Lead & Color Works, Hamtramck, to Acme Quality Paints, Inc., Detroit, Mich. 203,194, ren. 6-15-65. Cl. 6.
Adage, Inc., Cambridge, Mass. 790,976, pub. 3-30-65. Cl. 21.
Advertiser Co., The, Montgomery, Ala. 791,059, pub. 3-30-65. Cl. 38.
Aerojet-General Corp., El Monte, Calif. 790,908, pub. 3-9-65. Cl. 9.
Agio Sigarenfabrieken N.V., Duizel, Netherlands. 790,926-7, pub. 3-30-65. Cl. 17.
Ajello, Frank G., and Margaret M. Ajello, d.b.a. Mini Auto Plates, Orange, Calif. 791,134, pub. 3-30-65. Cl. 50.
Albert Chemical Corp., from A. Hirsch, d.b.a. Albert Photographic Products Co., St. Louis, Mo. 790,885, pub. 3-30-65. Cl. 6.
Albert Photographic Products Co.: *See*—
Albert Chemical Corp.
Alcon Laboratories, Inc., Fort Worth, Tex. 790,930, pub. 3-30-65. Cl. 18.
Alden, Milton, Brockton, to Alfax Paper and Engineering Co., Inc., Westboro, Mass. 413,880, ren. 6-15-65. Cl. 21.
Alfax Paper and Engineering Co., Inc.: *See*—
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Allan, Roger, Paris, France. 677,728, canc. Cl. 37.
Allied Mills, Inc., Chicago, Ill. 791,097, pub. 3-30-65. Cl. 46.
Allied Stores Corp., New York, N.Y. 791,143, pub. 3-30-65. Cl. 51.
Amateur Athletic Union of the United States, New York, N.Y. 791,171, pub. 3-30-65. Cl. 100.
Ambulitter Corp., Chestertown, Md. 791,125, pub. 3-30-65. Cl. 50.
American Aviation Publications, Inc., Washington, D.C. 791,049, pub. 3-30-65. Cl. 38.
American Bean & Rice Co.: *See*—
Schwartz, Ralph.
American Can Co., New York, N.Y. 790,868, pub. 3-30-65. Cl. 2.
American Can Co., New York, N.Y. 790,872, pub. 3-30-65. Cl. 2.
American Chemical Co.: *See*—
Lucky Heart Laboratories, Inc.
American Cyanamid Co., Wayne, N.J. 790,896, pub. 3-30-65. Cl. 6.
American Home Products Corp., New York, N.Y. 790,947, pub. 3-30-65. Cl. 18.
American Home Products Corp., New York, N.Y. 790,956-7, pub. 3-30-65. Cl. 18.
American Machinery Corp., Orlando, Fla., to American Machinery Corp., Belleville, N.J. 412,225, ren. 6-15-65. Cl. 23.
American Metal Climax, Inc., d.b.a. Hunter Engineering Co., New York, N.Y. 791,007, pub. 3-30-65. Cl. 23.
American Paper & Plastic Products, Inc., Milwaukee, Wis. 790,874, pub. 2-16-65. Cl. 2.
American Sportsman, Inc., The, Berwyn, Ill. 677,753, canc. Cl. 38.
Ames Co., Inc., Elkhart, Ind. 790,891, pub. 3-30-65. Cl. 6.
Ames Co., Inc., Elkhart, Ind. 790,907, pub. 3-30-65. Cl. 6.
Ametek, Inc., New York, N.Y. 791,015, pub. 3-30-65. Cl. 24.
Argus, McGregor Corp., from McGregor-Vantress Corp., Atlanta, Ga. 790,865, pub. 3-30-65. Cl. 1.
Anheuser-Busch, Inc.: *See*—
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Apwood Products, Inc., Silver Spring, Md. 677,635, canc. Cl. 22.
Arcadia Knitting Mills, Inc., Philadelphia, Pa. 791,204. Cl. 22.
Arkansas Rice Growers Cooperative Association, The, d.b.a. Riceland Rice, Stuttgart, Ark. 791,117, pub. 3-30-65. Cl. 46.
Arnold, Schwinn, & Co., Chicago, Ill. 790,961, pub. 3-30-65. Cl. 19.
Associated C-A-R, Inc., Kansas City, Mo. 790,963, pub. 3-30-65. Cl. 21.
Associates Investment Co., South Bend, Ind. 791,179-80, pub. 2-9-65. Cl. 102.
Association of College Unions, Ithaca, N.Y. 791,193, pub. 3-30-65. Cl. 200.
Association Pour la Diffusion, la Recherche l'Organisation et la Promotion de Fils Textures, Paris, France. 791,069-70, pub. 3-30-65. Cl. 39.
Association Pour la Diffusion, la Recherche l'Organisation et la Promotion de Fils Textures, Paris, France. 791,081-2, pub. 3-30-65. Cl. 42.
Association Pour la Diffusion, la Recherche l'Organisation et la Promotion de Fils Textures, Paris, France. 791,087-8, pub. 3-30-65. Cl. 43.
Atlantic Laboratories of Delaware, Inc., Wilmington, Del. 677,596, canc. Cl. 16.
Auto Lamp Mfg. Co., Chicago, Ill. 677,620, canc. Cl. 21.
Automatic Needle Exchange: *See*—
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B & H Supply Co., Inc., Winston-Salem, N.C. 791,078, pub. 3-30-65. Multiple Class (Classes 40, 51, and 52).
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 790,894, pub. 3-30-65. Cl. 6.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 791,033, pub. 3-30-65. Cl. 24.
Bailey Meter Co., Cleveland, Ohio. 677,675, canc. Cl. 26.
Bamm Corp., New York, N.Y. 677,572, canc. Cl. 13.
Bancroft, Joseph, & Sons Co., Wilmington, Del. 677,643, canc. Cl. 6.
Barclay, Jas., & Co., Ltd., Peoria, Ill. 791,131, pub. 3-30-65. Cl. 49.
Barkley, C. L., & Co., Chicago, Ill. 791,041, pub. 3-30-65. Cl. 37.
Barnette, S. Ronald, Miami Springs, from Dimensional Plastics Corp., Hialeah, Fla. 790,960, pub. 3-30-65. Cl. 1.
Basic-Witz Furniture Industries, Inc., Waynesboro, Va. 791,025, pub. 3-30-65. Cl. 32.
Becker, Helen B., (Mrs. William D. Becker), d.b.a. W. D. Becker Mfg. Co., Marine City, Mich. 677,631, canc. Cl. 32.
Becker, W. D., Mfg. Co.: *See*—
Becker, Helen B., (Mrs. William D. Becker).
Becker, William D., Mrs.: *See*—
Becker, Helen B., (Mrs. William D. Becker).
Berryman Products: *See*—
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Bialac, Marian, Inc.: *See*—
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Bialac, Marian, to Marian Bialac, Inc., New York, N.Y. 415,703, ren. 6-15-65. Cl. 51.
Birko Chemical Corp., Denver, Colo. 791,161-3, pub. 3-30-65. Cl. 52.
Blickman, S., Inc., Weehawken, N.J. 790,873, pub. 3-30-65. Cl. 21.
Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany. 791,060, pub. 3-30-65. Cl. 44.
Borden Co., The, New York, N.Y. 791,230. Cl. 46.
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Breinig Brothers, Inc., Hoboken, N.J. 677,596, canc. Cl. 16.
Briscoe Mfg. Co., Columbus, Ohio. 790,969, pub. 3-30-65. Cl. 21.
Bristol-Myers Co., New York, N.Y. 790,948, pub. 3-30-65. Cl. 18.
British Publications, Inc., New York, N.Y. 791,200. Cl. 102.
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Bruning, Charles, Co., Inc., Mount Prospect, Ill. 677,614, canc. Cl. 50.
Budd, George W., Wilkes-Barre, Pa., to Anheuser-Busch, Inc., St. Louis, Mo. 197,889, ren. 6-15-65. Cl. 46.
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Bull, Abernethy G., d.b.a. States-Wide Bookeasy Systems, Sterling, Ill. 791,211. Cl. 37.
Bunker Hill Co., The, Seattle, Wash. 791,209. Cl. 21.
Byrd Produce Co.: *See*—
Byrd, Stanley.
Byrd, Stanley, d.b.a. Byrd Produce Co., Guadalupe, Calif. 791,124-6, pub. 3-30-65. Cl. 46.
Callaway Mills, to Callaway Mills Co., La Grange, Ga. 413,-806, ren. 6-15-65. Cl. 46.
Callaway Mills, to Callaway Mills Co., La Grange, Ga. 413,-684, ren. 6-15-65. Cl. 46.
Callaway Mills Co.: *See*—
Callaway Mills.
Unity Cotton Mills.
Calzaturificio di Santo Tessaro, d.b.a. Calzaturificio di Santo Tessaro, Caerano di San Marco, Treviso, Italy. 790,941, pub. 3-30-65. Cl. 22.
Candy and Cake Craft Institute and Candie Institute: *See*—
Emerson Harvey Enterprises, Inc.
Carborundum Co., The: *See*—
Wireless Resistor Co. of America, The, now American Resistor Co.
Carborundum Co., The, Niagara Falls, N.Y. 414,999, ren. 6-15-65. Cl. 4.

Cardiosonics Medical Instruments Corp., Belmont, Mass. 791,092, pub. 3–30–65. Cl. 44.
Carley, Inc., Haddonfield, N.J. 791,165, pub. 3–30–65. Cl. 52.
Caytas Import G.m.b.H. & Co: *See*—
Kombrecht, Manfred.
Channel Master Corp., Ellenville, N.Y. 790,977, pub. 3–30–65. Cl. 21.
Charcoal Industries, Inc., Paso Robles, Calif. 790,868, pub. 3–30–65. Cl. 1.
Charles River Breeding Laboratories, Inc., North Wilmington, Mass. 790,964, pub. 3–30–65. Cl. 1.
Chase Bottle & Supply Corp., New York, N.Y. 677,787, canc. Cl. 44.
Chemtech, Inc., Miami, Fla. 677,883, canc. Cl. 15.
Chesebrough-Pond's, Inc., New York, N.Y. 677,541, canc. Cl. 51.
Chicago Graniting Mfg. Co., Chicago, Ill. 200,238, ren. 6–15–65. Cl. 24.
Chilton Co., Philadelphia, Pa. 791,216. Cl. 38.
Ciba Ltd., Basel, Switzerland. 790,949, pub. 3–30–65. Cl. 18.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 791,-136, pub. 3–30–65. Cl. 50.
Cinema Enterprises, Inc., d.b.a. Klayton's, Los Angeles, Calif. 791,144, pub. 3–30–65. Cl. 51.
Clairol Inc., New York, N.Y. 791,165–6, pub. 3–30–65. Cl. 51.
Clairol, Inc., New York, N.Y. 791,225–7. Cl. 51.
Clairtone Sound Corp., Ltd., Rexdale, Ontario, Canada. 790,-970, pub. 3–30–65. Cl. 21.
Clean-metal Process Co., Inc., Pittsburgh, Pa. 791,168, pub. 3–30–65. Cl. 52.
Clesk, C. L., Pacific Palisades, Calif. 790,965–7, pub. 3–30–65. Cl. 24.
Clement and Sirrine, Bridgeport, Conn. 677,755, canc. Cl. 38.
Cleveland, C. B. Lithichrome Co.: *See*—
Cleveland, Clarence E.
Cleveland, Clarence E., d.b.a. C. B. Cleveland Lithichrome Co., Fort Scott, Kans. 677,569, canc. Cl. 5.
Cleveland Pneumatic Industries, Inc., Cleveland, Ohio. 677,-668, canc. Cl. 28.
Clothes Tree, Inc., The, Youngstown, Ohio. 791,066, pub. 3–30–65. Cl. 39.
Clover Farm Stores Corp., Cleveland, Ohio. 791,046, pub. 3–30–65. Cl. 35.
Cluett, Peabody & Co., Inc., Troy, N.Y. 413,968, ren. 6–15–65. Cl. 39.
Cluett, Peabody & Co., Inc., Troy, N.Y. 414,040, ren. 6–15–65. Cl. 39.
Coca-Cola Co., The, Atlanta, Ga. 791,112, pub. 3–30–65. Cl. 46.
Cohn, M. M., Co., Little Rock, Ark. 665,438, canc. Cl. 39.
Colgate-Palmolive Co., New York, N.Y. 790,935, pub. 1–12–65. Cl. 18.
Colonial Radio Corp., to Sylvania Electric Products, Inc., New York, N.Y. 190,028–9, ren. 6–15–65. Cl. 21.
Columbia Electric & Mfg. Co., Spokane, Wash. 677,711, canc. Cl. 24.
Communication Products, Inc., Marleboro, N.J. 677,616, canc. Cl. 21.
Compania Insular Tabacalera, S.A., Las Palmas, Canary Islands. 790,938, pub. 3–30–65. Cl. 17.
Conco Engineering Works, Inc., Mendota, Ill. 791,024, pub. 3–30–65. Cl. 50.
Consdorfia Gesellschaft m.b.H., Halle, Westphalia, Germany. 791,101, pub. 3–30–65. Cl. 46.
Conklin, T. E., Brass & Copper Co., Inc., New York, N.Y. 197,662, ren. 6–15–65. Cl. 14.
Conklin, T. E., Brass & Copper Co., Inc., New York, N.Y. 199,104, ren. 6–15–65. Cl. 13.
Container Advertising Co., Denver, Colo. 791,176, pub. 3–30–65. Cl. 101.
Continental Distilling Corp., d.b.a. Inver House Distillers, Ltd., Philadelphia, Pa. 791,132, pub. 3–30–65. Cl. 49.
Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany. 791,066, pub. 3–30–65. Cl. 39.
Cook, Hugh F., d.b.a. Accreylon Co., New York, N.Y., to Kimberly-Clark Corp., Neenah, Wis. 416,435, ren. 6–15–65. Cl. 44.
Cooper, Tinsley Laboratories, Inc.: *See*—
Smith, Martin H., Co.
Cort Cosmetics, Inc., Stamford, Conn. 790,889, pub. 3–30–65. Multiple Class (Classes 51 and 52).
Cosgrove Labs: *See*—
Nethercutt Laboratories.
Court, Ward L., d.b.a. Hawaiian Rattan Craft, Redondo Beach, Calif. 677,776, canc. Cl. 41.
Cove Dehydrating Plant: *See*—
Shegrafoor, David D.
Crown Industrial Products Co., Hebron, Ill. 790,919, pub. 3–30–65. Cl. 15.
Culligan, Inc., Northbrook, Ill. 790,857–8, pub. 3–30–65. Multiple Class (Classes 1, 6, and 31).
Curtis Companies, Inc., Clinton, Iowa. 677,567, canc. Cl. 12.
Cushman Motor Works, Inc., Lincoln, Nebr. 677,611, canc. Cl. 19.
Dan River Mills, Inc., Danville, Va. 791,218. Cl. 42.
Davis, Harry F., d.b.a. Automatic Nozzle Exchange, Oakland, Calif. 677,573, canc. Cl. 13.
Dayco Corp.: *See*—
Dayton Rubber Mfg. Co., The.
Dayton Rubber Mfg. Co., The, to Dayco Corp., Dayton, Ohio. 413,577, ren. 6–15–65. Cl. 1.
Delmonte Plastics Corp., Los Angeles, Calif. 791,195. Cl. 1.
Demcorp Inc., Caro, Mich. 791,170, pub. 3–30–65. Cl. 52.
Devine Science Federation International, Denver, Colo. 791,186, pub. 3–30–65. Cl. 200.
Dial-A-Maid Service, Inc., from Rent-A-Maid Service, Inc., Union, N.J. 790,876, pub. 3–30–65. Cl. 4.
Diamond Crystal Salt Co., to Diamond Crystal Salt Co., St. Clair, Mich. 46,333, ren. 6–15–65. Cl. 46.
Dictaphone Corp., Bridgeport, Conn. 791,032, pub. 3–30–65. Cl. 36.
Dimensional Plastics Corp.: *See*—
Barnette, S. Ronald.
Dominator Corp., Kansas City, Mo. 790,968, pub. 3–30–65. Multiple Class (Classes 21 and 26).
Double D Plastic Co.: *See*—
Resilex Laboratory.
Douglas, Beverly, Nashville, Tenn. 791,001, pub. 3–30–65. Cl. 22.
Dow Chemical Co., The, Midland, Mich. 790,887, pub. 3–30–65. Cl. 6.
Drug Fair: *See*—
Drug Fair-Community Drug Co. Inc.
Drug Fair-Community Drug Co. Inc., d.b.a. Drug Fair, Alexandria, Va. 790,897, pub. 3–30–65. Multiple Class (Classes 6 and 22).
Dual Electric Heater Corp., Detroit, Mich. 790,964, pub. 3–30–65. Cl. 21.
Dubois Co., The, Cincinnati, Ohio, to W. R. Grace & Co., New York, N.Y. 415,095, ren. 6–15–65. Cl. 6.
Dumore Co., The, Racine, Wis. 413,980, ren. 6–15–65. Cl. 4.
Dumore Co., The, Racine, Wis. 414,279, ren. 6–8–65. Cl. 23.
Duncan, Donald F., Inc., Evanston, Ill. 791,203. Cl. 22.
Dunlop Tire and Rubber Corp., Buffalo, N.Y. 790,992–4, pub. 3–30–65. Cl. 22.
Dwyer Lumber Co., Portland, Oreg. 677,568, canc. Cl. 12.
Eagle Clothes, to Eagle Clothes, Inc., New York, N.Y. 413,454, ren. 6–15–65. Cl. 39.
Eagle Clothes, Inc.: *See*—
Eagle Clothes.
Levy Bros. & Adler Rochester, Inc.
Early California Foods, Inc., Los Angeles, from Pacific Olive Co., d.b.a. Pacific Olive Co., Visalia, Calif. 791,108, pub. 3–30–65. Cl. 46.
Eastern Tablet Corp., Albany, N.Y. 677,727, canc. Cl. 37.
Eastland Shoe Corp., Freeport, Maine. 663,193, canc. Cl. 39.
Emerson, Harvey, Enterprises, Inc., d.b.a. Candy and Cake Craft Institute and Candie Institute, Fallbrook, Calif. 791,184, pub. 3–30–65. Cl. 107.
Enthusiast Publications, Inc., Playa Del Rey, Calif. 677,748, canc. Cl. 38.
Erickson, Earl J., d.b.a. Erickson Enterprises, Detroit, Mich. 677,556, canc. Cl. 12.
Erickson Enterprises: *See*—
Erickson, Earl.
Erismann-Schinz S.A., La Neuveville, Bern, Switzerland. 791,021, pub. 3–30–65. Cl. 27.
Estimating Services, Inc., Dundee, Oreg. 791,058, pub. 3–30–65. Multiple Class (Classes 38 and 101).
Etablissements Kuhlmann, Societe Anonyme, Paris, France. 790,880, pub. 1–5–65. Cl. 6.
Etherton, Robert, Seattle, Wash. 791,177, pub. 3–30–65. Cl. 101.
Evenioque Co.: *See*—
Schwartz, Walter L.
Ex-Cell-O Corp., Detroit, Mich. 416,015, ren. 6–15–65. Cl. 23.
Expancel-Sociedade de Expansao Commercial de Plasticos, Limitada, Lisbon, Portugal. 790,915, pub. 3–30–65. Cl. 18.
FMC Corp.: *See*—
Niagara Sprayer and Chemical Co., Inc.
Family Circle, Inc., The, New York, N.Y. 791,057, pub. 3–30–65. Cl. 38.
Farm Crest Bakeries, Inc., Wilmington, Del. and Detroit, Mich., to Farm Crest Bakeries, Inc., Detroit, Mich. 413,-561, ren. 6–15–65. Cl. 46.
Federated Department Stores, Inc.: *See*—
Abraham & Straus, Inc.
Fenner, J. H., & Co., Ltd., Marfleet, Hull, England. 677,728, canc. Cl. 35.
Ferdinand Mulheas: *See*—
Mulheas & Kropf.
Fibre-Metal Products Co., The, Chester, Pa. 791,140, pub. 3–30–65. Cl. 50.
Florida Flower Association, Bradenton, Fla. 665,525, canc. Cl. A.
Food & Fixture Co. of Ohio, Columbus, Ohio. 791,173, pub. 3–30–65. Cl. 100.
"42" Products, Ltd., Inc., Santa Monica, Calif. 791,154, pub. 3–30–65. Cl. 51.
Fowler, Jesse C., Williams, Ariz. 677,235, canc. Cl. 28.
Franksville, Inc., Chicago, Ill. 791,174, pub. 3–30–65. Cl. 100.
Fur Animal Institute: *See*—
Kinsel, George V.
Gallo, E. & J., Winery, Modesto, Calif. 791,126, pub. 3–9–65. Cl. 47.
Gallo, E. & J., Winery, d.b.a. Grape Valley Wine Co., Modesto, Calif. 791,128–9, pub. 3–30–65. Cl. 47.
Galloway, Odie C., & Co., Inc., Beaumont, Tex. 677,592, canc. Cl. 16.
Garrett Laboratories, Inc., Baltimore, Md. 790,930, pub. 4–6–63. Cl. 18.
Geigy Chemical Corp., Ardsley, N.Y. 790,904–6, pub. 3–30–65. Cl. 6.
Gellich Tanning Co., Taunton, Mass. 677,513, canc. Cl. 1.
Gelshu Inc., Brooklyn, N.Y. 791,074, pub. 3–30–65. Cl. 39.
Gem Exchange, The: *See*—
Green, Stephen N.
General Aniline & Film Corp., New York, N.Y. 790,895, pub. 3–30–65. Cl. 6.
General Applicance Co.: *See*—
Levey Distributing Co.
General Blower Co., Morton Grove, Ill. 677,710, canc. Cl. 24.
General Classics, Inc., Chicago, Ill. 791,023, pub. 3–30–65. Cl. 26.
General Electric Co., Hendersonville, N.C. 790,975, pub. 3–30–65. Cl. 21.
General Foods Corp., White Plains, N.Y. 790,875, pub. 3–30–65. Multiple Class (Classes 1, 6, 46, and 46).
General Foods Corp., White Plains, N.Y. 791,113, pub. 3–30–65. Cl. 46.
Genesco Inc., Nashville, Tenn. 791,075, pub. 3–30–65. Cl. 39.
Gillette Co., The, d.b.a. The Teal Co., Boston, Mass. 791,150, pub. 3–9–65. Cl. 51.
Gilt Edge Candy Co., Akron, Ohio, to Spangler Candy Co., Bryan, Ohio. 206,627, ren. 6–15–65. Cl. 46.
Gladding, B. F., & Co., Inc., South Otselic, N.Y. 791,060, pub. 3–30–65. Cl. 58.
Gladding, McBean & Co., Los Angeles, Calif. 677,550, canc. Cl. 12.
Globe Knitting Works, Grand Rapids, Mich., to Modern Globe, Inc., Pawtucket, R.I. 414,587, ren. 6–15–65. Cl. 39.
Goldberg, Linda, Woodside, N.Y. 791,015, pub. 3–30–65. Cl. 24.
Golden, Donald L., Detroit, Mich. 677,675, canc. Cl. 26.
Goldware Corp., The, Chicago, Ill. 677,708, canc. Cl. 24.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 791,050, pub. 3–30–65. Cl. 35.
Gorham Corp., Providence, R.I. 790,916, pub. 3–30–65. Cl. 18.
Grace, W. R., & Co.: *See*—
Dubois Co., The.
Grant, W. T., Co., New York, N.Y. 791,178, pub. 3–30–65. Cl. 101.
Grape Valley Wine Co.: *See*—
Gallo, E. & J., Winery.
Graberman, A. J., & Son, Inc., Philadelphia, Pa. 791,217. Cl. 42.
Green, Stephen N., d.b.a. The Gem Exchange, Bayfield, Colo. 677,652, canc. Cl. 28.
Greene, E., and Co., Inc., Brooklyn, N.Y. 790,969, pub. 3–30–65. Cl. 2.
Greene, E., and Co., Inc., Brooklyn, N.Y. 791,008, pub. 3–30–65. Cl. 27.
Grit Publishing Co., Williamsport, Pa. 202,261, ren. 6–15–65. Cl. 38.
Gross, Lewis A., d.b.a. The Mulcine Co., Philadelphia, Pa., to Mead Johnson & Co., Evansville, Ind. 414,494, ren. 6–15–65. Cl. 18.
Hall, Caridon, Finishes, Inc., Branford, Conn. 790,922–3, pub. 3–30–65. Cl. 16.
Hamilton Watch Co., Lancaster, Pa. 790,962, pub. 3–30–65. Cl. 21.
Hamilton Watch Co., Lancaster, Pa. 791,209. Cl. 27.
Hampshire Mfg. Corp., Nashua, N.H. 790,859, pub. 3–30–65. Cl. 1.
Hanson Mfg. Co., The, Cleveland, Ohio. 790,913, pub. 3–30–65. Cl. 13.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 677,563, canc. Cl. 12.
Harowitz Bros. & Margareten, Long Island City, N.Y. 677,-207, canc. Cl. 47.
Harris, Morris, New York, N.Y. 677,669, canc. Cl. 29.
Harshaw Chemical Co., The, Cleveland, Ohio. 668,531, canc. Cl. 6.
Hat Corp. of America, Norwalk, Conn. 791,067, pub. 3–30–65. Cl. 39.
Hawaiian Rattan Craft: *See*—
Court, Ward L.
Heller, Walter E., & Son, Chicago, Ill. 791,232. Cl. 102.
Hemis Fair: *See*—
San Antonio Fair, Inc.
Henri's Food Products Co., Inc., Milwaukee, Wis. 677,805, canc. Cl. 46.
Hettrick Mfg. Co., The, Statesville, N.C. 790,902, pub. 3–30–65. Cl. 22.
Hexcel Products Inc., Berkeley, Calif. 790,910, pub. 3–30–65. Cl. 15.
Hilton, Harold S., d.b.a. Hilton Products Co., Seattle, Wash. 791,199. Cl. 15.
Hilton Products Co.: *See*—
Hilton, Harold S.
Hinde & Dauch Paper Co., The: *See*—
West Virginia Pulp and Paper Co.
Hirson, Albert: *See*—
Albert Chemical Corp.
Hold-A-Drink, Inc., Salisbury, Md. 791,198. Cl. 13.
Honegger Feed Mills: *See*—
Honeggers' & Co.
Honeggers' & Co., also d.b.a. Honegger Feed Mills, Forrest, to Honeggers' & Co., Inc., Fairbury, Ill. 416,290, ren. 6–15–65. Cl. 46.
Honeggers' & Co., also d.b.a. Honegger Feed Mills, Forrest, to Honeggers' & Co., Inc., Fairbury, Ill. 416,490, ren. 6–15–65. Cl. 46.
Hopkins Fishing Co.: *See*—
Hopkins, Tirrah U.
Hopkins, Tirrah U., d.b.a. Hopkins Fishing Co., Norfolk, Va. 791,000, pub. 3–30–65. Cl. 22.
Hops Extract Corp. of America, Yakima, Wash. 791,130, pub. 3–30–65. Cl. 48.
Hudnut, Richard, Morris Plains, N.J. 677,517, canc. Cl. 52.
Hudson National Inc. from Hudson Vitamin Products, Inc., New York, N.Y. 791,149, pub. 3–30–65. Cl. 51.
Hudson Vitamin Products, Inc.: *See*—
Hudson National Inc.
Hunter Engineering Co.: *See*—
American Metal Climax, Inc.
Huret et ses Fils, Societe Anonyme Francaise, Nanterre (Seine), France. 791,010, pub. 3–30–65. Cl. 23.
Huyck Corp., Rensselaer, N.Y. 791,035, pub. 3–30–65. Cl. 47.
Hyde Leather Co., Inc., The, New York, N.Y. 677,777, canc. Cl. 40.
Hydra-Cushion Inc., Salisbury, Md. 790,966, pub. 3–30–65. Cl. 19.
Hygrade Food Products Corp., Detroit, Mich. 791,129, pub. 3–30–65. Cl. 46.
Hyland Bag Co.: *See*—
Hyland, Richard C.
Hyland, Richard C., d.b.a. Hyland Bag Co., to Pacific Diamond H Bag Co., San Francisco, Calif. 206,679, ren. 6–15–65. Cl. 2.
Ideal Novelty & Toy Co., Long Island City, to Ideal Toy Corp., Hollis, N.Y. 415,218, ren. 6–15–65. Cl. 22.
Ideal Toy Corp.: *See*—
Ideal Novelty & Toy Co.
Ideal Toy Corp., Hollis, N.Y. 677,645, canc. Cl. 22.
Illinois Tool Works, Inc., Chicago, Ill. 791,043, pub. 3–30–65. Cl. 23.
Imperial Lighting Products Co., Latrobe, Pa. 677,621, canc. Cl. 21.
Indian Head Mills, Inc.: *See*—
Ullmann, Bernhard, Co. Inc.
Integrated Ceilings, Inc., Los Angeles, Calif. 791,027–8, pub. 3–30–65. Cl. 24.
International Association of Electrical Inspectors, Chicago, Ill. 791,188, pub. 3–30–65. Cl. 200.
International Franchise Corp., Eastchester, N.Y. 791,172, pub. 3–30–65. Cl. 100.
International Latex Corp., Dover, Del. 677,754, canc. Cl. 39.
International Paper Co., New York, N.Y. 791,043–4, pub. 3–30–65. Cl. 37.
Inver House Distillers, Ltd.: *See*—
Continental Distilling Corp.
Iowa Paint Mfg. Co., Inc., Des Moines, Iowa. 790,921, pub. 3–30–65. Cl. 16.
Ironees Co., The, Philadelphia, Pa. 791,205. Cl. 24.
Irwin Corp., New York, N.Y. 790,991, pub. 3–30–65. Cl. 22.
Jackson Vibrators, Inc., Ludington, Mich. 791,006, pub. 3–30–65. Cl. 22.
Jay Kay Co., Fort Worth, Tex. 791,148, pub. 3–30–65. Cl. 51.
Jefferson Chemical Co., Inc., Houston, Tex. 790,882, pub. 3–30–65. Cl. 6.
Jet-Start Corp., Phoenix, Ariz. 791,006, pub. 3–30–65. Cl. 23.
John-Frederics, Inc., New York, N.Y. 677,771–2, canc. Cl. 39.
Johnson, Edward S., Chicago, Ill. 791,164, pub. 3–30–65. Cl. 52.
Johnson & Johnson, New Brunswick, N.J. 791,169, pub. 3–30–65. Cl. 52.
Johnson, S. C., & Son, Inc., Racine, Wis. 790,881, pub. 3–30–65. Multiple Class (Classes 1, 4, 6, 15, 16, 21, 22, and 52).
Johnson, S. C., & Son, Inc., Racine, Wis. 790,877, pub. 3–30–65. Cl. 4.
Joseph & Feiss Co., The, Cleveland, Ohio. 663,185, canc. Cl. 39.
Joseph, George F., Yakima, Wash. 791,107, pub. 3–30–65. Cl. 46.
Jubo-Schuhfabrik Julius Bock K.G., Hauenstein/Pfalz, Germany. 791,072, pub. 3–30–65. Cl. 39.
Junkers & Co. Gesellschaft mit beschrankter Haftung, Wernau (Neckar), Germany. 677,692, canc. Cl. 31.
Kamaka & Sons Enterprises, Honolulu, Hawaii. 791,035–6, pub. 3–30–65. Cl. 36.
Kasar Co., Chicago, Ill. 790,940, pub. 1–19–65. Cl. 18.
Katz Drug Co., Kansas City, Mo. 791,235. Cl. 107.
Kearney, James R., Corp., St. Louis, Mo. 790,967, pub. 3–30–65. Cl. 21.
Keeter Charcoal Co., Branson, Mo. 790,866, pub. 3–30–65. Cl. 1.
Kelton Corp. Ltd., Toronto, Ontario, Canada. 790,942, pub. 3–30–65. Cl. 22.
Kenner Products Co., Cincinnati, Ohio. 790,979, pub. 3–30–65. Cl. 22.
Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 664,-294, canc. Cl. 15.
Kimberly-Clark Corp.: *See*—
Cook, Hugh F.
Kim-Kraft, Inc., Erie, Pa. 791,210. Cl. 37.
Kinsel, George V., d.b.a. Fur Animal Institute, Monrovia, Calif. 790,939, pub. 3–30–65. Cl. 18.
Klayton's: *See*—
Cinema Enterprises, Inc.
Klemzoll Corp., The, Philadelphia, Pa. 411,880, ren. 6–15–65. Cl. 52.
Koch, Max, & Son, Inc., New York, N.Y. 791,076, pub. 3–30–65. Cl. 39.
Kohner Bros., Inc., New York, N.Y. 790,969–60, pub. 3–30–65. Cl. 22.
Kombrecht, Manfred, d.b.a. Caytas Import G.m.b.H. & Co., Hamburg, Germany. 791,102, pub. 3–30–65. Cl. 46.
Kontes Glass Co., Vineland, N.J. 791,020, pub. 3–30–65. Cl. 26.
Kwik-Lite Mfg. Corp., Peekskill, N.Y. 791,201. Cl. 21.
Leathercraft Association, Inc., The, Washington, D.C. 791,-056, pub. 3–30–65. Cl. 38.
LeBron Mfg. Co.: *See*—
LeBron, Richard C.
LeBron, Richard C., d.b.a. LeBron Mfg. Co., Omaha, Nebr. 677,612, canc. Cl. 19.
Lefkowitz, Ernest W., Winston-Salem, N.C. 677,650, canc. Cl. 37.
Legg, Phillip M., Arlington, Va. 790,963, pub. 3–30–65. Cl. 23.
Legge, Walter G., to Vesuvius Chemical Co., Inc., New York, N.Y. 413,636, ren. 6–15–65. Cl. 4.

Leggett, Francis H., Co., Carlstadt, N.J. 791,114, pub. 3-30-65. Cl. 46.
Lehn & Fink Products Corp.: *See*—
Lyons, Inc.
L'Equilibre Biologique Association Technique Pharmaceutique et Hormonique Biologique Renate, Societe Anonyme, Amilly, Loiret, France. 790,946, pub. 3-30-65. Cl. 18.
Lewyn Distributing Co., d.b.a. General Appliance Co., Omaha, Nebr. 677,713, canc. Cl. 34.
Levin, Jake, and Son: *See*—
Levin, Jake, and Son, Inc.
Levin, Jake, and Son, Inc., Ryan Jake Levin and Son, Kansas City, Mo. 677,629, canc. Cl. 25.
Levy Bros. & Adler Rochester, Inc., to Eagle Clothes, Inc., New York, N.Y. 411,026, ren. 6-15-65. Cl. 39.
Lewis Engineering & Mfg. Co., The, Alliance, Ohio. 677,664, canc. Cl. 28.
Linton Brothers & Co., Inc., Fitchburg, Mass. 677,744, canc. Cl. 27.
Lionel Corp., The, New York, N.Y. 791,902. Cl. 22.
Lowe Brothers Co., The, Dayton, Ohio. 677,598, canc. Cl. 16.
Lubrizol Corp., The, Cleveland, Ohio. 790,878, pub. 3-30-65. Cl. 6.
Lucky Heart Laboratories, Inc., d.b.a. American Chemical Co., Memphis, Tenn. 791,151, pub. 3-30-65. Cl. 51.
Lueders Bros., Milwaukee, Wis. 677,636, canc. Cl. 22.
Lyons, Inc., to Lehn & Fink Products Corp., New York, N.Y. 200,701, ren. 6-15-65. Cl. 5.
L-W-L Industries, Inc., Noblesville, Ind. 790,958, pub. 3-30-65. Cl. 19.
Magnetic Metals Co., Camden, N.J. 790,965, pub. 3-30-65. Cl. 21.
Magnetics Mfg., Inc., Clayton, Mo. 677,638, canc. Cl. 22.
Man At Base, Inc., The, Chicago, Ill. 791,089, pub. 3-30-65. Cl. 39.
Manfield Supplies Co., Brooklyn, N.Y. 791,039, pub. 3-30-65. Cl. 37.
Mannings Mfg. Corp., Chicago, Ill. 790,963, pub. 3-30-65. Cl. 22.
Manufacture de Produits Pharmaceutiques A. Christiaens, Brussels, Belgium. 790,944, pub. 3-30-65. Cl. 18.
Margin & Webb Ltd., London, England. 791,032, pub. 3-30-65. Cl. 32.
Marcal Paper Mills, Inc., from Marcalus Mfg. Co., Inc., East Paterson, N.J. 791,037, pub. 12-6-60. Cl. 37.
Market Place, Inc., The, Oxon Hill, Md. 791,055, pub. 3-30-65. Cl. 39.
Marketing Manpower Development, Inc., Evanston, Ill. 791,060, pub. 3-30-65. Cl. 39.
Martin-Marietta Corp.: *See*—
Master Builders Co., The
Marx, Louis, & Co., Inc., New York, N.Y. 791,092, pub. 3-30-65. Cl. 22.
Master Builders Co., The, Cleveland, Ohio, to Martin-Marietta Corp., New York, N.Y. 200,394, ren. 6-15-65. Cl. 16.
Master Plug Co., Azusa, Calif. 677,641, canc. Cl. 22.
Mathatronics, Inc., Waltham, Mass. 791,019, pub. 3-30-65. Cl. 24.
Mattox and Moore, Inc., Indianapolis, Ind. 790,941, pub. 3-30-65. Cl. 16.
McCabe, Lawrence A., Dearborn Heights, Mich. 791,133, pub. 3-30-65. Cl. 50.
McGinnis, John T., Peoria, Ill. 791,054-5, pub. 3-30-65. Cl. 38.
McGraw-Edison Co.: *See*—
Waters-Genter Co.
McGregor-Vantress Corp.: *See*—
Angus, McGregor, Corp.
McIntosh, Frank H., Washington, D.C. 677,632, canc. Cl. 21.
Mead Johnson & Co.: *See*—
Gross, Lewis A.
Mead Johnson & Co., Evansville, Ind. 791,096, pub. 3-30-65. Cl. 44.
Mead Johnson & Co., Evansville, Ind. 791,145, pub. 3-30-65. Cl. 51.
Mendelson-Zeller Co., Inc., San Francisco, Calif. 791,115, pub. 3-30-65. Cl. 46.
Merrill's Turf Supplies Co. Ltd., Islington, Ontario, Canada. 790,931, pub. 3-30-65. Cl. 18.
Metal Spinners, Inc., Milwaukee, Wis. 791,016, pub. 3-30-65. Cl. 24.
Meyer, Fred, Inc., Portland, Oreg. 791,181, pub. 3-30-65. Cl. 102.
Michigan Carton Co., Battle Creek, Mich. 791,042, pub. 3-30-65. Cl. 37.
Miller Dial & Nameplate Co., Los Angeles, to Miller Dial and Name Plate Co., El Monte, Calif. 413,545, ren. 6-15-65. Cl. 50.
Mini-Auto Plates: *See*—
Ajello, Frank G., and Margaret M. Ajello.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 677,540, canc. Cl. 5.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 791,137-8, pub. 3-30-65. Cl. 50.
Mr. Dunderbak, Inc., Cherry Hill, N.J. 791,118, pub. 3-30-65. Cl. 46.
Mister Marty, Los Angeles, Calif. 791,077, pub. 3-30-65. Cl. 39.
Modern Globe, Inc.: *See*—
Globe Knitting Works.
Molmo Malleable Iron Co., St. Charles, Ill. 790,914, pub. 3-30-65. Cl. 19.
Monsanto Co., St. Louis, Mo. 790,901-3, pub. 3-30-65. Cl. 6.
Moore, Bronislawa W., d.b.a. Bronislawa, Salem, Mass. 791,142, pub. 10-4-62. Cl. 51.
Mortrum-Kleinschmidt Corp., Chicago, to Teletype Corp., Skokie, Ill. 202,003, ren. 6-15-65. Cl. 21.
Morton Salt Co., Chicago, Ill. 790,967, pub. 3-30-65. Cl. 1.
Moyer, J. Bird, Co., Inc., The: *See*—
Richardson-Merrell, Inc.
Mulcahy Co., The: *See*—
Gross, Lewis A.
Mulhens & Kropff, New York, N.Y., to Ferdinand Mulhens, Cologne o/Rhine, Germany. 44,822, ren. 6-15-65. Cl. 52.
Mulhens & Kropff, New York, N.Y., to Ferdinand Mulhens, Cologne o/Rhine, Germany. 45,743, canc. Cl. 51.
Musical Heritage Society, Inc., The, New York, N.Y. 791,094, pub. 3-30-65. Cl. 36.
Mutual Paper Co., Inc., The, Brooklyn, N.Y. 415,231, ren. 6-15-65. Cl. 37.
N.V. Phillips-Duphar, Amsterdam, Netherlands. 790,951, pub. 3-30-65. Cl. 18.
Nalley's, Inc., Tacoma, Wash. 791,116, pub. 3-30-65. Cl. 46.
Nate, Jean, Inc., to Jean Nate, Inc., New York, N.Y. 412,060, ren. 6-15-65. Cl. 51.
National Exchange Club, The, Toledo, Ohio. 791,100-2, pub. 3-30-65. Cl. 200.
National Gypsum Co., Buffalo, N.Y. 662,766, canc. Cl. 12.
National Laboratories, Inc., Chicago, Ill. 790,954, pub. 3-30-65. Cl. 18.
National Oil Products Co., Harrison, to Nopco Chemical Co., Newark, N.J. 416,718, ren. 6-15-65. Cl. 52.
National Space Club, The, Washington, D.C. 791,231, Cl. 101.
Neisner Bros., Inc., Rochester, N.Y. 791,144, pub. 3-30-65. Cl. 51.
Nethercutt Laboratories, d.b.a. Coegenic Labs, Hollywood, Calif. 791,223. Cl. 51.
Niagara Sprayer and Chemical Co., Inc., Middleport, to FMC Corp., New York, N.Y. 416,757, ren. 6-15-65. Cl. 6.
Nopco Chemical Co.: *See*—
National Oil Products Co.
Noramco, Inc., Queens Village, N.Y. 791,106, pub. 3-30-65. Cl. 46.
Norcross, Inc., New York, N.Y. 791,062, pub. 3-30-65. Cl. 38.
Norda Essential Oil & Chemical Co., Inc., New York, N.Y. 791,147, pub. 3-30-65. Cl. 51.
Northwestern Golf Co., Chicago, Ill. 790,999, pub. 3-30-65. Cl. 22.
Novocol Chemical Mfg. Co., Inc., Brooklyn, N.Y. 790,888, pub. 3-30-65. Cl. 6.
Nye-Wait Co., Inc., Auburn, N.Y. 677,779, canc. Cl. 42.
Olin Mathieson Chemical Corp., New York, N.Y. 790,954, pub. 3-30-65. Cl. 18.
Olive Heights Citrus Association, Olive, Calif. 203,631, ren. 6-15-65. Cl. 46.
Omark Industries, Inc., Portland, Oreg. 791,004-5, pub. 3-30-65. Cl. 23.
Omega, Simmon, Inc.: *See*—
Simmon Bros., Inc.
Orbit Pharmaceutical, Inc., Kansas City, Kans. 790,949, pub. 3-30-65. Cl. 18.
Pacific Diamond H Bag Co.: *See*—
Hyland, Richard C.
Pacific Olive Co.: *See*—
Early California Foods, Inc.
Page Milk Co., The, Merrill, Wis. 791,109, pub. 3-30-65. Cl. 46.
Peninsular Fiberglass Products, Inc., Hialeah, Fla. 677,608, canc. Cl. 19.
Pennington Grain & Seed, Inc., Madison, Ga. 677,510, canc. Cl. 7.
Pennsalt Chemicals Corp., Philadelphia, Pa. 791,160, pub. 3-30-65. Cl. 52.
Pepperell Mfg. Co.: *See*—
West Point-Pepperell, Inc.
Pesel, Helene, Inc., New York, N.Y. 791,158, pub. 3-30-65. Multiple Class (Classes 51 and 52).
Pfaudler Permutit, Inc., Rochester, N.Y. 790,911, pub. 3-30-65. Cl. 13.
Pfizer, Chas., & Co., Inc., New York, N.Y. 790,917, pub. 3-30-65. Cl. 14.
Pfizer, Chas., & Co., Inc., New York, N.Y. 790,937, pub. 3-30-65. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 790,938, pub. 3-30-65. Cl. 46.
Phillips Petroleum Co., Bartlesville, Okla. 791,045, pub. 3-30-65. Cl. 57.
Phylrich Corp., Los Angeles, Calif. 677,576, canc. Cl. 13.
Power Industries Inc.: *See*—
Saitz, Sol B.
Preway, Inc., Wisconsin Rapids, Wis. 662,254, canc. Cl. 24.
Procter & Gamble Co., The, Cincinnati, Ohio. 791,166, pub. 3-30-65. Cl. 52.
Products Techniques, Inc., Los Angeles, Calif. 790,924, pub. 3-30-65. Cl. 16.
Produits Chimiques Pechiney-Saint-Gobain, Paris, France. 790,881, pub. 3-30-65. Cl. 6.
Propper Mfg. Co., Inc., Long Island City, N.Y. 791,095, pub. 3-30-65. Cl. 44.
Puritan Chemical Co., Atlanta, Ga. 790,890, pub. 3-30-65. Cl. 6.
Pur-O-Zone Chemical Co., Inc.: *See*—
Vincent, V. Jack.
Quality Dairy Co., St. Louis, Mo. 677,805, canc. Cl. 46.
R. & R. Martin, Philadelphia, Pa. 790,892, pub. 3-30-65. Cl. 6.
Radway & Co. Inc.: *See*—
Radway & Co.
Radway & Co. to Radway & Co., Inc., New York, N.Y. 200,-237, ren. 6-15-65. Cl. 16.
Railton, E. A., Co., Chicago, Ill. 197,206, ren. 6-15-65. Cl. 4.
Rain Bird Sprinkler Mfg. Corp., Glendora, Calif. 790,912, pub. 3-30-65. Cl. 13.
Ray Oil Burner Co.: *See*—
Ray, W. S., Mfg. Co.

Ray, W. S., Mfg. Co., to Ray Oil Burner Co., San Francisco, Calif. 197,963, ren. 6-15-65. Cl. 34.
Record Corp. of America, Union City, N.J. 664,499, canc. Cl. 39.
Rent-A-Maid Service, Inc.: *See*—
Dial-A-Maid Service, Inc.
Reuther Laboratory, from Double D Plastic Co., Los Angeles, Calif. 791,069, pub. 3-30-65. Cl. 44.
Revlon, Inc., New York, N.Y. 791,232-9. Cl. 51.
Rexall Drug and Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 790,869-3, pub. 3-30-65. Cl. 22.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 790,870, pub. 3-30-65. Cl. 2.
Rexall Drug and Chemical Co. d.b.a. Tupperware, Los Angeles, Calif. 790,873, pub. 3-30-65. Cl. 3.
Reynolds Distributing Co., Inc., Lincoln, Nebr. 677,534, canc. Cl. 4.
Rieland Rice: *See*—
Arkansas Rice Growers Cooperative Association, The.
Richards & Conover Hardware Corp., Kansas City, Mo. 677,-826, canc. Cl. 2.
Rigney, Robert M., Long Beach, Calif. 662,846, canc. Cl. 39.
Robbins & Myers, Inc., Springfield, Ohio. 677,630, canc. Cl. 21.
Rogers, Martin, Inc., from Sassy Brooks, Inc., New York, N.Y. 791,078, pub. 3-30-65. Cl. 39.
Rosenthal, Loretta, and Jack Y. Dinsmore, Washington, D.C. 791,064, pub. 3-30-65. Cl. 38.
Rotex Punch Co., Inc., San Leandro, Calif. 791,009, pub. 3-30-65. Cl. 23.
Rothschild, David, Co.: *See*—
Rothschild, David, & Co.
Rothschild, David, & Co., to David Rothschild Co., Columbus, Ga. 200,501, ren. 6-15-65. Cl. 42.
Rothstein Dental Laboratories, Inc., Silver Spring, Md. 791,-003, pub. 3-30-65. Cl. 44.
Roxane, Phillips, Inc., New York, N.Y. 790,886, pub. 3-30-65. Cl. 18.
Roxane, Phillips, Inc., New York, N.Y. 790,887, pub. 3-30-65. Cl. 18.
Rust Master Chemical Corp., Worcester, Mass. 790,920, pub. 3-30-65. Cl. 6.
Rybert Printing Co.: *See*—
Rybert, Thomas F.
Rybert, Thomas F., d.b.a. Rybert Printing Co., Atlanta, Ga. 791,040, pub. 3-30-65. Cl. 37.
S & S Machinery Co., Brooklyn, N.Y. 791,008, pub. 3-30-65. Cl. 23.
Saf-T-Boom, Inc., Little Rock, Ark. 677,651, canc. Cl. 22.
Saks & Co., New York, N.Y. 413,577, ren. 6-15-65. Cl. 39.
Salerno Co., Inc., The, Philadelphia, Pa. 790,942-3, pub. 3-30-65. Cl. 18.
Sams, Howard W., & Co., Inc., Indianapolis, Ind. 791,214. Cl. 22.
San Antonio Fair, Inc., d.b.a. Hemis Fair, San Antonio, Tex. 791,185, pub. 3-30-65. Cl. 107.
Schwartz, Ralph, d.b.a. American Bean & Rice Co., Brooklyn, N.Y. 677,797, canc. Cl. 46.
Schwartz, Walter L., d.b.a. Evenique Co., Columbus, Ohio. 791,159, pub. 3-30-65. Cl. 51.
Sea Maid, Inc., New York, N.Y. 791,207-8. Cl. 26.
Seal-O-Matic Dispenser Corp., Newark, N.J. 790,972, pub. 3-30-65. Cl. 21.
Seapak Corp., St. Simons Island, Ga. 791,104, pub. 3-30-65. Cl. 46.
Seamless Rubber Co.: *See*—
Rexall Drug and Chemical Co.
Seamless Rubber Co., The: *See*—
Rexall Drug and Chemical Co.
Sears, Roebuck and Co., Chicago, Ill. 791,030, pub. 3-30-65. Cl. 43.
Seaver, William, Mayaguez, Puerto Rico. 677,740, canc. Cl. 37.
Security Lithographers Division of Lithographers and Printers National Association Inc.: *See*—
Security Lithographers Section of Printing Industries of America.
Security Lithographers Section of Printing Industries of America, from Security Lithographers Division of Lithographers and Printers National Association Inc., Washington, D.C. 791,194, pub. 3-30-65. Cl. A.
Semco Industries, Inc., Boston, Mass. 791,196. Multiple Class (Classes 5, 6, 11, 20, 21, 23, 26, 32, 37, and 50).
Sherwin-Williams Co., The, Cleveland, Ohio. 808,242, ren. 6-15-65. Cl. 16.
Showalter, David D., d.b.a. Cove Dehydrating Plant, Martinsburg, Pa. 790,909, pub. 3-30-65. Cl. 10.
Showell Poultry, Inc., Showell, Md. 791,221. Cl. 46.
Shultz, Charles, Shoemakersville, Pa. 662,716, canc. Cl. 39.
Sichel, H., & Sons Ltd., Adelphi, London, England. 791,127, pub. 3-30-65. Cl. 47.
Simmon Bros., Inc., Long Island City, to Simmon Omega, Inc., New York, N.Y. 414,031, ren. 6-15-65. Cl. 26.
Smith, Martin H., Co., New York, N.Y., to Cooper, Tinsley Laboratories, Inc., Harrison, N.J. 45,787, ren. 6-15-65. Cl. 18.
Saitz, Sol B., d.b.a. Power Industries Inc., Beverly Hills, Calif. 790,925, pub. 3-30-65. Cl. 16.
Scoty Concessions Ltd., London, England. 677,724, canc. Cl. 37.
South Bend Tackle Co., Inc., South Bend, Ind. 677,646, canc. Cl. 22.
Southern Plywoods, Inc., Greenville, Fla. 662,236, canc. Cl. 12.
Spangler Candy Co.: *See*—
Gilt Edge Candy Co.
Sperry Rand Corp.: *See*—
Victor Safe and Lock Co., The.
Standard Garments, Inc., Baltimore, Md. 791,004, pub. 3-30-65. Cl. 39.
Standard Oil Co. of California, San Francisco, Calif. 416,153, ren. 6-15-65. Cl. 15.
Standard Oil Co. of California, San Francisco, Calif. 416,155, ren. 6-15-65. Cl. 15.
Standard Oil Co., The, Cleveland, Ohio. 790,916, pub. 3-30-65. Cl. 15.
Standard Register Co., The, Dayton, Ohio. 791,212. Cl. 37.
Stanley, John T., Co., Inc., New York, N.Y. 416,078, ren. 6-15-65. Cl. 51.
Starlite Mfg. Co., Gardena, Calif. 791,011, pub. 3-30-65. Cl. 22.
States-Wide Economy Systems: *See*—
Bull, Abernathy G.
Steele Canning Co., Springdale, Ark. 415,569, ren. 6-15-65. Cl. 46.
Stellenbosch Farmers' Winery Ltd., The, 'Onde Libertas' Stellenbosch, Republic of South Africa. 791,233. Cl. 47.
Stephenson Corp., Red Bank, N.J. 791,094, pub. 3-30-65. Cl. 44.
Stile-Craft Manufacturers, Inc., St. Louis, Mo. 791,017, pub. 3-30-65. Cl. 28.
Still Fish Reel Co., Toledo, Ohio. 790,994, pub. 3-30-65. Cl. 22.
Stone Mountain Grit Co., Inc., Lithonia, Ga. 677,616, canc. Cl. 1.
Strauss, Levi, & Co., San Francisco, Calif. 791,082-4, pub. 3-30-65. Cl. 42.
Stripperliner, Inc., Oklahoma City, Okla. 791,205. Cl. 38.
Success Broadcasting Co., Newport Beach, Calif. 791,122, pub. 3-30-65. Cl. 104.
Sugardale Provision Co., The, Canton, Ohio. 791,105, pub. 3-30-65. Cl. 46.
Sun Best Fruit Distributors, Fresno, Calif. 662,232, canc. Cl. 46.
Sun Valley Industries, Inc., Sun Valley, Calif. 677,570, canc. Cl. 12.
Sunpak Movers, Inc., Seattle, Wash. 791,182, pub. 3-30-65. Cl. 105.
Sunkist Growers, Inc., Los Angeles, Calif. 677,504, canc. Cl. 46.
Supreme Wine Co., Inc., Boston, Mass. 677,806, canc. Cl. 47.
Sutter Candy Co.: *See*—
Sutter, Edward W.
Sutter, Edward W., d.b.a. Sutter Candy Co., Ashland, Ohio. 791,090-100, pub. 3-30-65. Cl. 46.
Swank, Inc., Attleboro, Mass. 791,153, pub. 3-30-65. Cl. 51.
Sweetheart Plastics, Inc., Wilmington, Mass. 790,971, pub. 3-30-65. Cl. 2.
Sylvania Electric Products, Inc.: *See*—
Colonial Radio Corp.
Tacoma Natural Oils Co., Inc., New York, N.Y. 790,894, pub. 3-30-65. Cl. 6.
Tan-O-Matic Corp. of America, The, Brooklyn, N.Y. 791,091, pub. 3-30-65. Cl. 44.
Taterstate Frozen Foods, Washburn, Maine. 791,102, pub. 3-30-65. Cl. 46.
Taylor Instrument Companies, Rochester, N.Y. 196,350, ren. 6-15-65. Cl. 26.
Technic, Inc., Cranston, R.I. 790,883, pub. 3-30-65. Cl. 6.
Technic, Inc., Cranston, R.I. 790,886, pub. 3-30-65. Cl. 6.
Teletype Corp.: *See*—
Mortrum-Kleinschmidt Corp.
Texas Plastics, Inc., Elsa, Tex. 677,523, canc. Cl. 2.
Thermwell Products Co., Inc., Paterson, N.J. 412,594, ren. 6-15-65. Cl. 12.
Thomas Industries, Inc., Louisville, Ky. 677,715-16, canc. Cl. 34.
Thomas Industries, Inc., Louisville, Ky. 791,052, pub. 3-30-65. Cl. 38.
Thomas, Susan, New York, N.Y. 677,761, canc. Cl. 39.
Thompson, F. D., Publications, Inc., Chicago, Ill. 791,047-8, pub. 3-30-65. Cl. 38.
Tile Game Co.: *See*—
Van Patter, Yates J.
Tiny Tim (Petfoods) Ltd., North Shields, Northumberland, England. 791,110, pub. 3-30-65. Cl. 46.
Toni Co., The: *See*—
Gillette Co., The.
Tour-A-Home Mfg. Corp., Flint, Mich. 677,610, canc. Cl. 19.
Transcience Investment Co., d.b.a. Transcience Laboratories, Canoga Park, Calif. 790,948, pub. 3-30-65. Cl. 18.
Transcience Laboratories: *See*—
Transcience Investment Co.
Transogram Co., Inc., New York, N.Y. 790,950, pub. 3-30-65. Cl. 22.
Trimo Mfg. Corp., New York, N.Y. 677,520, canc. Cl. 2.
Trustees of Indiana University, The, Bloomington, Ind. 791,187, pub. 3-30-65. Cl. 200.
Tupperware: *See*—
Rexall Drug and Chemical Co.
Turbo Machine Co., Lansdale, Pa. 791,012, pub. 3-30-65. Cl. 23.
Tutag, S. J., & Co., Detroit, Mich. 790,936, pub. 3-30-65. Cl. 18.
Ullmans, Bernhard, Co. Inc., to Indian Head Mills, Inc., New York, N.Y. 416,785, ren. 6-15-65. Cl. 42.
Ultronic Systems Corp., Pennsauken, N.J. 790,974, pub. 3-30-65. Cl. 21.
Underwood Corp., New York, N.Y. 677,683, canc. Cl. 22.
Union Carbide Corp., New York, N.Y. 791,139, pub. 3-30-65. Cl. 50.
United Elastic Corp., Easthampton, Mass. 791,079, pub. 3-30-65. Cl. 40.
United Mfg. Co., d.b.a. Wheeling Brake Fastener Co., Wheeling, W. Va. 791,197. Cl. 18.

United Mink Producers Association, Janesville, Wis. 790,-
660, pub. 2-25-65. Cl. 1.
United Roman Ceramic Tile Co., Canton, Ohio. 791,061, pub.
2-25-65. Cl. 19.
Unity Cotton Mills, to Calloway Mills Co., La Grange, Ga.
200,302, ren. 6-15-65. Cl. 39.
Upjohn Co., The, Kalamazoo, Mich. 790,858, pub. 2-25-65.
Cl. 18.
Upland Lemon Growers Association, Upland, Calif. 202,458,
ren. 6-15-65. Cl. 46.
Vale Chemical Co., Inc., The, Allentown, Pa. 790,853, pub.
2-25-65. Cl. 18.
Valley State Bank, Salt Lake City, Utah. 677,885, canc. Cl.
100.
Van Dale, Inc., Lake Lake, Minn. 677,897, canc. Cl. 16.
Van Patten, Yasmi J., d.b.a. Tile Game Co., Monrovia, Calif.
200,197, ren. 6-15-65. Cl. 22.
Vandenhoff, R. J., Co., Inc., New York, N.Y. 677,817, canc.
Cl. 1.
Varnishes, Corp., Charlottesville, Va. 790,866-869, pub. 2-25-
65. Cl. 6.
Vesley, James, & Sons, Inc., St. Louis, Mo. 790,870, pub.
1-14-65. Multiple Class (Classes 6 and 22).
Vesuvius Chemical Co., Inc.: See—
Logue, Walter G.
Victor Lock and Lock Co., The, to Sperry Rand Corp., New
York, N.Y. 94,852, ren. 6-15-65. Cl. 20.
Victory Metal Mfg. Co., Plymouth Meeting, Pa. 790,978,
pub. 2-25-65. Cl. 21.
Vidrant, V. Jack, d.b.a. Fur-O-Zone Chemical Co., to Fur-O-
Zone Chemical Co., Inc., Lawrence, Kans. 412,971, ren.
6-15-65. Cl. 4.
Volkswagenwerk Aktiengesellschaft, Wolfsburg, Germany.
790,879, pub. 2-25-65. Cl. 19.
Volkmith Co., The, Sheboygan, Wis. 677,881, canc. Cl. 12.
Vollmerhaus, J. (Dec'd), Watsonville, Calif. 791,120-3, pub.
2-25-65. Cl. 42.
White Pharmacal Co., Chicago, Ill. 790,883, pub. 2-25-65.
Cl. 18.
Washington Mfg. Co., Nashville, Tenn. 791,077, pub. 2-25-
65. Cl. 39.
Waters-Genter Co., Minneapolis, Minn., to McGraw-Edison
Co., Elgin, Ill. 197,894, ren. 6-15-65. Cl. 21.
Weber, K.G. (Webetic Co. Ltd.), Aschbach, Switzerland.
790,885, pub. 2-25-65. Cl. 18.
West Point-Pepperell, Inc., West Point Co., Sewn Pepperell
Mfg. Co., New York, N.Y. 791,082, pub. 2-25-65. Cl.
39.
West Virginia Pulp and Paper Co., New York, N.Y., from
The Hinde & Dauch Paper Co., Sandusky, Ohio. 677,819,
canc. Cl. 2.
Westminster Carpets Proprietary Ltd., Victoria, Australia.
677,788, canc. Cl. 42.
Wheeling Steel Products Co.: See—
United Mfg. Co.
Wheelright Shoppe, Inc., Long Branch, N.J. 790,971, pub.
2-25-65. Cl. 39.
Whiting & Co., Inc., Holyoke, Mass. 791,212, Cl. 37.
Whittlesey, Katherine, New York, N.Y. 677,546, canc.
Cl. 8.
Wiegand, Edwin L., Co., Pittsburgh, Pa. 790,966, pub.
2-25-65. Cl. 21.
Win Schuler's, Inc., Marshall, Mich. 791,111, pub. 2-25-65.
Cl. 46.
Wireless Receptor Co. of America, The, now American Recep-
tor Co., Milwaukee, Wis., to The Carborundum Co.,
Niagara Falls, N.Y. 200,301, ren. 6-15-65. Cl. 21.
Wright, Barry, Corp., Watertown, Mass. 791,013, pub. 2-25-
65. Cl. 23.
Writing Instrument Manufacturers' Association, Inc., Wash-
ington, D.C. 791,180, pub. 2-25-65. Cl. 260.
Wyandotte Chemicals Corp., Wyandotte, Mich. 791,167, pub.
2-25-65. Cl. 52.
Xerographic Copy Service, Inc., Rochester, N.Y. 791,175,
pub. 2-25-65. Cl. 101.
Youngstown Steel Car Corp., Niles, Ohio. 677,878, canc.
Cl. 12.
Zimmer Mfg. Co., Warsaw, Ind. 791,218-19. Cl. 44.
Zoo-Pix, North Hollywood, Calif. 791,014, pub. 2-25-65.
Cl. 38.

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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of May 1965

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Expediting Papers Relating to Appeals

In order to expedite the handling and processing of all papers relating to appeals, it is essential that all such documents include the Group Number to which the application is assigned, as well as the Appeal Number and Serial Number.

EDWIN L. REYNOLDS,
May 8, 1965. *First Assistant Commissioner.*

International Convention for the Protection of Industrial Property

Adherence of U.S.S.R. to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective July 1, 1965, of the Union of Soviet Socialist Republics to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
May 17, 1965. *Commissioner of Patents.*

Adverse Decisions in Interference

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,949,982, E. Marogy, METHOD AND APPARATUS FOR MAKING FILTER RODS, decided Jan. 21, 1965, Interference No. 89,920, claims 7 and 15.

Patent No. 2,897,972, M. M. Cannon, SEPARATOR, decided Jan. 21, 1964, Interference No. 92,329, claim 2.

Patent No. 2,923,977, W. Roth and R. R. Grande, INCANDESCENT LAMP, decided Feb. 26, 1965, Interference No. 92,123, claim 1.

Patent No. 2,969,642, K. Meyer, R. Jacob and S. Sommer, PROCESS FOR THE TREATMENT OF POLY-OLEFINS, decided Feb. 16, 1965, Interference No. 92,645, claim 7.

Patent No. 3,002,712, P. A. Mozen, J. R. Taylor and J. Jarvis, AIRCRAFT CONTROL SYSTEM, decided May 7, 1965, Interference No. 93,115, claims 9 and 10.

Patent No. 3,010,157, R. P. Cheek, METHOD FOR PREPARING MOLDINGS OF FOAMED THERMOPLASTIC RESINS, decided Apr. 30, 1965, Interference No. 93,096, claims 1 and 2.

Patent No. 3,016,194, L. S. Beasley and D. L. Nettleton, DIGITAL COMPUTING SYSTEM, decided May 12, 1965, Interference No. 93,532, claims 2, 3, 4, 6, 7, 8, 10, 11, 12 and 14.

Patent No. 3,047,823, S. T. Deakin, ELECTRICAL SOCKET CONTACTS, decided May 12, 1965, Interference No. 93,269, claim 1.

Patent No. 3,035,136, R. L. Boyles, TIME SWITCH, decided Apr. 13, 1965, Interference No. 94,071, claims 1, 2 and 3.

Patent No. 3,037,727, R. H. Watterioha, BOWLING BALL, decided Apr. 30, 1965, Interference No. 93,269, claim 3.

Adjudicated Patents

(C.A. Okla.) Pearon Patent No. 2,926,261 (260—93.6), for WELL LOGGING METHOD AND DEVICE. Claims 2 and 3 *Held* valid and infringed. *McCullough Tool Co.* v. *Well Surveys, Inc.*, 343 F. 2d 381; 145 USPQ 6.

(C.A. Md.) Collison Patent No. 2,694,389 (206—47), for BONE SURGERY. Claims 1 and 3 *Held* invalid. *Collison Surgical Engineering Co.* v. *Murray-Baumgartner Surgical Instrument Co., Inc.*, 346 F. 2d 168; 146 USPQ 1.

(C.A. Okla.) Swift Patent No. 2,554,844 (73—152), for CASING COLLAR LOCATOR. Claims 1 to 6 *Held* valid and infringed. *McCullough Tool Co.* v. *Well Surveys, Inc.*, 343 F. 2d 381; 145 USPQ 6.

(C.A.N.Y.) Fleisher Patent No. 2,624,102 (51—240), for AUTOMATIC SHARPENER FOR STRAIGHT KNIFE CLOTH CUTTING MACHINES, *Held* invalid. *Bonar Cloth Cutting Machines, Inc.* v. *H. Melmis Co. Inc.*, 346 F. 2d 442; 146 USPQ 109.

(C.A. Okla.) Pringle, Roulston and Brownell Patent No. 2,696,566 (250—71.5), for IMPROVEMENTS IN RADIATION DETECTORS. Claims 1, 2, 5 to 10, 13, 14, and 20 to 22 *Held* valid and infringed. *McCullough Tool Co.* v. *Well Surveys, Inc.*, 343 F. 2d 381; 145 USPQ 6.

(C.A. Okla.) Bender Reissue Patent No. 23,226 (250—83.6), for SUBSURFACE PROSPECTING DEVICE. Claims 14 to 16, 19 and 20 *Held* valid and infringed. *Id.*

New Applications Received During April 1965

Patents	7918
Designs	504
Plant Patents	9
Reissues	18
Total	8449

Issue—June 22, 1965

Patents	1205	No. 3,189,817 to No. 3,191,184, incl.
Designs	64	No. 201,426 to No. 201,489, incl.
Plant Patents	6	No. 2,559 to No. 2,564, incl.
Reissues	8	No. 25,803 to No. 25,810, incl.
Total	1283	

Patents Available for Licensing

ACCUMULATIVE NASA PATENT LIST No. 9

In accordance with the provisions of 14 C.F.R. § 1245.209 et seq., and 42 U.S.C. 2457(g) (1964), the National Aeronautics and Space Administration is prepared to grant royalty-free licenses, of the types specified, under the following patents.

Applications for licenses should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, D.C., 20546.

Patents available for exclusive, revocable, royalty-free licensing (67)

3,006,229. MECHANICALLY-LIMITED, ELECTRICALLY OPERATED, HYDRAULIC VALVE SYSTEM FOR AIRCRAFT CONTROLS.
3,009,307. TWO COMPONENT BEARING.
3,009,128. TEMPERATURE REDUCING COATING FOR METALS SUBJECT TO FLAME EXPOSURE.
3,004,361. APPARATUS FOR MAKING A METAL SLURRY PRODUCT.
3,040,260. ROCKET PROPELLANT INJECTOR.
3,044,816. PROCESS OF CASTING HEAVY SLIPS.
3,045,067. FLEXIBLE SEAL FOR VALVES.
3,050,772. LIQUID-SPRAY COOLING METHOD.
3,071,457. HIGH TEMPERATURE NICKEL-BASE ALLOY.
3,074,235. EXTERNAL LIQUID-SPRAY COOLING OF TURBINE BLADES.
3,064,735. RUNWAY LIGHT.
3,061,671. WIRE GRID FORMING APPARATUS.
3,061,261. JET AIRCRAFT CONFIGURATION.
3,066,212. SELF SUPPORTING SPACE VEHICLE.
3,067,274. TURBO-MACHINE BLADE VIBRATION DAMPER.
3,061,266. SPHERICAL SOLID-PROPELLANT ROCKET MOTOR.
3,061,265. AIR FRAME DRAG BALANCE.
3,061,720. AERIAL CAPSULE EMERGENCY SEPARATION DEVICE.
3,064,735. PARTICLE DETECTION APPARATUS.
3,065,661. HIGH INTENSITY HEAT AND LIGHT UNIT.
3,065,220. WIND TUNNEL AIRSTREAM OSCILLATING APPARATUS.
3,060,220. PROCESS FOR APPLYING A PROTECTIVE COATING FOR SALT BATH BRAZING.
3,010,272. FOLDING APPARATUS.
3,011,760. TRANSPIRATION COOLED TURBINE BLADE MANUFACTURED FROM WIRES.
3,012,400. NOZZLE.
3,012,407. INSULATING STRUCTURE.
3,016,692. ELECTRO-THERMAL ROCKET.
3,016,868. HYDROFOIL.
3,022,672. DIFFERENTIAL PRESSURE CELL.
3,024,650. MAGNETICALLY CENTERED LIQUID COLUMN FLOAT.
3,028,122. LANDING ARRANGEMENT FOR AERIAL VEHICLES.
3,028,126. THREE AXIS CONTROLLER.
3,028,128. REENTRY VEHICLE LEADING EDGE.
3,028,077. INFRARED SCANNER.
3,026,176. SURVIVAL COUCH.
3,041,587. ANGULAR MEASUREMENT SYSTEM.
3,041,924. MOTION PICTURE CAMERA FOR OPTICAL PYROMETRY.
3,045,424. METHOD FOR CONTINUOUS VARIATION OF PROPELLANT FLOW AND THRUST IN PROPULSIVE DEVICES.
3,049,876. ANNULAR ROCKET MOTOR AND NOZZLE CONFIGURATION.
3,053,494. VARIABLE SWEEP WING CONFIGURATION.
3,057,597. MODIFICATION AND IMPROVEMENTS TO COOLED BLADES.
3,059,220. APPARATUS FOR COUPLING A PLURALITY OF UNGROUNDED CIRCUITS TO A GROUNDED CIRCUIT.
3,063,291. HIGH VACUUM CONDENSER TANK FOR ION ROCKET ENGINES.
3,064,938. VARIABLE SWEEP WING AIRCRAFT.
3,067,578. TELESCOPING-SPIKE SUPERSONIC INLET FOR AIRCRAFT ENGINES.
3,068,652. VENTING VAPOR APPARATUS.
3,069,128. INSTRUMENT SUPPORT WITH PRECISE LATERAL ADJUSTMENT.
3,070,320. ATTITUDE AND PROPELLANT FLOW CONTROL SYSTEM AND METHOD.
3,070,340. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,070,407. AIR BEARING.
3,072,574. GAS LUBRICANT COMPOSITIONS.
3,076,065. HIGH-SPEED LOW-LEVEL ELECTRICAL STEPPING SWITCH.
3,077,300. COLLAPSIBLE LOOP ANTENNA FOR SPACE VEHICLE.
3,079,118. VEHICLE PARACHUTE AND EQUIPMENT JETTISON SYSTEM.
3,080,711. FINESHAPE EXHAUST NOZZLE FOR SUPERSONIC ENGINE.
3,083,611. MULTI-LOBAR SCAN HORIZON SENSOR.
3,084,421. REINFORCED METALLIC COMPOSITES.
3,085,165. ULTRA-LONG MONOSTABLE MULTIVIBRATOR EMPLOYING BISTABLE SEMICONDUCTOR SWITCH TO ALLOW CHARGING OR TIMING CIRCUIT.
3,087,692. VARIABLE-SPAN AIRCRAFT.
3,088,441. VALVE ACTUATOR.
3,090,212. SANDWICH PANEL CONSTRUCTION.
3,090,580. SPACE AND ATMOSPHERIC REENTRY VEHICLE.
D187,350. AIRCRAFT.
D187,351. AIRCRAFT.
D187,352. AIRCRAFT.
D187,353. AIRCRAFT.
D193,454. AIRCRAFT.

Patents available for nonexclusive, revocable, royalty-free licenses (95)

3,066,690. CHECK VALVE ASSEMBLY FOR A PROBE.
3,092,346. SPACE CAPSULE.
3,096,030. ANNULAR SUPERSONIC DECELERATOR OR DROGUE.
3,100,294. TIME-DIVISION MULTIPLEXER.
3,100,900. TWO-PLANE BALANCE.
3,102,948. ELECTRIC ARC WELDING.
3,104,079. VARIABLE-GEOMETRY WINGED REENTRY VEHICLE.
3,104,062. VARIABLE SWEEP AIRCRAFT WING.
3,105,515. PRESSURE REGULATING SYSTEM.
3,106,602. HIGH VOLTAGE CABLE.
3,106,171. RADIANT HEATER HAVING FORMED FILAMENTS.
3,110,318. SLOSH SUPPRESSING DEVICE AND METHOD.
3,112,672. UMBILICAL SEPARATOR FOR ROCKETS.
3,115,630. REFLECTOR SPACE SATELLITE.
3,116,100. ELECTRIC BATTERY AND METHOD OF OPERATING THE SAME.
3,119,222. ROCKET ENGINE.
3,120,101. CHANNEL TYPE SHELL CONSTRUCTION FOR ROCKET ENGINE AND THE LIKE.
3,120,361. LANDING ARRANGEMENT FOR AEROSPACE VEHICLE.
3,120,733. IGNITION SYSTEM FOR MONOPROPELLANT COMBUSTION DEVICES.
3,121,300. SPHERICALLY SHAPED ROCKET MOTOR.
3,122,000. APPARATUS FOR TRANSFERRING CRYOGENIC LIQUIDS.
3,122,006. APPARATUS AND METHOD FOR CONTROL OF A SOLID FUELED ROCKET VEHICLE.
3,122,305. INJECTOR FOR BIPROPELLANT ROCKET ENGINES.
3,122,340. EXPULSION BLADDER EQUIPPED STORAGE TANK STRUCTURE.
3,127,157. MULTIPLE BELLEVILLE SPRING ASSEMBLY.
3,126,500. VARIABLE FREQUENCY MAGNETIC MULTIVIBRATOR.
3,126,845. DESPIN WEIGHT RELEASE.
3,130,940. HEAT SHIELD.
3,132,342. ANTENNA SYSTEM USING PARASITIC ELEMENTS AND TWO DRIVEN ELEMENTS AT 90° ANGLE FED 180° OUT OF PHASE.

3,132,476. THRUST VECTOR CONTROL APPARATUS.
3,132,479. UNIVERSAL RESTRAINER AND JOINT.
3,132,903. SLIT REGULATED GAS JOURNAL BEARING.
3,135,089. DECOMPOSITION UNIT.
3,135,090. ROCKET MOTOR SYSTEM.
3,136,123. ROCKET ENGINE INJECTOR.
3,137,082. CHARACTER INDICATING DISPLAY DEVICE.
3,138,837. METHOD OF MAKING FIBER REINFORCED METALLIC COMPOSITES.
3,139,725. STEERABLE SOLID PROPELLANT ROCKET MOTOR.
3,140,738. HIGH PRESSURE FOURWAY VALVE.
3,141,340. GRAVITY DEVICE.
3,141,760. METHOD OF PRODUCING POROUS TUNGSTEN IONIZERS FOR ION ROCKET ENGINES.
3,141,932. SWITCHING MECHANISM WITH ENERGY STORAGE MEANS.
3,142,221. FRANGIBLE TUBE ENERGY DISSIPATION.
3,144,219. MANNED SPACE STATION.
3,144,999. PROPELLANT BLADE LOADING CONTROL.
3,147,422. ELECTRONIC MOTOR CONTROL SYSTEM.
3,149,897. PRINTED CABLE CONNECTOR.
3,150,329. VARIABLE FREQUENCY MAGNETIC COUPLED MULTIVIBRATOR.
3,150,337. FOAM GENERATOR.
3,152,344. LIFE PRESERVER.
3,155,992. LIFE RAFT.
3,156,090. ION ROCKET.
3,157,529. BONDED SOLID LUBRICANT COATING.
3,158,172. HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE.
3,158,336. ASSEMBLY FOR RECOVERING A CAPSULE.
3,158,764. TWO-FLUID MAGNETHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRIC POWER CONVERSION.
3,159,967. VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL.
3,160,825. TEMPERATURE COMPENSATING MEANS FOR CURITY RESONATOR OF AMPLIFIER.
3,160,980. METHOD AND APPARATUS FOR SHOCK PROTECTION.
3,162,012. FORMED METAL RIBBON WRAP.
3,162,935. MECHANICAL COORDINATE CONVERTER.
3,164,322. NON-REUSABLE KINETIC ENERGY ABSORBER.
3,164,369. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,165,256. SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS.
3,166,834. CATALYST BED REMOVING TOOL.
3,167,426. NICKEL-BASE ALLOY.
3,168,827. AIRPLANE TAKE-OFF PERFORMANCE INDICATOR.
3,169,691. AIRCRAFT WHEEL SPRAY DRAG ALLEVIATOR.
3,169,612. ELASTIC UNIVERSAL JOINT.
3,169,725. ERECTABLE MODULAR SPACE STATION.
3,170,286. INJECTOR VALVE DEVICE.
3,170,290. LIQUID ROCKET SYSTEM.
3,170,295. PROPELLANT TANK PRESSURIZATION SYSTEM.
3,170,324. AERODYNAMIC MEASURING DEVICE.
3,170,471. INFLATABLE HONEYCOMB.
3,170,486. TWO-COMPONENT VALVE ASSEMBLY.
3,170,005. EJECTION VALVE.
3,170,657. LANDING ARRANGEMENT FOR AERIAL VEHICLE.
3,170,660. PARACHUTE GLIDER.
3,170,773. REINFORCED METALLIC COMPOSITES.
3,171,060. PLASMA ACCELERATOR.
3,171,081. IONIZATION VACUUM GAUGE.
3,172,097. BINARY TO BINARY-CODED-DECIMAL CONVERTER.
3,173,246. COLLOID PROPULSION METHOD AND APPARATUS.
3,173,251. APPARATUS FOR IGNITING SOLID PROPELLANTS.
3,174,278. CONTINUOUSLY OPERATING INDUCTION PLASMA.
3,174,279. ROCKET THRUST CHAMBER.
3,174,827. PRODUCTION OF HIGH PURITY SILICON CARBIDE.
3,175,769. LANDING PAD ASSEMBLY FOR AEROSPACE VEHICLES.
3,176,222. APPARATUS HAVING COAXIAL CAPACITOR STRUCTURE FOR MEASURING FLUID DENSITY.
3,176,499. HIGH TEMPERATURE TESTING APPARATUS.
3,176,933. THERMAL CONTROL OF SPACE VEHICLES.
3,177,333. THERMAL SWITCH.
3,178,883. ATTITUDE CONTROL FOR SPACECRAFT.
3,180,264. COUPLING FOR LINEAR SHAPED CHARGE.
3,180,587. ATTITUDE ORIENTATION OF SPIN-STABILIZED SPACE VEHICLES.
3,181,821. SPACECRAFT SOFT LANDING SYSTEM.
D198,249. SWEPT WING ASSEMBLY.

Errata

In the OFFICIAL GAZETTE, March 16, 1965, vol. 812, under "List of Patentees," p. xix, second column, after line 12, insert "Salyer, Ival O., and A. S. Kenyon, to Monsanto Company. Stabilization of crystalline polymers with thiobis-dialkyl phenols. 3,173,890, 3-16-65, Cl. 260—45.95."; p. xiii, second column, after line 17, insert "Kenyon, Allen S.: *See*—Salyer, Ival O., and Kenyon. 3,173,890."; and p. xvi, first column, after line 73, insert "Salyer, Ival O., and Kenyon. 3,173,890."

TITLE 37—PATENTS, TRADEMARKS AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Accessibility of Assignment Records

Notice is hereby given that the United States Patent Office proposes to amend one of its rules relating to records and files of the Patent Office. The amendment is proposed pursuant to the authority contained in Title 35, United States Code, section 6.

All persons who desire to present their views, objections, recommendations or suggestions are invited to do so on or before June 29, 1965, on which date a hearing will be held at 10:00 a.m. in Room 3886B of the Department of Commerce Building. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

The proposed amendment is for the purpose of limiting public accessibility to the assignment records of the Patent Office relating to patents only, and to keep confidential the assignment records relating to pending and abandoned applications. The proposed amendment will apply only to assignments recorded after the date the amendment becomes effective. Assignments recorded prior to that date together with the indexes and digests relating to them will continue to be open to public inspection as provided for by Rules 12 prior to amendment.

Section 1.12 of Title 37 C.F.R. (Patent Rule 12) is proposed to be amended by adding the words *relating to original or reissue patents* after "records" in the first sentence thereof, and by adding the following as the second and third sentences: Assignment records, digests and indexes, relating to any pending or abandoned application are not available to the public. Copies of any such assignment records and information with respect thereto shall be obtainable only upon written authority of the applicant or his assignee or attorney or agent or upon a showing that the person seeking such information is a bona fide prospective or actual purchaser, mortgagee or licensee of such application, unless it shall be necessary to the proper conduct of business before the Office or as provided by these rules of this part.

The text of the proposed rule, as amended, reads as follows:

§ 1.12 *Assignment records open to public inspection.*—The assignment records, relating to original or reissue patents, including digests and indexes, are open to public inspection and copies of any instrument recorded may be obtained upon payment of the fee therefor. Assignment records, digests and indexes, relating to any pending or abandoned application are not available to the public. Copies of any such assignment records and information with respect thereto shall be obtainable only upon written authority of the applicant or his assignee or attorney or agent or upon a showing that the person seeking such information is a bona fide prospective or actual purchaser, mortgagee or licensee of such application, unless it shall be necessary to the proper conduct of business before the Office or as provided by these rules. An order for a copy of an assignment should give the identification of the record. If identified only by the name of the patentee and number of the patent, or in the case of a trademark registration by the name of the registrant and number of the registration, or by name of the applicant and serial number of the application, an extra charge will be made for the time consumed in making a search for such assignment.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

Approved: May 26, 1965

Published in 30 F.R. 7195, May 28, 1965

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF MAY 1, 1963

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager	7-11-62	8- 2-62
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.		
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager	12- 3-62	9-15-62
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.		
PETROLEUM CHEMISTRY, GROUP 130—J. E. LIBERMAN, Manager	2- 5-63	8-20-62
Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.		
HIGH POLYMER CHEMISTRY, GROUP 160—M. STERMAN, Manager	2- 1-63	8-14-62
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.		
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager	2-20-63	1-30-63
Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.		
COATING AND LAMINATING, GROUP 100—J. REDOLD, Manager	7-20-62	8- 7-62
Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures		
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. E. KNIGHT, Manager	9- 5-62	7- 1-62
Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Process; Liquid Purification; Thermolytic Distillation; Preserving.		
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager	12-19-62	1- 5-61
Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.		
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager	10- 5-62	8- 2-62
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.		
SECURITY, GROUP 220—S. BOYD, Manager	12-19-62	6-25-62
Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.		
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager	10-19-62	1-19-60
Communications; Multiplexing Techniques; Facsimile and Related Art.		
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager	7- 5-62	8-25-62
Data Processing, Computation and Conversion; Storage Devices and Related Art.		
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager	10- 2-62	1- 5-60
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.		
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager	9-10-62	2-11-59
Optics; Radiant Energy; Measuring.		
ELEMENTS, GROUP 270—E. J. SAX, Manager	1-18-63	7- 6-60
Conductors; Switches; Miscellaneous.		

Total number of pending applications (excluding Designs)	196,013
Total number of Design applications pending	5,327
Total number of applications awaiting action (excluding Designs)	143,033
Total number of Design applications awaiting action	1,013
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during June 1963, except those which may have been extended under the provisions of the Veterans Patent Extension Act (54 Stat. 316 as amended by 65 Stat. 281) and those which may have expired earlier due to shortened terms under the provisions of Public Law 593. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1957*.

Patents	Numbers 2,462,280 to 2,644,411, inclusive
Plant Patents	None

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. R. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-10-63	12- 1-60
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Founding; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	7-27-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	9-29-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	3-24-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 1-63	8-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	3-26-63	7-12-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-27-62	11-19-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-26-63	10-10-60
TRANSPORTATION, GROUP 450—F. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-12-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	3-14-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-59
DESIGNS, GROUP 480—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	3- 7-64	4- 9-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE GEORGE H. HITCHINGS, GERTRUDE B. ELION AND IRVING GOODMAN

No. 7221. Decided March 11, 1965

[52 CCPA —; 342 F.2d 80; 144 USPQ 637]

1. RES JUDICATA—UNAPPEALED FINAL REJECTION.

Held that "* * * we are convinced that principles of res judicata should not apply where the initial decision is no more than an unappealed final rejection of an examiner."

2. SAME—ADMINISTRATIVE PROCEEDINGS—UNAPPEALED FINAL REJECTION.

"* * * the inexorable and universal applicability of the traditional doctrine of res judicata to judicial proceedings does not always hold for administrative proceedings. Indeed, Professor Davis has said that the 'central problem of res judicata in administrative law is to discover when or to what extent the traditional doctrine as developed in the judicial system should be applicable to administrative action.' We have considered the problem in light of the guideline suggested by Davis and have concluded that a final rejection which has not been prosecuted to a final determination on appeal before the Patent Office Board of Appeals or a court should not be considered res judicata."

3. SAME—UNAPPEALED FINAL REJECTION.

"Application of res judicata to unappealed final rejections seems to us a particularly inappropriate means for achieving the normal goals of the res judicata doctrine, i.e., reliability and finality of judgments, and conservation of judicial time and energy. In situations like the one presently before us, there is no party having a substantial interest in being able to rely on a conclusive judgment with respect to a particular issue. Certainly the Patent Office cannot claim such an interest. Indeed, Patent Office practice abounds with procedures which afford applicant every opportunity to secure the full protection to which he is lawfully entitled. Often, the filing of a continuation or a continuation-in-part results in a fresh approach to and an effective reconsideration of the same issues. In many ways, application of res judicata is at variance with the entire concept of continuing applications."

4. SAME—SAME.

"We * * * hold that the Board committed error in refusing, on the ground of res judicata, to re-examine the disclosure of the parent application. To the extent that *Levin* v. *Pierotti* and *Whittier* v. *Borchardt* are inconsistent with this decision, they no longer represent the law."

5. PATENTABILITY—ANTEDATING OF REFERENCE—BENEFIT OF EARLIER FILING DATE—35 U.S.C. 102(b), 112 AND 120.

"Appealed claims 3 and 4 of the instant application are drawn to '6-Acetonylmercaptopurine' and '2-Amino-6-acetonylmercaptopurine,' respectively. There is no question but that the Canadian patent discloses both compounds. Thus, since the Canadian patent issued more than one year prior to the date on which the instant application was filed, appellants must be considered to have lost their right to a patent under the provisions of 35 U.S.C. 102(b), unless they are able to antedate the Canadian patent. In order to establish an effective filing date prior to the Canadian patent, appellants must show that their earlier-filed parent application disclosed the invention of claims 3 and 4 'in the manner provided by the first paragraph of section 112,' as required by 35 U.S.C. 120."

6. PATENTABILITY—UTILITY—EVIDENCE—THERAPEUTIC COMPOUND—EVIDENCE OF HUMAN UTILITY NOT REQUIRED WHERE NOT DISCLOSED—EVIDENCE OF ANIMAL UTILITY MAY BE REQUIRED.

"In *In re Krimmel*, 48 CCPA 1116, 282 F.2d 948, 130 USPQ 215, we held that it was unnecessary to prove safety, effectiveness and reliability in the treatment of human beings, where the specification made no express mention of human utility and where the applicant's immediate aim appeared to be the treatment of animals. See also *In re Berget*, 48 CCPA 1102, 282 F.2d 955, 130 USPQ 206; *In re Dodson*, 48 CCPA 1125, 282 F.2d 948, 130 USPQ 224.

In the case at bar, the parent application likewise makes no mention of utility with respect to humans. And while the Examiner might have been justified in calling for proof that the claimed compounds were effective in treating *animals*, see *In re Novak*, 49 CCPA 1283, 306 F.2d 924, 134 USPQ 335, we note that no such demand was made. The Examiner merely called for 'clear and convincing proof that the composition is safe, effective and reliable for human beings.' Thus, since there was no challenge of the effectiveness of the claimed substances in the treatment of non-human subjects, we hold that the rejection of the parent application for failure to satisfy section 101 was erroneous."

7. APPLICATION—DISCLOSURE—UTILITY—HOW TO USE—THERAPEUTIC COMPOUND—35 U.S.C. 112.

"With regard to the question of the 'how to use' requirement of section 112, we note that the parent application contains no information whatever concerning methods or manner of administration, dosages, etc. In short, there is a complete absence of *express* disclosure of how to use the claimed compounds. Such a lack, however, does not per se render the disclosure inadequate under section 112. All the statute requires is that the disclosure be one which will 'enable any person skilled in the art to which it pertains, or with which it is most nearly connected,' to make and use the invention. Thus, where the manner of using a claimed compound is obvious to one of ordinary skill in the particular art, even though the specification is utterly barren of any express teaching of how to use, this court has found compliance with section 112."

APPEAL from the Patent Office. Serial No. 11,967.

REVERSED.

James M. Mason, David Paul Weaver, for appellants.

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

On October 7, 1955, appellants filed in the United States Patent Office an application [1] (hereinafter "parent") disclosing and claiming certain organic compounds and a process for making them. Shortly thereafter, in November of 1955, appellants filed a Canadian patent application containing a disclosure nearly identical to that of the parent application. The Canadian application subsequently matured into Canadian Patent No. 560,171 (hereinafter "Canadian patent"), which issued July 8, 1958. The parent application did not fare so well. In June of 1957 the Examiner finally rejected all of its claims "as being based upon a fatally defective disclosure of utility." Appellants filed an appeal with the Board and submitted a brief, but the appeal was subsequently withdrawn and the application abandoned.

However, on March 1, 1960, several days before the parent application became abandoned, appellants filed another United States application [2] (hereinafter "instant" application), as a continuation-in-part of the parent application. The present appeal is from a Board decision sustaining the Examiner's final rejection of claims 3 and 4 of the instant application.

There are two separate grounds of rejection. First, the Examiner rejected the claims of the instant application as "fully met" by the Canadian patent, which issued more than one year prior to the actual filing date of the instant application. Appellants did not dispute the disclosure of the Canadian patent, but sought to dispel the statutory bar it created under 35 U.S.C. 102(b) by establishing as their effective date the filing date of the parent application, pursuant to 35 U.S.C. 120. The Examiner, however, held there was no continuity between

[1] Serial No. 539,271, entitled "6-Oxyorganopurines and Method of Preparing Them."
[2] Serial No. 11,967, entitled "6-Oxyorganopurines and Method of Preparing Them."

the parent and instant application, since the former had been found wanting in its disclosure of utility, and thus concluded that appellants were not entitled to the earlier filing date, citing *Ex parte Bue*, 114 USPQ 552 (P.O.B.A. 1957). The Examiner also held that appellants could not re-contest the validity of the unappealed rejection of the parent application, since that rejection was said to be res judicata.

The second ground of rejection is directly concerned with the merits of the instant application itself. The Examiner refused to allow the appealed claims on the ground that the specification fails "to teach how the invention is to be used," as required by 35 U.S.C. 112.

This appeal thus presents the following three basic questions: (1) May appellants *now* be heard to argue that the final rejection of the claims in the parent case was improper, and that, as a matter of law, the parent specification did contain sufficient supporting disclosure of utility? (2) If so, *was* the disclosure of utility in the parent application sufficient? (3) If so, does the *instant* application contain the required teaching of how to use the claimed invention?

The Patent Office has answered all of these questions in the negative, and in order for appellants to prevail, all must be answered in the affirmative. Since the pertinence of each of the latter two questions depends upon the answer to those preceding it, we shall consider them in the order stated above.

I. *Res Judicata*

On several occasions recently, this court has had to consider the doctrine of res judicata in various contexts. See, e.g., *Switzer v. Sockman*, 52 CCPA 759, 333 F.2d 935, 142 USPQ 226; *In re Seware*, 50 CCPA 1571, 319 F.2d 277, 138 USPQ 208; *In re Fried*, 50 CCPA 954, 312 F.2d 930, 136 USPQ 429. In those cases we have examined many of the fundamental problems encountered in applying res judicata. [1] In this case, however, we need not concern ourselves with such problems, for we are convinced that principles of res judicata should not apply where the initial decision is no more than an unappealed final rejection of an examiner.

In *Overland Motor Co. v. Packard Motor Co.*, 274 U.S. 417 (1927), the Supreme Court held that an unappealed final rejection of a claim is not *necessarily* res judicata with respect to the question of patentability of a similar claim to the same invention contained in a divisional application filed after the initial rejection. The Court indicated that the decision to treat such a rejection as res judicata was optional, and rested with the Patent Office. And since the divisional application had matured into a patent, the Office was considered to have waived the option.

In so holding, the Court referred to *In re Barratt's Appeal*, 14 App. D.C. 255 (1899), in which the Court of Appeals for the District of Columbia had reached a similar conclusion. In *Barratt*, the Court pointed out that

> While the rules that govern the finality and conclusiveness of adjudications at the common law do not apply, in the strict sense, to administrative or quasi-judicial action in the Executive Departments of Government, yet in administrative action, as well as in judicial proceeding, it is both expedient and necessary that there should be an end of controversy. * * *
>
> * * * * * * *
>
> In what we have said we do not desire it to be understood that the Patent Office may not, if it thinks proper so to do, entertain and adjudicate a second application for a patent after the first application has been rejected. What we

decide is, that it is not incumbent upon the office as a duty to entertain such applications * * *."

[2] As was recognized by the *Barratt* court in 1899, and as is clear today, the inexorable and universal applicability of the traditional doctrine of res judicata to judicial proceedings does not always hold for administrative proceedings. Indeed, Professor Davis has said that the "central problem of res judicata in administrative law is to discover when or to what extent the traditional doctrine as developed in the judicial system should be applicable to administrative action."[1] We have considered the problem in light of the guideline suggested by Davis and have concluded that a final rejection which has not been prosecuted to a final determination on appeal before the Patent Office Board of Appeals or a court should not be considered res judicata.

Of the factors which we have considered in arriving at this conclusion, one of the most significant has been the amazing diversity of opinion within the Patent Office itself. This circumstance would seem to indicate that there has been an utter lack of a uniform Patent Office policy with respect to the problem of res judicata.

For example, in *Ex parte Buc*, supra, the Board had before it a fact situation nearly on all fours with the present case. The holding was that an examiner's final rejection would be considered res judicata. In so deciding, the Board relied upon *Lavin* v. *Pierotti*, 29 CCPA 1235, 129 F.2d 883, 54 USPQ 400, and *Whittier* v. *Borchardt*, 33 CCPA 1028, 154 F.2d 522, 69 USPQ 282. Both of those cases involved interference proceedings and in both this court held that an examiner's final rejection was an act "judicial in character" and therefore should be considered res judicata.

However, in an opinion dated later than the *Lavin* case but earlier than the *Whittier* case, the Board took a contrary position. Thus, in *Ex parte Davidson*, 58 USPQ 343 (P.O.B.A. 1943), the Board stated:

> The Examiner has also rejected the claims on the ground of res adjudicata. * * *
>
> Appellant argues that he should not be refused the claims on appeal because of his failure to appeal from the final rejection in his earlier application. He points out that the course followed by applicant in this case is that recommended by Wolcott in the Manual of Patent Office Procedure which provided that in the case of continuation where an application has been prosecuted to a final rejection an applicant may have recourse to filing a continuation in order to introduce into the case a new set of claims and to establish a right to further examination by the Primary Examiner. Appellant points out that the continuation application was filed before the time for appeal had expired for the purpose of putting the description and claims in accurate form. He cites a number of decisions, some by this Board, in which rejection on the ground of res adjudicata in similar circumstances has not been affirmed.
>
> It is considered unnecessary to discuss these decisions as it is apparent from the reference to the Manual of Patent Office Procedure that applicant's procedure is tolerated and this ground of rejection will not be affirmed.

The *Davidson* case was later cited with approval by the Board, even in the interim between the *Lavin* and *Whittier* cases and the *Buc* case. See *Ex parte Smith*, 88 USPQ 121 (P.O.B.A. 1950); *Ex parte Turinsky*, 100 USPQ 443 (P.O.B.A. 1953).

In 1961, four years after the *Buc* decision, the Board decided *Ex parte Pfleger*, 131 USPQ 439. In that case, certain claims of the appealed application were identical with claims which had appeared in a previous application and which had been finally rejected. Since no appeal had been taken from the earlier rejection, the Examiner held the earlier rejection to be res judicata with respect to the claims in the later application, relying on the *Lavin* and *Whittier* cases. In reversing, the Board said:

> We have considered the decisions referred to by the Examiner, but are not convinced as to the applicability of the interparties situations there presented to the establishment of a precedent for the present ex parte action. It rather appears to be the policy of the Office to hold res judicata applicable as a ground of rejection where the same or substantially the same grounds of refusal *has been adjudicated by an appellate tribunal* such as the Board of Appeals or the Court of Customs and Patent Appeals. Such practice is evidenced by section 706.03(w) of the Manual of Patent Examining Procedure. We see no justification or precedent for the holding of res judicata against claims 1 and 2 stated by the Examiner in this case, and the rejection on this ground is reversed. [Emphasis added.]

Section 706.03(w) of the Manual is set forth in the margin along with section 201.11.[2]

One year subsequent to the *Pfleger* decision, in 1962, the Board decided *Ex parte Armstrong*, 139 USPQ 211. In *Armstrong*, the Board held an unappealed final rejection to be res judicata, relying on *Lavin*, *Whittier* and *Buc*. The *Pfleger* case and section 706.03(w) of the Manual were not mentioned.

Thus, if reported Board decisions are a valid indicator, the Patent Office appears to be applying the doctrine of res judicata to unappealed final rejections on a hit-or-miss basis, and if there is any Patent Office "policy" in this regard, it is a widely fluctuating one. It was precisely this "on again-off again" treatment of the problem that we condemned in *In re Fried*, supra.

In *Fried*, we held that an unappealed final rejection was not res judicata with respect to *different* claims in a later application. It was not necessary, therefore, for us to make an express holding with respect to the present problem. We did, however, indicate our dissatisfaction with the inconsistent way in which the problem is being handled by the Office, stating:

> We here observe that the express provisions of MPEP set forth an established Patent Office policy on which applicants for patents are entitled to rely in good faith in the orderly conduct of their business in the Patent Office. To depart from such policy as has been done here would, it seems to us, lead to such uncertainty on the part of applicants that they must necessarily traverse every ground of the Examiner's rejection at each stage of the prosecution and appeal his adverse rulings lest the failure to do so returns in the guise of a binding *res judicata* which forfeits an applicant's privilege of foregoing his right of appeal and making the permissible corrective changes by filing a continuation application. In addition, it seems to us that such an uncertainty in procedure leaves the patent Examiner vulnerable to a charge of arbitrariness, bad faith and favoritism when he, as the representative of the Patent Office, exercises the *res judicata* "option" in one way in one case and in another way in a different case.

We also "expressly overruled" the *Lavin* and *Whittier* cases, to the extent they were inconsistent with our holding in *Fried*.

[1] Davis, Administrative Law, 565 (1951). Pages 562–613 contain an excellent discussion of res judicata in the administrative setting.

[2] MPEP § 706.03(w) provides:

> A prior adjudication against the inventor on the same or similar claims constitute a proper ground of rejection as *res judicata*. Where a different question of patentability is presented the rejection of *res judicata* does not apply.
>
> The rejection should only be used when the earlier decision was a final, appellate one, such as a Board of Appeals decision where the time limit for further appellate has expired, or a decision by the Court of Customs and Patent Appeals. But see 201.11, last paragraph, for a special situation. * * *

MPEP § 201.11 (last paragraph) provides:

> Where the first application is found to be fatally defective because of insufficient disclosure to support allowable claims, a second application filed as a "continuation-in-part" of the first application to supply the deficiency is not entitled to the benefit of the filing date of the first application. * * * [Citing, e.g., the *Buc* case.] These cases also involve the question of *res judicata*.

It is interesting to note that *Fried* was decided subsequent not only to the Board's decision in the *Armstrong* case, supra, but also to the Board's opinion in the case at bar. It is understandable then that the Board did not feel, in either case, that any of our decisions compelled a contrary result. What is not so understandable, however, is the fact that both parties in the case at bar completely omitted reference to the *Fried* case in their briefs. For we think *Fried* clearly indicates the adverse feeling on the part of this court with respect to res judicata rejections predicated upon unappealed decisions of an examiner.

[3] Application of res judicata to unappealed final rejections seems to us a particularly inappropriate means for achieving the normal goals of the res judicata doctrine, i.e., reliability and finality of judgments, and conservation of judicial time and energy. In situations like the one presently before us, there is no party having a substantial interest in being able to rely on a conclusive judgment with respect to a particular issue. Certainly the Patent Office cannot claim such an interest. Indeed, Patent Office practice abounds with procedures which afford applicant every opportunity to secure the full protection to which he is lawfully entitled. Often, the filing of a continuation or a continuation-in-part results in a fresh approach to and an effective reconsideraiton of the same issues. In many ways, application of res judicata is at variance with the entire concept of continuing applications.

With regard to the goal of conserving the time of administrative and judicial tribunals, res judicata rejections would seem to have exactly the opposite effect. For if unappealed final rejections are uniformly held to be res judicata, the applicant has no choice other than appeal or abandonment of his case. But if time and energy are to be expended, even unnecessarily, it is much more desirable that such expenditure should occur at administrative levels. On balance, we believe that an applicant should be encouraged in, rather than penalized for, promptly filing a better application after final rejection instead of appealing, especially where so much of the procedural machinery of the Patent Office is designed to permit just such a remedy.

In short, we feel that the Patent Office has misapprehended the spirit of the Supreme Court's reasoning in the *Overland Motor* case.[5] It is inconceivable to us that the Court intended the Patent Office to apply res judicata when and where it chooses, with no uniform policy. Instead of increasing reliability and predictability, such a practice introduces a vast uncertainty on the part of the applicant, who does not know whether to appeal and fight his case to the "bitter end," or to file a new application and gamble that the Examiner will not reject on the basis of res judicata. On the whole, we believe it much more desirable that applicants should know that they will *not* receive a res judicata rejection on the basis of an unappealed final rejection.

[4] We therefore hold that the Board committed error in refusing, on the ground of res judicata, to re-examine the disclosure of the parent application. To the extent that *Lavin* v. *Pierotti* and *Whittier* v. *Berchardt* are inconsistent with this decision, they no longer represent the law.

[5] We note that *Overland* involved an infringement situation, wherein the defendant sought to claim the benefits of res judicata for itself. The Court held that the option lay with the Patent Office, and since the Patent Office had not chosen to apply the doctrine, it was of no avail to the defendant. This would seem to indicate that the Court felt that res judicata is unavailable as to a stranger to the original proceedings, which involved only the applicant and the Office.

It is also interesting to note that the *Barrett* case, upon which the Court in *Overland* relied, involved a situation wherein the second application lacked continuity with the first; there had been no co-pendency. In addition, an appeal had been taken to the same court on the *first* application.

II. *The Parent Application*

[5] Appealed claims 3 and 4 of the instant application are drawn to "6-Acetonylmercaptopurine" and "2-Amino-6-acetonylmercaptopurine," respectively. There is no question but that the Canadian patent discloses both compounds. Thus, since the Canadian patent issued more than one year prior to the date on which the instant application was filed, appellants must be considered to have lost their right to a patent under the provisions of 35 U.S.C. 102(b), unless they are able to antedate the Canadian patent. In order to establish an effective filing date prior to the Canadian patent, appellants must show that their earlier-filed parent application disclosed the invention of claims 3 and 4 "in the manner provided by the first paragraph of section 112," as required by 35 U.S.C. 120.[6]

The parent application was finally rejected by the Examiner as containing "a fatally defective disclosure of utility." It is the position of the Patent Office that such a rejection was sound and therefore appellants are not entitled to the filing date of the parent application.

While at first blush the language used by the Examiner seems to indicate that the rejection of the parent application was based upon a want of utility under section 101, further reading of the Examiner's action makes it clear that the rejection was also based upon a failure to comply with the "how to use" requirement of section 112. As the Examiner went on to point out:

> • • • Neither of the two statements disclosed in the specification are sufficient to comply with the requirements of the patent statutes. The first statement "inhibitors of cell division, particularly with regard to temporary remissions of acute leukemia" is defective in the absence of clear and convincing proof that the composition is safe, effective and reliable for human beings. No tests on humans have been submitted and said tests are necessary in cases of this nature. • • • Furthermore, there is a complete failure to teach *how* the invention is to be used, the proportions used, the *kind* of cell involved etc. It becomes obvious that the statement represents nothing more than an invitation to experiment. • • •

The thrust of the first portion of this passage is seemingly directed toward the question of section 101 utility, while the second portion is unquestionably concerned with the requirements of section 112.

The entire disclosure relating to utility is contained in the following two paragraphs from the parent application:

> 6-mercaptopurine and thioguanine, described in U.S. Patent 2,697,709 and our copending application 375,819, are known to be useful inhibitors of cell division, particularly with regard to providing temporary remissions of acute leukemia.
>
> The main object of the present invention is to provide new and useful compositions which modify the reactions of the known mercaptopurines so as to extend their range of usefulness particularly in regard to the absence of toxic side effects. It has now been found that certain 8-substituted derivatives have a greater therapeutic index, and, as a result, an extended range of usefulness. The compounds are likewise useful in the inhibition of lactic acid bacteria and for their bacteriostatic action.

With regard to the question of section 101 utility, we think the above statement satisfies the requirements of the statute as it has been interpreted by this court. [6] In *In re Krimmel*, 48 CCPA 1116,

[6] The first paragraph of section 112 provides:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

It is interesting to note that *Fried* was decided subsequent not only to the Board's decision in the *Armstrong* case, supra, but also to the Board's opinion in the case at bar. It is understandable then that the Board did not feel, in either case, that any of our decisions compelled a contrary result. What is not so understandable, however, is the fact that both parties in the case at bar completely omitted reference to the *Fried* case in their briefs. For we think *Fried* clearly indicates the adverse feeling on the part of this court with respect to res judicata rejections predicated upon unappealed decisions of an examiner.

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With regard to the goal of conserving the time of administrative and judicial tribunals, res judicata rejections would seem to have exactly the opposite effect. For if unappealed final rejections are uniformly held to be res judicata, the applicant has no choice other than appeal or abandonment of his case. But if time and energy are to be expended, even unnecessarily, it is much more desirable that such expenditure should occur at administrative levels. On balance, we believe that an applicant should be encouraged in, rather than penalized for, promptly filing a better application after final rejection instead of appealing, especially where so much of the procedural machinery of the Patent Office is designed to permit just such a remedy.

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[4] We therefore hold that the Board committed error in refusing, on the ground of res judicata, to re-examine the disclosure of the parent application. To the extent that *Lavin* v. *Pierotti* and *Whittier* v. *Borchardt* are inconsistent with this decision, they no longer represent the law.

[5] We note that *Overland* involved an infringement situation, wherein the defendant sought to claim the benefits of res judicata for itself. The Court held that the option lay with the Patent Office, and since the Patent Office had not chosen to apply the doctrine, it was of no avail to the defendant. This would seem to indicate that the Court felt that res judicata is unavailable as to a stranger to the original proceedings, which involved only the applicant and the Office.

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The thrust of the first portion of this passage is seemingly directed toward the question of section 101 utility, while the second portion is unquestionably concerned with the requirements of section 112.

The entire disclosure relating to utility is contained in the following two paragraphs from the parent application:

> 6-mercaptopurine and thioguanine, described in U.S. Patent 2,697,709 and our copending application 375,819, are known to be useful inhibitors of cell division, particularly with regard to providing temporary remissions of acute leukemia.
>
> The main object of the present invention is to provide new and useful compositions which modify the reactions of the known mercaptopurines so as to extend their range of usefulness particularly in regard to the absence of toxic side effects. It has now been found that certain 8-substituted derivatives have a greater therapeutic index, and, as a result, an extended range of usefulness. The compounds are likewise useful in the inhibition of lactic acid bacteria and for their bacteriostatic action.

With regard to the question of section 101 utility, we think the above statement satisfies the requirements of the statute as it has been interpreted by this court. [6] In *In re Krimmel*, 48 CCPA 1116,

[6] The first paragraph of section 112 provides:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

292 F.2d 948, 130 USPQ 215, we held that it was unnecessary to prove safety, effectiveness and reliability in the treatment of human beings, where the specification made no express mention of human utility and where the applicant's immediate aim appeared to be the treatment of animals. See also *In re Bergel*, 48 CCPA 1102, 292 F.2d 955, 130 USPQ 206; *In re Dodson*, 48 CCPA 1125, 292 F.2d 943, 130 USPQ 224. In the case at bar, the parent application likewise makes no mention of utility with respect to humans. And while the Examiner might have been justified in calling for proof that the claimed compounds were effective in treating *animals*, see *In re Novak*, 49 CCPA 1283, 306 F.2d 924, 134 USPQ 335, we note that no such demand was made. The Examiner merely called for "clear and convincing proof that the composition is safe, effective and reliable for human beings." Thus, since there was no challenge of the effectiveness of the claimed substances in the treatment of non-human subjects, we hold that the rejection of the parent application for failure to satisfy section 101 was erroneous.

[7] With regard to the question of the "how to use" requirement of section 112, we note that the parent application contains no information whatever concerning methods or manner of administration, dosages, etc. In short, there is a complete absence of *express* disclosure of how to use the claimed compounds. Such a lack, however, does not per se render the disclosure inadequate under section 112. All the statute requires is that the disclosure be one which will "enable any person skilled in the art to which it pertains, or with which it is most nearly connected," to make and use the invention. Thus, where the manner of using a claimed compound is obvious to one of ordinary skill in the particular art, even though the specification is utterly barren of any express teaching of how to use, this court has found compliance with section 112. *In re Johnson*, 48 CCPA 733, 282 F.2d 370, 127 USPQ 216.

The record before us contains the affidavit of one C. Chester Stock, dated October 16, 1957. Dr. Stock was, at the time of the affidavit, chief of the chemotherapy division of the Sloan-Kettering Institute for Cancer Research. The affidavit was apparently filed in connection with and during the prosecution of yet another patent application[7] in the name of two of the present appellants. Attached to the affidavit is an article by Dr. Stock entitled "Studies in Experimental Cancer Chemotherapy," reprinted from "Current Research in Cancer Chemotherapy" (Report No. 3–55, August 1955) and issued by The Committee on Cancer Chemotherapy of the National Advisory Cancer Council. The body of the affidavit itself presents comparative test data resulting from clinical testing of 6-chloropurine and 2,6,8-trichloropurine for effectiveness against "mouse sarcoma 180." At one point the affidavit states that "The tests presented above were conducted in the manner described by the attached reprint."

The article by Dr. Stock sets forth in detail test procedures employed and results obtained during the screening of a number of compounds for chemotherapeutic effect on non-human cancers. Among the compounds tested was 6-mercaptopurine, one of the substances mentioned in the portion of the parent specification quoted above. 6-Mercaptopurine is the subject of several of the claims of U.S. Patent No. 2,697,709, which patent was also mentioned in the parent application.

[7] Serial No. 557,249, filed January 4, 1956, entitled 6-Chloropurine, now Patent No. 2,882,781.

The Stock article contains much information concerning the method of using the compounds being screened. Thus, under the heading "Test Materials," Stock states:

> • • • Absorption can be obtained from intraperitoneally injected suspensions of some insoluble compounds sufficient to exert anti-tumor action. Subsequently better vehicles and routes of administration may be sought. Formerly we have used butyl succinate, propylene glycol, or peanut oil for saline insoluble compounds. Gum acacia suspensions were used where the compounds were not soluble in the above. Now, all compounds are tried in a limited volume of saline and, if the material appears soluble, physiological saline is added to the desired volume. If in the limited volume of saline any preparation appears unlikely to dissolve, a concentrated preparation of carboxymethyl cellulose (CMC) • • • is added in place of additional saline to prepare a suspension of the compound in 0.5% CMC in saline. • • • Solutions in saline and suspensions in CMC are made up in 50 cc. volume containing the weight of compound to be given per kilo per day. Thus a dose of 5 mg./Kg./day would be given by daily injections into a 20 gm. mouse of one cc. of a solution of 5 mg. in 50 cc. It has been convenient to use volume rather than weight measurements of those compounds that are liquids at room temperature. The preparations of the compounds have been kept in the ice box in sterile bottles with rubber stoppers permitting access of the syringes. Compounds that may react with water or CMC or are otherwise unstable are made up fresh daily. Some have been used in peanut oil.

Further, under the heading "Techniques," in connection with Sarcoma 180 screening, Stock says:

> The intraperitoneal route has been selected for the screening program as the most convenient one that would give a good absorption of the compound. However, certain compounds may not show up to best advantage by this route. This was found true with cortisone against the lymphosarcoma (7) (Table 2). Others have employed the oral route of administration (25). One route of administration that is generally considered unsatisfactory is the intratumoral. Such injections are not consistent with the implied conditions of usefulness of chemotherapeutic agents, i.e., treatment of tumors not susceptible of local radiation or surgical removal. Another unrealistic technique has involved injection of compounds prior to tumor implantation. While this is objectionable in a screening procedure, it is conceivable that such an injection program might be required in certain antimetabolite studies or that the animals should be on a metabolite-free or -low diet prior to tumor implantation and antimetabolite injection.

Two of the steps in the method used by Stock for Sarcoma 180 screening were as follows:

> (3) Twenty-four hours later [after tumor implantation], start interperitoneal injections of the compound solution or suspension at 125 mg./Kg./day (unless the compound is known or suspected to be too toxic for that dose).
>
> (4) Continue injections twice a day for seven days.

We think these and similar passages from the Stock article indicate that there are certain standard methods of using compounds which have suspected chemotherapeutic activity against various forms of cancer in animals, and that such methods are within the knowledge of those skilled in the art. Certainly the article, dated prior to the filing date of the parent application, shows that those skilled in the art knew how to use 6-mercaptopurine, a compound very similar to those claimed in both the parent and instant applications.[8] In *In re Adams*, 50 CCPA 1185, 316 F.2d 476, 137 USPQ 333, we held that where a claimed compound was similar to other known compounds, it would be apparent to one skilled in the art that the claimed com-

[8] We might also point out that Patent No. 2,697,709, referred to above, which claims 6-mercaptopurine, contains no express disclosures of how to use the compound. The specification merely states that the main object of the invention is to "provide new compositions of matter which are useful as inhibitors of microorganisms and in providing temporary remission in the treatment of acute leukemia and chronic myelogenous leukemia." The fact that this disclosure was deemed sufficient by the Patent Office to satisfy the requirements of section 112 argues strongly for the proposition that those skilled in the art would, without more, know how to use 6-mercaptopurine.

pound could be used in the same manner as the known compounds, and thus that the requirements of section 112 were fulfilled.

We think the reasoning of the *Adams* case applies with equal force here. We therefore hold that the Examiner was wrong in rejecting the parent application for failure to disclose how the claimed compounds were to be used. Having so held, it follows that appellants are entitled to the filing date of their parent application under section 120 and therefore, that the Canadian patent does not constitute a statutory bar. Accordingly, the first appealed ground of rejection is *reversed*.

III. *The Instant Application*

There remains the second ground of rejection. As stated by the Examiner in his answer:

> All of the claims stand finally rejected since there is a failure to teach how the invention is to be used. 35 U.S.C. 112. Even if it be assumed, arguendo, that one would know how to use the claimed compounds in treating *leukemia*, a form of *cancer*, no evidence has been submitted to substantiate this. * * *

There is no doubt, especially in view of his citation of the statute, that the Examiner was at this point concerned with section 112. Later in his answer, however, he made reference to the allegations of utility contained in the specification and made comments which indicate that he also felt the claimed compounds had not been shown to possess the utility required by section 101.

The instant application contains the following statements regarding utility:

> 6-mercaptopurine and thioguanine described in U.S. Patents 2,697,709 and 2,884,667 are known to be useful inhibitors of cell division, particularly with regard to providing temporary remissions of acute leukemia.
>
> The main object of the present invention is to provide a novel group of compounds which more effectively inhibit unnatural cell division and multiplication in general and with particular respect, for example, to chronic myelocytic leukemia. Pharmacologically, the compounds have been shown effective in transplanted animal tumors. The present derivatives appear to modify and extend the effective range of the known mercaptopurines through the absence of toxic side effects, whereby a greater therapeutic index is obtained. The compounds are also bacteriostatic and inhibit lactic acid bacteria.

With regard to these statements, the Examiner commented:

> * * * Hence, there are two aspects to the utility statement. The first relates to the inhibition of "unnatural cell division" and the second to inhibiting lactic acid bacteria and as a bacteriostatic.
>
> As to the first utility the Examiner's position is that the submitted evidence is *insufficient* to show that the compounds can in effect inhibit "unnatural cell division."
>
> With regard to the second portion of the utility statement, it is equally defective. * * *

The Board in substance agreed, pointing out that:

> We agree with the Examiner that the application does not disclose how the claimed compounds are to be used and that, with respect to the inhibiting function which appellants particularly associate with chronic myelocytic leukemia, the record does not contain adequate evidence that the claimed compounds so inhibit.

Concerning the "how to use" issue, we have already indicated, in our discussion of the parent application, that one of ordinary skill in the art would know how to use the claimed compounds. We therefore hold that the rejection of the claims in the instant application for failure to comply with section 112 was erroneous.

It is evident, however, that both the Examiner and the Board were of the opinion that appellants had not shown, to the satisfaction of one skilled in the art, that the claimed compounds were effective for any of the alleged utilities. The Solicitor and appellants have devoted large portions of their briefs to this question. Essentially, the issue turns on whether appellants have proved the truth of the statement in their instant specification that "the compounds have been shown effective in transplanted animal tumors."

Appellants rely upon two affidavits of Dr. Samuel Bieber, the senior research biologist in charge of the cancer chemotherapy screening program at The Wellcome Research Laboratories at Tuckahoe, New York. The first affidavit contains a brief description and results of experiments conducted under his direction as a part of the screening program. Mice having artificially implanted tumors were treated with the claimed compounds, by intraperitoneal injection and, in two instances, by oral administration. After three weeks and several treatments, the mice were killed and the tumors dissected out and weighed. Dr. Bieber set forth the results in the table which is reproduced below:

Compound	Dose, mg./kg.	TWI	T/N	Toxicity	BWI
6-acetonylthiopurine (cl. 3)	100 i.p.	0.43	4/6	0/6	1.03
	250 i.p.	0.005	2/6	0/6	0.97
	25 i.p.	0.63	10/12	0/12	1.1
2-amino-6-acetonylthiopurine (cl. 4)	75 i.p.	0.08	4/4	2/6	0.97
	100 p.o.	0.07	5/6	0/6	0.76
	250 p.o.	0.02	4/5	1/6	0.76

In the table, TWI refers to Tumor Weight Index and represents the ratio of average tumor weight in treated mice to average tumor weight in control mice. BWI stands for Body Weight Index and represents a similar ratio using average body weight. T/N represents the number of tumors remaining compared with the number of animals surviving the treatment. Thus, for example, six tumor-ridden mice were given intraperitoneal injections of the compound of claim 3 in doses of 250 mg. per kg. of body weight. All six survived the treatment and the tumors were completely eliminated in four of them. The ratio of the average tumor weight of the treated mice to the average tumor weight of controls was 0.005, and the body weight ratio was 0.97. Similarly, twelve mice were given 25 mg. per kg. injections of the compound of claim 4. Of these, all survived the treatment and two experienced complete elimination of the tumors. The tumor weight ratio was 0.63 and the body weight ratio was 1.1.

Bieber's second affidavit is essentially supplementary to the first, and contains his statement that the above results "are mathematically and statistically significant and prove beyond any reasonable doubt the anti-tumor activities of the compounds which are the subject of the application."

The Board held, and the Solicitor argues, that the affidavits are insufficient because they "do not establish the control basis of the experiments." However, appellants assert, and we agree, that it is apparent that control groups were used. We cannot imagine how ratios such as the Tumor Weight Index and the Body Weight Index could be established without average tumor and body weight data for a group of control animals. Moreover, the Solicitor's speculations concerning possible differences in age, condition, treatment, etc. between the controls and the treated mice, and the possible effect such differences (if they existed) might have on the validity of the test data, are not persuasive. Experimenters cannot be reasonably expected to anticipate every possible objection which might be raised

regarding the accuracy of their tests. For example, the Solicitor argues:

> The use of old mice as controls and young mice as experimental animals could have induced results unduly favorable to the inhibition of tumors in the experimental animals. Similarly, misleading results might have followed from differences in size or state of health as between the two groups of animals tested. Along the same line, the experimental data reported may be entirely consistent with an enriched diet for the experimental animals and a nutritionally deficient diet for the controls, or with the use of clean, well ventilated cages maintained at normal temperatures for the experimental animals and dirty, poorly ventilated cages maintained at uncomfortable temperatures for the controls. * * *

It is obvious that a nearly endless list of such objections could be imagined. It would be intolerable to require an experimenter to account for all of them. On the contrary, since we feel that Dr. Bieber's expertise in this area is amply authenticated by the affidavits, we are of the opinion that his test data may safely be accepted as being of the type and quality which would satisfy others of similar skill in the art.

The Board also objected to the affidavits on the basis that:

> * * * Neither the number nor the character of the suggested individual experiments is such as to establish the effectiveness "in transplanted tumors" with any reasonable degree of certainty. * * *

We disagree. As appellants point out, a total of 42 mice were treated with one or the other of the claimed compounds, and the results obtained with these animals were compared with groups of control mice. And in every case, the tumors were reduced in comparison with the controls.

Appellants further assert, and we believe correctly, that Dr. Bieber's test procedures and data compare favorably with those set forth in the Stock article discussed above. We take this as further evidence that the methods used by Dr. Bieber were of the type and quality which would be acceptable to those having ordinary skill in the art.

We therefore hold that the rejection of the claims in the instant application for lack of utility under section 101 was unwarranted. The appealed decision is accordingly reversed.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE GEORGE H. SCHIPPEREIT

No. 7240. Decided March 18, 1965

[52 CCPA —; 342 F.2d 471; 144 USPQ 742]

1. PATENTABILITY—OBVIOUSNESS—UNOBVIOUSNESS COMBINATION OF PRIOR ART FEATURES.

"Notwithstanding the fact that each of the individual features of appellant's invention was known to the prior art, however, we feel the Board was wrong in holding the invention to have been obvious. The Board's conclusion amounts to a finding that it would have been obvious to select and combine ideas from the several references. But we think both the selection and combination were unobvious when tested without the benefit of appellant's disclosure."

2. SAME—PARTICULAR SUBJECT MATTER—"INDUCTION FURNACE."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Induction Furnace," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 660,287.

REVERSED.

J. Helen Slough for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

Claims 8, 10, 16 and 19 of appellant's patent application[1] were rejected by the Examiner as "unpatentable over" the prior art, which rejection, in the context of this case, is one for obviousness under 35 U.S.C. 103. The Board of Appeals sustained the rejection on this basis and appellant has appealed.

Since section 103 calls for an analysis of the "differences between the subject matter sought to be patented and the prior art," we shall first consider what was taught by the references of record, and then consider the differences thereover as defined by the appealed claims.

The references relied upon by the Patent Office are:

Northrup, 1,286,395, December 3, 1918.
Clamer, 1,940,622, December 19, 1933.
Rossi (French), 1,064,849, May 18, 1954.

Northrup is concerned with the problem of melting and stirring metal by induction methods. When alternating current is caused to flow in a coil surrounding a crucible, corresponding currents are induced in the metal contained within the crucible. These currents circulate within the metal and give rise to heat. When the metal is molten, there is also a stirring effect.

Northrup indicates that the crucible itself may be made either of electrically conducting or non-conducting material. If the crucible material is non-conducting, all of the induced currents will be within the metal charge, and the heating will be direct. If, however, the crucible is of conducting material, most of the current will be induced within the crucible walls, thus heating the walls and only indirectly heating the metal charge by conduction of heat from the walls. Also, very little stirring will occur where the induced current is largely within the crucible walls.

Northrup uses a spark-gap oscillator to provide the primary alternating current to the coil surrounding the crucible. The frequency employed is not specified, but he discloses that the frequency depends upon the physical characteristics of the circuit components in the oscillator.[2]

The Clamer patent is primarily directed to the problem of stirring or mixing molten metal in a crucible for the purpose of adding treating or alloying materials into the molten charge. Clamer makes use

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[1] Serial No. 660,287, filed May 20, 1957 for "Induction Furnace."

[2] The Board notes in its discussion of the Examiner's rejection that "* * * reference is made to the Northrup patent for its disclosure of the use of commercial [60 cps.] frequency, induction heating to melt metal in a furnace." We think this is an erroneous reading of Northrup by both the Examiner and the Board.

At one point Northrup makes the statement that "Commercial charging frequencies can be used and the furnace is capable of highly advantageous use on polyphase circuits * * *." At an earlier point, however, the patentee states: "The purpose of my invention is to utilize the heating effect of electric currents having the natural frequency of a freely oscillating electric system from a condenser discharging through a gap as contrasted with the forced frequency directly produced by alternators."

From this we think it is clear that Northrup meant only that his *oscillator* circuit could be powered with commercial frequency current. The frequency of the current delivered by the oscillator to the coil surrounding the crucible depended upon the circuit elements in the oscillator. We note that the Solicitor apparently agrees with this position, for his brief states: "While a commercial frequency might be used to charge oscillator condenser C_1, 'it is indifferent, within wide limits what may be the natural frequency of the oscillatory circuit.'"

of the fact that currents induced in the molten metal cause agitation as well as heating. As stated in the patent:

> It is my intention to use induced electric current from a supply within the lower range of frequencies rather than of high frequency. Most desirably I use commercial frequency.
>
> As an additional or alternate step I may employ high frequency where heating is preferable to stirring. I may also heat while I stir.
>
> * * * * * * *
>
> As my inventon relates to a treating operation rather than a heating operation, I have assumed that the charge would be melted elsewhere, in any suitable furnace not shown, although it would of course be possible, as indicated above, but often not desirable, to melt in the treating furnace.
>
> * * * * * * *
>
> The heating effect upon a charge [of metal] within an inductor coil carrying alternating current is dependent upon and is very nearly proportional to the frequency as well as to the square of the ampere turns, but the stirring effect upon the charge of the alternating current passing through an inductor is largely independent of the frequency and is dependent upon the square of the ampere turns. Therefore, at low frequency, I may obtain stirring with relatively little heating effect, while at high frequency I would obtain the same stirring with considerable heating effect.
>
> As I wish usually to obtain stirring without great heating effect I will normally maintain the ampere turns at a minimum, as well as use low frequency.

These statements seem clearly to teach that, if any significant heating is wanted, "high" frequencies must be employed.

Clamer's crucible is apparently made of electrically non-conductive material, for if the crucible were conductive, the currents would be largely induced within the walls of the crucible itself, and there would be little or no stirring.

Rossi discloses a cylindrical mold for the continuous casting of metals. Molten metal is introduced into the mold at the top through a nozzle and a solid ingot is continuously withdrawn from the mold at the bottom. As the molten metal cools, a cone shaped crater is formed axially of the molten mass. One of Rossi's problems was to reduce the size of this crater so that the casting operation could be performed more rapidly. His solution was to position induction coils around the mold such that the resulting induced currents in the molten mass would produce a stirring action tending to minimize the depth of the crater.

Rossi's mold is made of conductive material. Therefore, in order to prevent the currents being induced in the walls of the mold, the mold is made in segments, each segment being electrically insulated from the others. Thus, most of the currents are induced in the molten metal so that they are able to produce the desired stirring action.

No mention is made by Rossi either of heating the molten metal or of operative frequencies. He does, however, disclose cooling of the mold by circulating cooling fluid through conduits in the mold segments.

Appellant's claimed invention is similar to all of these references, but only in certain general aspects. It differs in other respects from each of them. The issue we are required to determine is whether the Board was correct in holding that these differences are such that appellant's claimed subject matter as a whole would have been obvious to one of ordinary skill in appellant's art at the time the invention was made.

Appealed claims 8 and 19 are illustrative of what appellant asserts to be his invention and read as follows:

> 8. A low-frequency coreless induction furnace comprising a cup-shaped metal crucible having an inner metal surface formed from a hollow, cylindrically shaped metal part and a disk shaped metal bottom, said cylindrically shaped part being formed of individual metal sections, each of said metal sections constituting a continuous area running the length of said part and said sections being insulated from one another by an electrically nonconductive material, said cylindrically shaped part being insulated from said disk-shaped bottom by an electrically nonconductive material, means surrounding said crucible for providing an induced low-frequency alternating current to the charge contained within and in contact with the inner metal surface of said crucible and means for cooling the outside surface of said crucible.
>
> 19. The method of induction melting of metals comprising introducing and confining said metal within a crucible chamber formed at least by a cylindrical metal wall which provides a metal crucible chamber surface, the cylindrical metal wall being formed with at least one slit running substantially longitudinally the length thereof and filled with an electrically nonconductive material; cooling the outside surface of said crucible wall; subjecting the introduced metal confined within the cooled crucible chamber to a low-frequency alternating current melting flux induced from a primary induction coil surrounding said metal crucible wall; interrupting any circumferential current flow induced by said coil in said metal crucible wall to prevent induction heating of said metal crucible wall; and melting said introduced metal confined in said crucible chamber by said current without wetting or alloying between the crucible chamber surface of said cooled crucible and the introduced metal; thereby avoiding contamination of the introduced metal and damage to the crucible.

As indicated in claim 8, appellant has invented an induction furnace in which the crucible is divided into segments, which segments are electrically insulated from one another and from the bottom. The primary current in the induction coil is defined as "low-frequency," by which appellant means, as expressly stated in his specification, "the frequency range below about 1000 cycles per second."

Appellant asserts many advantages for his invention. The fact that the insulated, segmental crucible design makes possible the use of metallic, electrically conductive materials is important, since refractory, non-conductive crucible materials have a tendency to contaminate the melt. Also, the fact that no heat is generated in the crucible walls by induced currents, coupled with the use of crucible cooling means, permits the employment of metal crucible materials having a lower melting temperature than the metal to be melted, without the problems of alloying or "wetting."

Another important feature asserted by appellant is that low frequency operation minimizes the problems of "skin effect." As frequency increases, the induced currents tend to concentrate nearer and nearer to the surfaces or "skin" of the metal charge in the crucible. Such localization of induced currents causes uneven heating and stirring, with most of the activity occurring very near to the surfaces of the metal charge. Operation within appellant's claimed frequency range substantially eliminates this undesirable effect.

The references of record do not teach or suggest to one skilled in the art that low frequencies are suitable for induction melting of metals. As pointed out in note 2, supra, the Examiner went to some lengths to show, and we think erroneously, that Northrup teaches the use of commercial frequency for such an application. Also, we think the Clamer reference teaches *away* from the use of low frequency for melting. Nevertheless, appellant recognizes that there was a knowledge of particular types of low frequency furnaces prior to the time he made his invention, for as his specification states, "A disadvantage of high-frequency induction furnaces and *prior known low-frequency coreless furnaces* is the contaminating effect of the crucible on the molten metal." [Emphasis added.]

[1] Notwithstanding the fact that each of the individual features of appellant's invention was known to the prior art, however, we feel the Board was wrong in holding the invention to have been obvious. The Board's conclusion amounts to a finding that it would have been obvious to select and combine ideas from the several references. But we think both the selection and combination were unobvious when tested without the benefit of appellant's disclosure. The critical problem with which appellant was concerned was contamination of the molten metal within the prior art furnaces. As pointed out above, the prior use of non-conductive ceramic or other refractory crucible materials resulted in contamination of the molten metal, while the use of metallic crucibles produced undesirable alloying which also contaminated the molten charge. Appellant has solved this problem by what is clearly a novel and, we hold, an unobvious combination of various features selected from the prior art, viz: (1) the use of a metallic crucible to obviate the type of contamination resulting from the use of ceramics or other non-conductive refractories; and (2) further preventing contamination, due to alloying of the molten charge with the metallic crucible material, in three distinct ways: (*a*) by using cooling means to remove heat from the crucible; (*b*) by employing segmented, insulated construction of the crucible to prevent induction of currents and thus generation of heat in the crucible itself; and (*c*) by employing a low frequency range which eliminates skin effect and thus prevents excessive heating at the surfaces of the molten metal, where alloying would normally occur.

Upon considering appellant's invention as a whole, including not only the structural features and process steps, but also the nature of the technical problems involved as well, see *Eibel Process Co.* v. *Minnesota & Ontario Paper Co.*, 261 U.S. 45 (1923), we find that what appellant claims as his invention would not have been obvious to one of ordinary skill in the induction furnace art at the time the invention was made. Neither singly nor in combination do the references make obvious the many-faceted solution to the problem worked out by appellant and here claimed as his invention, both in terms of the furnace construction and in terms of a method.

[2] The appealed decision is accordingly reversed.

REVERSED.

MARTIN, *J.*, dissenting, with whom WORLEY, *Chief Judge*, joins.

Clamer specifies that "the heating effect upon a charge within an inductor coil carrying alternating current is dependent upon and is very nearly proportional to the frequency as well as the square of the ampere turns." [3] The reference specifically suggests heating, as is apparent from the following passages:

> Thus, it will be seen that I may choose between the use of stirring with or stirring without appreciable heating effect. If I desire the heating effect for a given number of ampere turns, the frequency should be increased, otherwise I will employ low, preferably commercial frequency.
>
> * * * unless I desire to heat the charge during treating, I will use relatively low amperage and low frequency.

Clamer also specifies that "[m]elting of the charge preliminary to its treatment may be effected * * * by the induction furnace in which it is to be treated."

[3] Ampere turns are the product of the number of turns in the coil and the number of amperes of current therethrough.

Clamer thus teaches that the amount of heating will increase proportionally with increase in frequency from his "low, preferably commercial frequency" to some higher frequency which he uses if he intentionally heats the charge. Moreover, Clamer teaches that the ampere turns, as well as the frequency, are kept at a minimum to hold down heating effect.[4] I think that teaching, along with the statement quoted above that heating effect increases with increase in ampere turns, suggests to a person skilled in the art that a heating effect sufficient to melt a metal charge could be obtained at a particular "low" frequency [5] by increasing the current without further increasing the frequency.

Appellant himself establishes that those relationships taught by Clamer were in fact followed in prior art induction furnace design by using high currents at low frequencies as an alternative to lower currents at high frequencies. Thus, appellant's application states:

> Coil currents somewhat higher than used *in prior known induction melting practices* are required to overcome heat loss because of the low temperature of the crucible wall. *In prior practice coil currents of the order of 6000–7000 amperes at 60 cycles per second, and of 300–500 amperes at 2000 cycles per second are usual.* * * * [Emphasis supplied.]

Appellant makes other references in his application to low frequency induction furnaces as known prior to his invention, referring, for example, to "prior known low-frequency coreless [induction] furnaces."

Thus the issue seems to be whether constructing the crucible of Clamer of electrically insulated, water cooled, metal sections, for use in melting metals at frequencies known in the prior art, would be obvious. In my opinion, Rossi's disclosure of insulated mold sections for the purpose of avoiding induction currents in the casing and of water cooling the sections would clearly suggest use of a corresponding construction in Clamer. It would also seem obvious to cool the crucible to a low enough temperature to prevent alloying of the crucible material with the melt. Such water cooling also would obviously cool the outside of the crucible.

A bottom member for the crucible is required only by claims 8 and 9. Where one was making a crucible of insulated conductive segments in line with Rossi's teachings, it would seem but an obvious expedient to make the bottom in the form of a separate insulated disk-shaped member.

For the foregoing reasons, I would affirm the decision of the Board of Appeals.

U.S. Court of Customs and Patent Appeals

IN RE GEORGE W. LUVISI AND THOMAS C. NOHEJL

No. 7228. Decided March 11, 1965

[52 CCPA —; 342 F.2d 102; 144 USPQ 646]

1. PATENTABILITY—REFERENCES—CONSTRUCTION OF REFERENCE.

Held that the cited Ryker et al. patent "contains, for all practical purposes, a 'needle-in-the-haystack' type of disclosure with respect to borax," and "does not *legally disclose* any particular borate."

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[4] Thus the patent states:

> As I wish usually to obtain stirring without great heating effect I will normally maintain the ampere turns at a minimum, as well as use low frequency.

[5] The Clamer patent, issued in 1933, does not specify the number of cycles considered "low, preferably commercial" frequency or "high" frequency. Appellant, in his application, refers to ordinary commercial power frequency as usually 60 cycles per second in the United States, and defines "low" frequency as the frequency range "below about 1000 cycles per second."

2. SAME—SAME—SAME.

"To be sure, the language 'sodium borates' is present and borax is a sodium borate. But an expression which *includes* numerous species does not, necessarily, ipso facto 'disclose' each and every one of those species. As so aptly stated by appellants, 'It is possible for a patent to *include* a wide variety of subject matter but at the same time *not* to *disclose* a *particular* subjetc matter.' * * * We might add that the reference need not be a patent. Our approach to this question is to ask whether or not it can fairly and reasonably be said that one of ordinary skill in this art through a reading of the *entire* reference has constructive possession of *the thing itself*, as opposed to possession of mere *language* which *embraces* the name of that thing."

3. SAME—OBVIOUSNESS—DEGREES OF SKILL NOT CONTEMPLATED BY STATUTE—35 U.S.C. 103.

"Section 103 requires that determinations of obviousness be made with respect to a person of a *particular* skill, namely, a person of ordinary skill *in the art* to which the subject matter pertains as of the time the invention was made. The statute does not contemplate *degrees* of skill and, accordingly, evidence of obviousness to those not of ordinary skill is not controlling."

4. SAME—CRITICALITY—CLAIMED LIMITATION NOT ALLEGED TO BE CRITICAL.

"We see no reason for requiring a showing of 'criticality,' whatever may have been intended by that term, of a limitation which finds support in the original disclosure, which is added to the claims for purposes of advancing prosecution of the application, and which is never alleged by the applicants to be 'critical.' If an applicant under these circumstances narrows the scope of his claims, he should be entitled to do so without being required to prove criticality."

5. SAME—COMPOSITIONS—OBVIOUSNESS—SYNERGISM.

"We do not accept the notion that every suggestion of synergism in the art coupled with a finding of synergism in the practice of the invention *automatically* compels a conclusion of obviousness. 'Synergism' is a very broad term and means 'the combined action of two or more agents * * * that is greater than the sum of the action of one of the agents used alone * * *.' Webster's Third New International Dictionary (1961). The definition says nothing at all about how much 'greater.' Hence, a synergistic composition could well be unobvious even though 'synergism' is suggested in the prior art. For example, the claimed compositions may be *many times more synergistic* than any of the prior art compositions. Again, some prior art compositions may show little synergism and others show considerable synergistic effects, with the net result that predictability is impossible save the fact that a synergistic result *of some kind* will probably be found. The situation before us is a blend of these two examples, i.e., the prior art compositions display less synergism than the claimed invention and, more importantly, they display such a variation in degree of synergistic effects that predictability is impossible."

6. SAME—PARTICULAR SUBJECT MATTER—"HERBICIDAL COMPOSITIONS AND METHOD FOR THE MANUFACTURE THEREOF."

The decision of the Board of Appeals, refusing the claims in an application entitled "Herbicidal Compositions and Method for the Manufacture Thereof," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 789,479.

REVERSED.

Richard L. Johnston, *Herbert B. Keil* for appellant.

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 15, 16, 20, 21, 22, 24, 25 and 28 through 36 in application Serial No. 789,479, filed January 28, 1959, entitled "Herbicidal Compositions and Method for the Manufacture Thereof." No claim has been allowed.

The invention relates to (1) a process for killing undesired vegetation, (2) a composition employed for this purpose, and (3) a process for preparing the latter. The composition contains two essential ingredients, viz, a phytotoxic 1-alkyl-3-phenyl substituted urea and a hydrated alkali metal borate such as borax, which is the decahydrate of sodium tetraborate.

Claims 15, 24 and 29 are representative and read as follows:

15. A composition comprising a phytotoxic 1-alkyl-3-phenyl substituted urea which is normally a water insoluble dusty powder and a hydrated alkali metal borate, said composition being in the form of granules in which said substituted urea and said borate are intimately associated, said granules being further characterized by the fact that they contain a minimum of at least 2% by weight of said substituted urea, that they contain a predominating proportion of said borate, calculated as borax, as compared with said substituted urea, that they are non-packing in spreaders, and are dustless and free-flowing, the weight ratio of said urea to said borate, calculated as its borax equivalent, being within the range of about 1:9 to 1:25.

24. A process of preparing a granular composition containing a phytotoxic 1-alkyl-3-phenyl substituted urea that is normally a water insoluble dusty powder which comprises granulating a mixture consisting essentially of a hydrated alkali metal borate and said phytotoxic 1-alkyl-3-phenyl substituted urea, said mixture containing at least 2% by weight of said 1-alkyl-3-phenyl urea and a predominating amount of said borate, calculated as borax, with respect to said substituted urea while adding 2% to 8% of water in the granulating process based on the total weight of the ingredients and using a weight ratio of said urea to said borate, calculated as its borax equivalent, within the range of about 1:9 to 1:25.

29. A method of controlling the growth of noxious vegetation which comprises applying to the ground on which it is grown a growth-inhibiting amount of a granular composition in which the granules contain at least 2% by weight of a phytotoxic 1-alkyl-3-phenyl substituted urea which is normally a water insoluble dusty powder intimately associated with a hydrated alkali metal borate which is present in said granules in a predominating amount by weight, calculated as borax, as compared with said substituted urea, said composition as applied being dustless, free-flowing and free from quantities of oil which would cause it to pack in a spreader, and the amount of said borate being sufficient to enhance the residual phytotoxicity of said composition, the weight ratio of said urea to said borate, calculated as its borax equivalent, being within the range of about 1:9 to 1:25.

Each claim requires that the weight ratio of urea to borate be within the range of about 1:9 to 1:25.[1] Claims 16, 21, 30, and 32 through 36 specify that the substituted urea is 3-p-chlorophenyl-1,1-dimethyl urea (hereinafter referred to by its trade name "CMU"). Claims 32 through 36 specify that the borate is borax, with claims 34 and 35 further specifying that a water-soluble binder is present.

In their brief, appellants acknowledge that phytotoxic 1-alkyl-3-phenyl substituted ureas are "well known compounds and are disclosed in a number of United States patents as set forth in appellant-applicants' specification * * *." The brief goes on to say:

These substituted urea compounds are normally water insoluble dusty powders, are very difficult to handle and apply from spreaders, and have poor residual kill properties.

One of the substantial problems involved in using substituted ureas as herbicides has been their tendency to form dust which often is blown into adjacent areas whereby desirable vegetation is killed as well as undesirable vegetation. The formation of dust and the danger of surrounding vegetation has severely

[1] In the record before us claim 35 does not recite this limitation. However, the amendment of July 28, 1961, in which claims 32 through 36 were substituted for certain other claims being cancelled, says the ratio has been incorporated into the claims and both the appellants' and Solicitor's briefs state that "Each claim requires that the weight ratio * * * be within the range of about 1:9 to 1:25." We therefore assume that claim 35 is intended to contain this limitation and our decision should be construed accordingly.

restricted the use of substituted ureas as herbicides. The problem is more severe because these herbicides are not selective but destroy practically all vegetation. Alkali metal borates have also been used as weed killers but the amounts required are so large as to make their use impractical and at reasonable levels of application they have no residual killing effect beyond the ordinary growing season.

Appellants' invention allegedly avoids these problems by providing a composition which (1) can be formed into granules which are dustless, free-flowing and nonpacking and (2) has a residual killing action beyond the ordinary growing season.

The sole ground of rejection is unpatentability over the following references:

Knight, 2,700,604, January 25, 1955.
Ryker et al., 2,709,648, May 31, 1955.
Crafts et al., "Toxicity of Arsenic Borax & Chlorates," in "Hilgardia," December 1936, vol. 10, No. 10, pages 411 and 412.
Litzenberger, "Effectiveness of Borax and Sodium Chlorate Borax Combinations for Control of Perennial Weeds," in Montana Agriculture Experiment Station War Circular 2, 1943, nine pages, page 7, particularly relied on.

All of the claims were rejected on Ryker et al. in view of either Knight, Crafts et al., or Litzenberger.

The Ryker et al. patent is directed to the use of substituted ureas as herbicides and more particularly to the *combination* of a herbicidal aryl alkyl urea *with another herbicidally active compound.* Over fifty aryl alkyl ureas, including "CMU," are specifically set forth and it is readily admitted by appellants that this patent could have been included among those cited in their specification to show that the ureas employed in the present invention are old. The patent teaches that "it is characteristic" of the aryl alkyl urea compounds of the class defined therein "to coact with other herbicidally active compounds, both of the hormonal type and contact type herbicidal compounds, to give *synergistic herbicidal results.*" [Emphasis ours.] The term "sodium borates" is included in a list of contact type herbicidal compounds which the authors say can be used. The amount of each component in the composition is said to vary widely (from 1:200 to 200:1) and depends upon a number of factors, including whether "short term or long term control" is desired. A granular composition is shown in Example V.

The Knight patent is directed to the preparation of granular mixtures from salts such as borates and chlorates, both types of salts being water soluble. It discloses a weed-killing composition containing, as the principal ingredients, sodium chlorate and a suitable hydrated borate such as borax in which segregation of these components is prevented. This is effected by heating the components, thereby releasing the water of hydration of the borate to form a solution of the components at their points of contact. When the mixture is cooled, the dissolved solutes resolidify and form a bridge or bond between neighboring particles. Water may be added from an external source as a substitute for or a supplement to the water of hydration of the borate. The presence of the borate substantially eliminates the risk of fire involved in the use of the chlorate and extends "the effectiveness of the mixture by the relatively slow but sustained weed-destroying property of the borate."

The Crafts et al. article discloses a soil sterilizing composition comprising borax and sodium chlorate in which the lowest effective dosage of chlorate is used and enough borax is added to complete the destruction of the vegetation. Besides reducing the fire hazard of the chlorate to a low level, the presence of borax is said to provide "a residual effect that lowers the probability of reinfestation by seedlings."

The Litzenberger publication discloses that various sodium chlorate-borax combinations were found "to be effective for the control of the perennial noxious weeds except white top for at least a two-year period * * *." The author states that borax "continues to remain active after the sodium chlorate loses its toxicity and thus late-appearing shoots are killed as they come to the surface."

The statutory basis for the Examiner's rejection is 35 U.S.C. 103, the Solicitor having stated at oral hearing that section 102 of the statute is not involved. The legal issue for our determination thus becomes: are the differences between the subject matter sought to be patented and the prior art of record such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in this art? Applied to the particular subject matter before us, the issue can be stated: would a dustless, free-flowing, nonpacking composition containing from 9 to 25 parts of a hydrated alkali metal borate per part of substituted urea and capable of effecting nearly 100% kill after fourteen months be suggested to a person of ordinary skill with the art of record before him? We think not, particularly in view of the Nohejl Rule 132 affidavit which will be discussed in detail below.

The decision of the Board is predicated upon three principal positions with which we do not agree.

Board Position Number 1

The Board found that since borax, a hydrated alkali metal borate, is taught by the secondary references to be a herbicidal compound, it would be obvious to a skilled chemist to employ borax as a herbicidal sodium borate broadly suggested in Ryker et al. Whereas a brief and selective presentation of the teachings of the art of record, such as that outlined above, may cause such a conclusion to appear reasonable, we believe it becomes so only through hindsight reasoning. A more thorough examination of the references persuades us that such a combination would not have been obvious *at the time the invention was made.*

[1] Ryker et al. contains, for all practical purposes, a "needle-in-the-haystack" type of disclosure with respect to borax. It states, in effect, that if one mixes an aryl alkyl urea of a certain designated formula with *any other* herbicidal agent, a composition giving synergistic herbicidal results will be obtained. The patentees set forth the following list of *other materials* which can be used:

2,4-dichlorophenoxyacetic acid and its salts, esters, and amides
2,4,5-trichlorophenoxyacetic acid and its salts, esters, and amides
2-methyl-4-chlorophenoxyacetic acid and its salts, esters, and amides
Maleic hydrazide and its herbicidal derivatives
. . . . . .
Polychlorophenols (3 to 5 chlorine atoms) and their alkaline salts
Sulfamic acid and its salts
Alkaline salts of cyanic acid
Alkaline salts of thiocyanic acid
Mono-, di-, and trichloroacetic acids, their alkaline salts and esters

3,6-endoxohexahydrophthalic acid and its disodium salt
Alkaline salts of arsenous and arsenic acids
Sodium borates
Sodium or calcium cyanamide
Phenyl mercury salts (acetate, oleate, formate, lactate, chloride, phosphate, and the like)
Isopropyl esters of phenyl- and chlorophenylcarbamic acids
1,2,4-trichlorobenzene
Dinitrophenols (dinitro-o-cresol and dinitro-o-sec-butyl-phenol) and their salts
Boron trifluoride amine complexes

Nearly all of these entries are generic in nature and together represent a very wide range of chemical types, including both organic and inorganic. The "preferred" compounds are said to be selected from the group consisting of ammonium sulfamate, alkaline salts of cyanic acid, alkaline salts of thiocyanic acid, dinitrophenols, pentachlorophenates, alkaline salts of trichloroacetic acid, 2,4,5-trichlorophenoxyacetic acid and its salts, esters, and amides, and 2,4-dichlorophenoxyacetic acid and its salts, esters, and amides. Neither the genus "sodium borates" nor any species therein is mentioned. The patent then discloses approximately sixty specific compositions alleged to be illustrative of the invention. None of these compositions contains borax, or any other alkali metal borate. We therefore conclude that Ryker et al. does not *legally disclose* any particular borate.[2]

We find nothing in the secondary references which would suggest combining a substituted urea such as disclosed by Ryker et al. with borax to solve the problem of how to obtain a granular, free-flowing, dust-free, herbicidal composition having synergistic residual characteristics and at the same time be economically practical for use in very large quantities. The secondary references disclose borax alone and borax in combination with some other component to produce *water soluble* compositions. The second component is, in all instances, completely non-analogous to a substituted urea. Furthermore, Crafts et al. concludes that one such combination, namely, that of borax with arsenic "would find little use." The sole combination which demonstrated any kind of residual kill effect was borax with sodium chlorate. However, in order to obtain the results appellants have achieved by the present invention, this borax-sodium chlorate composition would have to be applied at an exorbitant rate, so exorbitant as to be completely impractical for uses contemplated by appellants. Litzenberger states that borax is useful for the "more susceptible" perennial weeds after the chlorate component becomes ineffective, but any suggestion that borax alone possesses a residual kill effect on perennial weeds in general, as in this invention, is clearly negated by the Nohejl 132 affidavit. Knight combines borax with other soluble components and is not concerned with the problem of producing a granular material from a water *insoluble*, dusty component such as substituted ureas. He is therefore neither dealing with, nor suggestive of, a solution to the problem which appellants have overcome.

With regard to the art of record in this case, we believe the follow-

[2] To be sure, the language "sodium borates" is present and borax is a sodium borate. But an expression which *includes* numerous species does not, necessarily, ipso facto "disclose" each and every one of those species. As so aptly stated by appellants, "It is possible for a patent to *include* a wide variety of subject matter but at the same time *not* to *disclose* a *particular* subject matter." [Emphasis ours.] We might add that the reference need not be a patent. Our approach to this question is to ask whether or not it can fairly and reasonably be said that one of ordinary skill in this art through a reading of the *entire* reference has constructive possession of *the thing itself*, as opposed to possession of mere *language* which *embraces* the name of that thing.

ing excerpt from the opinion of the Patent Office Board of Appeals in *Ex parte Garvey*, 41 USPQ 583, at 584, is very much in point:

While the invention here claimed in its broader aspect is doubtless embraced within the speculative teachings of the references, we doubt if references which are not directed to the same purpose and do not have the same inventive concept, can be fairly applied in rejecting claims such as those on appeal where anticipation can be found only by making one of a very great number of possible permutations which are covered by the reference disclosures. *The likelihood of producing a composition such as here claimed* from a disclosure such as shown by the Dykstra patent *would be about the same as the likelihood of discovering the combination of a safe from a mere inspection of the dials thereof.* [Emphasis ours.]

Finally in regard to the question of whether or not it would be obvious to combine "CMU" and borax, we note the following passage from the Solicitor's brief:

Further evidence of the obviousness of combining CMU and borax in a herbicidal composition is provided by the Examiner's unchallenged statement that "the use of hydrated borates in the Ryker et al. formulation would be apparent to an ordinary farmer having this teaching before him." * * * The ordinary farmer is clearly one of *less than* ordinary skill in the herbicide art.

It is our view that what would be obvious to the "ordinary farmer" has no bearing on the issue before us. [3] Section 103 requires that determinations of obviousness be made with respect to a person of a *particular* skill, namely, a person of ordinary skill *in the art* to which the subject matter pertains as of the time the invention was made. The statute does not contemplate *degrees* of skill and, accordingly, evidence of obviousness to those not of ordinary skill is not controlling.[3]

To summarize on the Board's first position, while we observe that it is possible to piece together isolated features of appellants' invention taken from the references with the aid of appellants' disclosure, we do not think the invention would have been obvious within the meaning of section 103 in the absence of that disclosure.

Board Position Number 2

A second position taken by the Board was that "no criticality is apparent in the claimed ratio of the two conventional herbicidal compounds in view of appellants' original disclosure which teaches that the claimed ratio is merely a preferred ratio * * *." We find nothing in the record to indicate that appellants have ever alleged criticality in this regard. To the contrary, appellants' statement as to why a ratio has been recited is plainly set forth in their amendment of July 28, 1961, as follows:

At the interview the Examiner seemed to feel that more specific claims would be allowable. Accordingly, it is proposed to amend the present claims by reciting a ratio of urea to borate, also by cancelling some claims and adding new claims directed more specifically toward the use of borax. To this end, the ratio originally set forth in claim 19, namely, 1:9 to 1:25, has been incorporated into the claims by amendment.

[4] We see no reason for requiring a showing of "criticality," whatever may have been intended by that term, of a limitation which finds support in the original disclosure, which is added to the claims for purposes of advancing prosecution of the application, and which is never alleged by the applicants to be "critical." If an applicant under

[3] We do not intend to suggest that "opinion" testimony by experts cannot be used. See, for example, *E. I. du Pont de Nemours and Co. v. Ladd*, 328 F.2d 547 (D.C. Cir. 1964), 140 USPQ 297, wherein expert testimony was successfully employed to refute the contention that tetracyanoethylene was disclosed or "described," within the meaning of section 102, to a person having ordinary skill in the art. The use of such experts to establish "unobviousness" under section 103 is equally appropriate, insofar as they testify to *facts* to show *why* the invention would not be obvious under section 103.

these circumstances narrows the scope of his claims, he should be entitled to do so without being required to prove criticality.

Board Position Number 3

During prosecution, a Rule 132 affidavit was filed by applicant Nohejl which compared the residual kill effect of ten different compositions, some of which represent those disclosed in the art of record. Regarding this affidavit, the Board, in its original opinion, said:

> It is our opinion that the Nohejl Rule 132 affidavit does not prove that the claimed ratio critically distinguishes the claims over the applied references.

In its opinion upon reconsideration, the Board said:

> Petitioners call attention to the Nohejl Rule 132 affidavit. We are not persuaded that the results of residual kill shown for the ten formulations in the Nohejl Rule 132 affidavit prove that the claimed ratio of herbicidal compounds is unobvious and critically distinguishes the appealed claims over the applied combination of references.

We believe the results of the affidavit not only fail to justify such findings, but instead require us to conclude that appellants' compositions are unobvious *when viewed as a whole*. Assuming, arguendo, that the Board did not err in its positions 1 and 2, we would still feel compelled to reverse the Board's decision on the strength of the affidavit.

This court has frequently stated that *properties* of chemical *compounds* must be considered in determining obviousness. *In re Lambooy*, 49 CCPA 985, 300 F.2d 950, 133 USPQ 270; *In re Petering and Fall*, 49 CCPA 993, 301 F.2d 676, 133 USPQ 275; *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43. More recently, in *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496, in discussing the just-mentioned principle, we said:

> We think this also applies to such compositions as we have here, i.e., *admixtures of two or more compounds*. Therefore, the issue of obviousness in this case can be resolved only after considering the differences between the prior art and the claimed compositions chemically *and* in view of their pharmaceutical properties. [First emphasis added.]

Applying the dictate of *Huellmantel* to the present case, we now ask: what *properties* of the claimed invention have been shown? The answer requires an examination of the Nohejl Rule 132 affidavit.

This affidavit presents the results, in terms of "Average Percent Kill at 14 Months," of a number of compositions applied to an area "which consisted almost entirely of perennial or biennial weeds and perennial grasses." Several application rates for each composition were employed. A composition within the scope of the claimed invention gave 52.5, 92.5 and 96.5 percent kills at fourteen months when applied at rates of 200, 300 and 400 pounds per acre, respectively. Borax alone showed *no* residual kill at fourteen months when applied at rates of up to two and one-half times that of the claimed invention. "CMU" alone showed only slight residual kill at fourteen months, approximately one-tenth that of the claimed composition. Appellants contend that synergism is clearly demonstrated here. The Solicitor contends that such a finding is within the Ryker et al. teaching. The trouble we find with both these contentions is that each avoids the central issue—the question of section 103 obviousness.

[5] We do not accept the notion that every suggestion of synergism in the art coupled with a finding of synergism in the practice of the invention *automatically* compels a conclusion of obviousness. "Synergism" is a very broad term and means "the combined action of two or more agents * * * that is greater than the sum of the action of one of the agents used alone * * *." Webster's Third New International Dictionary (1961). The definition says nothing at all about how much "greater." Hence, a synergistic composition could well be *un*obvious even though "synergism" is suggested in the prior art. For example, the claimed compositions may be *many times more synergistic* than any of the prior art compositions. Again, some prior art compositions may show little synergism and others show considerable synergistic effects, with the net result that predictability is impossible save the fact that a synergistic result *of some kind* will probably be found. The situation before us is a blend of these two examples, i.e., the prior art compositions display less synergism than the claimed invention and, more importantly, they display such a variation in degree of synergistic effects that predictability is impossible.

This can be shown by referring to three compositions in the affidavit wherein a specifically named Ryker et al. "other compound" was combined with "CMU." In two instances, the ratio of "other compound" to "CMU" was approximately that used by Ryker et al., and in one of these, the composition differed from the claimed composition only in that ammonium sulfamate was substituted for borax. The application rates were either equal to or greater than those used for the claimed composition. Of the nine tests reported (three application rates for each of the three compositions) percent "residual kills" ranged from 0 to 87.5, eight of the nine values being below 55. The 87.5 value pertains to a 2.5:1 sodium trichloroacetate-"CMU" composition applied at an 800 pounds per acre rate. When applied at 600 and 400 pounds per acre, values of ten percent kill and below were obtained after fourteen months.[4] With the results of these nine tests before one of ordinary skill, how could values of 52.5, 92.5 and 96.5 be "obvious" for a 10:1 borax-"CMU" composition applied at rates equal to or less than those used for the Ryker compositions?

Results of tests employing borax-chlorate compositions of the type disclosed in the secondary references were also reported but no residual kill was observed at application rates equal to those used in testing the claimed composition.

Finally, compositions consisting of borax and a predominate amount of "CMU" were tested inasmuch as Ryker et al. allegedly "teach" compositions of up to 200 parts substituted urea per part of "other compound" and borax is allegedly "suggested" by the secondary references to be an "obvious" ingredient for herbicidal compositions having residual killing effects. Compared to the claimed compositions, these compositions were only about one-tenth as effective after fourteen months.

Thus, the affidavit shows a great lack of uniformity of residual herbicidal effects, even among those "other compounds" specifically set out in the Ryker et al. patent. In view of such highly erratic results, we find it inconceivable that any definite conclusion can be drawn from the cited art's so-called "synergism" teaching other than that it would be of little, if any, value to one attempting to achieve the results obtained by the practice of this invention. The invention appears to us to contribute knowledge to the art which could not

[4] By way of further explanation these three applications of sodium trichloroacetate-"CMU" placed on each acre of ground the same amount of "CMU" as the 400, 300 and 200 pounds per acre applications of the claimed composition discussed above. However, our position regarding the unpredictability of results shown by the affidavit is not changed by this fact.

have been derived from the combined teachings of the references, namely the unpredictable residual weed control, more than a year after application, even when used at relatively low dosage rates. We therefore hold that the claimed invention is unobvious within the meaning of 35 U.S.C. 103.

[6] The decision of the Board is reversed.

REVERSED.

KIRKPATRICK, *J.*, concurs in the result.

MARTIN, *J.*, dissenting.

My view of the references differs from that of the majority. Ryker teaches that CMU may be combined with "sodium borates" to give a synergistic weed-killing composition, but does not give a specific example of the two together. I do not agree that the Ryker reference is "a 'needle-in-the-haystack' type of disclosure with respect to *borax*." [Emphasis supplied.] Ryker at least teaches the basic combination of the two components. We need not look for *borax* to reject most of the claims. Appellants claim "hydrated [8] alkali metal borate" in claims 15, 16, 20, 21, 22, 24, 25, 28, 29, 30 and 31, which to me is satisfied by the "sodium borates" of Ryker. With regard to the claims that specify borax, I see the secondary references confirming the fact that *borax* is a commonly known useful component in bi-component weed-killing compositions. From these references it is clear that borax is extensively used as a herbicide component. Appellants appear to have picked the most common member of the broad class claimed.

Just what search in Ryker were appellants forced to make, such that their finding was out-of-the-way, and therefore patentable? Certainly they did not have to search through the 52 aryl alkyl ureas for a particular urea. The search was done for them since the particular "1,3 substituted urea" they used was commercially available as the herbicide CMU or Telvar (used in the affidavit), a product sold by du Pont, Ryker's assignee. Appellants acknowledge that, but the thrust of their argument is that sodium borates is buried in a list of 18 classes of compounds, and that borax is even more buried within the class. But, since the class "alkali metal borates" is claimed, we need look only for any member of the class, not the particular member borax. The list of the 18 classes is set out on page 1247 of the opinion. It is actually two lists, the asterisks separating the first list of "hormonal type" herbicidal compounds from the remaining list of 14 "contact type" herbicidal compounds. We are concerned only with the list of 14 since it is the contact type which is claimed. Of that list of 14, Ryker gave specific examples of 10.[9] Sodium borates are among the remaining four with no examples. The key factor is that the members of the list are *not* incidental, just "*any other* herbicidal agent[s]," a "list of *other materials* which can be used," as the majority terms them but are a list of the second component of *bi-component mixtures* such as are disclosed in *all* of the examples [7] in Ryker.

Thus, choice of the most common member of the borates, borax, combined with a commercially available aryl alkyl urea would, in my view, lead to patentability over Ryker and the secondary references *only if* the results were *unexpectedly* synergistic.[6] That is not

[8] There can be no difference predicated on the word "hydrated." Appellants' specification acknowledges that borax is a "hydrated compound."

[9] Ryker also showed 3 of the 4 in the non-applicable hormonal type, or 13 of 18 total.

[7] There are 64 examples, 48 of which show bi-component mixes, the remaining 16 showing one or the other component in comparison tests.

[6] I take "synergistic" to mean no more than a product greater than the sum of the parts.

shown by the specification, and I find the affidavit equally unpersuasive. As shown in their affidavit, appellants mix these two components of Ryker together and get results somewhat *less* effective than sodium trichloroacetate plus CMU, which Ryker disclosed in an example. Footnote 4 of the majority opinion can be amplified by noting that, excluding inert filler, 120 lbs. per acre of a 2:1 sodium trichloroacetate-Telvar [8] mixture gives an 87.5% kill at 14 months, while it takes 372 lbs. of an 8:1 borax-CMU mixture to give 96.5% kill, and 186 lbs. per acre give only 52.5% kill. The affiant's results with sodium pentachlorophenate-Telvar, another specifically disclosed Ryker composition, are better than the results with 186 lbs. per acre of the borax-Telvar mixture. The conclusion affiant makes is not justified by the data he presented; he states:

> • • • *Composition 1 consisting essentially of borax and CMU* in which the amount of borax was several times greater than the amount of CMU *was also superior at all dosages tested* (i.e., 20, 30 and 40 pounds of Telvar per acre) to compositions in which amomnium sulfamate was substituted for the borax, *to compositions in which sodium trichloroacetate was substituted for the borax, to compositions in which sodium pentachlorophenate was substituted for the borax*, to compositions containing less borax than CMU, to compositions containing CMU without borax, and to compositions containing borax without CMU.
>
> • • • It is also apparent from the foregoing test results that the compositions of the present application *are superior in their effectiveness to compositions disclosed by Ryker et al.*, U.S. 2,709,648. [Emphasis supplied.]

Nor has there been shown any critical range in the mixture proportions, assuming only comparable effectiveness, which would lead me to conclude that the combination was unobvious. Finally, there is no showing that *borax* is better than *other borates*, such that I could pin a conclusion of unobviousness thereon.

The majority characterizes the affidavit results as showing herbicidal effects as so "highly erratic" that the prior art teaching of synergism in the combination is negated. I cannot agree that the affidavit results negate the Ryker teaching of synergism in the combination.

The effect of the majority opinion seems to me to be that an enabling disclosure goes only so far as the examples. The opinion is so sweeping as to support claims which would not include ratios of components or be limited to borax, which leaves us in effect with the two-component combination of Ryker. I cannot agree that Ryker did not put one of *ordinary* skill in this art in possession of the combination to the extent that what is claimed here is obvious. Neither appellants nor the majority show me that there is any evidence of an *unexpected* result in the combination.

[8] Telvar is 80% CMU according to appellants' affidavit.

ABBREVIATURES OF APPLICATIONS

Published at the request of the applicant or owner in accordance with Notice of July 28, 1964, 804 O.G. 813. The abbreviatures are identified by serial number of the applications and arranged in chronological order. The heading of each abbreviature of application published herein indicates the number of pages of specification, including claims, and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and photocopies of them, or any part thereof, may be purchased for 30 cents a page.

408,924. **REMOVAL OF WATER FROM AQUEOUS SOLUTIONS AND RECOVERY OF FRESH WATER.** Manuel H. Gorin, San Rafael, and Ludwig Rosenstein, San Francisco, Calif. Filed November 4, 1964. Published June 22, 1965. Class 62—58. 2 sheets of drawings. 16 pages of specification.

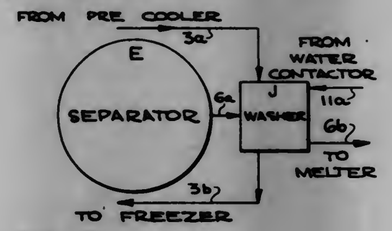


FIG. IV

5. A process of producing fresh water from saline water, comprising the steps of:

(1) precooling saline water to approximately 0° C. by direct contact heat exchange with a water-immiscible liquid;

(2) partially freezing a portion of said saline water precooled in step (1), to form a mixture of ice-crystals and concentrated brine;

(3) separating said ice-crystals from said brine;

(4) rinsing the separated ice-crystals with cold saline water from step (1);

(5) permitting said rinse to drain clear of the crystals whereby adherent concentrated brine is removed from the ice-crystals; and

(6) melting the ice-crystals to obtain fresh water.

REISSUES

JUNE 22, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,803

SLED ATTACHMENT FOR SUPPORTING MULTIPLE PURPOSE [PLOW] PLOWS

John W. Lynch, Lubbock, Tex., assignor, by mesne assignments, to Randolph Manufacturing Company, a corporation of Texas

Original No. 3,052,306, dated Sept. 4, 1962, Ser. No. 817,849, June 3, 1959. Application for reissue July 2, 1963, Ser. No. 293,574

13 Claims. (Cl. 172—393)



1. A multiple purpose plow comprising a sled, tool mounting means carried by said sled, and means for mounting said sled on a tool bar, said sled mounting means including a clamp adapted to be fixedly mounted on a tool bar, a pair of trailing arms pivotally connected to said clamp, and fittings carried by said sled pivotally connecting said trailing arms to said sled, said sled mounting means including a rod pivotally connected to said sled, an arm fixedly secured to said clamp, a sleeve carried by said arm receiving an intermediate part of said rod, and counter balance springs carried by said rod and engaging opposite ends of said sleeve.

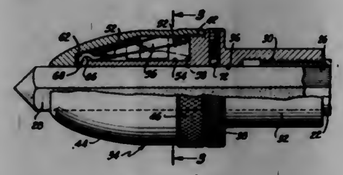
25,804

ELECTRICAL ERASING MACHINE

Louis J. Misuraca, 1359 Romulus Drive, Glendale, Calif.

Original No. 3,070,379, dated Dec. 25, 1962, Ser. No. 111,524, May 22, 1961. Application for reissue Dec. 3, 1964, Ser. No. 428,597

11 Claims. (Cl. 279—35)



1. In an electrical erasing machine adapted, when it is not operating, to permit the free lineal adjustment of an eraser having an elongated driven surface thereupon to establish a driven relationship with said machine, the combination of: a housing; a motor in said housing including a hollow drive shaft; and a chuck mounted on said drive shaft having a hollow shank communicating with said hollow drive shaft, said hollow shank and said hollow shaft defining a bore for the reception of said eraser, said bore having an elongated driving surface on the wall thereof adapted to engage the corresponding driven surface of said eraser in driving and sliding relationship, said chuck incorporating a plurality of centrifugally actuated jaws engageable with the perimeter of said eraser during operation of said machine to restrict relative lineal movement between said driven surface of said eraser and said driving surface of said bore.

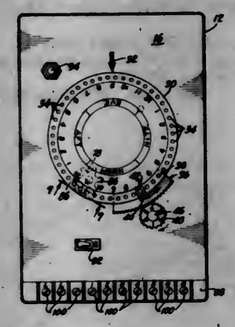
25,805

ELECTRIC PROGRAMMERS

Charles D. Gould, Los Angeles, Calif., assignor to Richdel, Inc., Los Angeles, Calif., a corporation of California

Original No. 3,101,418, dated Aug. 20, 1963, Ser. No. 131,322, Aug. 14, 1961. Application for reissue Oct. 19, 1964, Ser. No. 418,367

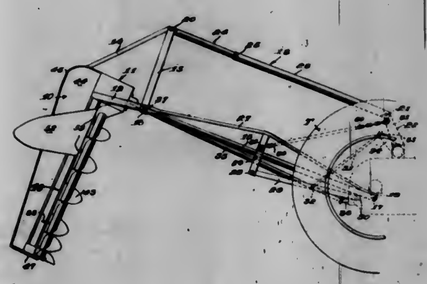
5 Claims. (Cl. 307—141)



5. An electric programmer which includes: mounting means, clock motor means supported by said mounting means, a gear disc connected to said clock motor means so as to be rotated thereby, a gear segment attached to the periphery of said gear disc; a shaft rotatably mounted on said mounting means, another gear mounted on said shaft so as to be engaged by said gear segment during rotation of said gear disc in order to intermittently turn said shaft; switch actuating means mounted on said shaft for periodic actuation of a first switch; a first switch mounted on said mounting means, said first switch including an actuating arm arranged to be actuated by said switch actuating means during rotation of said shaft; rotary distribution switch means having a distribution terminal coacting with a plurality of circuit terminals, one of said distribution terminal and a plurality of circuit terminals being secured to said shaft so as to rotate therewith, and the other of said distribution terminal and plurality of circuit terminals being secured to said mounting means; a pin affixed to said gear disc, a star wheel attached to said mounting means for rotation with respect thereto, said star wheel being intermittently rotated by

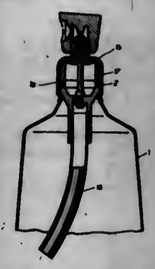
said pin as said gear rotates, a second switch mounted upon said mounting means, actuating means on said star wheel to actuate said second switch so that said second switch is actuated during one rotation of said gear disc and is non-actuated during another rotation of said gear disc; electrical transformer means including a primary winding and a secondary winding; a terminal board including a ground terminal and a plurality of individual circuit terminals and a pair of terminals for supplying power to said programmer; a first electrical conductor connected to one of said terminals for supplying power to both said clock motor and to one side of said primary winding of said electrical transformer, a second electrical conductor connected to another of said terminals for supplying power to both said first switch and said clock motor, a first electrical circuit connecting said first switch to the other side of said primary winding of said transformer, an electrical conductor connected to one side of said secondary winding of said transformer and to said ground terminal of said terminal board; a second electrical circuit connecting the other side of said secondary winding of said transformer to said distribution terminal of said rotary distribution switch means; still further electrical conductors connecting said plurality of circuit terminals on said rotary distribution switch means to said circuit terminals on said terminal board; and means connecting said second switch into one of said first and second electrical circuits.

25,806
TRENCH DIGGING MACHINES
Nicholas P. Oglesby, 906 Chalfonte Drive, Alexandria, Va., and Henderson Lee Turpin, Jr., and Robert E. Fowlkes, both % Wythe County Motors, Inc., Wytheville, Va.
Original No. 3,039,208, dated June 19, 1962, Ser. No. 586,581, May 22, 1956. Application for reissue June 19, 1964, Ser. No. 388,028
11 Claims. (Cl. 37—81)



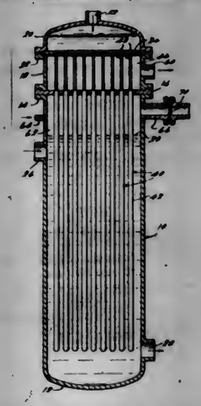
9. A trench digging machine comprising an elongated frame having upper and lower ends, an auger having a central shaft portion and a spiral flight adapted to move earth in dry condition and opposite ends thereof rotatably journalled in said upper and lower ends of the frame, a plurality of cutting members rotatably supported on the upper spiral surface of the flight of the auger immediately adjacent the cutting edge thereof and distant from the axis edge of the flight of said auger whereby the major area of the surface of the flight is unobstructed and passage of soil upwardly is not blocked, said members each comprising a toothed wheel mounted with an acute angle to the horizontal axis and for rotation with respect to the flight of said auger, said cutting members being adapted for a cutting action predominantly on the upper side of the cutter and for lateral movement of the auger.

25,807
AEROSOL VALVE
Wilhelm Josef Raehs and Hans Rauchmann, Stolberg, Rhineland, Germany, by Consilia Fiduciaire, assignee
Original No. 2,949,243, dated Aug. 16, 1960, Ser. No. 707,622, Jan. 7, 1958. Application for reissue May 13, 1963, Ser. No. 284,771
Claims priority, application Germany, Jan. 8, 1957
3 Claims. (Cl. 239—579)



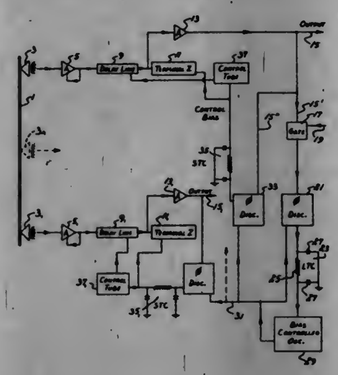
12. An aerosol valve comprising a hollow valve body defining a lower and upper section, said upper section defining a cylindrical wall portion and an elongated [tapering] neck portion [said portion defining at its upper] *extending outwardly from said upper section, said neck portion having at its outer* end a [conical] valve seat, the said neck and cylindrical wall portion being connected by a resilient wall portion defining a diaphragm, a stationary valve stem extending through the interior of said body *and said neck portion*, a valve body on said valve stem positioned for sealing engagement with said valve seat, said valve stem being fixed to said hollow body, *an* inlet passage to the interior of said hollow body in flow and pressure communication with the interior of the container in connection with which the valve is used, and means for moving said valve *seat* out of sealing engagement with said valve body against fluid pressure in the interior of said hollow body.

25,808
HEAT EXCHANGER
Alfred Amoroso and John J. Morabito, Birmingham, Mich., assignors to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York
Original No. 3,090,433, dated May 21, 1963, Ser. No. 848,298, Oct. 23, 1959. Application for reissue Apr. 29, 1964, Ser. No. 377,153
3 Claims. (Cl. 165—11)



3. A heat exchanger comprising a tank containing two incompatible fluids, a series of heat exchange elements disposed within said tank through which one of said fluids is circulated out of contact and in heat exchange relation with the other of said fluids, closure means for the top of said tank, a surge chamber defined by the upper portion of said tank, by said closure means and by the upper surface of said other fluid, an inlet in said tank for maintaining a body of inert gas at a predetermined pressure in said surge chamber, and normally closed outlet means for said surge chamber adapted to open in response to a substantial increase in pressure in said surge chamber.

25,809
PHASING SYSTEM FOR MULTIPLE TRACK RECORDING
Wayne R. Johnson, Los Angeles, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original No. 2,828,478, dated Mar. 25, 1958, Ser. No. 610,436, Sept. 4, 1956, which is a continuation of Ser. No. 507,005, May 9, 1955. Application for reissue Dec. 15, 1958, Ser. No. 780,649
18 Claims. (Cl. 340—174.1)



1. In apparatus for reproducing in a number of channels signals recorded as a plurality of parallel tracks on a single recording medium, each of said signals including a common cyclically recurring reference signal simultaneously recorded on all of said tracks: means for phasing and synchronizing the reproduced signals to eliminate the effects of flutter of the recording medium and misalinement of reproducing heads with respect to said tracks comprising: a master oscillator tuned to operate at a mean frequency integrally related to the frequency of said reference frequency and variable from said mean frequency in response to a control voltage, means for developing from said oscillator frequency a train of signals recurring at substantially said reference frequency, a delay-line in each of said channels which is variable in delay in response to an electrical bias applied thereto, a terminating impedance for said delay line also variable in response to an electrical bias, a feedback loop connected to the output of the delay-line in one only of said channels and comprising a discriminator responsive to said reference signal and connected to compare the time relation of said reference signal to said train of signals to develop an error signal dependent in sign and magnitude on the relative timing of the compared signals, and an integrating circuit of relatively long time-constant connected to apply the average value of said error signal as a control voltage to said oscillator; a plurality of additional feedback loops connected respectively to the outputs of the delay lines in each of said channels including said one channel and each including a discriminator connected to compare the time relation of said reference signal and said train of signals to develop an error signal dependent in sign and magnitude on the relative timing of the signals compared thereby, and a circuit of relatively short time-constant for integrating said last-mentioned error signal and connected to provide said electrical bias to said delay-line and said terminating impedance in such sense as to vary the delay in the connected delay-line to correct errors in time relationship.

25,810
[LAWN MOWER] *REEL TYPE LAWN MOWER*
James H. Postlewait, 5015 W. 69th St. Terrace, Prairie Village, Kans.; Edward H. Garnett, 6721 Brook Lane, Raytown, Mo.; and James R. Root, 3412 Norton, Independence, Mo.
Original No. 3,068,632, dated Dec. 18, 1962, Ser. No. 39,526, June 29, 1960. Application for reissue Dec. 17, 1963, Ser. No. 342,581
5 Claims. (Cl. 56—26)



6. A lawn mower comprising, a housing having a top wall and side walls depending from the top wall, the top wall having an upwardly inclining portion and an adjoining downwardly and rearwardly declining portion together forming a transversely extending pocket in the housing top wall, a cylinder type cutting reel mounted in the housing adjacent the pocket for rotation about a horizontal axis normal to the direction of forward movement of the mower, the reel having a continuous peripheral surface with cutter blades circumferentially spaced and extending outwardly from the cylinder and along the full length thereof, and means to rotate the reel so as to move the top of the cylinder counter to the direction of movement of the mower, the pocket-forming portions of the housing top wall and the cylinder forming between them a passageway of venturi-shaped vertical cross-section, the passageway having an entrance throat of vertically converging cross-section through which air currents induced by movement of the reel cutter blades through the passageway will pass to create an area of reduced air pressure within the housing forwardly of the reel in the direction of movement of the mower to lift grass into the path of the reel cutter blades, and the passageway having a discharge throat of vertically diverging cross-section to provide a discharge of progressively increasing area to allow free flow of cut grass out of the passageway.

PLANT PATENTS

GRANTED JUNE 22, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,539
PLUM TREE
Frederic W. Anderson, Merced, Calif., assignor to Kim Bros., Reedley, Calif., a copartnership doing business under the fictitious name and style of Reedley Nursery
Filed Mar. 5, 1964, Ser. No. 349,783
1 Claim. (Cl. Plt.—38)

A new and distinct variety of plum tree, as illustrated and described, which is a regular and productive bearer of medium size, early ripening, freestone fruit; characterized, in comparison to the Beauty, by fruit which ripens approximately one week earlier, is of slightly larger size, has a brighter red exterior color, and is of superior eating quality.

2,540
ROSE PLANT
Gerrit de Ruiter, Hazerswoude, Netherlands, assignor to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1964, Ser. No. 351,264
1 Claim. (Cl. Plt.—28)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a compact and well-branched habit of growth, leathery dark green foliage, good flower petalage and regular arrangement of the petals, a distinctive and attractive general color tonality of the flowers corresponding to an intense, velvety, luminescent Chrysanthemum Crimson color, a slight tea flower fragrance, and especially good flower longevity as cut flowers.

2,541
ROSE PLANT
Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York
Filed Mar. 24, 1964, Ser. No. 354,490
1 Claim. (Cl. Plt.—26)

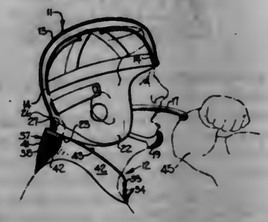
A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous and strong habit of growth, exceptionally good flower production, both outdoors and in the greenhouse, an attractive flower shape and medium flower size, a distinctive and attractive general color tonality of the flowers corresponding to La France Pink, lightly overcast with Thulite Pink, and very long-lasting flower qualities, both on the plant and as cut flowers.

PATENTS

GRANTED JUNE 22, 1965

GENERAL AND MECHANICAL

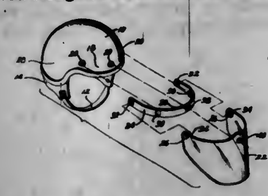
3,189,917
PROTECTIVE DEVICE
Danton F. Sims, 1707 Carolina Ave., Hartsville, S.C.
Filed Feb. 16, 1962, Ser. No. 173,712
4 Claims. (Cl. 2—3)



1. A neck protective device adapted for use with a helmet of the type worn by football players having a bottom edge comprising, an annular neck collar for encircling the neck of a wearer and adapted to lie in supported engagement with the shoulders of a wearer, said collar having an underside adopted to conform substantially to the configuration of the shoulders of a wearer, said collar having a substantially wedge-like cross-sectional shape extending upwardly from a wearer's shoulder when supported thereon to a forwardly sloping ledge positioned substantially below the level of a wearer's chin to provide complete freedom of head movement for a wearer, said collar formed substantially of yieldable material for the cushioning of forces applied thereto and for the protection of the neck of a wearer against shoulder pads worn by a wearer, said neck collar also extending laterally outward from a wearer's neck in said supported position to a distance sufficient to position said forwardly sloping ledge in underlying spaced relationship with said helmet bottom edge when the helmet is worn by a wearer, said collar being interrupted to form a pair of adjacent ends for permitting the collar to be readily placed on the wearer's shoulders, means for securing said adjacent collar ends together, corresponding portions of said helmet bottom edge and said neck collar forwardly sloping ledge adapted to be moved into mutual engagement by an elevation of a wearer's shoulders or a movement of said helmet or by a combination of both said collar and helmet movements whereby a force applied to said helmet is distributed over a wearer's shoulders through said collar and injury to the neck is prevented.

3,189,918
VISOR HELMET
Walter R. Hiatt, Norwalk, and Michael M. King, South Gate, Calif., assignors to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Filed Aug. 30, 1963, Ser. No. 305,886
3 Claims. (Cl. 2—9)

1. A visor helmet assembly, comprising:
(a) a helmet having a plurality of projecting fastener elements on the forehead portion thereof;
(b) an elongated, flexible, curved strip adapter band which extends across the forehead portion of said helmet and around the sides thereof;
(c) said adapter band having a plurality of lateral slots and cooperating fastener elements slidably mounted in said slots and into which said projecting fastener elements are detachably mounted, said lateral slots making it possible for the adapter band to fit different helmets where the spacing of said projecting fastener elements may vary;
(d) additional fastener elements mounted to the extremities of said band;
(e) a curved elongated visor which extends to the sides



of said helmet and has an extent sufficient to substantially cover the face of the wearer of said helmet;
(f) said visor having a plurality of complementary fastener elements adjacent the upper edges of its side margins which detachably and pivotally engage said additional fastener elements; and
(g) stop means on said adapter band which is engageable with said visor to hold it in position over the face of the wearer of said helmet.

3,189,919
CUSHIONED PROTECTOR
Kenneth Chase, Shirley Center, Mass., assignor to George Frost Company, Shirley, Mass., a corporation of Massachusetts
Filed Dec. 5, 1963, Ser. No. 328,322
2 Claims. (Cl. 2—16)

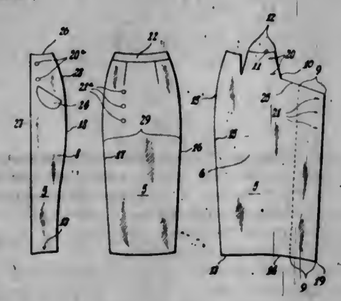


1. A cushioned protector comprising an elastic elongated body having inner and outer portions continuous transversely of said body and integrally joined at one end thereof to form a pocket, a cushion member arranged between said portions of the body and having longitudinal edges notched intermediate their lengths, the extremities of said inner and outer portions at the other end of said body being substantially contiguous, and stitching extending through said extremities to close said other end of the body to retain said cushion member in position.

3,189,920
CONTOUR WRAP-AROUND PENCIL SLIM SKIRT
Balbina Kurzyniec, 18316 Germain St., Northridge, Calif.
Filed Oct. 31, 1962, Ser. No. 234,376
1 Claim. (Cl. 2—211)

A contour wrap-around skirt comprising:
a back panel;

a front panel having front and overlying sections;
an underlying partial panel connected to said back panel and dimensioned to overlay a portion of the front of the body of the wearer;
said overlying panel section dimensioned to extend around the body of the wearer to overlay the said underlying panel and a minor portion of said back panel;
said back panel and underlying panel having an even waistline when the skirt is secured upon the wearer;
said back and underlying panels having an even hemline when the skirt is secured upon the wearer;
said front panel section and said overlying panel section having a hemline continuing from said even hemline for a distance substantially equal to its waistline dimension and therebeyond curving downwardly with respect to said waistline, such that said hemline of the overlying panel section will slope downwardly to project below said even hemline when merely wrapped in a natural fold around the wearer;



and releasable securement means for attaching said overlying panel section to said back panel, said securement means having a first portion carried by said back panel at a distance from said hemline, a second portion carried by said overlying panel section at a like distance from the hemline; said first portion being at a lesser distance from the waistband than said second portion when merely wrapped in a natural fold around the wearer, such that the overlying panel section must be raised to bring the securement means portions into engagement and thus bring its hemline into alignment with said even hemline;
said back and underlying partial panels having a hemline dimension substantially equal to their respective waistline dimensions;
whereby, such raising of the hemline of said overlying portion causes an inward force at the hemline area to contour the hemline inwardly, and yet allowing the full freedom of expansion of the skirt in the hemline area characteristic of a wrap-around skirt.

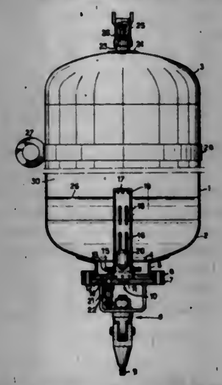
3,189,921
COMPOUND PROSTHESIS
William J. Pangman, 734 Muirland Vista Way, La Jolla, Calif.
Filed Apr. 11, 1962, Ser. No. 186,669
6 Claims. (Cl. 3—36)

1. A compound surgical prosthesis for insertion under the skin of the human body, comprising:
an exterior surrounding wall,
substantially the entire interior surface of said wall bounded by a surface layer which is integral therewith and which is relatively impervious to cellular structure of the human body but relatively pervious to fluids in the human body, and the exterior thickness of said wall outside said interior surface layer including substantially the entire exterior surface thereof being comprised of a foam-type resilient plastic surgical sponge material having a myriad of pores extending throughout it and opening through said exterior surface of the wall, whereby said exterior thickness of the wall is relatively pervious to both said cellular structure and fluids of the human body,
there being a sealed closure in said wall,



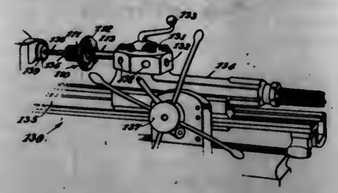
a core substantially completely filling the space inside said wall, and
substantially the entire exterior surface of said core having a surface layer which is relatively impervious to said cellular structure of the human body but relatively pervious to said fluids in the human body, and the interior portion of said core inside said exterior surface layer being comprised of a foam-type resilient plastic surgical sponge material having a myriad of pores extending throughout it, whereby the latter is also relatively pervious to said body fluids.

3,189,922
VARIABLE-BUOYANCY FLOATS
Jean Margot, La Celle Saint-Cloud, and Gabriel Grivory, La Courneuve, France, assignors to Electricite de France (Service National) and Gaz de France (Service National), both of Paris, France, French National Services
Filed Jan. 2, 1964, Ser. No. 335,296
Claims priority, application France, Jan. 16, 1963, 921,557
6 Claims. (Cl. 9—8)



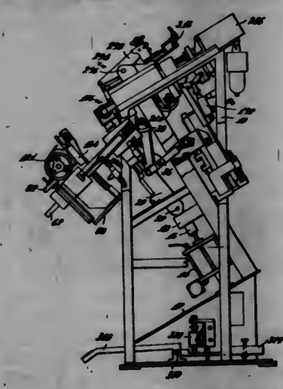
1. A variable-buoyancy float comprising:
(a) a closed hollow rigid tank comprising a filling valve disposed on its surface and a water orifice formed with a valve-seating and disposed in the lowest portion of its surface;
(b) a quantity of lighter than water liquid filling the lower part of the hollow interior of said tank;
(c) a quantity of gas filling the remainder of the hollow interior of said tank; and
(d) a valve for controlling the opening and closing of said water orifice so as to permit external water to enter said tank when the pressure of said external water exceeds that of said gas.

3,189,923
THREAD CUTTING TOOL HOLDER SUPPORTED BY TURRET TYPE LATHE
William H. Smyth, 44 W. 44th St., New York, N.Y.
Filed Oct. 8, 1962, Ser. No. 229,781
1 Claim. (Cl. 10—89)



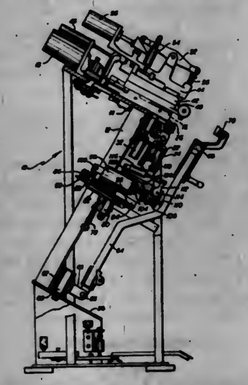
In a turret lathe, in combination, a rotary chuck; a turret comprising a head spaced from said chuck and having at least one opening of constant cross section which is alignable with a workpiece mounted in said chunk; and a one-piece holder comprising a shank slidably received in said opening and a tool supporting portion rigid with and movable by said shank with respect to said head toward and away from said chuck so that a thread cutting tool installed in said tool supporting portion may be moved into thread cutting engagement with a workpiece mounted in said retaining means in response to direct manual displacement of said holder without necessitating movement of said head toward said chuck or vice versa, the head of said turret having a portion surrounding said opening and constituting the sole means for supporting and guiding the holder in its movements toward and away from said chuck and said holder being arranged to be held by hand when the thread cutting tool engages a workpiece to prevent rotation of the holder.

3,189,924
UPPER STRETCHING AND HEEL SEAT LASTING MACHINE
Jacob S. Kamborian, 133 Forest Ave., West Newton, Mass., and Henry v. d. Benken, West Roxbury, Mass.; said Benken assignor to said Kamborian
Filed May 2, 1961, Ser. No. 107,156
44 Claims. (Cl. 12—3.8)



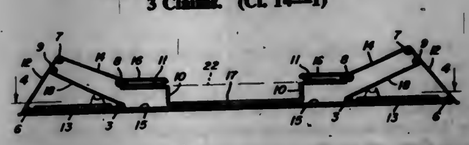
1. A heel seat lasting machine comprising: wiping means movable forwardly in a predetermined plane; a hold-down located forwardly of the wiping means; a mount; a shoe support, for supporting bottom-up a last having a shoe upper and insole thereon, located on the mount and positioned below the hold-down and forwardly of the wiping means; gripping means mounted on the mount for gripping the margin of the upper proximate to its toe end; means for moving the gripping means forwardly of the shoe support to stretch the upper about the heel of the last; means for raising the shoe support together with the gripping means to clamp the last and shoe between the shoe support and hold-down; means for raising the gripping means upwardly of the shoe support to stretch the upper tightly on the last; and means to move the wiping means forwardly to wipe the heel portion of the upper margin down upon the insole.

3,189,925
HEEL CLAMP
Jacob S. Kamborian, 133 Forest Ave., West Newton, Mass.
Original application May 10, 1962, Ser. No. 193,829. Divided and this application May 7, 1963, Ser. No. 278,594
7 Claims. (Cl. 12—14.4)



1. Heel clamping means comprising: an upwardly extending post; a heel clamp on the post; a support for supporting a shoe upper having its heel portion facing the heel clamp; means pivotally mounting the post for swinging movement at its lower end with respect to the support about a horizontal axis to enable the heel clamp to be moved toward and away from the heel portion of the upper and for free swinging movement with respect to the support about an upwardly extending axis; and powered means connected to the post to effect its movement about the horizontal axis.

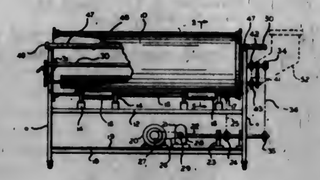
3,189,926
CONVEYOR COVER
Eldon E. Ehinger, Box 43, Fairfax County, Va.
Filed Apr. 3, 1961, Ser. No. 100,322
3 Claims. (Cl. 14—1)



1. In combination with a conveyor, a frame cradling said conveyor and having lateral surfaces on each side of said conveyor, said conveyor and lateral frame surfaces lying in substantially the same plane, a cover tread laterally slidable on each of said lateral frame surfaces and adapted to overlay and be supported by said conveyor, a base supporting said frame and extending laterally of the frame and below said lateral frame surfaces, a strike tread pivotally attached at each end of said base and extending upwardly therefrom and above said cover treads, and a ramp tread pivoted to the upper end of each of said strike treads and the outermost end of each of said cover

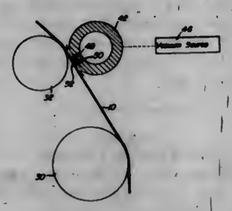
treads, and means connecting said strike treads to move them toward or away from said conveyor in unison whereby force on one of said strike treads will move said cover treads laterally over said conveyor in unison.

3,189,927
VEGETABLE CLEANERS
Robert L. Dyar, 1820 S. 1st St., Milwaukee, Wis.
Filed July 20, 1964, Ser. No. 385,543
11 Claims. (Cl. 15—3.16)



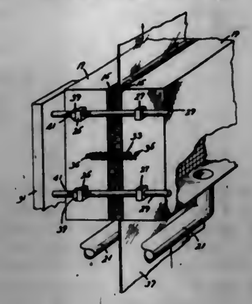
3. A machine for cleansing vegetables including a supporting frame and a drum mounted for rotation on said frame, an elongated rotary brush positioned within said drum, said brush having a supporting and driving shaft extending longitudinally of the drum, said supporting and driving shaft being rotatably received in arms extending radially with respect to the axis of rotation of said drum, means for supporting said arms for rotation about said longitudinal axis of said drum, means for rotating said drum in one direction, and means for rotating said brush in the opposite direction.

3,189,928
APPARATUS FOR VACUUM CLEANING A RECORD TAPE
Robert A. Pendleton, Dedham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,665
2 Claims. (Cl. 15—306)



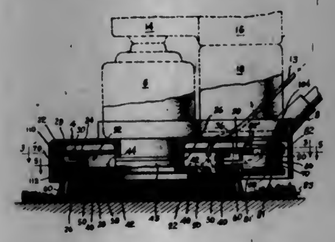
1. Apparatus for cleaning a magnetic tape as it is carried by a tape transport comprising a cleaning head positioned immediately adjacent to the oxide side of the tape but spaced therefrom, said cleaning head comprising a hollow cylindrical member having a pair of adjacent parallel slots cut in the surface thereof and communicating with the interior thereof, each slot having the open surface positioned at right angles to the path of travel of the tape and the cut positioned to be perpendicular to the surface of the tape and with the land area between the slots forming a mechanical buffer positioned closest to said tape to prevent the tape from covering said slots, said cylindrical member having the surface immediately adjacent each of said slots on the side opposite said land area cut away to form a flat surface parallel to the tape surface, and a vacuum source coupled to said member to cause a cleaning flow of air to pass over the tape and through said slots.

3,189,929
WIPING DEVICE FOR CONTINUOUS TRAVELING FILMS
Hugo P. Koppehele, Glen Riddle, Pa., assignor to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,534
1 Claim. (Cl. 15—308)



Apparatus for removing liquids from traveling continuous films including a pair of chambers each having an open side, a screen extended across each of the open sides of said chambers, a wiping cloth formed of a soft, flexible and absorbent material disposed over each of said screens, means for moving a continuous film relative to said wiping cloths, said wiping cloths being disposed in opposing relationship and adapted to engage with and to wipe liquids from adjacent surfaces of the film as it travels therebetween, spring means joining the respective chambers to effect snug engagement of said wiping cloths against the opposite sides of a continuous film as it is moved therebetween, and suction means including a conduit for maintaining the chambers evacuated and for removing liquids absorbed by said wiping cloths.

3,189,930
SURFACE CLEANING APPARATUS
Henry G. Tuthill, Jr., Los Angeles, Calif. (11409 Cherrylee Drive, El Monte, Calif.)
Filed June 16, 1964, Ser. No. 391,349
24 Claims. (Cl. 15—320)

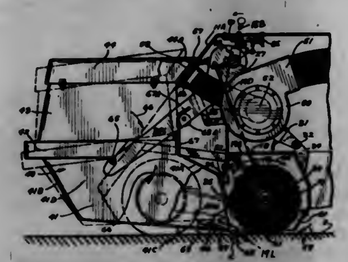


1. In a surfacing apparatus having a fluid reservoir, a source of vacuum, and drive means for rotating a brush member, the improvement comprising the combination of a brush member including a support driven by said drive means and having a circular circumferential area with an annular passageway therein adjacent the periphery of said support and communicating radially with the exterior of said support about said area, a plurality of bristle groups depending from said support to define a brush surface, conduit means carried by said support and extending between said passageway and said surface, means intermediate said passageway and the center of said brush

member for communicating said reservoir with said bristle groups, a belt passing about said circumferential area, means for movably maintaining said belt in contact with said support over said circumferential area and said annular passageway on opposite sides of a given fractional portion thereof and in spaced relation to said area adjacent said portion, and means defining a vacuum chamber adjacent said portion whereby a continuous vacuum can be created in said passageway and said conduit means when the apparatus is operated.

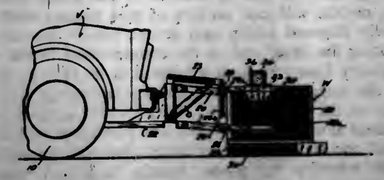
22. A brush member for use with a surfacing apparatus, said brush member comprising a support having a circular circumferential area with a peripheral annular passageway opening radially outwardly of said support about said area, a plurality of bristle groups depending from said support to define a brush surface, conduit means extending between said passageway and said surface, said support having a fluid-receiving recess intermediate said passageway and the center of said brush member and apertures communicating said recess with said bristle groups thereunder.

3,189,931
POWER SWEEPER IMPROVEMENTS
Ralph C. Peabody, Minneapolis, Minn., assignor to The G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 13, 1961, Ser. No. 137,865
11 Claims. (Cl. 15—340)



1. A sweeping machine comprising a mobile, powered steerable vehicle, a sweeping enclosure on said vehicle which extends substantially to the level of the surface over which the vehicle moves and is closed except for a bottom brush opening and an ejection opening through which swept material may be projected and air may flow, a suction device on the vehicle having a suction line extending to a suction port on the surface of the vehicle, movable support members on the vehicle for supporting a separate entity, a separate entity comprising a closed housing including a swept debris collection pan portion and a filter portion communicating with said pan portion, said pan portion having a filling opening leading into it and said filter portion having an exhaust opening leading out of it adjacent the top thereof, support parts on said entity to be engagable by the support members on the mobile vehicle for supporting and carrying the entity on the vehicle, the filling opening of the entity being located as to fit against and communicate with said ejection opening when the entity is carried by the support members, the support parts being located on said entity so that the entity tips freely to a position wherein the exhaust opening on the entity communicates with the said suction port when the entity is carried by said support members, and stop members mounted on said support members positioned to engage portions of said entity to limit the tipping action of said entity toward said suction port, said entity being free to move to a position wherein the exhaust opening does not fit against the said suction port.

3,189,932
STREET CLEANING APPARATUS
Ben Danaman, Milwaukee, Wis., assignor to Central Engineering Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 22, 1963, Ser. No. 267,108
6 Claims. (Cl. 15—340)



1. A self-propelled street cleaning vehicle including a debris windrower comprising: linkage means between said windrower and the front end of said vehicle for permitting relative vertical movement therebetween, said windrower including a generally vertical rear wall having a discharge opening in the lower portion thereof, said windrower also including a pair of generally vertical side walls diverging forwardly from said rear wall, ground contacting means located along the lower edge of said side walls for contacting the area being traversed, whereby debris in said area is formed into a windrow by said side walls and passes through said discharge opening at a width and height determined by the size of said opening, and agitator means in said windrower forwardly of said rear wall and above said discharge opening out of contact with the ground for agitating the material in said windrower to insure continuous discharge of the material through said opening.

3,189,933
VACUUM CLEANER WITH ROTATABLE NOZZLE
Aaron H. Smith, Ipswich, Mass., assignor to Signal Manufacturing Company, a corporation of Massachusetts
Filed Dec. 3, 1963, Ser. No. 328,148
14 Claims. (Cl. 15—344)



1. In a vacuum cleaning device, a hollow elongated nozzle having a bottom opening and a side opening, a rigid frame supported at its lower end on the nozzle for rotation about an axis inclined at a fixed angle relative to the bottom opening of the nozzle which is consistent with ease of manipulation, including a handle at its upper end parallel to said axis which provides for manipulation of the cleaner, said frame constituting an induction tube connected at the lower end to the side opening having a deviating portion intermediate its ends providing a recess for receiving a motor and a fan housing at its upper end for receiving a fan, said fan housing providing a seat for the lower end of a tank, a tank disposed parallel to the underside of the handle with one end resting on the seat

in communication with the fan, and the other end connected to the handle, a fan in the fan housing, a motor in the recess, means connecting one end of the motor shaft to the fan, a counter-shaft journaled in the lower end of the induction tube and having one end portion projecting through the side opening into the nozzle on an axis coinciding with the axis of rotation of the frame relative to the nozzle, said end portion of said counter-shaft being freely disposed within said nozzle, means driveably connecting the other end of the counter-shaft to the motor, a rotary beater element journaled at its ends in the ends of the nozzle for rotation about a horizontal axis to the axis of the counter-shaft, and a twisted endless belt entrained at one end about said end portion of said counter-shaft and about the rotary beater element intermediate its ends whereby the frame, handle, tank and motor are continuously rotatable as a unit about said inclined axis relative to the nozzle without disturbing the position of the nozzle on the floor or the drive between said counter-shaft and said beater element.

3,189,934
PLUMBING TOOL
Delmar C. Steinwedel, Seymour, Ind., assignor to Seymour Tool & Engineering Co., Inc., Seymour, Ind., a corporation of Indiana
Filed Feb. 7, 1963, Ser. No. 256,993
4 Claims. (Cl. 15—406)



1. Apparatus for unblocking pipes and the like comprising
a rigid tubular gas conducting frame having means at one end thereof for receiving a flat bottomed container of pressurized gas of a length greater than said container receiving means to extend thereabove and discharge means at the other end thereof,
said discharge means including resilient sealing means for engaging a drain opening and the like in sealing relationship,
said container receiving means being in fixed relation to said resilient sealing means,
container puncturing means projecting into said container receiving means,
means positioned within said container receiving means for providing a seal between said puncturing means and a container,
said puncturing means being mounted to provide passage of gas from a punctured container into said frame,
an operating handle assembly including a bracket and an operating handle,
said bracket being mounted on said container receiving means and including an extension laterally offset from said container receiving means, said extension terminating beyond the open end of said container receiving means to provide mounting means for an operating handle, operating handle means pivotally mounted on said extension and movable from one position to a rupturing position for puncturing a container and maintaining it in sealed relationship with said seal means within said container means, the spacing of said handle means on said extension with respect to said container receiving means being proportioned to provide engagement of said handle means with the edge of such container in said container receiving means nearest said bracket and to maintain said engagement throughout the rupturing movement thereof providing substantially constant leverage on such container during rupturing and sealing thereof,
and said operating handle means being of sufficient length to provide a mechanical advantage for relatively easy puncturing of a container positioned within said container receiving means.

3,189,935
TUBULAR-ARTICLE CLEANING DEVICE
Arthur B. Enga, 728½ Franklin Ave., Columbus, Ohio
Filed Jan. 28, 1963, Ser. No. 254,059
16 Claims. (Cl. 15—511)

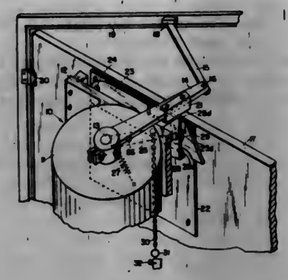


1. A cleaning device for elongated objects of a given cross sectional size and shape, comprising in combination, container means,
an end wall in said container means,
resilient sponge means in said container means adapted to hold cleaning liquid,
said end wall having an exit aperture,
an aperture in said sponge means aligned with said exit aperture and of said given size and shape to frictionally engage an object which may be passed through said aligned apertures,
resilient liquid impenetrable wiper means of said given size and shape and coaxially retained in said exit aperture to elastically engage and wipe any said object passed therethrough, and said wiper means and sponge means being removable from said container means without disassembly of said container means.

3,189,936
DOOR CLOSER LATCH
Patrick Lee, Woodside, N.Y., assignor of one-half to Patrick McTernan, Astoria, N.Y.
Filed May 31, 1962, Ser. No. 199,125
4 Claims. (Cl. 16—82)

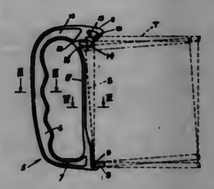
1. A system for the control of a door hinged to a frame, comprising a mounting on said door adjacent its upper edge, a shaft projecting upwardly from said mounting, a substantially horizontal arm on said shaft, link means forming an articulated connection from said arm to said frame, said arm being positioned to sweep along said upper edge upon the opening of said door, means on said mounting coupled with said shaft for automatically returning said arm at a controlled rate into a door-closing position, a latch bar swingably mounted on said door adjacent said upper edge, said bar being provided

with a first arm-engaging shoulder limiting the sweep of said arm and with a second arm-engaging shoulder ahead of said first shoulder adapted to block the return sweep of said arm in an intermediate position of said door, said bar further having a sloping front edge depressible by said arm, said bar normally occupying a position parallel to said upper edge with said shoulders projecting into



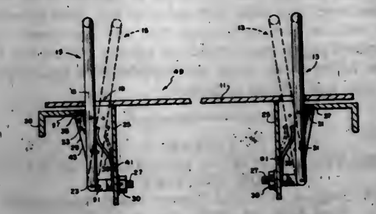
the path of said arm, restoring means yieldably tending to maintain said bar in said parallel position, and a guard element fulcrumed on said bar adjacent said second shoulder for engagement by said arm upon a forward sweep thereof beyond said intermediate position, said element having a camming edge effective to guide said arm past said second shoulder upon the return sweep thereof through said intermediate position to a closure position.

3,189,937
HANDLE ATTACHMENT FOR CONTAINERS
Joseph M. Sciortino, Ross Township, Allegheny County, Pa., assignor to H. J. Heinz Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 23, 1963, Ser. No. 310,663
4 Claims. (Cl. 16—114)



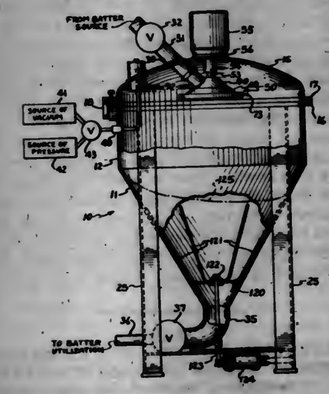
1. A handle attachment for tin cans comprising a body in the form of an integral vertically-elongated loop substantially coextensive with the height of the can to which it is adapted for use, the loop having an outer vertical side forming a handle to be grasped in one's hands, a top and a bottom arm comprising the opposite ends of the loop, and an inner vertical side strip connecting the top and bottom bars and holding them against spreading, the bottom arm having a notched ledge at the inner end thereof projecting beyond the inner vertical side bar for engagement under the beaded bottom of a tin can and the top arm having a hook-like extension overhanging the ledge at the bottom with a hook portion that is sloped downwardly toward the ledge and toward the loop and which may be flexed toward the inner side bar and upwardly when the top edge of a can is pressed against it with the bottom of the can resting on said ledge, said hook portion being resilient whereby it will spring back to its original position when the top edge of a can has been pushed toward the handle past the hook and so engage the inside of the top edge of a can and confine the can in position against the handle attachment.

3,189,938
SELF-LATCHING HANDLE
Benjamin M. Saunders, 1701 Lydia Drive NW., Huntsville, Ala.
Filed July 31, 1963, Ser. No. 299,124
7 Claims. (Cl. 16—126)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a panel adapted to cover a cabinet opening, the improvement, comprising:
(a) a handle having a bifurcated end portion;
(b) a connecting lug pivotally received within said bifurcated end portion adjacent its extremity;
(c) means for fixedly securing said connecting lug to said panel;
(d) a ramp latch partly positioned within said bifurcated end portion and fixed thereto;
(e) said ramp latch having a side surface sloping outwardly from the outer surface of the bifurcated end portion into an inside corner defining an obtuse angle, said inside corner being adapted to receive the inner edge corner of the cabinet opening;
(f) said sloping edge surface defining an angle with the center line of the bifurcated end portion of 7 to 15 degrees;
(g) said inside corner having a sloping characteristic for its bottom surface to prevent jamming against the cabinet edge when the handle is pivoted about said connecting lug.

3,189,939
DEAERATING MACHINE FOR SAUSAGE BATTER OR THE LIKE
Alvin W. Hughes, 4 N. 194 Church Road, Bensenville, Ill.
Filed Oct. 24, 1963, Ser. No. 318,725
11 Claims. (Cl. 17—35)



1. In a deaerating machine for sausage batter or the like, the combination comprising an enclosed chamber, means for drawing a vacuum in the chamber, a disc-shaped impeller having a generally conical hood mounted thereon, said hood and disc defining an annular space which is convergent toward the periphery of the disc,

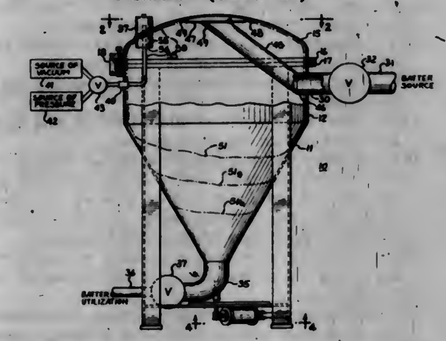
and means at the periphery defining a narrow peripheral escape slot which is sufficiently narrow so as to offer resistance to batter flow, means for depositing batter in said space, and means for rotating the disc at a speed which is sufficiently high so that the centrifugal force produced thereby is sufficient to overcome the flow resistance through the slot so that the batter is ejected in the form of a thin sheet and with both sides of the sheet presented to the vacuum atmosphere so that any entrained air is at a shallow depth and capable of release during the time that the batter flows from the periphery of the impeller to the side wall of the enclosure.

3,189,940

DEAERATING MACHINE FOR SAUSAGE BATTER OR THE LIKE

Alvin W. Hughes, 4 N. 194 Church Road, Bensenville, Ill.

Filed Sept. 18, 1963, Ser. No. 309,629
6 Claims. (Cl. 17—39)



1. In a vacuum-pressure apparatus for transporting and deaerating batter or the like, the combination comprising an enclosed vacuum-pressure chamber, said chamber having a generally conical body portion and a removable cover, an inlet fitting in the body portion having an associated inlet valve for communicating with a source of batter under pressure, discharge means at the lower end of the chamber including a discharge valve, a source of vacuum, a source of air pressure, valve means for selectively coupling said sources to said chamber, means for operating said valve means to apply a vacuum to said chamber with said inlet valve open and said discharge valve closed, a gooseneck within said chamber connected to said inlet fitting and extending upwardly in said chamber terminating adjacent the inner surface of the cover, and means at the terminus of said gooseneck for causing the stream of batter which is drawn through the inlet conduit to spread over the surface of the cover in the form of a thin flowing layer in which any entrained air is at shallow depth for prompt deaeration of the batter prior to the batter's collecting at the bottom of the chamber, and means for operating said valve means to apply pressure in said chamber with said discharge valve open and said inlet valve open for fluid discharge of the collected batter.

3,189,941

APPARATUS FOR CONTINUOUS EXTRUSION OF COMPOSITE BODIES OF PLASTIC MATERIAL

Friedrich Reifenhäuser, Troisdorf-Cologne, Germany, assignor to Reifenhäuser K.G., Troisdorf-Cologne, Germany

Filed July 19, 1962, Ser. No. 211,031
4 Claims. (Cl. 18—13)

1. For the continuous extrusion of shaped bodies, particularly plate-like construction elements having an extruded foamed sound and heat insulating core and a surrounding thermoplastic synthetic plastic shell, apparatus comprising:

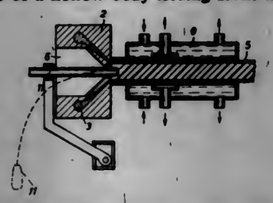
an extrusion head;

a separate core material extrusion nozzle means disposed in said extrusion head;

slit nozzle means in the head concentrically surrounding the first means and having a flat prismatic cross section for the extrusion of a hollow body as the said shell;

said apparatus adapted for simultaneous discharge of the shell and core materials;

a sizing device disposed immediately beyond said nozzle means adapted to apply a vacuum on the external surface of a hollow body issuing from the extrusion



head while yet plastically deformable to bring the same into conformity with a size calibrating inner wall of the sizing device;

a screw press for supplying to the slit nozzle means material for the hollow body and disposed laterally of the extrusion head;

said extrusion head having therethrough a central opening in communication on one side with the interior space of the hollow body extruded from the slit nozzle means and on the other side conically expanding to the exterior of the head;

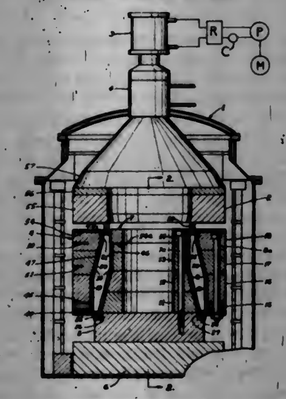
said core producing extrusion nozzle means being structurally independent of said slit nozzle means and movable into and out of a core-filling operative disposition in said central opening.

3,189,942

APPARATUS FOR FORMING POWDERED METAL INTO SINTERED HOLLOW BODIES

David Dean Rapprich, Vermilion, and Francis James Holewinski, Toledo, Ohio, assignors to The Brush Beryllium Company, Cleveland, Ohio, a corporation of Ohio

Filed July 31, 1962, Ser. No. 213,709
14 Claims. (Cl. 18—16)



1. An apparatus for forming metal powder into elongated hollow bodies and comprising a mandrel, a female die, means temporarily supporting the die and mandrel

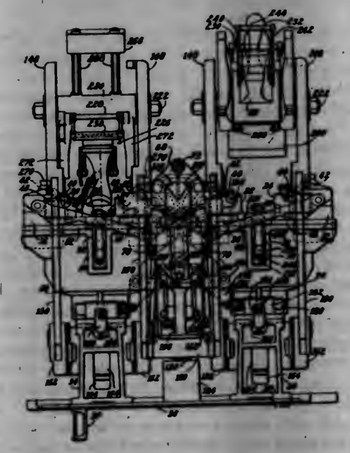
in a fixed upright starting position wherein the mandrel is within the female die with the mandrel and die walls spaced apart radially and defining an upright annular cavity which is open at the top for receiving the powder and is closed at the bottom, sealing means having two portions bonded together and forming at the juncture a powder tight seal which bridges across and seals the operating clearance space between the outer periphery of the mandrel and inner periphery of the die at the lower outer corner of the cavity whiie the die and mandrel are in said starting position, one of said portions being operatively connected to the die for downward movement therewith in fixed relation thereto, and the other portion being carried by the mandrel and constrained thereby from downward movement with the die, the bond between said portions being capable of being sheared in two by downward movement of the die upon application of sufficient downward forming pressure by the female die, and power means for applying sufficient force to the female die to cause said downward forming pressure and downward movement of the female die and destruction of the seal provided by the sealing means at said juncture.

3,189,943

MACHINE FOR VULCANIZING SOLES ONTO SHOE BOTTOMS

Frank Coleman Cloice, Raymond Derek Edwin Eldred, and Gordon Cecil John Wakefield, Leicester, England, assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

Filed Mar. 6, 1962, Ser. No. 177,857
Claims priority, application Great Britain, Mar. 18, 1961, 9,964/61
6 Claims. (Cl. 18—17)



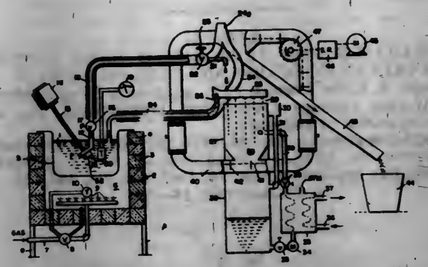
1. In a machine for molding soles onto shoe bottoms, a bottom mold member, a pair of side mold members movable into mold closing relation to the bottom mold member, a shoe form, a cylinder, connections from the cylinder for supporting the shoe form in its retracted position, a first piston mounted in the cylinder and operable to elevate the cylinder and the shoe form, a cam slide, a cam roll carried by the cylinder and arranged to limit its upward movement by engagement with the cam slide, and means for operating the cam slide to impart downward movement to the cylinder and through the cylinder to the shoe form.

3,189,944

PELLET FORMING APPARATUS

Clarence Jacklin, Downers Grove, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

Filed July 6, 1962, Ser. No. 207,982
4 Claims. (Cl. 18—2.7)



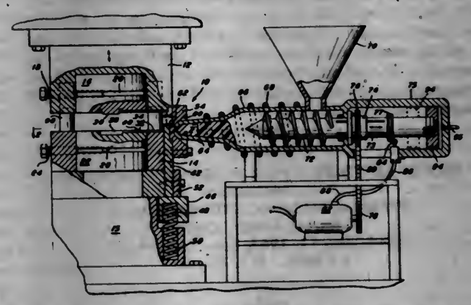
1. Pellet forming apparatus which comprises in combination: a vessel; heating means for maintaining lead in a molten condition within said vessel; drop forming means; conveying means for circulating molten lead between said vessel and said drop forming means; valve means associated with said conveying means for restricting the flow of said molten lead to said drop forming means; control means for maintaining a constant head on said valve means; liquid overflow means associated with said drop forming means for maintaining a constant head on said drop forming means; and quench means operatively associated with said drop forming means.

3,189,945

INJECTION MOLDING APPARATUS

William Strauss, Philadelphia, Pa., assignor, by mesne assignments, to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

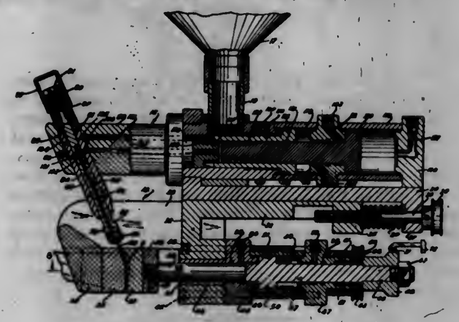
Filed Mar. 1, 1962, Ser. No. 176,735
2 Claims. (Cl. 18—30)



2. In an injection molding press comprising a top and bottom platen mounted for movement toward and away from each other, said bottom platen having a sprue with a surface adapted to be juxtaposed to a mating surface on said top platen, a nozzle engaging member supported by said bottom platen, said nozzle engaging member having a flow passage therethrough in alignment with said sprue, a nozzle juxtaposed to said nozzle engaging member, said nozzle having a discharge opening in line with said flow passage, a movable valve member disposed between said flow passage and said sprue, a spring biasing said valve member into abutting contact with said top platen, means for maintaining a supply of pressurized molding material in said nozzle, and heating means cooperating with said nozzle for plasticizing molding material within said nozzle except in the immediate area

of the discharge opening in said nozzle and nozzle member flow passage, whereby a cold slug of solidified molding material is adapted to be formed within said nozzle member flow passage in nozzle adjacent its discharge opening to cooperate with said valve member to prevent the flow of molding material from said nozzle discharge opening.

3,189,946
APPARATUS FOR PREFORMING SHOE UPPER PARTS BY INJECTION MOLDING PRINCIPLES
Joseph A. Cislo, Cerosa, N.Y., assignor to Modern Shoe Making Machine Corporation, Wilkes-Barre, Pa., a corporation of Delaware
Original application Dec. 26, 1956, Ser. No. 630,564, now Patent No. 3,026,573, dated Mar. 27, 1962. Divided and this application Mar. 26, 1962, Ser. No. 187,145
6 Claims. (Cl. 18—30)



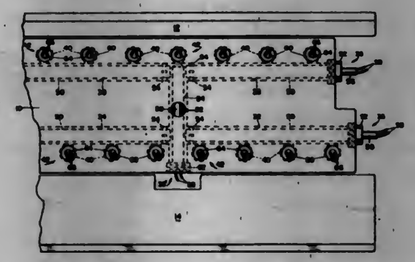
1. Apparatus for preforming a shoe-upper part comprising, in combination, clamping means for holding and sealing the perimeter of at least one portion of said shoe-upper part to a shape, with another portion of said shoe-upper part extending outwardly of said clamping means and within the path of a wiping means, means for injecting a qauntity of plastic material into securing engagement with both of said portions, said clamping means defining the shape of said one portion to said shoe-upper part, and a wiping means associated with said clamping means arranged to fix said other portions of said article to a shape independently of the shaping of said one portion by said clamping means.

3,189,947
MOLD ASSEMBLY FOR MAKING CHEMICAL SPHERES
Frank A. Pettkoske, 8919 Golf Drive, Spring Valley, Calif.
Filed Mar. 11, 1963, Ser. No. 264,435
1 Claim. (Cl. 18—36)



In a mold assembly the combination of:
(a) a body portion cylindrical in shape one end of which is a semi-spherical shape.
(b) a semi-spherical mold element oppositely disposed to the body portion which, when together therewith, form a spherical mold,
(c) a sleeve slideable associated with the body portion for telescopic action therewith suitable for retaining the chemical to be molded,
(d) a hollow guide member telescopingly mounted within the central portion of the body portion,
(e) a housing secured to the end of the body portion opposite to that semi-spherical in shape and in which said guide member telescopically slides,
(f) a support member slideably mounted in the guide member formed from a wire one end of which is looped and which rests at one end of the guide member, and
(g) spiral spring means operatively mounted between the guide member and the housing one end of which means abuts a stop in the slide member and the opposite end abuts a stop in the housing member.

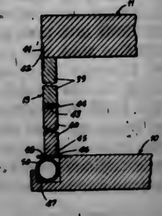
3,189,948
INTERNALLY HEATED COLD MANIFOLD MOLD
Edgar H. Whitney, Dunellon, Fla., assignor to Osley & Whitney, Inc., Westfield, Mass.
Filed Sept. 14, 1962, Ser. No. 223,652
2 Claims. (Cl. 18—38)



1. In a mold having partible mold sections defining a plurality of cavities therebetween for receipt of thermoplastic material therein, an internally heated cold manifold mounted on one of the mold sections and having horizontally-extending and vertically-extending interconnecting channels in said manifold forming an interconnected network, the vertically-extending channel being offset relative to the respective interconnected horizontally-extending channel, an inlet opening in said manifold communicating with at least one of said channels, heating elements extending into each of said channels from the mold exterior, the heating elements disposed in said horizontally-extending channels comprising a heating cartridge sleeved by a metal sheath threadedly engaged in said channels and having a plurality of radial ribs embracing the walls of said channels, nozzles in said vertically-disposed channels opening into said cavities, the heating elements disposed in said vertically-extending channels comprising a heating cartridge sleeved by a metal sheath threadedly engaged at one end in one of said channels and sleeved at its opposite end by one of said nozzles, and temperature control means for each of said heating elements whereby the temperature of the thermoplastic material in the cavities of the mold and in said channels of the manifold may be individually controlled.

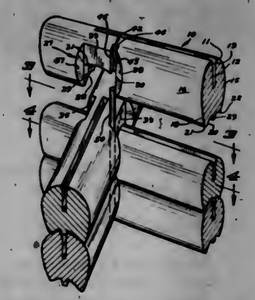
3,189,949
FOLDABLE BUILDING STRUCTURE
Charles H. Hurkamp, 3921 Lake Forest Drive NE., Atlanta, Ga.
Filed Sept. 14, 1962, Ser. No. 223,639
7 Claims. (Cl. 20—2)

1. An automatically erectable building comprising a rigid floor structure and a rigid roof structure interconnected by at least two opposing walls, each wall comprising an upper panel and a lower panel hinged together, the upper panels being hinged to the roof structure and the lower panels being hinged to the floor structure, recess means between the floor structure and the lower panels, the lower panels and the floor structure having



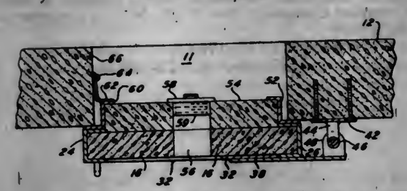
adjacent faces relatively pivotal in a variable arc when the lower panels are pivoted relative to the floor structure, and pneumatic tube means in the recess means and bearing against the said adjacent faces for pivoting the lower panels from generally horizontal positions to vertical positions when the tube means are inflated.

3,189,950
CONNECTING STRUCTURE FOR TIMBERS
Bertil L. Johnson, 4437 Upton Ave. S., Minneapolis, Minn.
Filed Nov. 29, 1961, Ser. No. 155,725
2 Claims. (Cl. 20—4)



1. In a building structure a plurality of similar superposed logs interfitted in crisscross relation, each of said logs comprising an upper portion forming a crown having a convex curvature in cross section,
a longitudinally extending slot centrally of said crown having parallel side portions,
a bottom portion of said log having a longitudinally extending concavely curved groove formed therein vertically aligned with said slot and having a radius substantially shorter than the radius of said crown and having longitudinal edge portions defined at either side of said groove,
a tongue tapered in vertical cross section extending outwardly centrally longitudinally of said concave groove,
said lower portion of said log having a transversely extending notch therethrough having its channel extending upwardly substantially one-half of the height of said log,
said log having a vertical groove at one side thereof within one end portion of said notch, said groove having an open side,
said vertical grooves in said plurality of logs with said logs being in superposed crisscross relation being in vertical alignment with one another whereby with each notched portion of a log interfitting with the upper half of the log directly therebelow at right angles thereto, a side of said transverse notch overlies the open side of the vertical groove of said interfitted logs directly therebelow forming a side enclosed vertical groove,
said concave groove of each log overlying the longitudinally extending slot of the log therebelow, with said tapered tongue extending into and being wedged within said slot to have a line engagement with the upper edge portions of said slot, and said longitudinal edge portions being disposed on said crown at either side of said slot having a line engagement with the surface of said crown, and
a pin disposed into said vertical groove having weather sealing engagement with the sides of said groove.

3,189,951
CONCRETE DOOR
Morton M. Rosenfeld, 271 Madison Ave., Mount Vernon, N.Y.
Filed Sept. 18, 1962, Ser. No. 224,484
7 Claims. (Cl. 20—35)

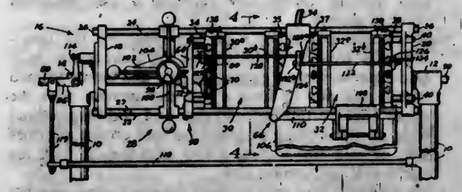


1. A door comprising a first channel forming an inner periphery thereof, said first channel including a pair of Z-shaped members, each member having a flat wall portion and a first inwardly directed side flange perpendicular to said wall portion, a second outwardly directed side flange spaced from and parallel to said first inwardly directed flange, a first ply of preformed building material nested within said first channel between the flat wall portions of said Z-shaped members, a second channel forming an outer periphery of said door, said second channel comprising a pair of C-shaped members, each of said C-shaped members having a wall portion parallel to the wall portion of said Z-shaped members and two spaced inwardly directed parallel side flanges perpendicular to its wall portion, the second outwardly directed side flanges of said Z-shaped members each being fixedly secured to a channel side flange of one of said C-shaped members in back-to-back relation, said first ply of material being freely removable from said first channel through said second channel, and a second ply of preformed building material nested within said second channel between the wall portions of said C-shaped members and securing said first ply in said first channel.

3,189,952
MULTIPLE MOLD CORE FORMING APPARATUS
Ronald M. Rouse, Portland, Oreg., assignor to Dependable Shell Core Machines, Inc., Portland, Oreg., a corporation of Oregon
Filed Sept. 4, 1962, Ser. No. 221,124
7 Claims. (Cl. 22—10)

1. In apparatus for forming molded articles, a mounting, a series of separable molding devices disposed in a row and mounted side by side on said mounting, said series including a nontraveling molding device and plural movable devices positioned to one side thereof, means including complementary molding surfaces defining mold cavities between adjacent pairs of the movable devices and between the nontraveling device and the movable molding device nearest to it, and operating means for displacing said movable devices by shifting them in one direction away from said nontraveling device, said operating

means including a positive connection with each of said movable devices operable on actuation of the operating

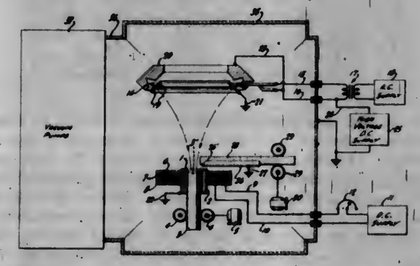


means to produce a spacing between adjacent movable devices and between the movable devices and said non-traveling device.

3,189,953
ELECTRON-BEAM FURNACE WITH MAGNETICALLY GUIDED BEAM

Hugh R. Smith, Jr., Piedmont, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

Filed May 27, 1960, Ser. No. 32,215
2 Claims. (Cl. 22—57.2)

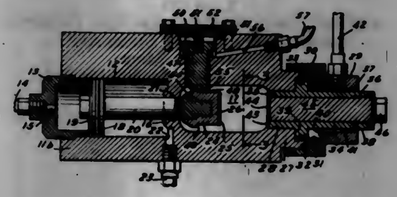


1. An electron-beam furnace for melting material and casting ingots therefrom in a high vacuum, comprising an annular, metal mold having a vertical axis and having open top and bottom ends, means for continuously cooling said mold to solidify molten material therein, means for progressively withdrawing the solidified material through the bottom end of the mold as an ingot of progressively increasing length, an annular electromagnet winding extending coaxially around said mold, a direct-current power supply connected to supply energizing direct current to said winding, the so-energized winding providing a magnetic field having a vertical axis of symmetry and having flux lines converging into said mold through its open top end, an annular electron gun vertically aligned above the top end of the mold and spaced therefrom by a large distance relative to the diameter of the mold, said gun comprising a thermionic cathode consisting of a horizontal loop of wire and connections for supplying heating current therethrough, an accelerating electrode closely spaced below said cathode, a focusing electrode closely spaced above said cathode, means for maintaining said accelerating electrode at substantially the same electric potential as said mold, and means for maintaining said cathode and focusing electrode at substantial negative potentials relative to the accelerating electrode, said focusing electrode and cathode and accelerating electrode being shaped and aligned to form a hollow, conelike, electron beam directing downwardly and converging inwardly, being everywhere substantially parallel to said converging magnetic field, a vacuum tank enclosing said electron gun and said mold and the space therebetween, means for continuously evacuating said tank to a high vacuum, a substantially horizontal feed trough extending inwardly toward and having a discharge end closely adjacent to the open top end of said mold, means for maintaining said trough at substantially the same electric potential as said mold, and means for feeding material to be melted through said feed trough into one side of the electron beam entering the mold, whereby the material emerging from the discharge end of the feed trough is melted away by the electron beam, the so-melted material falls into the open top end of the mold and there solidifies atop the ingot progressively forming therein, the electron beam entering the mold bombarding and heating the material therein to maintain a molten pool atop the solidified ingot, the magnetic field guiding the electrons from the gun into the mold even though gaseous matter evolved from melting and molten material may provide a copious supply of ions within the space between the electron gun and the mold.

3,189,954
APPARATUS AND METHOD FOR PRODUCING THIN FILM MATERIALS

Meyer Piet, Arcadia, Calif., assignor to Futurecraft Corporation, City of Industry, Calif., a corporation of California

Filed June 11, 1962, Ser. No. 201,440
12 Claims. (Cl. 22—67)

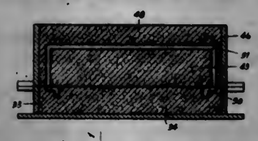


1. Apparatus for producing thin films of sheet-like material, comprising:
(A) anvil means;
(B) hammer means supported for movements between a spaced position and engaged position with respect to said anvil means;
(C) means for latching said hammer means in said spaced position;
(D) means for energizing the latched hammer means;
(E) means for introducing a quantity of material while in a molten state into a non-contacting position in the space between said hammer means and anvil means, whereby upon release of the latching means, the molten material will be deformed between the hammer means and anvil means into a thin film; and
(F) elements carried by the anvil means and hammer means for rapidly conducting heat from the material during deformation thereof.

3,189,955
METHOD OF MAKING CAST BOXES

Marshall G. Zavertnik, Manchester, Mo., and Clarence H. Rongey, Granite City, Ill., assignors to Kilark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Filed Aug. 26, 1963, Ser. No. 304,452
7 Claims. (Cl. 22—133)

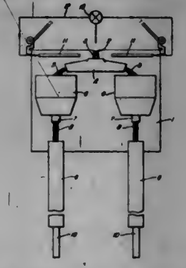


1. In a method of molding a box that has a bottom, generally vertical side walls, and an overhanging flange on the side walls extending laterally therefrom, the steps of: making a flange mold by placing a drag onto a match plate having a rigid flange pattern thereon, which flange pattern has the shape of the box walls including the flange and above the same, and packing sand into the drag around the pattern and against the plate, removing the plate and drawing the pattern, thereby providing a mold having a flange cavity opening into its upper surface; forming in a box-like pattern a green sand core shaped like the interior side and bottom walls of the box below the flange, applying the same onto the flange mold to rest on the same inside the flange cavity, and drawing the pattern off the core; forming a side and bottom wall mold by packing sand around the sides and end, a rigid box-like pattern in a cope, which pattern is shaped to form the outside of the side and bottom walls of the box and drawing the pattern to leave the cavity in the cope; inverting the said cope over the previously formed core and applying it to the flange mold, in proper alignment therewith; the side wall mold and the core within it forming a side wall cavity that registers with and opens into the flange cavity, the steps set forth forming a mold for a box having unitary bottom, side and flange walls.

3,189,956
PRODUCTION OF EFFERVESCING STEEL

Harold A. Longden, Dore, Sheffield, England, assignor to Concast A.G., Zurich, Switzerland, a Swiss company

Filed May 8, 1962, Ser. No. 193,243
Claims priority, application Great Britain, May 9, 1961, 16,908/61
7 Claims. (Cl. 22—200.1)



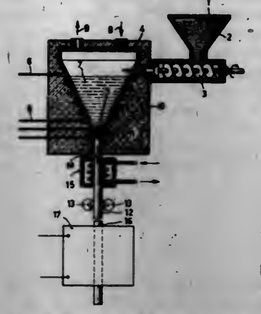
1. A process for the continuous casting of effervescent steel to produce sound rimmed steel comprising
(1) over-deoxidizing molten steel and
(2) reoxidizing said molten steel by directing at least one jet of oxygen on said molten steel and supplying an amount of oxygen sufficient to correct the over-deoxidized condition, and then
(3) pouring said steel into a continuous casting mold wherein said steel effervesces and solidifiies forming a sound rimmed steel.

3,189,957
METHOD OF MANUFACTURING PERMANENT MAGNETS BY CONTINUOUS CASTINGS

Anthonie Izaak Lesteljn, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 27, 1963, Ser. No. 261,255
Claims priority, application Netherlands, May 4, 1956, 206,892; Feb. 15, 1963, 289,045
3 Claims. (Cl. 22—200.1)

1. In the manufacture of directional-grain magnetically-anisotropic permanent magnets from an alloy of about 15 to 42% cobalt, about 10 to 20% nickel, about 6 to 10% aluminium, and the remainder principally iron, the steps of forming a melt of the above alloy, closing with a starting rod one end of a mold defining a tubular-shaped freezing zone having the cross section of the magnets, continuously feeding the melt to the open end of the mold, and moving the starting rod axially with a substantially constant speed of less than about 0.1 mm./sec. while withdrawing substantially all of the heat of solidification in the direction of movement to thereby progressively solidify the melt while in the solidification zone and a rod-shaped body is formed having cross-sectional dimensions for which, after magnetization, the rod has a $(BH)_{max}$ of at least 6.0×10^6 gauss-oersted.



3,189,958
METHOD OF BONDING INSERTS INTO CASTINGS

Albert G. Newbold, Lima, Pa., assignor to Trainer Associates Inc., New Castle, Del., a corporation of Delaware

Filed May 12, 1961, Ser. No. 109,559
11 Claims. (Cl. 22—202)



1. A method of retaining an insert of refractory hard carbide material within a metal casting formed in the cavity of a mold which comprises the steps of positioning said insert within a foamed organic body disposed within said cavity, arranging suitable vents within said mold to permit gas to be expelled in front of advancing molten metal, pouring the molten metal into said mold, temporarily shielding said insert from said advancing molten metal with said foamed body, decomposing said foamed body into a gas which is compatible with the formation of a tight intimate bond between the cast material and said insert by contacting said foamed body with said molten metal, and holding said insert in position while it is contacted and bound into said molten metal whereby a tight intimate bond is formed between the contacting surfaces of said insert and said metal without cracking said insert.

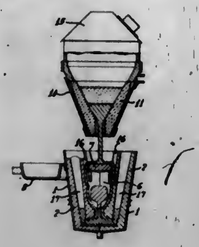
3,189,959
ALUMINOTHERMIC WELDING OF RAILS

Wilhelm Ahlert and Ernst Krüger, Essen, Germany, assignors to Elektro-Thermit G.m.b.H., Essen, Germany, a corporation of Germany

Filed Dec. 27, 1963, Ser. No. 335,460
Claims priority, application Germany, Oct. 8, 1963, E 25,641
4 Claims. (Cl. 22—204)

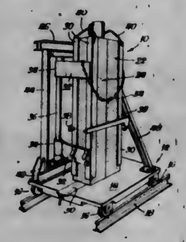
1. A method for the aluminothermic welding of rail ends in which the welding temperature is attained solely by the use of aluminothermically produced steel which comprises forming a melt of the steel in a re-usable casting crucible, tapping the crucible and pouring the steel as

a metallurgically balanced melt into a casting mold surrounding the rail ends in a manner such that the steel flows into the mold only on both sides of the upper curvatures of the rail heads, laterally and downwardly past



the lower edges of the rail heads, angularly towards the rail webs, and then to the rail bases, the initial portion of the steel passing the rail bases, and then filling the mold with steel.

3,189,960
MOLD AND SUPPORT THEREFOR
Jerald L. Bright, Hammond, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Sept. 16, 1963, Ser. No. 309,225
3 Claims. (Cl. 22—209)



1. A movable car having a support deck, a frame work mounted on the car, a pair of mold parts, means pivotally mounting the mold parts on the frame for movement about vertical axes into and out of interengagement, said mold parts including a pair of transversely spaced posts, means for adjustably moving the posts toward and away from each other, said mold parts having concavities which, when the molds are in interengagement, form a cavity opening downwardly through the mold, said car deck having a pouring opening in register with the mold cavity when the mold parts are in interengagement, and slide cut-off means between the mold and the car deck for cutting off the cavity from the pouring opening.

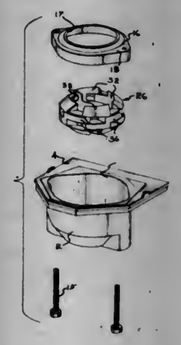
3,189,961
HOSE CLAMP
Richard V. Heller, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed Sept. 17, 1963, Ser. No. 309,450
1 Claim. (Cl. 24—20)

A hose clamp consisting of a substantially flat member formed from a resilient material, a first end of said member, a plurality of tongue receiving slots formed in said first end with each slot spaced from adjacent slots longitudinally of said member, a second end of said member, said ends turned upon one another to dispose said member in the form of a circle, a bent section of said member intermediate said first and second ends, a first portion of said bent section lying in the circumference of the circle so formed, a second portion of said bent section directed away from the center of the circle so formed, said second end forming an angle with said second portion, an end receiving slot formed in said first and second portions



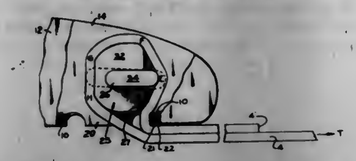
through which said first end is projected, a tongue formed in said bent section projecting toward the center of the circle so formed and within one of the slots of said plurality with said second end overlying said member and the resiliency of said member maintaining said tongue within said tongue receiving slot and said second end being resiliently pivotable about said bent section toward said member whereby said tongue is removed from said tongue receiving slot.

3,189,962
CLAMPING DEVICE
Ronald G. Hartwell, Hummelstown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 7, 1962, Ser. No. 236,000
3 Claims. (Cl. 24—126)



1. A clamping device for clamping an object having a generally circular cross-section, said device comprising a plurality of interfitting elements, each of said elements comprising an axial element of a cylinder having an even number of arcuate fingers extending laterally from its sides, the fingers on one side of said element being offset along the length of said element from the fingers of the other side and the fingers on each side being spaced apart by a distance equal to the thickness of said fingers, the end finger on each side having a segmental conical camming surface, said elements being arranged around a common axis with the fingers of each part being interdigitated with the fingers of adjacent parts, said segmental conical surfaces forming a camming surface at each end of said clamping means whereby, upon movement of complementary conical camming surfaces against said conical surfaces, said parts are moved relatively inwardly towards said common axis to reduce the inside diameter of said clamping means.

3,189,963
ADJUSTABLE STRAP CONNECTOR
Alden Y. Warner, Farmington, Wilbur J. Craven, East Hartford, and John Stacherl, New Britain, Conn., assignors to The Capewell Manufacturing Company, Hartford, Conn., a corporation of Connecticut
Filed Dec. 29, 1961, Ser. No. 163,255
5 Claims. (Cl. 24—196)



3. An adjustable strap connector comprising a frame including a generally planar wall terminating in a transversely extending stationary gripping face, a cross-member extending transversely of said frame and presenting a transversely extending convex movable gripping face toward said stationary gripping face, means mounting the cross-member to the frame for limited pivotal movement and for movement toward and away from the stationary gripping face, with the bottom surface of said movable gripping face moving in a plane above and closely overlying the stationary gripping face, said cross-member having a periphery providing a plurality of discontinuous convex and flat surfaces and being pivotable and movable toward said stationary gripping face upon the application of tension to a strap received around the cross-member and between said gripping faces to wedge and compress the strap between said gripping faces and to cause the periphery of the cross-member to engage and provide a plurality of slip-resisting inflections in the strap.

3,189,964
SLIDE FASTENER STRINGER
Walter Otto Galonska, Frankfurt am Main, Germany, assignor to Talon, Inc., Meadville, Pa.
Filed July 7, 1961, Ser. No. 122,512
9 Claims. (Cl. 24—205.13)



1. A stringer of slide fastener elements comprising a continuous strand of filamentary material defining a geometrically periodical series of spaced concatenated loops, said loops having a common median plane, each loop including two legs with each leg thereof disposed on opposite sides of said plane, a bend lying substantially transverse to said common median plane and joining the two legs of each loop at one end thereof and a concatenation intersecting the legs at the other end thereof, and locking means extending from the bends into the spaces between adjacent loops.

3,189,965
FASTENING DEVICES
Frank Parsons, Shoreham-by-Sea, England, assignor to Nyelet Limited, Shoreham-by-Sea, Sussex, England, a British company
Filed Apr. 16, 1963, Ser. No. 273,420
Claims priority, application Great Britain, Apr. 16, 1962, 14,692/62
5 Claims. (Cl. 24—221)

1. A fastening device for attachment to a ring, eyelet or like member, which device comprises

(a) a trunk,

(b) a lateral projection at one end of the said trunk, the said end of the trunk with the said projection being able to pass through the said member,

(c) a recess in the said end of the trunk, the recess being directed towards the said lateral projection,

(d) a key pivoted and held to the trunk at the said end, said key being manually operable between a first position in which the key rests in the recess and substantially overlies the trunk, in which position the said end of the trunk is free to pass through the said member, and a second position in which the key also rests in the recess but projects beyond the side of the trunk, in which position the end of the trunk is prevented from passing through the said member by the said projection and the key, the part of the key by means of which the key is manually

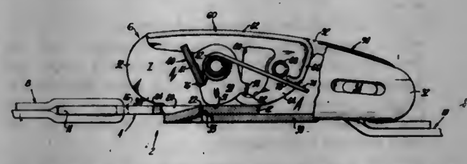


operated projecting upwardly from the said end of the trunk, the upward slope of the said part of the key at one side of the trunk being greater than the upward slope of the said part of the key at the other side of the trunk and being such that when the key is in the first position it coincides substantially with the locus of the inner circumference of the said member when the said member is swung from a position in which it is held in contact with the said lateral projection and encircling the said trunk, to a position in which it is retained under the said projection and has its plane substantially parallel to the axis of the trunk,

(e) means for resiliently holding the key to the trunk, and

(f) means whereby the key may be attached to an object to which the said member is to be fastened.

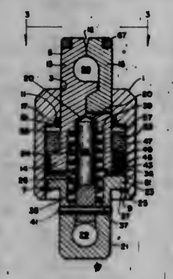
3,189,966
SAFETY BELT BUCKLE
Wilbur J. Craven, East Hartford, Conn., assignor to The Capewell Manufacturing Company, Hartford, Conn., a corporation of Connecticut
Filed Apr. 25, 1963, Ser. No. 275,625
2 Claims. (Cl. 24—230)



1. In a safety belt buckle formed of sheet metal a female coupling member including a base and a pair of upstanding side walls extending from the base dimensioned to receive a male coupling member between the side walls and overlying said base, said base having at least one latching shoulder formed thereon adapted to cooperate with a latching shoulder on the male coupling member for latching the male and female coupling members together, a transversely extending lock element pivotally mounted between said side walls above said base and having downwardly depending portions at the ends thereof providing cam surfaces for engaging the male coupling member for locking the members in latched relationship, a pivotally mounted operating lever having

downwardly depending side walls nested with said lock element between the side walls of the female coupling member and pivotable about a point longitudinally spaced from the pivot of the lock element, spring means biasing the lock element and operating lever in opposite angular directions towards the base, means interconnecting the lock element and the operating lever including a laterally extending tab on at least one of the downwardly depending portions of the lock element and an aperture in the adjacent side wall of the operating lever receiving said tab and forming a cam surface dimensioned to engage said tab to pivot said lock element in one angular direction to an unlocking position away from the base when said operating lever is pivoted in an opposite angular direction to an open position.

3,189,967
SAFETY DEVICE
Robert G. Walker and Robert B. Taylor, Fort Wayne, Ind., assignors to Robert F. Brooks, Fort Wayne, Ind.
Filed Jan. 21, 1963, Ser. No. 252,914
8 Claims. (Cl. 24—265)



1. A restraining device having an automatically releasable operation, and comprising:
(a) anchor means adapted for securement with a fixed structure,
(b) force-transmitting means adapted to be operatively connected to a restraining means for holding a person against relatively free movement,
(c) a severably releasable member adapted to transmit loads between said force-transmitting means and anchor means,
(d) damping means providing time-delayed relative movement between said force-transmitting means and anchor means when said releasable member is severed,
(e) and resilient spring means adapted to automatically effect time-delayed displacement between said anchor means and force-transmitting means when said releasable member is severed, said force transmitting means including means for automatically releasing the restraining means upon the completion of the time delayed displacement.

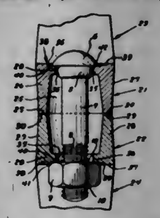
3,189,968
STRAP CLAMP
Wolfgang Henning, 3538 Niedermarsberg, Westphalia, Germany
Filed Oct. 2, 1962, Ser. No. 227,840
Claims priority, application Germany, Aug. 30, 1962, H 46,798
5 Claims. (Cl. 24—274)

1. A strap clamp, comprising an elongated band provided with toothed portion having an array of longitudinally spaced transversely extending teeth; a bracket secured to said band and adapted to accommodate the toothed portion of said band, said bracket having a pair of upstanding lateral walls on opposite sides of said band, said walls being provided with aligned first slots inclined toward said band in a band-tightening direction opposite the movement of said toothed portion relatively to said bracket, said walls being formed with a pair of aligned second slots longitudinally spaced from said first slots rearwardly thereof in said direction and inclined toward said band in said direction, said second slots being open at corresponding rearward edges of said lateral walls; a screw-support member provided with pivot means at a forward end thereof slidably and rotatably received



in said first slots to permit rotation of said member about said pivot means, said member being provided at a rearward end thereof with a pair of laterally extending portions removably receivable within said second slots; and a screw journaled in said member and shiftable therewith into engagement with said threads upon insertion of said laterally extending portions within said second slots whereby said first and second slots direct said screw into progressive engagement with said band upon rotation of said screw in a band-tightening sense.

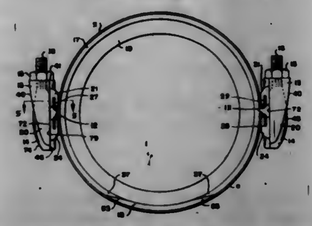
3,189,969
CENTERING OF BOLTS FOR COUPLING HOUSINGS
Harry M. Sweet, East Hanover Township, Morris County, N.J., assignor to Victaulic Company of America, Union, N.J., a corporation of New Jersey
Filed June 19, 1962, Ser. No. 203,491
4 Claims. (Cl. 24—279)



1. In coupling housing construction, a cylindrical housing formed of a plurality of segments of cylindrical sections, bolt pads extending directly outwardly from each of said segments one at each end thereof, each pad on one segment overlying a pad on the adjacent segment, said bolt pads being formed with bolt receiving walls extending transversely with respect to said segments, said walls being formed with oval holes therethrough centered with respect to said bolt pads and extending transversely thereof and each of said walls being formed with circular recesses extending thereinto from the surfaces thereof remote from the ends of said segments, said recesses being centered with respect to said holes and extending outwardly beyond the borders thereof, bolts passed through said bolt holes of said walls of each pair of overlying segments, each of said bolts having a head engaged with one wall of a pair thereof having an oval neck mated to the oval of the hole in said one wall and being seated therein, and said head overlying said neck, having a circular outline greater than the outline of said hole but smaller than the circle of said recess, said head being seated in said recess in said one one wall and being engaged with the bottom thereof and each of said bolts having a nut threadedly engaged with the end thereof opposite said head, said nut having a

symmetrical portion thereof received within the recess in the other wall of said pair for centering said nut with respect to said recess whereby said bolt pad carrying said wall engaged by said nut is aligned with said bolt pad carrying said wall engaged by said head.

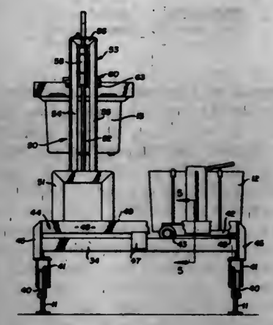
3,189,970
CLAMPING SEALING APPARATUS
Vernon L. Barr, 3382 W. 8th Ave., Vancouver, British Columbia, Canada
Filed Aug. 16, 1961, Ser. No. 131,918
4 Claims. (Cl. 24—284)



1. A sealing clamp comprising a band arrangement adapted to be clamped around an object such as a pipe or the like, said band arrangement having adjacent side edges that are co-extensive and in spaced adjacency when said band arrangement is clamped on an object, a first elongated lug fixedly connected near an inner end thereof to one side edge and extending over the other side edge, said first lug having a free outer end and an inner end having an abutment face, tensioning means on said free outer end, abutment surfaces beside each side of the inner end of the first lug fixedly secured to the latter, a second lug connected near an inner end thereof to said other side edge, said second lug comprising a pair of bracing legs spaced apart sufficiently to permit the first lug to fit therebetween, an abutment surface between the legs near the inner end thereof against which the abutment face of the first lug rests, said legs extending over and having free ends bearing against the abutment surfaces of the first lug, and a shoulder formed by the inner ends of the legs substantially normal to the length thereof against which said tensioning means bears to tighten the clamp, said tensioning means being free to move across said shoulder, said tensioning means drawing the band edges together and drawing the abutment face of the first lug against the abutment surface between said legs, whereby the abutment surface resists the torque action of said first lug as tension is applied to at least minimize transverse shearing stresses in the free outer end of the first lug and said tensioning means drawing the abutment face of the extension legs of said second lug against the abutment surfaces of said first lug whereby the abutment surfaces resist the torque action of said second lug as tension is applied, the effective geometrical centers of said abutment surfaces on said first lug and the effective geometrical center of said abutment surface on said second lug being substantially equi-distant from the center of the space between said side edges to minimize the tendency of the clamp to pivot about a point midway between said edges.

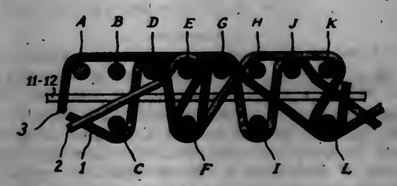
3,189,971
SYSTEM FOR SLIP CASTING HOLLOW CERAMIC SHAPES
Fred L. Derror, Lucas, Ohio, assignor to Mansfield Sanitary, Inc., Perrysville, Ohio, a corporation of Ohio
Filed May 6, 1963, Ser. No. 278,345
15 Claims. (Cl. 25—29)

1. A movable carriage for use in a slip casting system comprising, a frame, vertically spaced first and second supporting means on said frame, at least one of said supporting means movable vertically with respect to said second supporting means, at least one of said supporting means movable laterally with respect to the other said supporting means, a plurality of molds supported on one said supporting means and a plurality of cooperatively interfitting cores supported on the other of said supporting means in balanced pairs by connecting means, relative lateral movement between said supporting means vertically



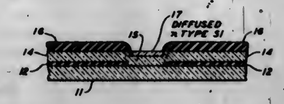
registering and laterally separating said cores and molds, and relative vertical movement between said supporting means when said cores and molds are in register selectively inserting said cores into and extracting said cores from said molds, said connecting means for the cores in any pair being the same length but the lengths of the connecting means for said pairs being different so that vertical separation of said supporting means progressively releases the pairs of cores from their respective molds.

3,189,972
PROCESS FOR THE MANUFACTURE OF ELASTIC FABRIC
Gérard Jules Antoine Marie Joseph Vernier, Flers-Lille (Nord), France, assignor to Etablissements Paul Vernier-Valentin & Fils, Roubaix, France, a company of France
Filed June 20, 1960, Ser. No. 37,469
Claims priority, application France, June 26, 1959, 17,439, Patent 1,238,301; Feb. 22, 1960, 819,157
1 Claim. (Cl. 28—72)



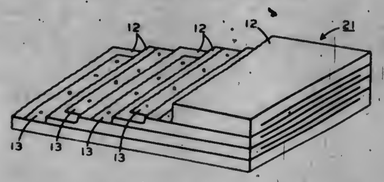
A process for producing an elastically stretchable fabric, comprising the steps of: weaving a fabric with main and auxiliary warp threads on a weaving apparatus with the auxiliary warp threads being on a separate beam from the main warp threads, the auxiliary warp threads being woven in a tightly tensioned condition and the main warp threads being loosely woven in a sinuous pattern having pronounced undulations, removing said fabric from the weaving apparatus and submitting said fabric to a fixing treatment to fix the undulations in the main warp threads, and finally removing the auxiliary warp threads from the fabric.

3,189,973
METHOD OF FABRICATING A SEMICONDUCTOR DEVICE
Roger Edwards, Gillette, John E. Iwersen, Morristown, Howard H. Loar, Madison, and Ian M. Ross, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 27, 1961, Ser. No. 154,958
1 Claim. (Cl. 29—25.3)



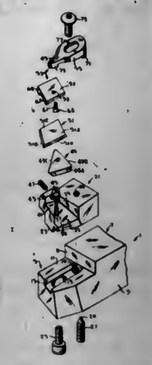
In the process of fabricating a semiconductor signal translating device the steps of masking the surface of a body of signal crystal silicon of one conductivity type except for a limited area thereof by coating a portion of said surface with a film of silicon oxide, vapor depositing on said masked surface a layer of said semiconductor material of opposite conductivity type, said layer having a single crystal portion where deposited substantially over said limited area of unmasked surface and a polycrystalline portion where deposited over said oxide, said single crystal portion of said deposited layer defining a PN junction with said silicon body over said limited area, forming a second PN junction at the surface of said single crystal portion of said layer by providing thereat another region of said one conductivity type, making low resistance electrical connection to each of said conductivity type regions including applying a low resistance electrode to the surface of said polycrystalline deposited layer.

3,189,974
PROCESS FOR CAPACITOR
John H. Fabricius, Stamford, Vt., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Apr. 12, 1962, Ser. No. 186,914
6 Claims. (Cl. 29—25.42)



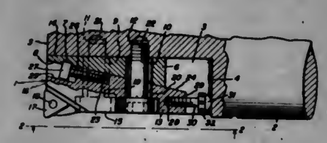
1. A process for forming capacitors comprising building up a plurality of alternate layers of dielectric material and metal electrodes, said layers being built-up as follows: forming a continuous surface of dielectric material; applying to said surface a plurality of suitably spaced long, narrow metal electrode strips; applying to the top of said strips a second continuous surface of dielectric material; applying to said second dielectric layer a plurality of suitably spaced long, narrow metal electrode strips, these strips being coextensive length-wise with the first strips and offset width-wise to a distance corresponding to the distance between said first strips; continuing said process, applying alternate layers of dielectric material and metal electrode strips until the desired number of layers have been built-up; thereafter forming said layers into long, narrow segments by cutting along lines corresponding with the outside length edges of the cooperating electrodes; converting said segments into a plurality of individual units by cutting across the width thereof; applying a coating of dielectric material about the individual units to cover the metal edges exposed by said last cutting; thereafter firing the individual units to maturity followed by exposing the electrode ends of said units and attaching leads thereto.

3,189,975
CUTTING TOOL HOLDER
Raymond J. Hammers, Peoria, Ill., assignor to Trasco Inc., Peoria, Ill., a corporation of Illinois
Filed July 1, 1963, Ser. No. 291,866
11 Claims. (Cl. 29—96)



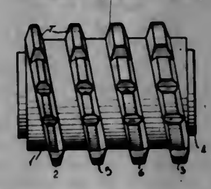
1. A tool holder for an insert cutting tool having a tool seat, an insert cutting tool positioned on said seat and having a cutting edge adjacent the forward end, a chip breaker having generally flat parallel faces disposed in face-to-face contact with the face of the cutting tool opposite the seat and having a rear edge opposite the cutting edge of the tool, a hold-down member for the chip breaker in face-to-face contact with the face of the chip breaker opposite the cutting tool and having an overlapping portion contacting said rear edge of the chip breaker, an adjusting member in contact with the overlapping portion to move the hold-down member and chip breaker toward the cutting edge of the tool, and means to clamp the hold-down member onto the chip breaker including a clamp arm pivotally carrying the hold-down member on one end and having an elongate slot adjacent the other end, and a bolt extending through said slot to secure the clamp arm onto the tool holder and permitting adjustment of the clamp arm along the elongate slot.

3,189,976
ADJUSTABLE CUTTING TOOLHOLDER
William Pichril, Berkley, Mich., assignor to General Electric Company, a corporation of New York
Filed Dec. 27, 1963, Ser. No. 333,958
1 Claim. (Cl. 29—96)



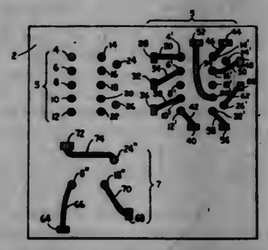
A cutting tool comprising
a toolholder having a longitudinal groove provided at one end thereof to receive a cartridge, and an adjustable cartridge mounted therein, said adjustable cartridge comprising
first and second complementary members having oppositely tapered surfaces, one of said members being adapted to hold a cutter bit at one extremity thereof,
first adjusting means threadably engaged with one of said members and coupled in a fixed position with said other member for effecting longitudinal movement of one of said members relative to the other of said members along said tapered abutting surfaces to effect transverse movement of the other of said members,
second adjusting means threadably engaged with one of said members and abutting a portion of the toolholder in which the cartridge is mounted to effect longitudinal movement of said first and second members,
said first and second adjusting means being accessible while the cartridge is mounted in the toolholder and providing fine adjustment of said cutter bit in both a transverse and longitudinal direction by threadable adjustment of said first and second adjustment means, and
holding means for retaining said first and second members in adjusted position on said toolholder.

3,189,977
PRODUCTION OF TOOTHED GEARING
Brian Alfred Shotter, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed June 3, 1963, Ser. No. 285,063
Claims priority, application Great Britain, June 6, 1962, 21,899
1 Claim. (Cl. 29—103)



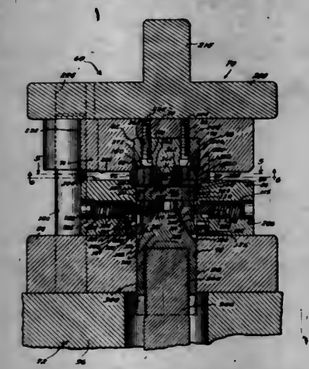
A gear cutting hob for the production of parallel axis toothed gears, comprising a central shaft portion, an outer cutter thread portion progressing helically along the longitudinal axis of the hob, the thread portion having a constant pitch and flank profile and at a given radius from the axis, having an axial thickness which increases continuously from one end of the hob to the other.

3,189,978
METHOD OF MAKING MULTILAYER CIRCUITS
Harold W. Stetson, Croydon, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,664
5 Claims. (Cl. 29—155.5)



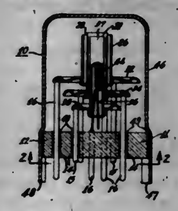
1. A method of manufacturing an electronic circuit comprising a monolithic ceramic body and interconnected electrical conductors bonded to said ceramic, portions of said conductors being disposed in different layers, said method comprising preparing a plurality of dry thin films each comprising finely divided ceramic particles and a heat volatile binder therefor, forming said conductors as thin metallic layers upon selected surface areas of at least two of said films, forming holes penetrating said last mentioned films and said conductors at desired locations, filling said holes with a paste including metallic particles in a heat volatile binder, assembling said films in a stack such that said conductors and holes are in a desired relationship, and then heating said stack for a time and at a temperature sufficient to volatilize said binders and sinter said ceramic particles and said metals into a monolithic structure.

3,189,979
METHOD AND APPARATUS FOR SIMULTANEOUSLY FORMING SPHERICALLY CONTOURED BEARING SEATS AND LOADING SLOTS IN BEARING HOUSINGS
Gerald Wayne Richmond, Montgomery, Ill., assignor to Stephens-Adamson Mfg. Co., a corporation of Illinois
Filed Apr. 9, 1963, Ser. No. 271,813
17 Claims. (Cl. 29—148.4)



16. The method of making a rolling bearing which includes taking an annular blank formed from ductible material, swaging the blank about a former to simultaneously form a spherically contoured annular bearing seat within said blank and diametrically opposed outer bearing race loading slots in one side wall of said seat, removing the former from within the housing blank, and then applying an assembled ball bearing assembly to said seat by inserting same through said loading slots and turning same into the plane of said seat.

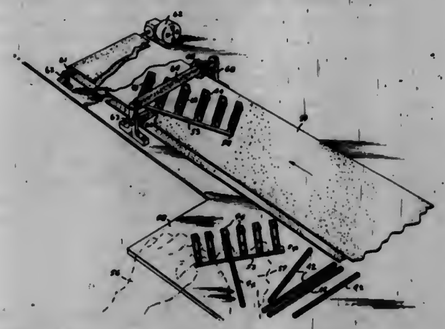
3,189,980
APPARATUS FOR AND METHOD OF FABRICATING ELECTRON TUBE STEMS
Harry V. Knauf, Jr., Mountainside, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 13, 1960, Ser. No. 35,664
7 Claims. (Cl. 29—155.5)



1. The method of assembling an electron tube stem comprising a wafer of insulating material having a plurality of conductors extending therethrough including the

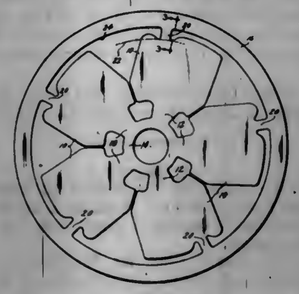
steps of simultaneously differentially longitudinally positioning the ends of all of the wires of an array of parallel wires in a predetermined mutual longitudinal relationship, simultaneously severing said wires in a common plane spaced from their said ends to provide an array of parallel conductors of different lengths, and thereafter, without disrupting the mutual arrayal of said conductors, moving said conductors for simultaneously and individually aligning said conductors with a like array of parallel bores in said wafer, and then disposing said conductors through said wafer bores.

3,189,981
METHOD OF ASSEMBLING MAGNETIZED RUBBER-LIKE STRIPS IN PLASTIC CONFIGURATIONS
Robert I. Genin, New Rochelle, and Murray D. Zak, Plainview, N.Y., assignors to Child Guidance Toys, Inc., Bronx, N.Y., a corporation of New York
Filed May 25, 1961, Ser. No. 112,725
2 Claims. (Cl. 29—155.59)



1. A method of forming magnetic configuration which comprises the steps of simultaneously molding a plurality of outline configurations having marginal outlines, closed tops and open bottoms, and simultaneously molding integral wells of uniform size and shape interiorly of each configuration and open at the bottom of the configuration, simultaneously forming horizontal ribs along the sides of each well and transverse ribs along the underside of the top of the configuration within the well, the sides of the well being slightly expandible, said configurations being connected as a unit by integral mold scrap, preparing a roll of an elongated strip of magnetized relatively brittle rubber-like material having grooves in the opposite sides thereof and of a thickness less than the depth of a well and a width slightly in excess of the width of a well, scoring the material at spaced points to provide break lines for individual magnets of a length substantially equal to the length of the well, severing the elongated strip at predetermined intervals to form readily handled lengths comprised of a plurality of individual magnet lengths, inverting the unit comprised of the plurality of molded configurations still connected by mold scrap on a work surface, grasping a number of lengths of individual magnets in the hand, with the break lines uppermost, inserting an end of the length into a well slightly separating the side walls thereof, breaking off the end individual magnet having its end in the well at the score line, repeating the process until all the wells of the connected configurations are filled, passing the unit comprising the connected configurations between pressure rolls to complete the seating of the individual magnets in the individual wells, wtih the bases of the magnets seating on the ribs formed on the underside of the configurations and the tops of the magnets being flush with the tops of the walls of the well, and the horizontal ribs of the side walls of the wells fitting into the grooves in the sides of the magnet, and finally breaking the completed configurations from the mold scrap.

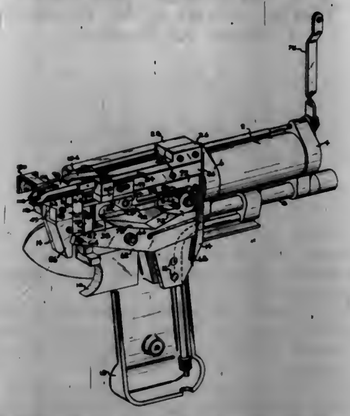
3,189,982
METHOD OF MAKING INTEGRAL FAN AND SLINGER RING
Kenneth A. Merz, Cornwall, Conn., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut
Filed Oct. 3, 1961, Ser. No. 142,639
8 Claims. (Cl. 29—156.8)



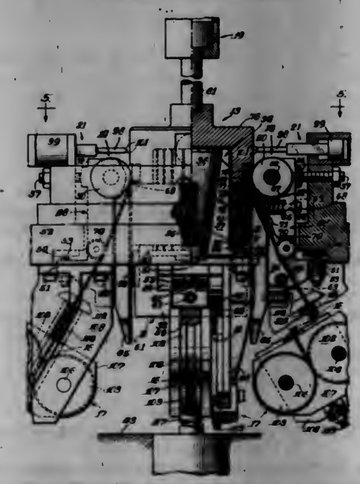
1. A method of making an integral fan and slinger ring which includes a plurality of similarly pitched circumaxially spaced air moving blades, a slinger ring disposed about the blades, a plurality of connecting tabs extending respectively between outer edge portions of the blades and the slinger ring, and a hub section substantially offset axially with respect to the tabs and connected with inner edge portions of the blades; said method comprising the steps of providing a one-piece sheet metal blank which has selected portions severed therefrom so as to define all the aforesaid elements in connected relationship but in substantially flat form and which has tabs with dimensions between their inner and outer end portions which are greater than the radial distance between said end portions, and forming said blank to pitch the blades and to offset the hub section thereof axially with respect to the tabs, said last mentioned step including the displacement of said tabs in such manner than the differences between their said end portion-to-end portion dimensions and the said radial distance between their end portions are employed to accommodate axial movement of the hub section without excessive deformation and rupture of the aforesaid elements.

3,189,983
TOOL FOR MAKING ELECTRICAL CONNECTIONS
Edwin Floyd, Jr., Lower Paxton Township, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 9, 1963, Ser. No. 250,300
4 Claims. (Cl. 29—203)

1. In an apparatus for electrically connecting a conductor to a terminal post by means of a terminal clip, said clip being axially movable onto said post and having an open seam extending axially along one side thereof, said apparatus comprising, a mandrel conforming to the internal cross-section of said clip, a clip pusher reciprocable along a path extending over said mandrel and beyond one end of said mandrel, a transfer slide having means on its end for holding a connector clip, said transfer slider being normally disposed on said path and between said mandrel and said clip pusher when said clip pusher is in its retracted position, said transfer slide being movable to a clip loading station beside said path, means movable with, and actuated by, said clip pusher for moving said transfer slide from its normal position to said clip loading station during forward movement of said clip pusher and after said clip pusher has moved past said one end of said transfer slide, means for loading a clip onto said one end of said transfer slide at said clip loading station, and means for returning said transfer slide to said normal position after retraction of said clip pusher.

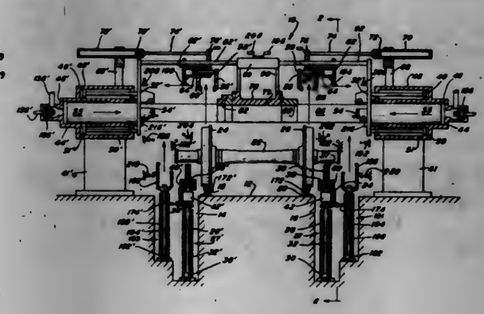


3,189,984
LAMINATED CORE BANDING APPARATUS
William E. Haldey, Edward J. Schaefer, and Lee J. Lakes, Bluffton, Ind., assignors to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana
Filed Dec. 30, 1958, Ser. No. 783,987
7 Claims. (Cl. 29—205)



4. Apparatus for banding a stack of slotted core laminations to form a core, said apparatus comprising a base member adapted to receive the laminations in generally aligned stacked relation with their slots forming a banding strip receiving groove, banding means for applying a strip of banding material to the stack in the groove, means for moving said base member from a loading position on one side of said band applying means through an intermediate position where the band engages the stack and then to a final position in the opposite side of said banding means in a direction parallel to the groove, said banding means having a guide member adapted to project into the groove as said base member moves from said loading position to said intermediate position, said guide member and said base member coacting to further align and to preserve the alignment of the laminations, a head member facing said base member, and means for moving said head member toward said base member to engage the stack at said intermediate position and compress the stack against said base member, said banding means also having means for deforming the strip into engagement with the groove as said base and head members and the stack move from said intermediate position to said final position, whereby to lock the laminations together; said guide member comprising an elongated body portion and a longitudinally extending rib positioned on the body portion to enter the groove, the width of said rib being substantially equal to the width of said groove; said rib comprising a carbide insert having an end projecting toward said loading position and beveled to cam the laminations into alignment as the base member and the stack move toward said intermediate position.

3,189,985
AUTOMATIC DEMOUNTING PRESS FOR REMOVING WHEELS FROM AXLE WHEEL SETS
Bernhard A. Hoffmann, Media, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 26, 1962, Ser. No. 205,296
9 Claims. (Cl. 29—208)



1. A demounting press comprising a pair of elevators for elevating an axle wheel set to a demounting position, centering pins mounted for reciprocation toward and away from the ends of an axle, jaw means lying in a plane above the plane of the centering pins for clampingly holding wheels on a wheel set, a resistor block means between the centering pins, means for selectively reciprocating the centering pins toward the resistor block means so that a wheel may be separated from its axle by engagement with the resistor block means, and means for reciprocating the jaw means so that the distance between the wheels is greater than the length of the axle on which the wheels were formerly press-fitted, and means for supporting the foregoing in cooperat ve relationship.

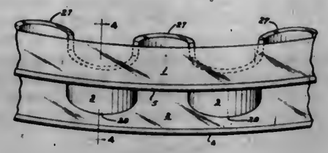
3,189,986
METHOD OF KEYING TOGETHER AN ANNULAR PISTON RING AND A BACK-UP ELEMENT
George C. Mayfield, 8518 Antler Drive, Richmond Heights, Mo.
Filed Nov. 13, 1963, Ser. No. 323,450
7 Claims. (Cl. 29—404)

1. The method of keying together an annular cylinder-engaging piston ring and a back-up element for delivering an expansive force to said ring, said method comprising,

(a) providing said back-up element with a series of

knife edge bearing points to engage the inner periphery of said piston ring and transmit expansive forces thereto, said knife edge bearing points being more resistant to wear against said inner periphery than the latter is resistant to wear against the former,

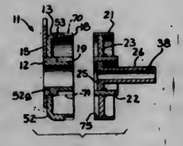
(b) mounting said piston ring and said backup element in a piston ring groove with said knife edge bearing points in engagement with the inner periphery of said ring, said ring having sufficient clearance to permit axial movement of the inner periphery of the ring relative to said knife edges within said groove,



(c) assembling said piston within a cylinder,

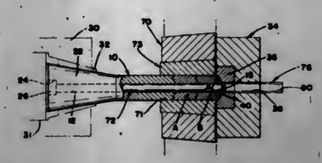
(d) and operating said piston in said cylinder until the knife edges have worn notches in the inner periphery of the ring to a depth sufficient to restrain relative circumferential movement between said ring and said back-up element during normal operation of said piston in said cylinder.

3,189,987
METHOD OF MAKING MAGNETIC CLUTCHES AND BRAKES
John S. Paterson, Torrington, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1963, Ser. No. 271,993
7 Claims. (Cl. 29—416)



1. The method of manufacturing magnetic torque transmitting clutches, or the like, having cooperating stationary and rotary members, comprising the steps of press fitting a tubular member having a bore into a circular opening in a cupped member such that the cup is coaxial and radially spaced from said tubular member, press fitting a nonmagnetic annular member between said tubular member and said cup, press fitting a flanged tube into the bore of said tubular member so that the flange and the annular member are disposed in substantially the same plane, physically severing the assembly so formed along a transverse plane intermediate the annular member and the end of the cup into two subassemblies, forming at least one of said subassemblies to receive the other in telescoping relation, placing an annular coil within one of said subassemblies, reassembling the subassemblies into an operative assembly so that one of said subassemblies is rotatable relative to the other, and fixing a power receiving driving member to one of said subassemblies to complete the clutch.

3,189,988
METHOD OF MAKING COPPER TUBING
Edward W. Crane, Canton, Ohio, assignor to E. W. Bliss Company, Canton, Ohio
Filed Apr. 18, 1961, Ser. No. 103,868
17 Claims. (Cl. 29—420.5)



1. A method of preparing and extruding a sintered shape adapted for use in an extrusion press to form a wrought metallic object substantially 100% dense comprising the steps of:

providing a powder of a ductile metal having a limited number of particles less than 10 microns and having an average particle size distribution in the order of 12 microns;

mixing a quantity of lubricant in said powder to lubricate the particles and to form a lubricant-powder mixture having a substantially uniform powder size distribution;

compacting the lubricated particles to form a porous green compact having a uniform density in the order of 18% of full density but substantially less than 100% dense;

sintering said green compact in a reducing atmosphere at a sintering temperature for said metal powder and for a period of time sufficient to cause inter-particle bonding, the rate of heating being such as to first volatilize the lubricant whereby when the sintering temperature is reached substantially all of said lubricant is removed; and

extruding the sintered shape at an extrusion pressure capable of further compressing it to full density whereby the wrought object formed is free of pin holes or internal voids.

3,189,989
DISPERSION HARDENING OF LEAD
Denis Keith Ebdon, Harlow, Essex, England, assignor to Associated Electrical Industries Limited, London, England, a British company
No Drawing. Filed May 20, 1963, Ser. No. 281,754
3 Claims. (Cl. 29—420.5)

1. A method of producing strengthened lead which comprises extruding lead oxide coated lead particles through a die and then rolling the extruded lead along and across the direction of extrusion.

3,189,990
METHOD OF PREPARING SMALL DIAMETER TUBES AND THE LIKE
William H. Metzger, Jr., Rockville, Md., assignor to the United States of America as represented by the Secretary of Commerce
Filed Feb. 25, 1963, Ser. No. 261,253
2 Claims. (Cl. 29—423)

1. The method of preparing an article having an extended, capillary passageway therein, which comprises:

(a) forming said article on a long, thin core having a configuration corresponding to the configuration of said passageway,

(b) inserting said article and embedded core into a rigid vessel containing a reagent in which said core is more dissolvable than said article,

(c) immersing said article and embedded core in said reagent,

(d) sealing said vessel in a rigid manner,

(e) heating said sealed vessel to about 150° C. to raise the temperature and pressure inside said sealed vessel to greatly increase the solubilities of the reactants of said reagent and said embedded core, and



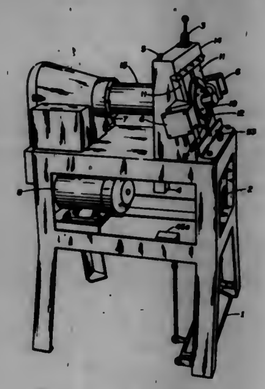
continuing said heating until said core is completely dissolved,

(f) cooling said sealed vessel,

(g) unsealing said vessel, and

(h) removing said article from said vessel.

3,189,991
TUBE JOINING DEVICE
Cecil E. Moore, Cedar Rapids, Iowa
Filed May 15, 1962, Ser. No. 194,941
7 Claims. (Cl. 29—437)



1. A machine for forming rotatable angle joints in cylindrical material comprising: means for holding said cylindrical material, said holding means including die means positioned at a predetermined oblique angle to the longitudinal axis of said cylindrical material and having an elliptical contour corresponding to but rotated 90° from the contour of said cylindrical material to the plane of intersection with said die means, means for forming a first bead on the surface of said cylindrical material conforming to said die means, means for cutting said cylindrical material along one edge of said bead, means for forming a second bead in said cylindrical material within said first bead after the cut edge of said cylindrical material is advanced and juxtaposed to said first bead, thereby forming a rotatable joint between said first and said second pieces of cylindrical material.

3,189,992
PIPE FORMING
John L. Wilson, Jr., Pittsburgh, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania
Filed June 7, 1961, Ser. No. 115,486
2 Claims. (Cl. 29—477.7)



1. The method of forming pipe or the like from skelp which comprises

cold forming the skelp transversely into an arc of from 180° to 270° with the edges spaced from each other,

moving the skelp continuously through a path in an axial direction with the edges facing in an upward direction,

at a first portion of said path heating said formed skelp to above 1600° F. predominantly by radiant heat directed toward the outside and through the space between said edges directed toward the interior of said formed skelp,

moving said edges closely adjacent to each other,

at another portion of said path heating said edges with hot, non-oxidizing products of combustion that blanket the formed skelp,

moving the heated edges together to weld them to each other thus forming a pipe, and

at another portion of said path heating the entire pipe to a degree to equalize its temperature and relieve the welding strains.

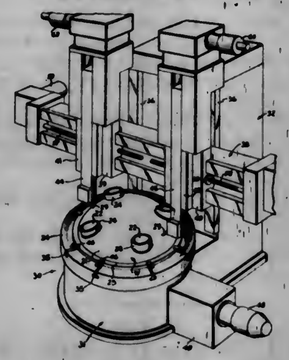
3,189,993
METHOD OF PREPARING A METAL DOWEL TO RECEIVE MOLDED RESILIENT MATERIAL
John B. Whitted, Kenilworth, and John B. Whitted, Jr., Glenview, Ill., assignors to Whitso, Inc., a corporation of Illinois
Continuation of application Ser. No. 57,733, Sept. 22, 1960. This application June 4, 1964, Ser. No. 372,656
2 Claims. (Cl. 29—527)



1. The method of preparing a ladies' heel lift comprising the steps of: enlarging one end of a wire stock to provide an enlarged first flange at the extremity of one end of the stock and an enlarged head contiguous with the flange and having spaced portions extending longitudinally of the dowel with the outer extent of said spaced portions generally aligned with the outer extent of said first flange and the outer extent of the intermediate portions of the head between said spaced portions spaced inwardly from the outer extent of said flange, and a second flange positioned between said head and said wire stock joining the head to the wire stop, said second flange having a continuous outer extent spaced outwardly from the periphery of the wire stock, but spaced inwardly from the outer extent of said intermediate portions; drilling lengthwise into said head past said first flange with a drill of sufficient diameter to remove material only from the interior of said head including the intermediate portions of said head, breaking through the outer extent of said intermediate portions to form a hollow head with lateral passages adjacent said first flange between the exterior and interior of the head, said spaced portions of said head connecting said first flange and said second flange and forming a cage structure for receiving a resilient material within and

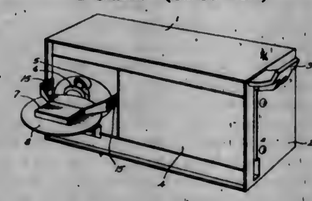
around said head beyond said second flange; and molding resilient material about the cage structure so that the molded resilient material will pass between the spaced portions and on either side of said first annular flange and about said second annular flange so that twisting of the material from the dowel is restricted by the passage of the resilient material through the spaced portions and axial pull of the material from the dowel is restricted by said first flange.

3,189,994
METHOD AND APPARATUS FOR MACHINING NOZZLE CLUSTERS AND THE LIKE
Gordon H. Jones, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed July 17, 1962, Ser. No. 210,474
6 Claims. (Cl. 29—558)



1. A method of machining workpieces having a plurality of upstanding barriers thereon, said method comprising the steps of forming a tool relief groove around the perimeter of each said barrier, machining the areas between said barriers by rotary planing while oscillating the workpiece, and machining the remaining areas that are free of barrier interference by continuous turning.

3,189,995
LID HOLDING MEANS FOR CAN OPENERS
William R. Hicks, Spencerport, and Harry Kronson, Jr., Kendall, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 29, 1962, Ser. No. 241,013
1 Claim. (Cl. 30—6.4)



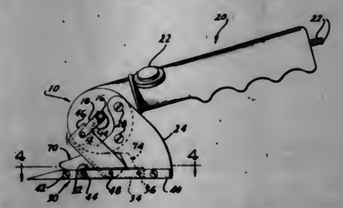
A can opener comprising:
(a) a housing,
(b) said housing having a wall with a pair of horizontally-spaced vertical slots therein,
(c) a lid-holding device comprising:
(aa) a magnet,
(bb) a sheet metal bracket for supporting said magnet in a position adjacent the lid of a can,
(cc) said bracket being formed from a single blank, three edges of said blank being disposed at right angles to form flanges for engaging the sides of said magnet,
(dd) two of said edges being opposite each other and including support arms extending therefrom,
(ee) said arms including hooked end portions for reception in said slots and engagement with said wall adjacent said slots,
(ff) said arms further including stop portions adjacent said hooked end portions for engagement with said wall to limit downward movement of said bracket whereby said lid-holding device may be pivotally attached to said wall for floatingly supporting said magnet, and
(d) means secured to said housing for removing the lid of the can.

3,189,996
NAIL CLIPPER WITH PROTECTIVE GUARD
William D. Casey, Jr., 3570 Autumn Ave., Memphis, Tenn.
Filed Nov. 6, 1963, Ser. No. 321,818
3 Claims. (Cl. 30—28)



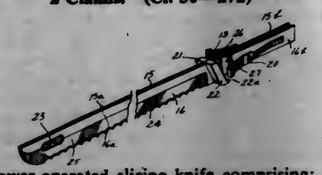
1. A nail clipper having a pair of elongated leaves secured together adjacent one end and resiliently separated at an opposite end, confronting knife edges projecting from said leaves on one lateral side thereof adjacent said opposite end, a pressure bar movably mounted at said opposite end of the leaves for displacement between a closed and an actuating position, and a guard projection extending from said pressure bar laterally aligned with the confronting knife edges for protective shielding thereof when the pressure bar is in the closed position.

3,189,997
HAND PORTABLE CUTTING DEVICES
George W. Mount, 576 Leyden Road, Greenfield, Mass.
Filed Apr. 23, 1963, Ser. No. 275,115
4 Claims. (Cl. 30—228)



1. A hand portable cutting device for sheet materials and the like comprising a frame having a foot member and a shearing edge on the upper surface of the foot, a motor fixed to said frame in elevated relation to the foot and having an armature shaft positioned transversely thereof with crank means at the end of said shaft overlying said shearing edge in spaced relation thereto, a blade member having upper and lower ends with a cutting edge therebetween, said blade extending upwardly from below said shearing edge and at its lower end having a pivotal mounting connection on said foot underneath said shearing edge and at its opposite upper end being connected to said crank means for the application of driving movement of the blade at said upper end.

3,189,998
CUTTING BLADES FOR POWER-OPERATED KNIFE
James W. Belsheim, Spencerport, and Carl J. Stephens, Batavia, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 29, 1963, Ser. No. 298,303
2 Claims. (Cl. 30—272)



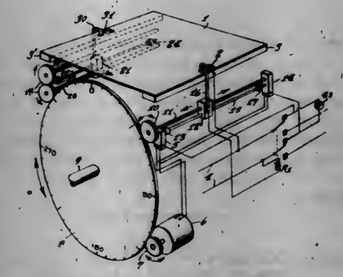
1. A power-operated slicing knife comprising:
(a) drive means including a pair of connecting elements adapted to be connected to a source of power for reciprocation of said elements;
(b) a pair of integral knife blades, said blades being adapted for connection to said drive means;
(c) each of said blades comprising:
(aa) a rearwardly extending tang portion,
(bb) a substantially flat forwardly extending cutting portion, the cutting portions of said blades being held in sliding contact with one another;
(cc) an offset portion connecting said cutting portion and said tang portion so that said tang portion lies generally parallel to but laterally offset from said cutting portion.
(dd) a lower edge on said cutting portion extending downwardly below a horizontal plane passing through the lower edge of said tang portion, and
(ee) a lower edge on said offset portion inclined upwardly from said lower edge of said cutting portion to the lower edge of said tang portion so that liquids reaching the lower edge of said offset portion flow downwardly and forwardly to drip from the lower edge of said cutting portion thereby preventing the flow of liquid along the lower edge of said tang portion to said drive means.

3,189,999
HIGH SPEED DENTAL DRILL
David Reiter, 5104 Skillman Ave., Woodside, N.Y.
Filed June 13, 1962, Ser. No. 202,226
2 Claims. (Cl. 32—27)



1. A high speed dental drill comprising a casing, a turbine mounted therein, a chuck secured to said turbine, a shaft on which said turbine is fixed, bearings in said casing on which the ends of said shaft are rotatably mounted, a pump, a tube leading from said pump to said turbine and a return tube from said turbine to said pump, said pump and tubes and turbine being filled with lubricating oil, one of said bearings is a jewel, the other bearing being an O-ring surrounding said chuck, a collar and an end cap on said chuck, said O-ring being held between said collar and cap.

3,190,000
MAP CONTROLLED DEVICE FOR FEEDING CORRECTIONS TO A GUIDANCE SYSTEM
Manuel Castro Fernandez, Canillojas, Madrid, Spain, and Carlos Cudell Goetz, Avenida Luiz Bivar 36–5E, Lisbon, Portugal
Filed May 8, 1961, Ser. No. 108,328
2 Claims. (Cl. 33—1)



1. An automatic system for change of maps and for feeding of corrections into position indicator instruments used in navigation comprising a guidance navigation system map having contact means thereon, mechanism for feeding corrections to the guidance navigation system, motor means driving said mechanism, said contact means serving to effect the stoppage of said motor means, said contact means being located on the map with reference to the compass orientation of the map, the reference line of an indicator, the magnetic declination prevailing at the point of navigation and any other given correction proper to the system, a spindle and a contact pointer thereon, the motor means operable on the mechanism to feed corrections to the guidance navigation system also operating said spindle to cause displacement of the contact pointer, the latter pointer upon encountering a contact means on the map along which said pointer travels allowing passage of current to a conductor plate mounted on the opposite side of the map causing a stoppage of said correction motor at the precise moments when said correction attains the desired value, a second spindle and means to drive same from the first spindle and a second contact pointer operable thereby, said second spindle driving means effecting simultaneous movement with the first spindle but which effects a faster rate of displacement of the second contact pointer with respect to the first, causing the second contact pointer to explore a large segment of the map while the first pointer performs the same function over a shorter space of the map, and thus subdividing the exposed contact means corresponding to the first contact pointer into separate contact means in the area scanned by the second contact pointer to produce a higher degree of correcting precision.

3,190,001
GUIDELINE-MARKER DRAWING INSTRUMENT
Earl F. Sorensen, 2403 Fenton St., Edgewater, Colo.
Filed Jan. 20, 1964, Ser. No. 338,818
2 Claims. (Cl. 33—41)

1. A drawing instrument comprising a plurality of leg members formed of resilient material, means join-

ing said leg members each to each whereby the resilience of said leg members exerts a spring force tending to bias said leg members for movement in opposite directions each to each, and an index locking mechanism for holding said leg members in selective adjusted positions as required for various drawing operations, said locking mechanism comprising a bar member extending between said leg members and having a plurality of notches longitudinally disposed along the length of



said bar, an operator member on said bar, a catch element on one of said legs for engagement selectively with one of said notches, and a raised element on the other of said legs positioned to act against the operator member of said bar at a point that is non-concentric with respect to said bar whereby the spring force of said legs exerts an eccentric force against said bar for holding said notches and catch in desired selective engagement.

3,190,002
ARRANGEMENT FOR ALIGNING SIGHTS
Willis H. Bliss, 201 S. Dianthus St., Manhattan Beach, Calif.
Filed June 6, 1960, Ser. No. 34,301
5 Claims. (Cl. 33—46)



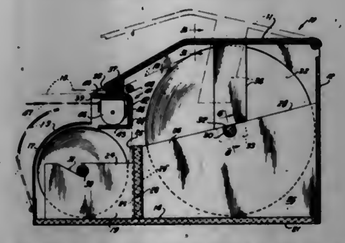
1. In a device having longitudinally displaced sighting members having indicia alignable in a sighting operation with a predetermined point of observation, a device for determining such alignment comprising means for transmitting a beam of light, said means including laterally spaced apertures remote from said indicia, said laterally spaced apertures having their axes aligned with said point of observation only when said indicia of said longitudinally displaced sighting members are substantially aligned with said point of observation.

3,190,003
RETICLE FOR OPTICAL INSTRUMENT
Clifford P. O'Brien, San Jose, Calif., assignor to Swift Instruments, Inc., Boston, Mass., a corporation of Massachusetts
Filed Mar. 22, 1962, Ser. No. 181,698
3 Claims. (Cl. 33—50)



1. A range-finding reticle for a telescopic optical instrument comprising a transparent reticle disk and visible indicia carried by the disk, said indicia comprising a horizontal cross line,
a first rectangular area having a greater height than width and having its upper edge coincident with said horizontal line,
a second rectangular area having one edge coincident with the lower edge of said first area, having a greater height than width, and being wider than said first area,
and a third area having at least three straight edges one of which is coincident with the lower edge of said second area, and being wider than said second area, the width of each of said areas and the height of said first and second areas each independently denoting the range to a target having a certain known corresponding dimension when the observed image of said target dimension is the same size as said area dimension, whereby the observer can selectively estimate the range to a target by visually comparing a dimension of its image with one of said dimensions of a said area.

3,190,004
DISPENSING APPARATUS FOR STRIP MATERIALS
Burl T. Land, 414 Cockrell Hill Road, Dallas 11, Tex., and Thomas G. Land, 7830 Claremont, Dallas 28, Tex.
Filed Dec. 10, 1962, Ser. No. 243,460
1 Claim. (Cl. 33—127)

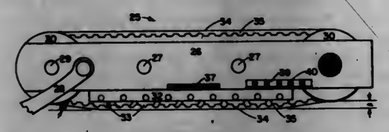


In a dispensing cabinet for strip materials in rolls having front and rear compartments therein, each divided transversely into a series of parallel elongated receptacles, each capable of receiving a roll of said strip material, and a hinged cover for each compartment, the improvements comprising: an elongated housing arranged along and coextensive with the upper front portion of said rear compartment and the upper rear portion of said front compartment and between the respective covers of said compartments, a guide bar arranged along and supported by said elongated housing and having upper and lower series of elongated apertures therein for receiving said strips of material dispensed therethrough from said rolls, a tensioning rod for said strips of material arranged along and spaced rearwardly from said guide bar between said series of apertures therein, a casing for a retractable measuring tape supported in said elongated housing below said guide bar and slidable longitudinally thereof, and a retractable tape.

3,190,005
CABLE MEASURING MACHINE
Charles W. Smith, Baltimore, and Victor I. Kimmel, Whitemarsh, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed June 18, 1962, Ser. No. 203,098
6 Claims. (Cl. 33—134)

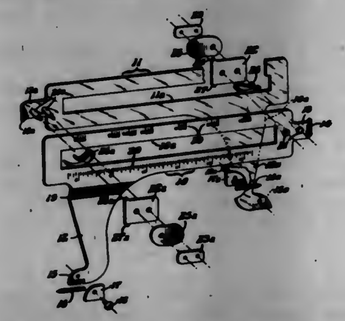
1. In a cable measuring machine cooperating with an external means for propelling a cable to be measured therethrough, an improvement comprising:
(a) a base;
(b) roller means connected to said base in parallel alignment to support said cable thereon;

(c) a floating carriage having a pair of rollers thereon, said carriage also including an endless belt disposed on said pair of rollers in a manner preventing any slippage from occurring therebetween, said carriage being connected to said base so that said cable may be disposed between said belt and said roller means with sufficient traction therebetween to reduce slippage therebetween to a minimum as said cable is propelled through said machine;
(d) a second means acting against the inside of said



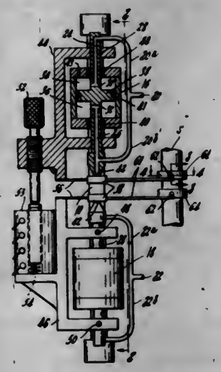
belt to urge a substantial section of said belt between said pair of rollers into contact with said cable, said section of said belt being displaced by said second means a greater distance from a plane passing through the axes of rotation of said pair of rollers than a section of said belt passing over one of said pair of rollers is displaced from the axis of rotation of said one of said pair of rollers; and
(e) means for measuring the distance traveled by said belt as said cable passes through said machine causing said belt to rotate on said pair of rollers.

3,190,006
BRAKE DRUM GAUGE
William T. Madeira, Lancaster, Pa., assignor to K-D Manufacturing Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1962, Ser. No. 190,860
6 Claims. (Cl. 33—143)



1. In a brake drum guage adapted to measure on one scale the interior diameter of a brake drum, including the depth of pin-point width grooves in the drum,
(A) a pair of flat-surfaced, elongated, longitudinally slotted main components each having an inner face and an outer face, reversely arranged and aligned opposite each other so that the inner faces of said main components are in opposing relationship, each main component having an integrally formed laterally projecting rigid arm at one end and a tongue-like projection at the other;
(B) said laterally projecting arms having pins at their respective distal ends, said pins having sharp conical heads and being rigidly positioned so as to be oppositely disposed in axial alignment and in a plane parallel to the slots in the main components for engaging the inner surface of a brake drum at diametrically opposite points;
(C) indicator means affixed to the tongue-like projection of one of said main components for coordination with a graduated scale affixed to the surface and along the slot of the other main component;
(D) and holding means for urging said main components against each other so that the mutual friction between said main components maintains said main components firmly in place with respect to each other within their range of mutual movement when no component of force is applied to either end of said components, but which further permits said main components to be slidingly moved with respect to each other merely by the application of oppositely directed force upon either end of said main components, said holding means including mounting elements affixed to the tongue-like projection of each main component and projecting through the longitudinal slot of the other main component, and friction plates affixed to said mounting elements and held in slidable engagement with the outer face of said other main component and across said slot,
whereby the depth of pin point width grooves in a brake drum may be accurately measured by varying the distance between said pinheads by infinitely small amounts merely by sliding one main component with respect to the other main component and whereby the diameter of said brake drum from one edge of the drum to its other edge may be measured in successive pinhead width intervals in a single continuous insertion of the gauge into the brake drum.

3,190,007
EXTENSOMETER
Joseph P. De Nicola, North Quincy, and William P. Hansen, Jr., Braintree, Mass., assignors to Instron Corporation, Canton, Mass., a corporation of Massachusetts
Filed Nov. 8, 1962, Ser. No. 236,225
5 Claims. (Cl. 33—147)



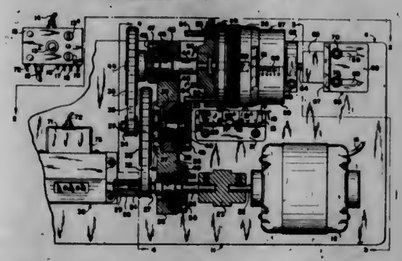
1. An extensometer comprising a support, a pair of gas servos carried by said support, each of said servos including a mounting portion and a nozzle, separate means responsive to movement of separate locations on a specimen to produce a tendency to vary the size of a gas gap from each of the respective nozzles, said servos being adapted to maintain a constant gap whereby the respective mounting portions are moved to correspond with movement of said separate locations, and signalling means carried by said mounting portions for signalling relative movement therebetween.

3,190,008
LINEAR MEASURING DEVICE
William Weiss, Buffalo, N.Y., assignor to Tele-Scale, Inc., Cheektowaga, N.Y., a corporation of New York
Filed Nov. 20, 1962, Ser. No. 238,971
4 Claims. (Cl. 33—161)



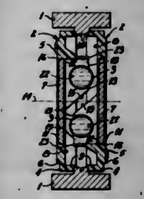
1. A linear measuring device comprising a pair of elongated metal bars arranged in face-to-face relation to each other, means connecting said bars for longitudinal sliding extensible movement with reference to each other, at least one of said bars having a longitudinal channel in its face opposing the other bar and the other of said bars having a longitudinal channel in its face remote from said one of said bars whereby said channels are visible from the same side of the measuring device, an elongated scale made of sheet material in each of said channels and extending substantially the full length of said bars, means retaining said scales in said channels, at least one of said bars being provided with another longitudinal channel in its side remote from its first mentioned channel, another scale of sheet material having its edges slidingly retained in undercuts at the sides of said another channel to be extensible from the end of said another channel, said another channel being provided with a longitudinal rib along its center and integral with the bar containing said another channel, and said another scale being of concavo-convex form in cross section with its concave face facing said rib.

3,190,009
MICROMETER OPERATING MECHANISM
Frank G. Zagar, Euclid, Ohio, assignor to Zagar, Inc., a corporation of Ohio
Filed Apr. 26, 1962, Ser. No. 190,469
12 Claims. (Cl. 33—166)



1. Mechanism for operating a rotatable micrometer head comprising in combination, a support, mounting means carried by the support for mounting the micrometer head for rotation relative to a first reference position, an electric motor carried by the said support, a driving shaft rotatable by said motor, a counter having an actuating shaft extending therefrom, connecting means operatively connecting said driving shaft and said actuating shaft for actuating the counter in direct correspondence with the rotation of the driving shaft to indicate the rotational progress of said driving shaft from a second reference position, a driven rotational member, coupling means coupling said micrometer head and said driven rotational member to permit axial movement of the micrometer head relative to said driven rotational member and to rotate the micrometer head in accordance with the rotation of said driven rotational member, switch mechanism operable by movement of the counter for controlling the energization of the said motor in accordance with a preset number of rotations of the counter, and power-transmitting means operatively connecting said driving shaft and said driven rotational member to drive the driven rotational member upon rotation of said driving shaft by said motor, said power-transmitting means including fixed-ratio reduction means to cause rotation of the driven rotational member at a slower rate of speed than the rotation of said driving shaft whereby the rotational progress of the driving shaft indicated by said counter corresponds with a proportional rotational movement of the driven rotational member and with the position of the micrometer head coupled therewith, said connecting means being independent of said reduction means whereby the actuating shaft of the counter is directly actuated by the driving shaft.

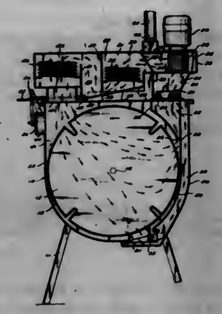
3,190,010
SPIRIT LEVEL
Lawrence A. Johnson, Milwaukee, Wis., assignor of one-half to George Johnson, Mequon, Wis.
Filed Oct. 9, 1961, Ser. No. 143,871
9 Claims. (Cl. 33—211)



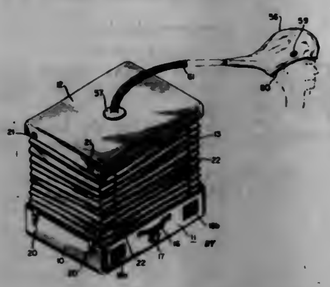
8. For use in a level having a tubular spirit vial:
a pair of spaced case portions having opposed windows, and
a pair of slightly flexible vial clamps disposed within at least one of said case portions,
each clamp having a pair of opposed spaced legs disposed and adapted to circumferentially wrap around a vial in tight surface contact therewith,
each leg terminating so that the ends of each leg pair and a vial contained therebetween are disposed inwardly from the adjacent window, and said legs are spaced apart a distance slightly less than a vial diameter so that the vial may be snapped into the clamps.

3,190,011
CLOTHES DRIER WITH VAPOR REMOVAL
Sebough S. Shields, Cleveland Heights, Ohio, assignor to Noubar S. Abdalian, South Euclid, and Robert V. Abdalian, Cleveland Heights, Ohio
Filed Dec. 5, 1960, Ser. No. 73,609
15 Claims. (Cl. 34—77)

1. In a clothes drier having a housing defining a drying chamber and a tumbler journaled in the chamber for rotation therein, the combination of, a chamber inlet opening and a spaced pair of chamber outlet openings in the housing, air conducting conduit means connecting the chamber outlets to the chamber inlet, a blower disposed in said conduit means, said conduit means also including a condensing cavity, an expansion cavity, and a heating cavity, said condensing cavity having an inlet and an outlet of substantially smaller cross section, said condensing cavity outlet being the expansion cavity inlet, said expansion cavity having a greater cross section than the condensing cavity outlet, the expansion cavity outlet being the heating chamber inlet, said expansion cavity having a condensed solvent trap positioned between its inlet and outlet openings to prevent the condensed solvent passing into the heating cavity, and one of said chamber outlets being above and the other below a horizontal plane passing through the axis of the tumbler rotation.



3,190,012
PORTABLE HEATING APPARATUS
Ruben L. Gray, 2635 Oakford St., Philadelphia 24, Pa.
Filed May 1, 1961, Ser. No. 106,671
3 Claims. (Cl. 34—151)



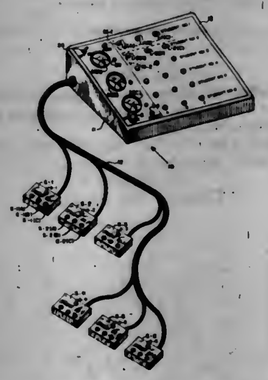
1. Portable heating apparatus comprising: casing means which includes a first top rigid wall portion and a second bottom rigid wall portion adapted to be connected to said top portion to form therewith an enclosed carrying case and detachable therefrom, folding closure wall means connected between said first top rigid wall and said second bottom rigid wall portions to form an adjustable enclosure, said folding closure wall means having a portion adapted to be opened and closed whereby articles may be inserted and withdrawn from said enclosure, said bottom wall portion having apertures therein to permit air to enter and also including a channel to receive said closure means when folded, extensible pantograph means within said enclosure which is connected to said first and second rigid wall portions to rigidly support said first top wall portion in a predetermined vertically spaced relation to said second bottom rigid wall portion when said folding closure wall means is unfolded, and electrical heater means within a housing situated in said enclosure for heating the atmosphere therein, said housing having air inlets formed therein through which passes air entering said bottom wall portion through said apertures, said housing also including a top perforated portion which permits the escape of air heated therein, said top and bottom rigid wall portions being constructed to encase said folding wall, pantograph, and electrical heater means when said carrying case is closed.

3,190,013
MNEMOTECHNIC DEVICE AND METHOD OF OPERATION THEREOF
Francois Cuttat, 10 Ave. Dapples, Lausanne, Vaud, Switzerland
Filed Oct. 4, 1962, Ser. No. 228,397
Claims priority, application Switzerland, Oct. 10, 1961, 11,791/61
1 Claim. (Cl. 35—35)



As an article of manufacture, a mnemotechnic device comprising, a plurality of slips adapted to be withdrawn from a receptacle wherein they are concealed from the view of the user thereof, each said slip having inscriptions thereon, each said slip being adapted to be easily detached from a single sheet containing a plurality of said slips, each of said slips provided on the front face with data to be interpreted by memory and, on the rear face, with the indication of the exact interpretation of the data carried on the front face of the slips, and means for differentiating between the front and rear faces thereof by mere touch and at random to facilitate rapid memorization of the inscription appearing on said each slip, said means comprising a smooth surface on one face of each of said slips and a rough surface on the opposite face of each of said slips.

3,190,014
TEACHING AID
William H. Rhodes, Baltimore, Md., assignor to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland
Continuation of application Ser. No. 95,673, Mar. 14, 1961. This application Mar. 31, 1964, Ser. No. 356,697
2 Claims. (Cl. 35—48)



1. Apparatus to provide an instructor or observer of a class of students with an indication of their response to a multiple choice question comprising:
a student station for each student;
each station having a different actuatable student answer switch identifiable with each choice;
actuation by a student of the student answer switch identifiable with a given choice constituting the student's selection of said given choice as his response;
an instructor's console;
a different matrix of lamps on said console identifiable with each student station;
each lamp in a matrix being identifiable with and indicative of a different choice and being operatively connected in illumination responsive relation to its

respective said answer switch independently of actuation of any of the answer switches of a different said station and matrix of lamps;
separate impedance associated with each individual student answer switch;
all of the impedances associated with answer switches identifiable with the same choice being equal;
a different meter on the console identifiable with each choice and having a movable indicator whose displacement is a measure of current flowing therethrough;
means for connecting said student answer switches to a source of E.M.F.;
the console lamps identified with a particular choice being arranged in parallel circuit arrangement with one another and in series with the associated respective said console meter;
means for connecting each respective said console choice indicator lamp in closed circuit relation with a source of E.M.F. in response to actuation of the respective said student answer switches associated with the respective said particular choice;
means operatively connected with each said student answer switch and responsive to actuation of the respective said answer switch to connect the respective associated impedance in closed circuit relation with a source of E.M.F. and the respective meter identifiable with the respective particular choice for effecting an incremental meter indication as a function of the total number of answer switches actuated for any given choice, said means for connecting said answer-switch-associated impedances and associated meters in closed circuit relation with a source of E.M.F. and said means for connecting the console choice indicator lamps in closed circuit relation with a source of E.M.F. comprising a plurality of relays, each student answer switch having a separate said relay with an electroresponsive actuating element connected with the respective said student answer switch.

3,190,015
SKI BOOT
Hermann Binder, Tuttlingen, and Egon Fridrich, Wurmlingen near Tuttlingen, Germany, assignors to Rieker & Co., Tuttlingen, Germany
Filed Apr. 12, 1962, Ser. No. 186,944
Claims priority, application Germany, Apr. 27, 1961, R 30,191
2 Claims. (Cl. 36—2.5)



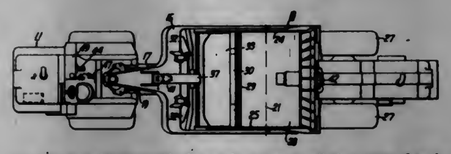
1. A ski boot having an upper and an outer sole; said outer sole having, in the region of the heel of the boot, a first raised up bead-shaped portion extending along the lower portion of the outside of said upper and forming a heel protective cover; said outer sole having, in the region of the toe of the boot, a second raised up bead-shaped portion extending along the lower portion of the outside of said upper and forming a toe protective cover; said outer sole having, also in the region of the toe of the boot, a third portion forming a forwardly and laterally projecting flat ledge portion; said outer sole, including said first, second and third portions thereof, being an integral entity molded to said upper so as to be firmly combined therewith.

3,190,016
SHOES PROVIDED WITH INTERMEDIATE SOLES
Nikolaus Hansjosten, Pluwig, Kreis Trier, Germany
Filed Apr. 8, 1964, Ser. No. 358,186
Claims priority, application Germany, Jan. 9, 1956, R 19,195
7 Claims. (Cl. 36—2.5)



1. A shoe comprising an upper, a flexible intermediate sole secured to said upper, said intermediate sole having an underside portion and being defined at its entire outer periphery by a marginal built up and reinforced portion, a wearing sole of sheet material of substantially uniform thickness secured to the underside of said intermediate sole, the margins of said wearing sole being flexed upward and anchored into the marginal portion of the intermediate sole so that the outer edge surface of said marginal reinforced portion of the intermediate sole conforms with the curvature of the wearing sole, the margin of said wearing sole further being formed with front and rear laterally extending portions turned upward and into said intermediate sole.

3,190,017
SCRAPER CONTROL SYSTEM WITH MEANS TO LOCK FLUID IN ONE END OF THE BOWL RAISING MOTOR
Harvey W. Rockwell, Cedar Rapids, Iowa, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 3, 1962, Ser. No. 241,877
3 Claims. (Cl. 37—129)



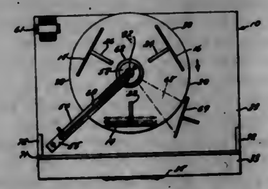
1. In a self-propelled earth mover of the type having an operator's station, a material handling bowl which is raised from a ground engaging position to a transport position by power means including a hydraulic motor and an apron controlled by a hydraulic actuator, a control system for said hydraulic motor and actuator comprising: a source of pressure fluid including a pump and a reservoir; a fluid supply passage connected to the output side of said pump; a return passage connected to said reservoir; a pair of motor passages connected to said motor; fluid bypass means for selectively connecting said supply passage to said reservoir including a bypass passage and a diverter valve movable from an open position in which said bypass passage is open to a closed position in which said bypass passage is closed; a bowl control valve remote from said operator's station connected to said supply, return and motor passages, said control valve having a hold position in which said motor passages are blocked, a first motor operating position in which said motor raises said bowl and a second motor operating position in which said motor lowers said bowl; an apron operating valve remote from said control station connected hydraulically in series with said control valve and connected to said hydraulic actuator, said operating valve having hold and operating positions; means independent of said control valve for selectively permitting a floating operation of said bowl including an auxiliary passage independent of said diverter valve connecting one of said motor passages to said reservoir and a float valve in said auxiliary passage and remote from said operator's station selectively movable between an open position in which said one passage is in fluid communication with said reservoir and a closed position in which fluid is not permitted to flow through said auxiliary passage; and control means for operating said valves including manually actuated control members at said operator's station, said control means permitting said diverter and float valves to simultaneously be in their open positions and including means automatically closing said diverter valve when said apron operating valve is moved to its operating position, said control system permitting fluid flow through said auxiliary passage and preventing fluid flow through said bypass passage when said float valve is in its open position and said diverter valve is in its closed position thereby permitting said apron actuator to be actuated when said float valve is open.

3,190,018
REVERSIBLE BITS FOR BULLDOZER AND SIMILAR BLADES
Maclay P. Nelson, 6703 N. Washington, Spokane, Wash., and Earl Ritzheimer, Bovill, Idaho (1704 Meadows Drive, Lake Oswego, Oreg.)
Filed Aug. 22, 1963, Ser. No. 303,807
6 Claims. (Cl. 37—143)



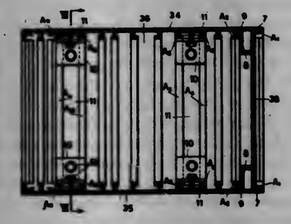
1. A replaceable bit assembly for a moldboard comprising:
a moldboard having a row of parallel slots adjacent the lower edge thereof;
a bit fitted against the front surface of said moldboard and including rearwardly directed projections protruding through said slots, each projection being provided with an aperture aligned axially with one another parallel to the row of moldboard slots;
a longitudinal tapered surface on said moldboard facing rearwardly thereon, said tapered surface extending parallel to the row of moldboard slots;
and a wedge received through said apertures and bearing against said tapered surface adapted to prevent forward movement of said bit relative to said moldboard.

3,190,019
THREE-DIMENSIONAL DISPLAYS
Irwin J. Davis, 44 Cooper Place, New Haven, Conn.
Filed Sept. 27, 1962, Ser. No. 226,621
4 Claims. (Cl. 40—77)



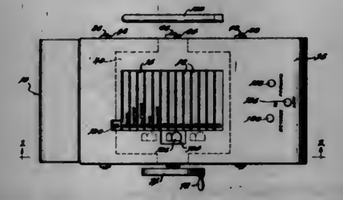
1. In a display, a plurality of pictures, each of said pictures being a representation of a portion of a composite scene as viewed at a different distance from the eye of an observer, the pictures being tangentially located with respect to a central axis at varying radial distances thereto, and means to sequentially expose to the view of the observer each of the pictures.

3,190,020
SYSTEM FOR PROVIDING LINES AND BOARDS OF INFORMATION SHOWING SYMBOLS FOR THE PURPOSE OF EXHIBITING INDICATIONS OF VARIOUS TYPES
Fermo Solari, Udine, Italy, assignor to Solari & C./Udine S.p.A., Udine, Italy, an Italian company
Filed Nov. 20, 1961, Ser. No. 153,416
Claims priority, application Italy, Sept. 14, 1961, Patent 655,632
4 Claims. (Cl. 40—83)



1. In a cabinet construction, top, bottom and side walls, each wall having interiorly a plurality of spaced parallel ribs, connecting means extending between a set of ribs of one wall to a corresponding set of ribs in an adjacent wall to maintain said walls in substantially perpendicular relationship with each other, and back wall means extending between two of said walls, said back wall means including spaced parallel edges resiliently engaging another set of ribs in the rear edges of said two of said walls.

3,190,021
INDEXING DEVICE
Everett F. Gustafson, 1320 Ardmore Ave., Chicago, Ill.
Filed Jan. 19, 1961, Ser. No. 83,672
1 Claim. (Cl. 40—86)



A storage and indexing device comprising in combination, a housing having a rectangular window therein with a longitudinal and a transverse axis, an elongated belt of flexible air impermeable plastic material disposed within the housing, means within the housing for transporting the belt adjacent to the window with the longitudinal axis of the belt disposed parallel to the longitudinal axis of the window including a first and a second spool positioned on opposite sides of the window, a plurality of elongated strips adapted to carry informational indicia on one surface thereof, said strips being adjacent to each other and having their longitudinal axes parallel to each other and spaced by a common distance, the longitudinal axis of

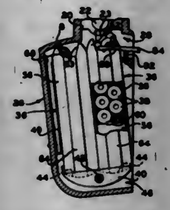
the strips being approximately equal to the transverse axis of the window and the longitudinal axis of the window being at least a multiple of the length of the transverse axis of the strips, a layer of non-drying adhesive disposed on the side of each of the strips opposite the indicia and disposed in contact with the surface of the belt confronting the window, each said layer securing one strip on the belt with the longitudinal axis thereof normal to the longitudinal axis of the window, the longitudinal ends of the strips being aligned with the transverse edges of the window, means within the housing for transporting of the belt including a reversible electrical motor mechanically coupled to the first and second spools, a first electrical switch electrically connected to the motor and mounted on the housing including an actuation member protruding from the housing for energizing the motor in the forward direction, and a second electrical switch electrically connected to the motor and mounted on the housing having an actuation member protruding from the housing for energizing the motor in the reverse direction, a light source confronting the window directed on the strips, said light source producing periodic pulses of light synchronized with the period required for the belt to travel a distance equal to the common distance between longitudinal axes of the strips, wherein the belt has a transverse axis greater than the transverse axis of the window and carries indicia on the belt adjacent to one of the longitudinal edges of the strips having a dimension in the direction parallel to the transverse axes of the strips at least a multiple of the transverse axes of a strip, said indicia being disposed adjacent to the window but confronting the housing, and an indentation disposed in the housing from the transverse edge of the window confronting the path of the indicia on the belt, said indentation having an axis parallel to the axis of elongation of the tape greater than the length of the indicia in said axis.

3,190,022
TIME-PIECE SERVING AS A REMINDER
Emmanuel Maitre, Le Noirmont, Bern, Switzerland
Filed Nov. 28, 1962, Ser. No. 240,554
Claims priority, application Switzerland, Nov. 29, 1961, 13,883/61
3 Claims. (Cl. 40—113)



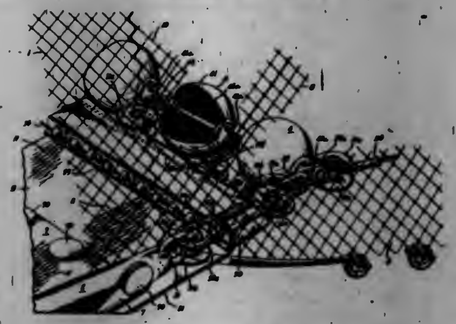
1. In combination with a time-piece dial, the provision of scales of days of the week carried by the dial and two further concentric scales of dates of the month angularly shiftable round the dial, one scale carrying the digits corresponding to the thirty-one dates of the longest months and the other further scale carrying two successions of digits each constituted by the successive digits corresponding to at least the four last days of the longest months and being adapted to be brought into overlapping relationship respectively with the last digits of the finishing month and with the first digits of the next month shown by said one further scale, the last date of the finishing month in each succession of digits on the said other scale registering in both cases with the day of the week preceding the day of the week registering with the first date of the month on said one scale.

3,190,023
MULTIMAGAZINE, TWO-STAGE FEEDING DEVICE FOR FIREARMS
Frederick P. Reed, Ludlow, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed May 24, 1963, Ser. No. 283,116
6 Claims. (Cl. 42—18)



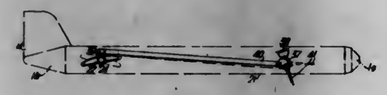
1. In a firearm having a receiver with a feed port, a feeding device including a housing depending from the receiver for receiving in side-by-side relationship a pair of magazines for respective disposition in a reserve and a feeding position respective to the feed port, a cradle pivotally mounted in said housing for supporting said magazines for transversal displacement, said housing being provided with an opening in one side for insertion of said magazines into and ejection of said magazines from said housing, a spring disposed between a side of said housing opposite said opening and said magazines in said cradle for biasing said magazines to said opening, and means for automatically releasing the one of said magazines in the feeding position when emptied to permit ejection thereof through said opening and displacement of the one of said magazines in the reserve position to the feeding position by said spring.

3,190,024
LOWER BOSOM SUSPENSION FOR TRAWL NETS
Frank J. Luketa, 5567 Greenwood Ave., Seattle 3, Wash.
Filed Jan. 3, 1963, Ser. No. 249,265
12 Claims. (Cl. 43—9)



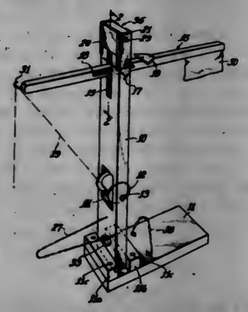
1. In a trawl net, in combination with a mesh panel constituting a part of the net's funnel, and having a transverse forward edge, a suspender of mesh at each side extending aft from the vicinity of such forward edge for connection to the net's codend, and a sweep line extending forwardly in general alignment with each suspender, means for interconnecting the mesh panel, the suspenders, and the sweep lines, said means comprising a suspension bar extending across and ahead of the forward edge of the bottom portion of said mesh panel, means for securing the mesh of said bottom portion of said mesh panel at intervals to said bar, tension means carried by each end of said bar, and attaching means engaged with and attached to the forward end of each suspender and with the after end of each sweep line, and engageable with the rear and the forward ends, respectively, of the tension means at the corresponding end of the suspension bar.

3,190,025
TRAWLING OTTERS
Charles Dennistoun Burney, 1 Chesham Place, London SW. 1, England
Filed July 5, 1963, Ser. No. 293,031
14 Claims. (Cl. 43—9)



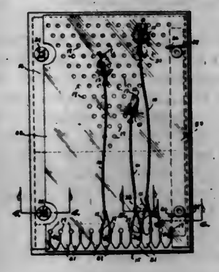
1. A trawling otter comprising a main lift surface, an associated control surface adjustable during towing of the otter to vary its angle of incidence in relation to the general direction of movement of said otter, and thus to modify the angle of attack of said main lift surface, a connecting member for a towline, pivotally mounted in said otter, and a link between said connecting member and said control surface, whereby the angular position of said control surface is automatically adjusted by said link in accordance with the angular position taken up by said pivoted connecting member, in dependence upon the direction of pull applied to said connecting member, by the towline connected thereto, during a towing operation.

3,190,026
TIP-UP WITH LIGHTING ATTACHMENT FOR FISHING DEVICES
John W. Roszak, 1718 S. 17th St., Sheboygan, Wis.
Filed Dec. 17, 1962, Ser. No. 245,072
5 Claims. (Cl. 43—17)



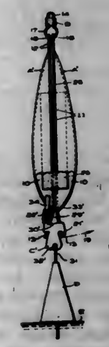
1. A tip-up comprising in combination:
an upright post,
a base member for supporting said post in a generally upright vertical position,
a line mounted on and secured to said upright post,
a lighting means attached to said post, said lighting means including spaced contacts in the form of closure members on either side thereof, and
a cross-beam having a signal flag on one end, line securing means on the opposing end, and a switch member mounted thereon, said cross-beam pivotally and slidably mounted on said post, said switch member adapted to bridge said closure members on said lighting means, and energize said lighting means on said post when said one end is in a raised position and said opposing end is in a lowered position.

3,190,027
ROD SUPPORTED FISHING FLY HOLDER
Caleb H. Spangler, 615 Cherry St., Des Moines, Iowa
Filed Dec. 4, 1961, Ser. No. 156,723
3 Claims. (Cl. 43—25.2)



2. In a holder for fish hooks having a hook portion and a leader attached at one of its ends to said hook portion, said leader having a loop at its other end,
a rectangular flexible sheet means comprised of a first flexible sheet member having a second flexible sheet member secured by at least two of its edges to said first sheet member and being in a coextensive relationship therewith,
said second sheet member having formed therein a plurality of holes for receiving said hook portions of said fish hooks,
a plurality of securing means on said second sheet member adapted to receive the loops of said leaders,
means on said sheet means for securing said sheet means adjacent one of its sides to a fishing rod,
and means on said sheet for detachably holding said flexible sheet means in a wrapped condition around said fishing rod so that said fish hooks are encased by said wrapped sheet means.

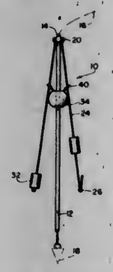
3,190,028
PROTECTIVE SHIELD FOR CASTING A BAITED HOOK
Joseph S. Mambrin, 320 Southcliff Ave., South San Francisco, Calif.
Filed Mar. 9, 1964, Ser. No. 351,279
3 Claims. (Cl. 43—41.2)



2. In a protective shield for casting a baited hook:
(a) a pair of companion housing members made to be disposed in confronting relation with one another, each being provided with a concaved compartment on that face thereof that confronts the other housing member;

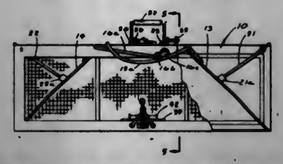
(b) the housing members having upper and lower ends;
(c) means hingedly securing the upper ends of the housing members together so that the confronting faces of the latter may be swung toward and away from one another;
(d) the concaved compartments of the housing members registering and coacting with one another to house a baited hook, when the housing members are swung toward one another into adjacent relation;
(e) a spring-pressed latch mounted on the lower end of one of the housing members and having a detent disposed to engage with a catch on the lower end of the other housing member for retaining the housing members in cupped relation around the bait, when the latch is moved downwardly by the spring, with the confronting faces of the housing members being disposed sufficiently close together to prevent accidental dislodgement of the bait from the compartments during the casting of the housing members by a line;
(f) a sinker anchored to the latch below the housing members to aid in casting the latter, and being disposed to move the detent upwardly into unlatched position for separation of the lower ends of the housing members to release the baited hook, when the sinker strikes a body of water into which the housing members are cast with the latter trailing behind the sinker;
(g) the housing member on which the latch is mounted being fashioned with an elongated slot in which the latch is slidably arranged and guided for vertical movement and the other housing member having an elongated slot formed therein for receiving and guiding the detent into latching position relative to the latter housing member.

3,190,029
FISHING DEVICE
Justino R. Bondi, 51 Newbury St., Revere, Mass.
Filed Apr. 19, 1963, Ser. No. 274,144
2 Claims. (Cl. 43—42.74)



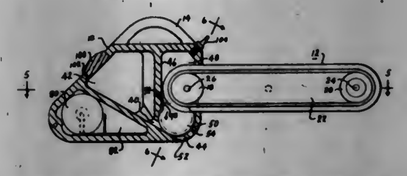
1. A fishing device for connection to the end of a fishing line, comprising an elongated support having an upper portion and a lower portion, a weight attached to the lower portion of said support, at least one elongated arm pivotally connected at one end to the upper portion of said support, float means mounted for free sliding movement along said support, guide means fixed to said float means and slidably engaging said arm, said guide means being adapted to hold said arm close to said support when said float means is at the lower portion of said support and to hold said arm generally perpendicularly to said support when said float means is at the top portion of said support, said float means being adapted to rise to the top portion of said support when said device is submerged in water to thereby hold said device in an upright position and to automatically bias said arm into a horizontally extending position, means for attaching fish catching devices to the free end of said arm, retrieval of said device being operative to cause said float means to slide to the bottom portion of said support and thereby retract said arm against said support.

3,190,030
ANIMAL TRAP
John W. Gilbaugh, 19396 Monte Vista Drive, Saratoga, Calif.
Filed Apr. 10, 1964, Ser. No. 358,891
10 Claims. (Cl. 43—61)



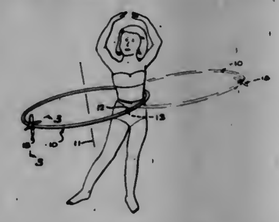
1. An animal trap comprising a cage having side walls, top and bottom and a door closing each end of said cage, said top being substantially shorter than said side walls, means attaching the sides of said top to the upper central parts of said side walls, pivoting means secured to each of said doors for pivotally supporting each of said doors on said side walls adjacent to the ends of said top, each of said pivoting means including an arm extending downwardly along one of said side walls in such manner that when the arm is moved downwardly the door attached thereto will open, roller means attached to one of said arms near the free end thereof, said arms extending downward along said one side wall when said doors are in open position, bait holding means pivotally supported in said cage substantially in the central part thereof for movement between an elevated and lowered position, trigger means on said cake for releasably engaging said one of said arms for holding it in its downwardly extended position, said bait holding means having latch means extending out of said cage for engaging said trigger means when said bait holding means is in its elevated position and for releasing said trigger means from said one of said arms when said bait holding means is in its lowered position, said roller means engaging the other one of said arms when said arms are in their downwardly extending positions whereby said doors are held in their open positions, said other one of said arms being concaved upwardly in a vertical plane and said roller means bears against this concave surface of said other one of said arms during the closing of said doors after said trigger means is released so that said roller means does not delay the closing of the door held in its open position by said other one of said arms.

3,190,031
TOY CHAIN SAW WITH SIMULATED SAWDUST DISPENSER
William J. Tengelitsch, R.R. 3, Box 262, Nappanee, Ind.
Filed Dec. 1, 1961, Ser. No. 156,390
8 Claims. (Cl. 46—39)



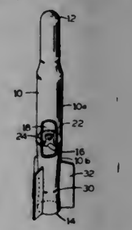
8. A toy chain saw, comprising a housing having a chamber for dust, a chain-like means extending forwardly from said housing, a member for supporting the forward end of said means, a passage extending from said chamber to a discharge opening near the lower rear portion of said chain-like means, a means associated with said passage for propelling dust through said discharge opening and forwardly beneath said chain-like means, and a means for operating said last mentioned means.

3,190,032
HULA HOOP CARRYING VANED SPINNING PART
William Porter Green, Rose Marie Green, and Hugh Michael Green, all of 2670 Huntington Drive, San Marino, Calif.
Original application Oct. 17, 1958, Ser. No. 767,931, now Patent No. 3,066,438, dated Dec. 4, 1962. Divided and this application Dec. 3, 1962, Ser. No. 241,923
4 Claims. (Cl. 46—53)



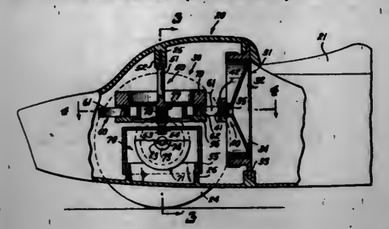
1. A toy comprising a hoop adapted to be whirled about a person's body by a hula type motion of the body, a part carried by the hoop for movement relative thereto along its circular extent and for rotation relative thereto and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant movement of said part along the length of the hoop, and vane means on said part disposed angularly to rotate said part relative to the hoop by movement through the air as the hoop whirls.

3,190,033
THERMALLY ACTUATED POWER AERIAL DEVICE
Wilburn W. Wood, 79 East Road, Tacoma, Wash.
Filed Feb. 13, 1961, Ser. No. 88,901
5 Claims. (Cl. 46—74)



1. A thermally actuated power device comprising a tubular body member closed at one end and open at the other, a rupturable transverse sealing member in said body member intermediate the ends thereof for forming a closed pressure chamber with said closed end and an empty thrust chamber with said open end, said sealing member being arranged to open instantaneously upon being subjected to a selected gas pressure, heat-actuable gas generating means disposed interiorly of said pressure chamber and being adapted to pressurize said pressure chamber and rupture instantaneously said sealing member to produce a gas power thrust through said thrust chamber and said open end of the body member, and heating means disposed exteriorly of said pressure chamber to heat the same and actuate said gas generating means.

3,190,034
DEVICE FOR SIMULATING MOTOR SOUNDS
John W. Ryan, 688 Nimes Road, Bel Aire, Calif.
Filed Dec. 9, 1964, Ser. No. 419,270
10 Claims. (Cl. 46—111)



1. A toy vehicle comprising: a substantially hollow body member forming a resonance chamber; a resonator in the form of a cellulose-acetate-butyral cone having an apex plug mounted in said body member, said resonator having a low-pitched natural frequency below approximately 1,000 c.p.s.; wheel means rotatably mounted on said body member for facilitating travel of said vehicle along a surface; striker means rotatably mounted in said body member adjacent said resonator for cyclically impacting said resonator at its apex plug causing it to vibrate and produce a low-pitched sound simulating the sound of an internal combustion enigne; and gear means connecting said striker means to said wheel means for rotating said striker means when said vehicle is pushed along said surface, whereby said striker means will cyclically impact said resonator, said striker means comprising an impeller connected to said gear means; and a plurality of rings loosely mounted on pins attached to said impeller and positioned around the periphery of said impeller, said lugs each being retractably mounted on said impeller for extension into engagement with said apex plug by the centrifugal force exerted thereon by the rotation of said impeller, said rings being made from an acetal resin having a modulus of elasticity of approximately 400,000 p.s.i.

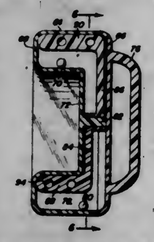
3,190,035
AMBULATORY ANIMAL TOYS
Arthur R. Armstrong, Dallas, Tex., assignor of one-third to Lloyd F. Sneed and one-third to Juanita L. Moffett, both of Dallas, Tex.
Filed Aug. 31, 1962, Ser. No. 220,762
10 Claims. (Cl. 46—149)



1. An ambulatory animal toy including a rigid longitudinal members, a pair of substantially rigid yokes of inverted U-shape, each yoke having it bight portion secured to one end of the member and its leg portions depending therefrom in transersely spaced relation to said member, a helical spring extending downwardly from the lower end of each leg portion of each yoke and providing

resilient lower portions for the front and rear legs of the toy, the leg portions of the yokes forming rigid upper portions of the front and rear legs and having their lower ends terminating substantially medially of said legs, and frictional means at the lower end of each spring for engaging a supporting surface and resisting relative sliding movement whereby each spring flexes rearwardly when the toy is pulled forwardly and snaps forwardly when the force of the flexed spring overcomes the resistance of the frictional means.

3,190,036
RATTLER WITH CLOCK FACE
Robert L. Motley, Dayton, Ohio
(4 Enright St., West Haven, Conn.)
Filed Jan. 16, 1961, Ser. No. 82,888
6 Claims. (Cl. 46—175)



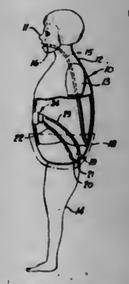
3. A baby rattler comprising a hollow casing, a plurality of rattler elements disposed in said casing for free movement in relation thereto, said casing being of transparent plastic construction, said rattler elements being colored and having a configuration simulating known objects, said casing being of cylindrical configuration, a circular rear plate attached to the cylindrical casing, a transversely extending U-shaped handle rigidly attached to the rearplate for manipulating the rattler, means for agitating the rattler elements including a pair of transverse arms rotatably connected with the interior of the casing for moving the rattler elements interiorly of the casing as the casing is rotated.

3,190,037
ELECTRICALLY ACTUATED SOUNDING DOLL WITH ILLUMINATING MEANS
Julius Giordano, 924 Cross Ave., Elizabeth, N.J.
Filed Oct. 17, 1962, Ser. No. 231,111
16 Claims. (Cl. 46—227)



1. A toy in lifelike form capable of simulating living actions comprising: a hollow body having a head end and a rear end, a front and a back, illuminating means positioned within said head end operable to create an external lighting effect at said head end, a simulated crying means including a separate motor means within said body, said crying means being operable by said motor means to cause air flow therethrough and produce a crying sound upon said toy assuming a predetermined position, a source of energy energizing said illuminating means and said motor means, gravity controlled means operable to prevent said air flow when said toy is placed in a second predetermined position.

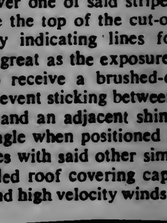
3,190,038
WETTING DOLL WITH ELECTRICAL SOUNDING ALARM
Bernard Kardon, 80 Vaughn Ave., New Rochelle, N.Y.
Filed Nov. 13, 1962, Ser. No. 237,216
3 Claims. (Cl. 46—232)



1. In combination with a doll comprising a head having a mouth opening, a torso having a rear opening, a feed tube extending from said mouth opening to said rear opening and a diaper removably attachable to the bottom portion of said torso and covering said rear opening, said diaper being composed of an absorbent material adapted to absorb liquid discharged from said rear opening; two spaced metal members carried upon the bottom portion of said torso adjacent said rear opening and adapted to be covered by said diaper, electrical current supplying means located within said torso and connected with said metal members, said current supplying means constituting an electrical circuit containing said spaced metal members, said spaced metal members constituting the terminals of a switch which is closed by the liquid absorbed by the diaper, and electronic sound generating means located within said torso and operatively connected with said current supplying means, said sound generating means being actuated to produce an audible sound when the circuit of said current supplying means is closed between said metal members.

3,190,039
GROUND VASE
Axel S. Carlson, 916 S. Park View St., Los Angeles, Calif.
Filed July 9, 1962, Ser. No. 210,296
5 Claims. (Cl. 47—41.1)

1. In a ground vase assembly:
(a) a base plate adapted to be mounted on a housing for receiving a vase, said base plate having a vase aperture therethrough adapted to pass a vase and a lift rod aperture therethrough for slidably receiving a lift rod;
(b) means seating a cover plate on said base plate without mechanical connection therewith and covering at least said vase aperture; and
(c) a freely movable lift rod extending through said lift rod aperture, said lift rod having a hinge connection at its upper end with said cover plate beneath the top surface of said cover plate, said cover plate extending beyond said seating means and said hinge construction with respect to said vase aperture and resting on said base plate, said cover plate ex-



tension being adapted to raise said lift rod when said cover plate is raised and inhibit the cover plate from opening when subjected to unequal loading from above.

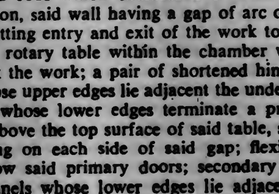
3,190,040
SELF-SEALING ASPHALT SHINGLES
Paul Frederick Theobald, North Hatley, Quebec, Canada, assignor to The Philip Carey Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 9, 1961, Ser. No. 94,542
4 Claims. (Cl. 50—83)

1. A self-sealing asphalt shingle of substantially rectangular shape and having cut-outs in the exposure area thereof, defining a plurality of tabs, and adapted to be laid with other similar shingle elements as lapping courses in a double coverage arrangement, said shingle having granule surfacing embedded in at least all the weather-exposed asphalt coating area of its upper surface as applied in said lapped courses on the roof, spaced apart continuous stripes of a solar heat softening adhesive extending parallel to the lower edge of the shingle entirely across the upper surface of said shingle in the area thereof which will, when laid on a roof, be covered by an overlying shingle, the upper one of said stripes being disposed in the headlap area at a distance from the lower edge of the shingle more than twice the exposure length of the tab, and the lower one of said stripes being disposed immediately above the top of the cut-outs, said stripes providing boundary indicating lines for an area therebetween about as great as the exposure area of the shingle, and adapted to receive a brushed-on asphalt adhesive, and means to prevent sticking between the adhesive stripes of one shingle, and an adjacent shingle when packed together, said shingle when positioned and nailed on a roof in lapped courses with said other similar shingle elements providing a sealed roof covering capable of withstanding water leakage and high velocity winds.

3,190,041
SUPPORT FOR LARGE MACHINERY
Alvion L. Kimball, Winchester, Mass., assignor to General Electric Company, a corporation of New York
Filed June 28, 1962, Ser. No. 205,888
6 Claims. (Cl. 50—185)

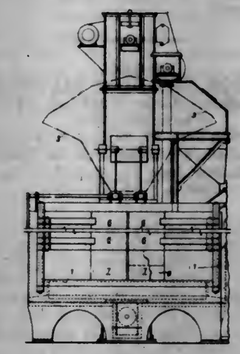
4. A permanent, non-corrosive support for a heavy machine comprising

a foundation,
vertically extending foundation bolts having heads secured in said foundation,
a removable foundation plate positioned in spaced relation above said foundation,
screw means threadedly engaging said plate and having ends engaging the upper surface of the founda-



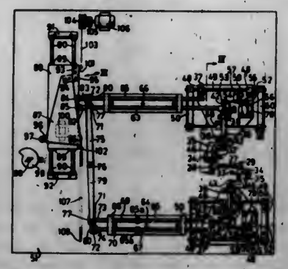
tion for leveling the upper surface of said plate,
and a concrete pad formed in placed by ram-packing mortar between said plate and said foundation,
said bolts being arranged to prevent vertically upward movement of said plate while said pad is formed and to secure a machine to the foundation plate after the formation of said pad.

3,190,042
BLAST CLEANING MACHINES
William Male Oddie, Bretton Lodge, Bretton, near Wakefield, England
Filed Feb. 26, 1963, Ser. No. 261,105
1 Claim. (Cl. 51—15)



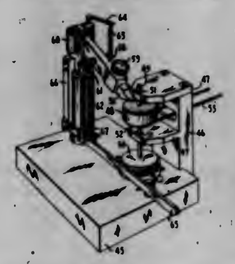
A blast cleaning machine adapted for partly, as well as completely, enclosing the work to be cleaned, comprising: a housing including a roof; a vertical wall below said roof which encloses a chamber of circular cross section, said wall having a gap of arc of 120°, said gap permitting entry and exit of the work to be cleaned; a circular rotary table within the chamber which serves to support the work; a pair of shortened hinged primary doors whose upper edges lie adjacent the underside of said roof and whose lower edges terminate a predetermined distance above the top surface of said table, said primary doors lying on each side of said gap; flexible curtains lying below said primary doors; secondary doors comprising panels whose lower edges lie adjacent the table and whose upper edges terminate near the lower edges of the primary doors; said primary doors, secondary doors and curtains enclosing the chamber into which the work is placed; said secondary doors being pivotally connected to said vertical wall to permit closing with the primary doors when the secondary doors are placed in closed position.

3,190,043
APPARATUS FOR MANUFACTURING ELECTRIC RESISTOR
Petrus Willem Koumans, Emmasingel, Eindhoven, and Henricus Petrus Stal, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,805
7 Claims. (Cl. 51—37)



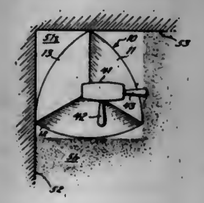
1. Apparatus for manufacturing resistors of predetermined value having a helical groove having a pitch angle comprising means for holding a resistor, means for rotating said resistor about its longitudinal axis, rotating cutter means, a first means for moving said cutter means in a plane parallel with the said axis of said resistor for cutting a helical groove in said resistor, a second means supporting said cutter means for movement to the pitch angle of said helical groove, and a means operatively connected with both said first and second means for establishing the rate of movement of said cutter means as well as the angle of said cutter means.

3,190,044
APPARATUS FOR GRINDING DIAMOND KNIVES
Humberto Fernandez-Moran Villalobos, 34 Leslie Road, Winchester, Mass.
Original application May 19, 1959, Ser. No. 814,217, now Patent No. 3,060,781, dated Oct. 30, 1962. Divided and this application June 11, 1962, Ser. No. 201,411
7 Claims. (Cl. 51—124)



1. In apparatus for grinding diamond knives; the combination of a base, a smooth substantially horizontal bearing surface on said base, a support projecting up from said base, two vertically spaced V-shaped bearings carried by said support and vertically aligned with one another above and spaced from said bearing surface, a vertical shaft rotatably journaled in said V-shaped bearings and having a pointed lower end resting on said bearing surface, a horizontal grinding disc having a smooth upper surface and fixed centrally on said shaft to rotate therewith, a pulley fixed on said shaft below said disc, said disc and pulley being disposed adjacent one another and between and adjacent said V-shaped bearings, a driving belt running around said pulley and holding said shaft in contact with said V-shaped bearings by belt tension, a holder for a diamond above said disc, an arm carrying said holder, means pivotally supporting said arm for pivotal movement about a horizontal axis above said base, said holder being positioned to present a diamond to the upper surface of said disc at a selected angle and means for selectively varying the vertical distance between said bearing surface and said pivotal supporting means to select the precise angle at which said diamond is presented to the upper surface of said disc.

3,190,045
ABRASIVE TOOL
Edward A. Zuzelo, 828 Suburban Station Bldg., Narberth, Pa.
Filed Dec. 4, 1963, Ser. No. 327,932
3 Claims. (Cl. 51—209)



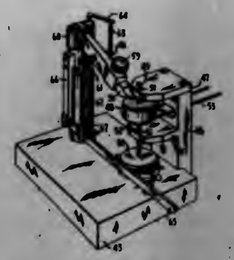
1. Dished abrasive tool open at its base and shaped such that any intersecting plane parallel to the base defines thereon an equilateral triangle having each side curved in an arc centered on the opposing vertex.

3,190,046
DEVICE FOR HOLDING A ROTARY CUTTING TOOL
Andrew J. Bryant, 900 Arthur Ave., Bristol, Pa.
Filed Apr. 7, 1961, Ser. No. 114,580
11 Claims. (Cl. 51—225)



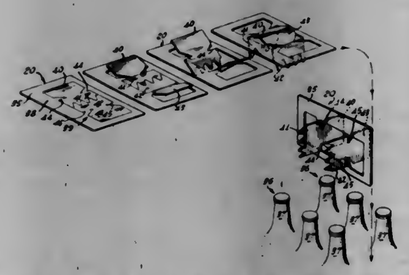
1. A device for holding a rotary cutting tool which device co-operates with the cutting tool to accurately index said tool to said device, said device comprising in combination a spindle having a concentric bore therein, a cam follower fixed to said spindle, a sleeve mounted for rotation about said spindle and having an arcuate cam-slot therein which cooperatively receives said cam follower, said spindle having a clearance opening therein communicating with its concentric bore for receiving the tool, and an indexing pin mounted on said sleeve and radially reciprocable through said sleeve and clearance opening into the concentric bore and means in said spindle, whereby said indexing pin may co-operate with a surface of registry on the portion of a cutting tool in said means in the concentric bore of said spindle for indexing the cutting tool to said device.

3,190,047
METHOD OF MAKING DIAMOND KNIVES
Humberto Fernandez-Moran Villalobos, 34 Leslie Road, Winchester, Mass.
Original application May 19, 1959, Ser. No. 814,217, now Patent No. 3,060,781, dated Oct. 30, 1962. Divided and this application June 11, 1962, Ser. No. 201,703
5 Claims. (Cl. 51—283)



1. A method of producing a knife edge which comprises selecting a diamond, cleaving said diamond along the plane of a cleavage face of the diamond, grinding said face with fine abrasive powder on a smooth disc, polishing said face on a disc rotating at a speed higher than 10,000 r.p.m. and coated with a paste containing a grinding powder having a particle size smaller than 0.005 micron and cutting and polishing in like manner a second face intersecting said first mentioned face at an angle of 50° to 80° to produce a cutting edge having a sharpness of 20 to 50 Angstrom units.

3,190,048
METHOD OF APPLYING DIVIDERS TO BOTTLES
Robert H. Ganz, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Aug. 3, 1960, Ser. No. 47,293, now Patent No. 3,031,813, dated May 1, 1962. Divided and this application Mar. 2, 1962, Ser. No. 177,086
3 Claims. (Cl. 53—26)



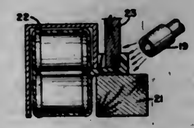
1. In a method for applying a folding divider blank to rows of containers to be packaged, the divider blank including a longitudinal partition adapted to divide the rows of containers and lateral partitions rotatably mounted in said longitudinal partition and adapted to divide the containers in a row from one another, the steps comprising delivering the divider blanks with the longitudinal and lateral partitions initially lying in a common plane, delivering the containers, separating the containers being delivered from one another, rotating the lateral partitions into position in which they are erected at an angle to the longitudinal partition as the blanks are delivered, and inserting the erected divider blanks between the containers.

3,190,049
METHOD AND APPARATUS FOR FORMING A PACKAGE FROM SHEET MATERIAL
Leonard van der Meulen, Oranje Nassaulaan 30, Amsterdam, Netherlands
Filed Apr. 12, 1961, Ser. No. 102,522
Claims priority, application Netherlands, Apr. 13, 1960, 250,471
26 Claims. (Cl. 53—29)



1. A method of effecting the treatment, at regular intervals therealong, of a strip of pliable sheet material drawn from a compact supply thereof, comprising the steps of
(A) uninterruptedly removing the strip material from said compact supply thereof,
(B) continuously delivering the strip material removed from the compact supply to a closed path by means of a delivery device which is moved continuously along said closed path,
(C) holding parts of the strip material delivered to said closed path at fixed locations along the latter for a period of time less than that required for a complete circuit of the closed path by the delivery device for the strip material.
(D) treating said parts of the strip material while said parts are held at said fixed locations, and
(E) releasing said parts of the strip material from said fixed locations following the treatment thereof so that the treated parts of the strip material can then be removed from said closed path.

3,190,050
PLASTIC MULTIPLE PACK CARRIER
Wylie C. Kirkpatrick, Wayland, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Original application Dec. 27, 1960, Ser. No. 78,486, now Patent No. 3,087,610, dated Apr. 30, 1963. Divided and this application Dec. 31, 1962, Ser. No. 264,463
1 Claim. (Cl. 53—30)

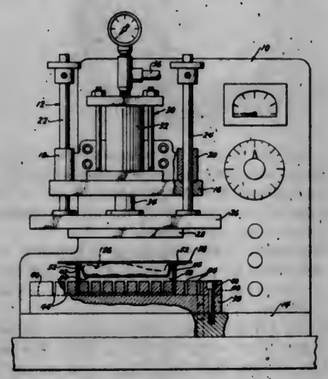


The method of producing a multi-pack carrier which includes providing a strip of thin, flexible, heat-shrinkable plastic material having a width greater than that of the packages intended to be enclosed, folding the strip upon itself so that its ends approximately coincide, forming a continuous, transverse heat seal at a point which will form a loop of a size sufficiently loose to encircle the packages while leaving substantial free end portions of the strip extending beyond the transverse seal, inserting a plurality of packages within the loop, heating said lop to shrink the plastic tightly about the packages while insulating the free ends of the strip from said heat to prevent shrinkage thereof, thereafter permitting relative motion of the loop

portion and applying heat to said free ends while insulating the central portion of said free ends, said heat being sufficient to merge the exposed areas into a thickened margin thus forming a hand hold.

3,190,051
METHOD OF WELDING THERMOPLASTIC MATERIALS

Mitchel J. Souligney, Harper Woods, Mich., assignor to Holley Carburetor Company, Warren, Mich.
Original application Jan. 8, 1960, Ser. No. 1,232, now Patent No. 3,098,916, dated July 23, 1963. Divided and this application Nov. 23, 1962, Ser. No. 239,664
4 Claims. (Cl. 53—39)



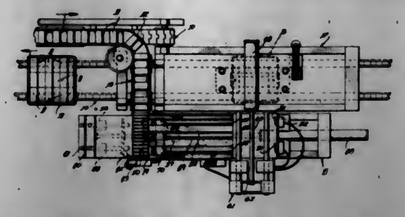
2. A method of sealing an article within a thermoplastic capsule, said method comprising the following steps:

(a) pressing a plurality of segmented electrode members into intersecting grooves extending across the entire surface of a mounting plate so as to form a desired geometric pattern and leveling the exposed surfaces of said electrode members so as to form a first electrode,
(b) placing a thermoplastic capsule within the chamber formed by said electrodes with a portion thereof extending over said electrode members,
(c) placing an article within the capsule,
(d) placing a covering sheet of suitable material over said thermoplastic capsule,
(e) pressing said thermoplastic capsule and covering sheet against said first electrode by the use of a second flat electrode, and
(f) applying heat to said capsule and covering sheet by heating said second electrode.

3,190,052
CARTON HANDLING APPARATUS

Warren Du Broff, 350 Carol Court, Highland Park, Ill.
Filed Oct. 19, 1962, Ser. No. 231,805
3 Claims. (Cl. 53—62)

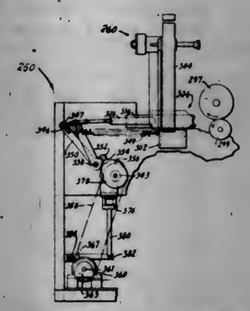
1. In carton handling apparatus, a horizontally disposed carton conveyor, a frame beneath said conveyor, an abutment on said frame for halting cartons being advanced by said conveyor, a ram on said frame adapted for horizontal reciprocal movement to shift a group of cartons halted by said abutment and a switch on said abutment engageable by a halted leading carton for actuating said ram, said ram being equipped with a generally vertical side in confronting relation with cartons subsequently advanced by said conveyor, a slotted platform on said frame positioned to receive cartons shifted by said ram, a plurality of rockably mounted dogs mounted on said frame for horizontal reciprocal movement to shift the pattern of groups of cartons initially shifted in single groups by said ram, a switch adjacent said platform engageable by said leading carton when part of an assembled pattern for actuating said dogs, a receiving platform on said frame positioned to receive a pattern of carton groups shifted by said dogs, a caser ram mounted on said frame for reciprocal horizontal movement in



a direction perpendicular to the direction of movement of the first-mentioned ram and said dogs and a switch on said frame engageable by said leading carton for actuating said caser ram, a caser positioned in the path of a carton pattern being shifted by said caser ram, and a horizontally disposed conveyor positioned below said caser for conducting cased cartons away from said caser.

3,190,053
CLOSURE MECHANISM

Hubert E. Tobey, Paramus, N.J., assignor, by mesne assignments, to Kwik Lok Corporation, Yakima, Wash., a corporation of Washington
Filed Oct. 29, 1962, Ser. No. 233,820
3 Claims. (Cl. 53—67)

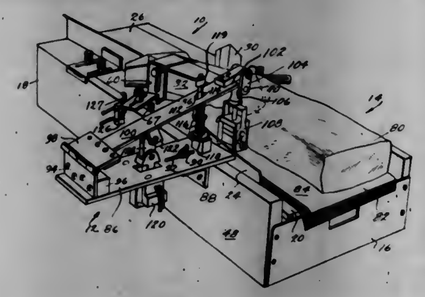


1. In a bag closing machine employing flat sheet closure tabs, each of which has a bag neck confining aperture and a narrow opening through which said neck may be fed into said aperture, the combination of: stationary magazine means having a chamber confining a column of said tabs in face to face relation; means propelling said column along said chamber towards an end of said magazine means; a head mounted on said end of said magazine means and having a slideway communicating with said chamber and disposed transversely thereof; a slide bar slidable in said slideway and having a passage extending lengthwise thereof and dimensioned for feeding said tabs in edge-to-edge tandem relation from said magazine chamber and out of said passage at one end thereof; an ejector slidably extending into the opposite end of said passage; and means for cyclically reciprocating said bar in said slideway and said ejector in said passage to advance tabs sequentially from said magazine along said passage and out of said end of said passage, the foremost tab being so advanced in each tab feeding cycle and being placed, by a substantial extension of said bar from said slideway, in a position for introducing a bag neck into the aperture

of said tab, said tab then being ejected from said passage by a retraction of said slide bar relative to said head and said ejector; and means operating in timely relation with said cyclic means for feeding a bag neck into the closure aperture of each tab while it is in said advanced position aforesaid and before said tab is ejected from said passage.

3,190,054
PRINTING FLEXIBLE BAGS

Julian R. Arnold and George W. Turner, Miami, Fla., assignors to Arnold Cellophane Corporation, Miami, Fla., a corporation of Florida
Filed May 24, 1962, Ser. No. 197,516
3 Claims. (Cl. 53—131)

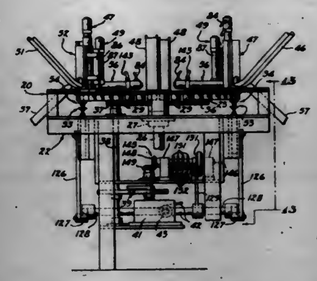


1. In combination, a bag loading machine comprising means for supporting a stack of flexible bags; means for inflating the uppermost one of the bags of said stack to thereby expose a side margin of the bag immediately below said uppermost bag; guide means to assist in loading material into said inflated uppermost bag, said guide means including at least one movable member which is displaced from its normal position during loading of said uppermost bag; printing means positioned to permit contact with the exposed side margin during actuation thereof; actuating means coupled to said printing means and operable by said movable member during displacement of the member to actuate said printing means to print indicia on said exposed side margin.

3,190,055
PACKAGING MACHINE

Lawrence Povlacs, Springfield Township, Summit County, Ohio, assignor to The Akwell Corporation, Akron, Ohio, a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,798
6 Claims. (Cl. 53—282)

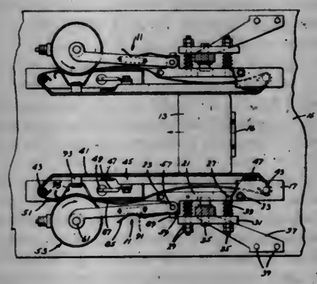
1. In a box filling and closing machine for filling a box bottom of a given size and configuration and closing it with a similarly configured lid dimensioned for telescopingly receiving the box bottom with close sliding fit, means mounted for movement as a unit from station to station of the machine and defining a pocket movable in its entirety from station to station by the movement of said means and having an open upper end and a vertically continuous side wall, said pocket comprising a lower section defined by said side wall and having a vertical dimension at least as great as the box bottom and having a substantially uniform cross section dimensioned to embrace the box bottom with a close sliding circumferential fit, and an upper section defined by said side wall and being of sufficiently larger cross-sectional dimensions to receive the box lid with a close sliding fit, stop means located at the bottom of said upper section and projecting inwardly from the periphery thereof sufficiently to limit downward movement of the box lid but insufficiently to prevent passing of the box bottom thereby, whereby a box bottom prepositioned and filled in the lower section of the pocket may be conveyed by movement of said pocket defining means as a unit to a box



closing station and closed by pushing it upwardly into telescoped relationship with a box lid that has been inserted into the top section and is being held down against said stop means.

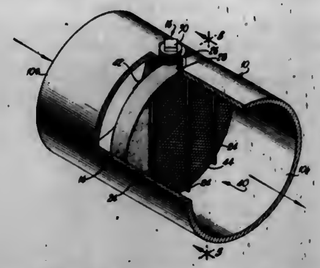
3,190,056
POSITIVE TRACKING BELT HEAT SEALER

Lawrence T. Ramaika, Media, and Claude John West, Springfield, Pa., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 17, 1962, Ser. No. 223,941
3 Claims. (Cl. 53—388)



1. Apparatus for heat sealing an article overwrap including a pair of elongated, laterally spaced sealing plates having surfaces disposed in opposing relationship, a heater secured to each of said sealing plates on the sides thereof opposite to said opposing surfaces, an endless belt extending loosely about each of said sealing plates for engaging with the opposite ends of an overwrapped article, means for independently advancing each of said endless belts relative to the respective sealing plates, and means for guiding said endless belts along the opposing surfaces of said sealing plates as they are advanced, said belt advancing means each including a roller, means for tensioning and enveloping a portion of one of said endless belts about a portion of the periphery of said roller while permitting the remainder of said belt to assume and maintain an untensioned condition, means for resiliently urging said roller toward said belt enveloping means to provide for snug engagement between said endless belt and the periphery of said roller, and means for rotating said roller.

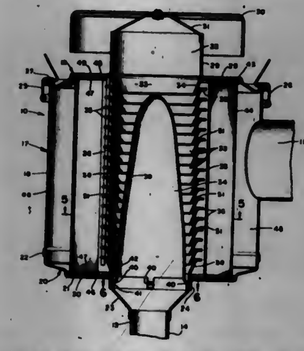
3,190,057
SEPARATOR FOR TREATING WELL FLUIDS
Gene O. Sinex, Farmington, N. Mex., assignor to American Tank and Steel Corporation, Farmington, N. Mex., a corporation of New Mexico
Filed Jan. 12, 1962, Ser. No. 165,885
1 Claim. (Cl. 55—313)



An apparatus for treating well fluids including gaseous components comprising a vessel, a gaseous component inlet to the vessel, a gaseous component outlet from the vessel spaced from the gaseous component inlet to provide a gaseous component flow path therebetween, a gas pervious retaining structure disposed between the inlet and the outlet and extending generally transverse to the flow path, said retaining structure comprising a pair of spaced apart gas pervious retaining means defining a cavity of a predetermined configuration having a first given dimension measured in a given plane transverse to the direction of flow and having a second given dimension measured in the direction of flow, access structure forming an access opening in the vessel communicating with the cavity and opening into the cavity between the spaced apart retaining means in a direction generally transverse to the flow path, said access opening having a first dimension measured in a plane parallel to said given plane and being substantially smaller than said first given dimension and having a second dimension measured in the direction of flow, said second dimension being not substantially greater than said second given dimension, an integrally formed and unitary body of flexible and compressible gas pervious material having a configuration and dimensions substantially the same as the cavity defined by the retaining structure, the integrally formed body being compressed and inserted through the access structure and permitted to expand within the cavity to substantially fill the cavity and provide an integral and unitary body of gas pervious material interposed in and extending completely across the flow path, said retaining structure defining an edge opening on the outlet side of the flow path considered relative to the body of gas pervious material into which the adjacent edge portion of the integrally formed and unitary body of gas pervious material is deflected when the pressure differential across the body exceeds a given level so that a flow path around the edge portion of the body is provided, and a removable closure for the access structure normally closing the access opening and removable to permit the body to be compressed and removed through the access opening.

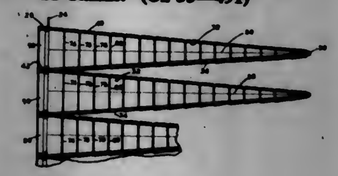
3,190,058
CYLINDRICAL DUST-SEPARATING DEVICE
Richard S. Farr, Los Angeles, and Paul A. Labadie, Redondo Beach, Calif., assignors to Farr Company, El Segundo, Calif., a corporation of California
Filed Oct. 3, 1961, Ser. No. 142,675
4 Claims. (Cl. 55—325)

1. In an air filtering device for use with an internral combustion engine or the like having intake means for drawing filtered air from the device and also having suction means for drawing from the device some unfiltered air and foreign material filtered out of the flowing air, the combination of: a generally cylindrical housing having a vertical axis and cylindrical wall, said housing having an upper end and a lower end joined to said wall, the said upper end having an air inlet opening substantially concentric with said housing, first annular means concentrically mounted within said housing for changing the direction of air flow from downwardly from said inlet to radially outwardly and upwardly in said housing whereby foreign material is inertially discharged from the flowing air, said first means including a plurality of vertically spaced annular vane members positioned concentrically with said housing, each vane member having a downwardly and inwardly extending flange, the said lower end of the housing having an annular outlet positioned



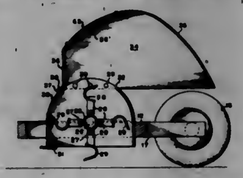
immediately adjacent and radially inwardly from said vane members and in communication with said inlet, imperforate means extending downwardly from said annular outlet for defining a passageway of increasing cross-sectional area for controlled expansion of air therein, said outlet being adapted to communicate with the suction means through said passageway whereby the discharged foreign material and some air is drawn from said housing through said outlet and said passageway, second annular means concentrically mounted in said housing between said first means and said cylindrial wall and in sealing relation with said upper and lower ends for filtering foreign material from the flowing air, and an outlet in said cylindrical wall for communicating with the engine intake means whereby air is drawn from said inlet opening through said first and second means to said outlet in said cylindrical wall.

3,190,059
POCKET FILTER
Carl J. Bauder and Charles G. Hart, Syracuse, N.Y., assignors to Cambridge Filter Corporation, a corporation of New York
Filed May 3, 1962, Ser. No. 192,238
11 Claims. (Cl. 55—491)



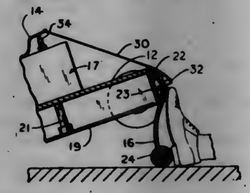
9. A filter pocket for an air filter cartridge, said pocket formed of flexible sheet filter media, and composed of two flanks joined along opposite side edges and one end, and having an elongated opening at the other end, said pocket having a plurality of substantially parallel spaced flexible connecting means arranged in rows within the pocket connecting the opposed flanks of each pocket along lines extending substantially parallel with the side edges of said pockets, said connecting means being of graduated length from the open end to said one end and within the pocket providing gradually decreasing spacing between flanks from the open to the other end of said pocket when inflated by air entering the pockets for filtration in passing through the flanks thereof, said opening being of a width greater than the length of the longest connecting means.

3,190,060
APPARATUS FOR CUTTING AND CONDITIONING HAY OR LIKE CROPS
Larry R. MacClintock, East Meredith, N.Y.
Filed Oct. 30, 1961, Ser. No. 148,653
5 Claims. (Cl. 56—24)



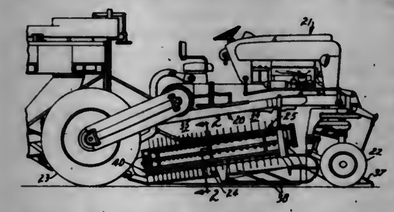
1. Apparatus for cutting and conditioning a crop, including a cutting unit comprising an elongated rotatable support bar, cutting members connected at intervals to said support bar, means for rotating said support bar and cutting members, a casing positioned over said cutting unit, said casing having an elongated opening at its upper limit, and a hood superimposed on said casing at the locus of the opening, the hood being of substantially dome-shape, and including side members and an arcuate top member, the highest point of said hood being superjacent the aft extent of the cutting unit's path of rotation, thereby forming a void of substantial size in which a vacuum is built up by the rotation of said cutting unit, the crop being directed upwardly and rearwardly after being cut, by the force of the cutting members and the vacuum created in the void between the cutting members and the top of the hood.

3,190,061
LAWNMOWER DEVICE
John E. Gilbertson, 3209 Douglas Ave., Des Moines, Iowa
Filed Nov. 4, 1963, Ser. No. 321,113
6 Claims. (Cl. 56—25.4)



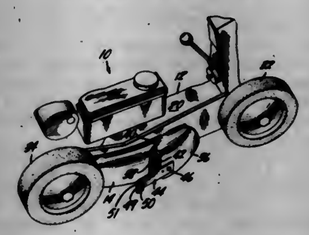
1. In a lawnmower device,
a lawnmower having a cutting blade housing supported by a plurality of wheels rotatably secured to said housing, an engine means rigidly secured to the top surface of said cutting blade housing, a drive shaft extending downwardly from said engine means through the top surface of said cutting blade housing having a cutting blade secured to its lower end, a handle operatively connected to said cutting blade housing, a spark plug threadably secured to said engine means, and an engine shut-off means on the top portion of said engine means,
a guard attachment hingedly secured to the backward end of said lawnmower,
an elongated roller rotatably secured to the backward end of said guard attachment,
a cable secured to and extending from said guard attachment to said engine shut-off means of said lawnmower,
a spring extending from the backward end of said lawnmower to said guard attachment yieldably holding said elongated roller in a ground engaging position,
said engine shut-off means including a flexible member adapted to ground the spark plug of said engine means,
said cable actuating said engine shut-off means when said guard attachment is moved downwardly with respect to said lawnmower thereby depressing said flexible member until said flexible member contacts and grounds said spark plug.

3,190,062
ROTOR FOR MECHANICAL BEAN PICKER
Bernard S. Paulson and Bruce H. Paulson, Clayton, Wis., assignors, by mesne assignments, to Pixall Corporation, Clear Lake, Wis., a corporation of Wisconsin
Filed Apr. 6, 1964, Ser. No. 357,682
7 Claims. (Cl. 56—130)



6. A mechanical picker for beans and the like planted in rows comprising a rotatably mounted gathering rotor having a plurality of circumferentially and longitudinally spaced radially extended resilient picker tines, the outer ends of which are adapted to move laterally and upwardly through the plants to pick pods from said plants, the longitudinal spacing between said tines being greater at one end of said rotor than at the other end.

3,190,063
FLEXIBLE TRIMMER FOR A LAWNMOWER
Isidore Epstein, New Hyde Park, N.Y., assignor to G. W. Davis Corporation, Richmond, Ind., a corporation of Indiana
Filed June 5, 1964, Ser. No. 372,750
1 Claim. (Cl. 56—255)



A trimmer for a lawnmower adaptable for deflecting vegetation into the path of the blade of the mower comprising,
a rotary mower housing having an aperture in its side surface, said aperture defined in part by an outer edge, and

flexible deflecting means for deflecting vegetation growing adjacent a vertical surface into said aperture even when said vertical surface is uneven and the distance between said aperture and said vertical surface constantly varies, said deflecting means being rigidly attached to said housing adjacent to said outer edge of said aperture and making an acute and diverging angle with the forward directional axis of said rotary mower, said deflecting means also having a forward, outer, rounded surface substantially adjacent the forward surface of said deflector for smoothly engaging the vertical surface of a rigid structure at any one of a plurality of points along its rounded perimeter and having a smooth inner surface proceeding to said aperture for deflecting vegetation along a path adjacent the inner surface, through the aperture, and into said blade of said rotary mower.

3,190,064
ROTARY CUTTING REEL WITH QUICK DETACHABLE FLAILS

Alfred Wenzel and Alwin Hantel, Eschwege, Germany, assignors to Massey-Ferguson G.m.b.H., Kassel, Germany, a company of Germany

Filed Dec. 31, 1963, Ser. No. 334,728
Claims priority, application Great Britain, Jan. 5, 1963, 609/63
8 Claims. (Cl. 56—294)



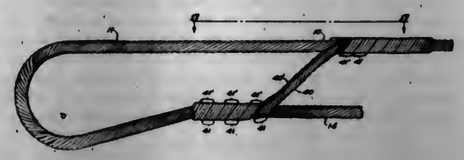
1. In a flail drum assembly including a rotor having at least one pair of rods spaced from and parallel to the axis of rotation of the rotor and at least one flail rotatably coupled at its inner end to each rod for extending radially upon rotation of the rotor with the outer end of the flail defining a circular path about the axis of rotation of said rotor; a hook portion on the inner end of said flail having substantially parallel legs with said rod being received between said legs to rotatably couple the flail to the rod; a slot in one of said legs; and a releasable latch member mounted on said one leg and biased to a locking position in which it extends through said slot into the space between said legs to prevent passage of said rod from between said legs; said latch member being selectively movable to an unlock position in which it is removed from the space between said legs permitting the flail to be removed from said rod.

3,190,065
DEAD ENDS FOR CABLES

Jess C. Little, Cleveland Heights, Ohio, assignor to The Fanner Manufacturing Company, a Division of Textron, Inc., Brookside Park, Cleveland, Ohio, a corporation of Rhode Island

Original application Mar. 2, 1961, Ser. No. 92,813, now Patent No. 3,132,468, dated May 12, 1964. Divided and this application Mar. 2, 1964, Ser. No. 357,850
7 Claims. (Cl. 57—145)

1. In combination with a main line arranged to be formed into a bight or loop and passed around or through a device to which it is to be anchored and having a tail end brought back opposite to the main line, means to secure the tail end of the line against longitudinal movement in a direction opposite to that of the main line comprising a pair of securing elements each formed of a plurality of clamp rods of resilient material, and each rod being formed as an open helix having the same pitch and lay, and said rods being assembled into half lay groups, said half lay groups having end portions applied to the

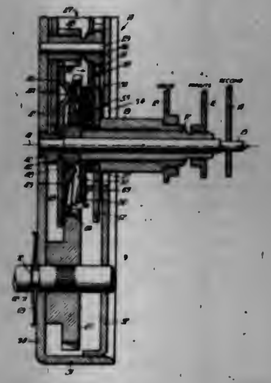


main line to form a whole lay and the other end portions applied to the tail end to form a whole lay and having intermediate portions extending between the main line and the tail end in parallel balanced relation.

3,190,066
ELECTRIC CLOCK

Alfred W. Gardes, Wilmette, and Joseph F. Gluth, Chicago, Ill., assignors to International Register Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 18, 1962, Ser. No. 245,539
3 Claims. (Cl. 58—26)

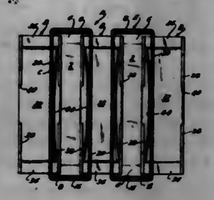


1. In an electric clock having a synchronous motor for driving time indicating means, means for interconnecting said motor and said time indicating means comprising: a second gear adapted to be driven by said synchronous motor to rotate about a fixed axis at a speed of one revolution per minute and having a bump extending laterally therefrom, a wobble disc mounted in juxtaposition to said second gear to wobble about said fixed axis as caused by rotation of said bump, means normally preventing rotation of said wobble disc, a minute disc for driving said time indicating means mounted in juxtaposition to said wobble disc to rotate about said fixed axis, the adjacent faces of the wobble disc and minute disc having interengaging gear teeth, there being fifty-nine teeth on said wobble disc and sixty teeth on said minute disc whereby said minute disc rotates at a speed of one revolution per hour, an annular fulcrum section on said wobble disc radially inwardly of said gear teeth thereon, and an annular planar surface section on said minute disc radially inwardly from said gear teeth thereon engageable with said annular fulcrum section about which said wobble disc wobbles under the control of said bump on said second gear.

3,190,067
EXPANSIBLE BRACELET LINKAGE

Clemens Kammerer, White Plains, N.Y., and Salvatore Bello, Cliffside Park, N.J., assignors to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York

Filed Mar. 21, 1962, Ser. No. 181,380
14 Claims. (Cl. 59—79)

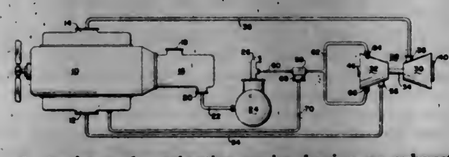


1. An expansible bracelet linkage comprising a series of hollow links having a side wall with an opening therein spaced from both the top and bottom thereof, said opening extending generally laterally from end to end of said side wall, and a connector having a body portion extending in the same direction as and slidably passing through said opening into said hollow link and adapted to be connected to an adjacent link, said connector having a first flange extending upwardly from said body portion adjacent the side thereof and a second flange extending downwardly from said body portion adjacent the side thereof, and resilient means operatively connected between said first flange of said connector and said side wall of said hollow link and effective to urge said connector into said link, said first and second flanges, when said connector is moved out from said link against the action of said resilient means, engaging said link side wall, said opening being located close to the bottom wall thereof, said first flange having a height greater than that of said second flange, said links having ends and being arranged in said linkage with said side walls directed toward adjacent links and with said ends directed generally outwardly toward the lateral periphery of said linkage, said connectors having ends correspondingly positioned relative to said link ends, and means operatively connecting said connector and said link and effective to support said connector on said link at their respective ends with an intermediate portion of said body portion of said connector spaced above the bottom of said link.

3,190,068
TURBOCHARGER FOR COMPRESSOR DRIVING ENGINE

Raymond F. Williams and Michael E. Martin, Quincy, Ill., assignors to Gardner-Denver Company, a corporation of Delaware

Filed May 14, 1964, Ser. No. 367,351
7 Claims. (Cl. 60—13)

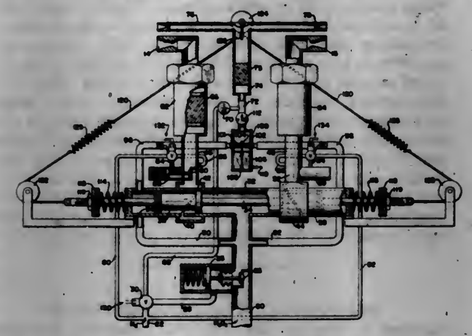


1. An internal combustion engine having an exhaust-driven turbocharger providing charging gas therefor;
said turbocharger including gas compressing means;
a source of compressed gas;
gas conducting means connecting said source to said gas compressing means whereby compressed gas supplied from said source operates on said gas compressing means to increase the charging-gas output of said turbocharger.

3,190,069
SPACE VEHICLE CONTROL SYSTEM

Arthur M. Gorbaty, Snyder, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.

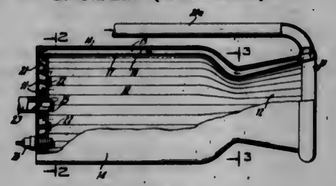
Filed Jan. 28, 1963, Ser. No. 254,068
5 Claims. (Cl. 60—35.6)



1. A thrust producing device for controlling a space vehicle operating beyond or in rarified earth's atmosphere, said device comprising: a reaction motor unit including a pair of oppositely directed main jet nozzles, a main catalyst chamber associated with each of said nozzles and having its outlet portion in flow-connected relation to the corresponding nozzle, an auxiliary catalyst chamber having oppositely directed outlet thrust nozzle devices arranged in common with said main jet nozzles, means for supplying a liquid monopropellant, means for separately supplying an inert-gas under pressure, and a conduit and valving and control system for selectively feeding monopropellant and inert gas to said main and auxiliary catalyst chambers, said system including a main monopropellant supply conduit including a main propellant flow control device, a shuttle valve and conduit system interconnecting said supply conduit and said catalyst chambers, said shuttle valve having separate monopropellant delivery conduits leading therefrom to respective of said main catalyst chambers, delivery control valve devices controlling flow of monopropellant through said delivery conduits, said shuttle valve comprising a cylinder and dual piston means carried by a common piston rod to be reciprocable longitudinally within said cylinder and defining a central chamber portion between said piston means, said cylinder having outlet ports associated with each of said delivery conduits and the parts being so arranged that when said piston unit is in centered position within said cylinder passage of monopropellant from said central chamber portion to either outlet port is blocked, and whereby displacement of said piston unit away from its centered position will progressively open one of said outlet ports and permit flow of monopropellant into the associated delivery conduit, said monopropellant supply passage having branch outlets therefrom leading through metered orifices into opposite ends of said cylinder behind said pistons, branch outlet conduits leading from each end of said cylinder behind said pistons to a servo valve device wherein their respective discharges are arranged in the form of oppositely directed jets playing against opposite sides of a movable differentially throttling armature portion of said servo valve mechanism, the fluid chamber portion of said servo valve having its outlet flow-connected with said auxiliary catalyst chamber, said pressured gas supply means including a branch conduit arrangement wherein one of the branches thereof leads to a main control valve controlling delivery of inert gas to an actuator for said main monopropellant flow control device, another branch of said conduit system leading through a one-way check valve to said auxiliary catalyst

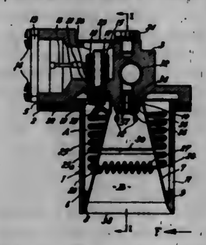
chamber, and a pair of branch conduits running respectively to actuators for said monopropellant delivery control valves and alternatively into said monopropellant delivery conduits, valve means operably associated with said branch conduits and actuable to selectively direct pressured gas into said monopropellant delivery conduits and/or to actuate said delivery control valves, signal-responsive means associated with said servo valve armature and operable to bias the latter differentially relative to the opposed nozzles of said servo valve mechanism whereby to differentially regulate the static pressure acting within said shuttle valve cylinder against opposite ends of said piston unit thereby controlling the position of said piston unit in said valve cylinder and the passage of monopropellant into said main catalyst chambers, and signal reception means associated with said main control valve and with said auxiliary control valves and with said servo valve mechanism for controlling the operations thereof.

3,190,070
REACTION MOTOR CONSTRUCTION
Edward A. Neu, Jr., Denville, N.J., assignor, by mesne assignments, to Thiokol Chemical Corporation, a corporation of Delaware
Filed Apr. 5, 1950, Ser. No. 154,056
10 Claims. (Cl. 60—35.6)



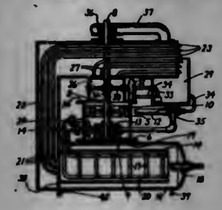
1. A reaction motor combustion chamber and exit nozzle having a side wall of individual longitudinal coolant conduits of curved longitudinal contour and trapezoidal cross section sealably attached side by side to form a fluid tight and pressure resistant enclosure, said conduits being reduced in cross sectional area at the throat of the exit nozzle of said thrust chamber to increase the velocity of flow of said coolant.

3,190,071
IGNITER DEVICE INTENDED IN PARTICULAR FOR JET ENGINES
Pierre Jean Victor Negré, Paris, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Oct. 8, 1962, Ser. No. 229,070
Claims priority, application France, Oct. 11, 1961, 875,658
3 Claims. (Cl. 60—39.82)



1. An igniter device designed to be located in the auxiliary combustion chamber of a jet engine, comprising a support, an outer annular shell attached to and extending forwardly from said support, a frusto-conical shell coaxially of and attached at its forward end to the forward end of the annular shell, said frusto-conical shell forming a central chamber and converging rearwardly to form with said annular shell an annular chamber between the shells, an air inlet to said annular chamber in the vicinity of the wider base of said frusto-conical shell, orifices in said frusto-conical shell in the vicinity of the narrower base of said shell, an outlet from said central chamber at the larger end thereof, an electrical heating resistance within said annular chamber and surrounding said frusto-conical shell, fuel injecting means mounted on said support, said fuel injecting means delivering fuel forwardly into said frusto-conical shell from said narrower base and inducing a flow of air through said orifices to mix with said fuel, and air-fuel mixture igniting means mounted forwardly of said injection means in said central chamber.

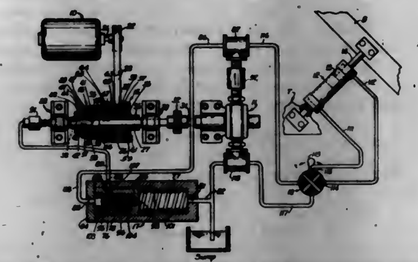
3,190,072
TURBINE ENGINE
Pierre Berryer, 141—45 85th Road, Apt. 4B, Jamaica, N.Y.
Filed Oct. 20, 1964, Ser. No. 405,170
4 Claims. (Cl. 60—40)



1. An oil driven turbine engine, comprising, a vertical cylindrical housing, a drive shaft extending concentrically through the housing, a bladed turbine wheel mounted on the shaft in an upper portion of the housing, a gear pump operated by the shaft in a lower portion of the housing, said lower portion forming a sump and containing a supply of oil, a nozzle entering the side of the housing and directed towards the turbine blades, an oil heating cylinder, said pump drawing oil from the sump and through the heating cylinder and outwardly through the nozzle against the turbine blades, a water supply tank, an injector nozzle for introducing water into the first nozzle, and a heat exchanger for condensing steam formed by the introduction of water into the heated oil.

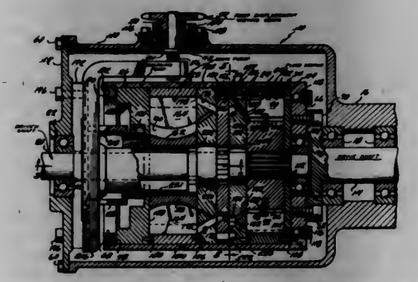
3,190,073
AUTOMATIC VALVE AND CLUTCH ARRANGEMENT
Robert O. Baker, Moline, Ill., assignor, by direct and mesne assignments, to Havaco, Inc., Moline, Ill., a corporation of Illinois
Filed Mar. 13, 1963, Ser. No. 264,911
18 Claims. (Cl. 60—52)

1. In a power transmission system, a hydraulic motor forming a fluid pressure operated work element, a hydraulic pump, a first hydraulic circuit including a control valve connecting said work element with said pump, a check valve incorporated in said hydraulic circuit to prevent flow of fluid from said work element through said control valve to said pump, a prime mover, clutch means connecting said prime mover with said pump, means biasing said clutch for movement to an engaged position, fluid pressure means operative to overcome said bias and disengage said clutch, a second hydraulic circuit connected with said first hydraulic circuit between said check valve and said control valve for directing fluid under pressure to said fluid pressure means to disengage said clutch in response to high pressure between said check valve and said control valve, and valve means incorporated in said second hydraulic circuit and responsive to a drop in pressure in portions of said first hydraulic



circuit for relieving pressure in said fluid pressure means so as to permit said biasing means to engage said clutch.

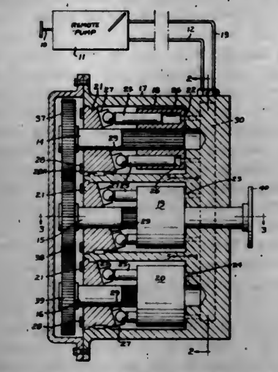
3,190,074
HYDRAULIC TRANSMISSION
Stanley S. Johns, 8 Aintree Road, Towson, Md.
Filed Nov. 22, 1963, Ser. No. 325,699
34 Claims. (Cl. 60—53)



13. A fluid transmission comprising: a casing; a drive shaft extending into said casing; a hollow cylindrical body member having a closed end, said drive shaft being fixedly attached to the closed end of said body member for rotatably supporting the same within said casing; bearing means supported in the closed end of said body member; a driven shaft extending into said casing and into the open end of the cylindrical body member, said driven shaft having its end within said cylindrical body member supported by the bearing in the closed end of said body member; a bearing in said casing for supporting said driven shaft at a point in spaced relationship to the bearing supporting the end of said driven shaft; a variable volume fluid pump carried within said body member; a reversible constant volume fluid driven motor positioned within said body member and having a driven rotor keyed to said driven shaft; valve means interposed between said pump and said motor for providing a continuous fluid circuit to and from said pump and motor; and an end plate for retaining said pump, valve means, and motor within said body member.

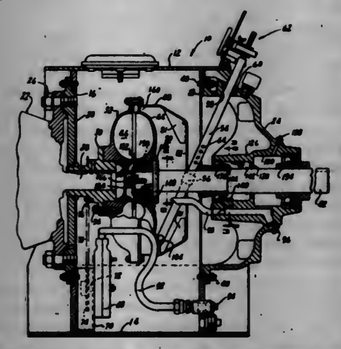
3,190,075
INFINITELY VARIABLE TRANSMISSION
Heinrich Ebert, Im Weller 2, Furth, Bavaria, Germany
Original application May 8, 1961, Ser. No. 108,349, now Patent No. 3,123,975, dated Mar. 10, 1964. Divided and this application Dec. 13, 1963, Ser. No. 330,353
Claims priority, application Germany, Aug. 14, 1957, E 14,537
8 Claims. (Cl. 60—53)

1. In a hydrostatic transmission with swash plate operated pistons, a housing member having pressure fluid and suction fluid conduit means therein, a plurality of hydraulic units of the axial piston type in said housing, arranged therein on one and the same side of said conduit means, each one of said units having a swash plate and also having a rotatable cylinder block provided with a plurality of cyinders extending substantially in the direction of the axes of rotation of said cylinder blocks, the axes of rotation of said cylinder blocks being substantially parallel to each other, a plurality of pistons respectively reciprocable in the cylinders of each of said cylinder blocks and acting upon the respective swash plate, each of said



swash plates being stationarily mounted in said housing, control valve means for each cylinder block comprising passage means in said housing extending in axial direction of said cylinders leading from said cylinder blocks to said conduit means and operable in response to the rotation of said cylinder blocks for alternately establishing communication between said cylinders and said pressure fluid conduit means and between said cylinders and said suction fluid conduit means, said passage means being located entirely within the radial limits of said cylinder blocks.

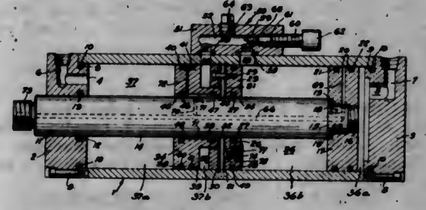
3,190,076
FLUID DRIVE FOR REVERSIBLE ROTATION
Harry A. Meyer, Detroit, and Henry J. Langlois, Dearborn, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 191,670
3 Claims. (Cl. 60—54)



2. In a fluid coupling, a toroidal work chamber defined by opposed impeller and runner shells having inner and outer peripheries and separated by a radial gap, means for supplying fluid to said work chamber, a casing connected to said impeller shell and enclosing said runner

shell in spaced relation, a rotatable scoop chamber defined by said casing as one wall with the back of the runner shell forming the other wall of said scoop chamber, said scoop chamber being coaxial to said work chamber and in free liquid communication with said work chamber whereby the level of liquid in said scoop chamber determines the amount of liquid in said work chamber and the slip in said coupling, said casing having an opening therein coaxial to and spaced from the back of the runner shell, a scoop tube extending through said opening and adjustable in said scoop chamber by radial movement through said opening for controlling the amount of liquid therein and thus in said work chamber, said runner shell including a hub, said runner hub having at least one breather hole formed therethrough and in free liquid communication with said work chamber, said breather hole extending from the inner periphery of the runner hub to said scoop chamber, the outlet of said breather hole being directed toward the opening in said casing, baffle means at the outlet of said breather hole for deflecting liquid discharged through said breather hole radially in said scoop chamber, vane means on the interior of said casing and rotatabe therewith to smoothly rotate liquid within said scoop chamber for flow into said work chamber via said radial gap, and a flexible load plate connected to the inner periphery of said runner hub in overlying relation to said breather hole, a portion of said load plate extending into the work chamber so that the toroidal flow of fluid thereagainst will cause flexure thereof to expose said breather hole and deflect liquid thereinto for exhaust of liquid from said work chamber into said scoop chamber.

3,190,077
FLUID MOTOR
Harold W. Scholin, Chicago, Ill.
(1225 N. Northwest Highway, Park Ridge, Ill.)
Filed Jan. 4, 1963, Ser. No. 249,474
3 Claims. (Cl. 60—54.5)



1. In a fluid-operated motor, the combination comprising a hollow cylinder, a partition wall mounted in said hollow cylinder and dividing the space therein into a first chamber and a second chamber, an end wall closing each end of said cylinder, a pressurized air-operated piston reciprocable in said first chamber, pasage means for alternately admitting and venting air into and from said first chamber, said partition wall and said end wall of said second chamber each having an axial bore, a piston rod extending through said bores and attached at one end to said piston, a free floating piston reciprocable in said second chamber, said free floating piston also having an axial bore through which said piston rod extends, said free floating piston and said piston rod unattached to each other, each of said pistons having a radial vent passage in communication with radial vent passages in said piston rod, said last-mentioned radial vent passages intercepting an axial vent passage in said piston rod, and said bore of said floating piston having a ring groove therein which is intercepted by the radially outer end of one of said radial vent passages in said piston rod and which is also intercepted by the radially inner end of the radial vent passage in said free floating piston, the cylinder wall of said first chamber having a radial passage therethrough near said partition wall, the cylinder wall of said second chamber having a radial passage therethrough near said partition wall, a valve body mounted on the outside of said cylinder wall over said last-mentioned radial pasasges, fluid passage means in said valve body communicating said last-mentioned radial passages, and a valve on said valve body having a movable member for varying the rate capacity of hydraulic fluid flow between said first chamber and said second chamber.

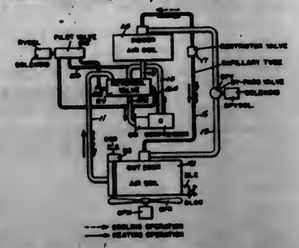
3,190,078
PILE DRIVING MANDREL ASSEMBLY
Fredric Rusche, 8125 Medina St., Detroit, Mich.
Filed June 11, 1962, Ser. No. 201,672
9 Claims. (Cl. 61—53.72)



1. A fluid pressure operated, expanding plug type mandrel assembly for driving hollow tubular pile shells and the like elongated forms comprising: first and second coaxially aligned external tubular cores insertable within said forms, said cores each having radial apertures therethrough; a driving head engaged with one end of said first core to receive and transmit heavy blows to said first core axially thereof; gripping plugs received in said apertures for radial movement into and out of gripping engagement with said forms; fluid pressure inflatable means in each core acting radially of said plugs to urge same outwardly to produce said gripping engagement; elongated pressure transmiting means between each of said inflatable means and the plugs in each core to transmit force to and guide said plugs; coupling means inserted between and joining said first core to said second core; and fluid distribution means for channeling pressure from a source of pressurized fluid to the bladder means in said first and second cores.

3,190,079
HEAT PUMPS
Rodney F. Lamar, Staunton, Va., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1963, Ser. No. 309,677
6 Claims. (Cl. 62—155)

1. A heat pump comprising an indoor air coil, an outdoor air coil, a refrigerant compressor, reversal valve means and two-way expansion means connected in a closed refrigeration circuit, means including a first solenoid for adjusting said valve means to route refrigerant from said compressor to said outdoor coil to operate said outdoor coil as a condenser and said indoor coil as an evaporator, and for adjusting said valve means to route refrigerant from said compressor to said indoor coil to operate said indoor coil as a condenser and said outdoor coil as an evaporator, said valve means being adjusted to route refrigerant from said compressor to said outdoor coil when said solenoid is energized, and to route refrigerant from said compressor to said indoor coil when said solenoid is deenergized, a by-pass tube connecting said coils, a normally closed valve in said tube, a normally energized, second solenoid for opening said normally closed valve when said second solenoid is energized, a defrost relay having a normally closed switch, a defrost initiating control having a switch which closes when frost



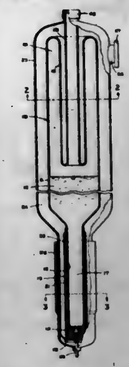
forms on said outdoor coil when said outdoor coil is operating as an evaporator, means including said switch of said control, when closed, in series with said defrost relay for energizing said defrost relay, a heat control thermostat having a switch which closes when said thermostat calls for heat, and means including means energized when said thermostat switch and said switch of said defrost relay are closed, for first energizing said second solenoid, for next deenergizing said second solenoid, and for next energizing said first solenoid.

3,190,080
HIDEAWAY FREEZER
Starlin C. Helton, 384 Grand St., Pierson, Mich.
Filed Nov. 26, 1962, Ser. No. 240,014
6 Claims. (Cl. 62—259)



1. A refrigeration unit for overhead mounting in a room, comprising: a housing having mounting means on the lower end thereof for mounting said housing to ceiling joists above the ceiling in a room; said housing having insulated walls and top defining a storage chamber; refrigeration equipment operably assocaited with said chamber to cool the air therein; said housing and chamber having an open bottom adapted to coincide with an opening in said ceiling; a foodstuff storage unit normally positioned in said housing to be overhead of and substantially out of said room; the bottom of said unit being insulated to close the open bottom of said housing when in the normal storage position; said unit being in telescopic relationship inside said housing and operably connected thereto by elevating means; and actuator means for reversibly operating said elevating means to lower said unit largely out of said housing and into the room for removal or insertion of foodstuffs, and to raise said unit back into storage position again inside said housing.

3,190,081
CRYOGENIC APPLICATOR WITH PROBE MEANS
Frank G. Pytryga, Elizabeth, N.J., assignor to Sulfrian Cryogenics Incorporated, Hillside, N.J., a corporation of New Jersey
Filed July 26, 1963, Ser. No. 297,866
16 Claims. (Cl. 62—293)

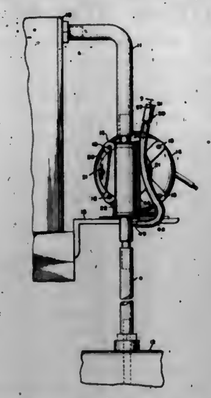


1. An applicator for withdrawing heat from a localized area on a surface comprising:
(a) a thermally insulated reservoir having an inlet means for charging a supply of vaporizable fluid therein, and means on said reservoir to vent vapors therefrom,
(b) an insulated neck section connected at one end with the reservoir,
(c) said neck section including walls forming a chamber in fluid communication with the reservoir to receive a portion of the vaporizable fluid present in said reservoir,
(d) a thermally conductive support means connected to and forming at least a portion of said walls in said neck section to permit heat exchange relation with the vaporizable fluid in the chamber,
(e) probe means for engaging the local area of the surface from which heat is to be removed,
(f) and said probe means secured to said support means to maintain a temperature gradient and to cause heat to flow from the local area of the surface being cooled to the vaporizable fluid.

3,190,082
APPARATUS FOR MANUFACTURING SOFT ICE CREAM
Gene S. Duke, 617–623 15th Ave., East Moline, Ill.
Filed Oct. 4, 1962, Ser. No. 228,391
4 Claims. (Cl. 62—342)

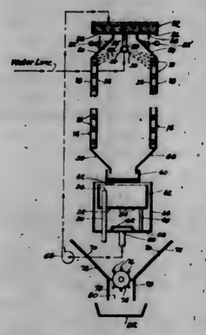
1. Apparatus for use in the manufacture of soft ice cream, adapted for insertion between a freezing machine and a mix receptacle, said apparatus including a feed line connecting the mix receptacle to the freezing machine, a pump connected to said feed line for creating suction in the latter, the pump including a suction line and discharge line connected to said feed line in vertically spaced relationship, a ball valve in said feed line between said suction line and discharge line, a convoluted spring in said feed line between said suction line and discharge line, said ball valve being seated in the upper portion of said convoluted spring, to normally prevent passage of the mix from the discharge side to the suction side of the pump, said ball valve being moved to an inoperative position under force of the mix, when the freezing machine is full, an air inlet line, one end of which is connected to said feed line between said pump and mix receptacle, for drawing in air, a closed cylindrical housing connected to the opposite end of said air inlet line, said housing being

provided with an air inlet opening in communication with the interior thereof, a separate air conduit unit positioned within said cylindrical housing, the air conduit unit being provided with an air opening of predetermined size for



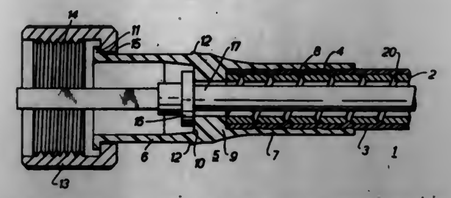
metering air delivered to the air inlet line, and spaced ball valves located in said feed line above and below the air inlet line, to seal off the latter from said feed line when the mix is not being suctioned into the freezing machine.

3,190,083
ICE MAKER HAVING WATER THAWING MEANS
Joseph P. Miller, Chicago, Ill., assignor to Chicago Stock Yards Turbo Refrigerating Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 18, 1963, Ser. No. 317,326
2 Claims. (Cl. 62—349)



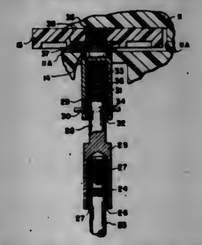
1. An ice making machine which makes use of a pair of vertically disposed laterally spaced apart parallel freezing plates, means for flowing water over the outer freezing surfaces of the freezing plates, means for refrigeration of the plates to cause ice to plate out on the freezing surfaces of the plates to form an ice layer on each plate, a pipe extending crosswise between the adjacent inner surfaces of the plates for applying water onto the adjacent inner surfaces of the plates at a temperature above the freezing point temperature for water, said spray pipes having spaced openings on opposite sides with the openings on one side being more numerous than the openings on the other whereby a larger volume of water is supplied from the one side onto the adjacent inner surface of the plate than from the other onto the other plate whereby the ice layer on the plate adjacent the one side of the spray pipe is released before the ice layer on the other.

3,190,084
FLEXIBLE DRIVE SHAFT ASSEMBLY
Philip Roger Moon, Bushey, Walter Stanley Stockwell, Carpenders Park, and Richard George Tilbury, Letchmore Heath, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company
Filed Feb. 26, 1963, Ser. No. 261,093
Claims priority, application Great Britain, Mar. 2, 1962, 8,119/62
5 Claims. (Cl. 64—3)



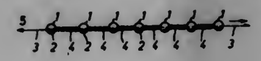
1. A flexible driving shaft assembly comprising an inner driving member, a tubular outer member disposed in surrounding relation to said driving member, said outer member comprising an inner tubular layer of helically wound wire, adjacent turns of said wire being spaced apart axially to form a helical gap, said outer member also comprising an outer layer fabricated of a plastic material and having portions of its inner surface protruding between the turns of said wire, and a tubular coupling part surrounding and overlapping at least a portion of said plastic outer layer, said coupling part having a helical protrusion on its inner surface, the spacing between the turns of said helical protrusion being substantially the same as said helical gap, said coupling part being press fitted onto said outer layer with said helical protrusion forming a key between said coupling part and said outer layer.

3,190,085
COUPLING CONSTRUCTION
Marcellus I. Fillweber, Mansfield, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Feb. 20, 1963, Ser. No. 259,968
3 Claims. (Cl. 64—8)



1. A coupling construction operatively connecting an actuating member rotatable on a first reference axis and an actuable member rotatable on a second reference axis and disposed at an axial distance from the actuating member, and accommodating for any lack of alignment of said reference axes and for any variation in said axial distance, comprising in combination a first shaft engaged to said actuating member to rotate therewith on said first reference axis and extended toward said actuatable member, a second shaft engaged to said actuatable member to rotate therewith on said second reference axis and extended toward said actuating member, a transmitting member telescopically interengaged with said first and second shafts, respectively, for transmitting power between said shafts through a range of variations in said axial distance, and first and second means providing interengagement between said transmitting member and said first shaft and said second shaft, respectively, each of said means including a toothed head and a longitudinal serrated cylindrical inner wall intermeshed to cause rotation of one of the transmitting member and a said shaft upon rotation of the other, said toothed head having longitudinally extending curved sides engageable with said inner wall to permit variable angular disposition of the axes of the transmitting member and a respective shaft interengaged therewith, at least one of said first and second means including a transverse pin movable with said toothed head thereof and a pair of oppositely disposed aligned openings having defining edges movable with said cylindrical inner wall and accommodating opposite end portions of said transverse pin in a loose fit to permit the transverse pin to tilt in a plane coinciding with a common axis through said openings and to be displaced from said plane, said at least one of said first and second means including resilient means biasing said toothed head in a direction outwardly of said cylindrical inner wall and biasing said transverse pin toward a side of said openings in said plane against the defining edges thereof to resiliently resist said tilting in said plane and said displacement from said plane, the arrangement of the said first and second shafts, transmitting member and the said first and second means permitting such angular disposition of the axes of the respective shafts and transmitting member and variable longitudinal positions of the transmitting member along the axes of the shafts, and the arrangement of said transverse pin, openings and resilient means providing for limited resiliently yieldable movement between said at least one of said first and second means.

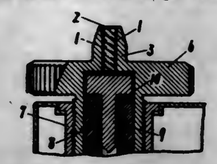
3,190,086
EXPANDABLE BRAIDED ORNAMENT
Pia-Maria Klein, Eulerstrasse 41a, Stuttgart-Rohr, Germany
Filed Oct. 20, 1961, Ser. No. 146,543
Claims priority, application Germany, Nov. 29, 1960, K 42,265
1 Claim. (Cl. 66—193)



A necklace, bracelet, belt and the like, comprising a single, smooth, resilient, synthetic linear polyamide thread, crocheted into an open stitched chain-like series of small extensible link-like loops, spacedly threaded bead-like members positioned between said loops and a plurality of said loops separating said adjacent bead-like members, resulting in a closed ornamental chain which may be extended for application to a body member.

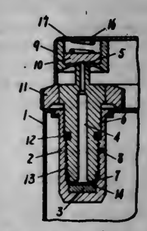
3,190,087
MOUTHPIECE OF GAS LIGHTER
Seiichi Kitabayashi, 2—2246 Nishisugamo, Toshima-ku, Tokyo, Japan
Filed Nov. 7, 1962, Ser. No. 236,051
Claims priority, application Japan, Nov. 8, 1961, 36/39,772
3 Claims. (Cl. 67—7.1)

1. In a gas lighter having a gas outlet controlling valve and an exterior control wheel for said valve, a gas nozzle comprising a nozzle tube provided on said control wheel and having a bore in communication with said gas controlling valve for receiving gas therefrom under various pressures as controlled by said control wheel providing varying flame formations as desired, said nozzle tube bore having a conical mouth with the outer end thereof being wider than the inner end of said conical mouth, means positioned in said nozzle tube bore providing a plurality



of gas routes with said nozzle tube bore opening closely together in said tube bore below and adjacent to said tube bore mouth inner end.

3,190,088
FLAME REGULATION VALVE FOR GAS LIGHTER
Seiichi Kitabayashi, 2—2246 Nishisugamo, Toshima-ku, Tokyo, Japan
Filed May 24, 1963, Ser. No. 282,958
Claims priority, application Japan, May 26, 1962, 37/27,592; June 20, 1962, 37/32,749
3 Claims. (Cl. 67—7.1)

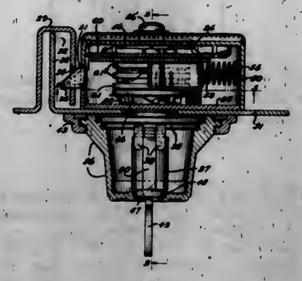


1. A flame regulation valve device for a liquified gas lighter comprising a cylindrical valve housing for being fixed to the wall of and extending within a fuel reservoir of a liquified gas lighter, a threaded valve stem having the lower portion thereof rotatably positioned in said valve housing, said valve stem being provided longitudinally thereof with a gas expansion chamber with the top end of said gas expansion chamber forming a burner, a seat gasket being encased in the bottom of said valve housing below said valve stem lower portion, the side wall of said valve housing being provided therein with threads in threaded engagement with said valve stem and a hole for the passage of gas from said reservoir, at the upper portion of said thread.

3,190,089
KEY-CONTROLLED, COMBINATION CHANGING, PERMUTATION LOCK
Daniel J. Foote, Wauwatosa, Alex D. Stahl, Milwaukee, and Kenneth H. Buchmann, Menomonee Falls, Wis., assignors to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 4, 1962, Ser. No. 192,551
9 Claims. (Cl. 70—156)

9. A combination lock comprising, a lock casing having an opening therein, a lock bolt reciprocally mounted through the casing opening and having an integral portion extended into the casing, a spring reacting against a portion of the lock bolt to yieldingly urge it toward its projected position, a plurality of supermiposed tumbler discs rotatably mounted within the casing and formed with registering gates, certain of the discs having notched peripheral portions, means including a knob for turning said discs to a predetermined position wherein their gates are in registration, a lever retaining plate carried by the extended portion of the lock bolt to yieldingly reciprocate therewith, a spring biased drive lever pivotally mounted on said lever retaining plate and having a portion engageable with the

gates of the tumbler discs when the latter are in a predetermined position of registration, a spring biased upset lever also pivotally mounted on the lever retaining plate and having a portion engageable with the tumbler disc notches to turn and upset the same when the bolt is moved from its retracted to its extended position, a key-receiving



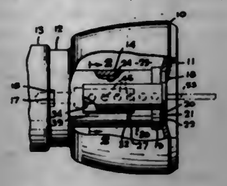
cylinder plug independently rotatably housed within said knob and turnable upon the insertion therein of a proper key, and a member within the casing and connected to the cylinder plug to turn therewith and engageable with a portion of the lock bolt extension to reciprocate the bolt to a retracted position when the plug is turned through an inserted key.

3,190,090
ANTI-THEFT DEVICE FOR ROAD VEHICLES
Kitty Zaidener, 7 Beresford Lodge, Beresford Road, London, England
Filed Feb. 15, 1962, Ser. No. 173,425
3 Claims. (Cl. 70—203)



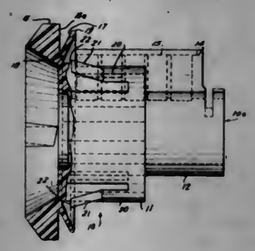
1. An anti-theft device for a road vehicle having a steering wheel and control pedals, the device comprising an elongated rod comprising a tubular length, a stem in screw-threaded relationship with the upper end of said tubular length, and a lower part which is in telescopic but non-rotary relationship with the tubular length, a shaped member at the lower end of the lower part which hooks around one of said control pedals, a U-shaped bracket mounted on the upper end of said stem to receive the rim of the steering wheel, and locking means including a locking finger to extend across said bracket and so prevent removal of the bracket from the wheel and lock the device in its working position where the rod extends between said part of the wheel and said control pedal.

3,190,091
REMOVABLE CYLINDER SPINDLE RETAINING SHOULDER
Fred J. Russell, 8635 Otis St., South Gate, Calif., and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Filed May 27, 1963, Ser. No. 283,388
3 Claims. (Cl. 70—224)



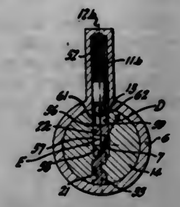
1. In a lock, a spindle having a bore therein and a retaining shoulder on the spindle, a key-operated mechanism having a portion thereof located in said bore and a portion extending through the wall of said spindle adjacent said shoulder, cam means operably associated with said key-operated mechanism and responsive to operation by a control key and not responsive to operation by an operator key, said cam means being extendable into engagement with said shoulder whereby to retain said key-operated mechanism in engagement with said spindle during manipulation of said key-operated mechanism by said operator key.

3,190,092
CYLINDER LOCK HOUSING
George P. Patriquin, Gardener, Mass., assignor to Independent Lock Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Dec. 17, 1962, Ser. No. 245,248
5 Claims. (Cl. 70—370)



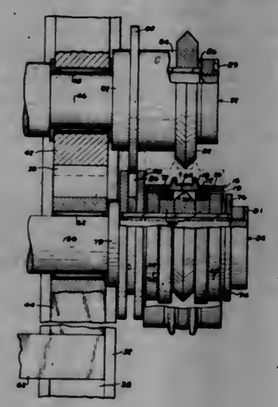
2. A self-mounting cylinder lock assembly comprising resilient plastic and including a body portion, a cylindrical bore extending inwardly from the outer end of said body portion, a headed portion at the front end of said body portion extending radially outwardly beyond said body portion, said headed portion being resistant to flexure relative to said body portion, a longitudinally compressible, thin walled skirt having a neck portion extending from said body portion adjacent the junction of the body portion and the rearmost face of said headed portion, said skirt flaring outwardly and rearwardly to a widened, rearwardly directed annular rim, said annular rim being spaced a clearance distance rearwardly of the rearmost face of said headed portion, and retainer means projecting from said body adapted to engage behind the inner surface of an automobile door panel or the like and to maintain said rim in stressed, conforming contact with the outer surface of said panel.

3,190,093
PIN TUMBLER CYLINDER AND KEY SYSTEM
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed Feb. 7, 1963, Ser. No. 256,852
11 Claims. (Cl. 70—383)



9. In a pin tumbler cylinder lock, a body, a rotor rotatable in said body, means in said rotor for receiving a pin tumbler, a two part telescoping pin tumbler disposed in and having one of said parts projecting from said receiving means, and means actuated by a key engaging the other of said parts of said pin tumbler and rotating said rotor in said body for forcing said one part of said pin tumbler against said body and telescoping said two parts of said pin tumbler.

3,190,094
METHOD AND APPARATUS FOR DRUM RING PARTING
Frank J. Kutas, Lansing, Mich., assignor, by mesne assignments, to Motor Wheel Corporation, Akron, Ohio, a corporation of Ohio
Filed Dec. 3, 1962, Ser. No. 241,813
9 Claims. (Cl. 72—71)

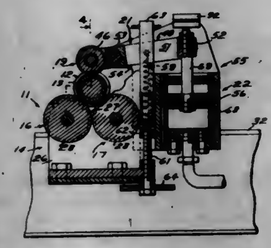


6. In the method of making brake drums wherein a lining of iron is cast into a steel drum band having a contour of two single drums with their open ends joined at a proposed line of parting to form a double brake drum with said lining secured to said band by a metallurgical bond, the step of parting said double drum to form two single brake drums by applying with a tool a localized radially outward pressure to the inner surface of said lining at said proposed line of parting while simultaneously applying with a tool a localized radially inward pressure to the outer surface of said band at said proposed line of parting to sever said band and groove said lining at opposite surfaces thereof until said lining separates along said proposed line of parting.

3,190,095
DIES FOR THREAD ROLLING MACHINES FOR PRODUCING SCREWS
Frederick William Cooper, Birmingham, and John Forsyth, Longdon, near Rugeley, England, assignors to G.K.N. Screws & Fastener Limited, a British company
Filed Oct. 10, 1962, Ser. No. 229,582
Claims priority, application Great Britain, Oct. 14, 1961, 36,957/61
2 Claims. (Cl. 72—88)

1. A die for use in rolling a thread upon a blank to produce a spaced thread type of screw having, on its blank engaging face, a thread form comprising alternate ribs and main grooves extending from the starting end to the finishing end of the die and wherein, at the finishing end of the die each rib has a crest which is of flat-top form and, at the starting end of the die, each rib has a form which is similar to that at the finishing end, but each rib at the starting end having its crest provided with at least one groove, extending longitudinally of the rib and of a depth which is relatively shallow as compared with the depth of the main grooves, such groove decreasing in depth from the starting end to the finishing end of each rib until it disappears at a position short of the finishing end of each rib.

3,190,096
AUTOMATIC CRIMPING MACHINE
Felix M. Anthony, 275 Fairmount Ave., Piedmont, Calif.
Filed Jan. 22, 1962, Ser. No. 167,707
9 Claims. (Cl. 72—110)

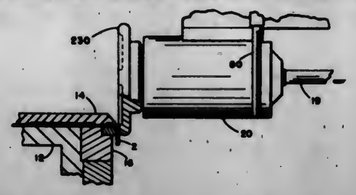


1. A cable crimping machine comprising a bed with spaced drive and idler rolls journalled thereon, a crimping roll disposed in overlying relation to said drive and idler rolls, feed means mounting said crimping roll for rotation about an axis parallel to the axes of said drive and idler rolls and for translation towards and away from said bed, a powered drive system coupled to said drive roll to upon energization rotate the drive roll alternately in opposite directions, a powered feed system coupled to said feed means to upon energization translate said crimping roll towards said drive and idler rolls, and a control system coupled to said powered drive and powered feed systems to selectively effect simultaneous actuation thereof.

3,190,097
EDGE PREPARATION MACHINE AND METHOD
Rudolph Horn and Kennison L. Vowell, Los Angeles, Calif., assignors to North American Aviation, Inc.
Original application June 20, 1960, Ser. No. 37,146, now Patent No. 3,120,915, dated Feb. 11, 1964. Divided and this application Sept. 18, 1963, Ser. No. 318,467
4 Claims. (Cl. 72—210)

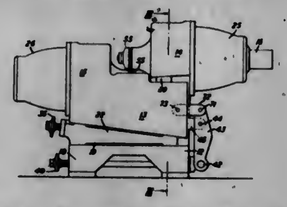
1. In apparatus for spinning an edge on sheet material, support means for supporting said material, stationary straight edge means over which said material may be placed in overhanging relationship, movable arcuate means for imposing force progressively on said edge to deform the same, said force causing said material to fold over said straight edge, adjustable clamping means for

holding said material stationary during said folding operation, frame means mounted on said support means, elongate support means forming part of said frame means for movably supporting carriage means, carriage means supported by said elongate support means and movable



translationally with respect to said frame means, and connection means connecting said movable arcuate means to said carriage means so that translational movement of said carriage means causes similar movement of said movable arcuate means.

3,190,098
CANTILEVER ROLLING MILL
Ian Wilson, High Green, near Sheffield, England, assignor to The British Iron and Steel Research Association
Filed Aug. 1, 1960, Ser. No. 46,784
9 Claims. (Cl. 72—223)



1. A rolling mill comprising two pairs of work rolls to define two roll gaps therebetween, a common spindle carrying one roll of each pair mounted in an overhanging manner at either end of the spindle, a central housing in which the spindle is mounted, separate housings in which the other rolls of each pair are mounted in overhanging manner, said separate housings each having a fixedly secured part interleaving with a part of the central housing, the abutting surfaces of the interleaving parts of the separate housings being disposed in planes intersecting the pass planes of said two roll gaps, and wedge adjustment means between the interleaving parts corresponding to each pair of rolls for independent adjustment of each pair of rolls for roll gap and alignment.

3,190,099
ROLL CHANGING APPARATUS
Maurice F. Sieger and James R. Adair, Pittsburgh, Pa., assignors to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1962, Ser. No. 226,859
6 Claims. (Cl. 72—238)

1. In combination with a rolling mill having at least two rolls in which said rolls are arranged substantially in a common vertical plane,

a roll changing apparatus comprising a first rig having a first supporting area for receiving a roll withdrawn from the mill and a second area for supporting a replacement roll to be inserted into said mill,

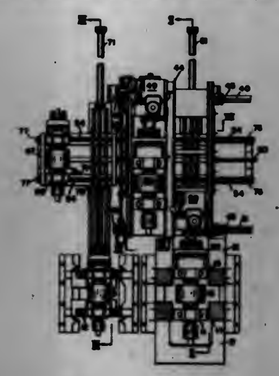
a substructure supporting said first rig at an elevation substantially coincident with at least a portion of the upper-most roll,

said first rig being arranged so that its first and second supporting areas can be brought into an operative receiving and inserting position, respectively, relative to the upper-most roll of said mill,

a second rig having a first supporting area for receiving a roll withdrawn from the mill and a second area for supporting a replacement roll to be inserted into the mill,

said second rig being arranged to pass beneath the first rig at an elevation substantially coincident with at least a portion of the lower-most roll,

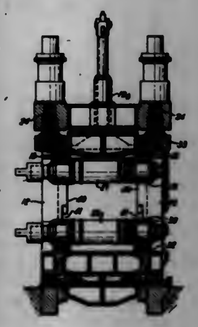
said second rig being arranged so that its first and second supporting areas can be brought into their



receiving and inserting positions, respectively, relative to the lower-most roll of said mill, and

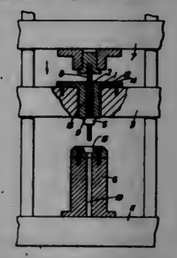
means for moving said rigs longitudinally relative to said mill to locate said first roll-supporting areas in positions to receive rolls withdrawn from the mill and for further moving said rigs so that the withdrawn rolls will be removed away from said receiving positions and the replacement rolls supported by said second roll-supporting areas positioned relative thereto in readiness for insertion into the mill.

3,190,100
ROLLING MILL
Jeremiah W. O'Brien, 457 Morrison Drive, Mount Lebanon, Pittsburgh 16, Pa.
Filed July 23, 1962, Ser. No. 211,531
Claims priority, application Great Britain, Dec. 21, 1961, 45,797/61
8 Claims. (Cl. 72—248)



1. A rolling mill comprising a pair of fixed spaced apart housings adapted to alternatively receive a first roll arrangement consisting of two rolls or a second roll arrangement consisting of four rolls, windows in said housings into which said two roll arrangements are alternatively received, the aggregate diameters of said second roll arrangement exceeding the aggregate diameters of said first arrangement, roll adjusting means mounted in said housings, bearing-chock assemblies mounted on the ends of said rolls, the length of the rolls of said first roll arrangement being such that their bearing-chock assemblies are offset toward the center of said mill relative to said roll adjusting means, a filler beam received in said windows when said first roll arrangement is being employed to carry the bearing-chock assemblies of one of said rolls of said first arrangement and transmitting the rolling loads of said roll adjusting means.

3,190,101
EXTRUSION OF FLUTED ROD-LIKE ARTICLES
William Shiel Caisley, 48 8th Ave., Blyth, Northumberland, England
Filed Aug. 13, 1963, Ser. No. 301,736
Claims priority, application Great Britain, Aug. 14, 1962, 31,190/62
1 Claim. (Cl. 72—257)



Apparatus for producing, by extrusion, rod-like articles such as twist drills or reamer bodies with either straight or helical flutes and having at one end a shank portion without flutes or with only partially formed flutes which apparatus comprises a support, two platens or holders one on each side of the support and both movable relative to the support towards and away from one another, a container or guide member carried by the support between the platens and having a through-way to receive a blank, said throughway extending in the direction of relative movement of the platens, a flute-forming extrusion die removably supported by one platen and movable therewith to and from a position in which it is at one end of the throughway aligned therewith, and an extrusion plunger carried by the other platen in alignment with the throughway and operably by movement of said other platen first to force a rod-like blank in the throughway partly through the die, leaving a portion of the blank still in the throughway, and then directly or indirectly to eject the blank from the throughway, the die being movable with the blank during such ejection and thereafter removable from the apparatus with the blank.

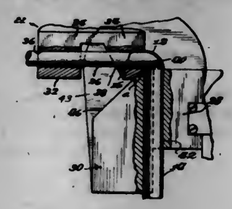
3,190,102
EXTRUSION PRESS
Ernst Muller, Duisburg, Germany, assignor to Hydraulik G.m.b.H., Duisburg, Germany
Filed June 22, 1962, Ser. No. 204,378
4 Claims. (Cl. 72—265)

1. A press for extruding tubular members comprising in combination an abutment block having an extrusion opening therein, an extrusion die supported adjacent the inner face of said abutment block, a billet container mounted adjacent said extrusion die and having a bore communicating with said die and said extrusion opening, a stationary pressure cylinder mounted in spaced relation to said billet container and rigidly connected to said abutment block, said stationary pressure cylinder having an open end facing said billet container and a remote end having an opening therethrough, a first hollow piston slideably received in said stationary pressure cylinder, a hollow ram at one end of said first piston and adapted to slide in the bore of said billet container, a tubular extension at the other end of said first piston and slideable in the opening in said remote end of said stationary cylinder, a crossbeam fixed to the end of said tubular extension, a crosshead rigidly connected in spaced relation to said crossbeam, a movable pressure cylinder rigidly connected



to said crosshead, a second piston slideably received in said movable cylinder, a crosspiece fixed to said second piston and disposed for movement between said crossbeam and said crosshead, means on said crosspiece for adjusting the stroke of said second piston, a rod connected to said second piston and slideably received in said tubular extension, and a piercing mandrel connected to said rod and slideably received in said first piston and in said hollow ram, said first piston being operable independently of said second piston to move said mandrel relative to said hollow ram into said billet container and said die.

3,190,103
APPARATUS FOR BENDING TUBING
James H. Doyle, Malden, Ill., assignor to Harper-Wyman Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 16, 1961, Ser. No. 145,040
3 Claims. (Cl. 72—388)



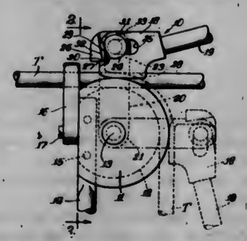
1. Apparatus for bending tubing to have substantially a zero radius at the inside of the bend including a mandrel block having a tube receiving opening at one end with a diameter slightly greater than the outside diameter of the tube and having concentrically disposed therein a thumb tip mandrel having a curved tip portion and an outside diameter slightly less than the inside diameter of the tube and with its tip portion projecting a fixed distance from the mandrel block corresponding substantially to the diameter of the tube, whereby an end portion of the tubing may be slidably received in said block, a tube encircling clamp block extending in one position from a point immediately adjacent the mandrel block and adapted fixedly closely to encircle and to hold tubing projecting from the mandrel block, said mandrel and mandrel block and said clamp block being relatively moveable to bend said tubing around the thumb tip mandrel about a point on the tube opposite the curved part of the thumb tip mandrel, said blocks abutting each other in said one position before the tube is bent and having angularly cut away surfaces adjacent said point permitting said blocks to be moved substantially 90° about said point relative to each other, thereby to form a bend having a substantially zero radius.

3,190,104
AUTOMATIC PULL GUN
Paul Anthony, 9109 E. Admiral Place, Tulsa, Okla.
Filed Feb. 8, 1962, Ser. No. 172,012
7 Claims. (Cl. 72—391)



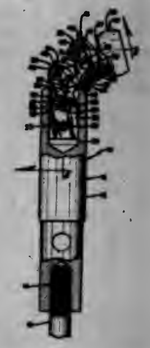
1. Apparatus for operationally first, pulling and folding and second driving and setting blind rivets and the like, the combination comprising,
an axially movable actuating shaft having axial means at a forward end to removably retain said rivet,
a coaxial thrust housing within which said shaft is movable,
manually actuatable means on said housing and engaging said shaft at the rearward end to actuate said shaft,
an outer anvil substantially adjacent said forward end and coaxially movable about said housing,
an inner anvil coaxially positioned and axially movable upon relative movement of said housing and said outer anvil to cause said second operation,
axially aligned openings in said housing, and said outer and inner anvils to permit insertion of said rivet, and retention on said shaft, and
a thrust actuator positioned between said thrust housing and said outer anvil and pivotal form a first operational position maintaining said outer anvil and said thrust housing apart, to a second operational position permitting relative movement between said outer anvil and said thrust housing.

3,190,105
TUBE BENDER
Richard V. Strybel, Elk Grove Village, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed May 21, 1962, Ser. No. 196,102
7 Claims. (Cl. 72—459)



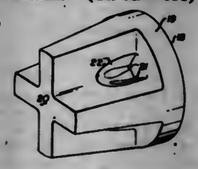
1. In a tube bender having a mandrel provided with an axis, a peripheral tube-bending groove annularly concentric of said axis, an elongated handle secured to the mandrel, and means for retaining a tube in association with the mandrel groove, means for bending the tube into the groove comprising: a connector link having an inner end and an outer end; means connecting the inner end of the link to said mandrel to pivot about said axis; a bending shoe having a first tube engaging surface and a second tube-engaging surface extending angularly to said first tube-engaging surface, and tube-engaging surfaces having the same radius of curvature in a cross section; means connecting the shoe to said outer end of the link for pivoting about an axis parallel to said mandrel axis; an elongated handle secured to the shoe; a first shoulder on said link; a second shoulder on said shoe engaging said first shoulder when said shoe is pivoted on the link to a first position wherein said first tube-engaging surface is juxtaposed to said mandrel groove; and a third shoulder on said shoe engaging said first shoulder when said shoe is pivoted on the link to a second position wherein said second tube-engaging surface is juxtaposed to said mandrel groove.

3,190,106
TUBE BENDING MANDREL
Henry M. Spates, Englewood, Colo., assignor to H & H Engineering Company, Denver, Colo., a corporation of Colorado
Filed Dec. 22, 1961, Ser. No. 161,541
10 Claims. (Cl. 72—466)



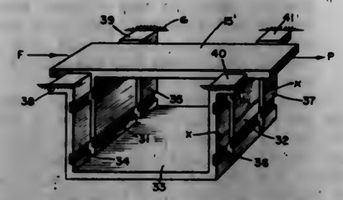
1. A universal tube bending mandrel comprising a series of outer ring members, and a corresponding series of inner ball link members connected together in end-to-end relation, each link having an expansible hollow female socket end portion at one end and a spherically shaped male end portion at its opposite end for interlocking engagement in the hollow female socket end of each link in succession, said female end portions being sized for disposition within said ring members and to be secured to said male end portions by said ring members, and locking means between said female socket end portions and said rings for locking said ring members on said female socket end portion in spaced, axial relation whereby said ring members are free to bend in any direction while maintaining a constant diameter.

3,190,107
EXTRUSION DIE
Joseph P. Slifka and Peter N. Voss, Youngstown, Ohio, assignors to Extrusion Dies, Inc., Youngstown, Ohio, a corporation of Ohio
Filed Dec. 13, 1962, Ser. No. 244,425
4 Claims. (Cl. 72—468)



1. An extrusion die comprising a single piece structure having a downstream delivery end portion with a cross-shaped rearwardly or upstream extending portion including a solid axial section, at least one shaped extrusion opening substantially perpendicular to said flat face portion and extending inwardly therefrom and at least one internal passageway in said cross-shaped rearwardly extending portion establishing communication between the inner end of said extrusion opening and the sides of said cross-shaped rearwardly extending portion.

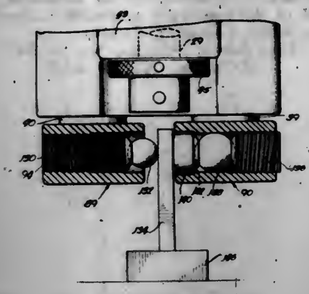
3,190,108
STABILIZED PLATENS
Alfred N. Ormond, 11969 E. Slauson, Santa Fe Springs, Calif.
Filed Mar. 20, 1961, Ser. No. 96,797
1 Claim. (Cl. 73—1)



A stabilized platen structure for transmitting a force of large magnitude as exists in rocket engine testing between end points in a rectilinear path of given direction wherein said force is isolated from any force components in directions other than said given direction, comprising, in combination: a flat force and motion transmitting plate extending between said end points with the ends of said plate coinciding with said end points; a tie plate in spaced parallel relationship to said force plate; first and second support means secured at upper ends to said force plate at locations spaced along said given direction and at lower ends to said tie plate at locations spaced along a line parallel to said given direction corresponding to the spacing between said first mentioned locations to define a parallelogram type structure, each of said support means including upper and lower flexure webs coplanar with each other and lying in a plane normal to said given direction, said flexure webs being respectively positioned adjacent to the points of securement of said support means to said force plate and tie plate respectively for flexing movement about parallel axes lying in said plane and parallel to said force plate; and two pairs of additional support means, the support means of one pair being positioned on either side of said first support means with their lower ends secured to said tie plate and their upper ends secured to a stationary structure co-planar with said force plate; and the support means of the other pair being positioned on either side of said second support means with their lower ends secured to said tie plate and their upper ends secured to a stationary structure co-planar with said force plate, each of said additional support means including flexure webs adjacent their upper and lower ends co-planar and at corresponding levels with the flexure webs of said first mentioned first and second support means respectively, and being of one half the width of the flexure webs in said first mentioned support means whereby the total stiffness of said first and second support means equals the total stiffness of said additional support means and whereby said force plate is constrained for movement only in said given direction.

3,190,109
CALIBRATING AND TESTING METHODS
Frederick A. Faville, 1500 Hinman Ave., Evanston, Ill.
Filed Apr. 2, 1963, Ser. No. 269,991
6 Claims. (Cl. 73—1)

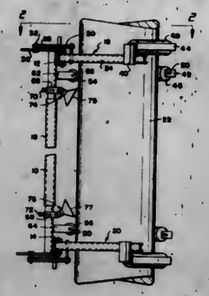
1. The method of calibrating a lubricant testing machine of the type in which test elements of solid material are moved in frictional contact with each other immersed in lubricant while pressed toward each other under an indirectly indicated force, for testing the quality of the lubricant, and related tests, which comprises: substituting for the test elements and lubricant, a standardized Brinell ball and anvil; interposing between the ball and the anvil a sheet of metal of standardized strength properties; operating the pressure linkage of the testing machine to impress the ball into the specimen; making several impressions at different indicated loads; and ascertaining the exact pressure for each indicated load point by measuring the indentation produced by the ball.



3,190,110
MECHANICAL SPIKE PULSE FILTER FOR SHOCK MACHINE
Lester V. Craycraft, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 26, 1962, Ser. No. 240,182
5 Claims. (Cl. 73—12)
(Granted under Title 35, U.S. Code (1952), sec. 266)

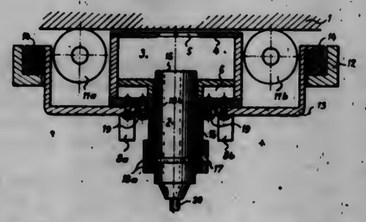
1. In a shock machine of the drop carriage design, for producing square waves and the like having an anvil base, vertical guide rails and drop carriage upon which specimens to be shock tested are mounted, the improvements for eliminating the effects of undesirable spike accelerations on the test specimens comprising:
(a) an adapter plate mounted on said drop carriage upon which a specimen to be tested can be attached thereto,
(b) an isolator filter pad mounted in between and separating said adapter plate from the carriage,
(c) an accelerometer attached to said adapter plate the output of which is used for recording the shock wave transmitted to said adapter plate and any specimen mounted thereon,
(d) said adapter plate and isolator pad forming a mechanical filter for the drop carriage for filtering out unwanted spike accelerations while maintaining the desired high rise time shock pulse pattern.

3,190,111
APPARATUS FOR DETECTING INTERNAL DAMAGE IN WOOD
Paul C. Trussell and Thomas Anthony Lambe, Vancouver, British Columbia, Canada, and John Vitins, Baden, Switzerland, assignors to British Columbia Research Council of the University of British Columbia, Vancouver, British Columbia, Canada
Filed July 3, 1961, Ser. No. 121,597
12 Claims. (Cl. 73—67.5)



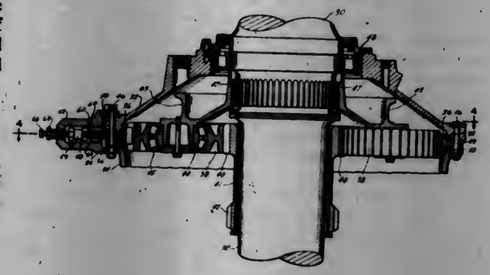
7. Apparatus for detecting internal damage in a wood specimen submerged in water and caused by the action of wood borers and resulting in the creation of moisture-laden pockets within the wood comprising a sound transmitter, a sound receiver, means retaining the transmitter and the receiver spaced from each other and spaced from a surface of the specimen that parallels the grain of said specimen, said sound transmitter being positioned to direct sound waves into said surface of the wood so as to form compressional waves whose front travels parallel to the grain of the specimen, and said sound receiver being positioned to detect the sound waves radiating from the surface of the wood after travelling along the grain of the specimen, the degree of attenuation of said sound waves providing an indication of the soundness of said specimen.

3,190,112
ULTRASONIC INSPECTION PROBE
Louis Beaujard and Jacques Mondot, Saint Germain-en-Laye, France, assignors to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, France, a professional institution of France
Filed Jan. 23, 1962, Ser. No. 168,086
Claims priority, application France, June 6, 1961, 864,011, Patent 1,299,006
10 Claims. (Cl. 73—71.5)



1. In an ultrasonic device for inspecting a test piece having a surface, in combination:
(a) a container defining a chamber therein, said container including a n end plate formed with an opening, said opening having an axis;
(b) a baffle member in said container and dividing said chamber into two portions, one of said portions contiguously communicating with said opening;
(c) transducer means in said one chamber portion, said transducer means being axially aligned with said opening for emitting an ultrasonic beam from said chamber portion outward through said opening;
(d) supply means for continuously supplying a coupling liquid to the other portion of said chamber,
(1) a portion of said container and said baffle member constituting the wall of said other chamber portion,
(2) said wall being formed with port means for selective release of gas from said other chamber portion when the same contains said gas and a liquid, and
a conduit connecting said chamber portions for flow of said coupling liquid from said supply means in sequence through said other chamber portion, said conduit, said one chamber portion, and said opening; and
(e) support means for supporting said container on said test piece surface in a position in which said end plate is spaced a predetermined distance from said surface, and said end plate and said surface define a flow channel therebetween, said flow channel leading radially away from said opening and having an effective flow section substantially smaller than the flow section of said chamber portions, of said conduit, and of said opening, whereby the pressure drop in the flowing coupling liquid is concentrated in said channel.

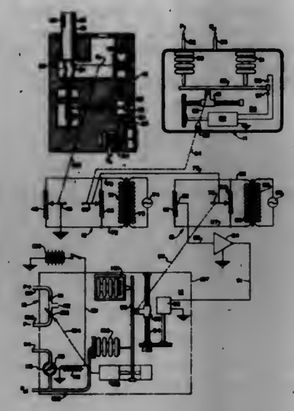
3,190,113
ELECTRO-MECHANICAL TORQUE SENSING DEVICE AND METHOD
Nelson R. Richmond, Thompsonville, Conn., assignor to Kaman Aircraft Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Nov. 28, 1962, Ser. No. 240,676
19 Claims. (Cl. 73—136)



1. A device for measuring the amount of torque transmitted through a mechanism having a part which deflects periodically with an amplitude of deflection related to the transmitted torque, said device comprising an electromechanical transducer adapted to sense said deflection and to produce an alternating output voltage signal with an amplitude related to said deflection, and means for rectifying said output voltage signal to produce a D.C. voltage signal representative of the amount of transmitted torque.

3,190,114
STATIC PRESSURE COMPENSATING SYSTEM
Sydney E. Westman, Inglewood, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 655,601, Apr. 29, 1957. This application Nov. 8, 1961, Ser. No. 152,710
16 Claims. (73—180)

1. An indicated static pressure compensating system to supply a compensated static pressure for aircraft comprising: means operative in dependency on at least Mach number and apparent angle of attack of an aircraft in flight to generate an error signal, an enclosure, enclosure pressure control means, means for supplying indicated static pressure, pressure responsive means within the enclosure for generating separate forces varying in dependency on said indicated static pressure and on pressure within the enclosure, means operable to couple the forces



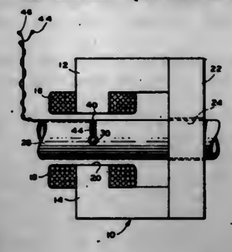
generated by the pressure responsive means and transmit an actuating resultant force to the pressure control means, and control means operative to vary the coupled relationship of at least one of said forces responsively to changes in the error signal and thereby to develop a compensated static pressure in the enclosure.

3,190,115
ANGLE OF ATTACK MEASURING DEVICE
Allan B. Heinsohn, Valley Cottage, N.Y., assignor to Monitair Corp., Valley Cottage, N.Y., a corporation of New York
Filed May 2, 1962, Ser. No. 191,899
20 Claims. (Cl. 73—180)



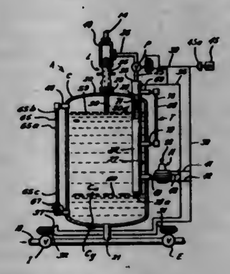
1. In combination, a device effective to measure instantaneous values of angle of attack over substantially the entire operative range thereof comprising a support, a vane mounted on said support to pivot about an axis over a given range of movement, and sensing means operatively connected to said vane to sense its pivotal position about said axis at substantially all points within said range of movement; an airplane wing; and means operatively connected to said wing and to said support for locating said vane in the air-flow-deflection area adjacent the leading edge of said wing with said axis in advance of said vane and adjacent said leading edge of said wing.

3,190,116
FLUID FLOW-MEASURING APPARATUS
Albert F. Romanowski, Fort Wayne, Ind., assignor to Bowser, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Dec. 23, 1960, Ser. No. 77,989
13 Claims. (Cl. 73—194)



1. Apparatus for measuring fluid flow comprising a first fluid-conducting member of non-magnetic non-conductive material, a second fluid-conducting member of non-magnetic electrically conductive material disposed exteriorly of said first member, said second fluid-conducting member being in electrical contact with fluid flowing therethrough, means for providing magnetic fields which extend entirely across a plurality of spaced-apart cross-sectional areas of said second member, said magnetic fields being such as to produce eddy currents in said second fluid-conducting member which oppose and nullify each other to thereby prevent eddy current flow therein, and two output terminals, one of said output terminals being electrically connected to said second member and the other of the output terminals being insulated from the second member, said other output terminal extending through both said first and second members so as to be in electrical contact with fluid flowing through the members and centrally disposed within one of said magnetic fields such that flux lines are divided substantially equally on opposite sides of the terminal.

3,190,117
LIQUID METERING APPARATUS AND CONTROL THEREFOR
Jack Whiteman, 2820 Jarrard, Houston, Tex.
Filed Dec. 26, 1962, Ser. No. 246,960
11 Claims. (Cl. 73—223)



1. An apparatus for metering liquid volumes comprising,
(a) a collection container to collect a predetermined volume of liquid,
(b) said container having an opening adapted to receive liquid in said container and to discharge liquid from said container,
(c) additional liquid container means,
(d) said additional liquid container means being adapted to hold a substantially smaller volume of liquid than said collection container,

(e) said additional liquid container means having an opening in the lower end thereof to receive liquid to a predetermined level when the predetermined liquid volume is collected in said collection container and to discharge liquid from said additional container,

(f) diaphragm actuated inlet valve means for regulating the flow of liquid into said collection container,

(g) diaphragm actuated discharge valve means for regulating the flow of liquid from said collection container,

(h) a conduit for communicating gas to said container above the liquid therein,

(i) conduit means for communicating gas from said gas communicating conduit to said additional container means above the liquid level therein,

(j) diaphragm actuated valve means in said conduit means which communicates gas to said additional container means,

(k) additional conduit means connected to said additional container means above the predetermined liquid level for communicating gas to one side of said diaphragms of each said inlet valve means and said valve means in said conduit which communicates gas to said additional container means to urge each of said valve means toward closed position,

(l) said inlet valve means and said valve means in said conduit means which communicates gas to said additional container means each having means acting on their respective diaphragms to bias said valve means toward open position as liquid is collecting in said collection container,

(m) other conduit means to communicate gas from said additional conduit means to the other side of said diaphragms of each said liquid inlet valve means and said valve means in said conduit means which communicates gas to said additional container means to counterbalance the gas pressure tending to close each of said valve means,

(n) said other conduit means also communicating gas to said diaphragm of said liquid discharge valve means to urge said valve means to closed position,

(o) control means connected between said additional and said other conduit means for controlling communication therebetween and for opening and closing said other conduit means to atmosphere to actuate each of said valve means,

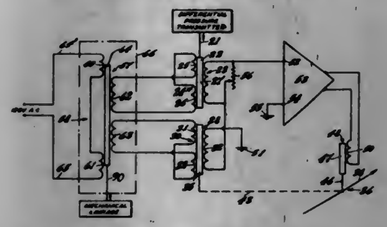
(p) said control means responsive to the hydrostatic pressure in said additional container means when said predetermined liquid level is reached to close off communication between said additional and other conduit means and to open said other conduit means to atmosphere whereupon said liquid inlet valve means and said valve means in said conduit means which communicates gas to said additional container means each close and said liquid discharge valve opens,

(q) the closing of said valve means in said conduit means which communicates gas to said additional container means acting to trap gas above the predetermined liquid level in said additional container means and in said additional conduit,

(r) the gas trapped above said predetermined liquid level in said additional container means serving to hold said predetermined liquid level therein until the predetermined liquid volume is discharged from said collection container whereupon the opening in the lower end of said additional container means is exposed for discharge of liquid therefrom and into said collection container, and

(s) said control means functioning when liquid is discharged from said additional liquid container means to communicate said gas communicating conduit and to said additional conduit means for gas passage therethrough to close said discharge valve means and then open said inlet valve means and said valve means in said conduit means which communicates gas to said additional container means so that said container may receive another predetermined liquid volume therein.

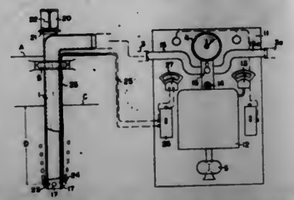
3,190,118
INDICATOR COMPENSATION
Robert D. Neyer, Oreland, Pa., assignor to Yarnall-Waring Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 16, 1962, Ser. No. 210,109
11 Claims. (Cl. 73—290)



1. In an indicator device, a differential pressure transmitter; a transmitting differential transformer having a movable core, a primary and a secondary; a balancing differential transformer having a movable core, a primary and a secondary, the same one of the primary and secondary in both the transmitting differential transformer and in the balancing differential transformer having equal opposed coils connected in series; means operatively connecting the differential pressure transmitter to the core of the transmitting differential transformer to move that core in response to the movement of the differential pressure transmitter; an indicator having an indicator shaft pivotally mounting the indicator; means for biasing the indicator shaft in one direction; means operatively connecting the indicator shaft with the movable core of the balancing differential transformer to move the balancing differential transformer core in response to motion of the indicator; an electric motor, means operatively connecting the electric motor to the indicator shaft and connected to the indicator shaft for moving the indicator shaft away from the initial position while the core of the balancing differential transformer moves toward balance; circuit means operatively connecting the secondaries of the transmitting differential transformer and the balancing differential transformer in series opposed to one another and to the electric motor; an energizing transformer having a primary, a core and two secondaries, means operatively connecting one of the secondaries of the energizing transformer to the primary of the transmitting differential transformer; means operatively connecting the other secondary of the energizing transformer to the primary of the balancing differential transformer, and power input terminals for applying alternating electric current to the primary of the energizing transformer.

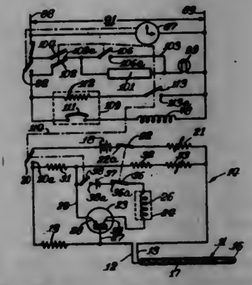
3,190,119
APPARATUS FOR DETERMINING THE WEIGHT OF CARGO ON BOARD A SHIP
Takashi Isobe, 252 Akazutsumicho-1-chome, Setagaya-ku, Tokyo, Japan, and Yuichi Yamane, 10 Kikuzuicho-5-chome, Hyogo-ku, Kobe, Japan
Filed July 31, 1961, Ser. No. 128,128
4 Claims. (Cl. 73—302)

1. Apparatus for determining the total intake weight of cargo on board a ship, the apparatus comprising: at least one air pipe vertically mounted on said ship and having a downwardly facing opening at the level of the bottom of the ship, means for feeding air under pressure to said air pipe towards said opening, manometer means for determining the air pressure value in said air pipe necessary to substantially completely expel water from said air pipe through said opening, means for indicating the value of said total intake weights of cargo corresponding to the respective pressure values determined by said



manometer means, a pair of opposite electrodes disposed in said air pipe adjacent said opening, means for producing an electric signal current in accordance with said electrodes selectively being in water and in air, movable means energized in accordance with said signal current, and means for stopping the feed of air under pressure from said air feeding means with said movable means assuming a predetermined position corresponding to expulsion of the water from said air pipe.

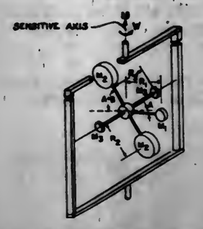
3,190,120
TEMPERATURE MEASURING AND RECORDING APPARATUS
Walter W. Bronson, 1146 E. 85th St., Chicago, Ill.
Filed June 20, 1961, Ser. No. 120,427
10 Claims. (Cl. 73—343.5)



3. Temperature taking and recording apparatus, comprising a supporting structure having a receptacle, a temperature sensing device removably mounted in said receptacle, means on said structure for holding record material stationary relative to said structure when said device is removed from said receptacle, means on said structure and connected to said device for measuring the temperature sensed by said device and for registering on the material the temperature measured, and means for actuating said device and said measuring and registering means in response to removal of said device from said receptacle.

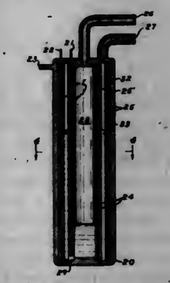
3,190,121
GRAVIMETER
Benjamin P. Blasingame, 2621 E. Menlo Blvd., Milwaukee, Wis.
Filed Jan. 19, 1962, Ser. No. 167,451
4 Claims. (Cl. 73—382)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In an instrument for the precise measurement of the acceleration of gravity means including a pendulous element constrained to a pivot axis and maintained at near neutral buoyancy in a fluid, said pendulous element having means including an arrangement of three co-planar concentrations of mass, two of said concentrations of masses being on the same center line through and balanced about the pivot axis of said pendulous element and a third mass being on a radius through said pivot axis intersecting the center line of said balanced pair of masses,



means to rotate said pendulous element together with a case containing said supporting fluid about an axis normal to said pivot axis, means to precisely control and indicate remotely the rotational speed so that the force of gravity may be inferred precisely from the rotational speed required to maintain said pendulous element in its neutral position relative to said axis of rotation, said axis of rotation being aligned generally along the local vertical.

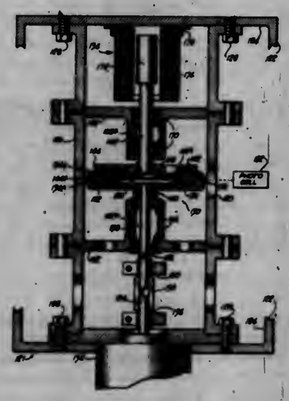
3,190,122
MERCURIAL CAPACITORS FOR REMOTE INDICATION OF PRESSURE
Harrison F. Edwards, Ferrisburg, Vt., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Sept. 1, 1960, Ser. No. 53,451
1 Claim. (Cl. 73—398)



In an electrical measuring system, a capacitance bridge having a balanced and an unbalanced condition, said capacitance bridge comprising first and second capacitance elements, said first capacitance element consisting of a variable mercurial capacitor, said mercurial capacitor comprising a hollow metallic casing containing a plurality of insulating sleeves arranged in two concentric, spaced apart pairs, metallic coatings sandwiched between each of said pairs, an annular recess formed by the aforesaid spaced apart insulating sleeves, and an internal recess defined by the innermost sleeve, mercury columns contained in said recesses, said recesses being interconnected at their lower ends, high and low pressure fittings attached to the hollow metallic casing and each communicating with the one of said recesses, whereby the resulting pressure differential of the mercury columns causes a corresponding height variation of said mercury columns, said capacitance bridge being responsive to a change in capacitance of said mercurial capacitor to shift from a balanced to an unbalanced condition, movable gauge means responsive to the unbalanced condition of said capacitance bridge, connecting means between said movable gauge and said

second capacitance element such that a movement of said gauge results in a corresponding variation in capacitance of said second capacitance element, with said variation in capacitance of said second capacitance element being operative to restore said capacitance bridge to a balanced condition.

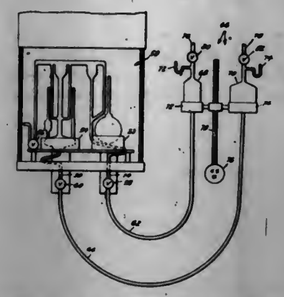
3,190,123
FORCE MEASURING MEANS
Heinz E. Schmitt, Racine, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 16, 1961, Ser. No. 83,070
1 Claim. (Cl. 73—398)



A force transducer comprising a sealed chamber, bellows means disposed in said chamber and containing a liquid, means for introducing a fluid into said chamber having a pressure representing a force to be measured, said fluid being applied to all of the walls of the bellows assembly and acting on said bellows means to displace said bellows means in one direction, drive means including a drive motor mounted in a fixed position relative to the chamber and having a drive shaft secured to said bellows means for rotating said bellows means, first bearing means mounting said drive shaft for only rotary movement, rotation of said bellows means acting on said bellows means to displace said bellows means in a direction opposite to said one direction, control means controlled by displacement of said bellows means for controlling the speed of said drive means, said control means including position sensing means mounted in a fixed position relative to the chamber coaxial with the drive shaft and having an element carried on said bellows means in a position axially aligned with said drive shaft, second bearing means mounting said element for rotary movement and for translatory movement along the axis of rotation of the drive shaft, and indicating means responsive to the rotation of said bellows means for providing an indication of the force to be measured.

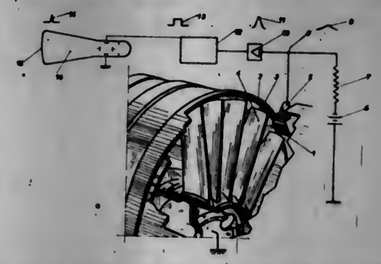
3,190,124
BAKEABLE McLEOD GAUGE
Wallace S. Kreisman, Malden, Mass., assignor to Geophysics Corporation of America, Bedford, Mass., a corporation of Delaware
Filed Nov. 7, 1961, Ser. No. 150,690
16 Claims. (Cl. 73—400)

1. A vacuum gauge of the McLeod type comprising compression bulb means, measuring capillary tube and comparison capillary tube means connected to said compression bulb means, means for connecting said compression bulb means to a fluid reservoir means, said reservoir means being maintained under a vacuum, and valve means connected in said connecting means whereby the com-



pression bulb means and reservoir means may be isolated from one another and the fluid flow controlled.

3,190,125
APPARATUS FOR THE MEASUREMENT OF THE RELATIVE AXIAL DISPLACEMENT OF A ROTOR AND A STATOR
Robert Gustave Holz, Dravell, Seine et Oise, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Oct. 27, 1961, Ser. No. 148,121
Claims priority, application France, Nov. 7, 1960, 843,196
3 Claims. (Cl. 73—432)

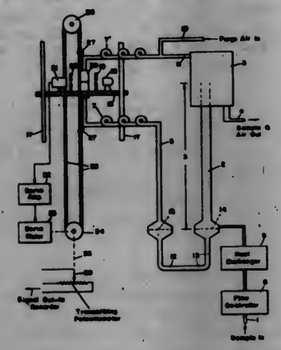


1. In a rotating machine comprising as members rotating with respect to each other a rotor and a stator, a device for indicating the axial position of the rotor with respect to the stator which comprises: a first electrode located on the periphery of one of said members and comprising three branches, two of which are parallel and at an angle to the transverse rotation planes of the rotor and the third of which is at an angle to these two branches and to the transverse rotation planes of the rotor; a second electrode located on the periphery of said other member in a transverse plane crossing said three branches; elements connected to the two electrodes respectively and adapted to complete an electric circuit when said second electrode faces a branch of said first electrode; and an indicating apparatus connected to said electric circuit for indicating the instants when the second electrode is opposite a branch of the first electrode.

3,190,126
CONTINUOUS DENSIMETER
J Rondle Wright, Newtown Square, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed July 5, 1962, Ser. No. 207,574
2 Claims. (Cl. 73—438)

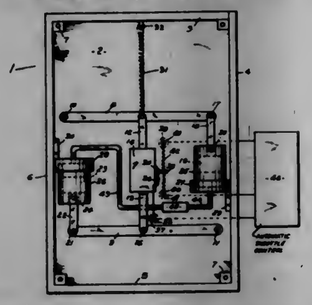
1. In a densimeter, a vertical tube having an open upper end; means for continuously flowing into said tube and

out its upper end a liquid whose density is to be measured, a vertically-extending conduit containing a quantity of reference liquid of known density, pressure-transmitting means coupling together the lower ends of said tube and said conduit, means placing the space above the upper end of said tube into communication with the interior of said conduit above the upper surface of said reference



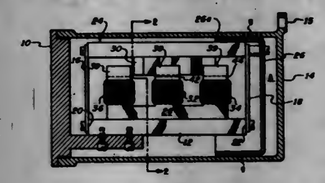
liquid, means for developing an error signal in response to any movement of the upper surface of said reference liquid with respect to a reference level, a servo system energized in response to said error signal to move said conduit in the vertical direction, thereby to return the reference liquid upper surface to said reference level, and a transmitting potentiometer connected to said servo system.

3,190,127
DAMPED ACCELEROMETER
Edward S. Gwathmey, Earlysville, Va., assignor to Specialties Incorporated, Syosset, N.Y.
Filed July 27, 1962, Ser. No. 212,824
9 Claims. (Cl. 73—515)



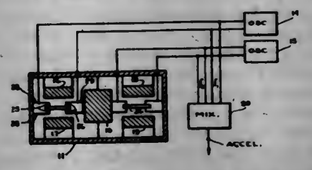
7. In a damped accelerometer, a first cylinder having an open end facing in one direction, a second cylinder having an axis substantially parallel with the axis of said first cylinder and having an open end facing in a direction opposite to said one direction, a first piston movable in said first cylinder, a second piston movable in said second cylinder, support means connecting said cylinders, a first arm pivoted to said support means adjacent said second cylinder, a second arm substantially parallel with said first arm and pivoted to said support means adjacent said first cylinder, first connecting means pivoting said first arm to said first piston, second connecting means pivoting said second arm to said second piston, inertia means, pivot means connecting said inertia means to said first and second arms, conduit means connecting the interiors of said cylinders, resilient means yieldingly supporting said inertia means and said arms, and including means for sensing accelerations or decelerations of said accelerometer.

3,190,128
ACCELEROMETER
John D. Weir, Huntington, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,641
1 Claim. (Cl. 73—516)



An accelerometer comprising a base, a mass, a pair of flat cantilever springs, one end of each spring being rigidly secured to said end portions of said base and the other end of each spring being rigidly secured to end portions of said mass whereby said mass is capable of constrained longitudinal movement relative to said base under the influence of acceleration forces acting thereon, an E transformer mounted on the mid portion of said base and located between said springs, and said mass constituting, at least in part, a movable armature cooperable with said transformer, means for electrically energizing said transformer whereby upon movement of said armature an electrical signal will be produced in accordance with such movement, and a cylinder and cylindrical cup-shaped piston loosely fitting therein, said cylinder being the housing for the accelerometer and containing gas therein, and said piston being rigidly secured to said mass and adapted to contain at least part of said mass and base, being however disposed to have its inner wall in spaced apart relationship with said base, whereby said piston is moved by said mass when said mass moves, said piston being of such size that a clearance is provided between the piston outer wall and the inner cylinder walls sufficient to prevent gas from becoming sealed on one side of said piston.

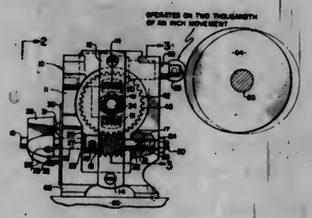
3,190,129
ACCELEROMETER AND PARTS THEREFOR
Jack Kritz, Westbury, and Michael Tarasevich, Glen Cove, N.Y., assignors to American Bosch Arma Corporation, a corporation of New York
Filed July 10, 1961, Ser. No. 123,012
11 Claims. (Cl. 73—517)



1. In an accelerometer for sensing acceleration along an axis, a frame, a mass suspended in said frame for freedom of motion along said axis, a bar, means for suspending said bar for free end vibration between said mass and said frame symmetrically with respect to said axis, said means including tension members attached to said bar at substantially the nodal loci and extending between said bar and said frame and between said bar and said mass and adapted to vary the longitudinal tension of said bar in accordance with the change in tension in said tension members, said bar and said tension members comprising a tape member having oppositely disposed, spaced cutouts

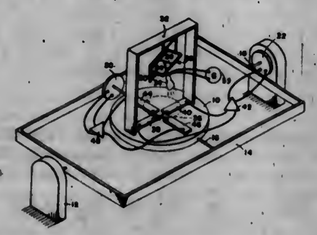
for providing free vibrating ends extending from the nodal loci toward said frame and said mass, and means for producing about said bar a force field having a pulsating relative field strength on opposite sides of said bar, said bar being responsive to said field to vibrate in accordance with said pulsating relative field strength.

3,190,130
CAM OPERATED ADJUSTABLE MICRO TIMING SWITCH
Lewis A. Kingsley, Beverly Hills, Calif. (% Kingsley Machine Co., 850 Cahuenga Blvd., Hollywood, Calif.)
Filed Sept. 11, 1961, Ser. No. 137,318
8 Claims. (Cl. 74—3.54)



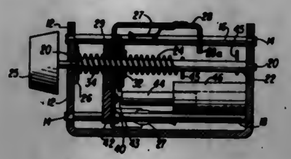
1. In an adjustable control unit operably responsive to a cam or other actuating means, the combination of: a turnable shaft, a switch means eccentrically mounted on said shaft, said switch means having means for engaging said cam or actuating means, a second shaft, and means connecting said first and second shafts.

3,190,131
PHOTO-ELECTRIC PICKOFF AND RESOLVER FOR GYROSCOPES
Henry C. Daubert, Jr., Grand Rapids, Mich., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed June 30, 1960, Ser. No. 39,978
5 Claims. (Cl. 74—5.41)



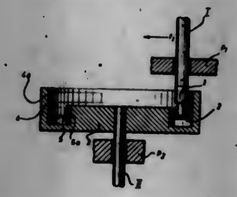
1. A vertical gyroscope supported upon at least a pair of axes which are normal to the vertical reference axis of said gyroscope and normal to each other and which form with the vertical axis a first coordinate system; a pendulum supported relative to a second coordinate system which has one axis coaxial with said vertical axis of said first coordinate system; illumination means positioned upon said pendulum and having an illumination pattern symmetrical with the axis of said pendulum; a first pair of in-line photo-electric devices mounted upon said vertical gyroscope, positioned symmetrically with respect to said vertical axis and oriented to detect motion of said illumination source relative to said vertical gyroscope along said devices; a second pair of in-line photo-electric devices mounted upon said gyroscope, positioned with their in-line direction normal to said first pair of photo-electric devices and symmetrically with respect to said vertical axis and oriented to detect motion of said illumination source along said second pair of devices; said illumination source having a uniform illumination pattern about its axis to cause each of said photo-electric devices to be equally illuminated when the axis of said pendulum is in a predetermined no-signal position co-axial with said vertical axis.

3,190,132
TUNER MECHANISM
Charles E. Lyon, Jr., Des Plaines, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1962, Ser. No. 231,060
11 Claims. (Cl. 74—10.85)



1. In a radio receiver tuner mechanism, a core carriage assembly including in combination, a frame member having a plurality of guide rods, a core carriage member slidably mounted upon said rods, a worm shaft rotatably disposed on said frame member, an internally threaded core carriage sleeve mounted within an opening formed in said core carriage member, said sleeve being threadably disposed upon said worm shaft, the threads on said sleeve having a different lead than the threads on said worm shaft to provide an interference fit between such threads, and means fastening said sleeve to said core carriage member permitting movement of said sleeve with respect to said core carriage member transversely of said shaft.

3,190,133
REVERSING CONTROL SYSTEM FOR A ROTARY SHAFT
Jean Foufounis, 17 Ave. Dapples, Lausanne, Vaud, Switzerland
Filed Apr. 8, 1963, Ser. No. 271,201
Claims priority, application Switzerland, Apr. 12, 1962, 4,494/62
3 Claims. (Cl. 74—284)



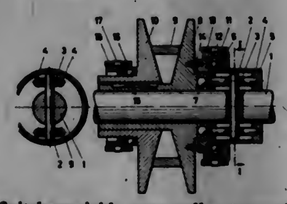
1. A transmission system interconnecting two parallel rotary shafts comprising two wheels rigidly carried at the end of one of said shafts, a plate carried by the end of the other shaft and provided with an annular recess coaxial with said other shaft, and inside which the wheels on said one shaft are housed with a radial clearance, said recess being bounded by two at least partly cylindrical surfaces facing each other and extending coaxially with reference to said other shaft, and means for shifting the two shafts with reference to each other between a position for which the smaller diameter wheel is brought into contacting relationship with the cylindrical surface of a smaller diameter and another position for which the other wheel is brought into contacting relationship with the other cylindrical surface, the diameters of the cylindrical surfaces and of the wheels being selected so as to provide equality in the speed ratio between the two shafts for both said relative positions of said shafts.

3,190,134
HUB DRIVEN DEVICE AND MEANS AND METHOD FOR MAKING THE SAME
James E. Sadler, 3317 Park Ave., and Robert L. Haley, 3293 W. Lakewood Drive, both of Memphis, Tenn.
Filed Aug. 9, 1963, Ser. No. 303,715
5 Claims. (Cl. 74—230.4)



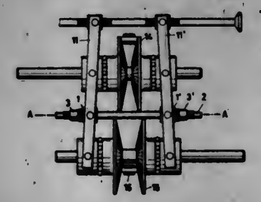
5. A pulley comprising an outer part including a pair of opposed segments each comprising a web portion with an outturned peripheral annular V-groove-forming flange, each web portion having a central transverse non-round opening therein, a hub member comprising a tube having an initial outer diameter smaller than the smallest diametrical dimension of said openings, said member extending through said openings, said member being under an axial compressive load beyond its elastic limit and including a section expanded radially outwardly in the region of said openings into a shape conforming with the openings to effect a torsional interlock with the webs and expanded radially outwardly of said webs thereby providing shoulders embracing said webs therebetween, said hub member being resiliently loaded at said shoulders against said webs in compression axially of the hub member.

3,190,135
INFINITELY VARIABLE CONE PULLEY TRANSMISSION
Heinrich Berens, Bad Homburg vor der Hohe, Germany, assignor to Reimers-Getriebe KG., Ascona, Switzerland, a firm of Switzerland
Filed July 25, 1963, Ser. No. 297,492
Claims priority, application Germany, July 31, 1962, R 33,240
9 Claims. (Cl. 74—230.17)



1. An infinitely variable cone pulley transmission having a pair of shafts, a pair of conical disks on each shaft, an endless driving element connecting the two pairs of disks, means for sliding at least one of said disk on each shaft relative to the other disk on said shaft in a direction opposite to the relative sliding movement of the disks on the other shaft for changing the gear ratio of said transmission, pressure-producing means on at least one of said shafts for applying said disks on said shaft against said driving element with a contact pressure varying with said gear ratio and with the torque of said shaft, said pressure-producing means comprising cam members having inclined surfaces of a fixed and constant angularity and rolling bodies between said inclined surfaces, and means for dividing the peripheral force produced by the torque of said shaft into two variable components, one of said components acting directly upon the conical disk which is axially slidable for changing said gear ratio and the other component acting upon said slidable disk through said pressure-producing means, said force dividing means comprising at least one rocking pin, bearing means for rockably mounting said pin, and at least one pressure pin engaging upon said rocking pin at a point the distance of which from said bearing means is variable in accordance with the axial movements of said slidable disk whereby one of said components of the peripheral force is transmitted directly to said slidable disk, while the other component is transmitted to said pressure-producing means, so that the axial pressure produced by said pressure-producing means depends upon the actual position of said pressure pin on said rocking pin resulting from said gear ratio.

3,190,136
AUTOMATIC BELT OR CHAIN TIGHTENING MECHANISM FOR AN INFINITELY VARIABLE CONE PULLEY TRANSMISSION
Herbert Steuer, Bad Homburg vor der Hohe, Germany, assignor to Reimers-Getriebe KG., Ascona, Switzerland
Filed Oct. 25, 1963, Ser. No. 319,013
Claims priority, application Germany, Nov. 13, 1962, R 33,867
12 Claims. (Cl. 74—230.17)



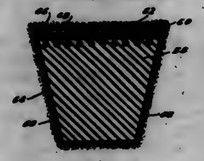
1. A mechanism for automatically tightening the endless driving element of an infinitely variable cone pulley transmission having a housing, a drive shaft and a driven shaft rotatably mounted in said housing, a pair of conical pulley disks mounted on each shaft so as to be axially slidable thereon, nonrotatable pressure members axially slidable on each shaft and adapted to press the disks of each pair toward each other, an endless driving element connecting both pairs of disks and adapted to run between them, a tightening spindle mounted centrally between said shafts and having a screw thread near at least one end thereof, a pair of tension blocks disposed coaxially to each other and also forming pivot means, at least the first of said tension blocks being slidable axially on said spindle relative to the second tension block, control levers pivotably connected to the pivot means of said tension blocks and also to the pressure members associated with the corresponding disks of both pairs, means for equally pivoting said levers at the opposite sides of both pairs of disks in opposite directions to each other about said pivot means on said tension blocks, whereby, when said driving element runs between both pairs of disks, the disks of one pair are moved for a certain distance toward each other and the disks of the other pair are moved for the same distance away from each other so that the speed ratio of the transmission is changed, spring means acting upon at least said first tension block in the axial direction of said spindle and tending to move said first tension block toward said second tension block and thus also said lever on the pivot means of said first tension block toward the lever on the pivot means of the second tension block so as to tighten said driving element, a nutlike member screwed on said screw thread of said spindle and adapted to engage with the outer side of said first tension block, and means for continuously producing a torque for turning said nutlike member and said spindle relative to each other so as to move said nutlike member for the distance of the tightening move-

ment of said first tension block caused by said spring means and merely into bracing engagement with the outer side of said first tension block.

3,190,137
RUBBER FACED BELT WITH FIBER TRACTION SURFACE

James Adams, Jr., Packanack Lake, N.J., assignor to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey

Filed Oct. 28, 1958, Ser. No. 770,202
7 Claims. (Cl. 74—233)

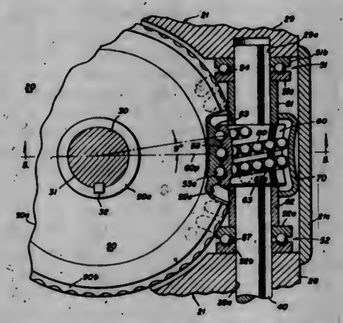


1. A rubber faced belt provided with a fiber immersed traction surface layer comprising, a belt carcass having a vulcanized rubber body provided with a vulcanized rubber traction surface layer, and a deposit of fiber-flock in said rubber traction surface layer, the fibers of the fiber-flock being immersed in, localized to and bonded to the rubber in the said vulcanized traction surface layer of the belt carcass, thereby forming a fiber-immersed-rubber traction surface on the rubber belt.

3,190,138
MOTION TRANSMITTING MECHANISMS OF THE GEAR-PINION TYPE

Chester M. MacChesney, Chicago, Ill., assignor of eighty-five percent to Ellamac Incorporated, Chicago, Ill., a corporation of Illinois, and fifteen percent to Clarence S. Henderson, Miami Beach, Fla.

Filed Mar. 4, 1963, Ser. No. 262,468
5 Claims. (Cl. 74—425)



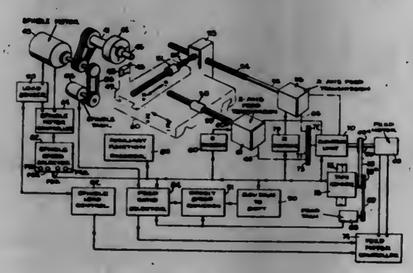
1. Motion transmitting mechanism comprising a driven shaft mounted for rotation about its longitudinal axis extending in the Z direction of reference, a drive shaft mounted for rotation about its longitudinal axis extending in the X direction of reference and offset from the longitudinal axis of said driven shaft in the Y direction of reference, a disk-like gear rigidly secured to said driven shaft and including an outer surface of revolution generated about the longitudinal axis of said driven shaft as a directrix and having a substantially concave cross section constituting a segment of a first circle at each intersection thereof with any radial plane passing through the longitudinal axis of said driven shaft, a drum-like pinion rigidly secured to said drive shaft and including an outer surface of revolution generated about the longitudinal axis of said drive shaft as a directrix and having a substantially concave cross section constituting a segment of a second circle at each intersection thereof with any radial plane passing through the longitudinal axis of said drive shaft, said gear and said pinion being disposed in cooperating relation so that the median plane of said gear between the opposite faces thereof passes through the longitudinal axis of said drive shaft and so that the median plane of said pinion between the opposite ends thereof passes through the longitudinal axis of said driven shaft and so that in the median plane of said pinion said first circle is centered along the longitudinal axis of said drive shaft and so that in the median plane of said gear said second circle is centered along the longitudinal axis of said driven shaft and so that the mutually facing segments of said outer surfaces are disposed in closely spaced-apart relation, whereby said gear and said pinion are arranged in mutually embracing relation regardless of the rotary positions of said shafts, said gear outer surface having a plurality of circumferentially spaced-apart and helically disposed slots therein, said pinion outer surface having an elongated continuous substantially helical groove of a plurality of longitudinally spaced-apart interconnected turns therein, wherein said slots and said turns have a fixed angular pitch measured from the longitudinal axis of said driven shaft, a stationary element supported in fixed position and in cooperating relation with said pinion and partially surrounding in closely spaced-apart relation the adjacent segment of said pinion outer surface disposed in non-facing relation with said gear outer surface, and a group of contiguous balls disposed in said groove so that a plurality of said balls are arranged as a first subgroup mutually in said slots and in said turns and so that another plurality of said balls are arranged as a second subgroup mutually in said turns and in contact with said element, the balls in said group being held in position in said turns for rotation with said pinion and for individual rotation in said turns, whereby rotation of said drive shaft effects corresponding rotation of said driven shaft by the action of said pinion upon said gear through said first subgroup of balls, the opposite ends of said groove being closed by the respectively adjacent end portions of said pinion and said group of balls substantially completely filling said groove between the opposite closed ends thereof, thereby to restrain said balls against circulation or any substantial movement along the helix of said groove.

3,190,139
PROGRAMMED MOTION CONTROL SYSTEM

Eugene S. Swanson, Richard D. Livingston, William A. Means, and John G. Floden, all of Rockford, Ill., assignors to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed Sept. 1, 1961, Ser. No. 135,679
32 Claims. (Cl. 74—472)

16. In a system for controlling precisely the lengths and velocities of successive increments of movement while keeping the aggregate of movement equal to the sum of the incremental lengths, the combination comprising a movable member, a rotating main shaft, a multi-ratio transmission having an input shaft and an output shaft with the latter connected to translate said member, said transmission including a plurality of positive clutch elements shiftable between two positions in which they are respectively held stationary or connected with said input shaft to establish different drive ratios, said clutch elements being shiftable only when said input shaft is substantially in a predetermined angular position, a slowdown unit normally establishing a positive drive between said main shaft and said input shaft, said slowdown unit having selectively actuatable cycle means for smoothly reducing the speed of said input shaft so that it is substantially stationary when in said predetermined angular position and then increasing the speed of said input shaft back to its original value with the resulting loss of predetermined angle of rotation of said input shaft relative to said main shaft, an elongated record having successive sets of indicia spaced therealong and with each set representing a desired one of the transmission drive ratios, a reader and means for transporting said record lengthwise through the reader a predetermined unit distance for each revolution of said main shaft, said reader having means for producing a set of signals corresponding to each set of indicia passing therethrough, means responsive to each set

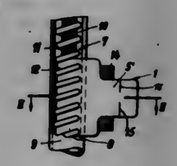


of signals for initiating one cycle of said slowdown unit and for shifting said clutches at the instant said input shaft is substantially stationary to establish the corresponding transmission drive ratio, said record being characterized in that the distance D between first and second successive sets of indicia thereon is equal to $d+c$, where d is proportional to the ratio of the desired increment length and the transmission ratio represented by the first set of indicia, and c is the distance said record is transported while said input shaft rotates through said predetermined angle.

3,190,140
DRIVING DEVICE

Johannes Werner, Offenbach (Main), Germany, assignor to H. T. Golde G.m.b.H., & Co., K.G., Frankfurt am Main, Germany

Filed Nov. 8, 1962, Ser. No. 236,341
Claims priority, application Germany, Nov. 16, 1961, G 33,605; June 12, 1962, G 35,182
5 Claims. (Cl. 74—501)

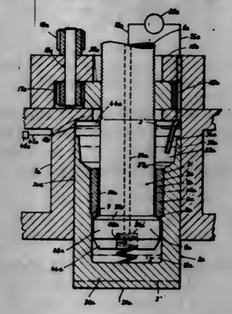


1. A driving device comprising a cable having radial projections, a driver member surrounding said cable, and a tubular guide enveloping said cable and said driver member while permitting relative axial movement of said cable and said driver member within said guide, the latter including a longitudinal slot, said driver member comprising a single sheet of material including elongated apertures, said sheet being bent around substantially the entire cable with said projections extending into said apertures, the opposing ends of said sheet extending through said slot to form a connector portion for making connection with a driven member.

3,190,141
HYDRAULIC OVERLOAD SAFETY DEVICE

Walter Schlatter, Schaan, Leichtenstein, and Max Fischer, Buchs, Sankt Gallen, Switzerland, assignors to Massey Schlatter A.G., Buchs, Sankt Gallen, Switzerland

Filed June 11, 1962, Ser. No. 201,565
Claims priority, application Switzerland, June 13, 1961, 6,881/61; Feb. 2, 1962, 1,273/62
24 Claims. (Cl. 74—584)



1. A hydraulic overload safety device comprising in combination: two relatively movable cylinder components, a hydraulic chamber in one of said components, a plunger carried by one of said components and movable in said chamber in the direction of the relative movement of said two components, said chamber being defined by said plunger and said movable components, a hydraulic pressure fluid from an external source of hydraulic pressure in operation filling the space in said chamber, said chamber having a wall provided with a central aperture and said plunger having a neck portion passing with ample clearance through said aperture, a valve head on said neck portion beyond said aperture, said central aperture in said wall forming a valve seat for said valve head, means for subjecting said movable cylinder components to external forces, and an external source of hydraulic pressure in communication with said chamber and in operation setting up a preloading pressure therein which keeps said valve head tightly on said valve seat as long as the pressure set up by the external forces between said relatively movable cylinder components is below said preloading pressure, and allows said valve head to be lifted off said valve seat and to rapidly discharge said hydraulic fluid in said chamber past said neck portion when external forces generates a pressure exceeding a predetermined pressure limit of said preloading pressure.

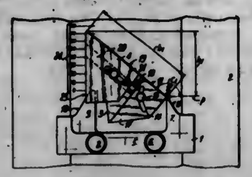
3,190,142
FLAT CAM FOR THE POSITIVE MECHANICAL CONTROL OF A MOVABLE MEMBER OF AN AUTOMATIC LATHE

Pierre Bergonzo, 117 Route de la Capite, Cologny, Geneva, Switzerland

Filed Sept. 5, 1961, Ser. No. 136,063
Claims priority, application Switzerland, Oct. 7, 1960, 11,259/60
4 Claims. (Cl. 74—568)

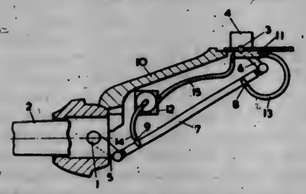
1. A cam for the mechanical control of a mobile member of a machine tool, comprising support means including first cam means having a first cam working profile, second cam means having a second cam working profile which is a continuation of said first profile and is disposed at an angle greater than 90° to said first profile, means mounting said second cam means for rotation relative on and relative to said support means about an axis which is contiguous to the junction of said first and second profiles, means for releasably locking said second cam means in any of a plurality of positions of adjustment relative to said support means, third cam means

having a third cam working profile which is a continuation of said second profile and which is disposed at an angle greater than 90° to said second profile, means mounting said third cam means on said second cam means



for movement relative to said second cam means lengthwise of said second profile, and means for releasably locking said third cam means in any of a plurality of positions of adjustment relative to said second cam means.

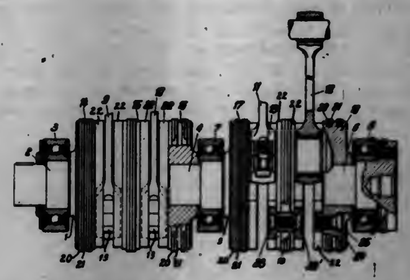
3,190,143
LINKWORK
John Hardaker, Woking, Surrey, and Richard Rowland Evans, Barnes, London, England, assignors to Her Britannic Majesty's Principal Secretary of State for the War Department, Whitehall, London, England
Filed Feb. 23, 1962, Ser. No. 175,171
4 Claims. (Cl. 74—586)



1. A linkwork comprising co-acting links that are normally subjected to different and varying temperature conditions, at least one of said links being solid in cross section and at least one of said links being tubular in cross section, a reservoir vessel located in the same ambient environment as a link solid in cross section so that the temperature of the vessel is in substantial equilibrium with that of said link solid in cross section, pump means, and conduit means connecting said vessel, tubular link and pump to form a closed circuit for the flow of fluid therethrough.

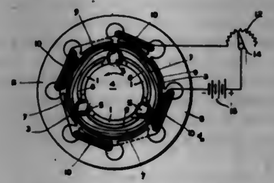
3,190,144
CRANKSHAFT FOR INTERNAL COMBUSTION ENGINES
Helmut Ausserbauer, Pettenkoferstrasse 11, Ingolstadt, Bavaria, Germany
Filed Feb. 28, 1962, Ser. No. 176,352
Claims priority, application Germany, Mar. 21, 1961, A 37,012
1 Claim. (Cl. 74—597)

A crankshaft for four cylinder-V or boxer two stroke internal combustion engine with crankcase pump, comprising in combination with a flywheel pivot; two similar crankshaft parts, each of said crankshaft parts having a pivot at one end, a bore at the other end and three crank discs between the two ends, the pivot of one of said crankshaft parts extending into the bore of the other one of said crankshaft parts, said flywheel pivot extending into the bore of said one crankshaft part, separate bearings enclosing the pivots of the crankshaft parts, a third bearing enclosing said flywheel pivot, two connecting rods carried by said one crankshaft part, two connecting rods carried by the other crankshaft part, counterweights upon those surfaces of the crank discs which face the connecting rods, and screws connecting the counterweights to those surfaces of the crank discs which face the connecting rods, the screws pertaining to each crankshaft part being in alinement with each other, the outwardly located crank discs having screw-receiving openings providing



access to screws carried by inwardly located crank discs, at least some of said screws having heads located adjacent said bearings.

3,190,145
VARIABLE SPEED REDUCER MECHANISM
Richard S. Bradley, Upper Saddle River, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Mar. 20, 1963, Ser. No. 266,638
4 Claims. (Cl. 74—640)

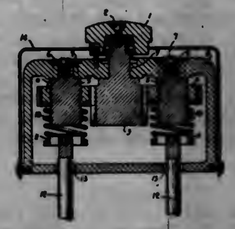


1. In a variable speed reducer mechanism a drive shaft, a groove in the drive shaft, actuator balls positioned in the groove and evenly spaced about the drive shaft, a flexible tubular member positioned about the drive shaft and actuator balls rotatably mounted in the drive shaft groove, said flexible tubular member being arranged to be distorted by the actuator balls acting under centrifugal force, a stationary ring positioned about the flexible tubular member, the circumference of the flexible tubular member being arranged to contact an inner surface of the stationary ring under centrifugal forces applied to the actuator balls and an electromagnetic stator arranged about the stationary ring and effective upon energization to vary the circumferences of the stationary ring and flexible tubular member so as to effectively control the speed reduction ratio of the variable speed reducer with energization of the electromagnetic stator.

3,190,146
DEVICE FOR SIMULTANEOUS ADJUSTMENT OF SEVERAL ELEMENTS DEPENDING UPON THE SAME ADJUSTMENT VALUE
Carl Sörensen and Helmar Trost Nielsen, Nordborg, Denmark, assignors to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Aug. 3, 1961, Ser. No. 130,725
Claims priority, application Germany, Aug. 3, 1960, D 33,937
5 Claims. (Cl. 74—665)

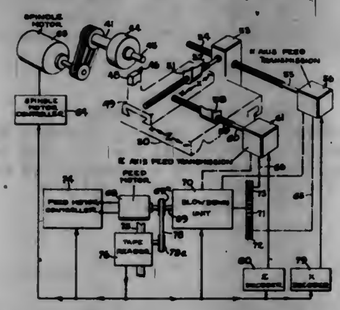
1. A device for the simultaneous adjustment of a plurality of elements depending upon the same adjustment value comprising, in combination, a casing, a rotatable driver gear wheel in said casing, a single manually-actuatable adjustment knob connected to said wheel but disposed

exteriorly of said casing, a plurality of follower gear wheels adapted to be connected to each element to be adjusted, said follower gear wheels being supported in meshing engagement with said driver gear wheel, and threaded spindles carrying said follower gear wheels, said follower gear wheels being each provided with a bore with an in-



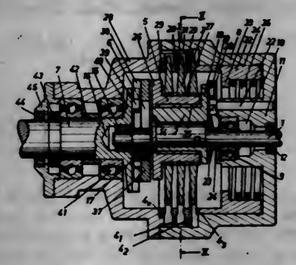
ternal thread, said threaded spindles being engaged with said internal thread and being mounted stationarily, whereby rotation of the driver gear wheel in response to turning movements of the manually-actuatable adjustment knob causes a simultaneous axial displacement of all of said follower gear wheels.

3,190,147
TRANSMISSION MECHANISM
Richard D. Livingston, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Sept. 1, 1961, Ser. No. 135,676
22 Claims. (Cl. 74—751)



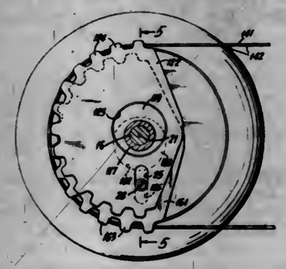
1. In combination, a multi-ratio transmission having input and output shafts and a plurality of two-position positive clutch elements selectively shiftable to different position patterns to establish different drive ratios between said input and output shafts, a main shaft adapted to be continuously rotated, a slowdown unit drivingly interposed between said main shaft and said input shaft, said unit including means for normally establishing a direct drive between said main shaft and said input shaft, cyclically operable means connected between said main shaft and said input shaft for causing said input shaft to decelerate and then accelerate while said main shaft continues to rotate, said cyclically operable means including means for causing said input shaft to rotate a predetermined, fixed angle less than it would otherwise be driven in response to each deceleration-acceleration cycle, and means responsive to an actuating signal for initiating one cycle of said cyclically operable means, means operative during such cycle for shifting said clutch elements to a desired position pattern substantially at the instant when said input shaft has been decelerated to its lowest velocity, whereby the total rotation of said output shaft is known or determinable in terms of the total elapsed rotation of said main shaft, the number of shifting cycles which have occurred, and the number of revolutions of said main shaft while the transmission is operating at each of a succession of drive ratios.

3,190,148
SPEED VARIATOR AND REDUCER APPARATUS
Jacques Flichy, Paris, France, assignor, by mesne assignments, to Ateliers Metallurgiques de Saint-Urbain, a corporation of France
Filed July 22, 1963, Ser. No. 296,778
Claims priority, application France, Aug. 23, 1962, 907,600, Patent 1,338,943
8 Claims. (Cl. 74—796)



1. Speed variator apparatus comprising a casing, an input shaft and an output shaft mounted for rotation with respect to the casing, an adjustable-throw excentric member driven in rotation by the input shaft, at least one disk member having an aperture mounted for free rotation about the excentric member, friction means engaging a surface of the disk member for restraining rotation thereof with respect to the casing, and coupling means rotatively connecting the disk member with the output shaft, whereby adjusting the throw of said excentric member will vary the ratio of input shaft velocity to output shaft velocity, and means for dynamically balancing said excentric member and parts carried thereby about the geometric axis of the input shaft.

3,190,149
SPEED REDUCTION DRIVE MECHANISM
Alex M. Gorfin, 490 West End Ave., New York, N.Y.
Filed Oct. 5, 1962, Ser. No. 228,556
16 Claims. (Cl. 74—805)



1. A speed reduction drive mechanism comprising a stationary support, a motor, a member rotatable on said support about the axis of rotation of said motor, means for drivingly connecting said member to said motor, a circular eccentric disk fixed to said member and eccentrically located with respect to said axis, a gear having teeth at the periphery thereof and having a circular central opening rotatably receiving said eccentric disk and having an elongated slot therethrough extending radially with respect to said axis, pin means secured to said support

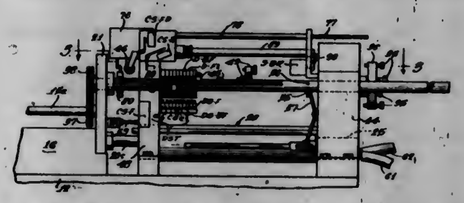
and slidably extending into said slot, a continuous curvilinear driven element extending around said gear and having a series of spaced openings therethrough for receiving said teeth, the number of teeth in the gear being different than the number of openings in said element, whereby rotation of said member will cause combined oscillatory and reciprocal translatory motion of said gear to provide progressive interengagement of said teeth with said openings and thereby drivingly rotate said element, and power take-off means drivingly connected to said element.

3,190,150
METHOD OF MAKING KEY BLANKS
Carl J. Demrick, Birmingham, Mich., assignor to Avis Industrial Corporation, Almont, Mich., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,047
9 Claims. (Cl. 76—110)



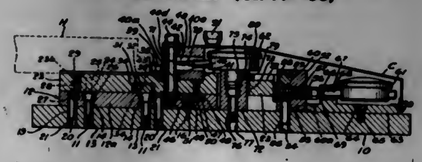
1. The method of making a key blank which has various transverse cross-sectional areas along its longitudinal axis comprising the steps of forming a preliminary blank having material equal in weight to that of the finished key blank with the material distributed along the axis of the preliminary blank in cross-sectional areas thereof generally in proportion to corresponding tranverse cross-sectional areas of the key blank, placing the preliminary blank in the cavity of a punch and die set which defines the configuration of the said key blank and which has the longitudinal axis of the defined configuration normal to the path of movement of the punch of said set, and cold working said preliminary blank by exerting forces on the preliminary blank with the punch of said set in a direction normal to said longitudinal axis to flow the material of said preliminary blank in the planes of said cross-sectional areas generally laterally with respect to such axis to the final configuration of said key blank.

3,190,151
CONTROLS FOR TURRET LATHES AND THE LIKE
Arthur G. Kozacka, Chicago, Ill., assignor to Acme Industrial Company, Chicago, Ill., a corporation of Illinois
Original application Jan. 30, 1958, Ser. No. 712,263, now Patent No. 3,060,466, dated Oct. 30, 1962. Divided and this application Mar. 7, 1962, Ser. No. 180,920
2 Claims. (Cl. 77—32.5)



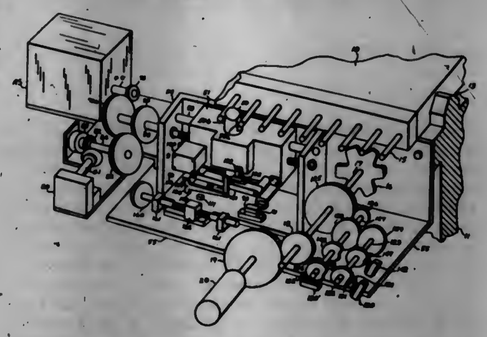
1. In a lathe having a turret movable along a linear path, reversible power means for advancing and retracting the turret, and means for indexing the turret to successive ones of a plurality of rotational stations as an incident to retraction of the turret, the combination comprising means for controlling the power means to execute a standard cycle of operation consisting of traversing forwardly through a predetermined distance, feeding forwardly through a second predetermined distance, and then traversing reversely to the original position, said controlling means including electrical time delay means responsive to termination of the forward movement of said turret for creating a dwell period between the termination of the forward feeding and the initiation of the reverse traversing of the turret, and a plurality of electrical time period determining elements each of which is adjustable for determining the duration of said dwell period independently of the feed rate of said turret and also independently of the length of said predetermined distances, and means indexed with the turret for connecting a different one of said elements into controlling relation with said time delay means when the turret is in each of its stations, so that the dwell period for each station of the turret may be preselected by adjustment of said elements independently of the turret feed rate and of the distances through which the turret moves.

3,190,152
MICROMETRICALLY ADJUSTABLE TOOL ARM
Carl H. Werth, 818 Thurman St., Saginaw, Mich.
Filed Sept. 17, 1962, Ser. No. 223,886
16 Claims. (Cl. 77—58)



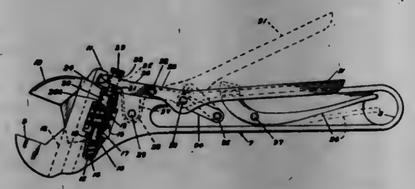
1. In a tool arm; support means for attachment to a machine tool frame opposite the spindle thereof; flexible bar means mounted thereon and having a resilient portion deformable in an axial and radial direction; tool holding means on said deformable portion; and means for selectively deforming said deformable portion axially and radially.

3,190,153
POSITIONING SYSTEM
Robert E. Diener, Shaker Heights, and Andrew A. Spisak, Cleveland, Ohio, assignors to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed May 3, 1963, Ser. No. 277,885
21 Claims. (Cl. 77—63)



1. In a system for positioning a movable member, presettable control means for measuring the movement of said member from a preseleoted one of a plurality of coarse positions and presettable to stop the movement of said member after a desired movement of said member from the preselected coarse position comprising a gauge member and means for driving said gauge member to move the latter proportionately to the movement of the movable member, second control means actuated as said movable member arrives at each coarse position rendering said presettable control means effective, and third control means for conditioning said second control means to render said presettable control means effective only as the movable member arrives at a preselected coarse position.

3,190,154
ADJUSTABLE END WRENCH WITH LOCKING MEANS
William C. Chapman, 6061 Brighton Road, Brighton, Mich.
Filed Nov. 13, 1963, Ser. No. 323,372
2 Claims. (Cl. 81—315)



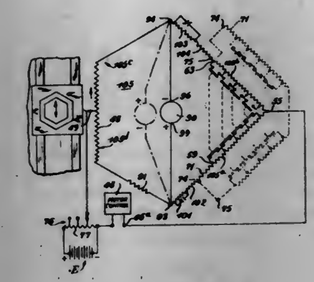
1. In a wrench having a handle portion, one fixed jaw and one slideable jaw, with a rack thereon, the combination of a spindle reciprocable in a bore formed in said handle portion, a worm gear freely rotatable on said spindle and in contact with said rack, spring means to urge said spindle and said worm gear in one direction and means to urge said spindle and said worm gear in the opposite direction, said last named means including shoulder on said spindle contactable with one end of said gear, a set screw contactable with the end of said spindle opposite said spring means, toggle linkage pivoted on said handle and arranged to exert pressure on said set screw.

3,190,155
TOGGLE OPERATED PLIERS
Charles H. Ortman, Chardon, Ohio, assignor of one-third to Ira J. Warner, Cleveland, Ohio
Filed Nov. 16, 1962, Ser. No. 238,102
4 Claims. (Cl. 81—379)



1. In a tool of the class described, a handle having a relatively fixed jaw, a relatively movable handle, a movable jaw pivotally connected with the movable handle and fixed jaw, means pivotally carried at one end on the movable handle for sliding engagement at its other end with the other handle when the handles are moved toward and away from each other, tension means connecting said movable jaw with said first means tending normally to urge the jaws toward closed position, means limiting the sliding movement of the first means with respect to said other handle when a workpiece is gripped between the jaws, said slide limiting means comprising a member pivotally supported in said other handle for engagement with said first means, and adjustable means on said other handle for engagement with said member while said member is in engagement with said first means to thereby prevent further sliding movement of the first means with respect to the said other handle as the jaws are brought into final gripping relation to a workpiece.

3,190,156
CONSTANT SURFACE SPEED MACHINE TOOL
Ralph H. Schuman, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed July 20, 1960, Ser. No. 44,207
11 Claims. (Cl. 82—2)

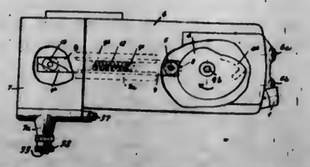


4. In a machine tool, a motor for effecting rotation of a workpiece relative to a tool, means supporting said tool and workpiece for relative movement transversely of the axis of rotation of the workpiece and including a slide movable along a path to effect said relative movement, means for mounting said tool in a reference position with respect to said slide in which the positions of said slide along said path corresponds to a corresponding predetermined distance of said tool from the axis of rotation, said tool being offsettable from said reference position, a control circuit for controlling the speed of said motor, said control circuit having input terminals, input circuit means comprising a reference voltage supply connected to said terminals to apply a signal voltage of a sense to increase the speed of said motor, electrical means providing an output voltage dependent on motor speed and means connecting said electrical means to said input terminals in opposition to said reference voltage including a voltage dividing circuit including a first variable element having a movable connection intermediate the terminals thereof, said movable element being connected to one of said input terminals for applying varying portions of said output voltage to said input terminals and a second variable circuit element for varying the portion of said output voltage applied to said input terminals, means connecting said slide to vary said first variable element as said slide moves along said path, and means for varying said second variable element in accordance with the magnitude of the offset of said tool from said reference position.

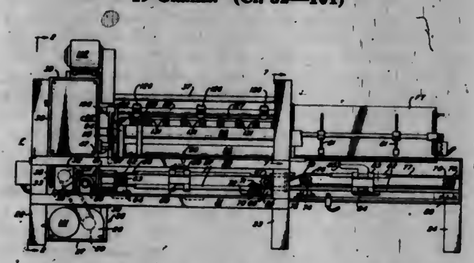
3,190,157
ATTACHMENT FOR CHASING THREADS ON HORIZONTAL LATHES
Pietro Ciccarelli, Genoa-Sampirdarena, Italy, assignor to Instituto Salesiano Rebaudengo, Turin, Italy
Original application Apr. 6, 1956, Ser. No. 576,565. Divided and this application Nov. 13, 1962, Ser. No. 237,209
9 Claims. (Cl. 82—5)

1. In a threading attachment for a lathe adapted to mount and rotate a workpiece about the conventional axis of rotation of a lathe, a base, a slide mounted on said base for guided translation in a first path, a tool carrier mounted on said slide for guided translation in a second path toward and from said first path, a helicoidal cam journaled on said carrier for rotation about an axis parallel with said second path, and engaging said slide, rotation of said cam effecting advance of said car-

rier transversely of said first path, a ratchet wheel fixed with said cam, pawl means carried by said slide for translation with respect thereto, and engaging said ratchet wheel, an abutment fixed with said base and, in response to translation of said slide, moving said pawl means in one direction to pass freely over said ratchet wheel without rotating the same, and spring means engaging and urging said pawl means in the opposite direction of movement to thereby rotate said ratchet wheel and said cam as said slide recedes from said abutment.



3,190,158
TUBE RECUTTER
Joseph Snyderman, Philadelphia, Pa., assignor to John Eppler Machine Works, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1964, Ser. No. 343,996
19 Claims. (Cl. 82—101)



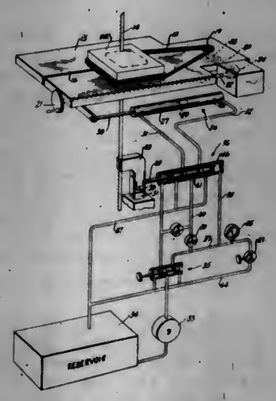
1. In a tube cutting machine having a mandrel rotatably supported at one end, members for feeding a tube to be cut onto the mandrel from the other end thereof at one location, members for advancing the mandrel to another location for tube cutting, and to another location for stripping, the improvement which comprises means including a slidable member for advancing a mandrel support for said other end into engagement with the mandrel and a tube positioning member for moving said tube longitudinally on said mandrel, said means for advancing including an actuator member movable in timed relation to said members for feeding a tube, detector means responsive to the initial position of said tube for controlling said tube positioning member, and members for rotating said mandrel at the location for tube cutting.

ERRATUM

For Class 82—285 see:
Patent No. 3,190,162

3,190,159
CONTOUR SAWING MACHINE
James W. Wilkie, Hopkins, and Charles E. Cleland, Minneapolis, Minn., assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota
Filed Apr. 13, 1964, Ser. No. 359,216
16 Claims. (Cl. 83—56)

1. In a machine tool for performing work along any prescribed path on a workpiece, the combination of:
(A) carriage means constrained to translatory motion along a first path lying in a plane;
(B) means on the carriage means to support a workpiece for bodily movement with the carriage means along said first path, while enabling free movement of the workpiece with respect to the carriage means along a second path transversely intersecting the first path and lying in the same plane, as well as rotation of the workpiece with respect to the carriage means and about an axis perpendicular to said plane;
(C) a tool operating on a fixed axis parallel to the axis about which the workpiece may turn and so located with respect to the carriage means that any part of a workpiece on the carriage means may be brought into engagement with the tool by motion of the carriage means along the first path, motion of the workpiece with respect to the carriage means along the second path, and rotation of the workpiece;
(D) controllable variable speed reversible power means connected with the carriage means to effect motion thereof along said first path in the direction to engage the workpiece with the tool and produce a known force between the tool and the workpiece and in the opposite direction;



(E) means connected with the carriage means and connectable with the workpiece operable to rotate the workpiece and by such rotation add to or subtract from said known force between the tool and the workpiece, the freedom of the workpiece to move along the second path enabling the same to freely assume any position required to maintain substantially zero force between the tool and the workpiece along the second path;
(F) sensing means operatively connected with the tool to be responsive to any changes in force between the tool and the workpiece; and
(G) control means governed by said sensing means and operatively connected with the power means to regulate the same and cause it to move the carriage means in the direction and at the rate required to maintain the force between the tool and the workpiece along the first path at its known value, so the work can be performed at a constant rate along any contour line by controlling only the rotary motion of the workpiece.

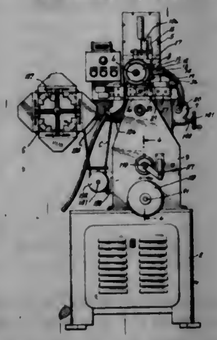
3,190,160
SLUG SHEDDER
Robert H. Armacost, Los Angeles, Calif., assignor to American Drill Bushing Company, Los Angeles, Calif., a corporation of Maryland
Filed Apr. 3, 1963, Ser. No. 270,218
3 Claims. (Cl. 83—128)

1. A slug shedding piercing punch comprising a body having a spring housing at one end and a piercing punch shaft at the other end terminating in a cutting face at a free end thereof, said spring housing having an axially extending chamber therein and said shaft having an axial bore therethrough in axial alignment with and in communication with said chamber and means forming a shoulder at the junction of said bore with said chamber, a shedder pin having a shank slidably contained in said bore and a head for said shank located in said chamber and means on said head adapted to seat on said shoulder when the pin is in extended position, a spring keeper slidably contained in the chamber and normally in engagement with said head, spring retaining means located at



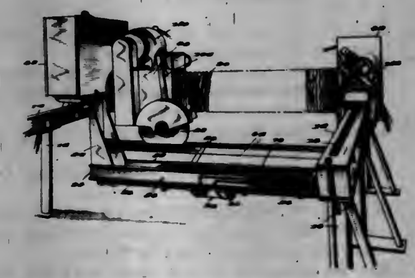
an end of said chamber opposite said bore and a spring in said chamber in engagement at one end with the keeper and at the other end with the spring retaining means, means forming a laterally open recess having an outer end larger than an inner end thereof between said keeper and said head, said spring housing having a transverse hole in the wall at a location coincident with the outer end of said recess when the shedder pin is in its innermost position, said hole being adapted to removably receive a retention pin at a location behind said head whereby to hold the spring in retracted position during sharpening of the shaft and shortening of the shedder pin.

3,190,161
MACHINE FOR CUTTING SLIDE FASTENER CHAIN
George W. Runnels, Gaylord F. Emig, and William J. Reuter, Meadville, Pa., assignors to Talon, Inc., a corporation of Pennsylvania
Filed July 5, 1961, Ser. No. 121,894
18 Claims. (Cl. 83—256)



1. In a machine for cutting slide fasteners of predetermined lengths from continuous fastener chain consisting of a pair of opposed tapes having a series of interlocked spaced-apart fastener elements attached to the opposed edges thereof, the combination of a single feed wheel arranged on a rotatable shaft for intermittent rotation and partially around which the fastener chain is disposed and passes as it is delivered into and through the machine, a rotatable shaft suitably mounted below said feed wheel and parallel to said first shaft, a gear arranged on said second shaft which cooperates with a bull gear suitably mounted adjacent thereto, a gear rack having one end thereof attached to adjustable eccentric means carried by said bull gear, an overrunning clutch mounted on said first shaft having a gear arranged therewith with which the opposite end of said gear rack cooperates to intermittently rotate said feed wheel, a slide member positioned below said feed wheel for reciprocation in a plane transversely of the axis of said rotatable shaft, a cutting punch mounted on said slide member adjacent one end thereof operable from one side of said chain, a stationary cutting die positioned directly opposite said cutting punch with which it is adapted to cooperate to sever and remove a series of adjacent fastener elements from the edges of the tapes of the chain as it is pulled therebetween by said feed wheel so as to provide a series of spaced-apart gap spaces in the chain, a cut-off knife mounted on said slide member adjacent the opposite end thereof and operable on the opposite side of said chain, and a stationary anvil with which said cutting knife cooperates to cut the tapes of the chain transversely thereof at the successive gap spaces along the chain so as to provide fasteners of a predetermined length as the chain is delivered from said feed wheel and between the cutting knife and said anvil, and means for driving said second shaft.

3,190,162
CUT-OFF MACHINE HAVING MEANS TO CLAMP WORKPIECE TO RECIPROCATING CUTTER CARRIAGE
Ralph E. Sonneland, Knoxville, Tenn., assignor by mesne assignments, to Tysaman Machine Company, Inc., Knoxville, Tenn., a corporation of Tennessee
Filed May 2, 1961, Ser. No. 107,130
5 Claims. (Cl. 83—285)



1. A cut-off machine for severing a moving length of formed article in a direction transverse to the direction of movement of such article comprising:
a traveling table having at least one upper surface for supporting a length of moving article to be severed;
a pair of rollers mounted on said table, means mounting the rollers for selective movement between a lower position beneath said upper suporting surface and an upper position to extend at least partially above said upper supporting surface, links connected with the mounting means for raising and lowering the rollers upon displacement of the links;
clamping means having a movable clamping surface spaced above the upper supporting surface of said traveling table;
power means having an operating shaft extending longitudinally of the table, cam means secured on the shaft in position to engage the links, means for connecting said clamping means with said shaft, said cam means and said connecting means lowering said rollers and said clamping means upon rotation of said shaft in one direction, and raising said clamping means to re-

lease the article and raising said rollers at least partially above said upper supporting surface upon rotation of said shaft in the opposite direction.

3,190,163
CUTTING DEVICE
John J. Bradley, 125 W. Mission Road, Green Bay, Wis.
Filed July 9, 1963, Ser. No. 293,761
10 Claims. (Cl. 83—342)



3. A knife blade for a shear cut perforator, comprising a generally rectangular solid body having
(A) four longitudinally-extending cutting edges,
(i) each of said edges having a concave contour extending over most of its length,
(B) said body being equipped with transverse notches interrupting said concave contour, adjacent notches being spaced apart by a distance greater than the width of the notches.

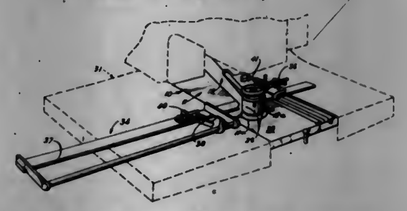
4. In web perforating apparatus,
(A) a frame,
(B) a cutting roll mounted for rotation in said frame,
(i) means for rotating said roll,
(ii) said roll having a plurality of circumferentially spaced recesses therein and a rigid bearing surface within each recess,
(C) a flat resilient blade rigidly supported upon the bearing surface in each recess and
(i) having an inclined, outwardly-extending free portion provided with a cutting edge,
(ii) said roll being provided with a further recess about each outwardly-extending free blade portion for relieving the same for flexing,
(iii) the inclination of each blade being such that it forms, with a radial line drawn from its cutting edge to the roll center, an acute angle,
(D) a blade-supporting member adjacent said roll adapted to support a blade for contact with the blades of said cutting roll,
(E) a flat anvil blade supported on said member and
(i) having its cutting edge radially inward of the path of travel of the cutting edges of the roll blades,
(ii) said anvil blade being arranged with its cutting edge at an angle to the cutting edge of each roll blade to provide progressive point contact as the edges of said blade are brought into engagement during rotation of said roll in the perforating operation, with the said resilient blade edge yielding during said engagement,
(I) each of said roll blades being equipped with a concave contour extending generally over the length of the cutting edges of the roll blades whereby said anvil blade and roll blade develop a uniform cutting force during progressive point contact therebetween,
(II) each roll blade being equipped with a plurality of longitudinally spaced-apart, transversely-extending notches in its cutting edge.

3,190,164
MAGNETIC MOUNTING DEVICE FOR A MICROTOME
James B. McCormick, 521 S. Madison, La Grange, Ill.
Filed Apr. 17, 1962, Ser. No. 188,116
3 Claims. (Cl. 83—411)



1. In combination, a microtome including an element reciprocally movable when said microtome is operated, an open-ended housing connected to said reciprocally movable element, a magnet secured within said housing and including a face accessible through the open end of said housing, a disk formed at least partially of a magnetic material positionable on said face of said magnet, one face of said disk being provided with a roughened surface to which a specimen will readily adhere, the other face of said disk being provided with a groove, means effective to limit sliding movement of said disk transversely of the said face of said magnet, and means for disengaging said disk from said magnet face, said lattermentioned means comprising a lever pivotally mounted on said housing and including a finger extending intermediate said disk and magnet and engageable with said groove, whereby pivotal movement of said lever in a given direction will move said disk away from said magnet.

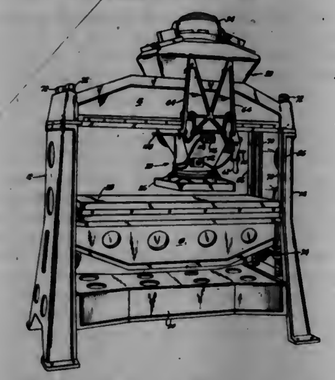
3,190,165
STRUCTURE FOR PUNCHING MACHINE
Arthur K. Schott, Kenmore, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Original application Mar. 6, 1961, Ser. No. 93,578. Divided and this application June 18, 1962, Ser. No. 203,373
2 Claims. (Cl. 83—467)



1. A structure for accurately angularly orienting a shaped tool with respect to a workpiece, comprising in combination:
(a) a rigid frame constructed to be installed in and removed from a press as a unit and having relatively fixed upper and lower arms, said arms respectively having vertically fixed means defining a pair of spaced aligned apertures;
(b) a pair of vertically-spaced upwardly-open concentric annular members respectively supported by said arms in said spaced aligned apertures in vertically fixed positions and each rotatable therein, and each of said members having means respectively defining a bore slidably receptive from above of separate cooperating tools comprising punch and die means of noncircular cross-section, one of said bore-defining

means further enabling one of said tools to be vertically reciprocated with respect to the associated vertically fixed annular member;
(c) said rotatable annular members each having radially inwardly extending keying structure operative between each annular member and the tool supported by it to effect corotation with such supported tool while enabling the relative vertical movement of the one of said tools and slidable reception of both of said tools; and
(d) selectively effective locking means for each of said annular members, said locking means being respectively operative between said frame and said annular members to lock said annular members in any selected rotational position with respect to said frame.

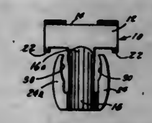
3,190,166
DIE PRESS WITH TRAVELING HEAD
Edgar Haas, New York, N.Y., assignor to Herman Schwabe, Inc., Brooklyn, N.Y., a corporation of New York
Filed Sept. 6, 1962, Ser. No. 221,703
18 Claims. (Cl. 83—534)



1. A die press of the traveling head type for cutting sheet material by means of freely movable dies, said press comprising a frame having upright ends carrying an elongated bridge at the top, an elongated table between the ends beneath the bridge, a traveling head carried by and movable along the bridge for travel over the table, a cylinder and piston in said head and disposed for reaction against the bottom of the bridge, a platen therebeneath moved toward or away from the table by the cylinder and piston, a tank for hydraulic fluid, a pressure pump receiving fluid from the tank, a motor to drive said pump, a control valve and piping between the pump and the cylinder, said tank, pump, motor, valve and piping all being mounted on and forming a part of the traveling head for movement therewith.

3,190,167
ROTARY SHEET METAL FASTENER
Robert J. Holton, Cleveland, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 13, 1961, Ser. No. 116,786
5 Claims. (Cl. 85—5)

1. A rotary fastener formed of sheet metal and adapted for assembly with an apertured support panel comprising, an elongated head of inverted U-shaped configuration in end elevation, with the open end of the U adapted to face the support panel, a resilient cam-like element bent inwardly on the underside and extending from each end surface of the inverted U-shaped head transversely across the open end thereof, said elements being situated on said head adjacent each of its opposed ends and being adapted for coacting engagement with the confronting surface of said support panel, a split shank depending downwardly from said head defining a pair of oppositely disposed leg portions, each of said leg portions being integral with and extending one from each of the sides of the open end of said U-shaped head, said leg portions being spaced laterally from one another throughout their lengths to provide transverse resiliency in said shank, said leg portions having convex exterior surfaces in a generally transverse direction, the transverse dimension of said shank being at least as great as the transverse dimension of said head as measured in the same plane, each of said leg portions including a single outwardly extending resilient wing on one side thereof commencing adjacent the lower extremity of the respective leg portion and projecting upwardly toward said head, each of said wings being cut away toward its upper end so as to be substantially laterally spaced from its respective leg portion, and the terminal end of each of said wings being disposed in predetermined spaced relation with respect to said head, both of said wings being inwardly curved in the opposite direction relative to a vertical plane passing through said shank, to facilitate rotary movement of said fastener in the opposite direction relative to said curvature upon assembly with said support panel.



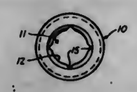
3,190,168
QUICK DETACHABLE FASTENING MEANS
Leonard Ray Sullivan, 911 Kenwood St., Burbank, Calif.
Original application Jan. 25, 1960, Ser. No. 4,495. Divided and this application Dec. 26, 1962, Ser. No. 248,831
2 Claims. (Cl. 85—7)



1. In a quick detachable fastener, a bolt having a first and a second peripheral groove spaced axially of each other and a collar component attachable to and detachable from said bolt by interlocking engagement with and release from said grooves; said collar component comprising a cylindrical base member having an axially disposed bolt receiving bore extending therethrough, a radially outwardly extending flange at one end thereof and an external cylindrical bearing surface adjacent to said flange, a first locking member retaining and guiding opening extending from said bearing surface to said bore adjacent to said flange, said opening terminating in said bore in a reduced diameter portion, a first locking member disposed in said first opening and adapted to project into said bore sufficiently to engage said first groove on said bolt, means for causing said locking member to effect locking engagement with said groove including a ring mounted for rotation on said bearing surface on said base member and having means for effecting movement of said locking member into locking engagement or to be released from such engagement and further having an end face engaging a complementary face of said flange, a second opening in said

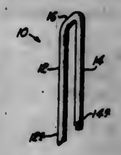
bearing surface spaced axially from said first opening at the same distance as said grooves in said bolt are spaced from each other, a second locking member in said second opening and a second rotatable ring mounted for rotation on said bearing surface and having similar means for effecting engagement and release of said second locking member with said second groove and having an end face engaging the end face of said first ring opposite the face thereof engaging said flange, spring means for holding said rings and said collar component in engagement with each other and with said flange with capacity for limited axial movement and comprising a spring washer mounted on the end of said collar component at the end thereof remote from said flange and having a plurality of generally radially outwardly extending fingers terminating in ends displaced toward said flange and engaging the face of said second ring remote from said first ring with resultant creation of capacity for limited axial movement of said rings against the bias of said spring fingers, and ratchet means operated by said bias of said spring washer for displaceably retaining said rings in predetermined increments of movement relative to each other and to said flange comprising a first ratchet means on the juxtaposed faces of said first ring and said flange, a second ratchet means on the juxtaposed faces of said first and second rings, each of said first and second ratchet means comprising a plurality of circumferentially spaced depressions formed in one of the juxtaposed faces and at least one protuberance on the other juxtaposed face engageable selectively with said plurality of depressions on the other juxtaposed face under the influence of said spring means.

3,190,169
INSERT HAVING INTERNAL DRIVE GROOVES
José Roaén, San Juan Capistrano, Calif., assignor to Rosan Engineering Corp., Newport Beach, Calif., a corporation of California
Filed Dec. 4, 1961, Ser. No. 157,327
5 Claims. (Cl. 85—45)



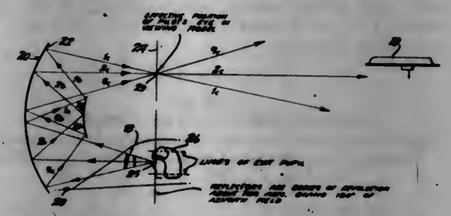
1. An insert adapted to be installed in a workpiece having a bore, comprising: an elongated cylindrical body having an external thread for mounting said insert within said bore in said workpiece, said body having a bore incorporating an internal thread, and having a thin wall between said internal and external threads, all of said internal threads being load-carrying threads engageable by a threaded member entering through the upper extremity of said body, said internal threads being constituted by a plurality of successive convolutions having major and minor diameters, and a plurality of longitudinal drive grooves extending across all of said internal threads and being engageable by a driving tool through said upper extremity of said body for driving said body into said workpiece, said drive grooves having their bases located inwardly of said major diameter and outwardly of said minor diameter of said internal threads, whereby said drive grooves do not extend into and weaken the wall between said internal and external threads, the limited depth of said drive grooves leaving unimpaired circumferentially continuous major diameter thread portions disposed radially outwardly of said drive grooves, whereby the structural integrity of the major diameter portions of the successive convolutions of the internal threads is maintained, said drive grooves occupying a minor portion of the circumferential length of any given convolution of said internal threads, thereby forming chordal arc segments in said successive convolutions, the terminal portions of said segments being triangular and being formed by the side walls of said drive grooves, said drive grooves providing means through which high torque can be applied in driving said insert without causing any substantial reduction in the strength of said internal threads to resist axial stripping when a threaded member is tightened therein.

3,190,170
FASTENER CONSTRUCTION
William H. Baum, Westchester, and John Mosetich, Elmhurst, Ill., assignors to Fastener Corporation, Chicago, Ill., a corporation of Illinois
Filed May 11, 1961, Ser. No. 109,315
4 Claims. (Cl. 85—49)



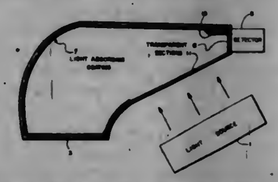
4. A fastener construction adapted to be driven through an imperforate portion of a workpiece by a power actuated driving member and adapted to be clinched during said driving operation comprising a fastener having both a crown portion adapted to be engaged by the driving member and a pair of elongated legs that are to be deflected relative to each other when the fastener is clinched, each of said legs having a longitudinal axis and terminating in a free end, and a blunt point structure formed in the free end of each of said legs, the terminus of each of said blunt point structures being defined by a first planar semicircular surface, each of said point structures including a second generally parallel and semicircular surface formed in each leg spaced longitudinally along said axis from said first surface, said leg between said first and second surfaces of each leg being defined by an axially extending planar surface perpendicular to said first and second surfaces, said semicircular surfaces extending generally perpendicular to said axis and being spaced from each other a distance substantially equal to the radius of one of the semicircular surfaces.

3,190,171
VIEWING DEVICE HAVING OPTICAL ARRANGEMENT PRODUCING VIRTUAL IMAGE AT INFINITY
George A. Reed, Williamsville, N.Y., assignor to The Oxford Corporation, Williamsville, N.Y., a corporation of New York
Filed June 7, 1960, Ser. No. 34,507
9 Claims. (Cl. 88—1)



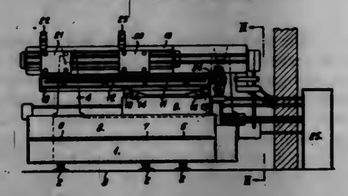
8. In a viewing device, an optical arrangement comprising a first reflector having a concave specular surface of revolution including first and second portions, and a second reflector having a convex specular surface of revolution, said surfaces opposing each other and spaced apart a distance substantially equal to the prime focal length of said concave surface, said convex surface having a shorter chordal length in one direction than the chordal length in the same direction of said concave surface, whereby light from an object to be viewed passing laterally of one side of said second reflector and being incident to said second concave surface portion is focused on said convex surface from whence it is reflected to impinge said first concave surface portion and thereby create a virtual image of said object at infinity viewable laterally of the other side of said second reflector.

3,190,172
OPTICAL RESONANCE FILTERS
Edwin Laegberg, Cambridge, Mass., assignor to Elcon Laboratory, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 24, 1959, Ser. No. 855,103
9 Claims. (Cl. 88—14)



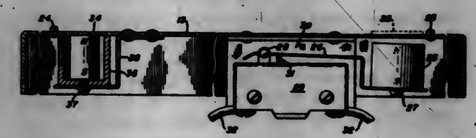
1. Apparatus for filtering a narrow band of optical energy comprising, in combination, means forming a gas tight enclosure, a gas contained within said enclosure, said gas exhibiting resonance scattering in the band of optical energy it is desired to filter when the molecules of said gas are in an excited state, said enclosure including an optically transparent surface, through which optical energy to be filtered may enter said gas, means for exciting at least a portion of the atoms of said gas to said excited state, said excited state corresponding to an energy level higher than the ground state of said atoms, means responsive to the resonance radiation in the band of optical energy to be filtered which is emitted and scattered by said gas following absorption of energy to be filtered, said enclosure being non-resonant to the radiation emitted and scattered by said gas, said resonance radiation being of a frequency which lies within the band of frequencies occupied by the optical energy to be filtered and said radiation responsive means being shielded from direct radiation entering said transparent surface.

3,190,173
DEFORMATION-COMPENSATING MACHINE HAVING A SUSPENSION COMPRISING THREE BALLS
Jacques Pettavel, Geneva, Switzerland, assignor to Societe Genevoise d'Instruments de Physique, a firm of Switzerland
Filed Feb. 15, 1960, Ser. No. 8,663
Claims priority, application Switzerland, Feb. 25, 1959, 70,107/59
4 Claims. (Cl. 88—14)



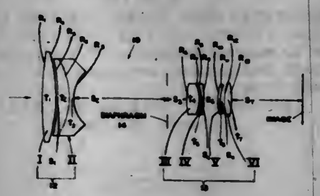
1. In high precision apparatus, the combination of a rigid base member, three feet supporting said base member on a foundation, a column structure comprising at least one column extending up from said base member, a superstructure carried by said column structure, at least one operating unit carried by said superstructure, means for moving and guiding said operating unit on said superstructure, a stationary bed overlying said base member, means supporting said bed on said base member, a work carriage movably carried by said bed and adapted to support work for presentation to said operating unit, means for moving said carriage and for guiding said carriage on said bed, said supporting means consisting of three balls disposed between said bed and base member and transmitting to said base member the entire weight of said bed, carriage and work, and means positioning said balls at all times in accurate vertical register respectively with said three feet supporting said base member, whereby any deformation of said bed caused by the shifting of weight resulting from movement of said carriage is not transmitted to said base member nor to said column structure, superstructure and operating unit.

3,190,174
SLIDE-ACTUATE SWITCH FOR PHOTOGRAPHIC PROJECTOR
Philip M. Field, Maplewood, N.J., assignor to Charles Beseler Company, East Orange, N.J., a partnership
Filed Mar. 22, 1962, Ser. No. 181,612
15 Claims. (Cl. 88—26)



1. In a photographic projector of the type wherein a switch in the lamp circuit is actuated by the placement into operative position of a member carrying the material to be projected, the improvement wherein the switch actuating means are cooperating magnetic material members carried by the projector and the said member, one of the magnetic material members being a magnet.

3,190,175
WIDE ANGLE PHOTOGRAPHIC OBJECTIVE
Walter Mandler, Midland, Ontario, Canada, assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Oct. 22, 1962, Ser. No. 232,028
8 Claims. (Cl. 88—57)



1. A wide angle photographic objective having a relative aperture at least as large as $f/2.8$ and a field angle of substantially 64° and an extra long back focal length at least as great as twice the equivalent focal length of the objective, said objective having excellent correction of all chromatic and monochromatic aberrations, coma, astigmatism, and distortion and comprising

a dispersive front lens group and a collective rear lens group, said groups being spaced on opposite sides of an interposed diaphragm in optical alignment with each other,

said front group comprising a positive singlet lens designated I which is located at the object end of the ob-

jective and a negative compound lens designated II and spaced rearwardly of the positive lens,

said rear group comprising a second positive singlet lens designated III which is located adjacent to the rear side of said diaphragm,

a meniscus single negative lens which is designated IV and is spaced rearwardly from said second positive singlet lens and has a concave surface turned toward said diaphragm,

said rear group further comprising a second meniscus singlet negative lens designated V which is spaced rearwardly of the first singlet negative lens and is concave toward the image, and

a rearmost positive single lens designated VI which is spaced from the last-named meniscus lens,

the focal lengths which are designated F_I to F_{VI} for the aforementioned lens members I to VI respectively having values as given in the table of mathematical expressions herebelow,

$$6.79F<F_I<8.30F$$
$$1.458F<-F_{II}<1.778F$$
$$1.214F<F_{III}<1.474F$$
$$1.993F<-F_{IV}<2.433F$$
$$3.85F<-F_V<4.69F$$
$$1.637F<F_{VI}<1.997F$$

said values being stated in terms of the equivalent focal length designed F of the entire objective, the axial thicknesses of the successive lens parts being denoted t_1 to t_7 and the successive interlens air spaces which are represented by S_1 to S_6 having values which are specified by the table of mathematical expressions herebelow,

$$.413F<t_1<.503F$$
$$.287F<t_2<.349F$$
$$.1227F<t_3<.1399F$$
$$.298F<t_4<.364F$$
$$.0522F<t_5<.076F$$
$$.0522F<t_6<.076F$$
$$.172F<t_7<.210F$$
$$.0413F<S_1<.0503F$$
$$2.33F<S_2<2.85F$$

Diaphragm

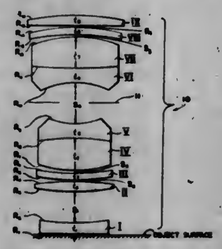
$$.492F<S_3<.610F$$
$$.0413F<S_4<.0503F$$
$$.340F<S_5<.414F$$
$$.1078F<S_6<.1316F$$

stantially $f/3.0$ said objective comprising in optical alignment a negative field flattening lens located nearest to the objective, a pair of positive singlet lenses spaced rearwardly thereof in optical alignment with the first lens, a pair of mutually spaced negative meniscus lenses arranged concave to each other on opposite sides of an interposed diaphragm and rearwardly spaced from said positive lenses, and a second pair of singlet positive lenses rearwardly spaced from and optically aligned with said negative lenses, said successive lenses having focal lengths which are designated F_1 to F_7 and having axial thicknesses t_1 to t_7 axial spacings S_1 to S_6, and refractive index n_D and Abbe number ν of the glass from which said lenses are made which are specified numerically in the table of mathematical statements herebelow,

$$2.0F<-F_1<2.44F$$
$$1.64F<F_2<2.0F$$
$$2.10<F_3<2.56F$$
$$4.86F<-F_4<5.94F$$
$$3.98F<-F_5<4.86F$$
$$3.00F<F_6<3.67F$$
$$2.56F<F_7<3.13F$$
$$.0408F<t_1<.0498F$$
$$.0381F<t_2<.0465F$$
$$.0364F<t_3<.1784F$$
$$.0550F<t_4<.0672$$
$$.0550F<t_5<.0672F$$
$$.1487F<t_6<.1817F$$
$$.0381F<t_7<.0465F$$
$$.0399F<t_8<.0487F$$
$$.701F<S_1<.857F$$
$$.00200F<S_2<.00244F$$
$$.00463F<S_3<.00565F$$
$$.244F<S_4<.396F$$
$$.00463F<S_5<.00565F$$
$$.00200F<S_6<.00244F$$

wherein the minus (−) sign designates lenses of negative power and F designates the equivalent focal length of the objective.

3,190,176
PHOTOGRAPHIC OBJECTIVE FOR USE IN ENLARGING OR REDUCING DEVICES
Michael J. Buzawa, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Nov. 13, 1962, Ser. No. 237,152
7 Claims. (Cl. 88—57)

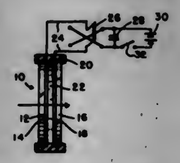


1. A photographic objective for photographic enlarging or reducing devices having a relative aperture of substantially $f/3.0$ said objective comprising in optical alignment a negative field flattening lens located nearest to the objective, a pair of positive singlet lenses spaced rearwardly thereof in optical alignment with the first lens, a pair of mutually spaced negative meniscus lenses arranged concave to each other on opposite sides of an interposed diaphragm and rearwardly spaced from said positive lenses, and a second pair of singlet positive lenses rearwardly spaced from and optically aligned with said negative lenses, said successive lenses having focal lengths which are designated F_1 to F_7 and having axial thicknesses t_1 to t_7 axial spacings S_1 to S_6, and refractive index n_D and Abbe number ν of the glass from which said lenses are made which are specified numerically in the table of mathematical statements herebelow,

$$2.0F<-F_1<2.44F$$
$$1.64F<F_2<2.0F$$
$$2.10<F_3<2.56F$$
$$4.86F<-F_4<5.94F$$
$$3.98F<-F_5<4.86F$$
$$3.00F<F_6<3.67F$$
$$2.56F<F_7<3.13F$$
$$.0408F<t_1<.0498F$$
$$.0381F<t_2<.0465F$$
$$.0364F<t_3<.1784F$$
$$.0550F<t_4<.0672$$
$$.0550F<t_5<.0672F$$
$$.1487F<t_6<.1817F$$
$$.0381F<t_7<.0465F$$
$$.0399F<t_8<.0487F$$
$$.701F<S_1<.857F$$
$$.00200F<S_2<.00244F$$
$$.00463F<S_3<.00565F$$
$$.244F<S_4<.396F$$
$$.00463F<S_5<.00565F$$
$$.00200F<S_6<.00244F$$

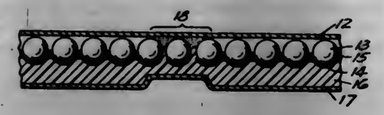
wherein the minus (−) sign designates lenses of negative power and F designates the equivalent focal length of the objective.

3,190,177
ELECTROCHEMICAL SHUTTERS
Edward K. Kaprelian, Joppa, Md.
(29 Riveredge Road, Red Bank, N.J.)
Filed Apr. 15, 1958, Ser. No. 728,745
5 Claims. (Cl. 88—61)



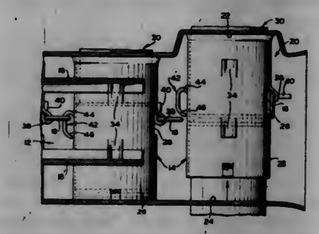
1. A light shutter comprising a first transparent electrode, a second transparent electrode parallel to, coextensive with, and spaced apart from said first electrode, an insulating frame receiving the edges of said electrodes and retaining same to form therebetween a sealed electrolyte retaining cell, an electrolytic plating bath in said cell, a plated, non-light-transmitting metal layer on the surface of said first transparent electrode, and a source of electrical power connectable to said electrodes for successively unplating said metal layer from said first electrode and plating a non-light-transmitting metal layer on said second electrode in a single continuous action, said source including switching means for reversing the polarity of the power connected to said electrodes.

3,190,178
REFLEX-REFLECTING SHEETING
Eugene L. McKenzie, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 29, 1961, Ser. No. 120,680
5 Claims. (Cl. 88—82)



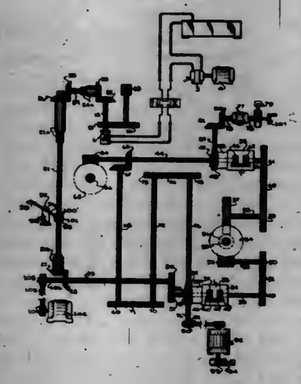
1. Reflex-reflecting sheeting comprising a continuous layer of glass beads in compact relationship to one another, and means separating said layer of beads into a plurality of discrete encapsulated and hermetically sealed pockets having no lateral dimension greater than three-fourths inch, with the beads of each said discrete pocket optically exposed to an air interface, said separating means being relatively small in total area as compared to the total area of said pockets, and said separating means including an intersecting grid pattern of pressure-formed heat-sealed connection between the structure of said reflex-reflector overlying said layer of beads and the structure of said reflex-reflector underlying said layer of beads, the structure overlying said beads comprising a transparent cover film, and the structure underlying said beads comprising a binder layer in which said beads are partially embedded and internal light-reflecting means underlying said beads and in optical connection with the back extremities thereof, those beads of the sheeting in the intersecting grid pattern of pressure-formed heat-sealed connection being flooded over and optically obscured by binder layer material displaced from said binder layer and hermetically sealed to said transparent cover film according to said intersecting grid pattern.

3,190,179
DISCONNECTABLE CARTRIDGE BELT LINK
Paul H. Benoit, Chicopee Falls, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed May 8, 1964, Ser. No. 366,199
4 Claims. (Cl. 89—35)
(Granted under Title 35, U.S. Code (1952), sec. 266)



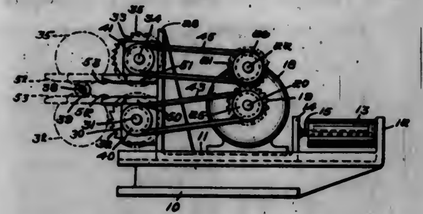
1. A cartridge link including a sleeve for resiliently retaining a shell of a cartridge, a connector hingedly mounted on one side of said sleeve for pivotal 90° displacement between a rear position lying along the side of said sleeve and an extended position respective thereto, means on said connector for preventing pivotal displacement of said connector forwardly of the extended position, and a rearwardly extending spring clip fixed to said sleeve opposite to said connector for releasably engaging said connector of said another link to form a cartridge belt.

3,190,180
SELECTIVE GEARING ARRANGEMENT FOR HOBBING GEARS AND MILLING THREADS
John A. Bradner, Cleveland, Ohio, assignor to The Lees-Bradner Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 14, 1963, Ser. No. 323,832
4 Claims. (Cl. 90—4)



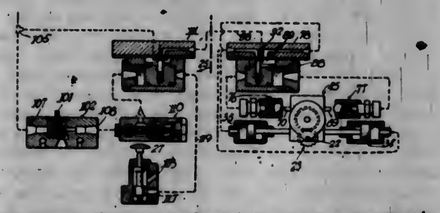
1. A machine tool selectively convertible for use as a hobbing machine and for thread milling comprising a tool spindle for receiving a selected cutter thereon, a main drive shaft, a single drive means for the spindle and drive shaft, a rotatable housing lead differential mechanism, a first index gear train, a work spindle, a rotatable housing traverse differential mechanism, a lead screw, said drive shaft having a releasable drive connection with the input to said lead differential, a second index gear train driven by said single drive and having a drive input to the traverse differential, said first index gear train delivering the output of said lead differential to the work spindle to rotate the same at a precise rotational rate, said second gear train determining the cutting gear rate of a tool on the tool shaft, means for disengaging the drive shaft drive to the work spindle, a selectively open and closed gear train having driving connection only, when closed, with said lead screw and with the rotational housing of the lead differential mechanism, a prime mover energizable for effecting a precise rotational rate to the work spindle through said lead differential and independent from said drive shaft when the releasable drive connection of the drive shaft is disengaged, and a second prime mover energizable for effecting a driving connection with the rotational housing of the lead differential when the selectively open and closed gear train is open, whereby respectively the selected relationship of the rotational rate of the work spindle to the tool feed rate is maintained constant during dis-engagement of the first and second prime movers while maintaining a driving connection between the drive shaft and the lead differential and during maintenance of a closed drive of the gear train connecting the rotatable housing of the lead differential with the lead screw as in performing a hobbing operation, and whereby the selected relationship between the rotational rate of the work spindle to the tool feed rate may be maintained as in thread milling.

3,190,181
MACHINES FOR REMOVING FINS FROM FINNED TUBES
Robert M. Stikeleather, Holbrook, Mass., assignor to Aerofin Corporation, Syracuse, N.Y.
Original application Dec. 23, 1958, Ser. No. 782,506. Divided and this application Aug. 1, 1962, Ser. No. 213,966
3 Claims. (Cl. 90—15)



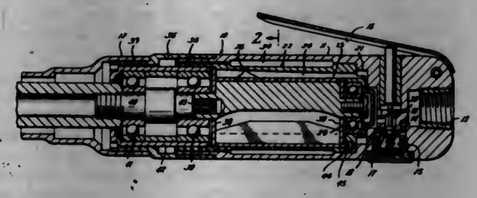
1. A machine for removing fin from a finned tube comprising a frame, an electric motor supported on said frame, a first gear and a first pulley on the shaft of said motor, a second gear meshed with said gear, a second shaft for said second gear, a journal supported on said frame for said second shaft, a second pulley on said second shaft, a first circular, rotary cutter, a third shaft for said cutter, a journal supported on said frame for said third shaft, a third pulley on said third shaft, a second rotary, circular cutter, a fourth shaft for said second cutter, a journal supported on said frame for said fourth shaft, a fourth pulley on said fourth shaft, said shafts having parallel axes, belts around said first and second and around said third and fourth pulleys, said cutters being spaced apart at their peripheral edges in a direction normal to said axes a distance equal to the diameter of a tube from which fin is to be removed, said cutters being displaced in the direction of said axes so that the inner edge of one of said cutters and the outer edge of the other one of said cutters extend substantially in a plane normal to said axes, and a pair of guides supported from said frame between said third and fourth shafts, said guides extending outwardly beyond said cutters and being spaced apart in a direction normal to said axes a distance equal substantially to the outer diameter of the fin on said tube.

3,190,182
PNEUMATIC MOTOR
Walter Jakowchuk, Melrose Park, Ill., assignor to Mead Specialties Company, Inc., Chicago, Ill.
Filed Feb. 4, 1963, Ser. No. 255,970
8 Claims. (Cl. 91—2)



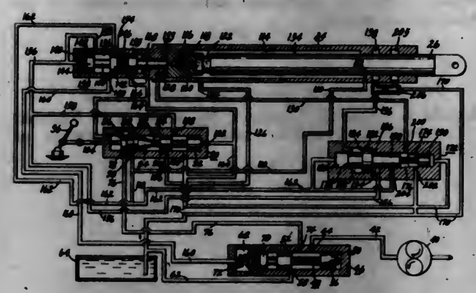
1. A pneumatic motor adapted to power a pneumatic timer, comprising:
a frame equipped with spaced bearings, a shaft journaled in said bearings and adapted to be coupled to said timer,
a one-way rotary clutch coupled to said shaft between said bearings, said clutch including a block adapted to reciprocate transversely to the axis of said shaft to provide a few degrees of shaft rotation for each reciprocation,
a pair of pneumatic cylinder and piston rod units mounted on said frame in alignment with said block on opposite sides thereof and coupled thereto for reciprocating the same, and
means including a source of pressure fluid and a directing valve for alternately delivering pressure fluid to said pneumatic cylinder and piston rod units for exhausting pressure fluid therefrom, said alternately delivering means including a pair of poppet valves mounted on said frame, one on each side of said block and engageable sequentially thereby during reciprocation thereof for controlling said directing valve.

3,190,183
AIR TOOL IMPROVEMENT
George G. Walker and Richard E. Eckman, Houston, Tex., assignors, by mesne assignments, to The Cooper-Bessemer Corporation, Mount Vernon, Ohio, a corporation of Ohio
Filed May 10, 1962, Ser. No. 193,780
12 Claims. (Cl. 91—80)



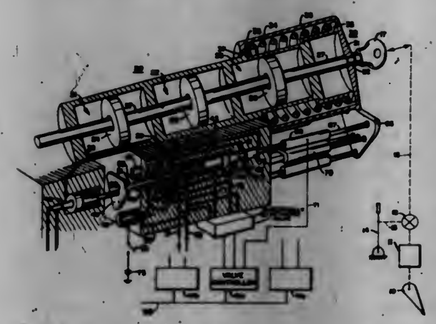
1. An air tool comprising
a tool body,
pressure fluid circulation means for admitting pressure fluid into the body at a controllable rate,
a rotatable spindle disposed within said body adapted for having attached thereto a work performing element, and
a self-housed motor unit carried within the confines of the body and operatively connected to the spindle,
said motor unit comprising
a housing,
conduit means disposed in the housing in communication with the pressure fluid circulation means to admit pressure fluid into the housing,
a cylindrical sleeve insert removably disposed within the confines of the housing of the motor unit,
said sleeve insert having a plurality of spaced apart pressure fluid inlet ports in communication with the conduit means,
said housing and said sleeve insert being provided with exhaust ports for exhausting pressure fluid therefrom,
a rotor eccentrically mounted within the sleeve insert for rotation relative thereto,
bearing means disposed adjacent each end portion of the cylindrical sleeve insert for enabling the rotor to be rotated relative thereto,
said rotor having a plurality of vane members carried thereby for generally radially extensible movement relative thereto with the vane members engaging the sleeve insert to impinge circulating pressure fluid against the vane members and impart rotation to the rotor,
substantially flat disc-like wear plates removably disposed within the confines of the housing in engagement with the cylindrical sleeve insert and the vane members of the rotor, and
spacer means for preventing the wear plates from having any engagement with the bearing means.

3,190,184
WINDSHIELD CLEANING SYSTEM
Keith H. Carpenter, Pittsford, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 218,007
11 Claims. (Cl. 91—219)



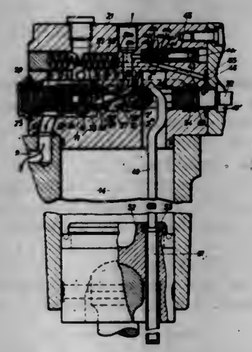
1. A hydraulically operated windshield wiper actuating system including, a source of hydraulic fluid under pressure, pressure regulating means for controlling the pressure potential of said source comprising a spring loaded relief valve and a servo piston disposed in a servo chamber for varying the load on said spring, a wiper motor having a differential area reciprocable piston, a manual control valve for throttling the flow of hydraulic fluid to said motor and for continuously pressurizing the smaller area of said motor piston, valve means connecting said servo chamber and said wiper motor for loading said spring in accordance with the demands of said motor, servo actuated reversing valve means controlled by movement of said piston for alternately subjecting the larger piston area to drain and pressure to reciprocate said piston, and means actuated by said piston for moving said valve means to connect said servo chamber to drain when movement of said piston is arrested by positioning said manual control valve in the "off" position.

3,190,185
SERVOMOTOR WITH MONITOR
Robert F. Rasmussen, Brooklyn Center, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed July 11, 1961, Ser. No. 123,220
21 Claims. (Cl. 91—363)



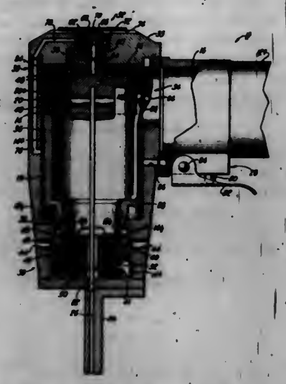
1. In a fluid type servomechanism having an output member and comprising at least three cylinders and integrally connected rams, one for each cylinder, connected also to said output member; a servo control valve for each cylinder; an engage valve intermediate each said servo valve and cylinder to effect transmission of fluid from the servo valve when operated to its respective cylinder; pressure responsive means connected to each engage valve for operating each said engage valve to its operated position; a comparator or limit valve for each cylinder; means for operating or displacing each limit valve in response to differential pressures on opposite sides of the ram in each individual cylinder; and means responsive to unequal differential pressures in the three cylinders operating one of said limit valves to relieve the pressure on the engage valve and causing return of said one engage valve to unoperated position whereby the opposed ends of the cylinder corresponding to said returned engage valve because of a malfunction, indicated by nonconformance of its differential pressure with the other two cylinders, are brought into communication with each other.

3,190,186
HYDRAULIC DEVICE
Hans Molly, 48 Dr. Eugen-Essig-Strasse, Malsch, Kreis Karlsruhe, Germany
Filed Dec. 21, 1961, Ser. No. 161,116
Claims priority, application Germany, Dec. 27, 1960, M 47,525
21 Claims. (Cl. 91—382)



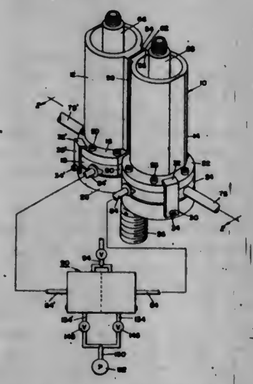
14. The combination of a hydraulic jack and a slide valve therefor, said combination including: a hydraulic cylinder; a piston movable axially in said cylinder; a cylinder head member closing one end of said cylinder, said head having a first opening therein for a valve slide and positioned at an angle to the line of movement of the piston, a second opening between said first opening and said cylinder, a pressure line connection communicating with said first opening, and a fluid return connection communicating with said first opening; a slide member in said first opening and movable longitudinally therein; resilient means urging said slide member in a given direction in the first opening; means operatively connected to the slide member and extending outside the head member to permit said slide member to be moved in the reverse of said direction against said urging; said members including fluid control means to direct the flow of hydraulic fluid from said line connection to said second opening when said slide is in a first position, to direct the flow of hydraulic fluid from the second opening to the return connection when the slide is in a second position and to prevent the flow of fluid to and from the second opening when the slide is in a third position, said first position being in said direction from the second position; a cam follower connected to the slide and positioned in said second opening when said slide is in the first position, said follower facing in said direction; and a cam operatively connected to said piston and positioned in said second opening, said cam being positioned to contact said follower and move said slide away from the first position when said piston reaches approximately the end of its stroke.

3,190,187
FASTENER DRIVING APPARATUS
Richard H. Doyle, Mount Prospect, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed Dec. 21, 1962, Ser. No. 246,608
18 Claims. (Cl. 91—403)



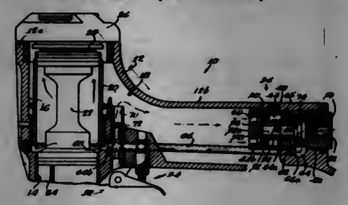
1. A fastener driving apparatus comprising a housing supplied with a pressurized fluid and including a cylinder, fastener driving means including piston means slidably mounted in the cylinder, control means for alternately connecting the upper end of the cylinder means to the atmosphere and to the fluid to drive the piston means, and means responsive to the pressure in the upper end of the cylinder and controlled by the connection of the upper end of the cylinder to the atmosphere for selectively supplying fluid to the cylinder below the top of the piston means when the upper end of the cylinder disposed above the piston means is placed at atmospheric pressure.

3,190,188
GLASS FORMING APPARATUS HAVING SELF-ACCOMMODATING PLUNGERS
Joseph W. Donnelly, Vineland, N.J., assignor to Maul Brothers, Inc., Millville, N.J., a corporation of New Jersey
Filed Aug. 25, 1960, Ser. No. 51,829
11 Claims. (Cl. 91—414)



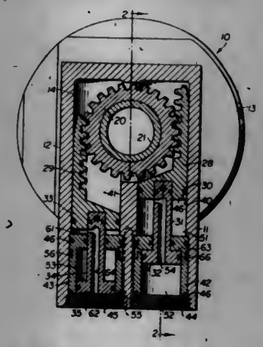
1. In an apparatus for forming glassware comprising a base plate, means mounting a pair of cylindrical casings on said base plate for providing individual self-adjustment of said casings and maintaining said casings in any disposition with respect to each other, an element on said base plate adapted to be connected to a device for raising and lowering said base plate and casings as a unit, a piston rod in each casing, a piston means on one end of each piston rod within its respective casing, and a means including separate fluid conduits connected to each casing for conveying a fluid to selectively reciprocate each piston means within its respective casing independent of the other piston means.

3,190,189
FASTENER DRIVING APPARATUS
Ronald J. Mosetich, Lombard, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed Oct. 3, 1963, Ser. No. 313,635
12 Claims. (Cl. 91—423)



2. A fastener driving tool for use with a pressurized fluid source comprising a housing having a hollow handle forming a fluid reservoir and a head portion with a cylinder having an end open to the fluid in the reservoir, main valve means normally closing the open end of the cylinder, piston means slidably mounted in the cylinder, means for selectively separating the main valve and the cylinder to admit fluid from the reservoir to the cylinder to drive the piston from a normal position adjacent the main valve to a displaced position, fluid means for returning the piston to its normal position, and control means for delaying the admission of fluid to the reservoir until the fluid means returns the piston to its normal position.

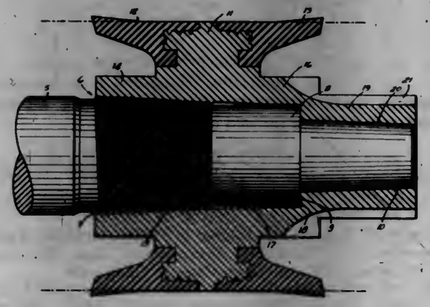
3,190,190
ROTARY ACTUATOR
Edward H. Rudd, Wooster, and Eldon D. Sullivan, Orrville, Ohio, assignors to Flo-Tork, Inc.
Filed May 2, 1963, Ser. No. 277,551
14 Claims. (Cl. 92—68)



1. A fluid actuator comprising:
(a) a housing,
(b) a shaft journaled in said housing,
(c) first and second drive means in said housing on one side of said shaft, said drive means being operatively connected to said shaft,
(d) and first and second fluid systems each being operatively connected to each of said drive means,

(e) said first fluid system including means for applying fluid pressure to both of said drive means to rotate said shaft in one direction, and said second fluid system including means for applying fluid pressure to both of said drive means to rotate said shaft in the opposite direction.

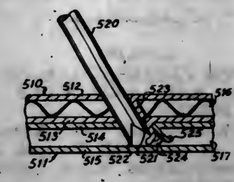
3,190,191
RECIPROCATING PUMP PISTON AND ROD CONNECTION
Arthur L. Leman, P.O. Box 24068, Houston, Tex.
Filed Oct. 3, 1963, Ser. No. 313,575
13 Claims. (Cl. 92—243)



1. A double acting reciprocating pump piston and rod assembly comprising a piston rod having an outer terminal portion; an inner threaded tapered section formed on said terminal portion; and outer plain tapered section formed on said terminal portion; a piston comprising a transversely extending metallic core; an axial passage formed through said core whereby it is receivable on said terminal portion of said rod; an inner hub extension integrally projected at one side of said core and formed at said passage with a threaded taper for conformant fit on said threaded tapered section of said rod; and an outer hub extension integrally projected at the other side of said core and balancing said inner hub extension, said outer hub extension formed at said core passage with a plain taper for conformant fit on said plain tapered section of said rod; and said threaded and plain tapers of said piston hub extensions being predeterminedly smaller than said threaded and plain tapered sections of said terminal rod portion, whereby when said piston is advanced over said rod to operative position said threaded and plain piston hub tapers are prestressed in circumferential tension, and said pump piston and rod assembly is afforded axial rigidity to prevent said threaded piston hub taper from working loose from said threaded tapered rod section.

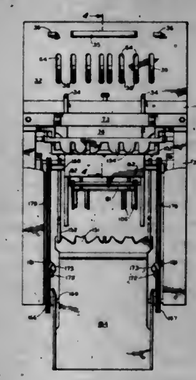
3,190,192
APPARATUS AND METHOD OF CONNECTING OVERLAPPED LAYERS OF CORRUGATED FIBRE BOARD
Morris P. Neal, Clearwater, Fla., assignor to A-B-C Packaging Machine Corporation, Clearwater, Fla., a corporation of Illinois
Filed Sept. 19, 1961, Ser. No. 139,163
19 Claims. (Cl. 93—1.1)

1. In a method of joining two plies of corrugated fibre board, each ply having an outer liner, an inner liner and a corrugating medium therebetween, the steps of overlapping said plies such that the inner liner of one ply is contiguous with the outer liner of the other ply, respectively creating registering tabs from portions of and joined to said inner liner of said one ply and said outer liner of



said other ply, and inserting said tabs into the space between said inner liner and said outer liner of said other ply.

3,190,193
EGG CARTON SETUP MACHINE
Arthur E. Randles, Jr., 3000 Middlefield Road, Redwood City, Calif.
Filed Feb. 6, 1963, Ser. No. 256,667
1 Claim. (Cl. 93—37)



An egg carton setup machine comprising:
a frame,
means for supporting a stack of carton blanks on said frame,
each of said carton blanks having a lower panel with apertures in the leading portion thereof,
means for feeding said carton blanks one at a time from said stack to an erecting zone on said frame,
means for engaging a carton blank to position it at said erecting zone,
means on said frame and operating through said apertures for erecting an opened carton blank,
a pair of conveyor means on said frame movable along parallel paths on opposite sides of a carton blank from a position displaced from said erecting zone to and past said erecting zone to a delivery area,
a pair of pusher fingers each pivotally mounted about an upright axis on one of said conveyor means,
a cam means along and outward of said parallel paths extending from said erecting zone to said delivery zone and engageable by said fingers to extend said fingers inward from said paths as they pass an erected carton at said erecting zone to enter said erected carton and engage the edges of a leading upright panel thereof, and

means normally biasing said fingers into retracted positions,

said cam means releasing said fingers at said delivery area.

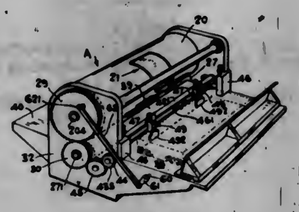
3,190,194

APPARATUS FOR CREASING AND/OR CUTTING CARDBOARD AND ANALOGOUS FLEXIBLE SHEET MATERIAL

Kenneth Kirby, Keith Roland Tallett Kirby, and Colin Walter Kirby, all of Walsall, England, assignors to Kirby's (Engineers) Limited, Walsall, England, a corporation of Great Britain

Original application Aug. 2, 1961, Ser. No. 128,805. Divided and this application Nov. 18, 1963, Ser. No. 324,564

5 Claims. (Cl. 93—58.2)



1. A machine for creasing and/or cutting cardboard and analogous flexible sheet material incorporating a roller, a detachable forme of bendable sheet material bent to an arcuate formation corresponding to the curvature of said roller, lengths of rule arranged to the contour of the desired lines of creasing and/or severance carried by said forme, means for securing the said forme to said roller which also serves to hold the forme in contact with the periphery of the roller, an impression roller adapted to cooperate with the forme carrying roller, a detachable sheath of bendable sheet material bent to an arcuate formation corresponding to the curvature of the said impression roller, means for securing said sheath to said impression roller which also serves to hold the sheath in firm contact with the periphery of the impression roller, gearing interconnecting the forme carrying roller and the impression roller, a power source, means for imparting a positive drive from the power source to said forme carrying roller and impression roller and means for adjusting the nip between the forme carrying roller and the impression roller.

3,190,195

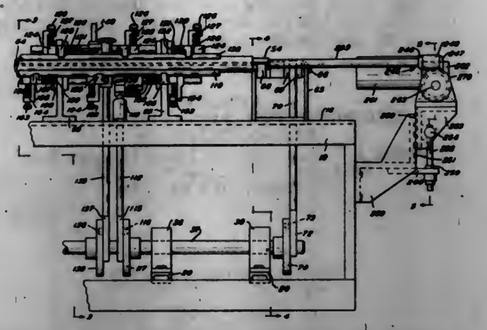
CONVOLUTE TUBE MAKING MACHINE

Joseph Snyderman, Philadelphia, and Martin Schnabl, Elkins Park, Pa., assignors to John Eppler Machine Works, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed May 27, 1963, Ser. No. 283,268

14 Claims. (Cl. 93—81)

1. In a tube winding machine having a rotatable winding mandrel mounted at one end for tube winding, members for driving said mandrel, a carriage movable along said mandrel having a tube stripper carried thereby, a member for supporting said mandrel at the other end thereof, members for retracting said supporting member in timed relation to the movement of said tube stripper, said free end of said mandrel having an extension therebeyond of lesser diameter than said mandrel, and a support member at a fixed height for engagement by a tube impelled along said extension by said tube stripper, said extension spaced at a location beyond said mandrel,



whereby upon retraction of said supporting member, support is provided for said mandrel.

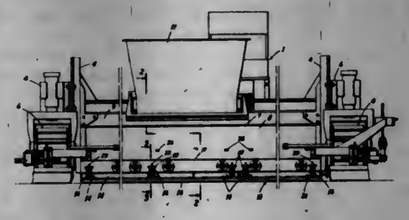
3,190,196

HOPPER AND GATE UNIT FOR CONCRETE SLAB LAYING MACHINES

Ronald M. Guntert and Wilbur F. Earley, Stockton, Calif., assignors to Guntert & Zimmerman Const. Div., Inc., Stockton, Calif., a corporation of California

Original application Mar. 18, 1960, Ser. No. 15,871, now Patent No. 3,135,178, dated June 2, 1964. Divided and this application Apr. 6, 1964, Ser. No. 357,508

1 Claim. (Cl. 94—46)



In a concrete slab laying machine having a slab engaging pan extending lengthwise thereunder, and a concrete distributing hopper mounted on the machine and extending the full width of the pan and including front and rear walls spaced apart; the rear wall terminating at and merging into the pan at its front end, the upper portion of the front wall being rigid and the lower portion of said front wall comprising a gate unit extending lengthwise of the hopper, means mounting the gate unit on said upper portion of the front wall for forward and upward swinging movement from a position normally substantially alined with said upper portion of the front wall, the lower edge of the upper portion of the front wall being substantially on a level with the pan, releasable holding means to retain the gate unit in such normal position, and means included in part with the holding means to releasably retain the gate unit in a forwardly and upwardly swung position at a level above that of the pan; the gate unit mounting means comprising rigid spaced brackets secured to the front of the unit and extending thence upwardly to a pivotal connection with the front wall of the hopper; said holding means comprising an orificed lug rigid with and projecting forwardly from the front wall adjacent each bracket, said lug normally projecting through the gate unit below the pivot, and a holding pin releasably projecting through the lug orifice in front of the gate unit; and said last named means comprising a flexible element connected at one end to the pin and anchored at the other end on the gate unit below the lug, and a support for the pin mounted on the front wall of the hopper at a point a predetermined distance above the lug.

3,190,197

PROTECTIVE COLLOIDAL SILICA LACQUER FOR DEVELOPED PHOTOGRAPHIC PRINTS

Raymond G. Pinder, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,806

6 Claims. (Cl. 95—1)

5. A photographic print having a protective coating thereon comprising a vinyl acetate-vinyl chloride copolymer containing at least 70% by weight vinyl chloride and having a molecular weight of 10,000–250,000, 1–4% based on the weight of the copolymer of colloidal silica, the particles of which have an average diameter of 0.01–0.03 micron, and 0–3%, based on the weight of the copolymer, of a compatible ultraviolet absorber.

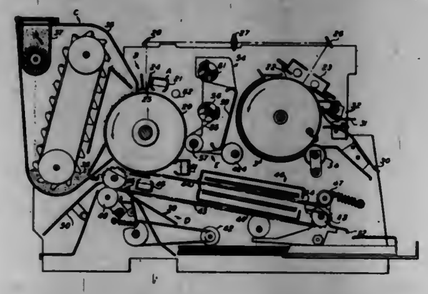
3,190,198

XEROGRAPHIC CLEANING APPARATUS

Roger H. Eichorn, Webster, N.Y., assignor to Xerox Corporation, a corporation of New York

Filed Dec. 23, 1960, Ser. No. 77,922

4 Claims. (Cl. 95—1.7)



1. In a xerographic reproducing apparatus wherein a xerographic plate in the form of a drum is journaled in a frame element of the machine to be driven by a suitable drive means through a series of xerographic processing stations including a plate cleaning station wherein residual powder remaining on the drum is removed; the improvement including a frame having two spaced parallel side plates, a pressure roll journaled for rotation in said side plates, a supply roll and a take-up roll journaled in said side plates, said supply roll and said take-up roll being positioned with their axes parallel to the axis of said pressure roll whereby a web of cleaner material can be fed from said supply roll around said pressure roll to be rewound on said take-up roll, a first driven means connected to said pressure roll, a second driven means connected to said take-up roll, a locating dowel secured to said frame element, a first drive means and a second drive means connected to said frame element, and cam means connected to said frame element, said locating dowel being positioned to slidably and pivotably receive said supply roll and said cam means being positioned to abut against said frame to pivot said frame about said locating dowel to force said pressure roll against said xerographic plate with a web of cleaning material sandwiched therebetween and to connect said first driven means to said first drive means and to connect said second driven means to said second drive means.

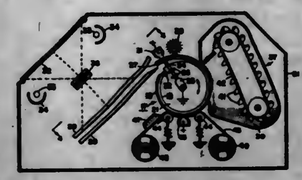
3,190,199

XEROGRAPHIC COPYING APPARATUS

Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Jan. 2, 1963, Ser. No. 249,020

7 Claims. (Cl. 95—1.7)



1. A xerographic apparatus comprising:

(a) a mandrel having a substantially cylindrical shape,

(b) a flexible, web-like, reusable, xerographic plate wrapped on said mandrel and having a first one of its ends fixed thereto,

(c) means to uniformly charge said xerographic plate,

(d) plate handling means to unwrap the free end of said xerographic plate, flatten said plate, and hold it in a planar condition while said first end is still fixed to said mandrel,

(e) means to expose said charged plate to a full frame pattern of actinic electromagnetic radiation while it is being held in a planar condition by said plate handling means thus forming a latent electrostatic image on said plate,

(f) processing means adapted to process the latent electrostatic image on said plate; and,

(g) means to rewrap said xerographic plate on said mandrel after each exposure, moving at least the exposed portion of said plate past said processing means so that said plate is readied for another cycle of full frame exposure and rapid processing.

3,190,200

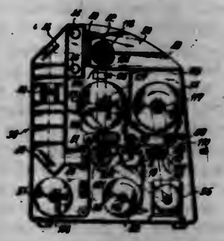
APPARATUS FOR THE REPRODUCTION OF COPIES BY DISTILLATION TRANSFER

Walter Limberger, Hamburg-Poppenbuttel, and Rudolf Wendt, Harksheide, Bezirk Hamburg, Germany, assignors to Lumoprint Zindler KG., Hamburg, Germany, a corporation of Germany

Filed Mar. 5, 1963, Ser. No. 263,918

Claims priority, application Germany, Mar. 9, 1962, L 41,418

6 Claims. (Cl. 95—1.7)



3. In a device for the reproduction of copies by oil transfer, in combination, a housing; a heating station in said housing for selectively distilling an oil from a film to a copy-receiving layer in accordance with a latent image carried by a xerographic layer; a first transport path leading within said housing to said heating station and provided with first transport means for displacing a xerographic layer to said heating station; a second transport path formed in said housing and leading toward said heating station for feeding a copy-receiving layer thereto; charge means along said first transport path for electrostatically charging a xerographic layer; exposure means

along said first transport path between said charge means and said heating station for exposing the electrostatically charged xerographic layer and forming thereon a latent electrostatic image corresponding to a master copy; surface-wetting means along one of said paths between said exposure means and said heating station for applying a film of distillable oil between said layers, said layers merging at said station with said film disposed between them; separating means beyond said heating station for directing said layers along respective further paths including a third transport path for said xerographic layer and a fourth transport path for said copy-receiving layer; developing means along at least one of said transport paths for applying a pigmentatious material to an oil-carrying surface of the respective layer, thereby developing an image corresponding to the latent image originally formed on said xerographic layer; second transport means along said second transpost path for displacing said copy-receiving layer therealong, said heating station including a pair of displaceable surfaces adapted to sandwich said layers between them with surface-contact pressure; and drive means for said first and second transport means, said pair of displaceable surfaces and said separating means.

3,190,201

PHOTOGRAPHIC COMPOSING DEVICE

Bernard Borisof, Chicago, Ill., assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware

Filed July 19, 1961, Ser. No. 125,164
8 Claims. (Cl. 95—4.5)



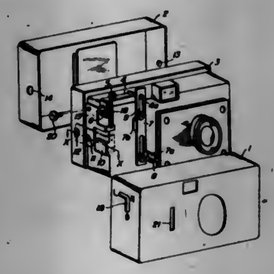
1. In a photographic composing device having a base, a carriage supported on said base movable from a normally inoperative to an operative position, means adjustable to effect movement of said carriage to the operative position, a backing roller mounted in said base having a rolling contact with a photosensitive paper strip passing thereover, a pair of power-driven means mounted in said carriage securing the respective ends of an opaque film strip and operable to maintain said film strip taut, said film strip having a series of transparent characters formed thereon and being superimposed with relation to said paper strip normally spaced therefrom and movable longitudinally corresponding to the course of travel of said paper, a light tight compartment in said carriage providing a rectangular aperture of predetermined width in one wall thereof extending transversely of the path of travel of said film strip and parallel with the axis of said roller, a pair of guide strips positioned on each side of said compartment for maintaining said film strip in its path of travel relative to the aperture in said compartment, an exposure lamp in said compartment, a manual control means for moving said film strip, and means for providing photographic contact between said film strip and said paper strip, the combination comprising, a flexible pressure plate having substantially parallel planar surfaces and an exposure aperture extending therethrough of a width of about three-sixteenths of an inch and narrower than the width of the aperture in said light compartment, said plate being mounted with one of said surfaces adjacent the outer surface of said one wall of said compartment and the exposure aperture therein in register with the aperture in said compartment, said film strip having a sliding contact maintained by said guide strips with the other of said surfaces of said plate, the edges of the aperture in said plate at their point of intersection with said other surface being chamfered to conform to the curvature of said backing roller so that upon adjustment of said adjustable means to move said carriage to its operative position the film strip is moved into engagement with the paper strip thereby enabling movement of the paper strip with the film strip upon operation of said manual control means and the chamfer surfaces of the plate aperture providing a photographic contact of the film strip with the paper strip, and a guide means for maintaining lineal registry of said film strip with said paper strip during operation of said manual control means.

3,190,202

SAFETY DEVICE FOR SECURING AGAINST INADVERTENT OPENING OF THE REAR COVER OF A PHOTOGRAPHIC CAMERA AND AGAINST INADVERTENT SHUTTER RELEASING

Sakae Fujimoto, Chofu-shi, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Ota-ku, Tokyo, Japan, a corporation of Japan

Filed Sept. 5, 1963, Ser. No. 306,729
Claims priority, application Japan, Sept. 6, 1962, 37/51,078
1 Claim. (Cl. 95—11)



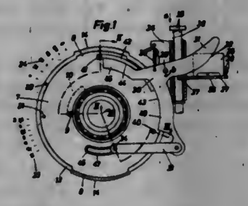
A safety device for a photographic camera of the type including a rear cover adapted to fit over the peripheral wall of the camera body, comprising a resilient strip secured at its forward end to the camera body so as to extend rearwardly along the inside of the peripheral wall of the camera body, a first lug formed on the outside of said resilient strip, a second lug formed on the outside of said resilient strip in a position forwardly spaced from said first lug, apertures formed in the periperal wall of the camera body to loosely receive said first and second lugs, said first lug normally extending outwardly through one of said apertures to engage the rear cover of the camera, an upwardly spring-biased floating member arranged along the adjacent side of the camera body and formed with a recess to receive the outer extremity of said second lug on said resilient strip, a lever pivoted intermediate its ends to the top surface of the camera body and having one arm associated with a portion of said floating member, a projection formed on the other arm of said lever for releasable engagement with the vertically slidable shutter-releasing bar of the camera, and means for operating said floating member from the exterior of the camera selectively to rotate said lever associated with said floating member and to force said lugs formed on said resilient strip into said respective apertures in the peripheral wall of the camera body.

3,190,203

MANUALLY AND AUTOMATICALLY OPERABLE CAMERA

Gerd Kiper, Unterhaching, near Munich, and Willy Kaden, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany

Filed Feb. 13, 1961, Ser. No. 88,822
Claims priority, application Germany, Feb. 19, 1960, A 34,009
10 Claims. (Cl. 95—64)



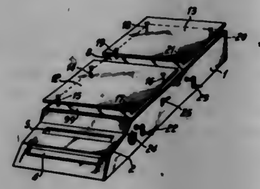
1. In a camera, in combination, rotary diaphragm ring means turnable about the optical axis of the camera for setting the diaphragm thereof; automatic means cooperating with said rotary diaphragm ring means for automatically turning the latter to an angular position determined by the lighting conditions; exposure time control means operatively connected to said rotary diaphragm ring means for turning movement therewith, said exposure time control means setting the exposure time during turning of said rotary diaphragm means by said automatic means; second rotary diaphragm ring means coaxial with said first-mentioned ring means and also cooperating with the diaphragm of the camera to set the diaphragm; and manually operable means operatively connected to said second ring means for manually turning the latter to set the diaphragm.

3,190,204

APPARATUS FOR MAKING CONTACT COPIES

Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler KG, Hamburg, Germany, a corporation of Germany

Filed May 22, 1963, Ser. No. 282,264
Claims priority, application Germany, May 26, 1962, L 42,068
4 Claims. (Cl. 95—73)



1. In a contact-copying device for the photoreproduction of an image of a master upon a copy sheet by juxtaposing said master and said copy sheet and exposing them to light while so disposed, in combination,

(a) housing means forming an enclosure and provided with at least one light-transmissive, generally planar horizontal wall of generally rectangular configuration, said housing means being provided at one of the minor sides of the rectangle and externally of said enclosure with an inlet for said master and copy sheet substantially at the level of said horizontal wall;

(b) at least two pressure plates substantially contiguously disposed along said wall at different distances from said inlet and individually displaceable toward said wall and away therefrom for alternately compressing said master and said copy sheet against said wall and releasing them;

(c) respective guide means supported on said housing along the major sides of said rectangle for enabling individual displacement of each of said plates with respect to said wall, said plates being adapted to cover respective areas of said wall upon movement toward said wall;

(d) respective arrays of light sources within said enclosure along a side of said wall opposite said plates, each of said arrays being so disposed and arranged so as to illuminate a corresponding one of said areas;

(e) actuating means on said housing coupled with said plates for the selective displacement of one and a plurality of said plates toward and away from said wall, the plate more remote from said inlet being positionable in contacting relationship with said wall and having an edge extending generally parallel to said inlet and adjacent the other of said plates for constituting an abutment for said master and said copy sheet upon their insertion between the last-mentioned plate and said wall; and

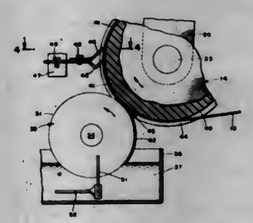
(f) respective circuit means in said housing operatively connected with said arrays and including respective switch means for individually energizing said light sources of a respective array upon displacement of a corresponding pressure plate toward said wall.

3,190,205

GEL APPLICATOR DEVICE FOR CHEMICAL PROCESSING OF PHOTOGRAPHIC FILM STRIPS

Harlan Baumbach, Los Angeles, Calif., assignor to Panacolor, Inc., Los Angeles, Calif., a corporation of Delaware

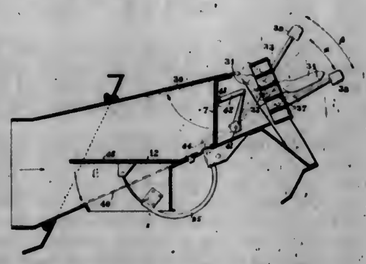
Filed Jan. 10, 1961, Ser. No. 81,893
9 Claims. (Cl. 95—89)



1. An applicator device for coating a moving film strip with gel material, comprising in combination: a pulley around which a moving film strip may pass, said pulley having end flanges, an open top container for thixotropic gel material, a power-driven applicator wheel having a lower portion projecting into the container and an upper portion projecting between the flanges of said pulley and cooperating with the surface and flanges of said pulley to define a bight, said applicator wheel being adapted to carry gel material upon its periphery into contact with a surface of the film strip to form a continuous coating upon said surface of the film strip, and stationary blade means position adjacent said pulley adapted to contact said gel

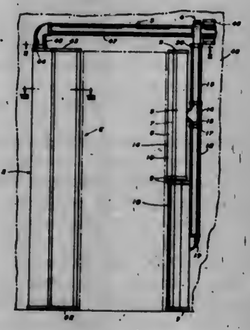
material adhering to said film strip for regulating the thickness of said coating.

3,190,206
AIR CONDITIONING SYSTEM FOR AN AUTOMOTIVE VEHICLE
Antoine Breeder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed May 22, 1962, Ser. No. 196,692
Claims priority, application France, May 24, 1961, 862,654, Patent 1,132,271
3 Claims. (Cl. 98—2)



1. An automotive vehicle with air-conditioning system comprising an outlet device disposed on each side of the interior of the vehicle and comprising duct passages for delivering fresh air to the interior of the vehicle, a first outlet aperture at the end of each duct about in the upper part of the vehicle, another outlet aperture near said first aperture, a duct disposed between said other aperture and the lower part of the vehicle, a hinged flap mounted in front of each outlet aperture, a pivot pin mounted horizontally in said outlet duct, operating lever means disposed side by side on this pivot pin and controlling said hinged flaps, a honeycomb grid at the outlet duct disposed in front of the flap, deflector blades of said grid so disposed as to direct an air flow towards the side and top of the vehicle's normal position, bearing means rigid with said outlet duct, aligned horizontal pivot pins engaging said bearing means and on which said grid is pivotally mounted, and exterior operating handle means controlling this pivotal arrangement and disposed near said operating levers.

3,190,207
AIR CURTAIN
Dan Weisz, Ellwood City, Pa., assignor to P. J. Mac, Inc., Ellwood City, Pa., a corporation of Pennsylvania
Filed Nov. 6, 1962, Ser. No. 235,662
3 Claims. (Cl. 98—36)



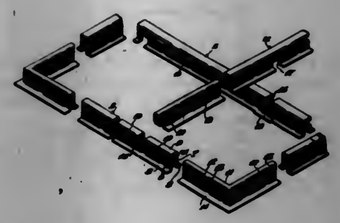
1. Apparatus for establishing and maintaining a moving curtain of air transversely of a door opening leading to a room refrigerated to temperatures below 32° F., which air curtain is of sufficient velocity and direction to retard escape of refrigerated air from the said room area and exclude entrance of dust and insects, comprising,

(a) a vertically disposed air discharge duct disposed adjacent one side of the said door opening and provided with a vertically extending opening directing a high velocity vertical air stream across the full height thereof and towards a vertically disposed air receiving duct located adjacent the opposite vertical side of said opening for restricting passage of cold air from said room, means for adjustably mounting said air discharge duct,

(b) a vertically disposed air receiving duct adjacent the opposite side of said door opening comprising a front face defined by a continuous vertical rectangular shaped opening of substantially the width of the adjacent air curtain to be received therein and of a height substantially that of said door opening, rearwardly converging sidewalls at opposite sides of said rectangular shaped opening defining a vertical constricted throat opening, a vertically extending air collecting and transmitting chamber having a closed bottom portion and a top portion connecting with said throat opening, and

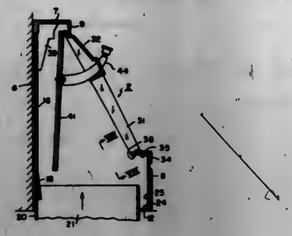
(c) air conduit means connecting said ducts and embodying suitable fan means to draw air in the desired volume through said receiving duct and discharge it at the desired velocity through said discharge duct to maintain an air curtain of the desired characteristics.

3,190,208
CEILING CONSTRUCTION
Alexander F. Styne, 3810 Anderson Road, Coral Gables, Fla., and Lee James, 915 W. 60th St., Hialeah, Fla.
Filed May 21, 1963, Ser. No. 281,975
8 Claims. (Cl. 98—40)



1. A suspended drop ceiling to be suported by rafters or other permanent ceiling structure of the building, the ceiling adapted to be suspended in spaced relation to the permanent ceiling to provide an upper air space, the suspended ceiling being formed of spaced apart inverted U-shaped beams and a plurality of spaced apart cross beams of inverted U-shape, the first named beams and the cross beams having notched interlocking engagement at their point of crossing, whereby the cross beams extend continuously across the first-mentioned beams each of the beams being shaped from sheet metal, each of the beams having a downwardly opening channel and with the sides of the beams provided with a plurality of spaced apart slots that communicate with the air space and with the channels, whereby mechanically conditioned air pumped into the upper space will flow through the slots and the channels for discharge into an occupied space below the ceiling, the side walls of the beams having right angle flanges for the resting support of closure panels and means to support the suspended ceiling from either the rafters or the side walls.

3,190,209
REGISTER FOR DELIVERY OF AIR
Daniel A. Goetz, Pittsburgh, Pa., assignor, by mesne assignments, to Gateway Building Products Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1963, Ser. No. 264,592
2 Claims. (Cl. 98—106)



1. An air register section comprising

(a) a housing formed of top, back, front, inclined front and end walls,

(b) said inclined front wall being a removable grille mounted in an opening between said top, front and end walls,

(c) said front and end walls having inwardly extending flanges along the front side of said housing,

(d) said top wall having a depending flange along the front side of said housing, said flanges of said front, end and side walls defining said opening,

(e) said grille having outwardly extending flanges along its outer edges, the side and lower flanges of said grille resting on said side and lower flanges of said opening and the upper flange of the said grille extending under said depending top flange,

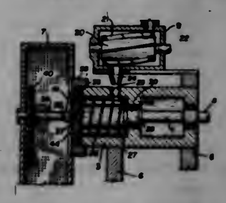
(f) the flanges of said grille having projecting lips which provide a snap fit of the grille to said flanges of said opening,

(g) a damper,

(h) means pivotally and detachably mounting said damper upon said grille interiorly of said housing and permitting movement of said damper to regulate amount of air exiting from said register,

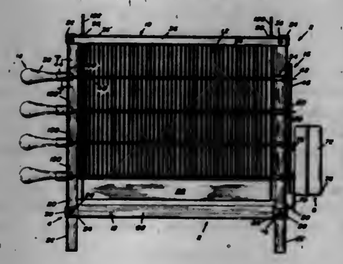
(i) said means including detachable spring members which engage a portion of pivot members of said damper and a portion of said grille to form said detachable mounting of said damper.

3,190,210
EXTRUDER HEAD FOR FOOD STUFF
Bruce W. McComb and Kenneth H. McComb, both of 6099 S. Elati St., Littleton, Colo.
Filed July 16, 1962, Ser. No. 209,976
3 Claims. (Cl. 99—238)



1. A die plate organization for use with a machine for liquidizing and extruding cereal grains, said machine including a housing having a bore therein, a sleeve mounted in said bore and having helical threads on the internal surface thereof, an auger mounted for rotation within said sleeve and having helical threads on the external surface thereof, the diameter of said threads on said auger being less than the internal diameter of the threads on the internal surface of said sleeve to define between said sleeve and auger an axially-extending annular passage, said die plate organization closing said bore at one end thereof and comprising, in combination, a die plate having front and rear surfaces; an axially-extending, centrally-positioned boss on the rear surface of said die plate, said boss extending toward said auger; means defining an annular groove of substantially semicircular transverse cross section positioned in said rear surface of said die plate and surrounding said boss immediately adjacent thereto; an annular member abutting said rear surface of said die plate and having an inner axial surface surrounding said boss in closely juxtaposed relation therewith to define therebetween a short, narrow annular passage opening at one end into said annular groove and at the other end into said axially-extending annular passage; and means defining a plurality of extrusion orifices extending from the bottom of said circular groove, through said die plate to the front surface thereof, said annular passages, said annular groove and said extrusion orifices extending parallel to the axis of the auger and being disposed in substantially axial alignment with respect to each other to provide a substantially straight flow path for the cereal grains extruded through the machine, upon rotation of said auger, and into the atmosphere through said extrusion orifices to produce a puffed cereal product.

3,190,211
PORTABLE CULINARY STOVE
Michael Ticoian, 2339 Ashmead Place NW., Washington, D.C.
Filed Jan. 2, 1964, Ser. No. 335,131
3 Claims. (Cl. 99—421)



1. A portable culinary stove of the type using charcoal for fuel, said stove comprising:

a support frame including a first pair of spaced apart substantially coplanar upstanding support legs and a second pair of spaced apart substantially coplanar upstanding support legs, with the plane of said second pair being substantially parallel to the plane of said first pair;

said support frame further including transverse connecting members extending between the legs of each pair adjacent the upper end and the lower end thereof;

said support frame still further including longitudinal connecting members extending between one leg in said first pair and its aligned leg in said second pair adjacent the upper and the lower ends thereof;

a plurality of aligned sprocket wheels mounted upon each leg of said second pair with each of said sprocket wheels meshing with each wheel adjacent to it in said alignment;

each of said sprocket wheels having a projecting hollow stub shaft passing through said second pair of legs and extending toward said first pair of legs;

motor means secured to said support frame adjacent said second pair of legs;

said motor means including a driven auxiliary sprocket

wheel disposed between said legs in said second pair and interengaging a sprocket wheel on each of said legs, whereby operation of said motor means to rotate said auxiliary sprocket wheel will in turn rotate each of the aligned sprocket wheels on each of said legs;

each leg in said first pair having a plurality of slots extending from one edge thereof and merging downward into a recess;

each of said recesses being substantially longitudinally aligned with one of said sprocket wheel stub shafts;

a plurality of skewers adapted to support items to be cooked in the stove;

each of said skewers having a pointed end and a handle end;

each skewer being disposed within said stove with its pointed end disposed within a selected hollow stub shaft, with its handle end projecting outwardly beyond said first pair of legs, and with a portion between said ends being freely supported within the recess aligned with said selected stub shaft;

a charcoal receiving receptacle disposed centrally within said stove between said legs;

said receptacle including a base portion, a pair of upstanding longitudinally extending side walls, a pair of transverse supporting bars extending between and beyond said side walls at the top ends thereof, and handle means secured to said transverse supporting bars;

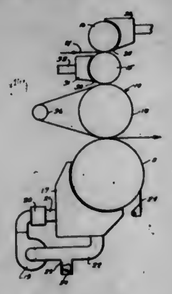
said receptacle being removably mounted within said stove by supporting said receptacle within said support frame with said transverse supporting bars abutting against said upper longitudinal connecting members;

said skewers and said receptacle being cooperatively disposed with said skewers being located adjacent the side walls of said receptacle whereby heat radiating from said charcoal within said receptacle will cook said items on said skewers as said skewers are rotated by their respective sprocket wheels;

said skewers being completely removable from said stove to remove cooked items therefrom and to replace uncooked items thereon;

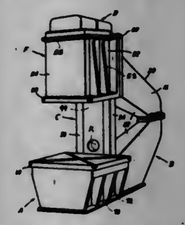
said receptacle being removable from said stove by lifting the same by its handle means, and such removal being manageable without removal of said skewers.

3,190,212
GLOSS CALENDER
Lawrence Augustus Moore, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 156,258, Dec. 1, 1961. This application May 27, 1963, Ser. No. 283,514
9 Claims. (Cl. 100—38)



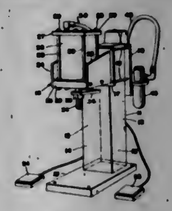
1. A method of calendering an uncoated paper web as it leaves the drier of a paper making machine, comprising the passing of the web through the nips of a series of pressure rolls and through the nip between a backing roll and a finishing roll of a calender stack, and heating the surface of the finishing roll to a temperature greater than the boiling point of water and at the incoming side of the nip between the finishing roll and the backing roll by impinging heated air on the surface of the finishing roll over a substantial area thereof.

3,190,213
GUIDE SYSTEM FOR THE MOVING PORTION OF A ONE-COLUMN PRESS
Albino Ferranti, Viale Marche 97, Milan, Italy
Filed Oct. 13, 1961, Ser. No. 144,916
3 Claims. (Cl. 100—214)



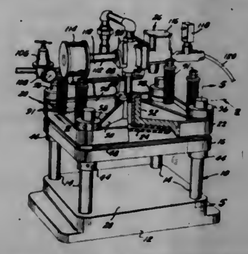
1. An upright press comprising a frame with an upright supporting member, a stationary bed plate extending forwardly from said member adjacent the lower end thereof, a prismatic head rigid with said frame, said head being supported in cantilever fashion on the upper end of said member and overhanging said bed plate, a movable platen below said head facing said bed plate, a prismatic casing rigid with said movable platen surrounding said head, said casing having a rearward extension bracketing said member in slidable engagement therewith, said casing and said head being provided with co-operating wall surfaces remote from said member slidably guiding a front portion of said casing on the outer surface of said head, and drive means on said head connected with said platen for vertically displacing it along said member.

3,190,214
PRESS
Harry H. Adams, Winnetka, and Melville E. Lawrence, Arlington Heights, Ill., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 4, 1963, Ser. No. 262,630
2 Claims. (Cl. 100—214)



1. In a press, a base, an upright on said base having parallel side faces and parallel front and rear faces, a first plate engageable with said front face, said first plate carrying a fluid pressure cylinder, a ram within said cylinder extending therefrom and movable by fluid pressure, a second plate engageable with said rear face, said second plate carrying means for controlling flow of fluid to said cylinder, and a pair of bolt means on each side of said upright connecting said plates and being operative releasably to clamp said first plate against said front face and said second plate against said rear face in selected positions along said upright, said bolt means in each pair being vertically spaced a substantial distance from each other and engaging said side faces for locating the sidewise position of said plates on said upright.

3,190,215
FLUID ACTUATED PRESS
Reginald C. Howard, 11924 Montana Ave., Apt. 5, Los Angeles, Calif., and Lawrence W. McDowell, Jr., 4223 Patrice Road, Newport Beach, Calif.
Filed May 11, 1964, Ser. No. 366,489
10 Claims. (Cl. 100—257)



1. In a press having a stationary bed, a plurality of vertical guide posts fixed at their lower extremities to said bed, and a ram vertically slidably mounted on and directly connected to said posts and defining a die set area with said bed, an actuator for urging said ram toward said bed, said actuator comprising:

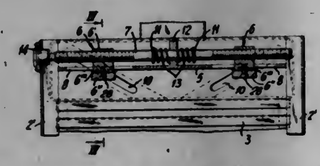
a thrust plate mounted to said posts above said ram;

means operative to maintain said thrust plate in fixed position upon said posts;

a flexible, unarticulated bag resting upon said ram and connected to said thrust plate, the material of said bag having an elastic characteristic of longitudinal expansion without significant lateral expansion upon introduction of pressurized fluid into said bag;

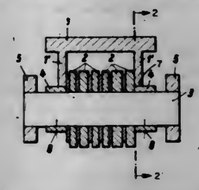
and means for introducing fluid under pressure into said bag whereby said ram is urged toward said bed.

3,190,216
APPARATUS FOR PRESSING A SERIES OF STACKED ARTICLES
Alois Keller, Bischofszell, Thurgau, Switzerland, assignor to Gebruder Buhler, Uzwil, Sankt Gallen, Switzerland
Filed Apr. 1, 1964, Ser. No. 356,623
Claims priority, application Switzerland, May 21, 1963, 6,335/63
9 Claims. (Cl. 100—289)



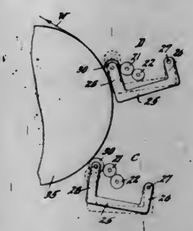
1. A pressure applying device for a stack of articles such as riddles, comprising a frame, a spindle rotatably supported by said frame and axially displaceable thereon, at least two spindle nuts threadably engaged with said spindle at spaced locations, a pressure member movable in two directions for pressing a stack of articles carried in said frame, said pressure member having oblique slot trackways defined therein which extend in opposite directions upwardly toward each end of said pressure member from the central portion thereof, each spindle nut including a bearing portion extending into said oblique trackway for supporting said pressure member and for effecting the transmission of downward pressure therethrough, said spindle being rotatable to displace said spindle nuts in opposite directions outwardly for moving said pressure member downwardly into pressure engagement with a stack of articles in the frame and inwardly toward each other for relieving pressure on the articles and permitting upward vertical displacement of said pressure member.

3,190,217
BEARING ARRANGEMENT FOR REMOVABLE TYPE WHEEL ASSEMBLY
Ernst Reiner, 15 Baumannstrasse, Furtwangen, Germany
Filed Feb. 5, 1963, Ser. No. 256,474
Claims priority, application Germany, Mar. 12, 1962, R 23,865/47
3 Claims. (Cl. 101—110)



1. In an axle bearing arrangement of a type wheel printing attachment, a frame comprising two parallel mutually spaced flanges, said flanges having aligned bores therethrough, each said bores being circumferentially recessed whereby each said flange is jaw-like in shape, an axle having a diameter less than the width of the flange interruptions, a plurality of printing wheels on said axle between said flanges, each of said wheels being of a larger diameter than that of said bores, and two bushes, each of said bushes being longitudinally slidable on said axle and fitting within the bores of said flanges.

3,190,218
ADJUSTABLE PLATE CYLINDER MOUNTING FOR PRINTING PRESSES
Robert P. Willard, Durham, N.H., assignor to Kidder Press Company, Inc., Dover, N.H., a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,171
1 Claim. (Cl. 101—247)



In a rotary printing press, in combination, a main frame, an impression cylinder rotatably supported upon said main frame in a basically fixed position, a bracket carried by said main frame, a plate cylinder and an inking cylinder both supported solely by said bracket, means on said bracket for adjustably supporting said inking cylinder at a point where it is parallel with and spaced from said impression cylinder a distance less than the diameter of said plate cylinder, a bearing pedestal having one end pivoted from a rearward portion of said bracket at a point more remote from the impression cylinder than is said inking cylinder, whereby said pedestal is long enough to extend past the inking cylinder from said pivot point to its distal end, a bearing for said plate cylinder carried at the distal end of said pedestal and fixed against radial movement with respect to said pedestal, and means

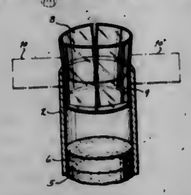
operative between said pedestal and said bracket for swinging said pedestal by purely pivotal movement toward and from a position of substantially simultaneous operative contact of the plate cylinder with both said impression cylinder and said inking cylinder, each pedestal comprising a pair of laterally spaced frame members closely embracing the ends of said inking cylinder, said pedestal frame members being U-shaped, the pivot points and the plate cylinder bearings being disposed respectively at the ends of the arms of the U-shaped frame members, and abutment means limiting the relative movement between said bracket and said pedestal, said abutment means disposed within the bight portions of said U-shaped pedestal frames.

3,190,219
PERFORATING DEVICE
Alexis Venghiattis, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 2, 1960, Ser. No. 6,317
7 Claims. (Cl. 102—20)



1. A device adapted to be lowered into an earth well borehole to produce perforations in the wall thereof comprising: a hollow, elongated case; means forming a plurality of openings in the side of said case; closure means covering each of said openings; a cone around each of said openings and extending with its apex pointed toward the interior of said hollow case; an elongated body of high explosive within said case extending longitudinally thereof, said explosive body being formed with a convex exterior surface; a non-explosive liquid pressure-wave transmission medium substantially filling the interior of said hollow body between said cones and said explosive body; and means for detonating said explosive body.

3,190,220
SHOT RECEPTACLE
Delbert R. Jones, Godfrey, and Joffre Du Pont, Granite City, Ill., assignors to Alcan Company, Incorporated, Alton, Ill., a corporation of Illinois
Continuation of application Ser. No. 293,000, July 5, 1963. This application Dec. 28, 1964, Ser. No. 425,663
6 Claims. (Cl. 102—42)



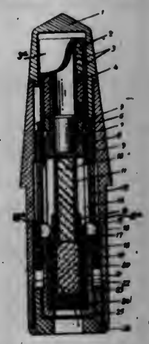
1. In combination a shot receptacle and a shotgun cartridge, said receptacle formed from flexible, durable sheet stock, comprising a central portion and a pair of generally rectangular side sections integrally formed with and connected to, said central portion, the transverse extent of said central portion being less than the inside diameter of the shotgun cartridge, said side sections being bendable about their connection to said central portion, so as to be presented in axial normal relationship to the plane of said central portion when the receptacle is disposed within the shotgun cartridge, the side of each of said side sections immediately adjacent the said central portion extending in its opposite end portions beyond the zone of connection to said central portion being at least equal to one-half the peripheral extent of said inside diameter of said cartridge whereby adjacent edges of said sections will be continguous in operative position.

3,190,221
ROCKET STAGE COUPLING
John M. Gariboldi, Oxnard, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 27, 1961, Ser. No. 162,621
10 Claims. (Cl. 102—49)
(Granted under Title 35, U.S. Code (1952), sec. 266)



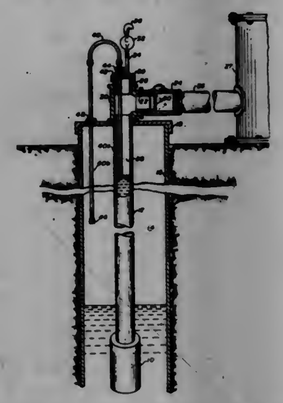
1. A missile having a forward end and an after end, comprising at least two rocket stages, wherein one of the stages is adjacent to and fired first with respect to a second fired stage, a sleeve having opposite ends, means for attaching one end of the sleeve to a forward end of the first fired stage, at least a portion of the other end of the sleeve encompassing at least a portion of the after end of the second fired stage and radially spaced therefrom, and means wedged within the space for maintaining a connection intermediate the two stages so that upon firing of said first fired stage the exhaust force therefrom is transmitted to the second stage through said means and the wedging action of said means operates to strengthen the connection, and upon firing of the second fired stage the exhaust force therefrom breaks the wedging action and separates the stages.

3,190,222
IMPACT SENSITIVE TOP FUZE
Georg Henry Sixten Holmstrom, Zakrisdal, Karlstad, Sweden, assignor to Försvarets Fabriksstyrelse (Directorate of Defence Factories), Stockholm, Sweden
Filed July 26, 1962, Ser. No. 212,517
Claims priority, application Sweden, Oct. 31, 1961, 10,821/61
8 Claims. (Cl. 102—73)



1. An impact-sensitive top fuze having a body provided with a detonating cap in it, said cap consisting of an annular casing protruding from the fuze body, the protruding portion of the casing being readily deformable, said casing having an inner and an outer tubular wall, which walls define an annular space between them, an annular wall at each end of the casing for closing said space, an impact-sensitive primer charge occupying the forward portion of said space, and an auxiliary charge occupying the remaining portion of said space.

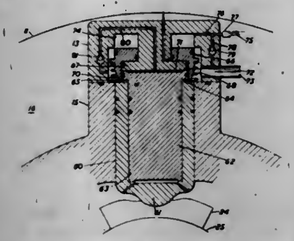
3,190,223
AIR INJECTOR FOR WATER WELL PRESSURE SYSTEMS
Dale H. Birdsall, 2830 Reed Ave., Livermore, Calif.
Filed Sept. 21, 1962, Ser. No. 225,338
6 Claims. (Cl. 103—6)



1. A pressure tank air charging device for use in a water well pumping system including an air-tight pressure tank, a submersible pump, a water supply pipe extending from said pump to said pressure tank and a water check valve disposed in said supply pipe in the region thereof near said pressure tank, said device comprising a siphon tube having one end extending downwardly a substantial distance through an upper portion of said supply pipe and in sealed relationship therewith, said siphon tube and supply pipe defining an annular volume therebetween, air valve means connected to said upper portion of supply pipe in communication with said volume, said air valve being adapted to open and introduce air into the pipe at such time as said pump is inoperative, said siphon tube to siphon a quantity of water from said supply pipe upon introduction of air through said air valve means, such quantity being commensurate to said volume therein and determined by the extent of said siphon tube end therein, said air valve means to close upon operation of said submersible pump to trap the air introduced to said supply pipe.

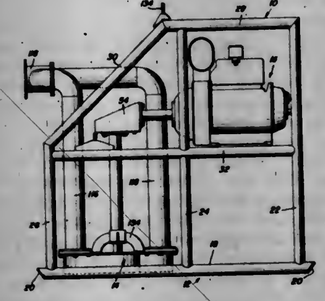
3,190,224
HYDRAULIC MACHINES OF THE PISTON-OPERATED TYPE
William Peter Billington, Flitwick, and David Frank Howson, Brickhill, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Feb. 12, 1963, Ser. No. 257,997
Claims priority, application Great Britain, Feb. 15, 1962, 5,862/62
6 Claims. (Cl. 103—37)

1. A hydraulic machine having a cylinder, a cylinder head, a main piston and an auxiliary piston both movable reciprocally within the cylinder, to vary the volume of the free space within the cylinder between the pistons and the cylinder head, means constraining the auxiliary piston to a piston stroke of substantially the same length as the overall stroke of the main piston, means for admitting hydraulic fluid to the said free space within the cylinder to coact simultaneously with both the said pistons, and control means for altering the swept volume of the machine, the said control means having a hydraulic pressure inlet for connection to a source of hydraulic control pressure, and including a selectively-operable hydraulic shuttle valve connected to the pressure inlet for operation in response to predetermined changes in control pressure, the shuttle valve including a sliding shuttle member subject to the said control pressure and movable selectively into a first position in which it admits unbalanced hydraulic



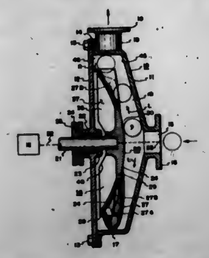
pressure to one side only of the auxiliary piston and shuts off the said hydraulic pressure from the other side of the auxiliary piston, by which unbalanced pressure thrust the auxiliary piston is held fixedly clamped against a fixed abutment in the cylinder, the shuttle member also being movable selectively into a second position in which it admits balanced hydraulic pressures to both sides of the auxiliary piston, whereby the auxiliary piston is freed to move in the cylinder together with the main piston.

3,190,225
DITCH DRAINING DEVICE
Hubert L. Elliott, Aline, Okla.
Filed Jan. 14, 1963, Ser. No. 251,112
7 Claims. (Cl. 103—87)



1. A portable pumping unit comprising a vertically orientated impeller assembly, a power plant for said impeller assembly, said power plant being located adjacent said impeller assembly, means operatively connecting said power plant and said impeller assembly, said impeller assembly including a circular housing, a plurality of discharge openings in said housing, an impeller positioned within said housing, a vertically extending shaft on said impeller operatively associated with the power plant for effecting rotation of the impeller, said impeller including a plurality of radially extending blades forming a pluarility of radial chambers, said blades being arranged so as to provide for a constant direct communication of each chamber with one or another of the discharge openings, and a framework, said impeller assembly and power plant being mounted within said framework, said framework completely surrounding said impeller assembly and power plant.

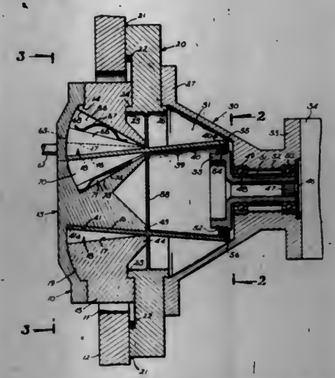
3,190,226
CENTRIFUGAL PUMPS
Thomas E. Judd, 1960 Browning Ave., Salt Lake City, Utah
Filed Sept. 13, 1963, Ser. No. 308,791
6 Claims. (Cl. 103—103)



1. In a centrifugal pump including housing structure defining an interior cavity and including a central intake orifice and a side exhaust orifice, and a shaft sealingly journalled to and extending within said housing structure and nominally axially disposed in line with and facing said intake orifice; an improvement comprising an impeller revolvably disposed in said housing structure and including a base fixedly secured to said shaft, said base having a continuous, convex front face which is spaced from and faces said intake orifice, said shaft having an axis of rotation passing centrally through said front face, said impeller also including plural, radially extending vanes affixed to said base and upstanding from said front face, said vanes being mutually spaced from each other and from the center of said front face, said vanes having leading edges terminating short of a primary imaginary plane normal to and intersecting said shaft axis at its intersection with said front face, said leading edges of said vanes having their respective portions proximate said front face joining said front face in respective contours, to form juncture angles, that is, angles between said proximate portions of respective ones of said leading edges of said vanes and tangents to said front face at said contours which respectively lie in the same planes as said proximate portions of respective ones of said leading edges of said vanes, said juncture angles of said leading edges with said front face being not less in magnitude than juncture angles between said front face and respective, secondary imaginary planes parallel to said primary imaginary plane and respectively intersecting said front face at respective leading edges' junctures therewith, and said housing structure and said impeller being so constructed and arranged to provide an annular discharge chamber circumscribing said impeller and communicating with said discharge orifice and also to provide an annular, conical, pumped-media passageway interconnecting said intake aperture with said discharge chamber and disposed between said leading edges of said vanes and said housing structure.

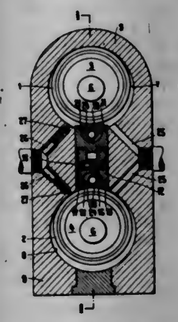
3,190,227
FLUID DEVICE
Clifford B. Davids, Woodland Hills, and Roland H. Thorsell, Granada Hills, Calif., assignors to The Marquardt Corporation, Van Nuys, Calif., a corporation of California
Filed Sept. 4, 1964, Ser. No. 394,467
9 Claims. (Cl. 103—117)

1. A fluid device comprising:
a deformable tube supported by a diaphragm about its periphery at a location intermediate the ends thereof, said diaphragm separating said tube into first and second end portions terminating in first and second tube ends;
the deformation of said first end portion resulting in the same deformation of said second end portion but with a phase difference of 90 degrees;
rotatable drive means having a deformed drive member located within said first end of said first tube portion for progressively deforming said first end portion;
fluid cavity means receiving said second end portion of



said tube while said second end portion is deformed during deformation of said first end;
said fluid cavity means having movable barrier means for blocking said cavity at one location while permitting said second end portion of said tube to deform; and
inlet and outlet ports located adjacent to and on opposite sides of said barrier means for controlling fluid flow through said cavity means.

3,190,228
ROTARY PISTON MACHINE
Otto Grigar, Landtestrasse 47, Bienne, Switzerland
Filed Sept. 16, 1963, Ser. No. 309,142
Claims priority, application Switzerland, Sept. 21, 1962, 11,173/62
3 Claims. (Cl. 103—130)



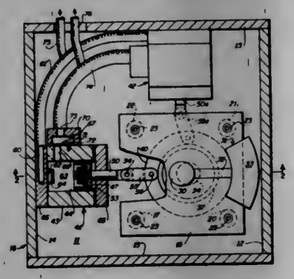
1. A rotary piston machine, comprising at least one rotary piston having a cylindrical surface and adapted for rotary displacement in a cylinder of a diameter exceeding the diameter of the piston, a guideway extending in a direction substantially radially of the cylinder, separating-gate means displaceable along said guideway in a direction substantially radial to the cylinder surface and rotary piston surface respectively, means for displacing said rotary piston along the cylinder surface with one mantle line of the rotary piston contacting one mantle line of the cylinder surface for any position of the rotary piston, means for urging said separating gate means against the surface of the rotary piston, a pair of sealing pads pivotably mounted in said separating-gate means round an axis parallel to the cylinder axis and having cylindrical sealing surfaces engaging the piston surface, pressure means between such sealing pads axially urging such sealing pads against the end surfaces of the cylinders, and labyrinth sealing means between such sealing pads preventing circumferential flow between such sealing pads.

3,190,229
METHOD AND APPARATUS FOR CONVEYING LIQUIDS
Erwin Turowski, Forststrasse 40, Berlin-Zehlendorf, Germany
Filed June 7, 1962, Ser. No. 200,866
Claims priority, application Germany, June 9, 1961, T 20,271; Nov. 10, 1961, T 21,093
8 Claims. (Cl. 103—148)



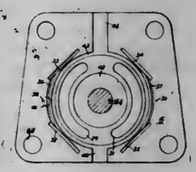
1. A system for pumping fluid media comprising: a conduit for receiving the media to be pumped, said conduit including a first section of an elastic material and a second elastic material section which has a cross sectional flow area which is normally constricted relative to the cross sectional flow area of said first section; and means for repetitively applying force to said first section to reduce the flow area thereof to pressurize the fluid media and enable the pressurized media to expand the normally constricted flow area of said second section for flow of fluid media from said first section to said second section and through the expanded constricted flow area of the latter, said constricted flow area, upon release of the pressure on said first section, substantially inhibiting return flow of fluid media to said first section, said normally constricted flow area of said second section being produced by an adjustable force spring acting on said second section.

3,190,230
PUMPING APPARATUS
Edward V. Nielsen, Darien, Conn., assignor to Nicholas J. Totalo
Filed Nov. 1, 1963, Ser. No. 320,769
5 Claims. (Cl. 103—152)



1. A gravity actuated pump: comprising
a main housing;
a substantially vertically disposed shaft rotatably mounted in said main housing;
a substantially horizontally disposed pendulum secured to said shaft, said pendulum being free to swing under the action of gravity when said housing is tilted thereby rotatably actuating said shaft;
crank means connected to said shaft;
at least one pumping unit disposed in said housing and operatively coupled to said crank means so as to be actuated in response to the rotational movement of said shaft;
said pumping unit comprising a resilient diaphragm that sealingly covers one end of a bore formed in said housing, and a connecting rod secured at one end to the central portion of said diaphragm and coupled at the other effectitve end thereof to said crank means;
said housing having inlet and outlet fluid conducting passages formed therein each communicating with said pumping unit;
a first one way flapper valve member attached at one side thereof to said housing and adapted to swing towards and away from an inlet passage blocking position so as to permit only a fluid inlet flow through said inlet passage to said pumping unit; and
a second one way flapper valve member attached at one side thereof to said housing and adapted to swing towards and away from an outlet passage blocking position so as to permit only a fluid outlet flow through said outlet passage from said pumping unit.

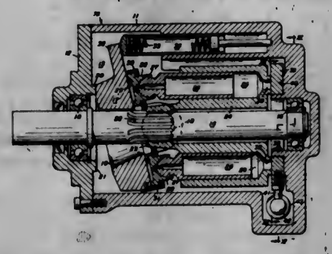
3,190,231
HYDRAULIC APPARATUS
Oswald Thoma, Charlton Kings, Cheltenham, England, assignor to Dowty Hydraulic Units Limited, Ashchurch, England, a company of Great Britain, and Unipat A.G., Glarus, Switzerland, a company of Switzerland
Filed Jan. 31, 1963, Ser. No. 255,254
Claims priority, application Great Britain, Apr. 6, 1962, 13,366/62
2 Claims. (Cl. 103—162)



1. In a rotary pump or the like, in combination, a valve plate and a cylinder block rotatable relative to the valve plate and having cylinders disposed about its axis, the complemental surfaces of the cylinder block and valve plate being arranged to transmit thrust but to afford but slight clearance between them, such surface of the valve plate having a hydrostatic balancing recess opening into it, and with a sole restricting connection leading to the recess, a separate feed port also opening into such surface adjacent the restricting connection, two kidney-shaped ports in such surface arranged to register during a rotative cycle with the cylinders of the cylinder block for intake and discharge, respectively, of fluid between the valve plate and cylinder block, said restricting connection being located concentrically of but radially outwardly of said kidney-shaped ports, an annular recess in the valve's surface concentric with and located intermediate said ports and the restricting connection, a central circular recess in the valve's surface located radially inwardly of the ports, the annular recess and the circular recess both being in communication with a low pressure region, the rotative cylinder block being formed in its surface that is complemental to the valve plate's surface so as to close the balancing recess and the restricting connection during the greater part of its rotative cycle, apart from a leakage gap

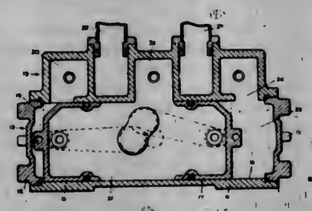
resulting from the slight clearance, and the cylinder block's surface also having a bridging recess located to afford communication with both said feed port and said restricting connection momentarily during each rotative cycle, for access of pressure liquid intermittently from the feed port to the restricting connection, and thence to the balancing recess.

3,190,232
HYDRAULIC APPARATUS
Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio
Filed Feb. 11, 1963, Ser. No. 257,699
12 Claims. (Cl. 103—162)



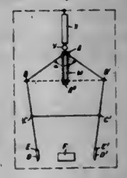
1. A fluid pressure energy translating device comprising a housing having inlet and outlet ports, a cylinder barrel rotatably mounted in said housing, pistons reciprocally disposed in said cylinder barrel, a cam plate mounted for tiltable movement in respect to the housing about an axis, biasing means normally urging said cam plate to tilt in one direction, valving means to sequentially connect said pistons with the inlet and outlet ports, said valving means including stationary support means, and fluid distributing means interposed between said stationary support means and said cylinder barrel, mounting means for said fluid distributing means to permit movement of said fluid distributing means in respect to said tiltable cam plate to change the force moment of the pistons on the cam plate in respect to the axis of tilt of the cam plate, and actuation means to impart movement to said fluid distributing means to change the cam angle of the tiltable cam plate in response to change in the force moment of the pistons coactable with the cam plate.

3,190,233
PUMPS
Harold George Welch, Sanderling, Moody's Boat Yard, Lower Swanwick, Hampshire, England
Filed Mar. 5, 1963, Ser. No. 263,683
6 Claims. (Cl. 103—169)



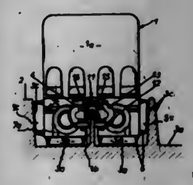
1. A pump having a cylinder with closed ends in a common casing with a valve chest, a pair of pistons reciprocable within said cylinder, a crank shaft in said cylinder between said pistons, connecting rods connecting each of said pistons to said crank shaft at a phase diffence of approximately 60°, the space within said cylinder between the pistons being sealed and comprising an operative part of the pump in addition to the end spaces beyond each of the pistons and the closed ends of said cylinder, access ports in said common cylinder establishing communication between said valve chest and said common cylinder, pressure operated valves controlling said access ports, and wherein said common casing is completely sealed except for said valved access ports.

3,190,234
METHOD OF TAMPING THE BALLAST OF A RAILWAY TRACK AND DEVICE FOR THE EXECUTION OF THIS METHOD
Paul Grossmann, Lausanne, Switzerland, assignor to Matisa Materiel Industriel S.A., Lausanne, Switzerland, and Constructions Mecaniques S.A., Renens, Vaud, Switzerland, both corporations of Switzerland
Filed Feb. 1, 1963, Ser. No. 255,605
Claims priority, application Switzerland, Feb. 8, 1962, 1,570/62
13 Claims. (Cl. 104—12)



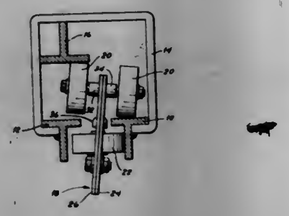
1. A tamping device for tamping the ballast of a railway track, said device having at least one pair of tamping tools adapted for being displaced relative to one another while undergoing vibration during a working stroke in a tamping operation, said device comprising: pivotally supported levers supporting the tamping tools, jack means connected to said levers for producing said working stroke, vibration means having a constant amplitude of vibration for vibrating the levers and the tools therewith, and means pivotally connected to the levers and to the vibration means to pivotally move the levers and cause the tools to be vibrated relative to one another while modifying the amplitude of the vibration transferred to the tools such that the latter undergo reduced amplitude of vibration as the tools are displaced towards one another in a working stroke.

3,190,235
VEHICLES ASSOCIATED TO A GUIDING TRACK
Jean Henri Bertin, Neuilly-sur-Seine, and Paul Guienne, Paris, France, assignors to Société Bertin & Cie, Paris, France, a company of France
Filed June 17, 1963, Ser. No. 288,386
Claims priority, application France, June 26, 1962, 901,981
8 Claims. (Cl. 104—134)



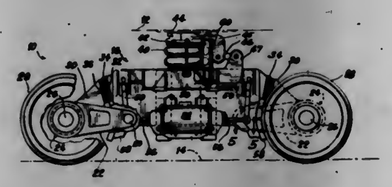
1. A trackway transportation system comprising a horizontally extending track having in cross section flat and substantially horizontal bearing wall portions and flat, substantially vertical guiding wall portions of opposite orientations; a vehicle having a hull, front end and rear end elongated seals made of deformable material such as rubber and plastic externally supported by said hull, and defining therewith at least two flattened plenum chambers facing each of said guiding and bearing track wall portions, pump means aboard of said vehicle for independently supplying with pressurized fluid the plenum chambers facing said bearing and guiding track wall portions, respectively; and propulsive means for moving said vehicle along said track.

3,190,236
HOOK CONVEYORS
John M. Leach, Port Washington, N.Y.
(P.O. Box 350, Port Jefferson, N.Y.)
Filed Nov. 21, 1960, Ser. No. 70,648
4 Claims. (Cl. 105—155)



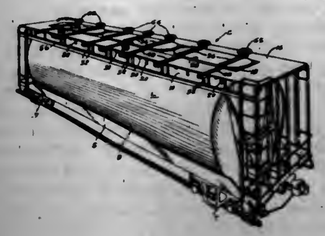
1. A conveyor comprising a trolley, means for applying force to the trolley at different angles, a wheel carried by the trolley, a bearing for the wheel, an angularly movable mount for the wheel bearing which will enable the wheel to assume different angular positions relative to the trolley to correct for varying angles of application of force to the bearing.

3,190,237
RAILWAY TRUCK
Thomas A. Hurtner, Albany, N.Y., assignor to Adirondack Steel Casting Co., Watervliet, N.Y.
Filed Feb. 12, 1962, Ser. No. 172,412
4 Claims. (Cl. 105—182)



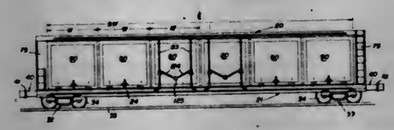
1. A railway truck comprising a frame portion, means located centrally of said frame portion for providing a swivel connection with a railway car, support means integrally formed in said frame portion spaced laterally of said connnection, spring means located on said support means and provided for engagement with the under side of said car, bearing members located intermediate said spring means and said car, extensions rigidly connected to said bearing members, link means pivotally secured at one end to said bearing member extensions and pivotally secured at the other end to said frame portion, journal boxes located at the corners of said frame portion for supporting the wheels and axles of said truck, arms extending inwardly of said boxes, means for pivotally connecting said arms to said frame, upstanding portions formed integrally with said boxes, and resilient members interposed between said upstanding portions and said frame adapted to react to forces resulting from relative movement between said frame and said boxes.

3,190,238
HATCH COVER FOR RAILWAY CARS
John L. Carney, Jr., St. Louis, and Bernard A. Trompeter, O'Fallon, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 19, 1963, Ser. No. 289,005
12 Claims. (Cl. 105—377)



1. In a railway hopper car, a roof covering the hopper car, an elongated hatch opening extending lengthwise longitudinally of the car, a hatch frame surrounding the hatch opening, an elongate hatch cover over the hatch opening slidable transversely of the car between open and closed positions, said hatch cover being seated on the hatch frame in the closed position and being removed from the hatch opening in the open position to permit access to the hatch opening, an arm secured adjacent one side of the elongate hatch cover and extending laterally from the hatch cover over the adjacent roof transversely of the car, a guideway mounted on the roof and extending transversely of the car generally parallel to the longitudinal axis of the arm, anti-friction means on the extending end of the arm engaging the guideway for sliding movement back and forth transversely of the car upon opening and closing of the cover, and releasable means to secure the hatch cover in closed position onto the hatch frame and to release the hatch cover from the hatch frame for sliding movement transversely of the car.

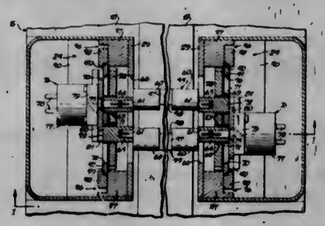
3,190,239
RAILWAY CARS COMPRISING BODIES HAVING WIDE SIDE ACCESS OPENINGS THEREINTO
Edward L. Davis, Chicago, and Robert L. Hassenauer, Chicago Heights, Ill., assignors to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Feb. 7, 1963, Ser. No. 257,037
10 Claims. (Cl. 105—378)



1. A railway car body comprising a substantially rectangular floor, a substantially rectangular roof arranged in superimposed relation with said floor, a pair of upstanding end walls respectively arranged at the opposite ends of said body, each of said end walls joining both the adjacent end of said floor and the adjacent end of said roof, whereby said body is of elongated box-like configuration and having a pair of opposed sides that are open substantially between said end walls, a pair of elongated longitudinally extending lower rail structures respectively carried by the opposite lower side portions of said body adjacent to the opposite sides of said floor and respectively extending substantially between said end walls, a pair of elongated longitudinally extending upper rail structures respectively carried by the opposite upper

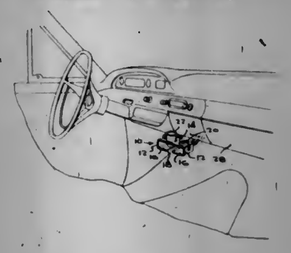
side portions of said body adjacent to the opposite sides of said roof and respectively extending substantially between said end walls, and two sets of upstanding side doors respectively arranged at the opposite open sides of said body and respectively carried by the adjacent ones of said upper and lower rail structures, each of said sets of side doors including a plurality of individual first side doors of the plug-sliding type and a plurality of individual second side doors of the simple sliding type, each of said first side doors being mounted upon the adjacent ones of said upper and lower rail structures for lateral movements between "in" and "out" positions respectively disposed in corresponding inner and outer upstanding planes at the adjacent open side of said body, each of said first side doors in its "out" position also being mounted upon the adjacent ones of said upper and lower rail structures for longitudinal movements therealong in either direction in the adjacent outer plane, each of said second side doors being mounted upon the adjacent ones of said upper and lower rail structures for longitudinal movements therealong in either direction in the adjacent inner plane, in each of said sets the adjacent ones of said first side doors in their "in" positions in the adjacent inner plane cooperating with each other and with the adjacent ones of said second side doors in the adjacent inner plane to close the adjacent open side of said body, said first side doors in their "out" positions being movable longitudinally in the adjacent outer plane into covering relation with corresponding adjacent ones of said second side doors in the adjacent inner plane so as to produce a composite doorway into the adjacent open side of said body, each of said second side doors being selectively movable longitudinally in the adjacent inner plane under the adjacent ones of said first side doors in their "out" positions in the adjacent outer plane so as to locate the composite side doorway into the adjacent open side of said body at any longitudinal position therealong between said end walls, whereby lading may be readily placed and removed with respect to said body at any longitudinal position therealong and from either open side thereof through an immediately adjacent and convenient composite side doorway thereinto.

3,190,240
FOLDING DEVICE FOR COOKIE MAKING MACHINE
Virgil L. Archer, 205 N. 3rd St., Olean, N.Y., and Franc A. Spilsbury, 140 Bancroft Drive, Ebenezer, N.Y.
Filed Aug. 16, 1962, Ser. No. 217,471
12 Claims. (Cl. 107—1)



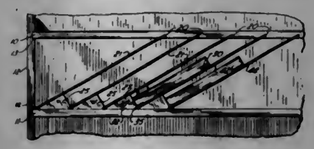
1. In a cookie machine, the combination of means for folding over portions of rows of unbaked cookie dough blanks, comprising a step-by-step conveyer belt adapted to carry crosswise thereon, at spaced stations rows of cookie dough blanks, an end head on said base at each side of said belt, at least one upright slideway on said end head, a member movable vertically along said slideway, at least one blade having a cutting edge lying in a plane at right angles to a belt to be parallel with said rows with its opposite ends arranged adjacent said members, means on each of said members for simultaneously reciprocating both ends of said blade in the same direction lengthwise of said belt, means on each of said members for rotating said blade in the same direction about an axis generally parallel with its edge, and means for simultaneously raising and lowering said members, whereby said blade can be lowered to bring its cutting edge onto said belt, moved lengthwise of said belt to move said cutting edge under said portions of said row of cookie dough blanks rotated to turn said portions of said row of cookie dough blanks over the other parts of said cookie dough blanks elevated to permit another row of cookie dough blanks to be advanced into the zone of action of said blade.

3,190,241
SERVING TRAY FOR VEHICLES
Charles F. Rodgers and Russell M. Deeter, both of 5334 Normandy Blvd., Jacksonville, Fla.
Filed Nov. 15, 1963, Ser. No. 324,034
2 Claims. (Cl. 108—45)



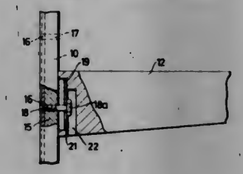
1. A device of the character described comprising a tray element having bottom flanges, said flanges being formed with laterally spaced longitudinal saddles struck down out of said flanges, arms having rear end portions extending securably through the saddles, said arms having portions extending forwardly from the tray element and terminating in coaxial inwardly extending trunnions, and instrument panel carried mounting assembly in which said trunnions are engaged.

3,190,242
PAPER STORAGE SYSTEM
Gerald B. Shelly, 3802 W. Townley Ave., Phoenix, Ariz.
Filed Jan. 29, 1964, Ser. No. 340,958
12 Claims. (Cl. 108—60)



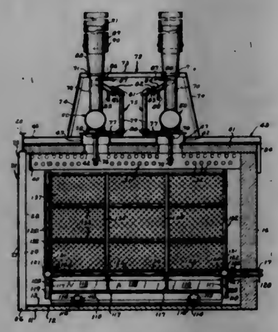
1. A paper storage system comprising:
(A) means defining two substantially parallel planes
(B) a plurality of dividers parallel to each other and angularly disposed to said parallel planes
(C) a plurality of separators positioned intermediate said dividers, each including:
(1) a first surface parallel to and in contact with one of said dividers
(2) a second surface extending from and perpendicular to said first surface
(3) a third surface extending from said first surface parallel to and in contact with one of said parallel planes
(4) means defining a channel portion extending from said second and third surfaces and shaped to accept one edge of the divider adjacent said one of said dividers.

3,190,243
SHELF STRUCTURE
Olof Pira, Vallingby, Stockholm, Sweden, assignor to String Design AB, Vallingby, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 19, 1962, Ser. No. 173,969
Claims priority, application Sweden, Feb. 20, 1961, 1,748/61
1 Claim. (Cl. 108—152)



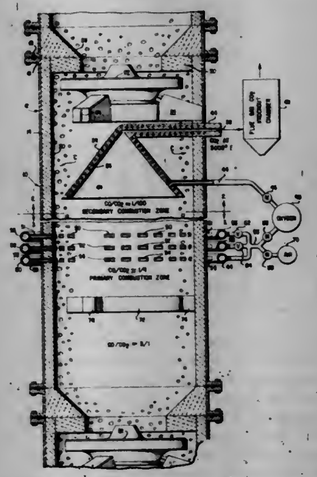
A shelf mounting comprising, a wall panel having an aperture, a threaded fastening bolt extending through the aperture, a shelf having a rear face, a back plate on said shelf, disposed substantially parallel to the rear face and located forwardly of the same, said back plate being provided with a key-hole shaped aperture through which the fastening bolt extends, adjustment means on the fastening bolt located forwardly of the back plate and adapted by rotative movement to draw the shelf toward the panel to bring its rear face in contact with the panel while locating the rear plate forwardly of and free of contact with the panel, and the shelf having a recess having one of its walls formed by the back plate, said recess being located forwardly of the back plate and exposing the adjustment means from below the shelf only and permitting the entry of a tool to engage and rotate the adjusting means to thereby cause the bolt to draw the rear face of the shelf against the face of the panel.

3,190,244
INCINERATOR AND SMOKE-CONSUMING APPARATUS
Gordon H. Hoskinson, 36th Ave. and 13th St., Long Island City, N.Y.
Filed Dec. 19, 1960, Ser. No. 76,670
12 Claims. (Cl. 110—18)



1. An incinerator construction comprising a building unit having a floor, side walls, rear wall, door means and a roof, spaced track means in the floor of said building unit, cart means for receiving material to be burned mounted on said track means for movement into and out of said building unit, said cart means including a plurality of hollow pipe means connected to one another defining a pair of side walls and front and rear walls, at least one of said pipe means having a plurality of openings axially spaced therealong for directing air inwardly within the cast means, one of said pipe means forming said rear wall of said cart means having at least one nipple extending outwardly therefrom in substantially right angled relationship to the rear wall of said building unit, air inlet means in said rear wall of said building unit for detachable, axial engagement with said nipple of said rear wall of said cart means for passage of air through the pipes forming said cart and out through the plurality of openings to support combustion of the material to be burned, at least one outlet means in said roof for passage of the waste products of combustion therethrough, and exhaust means secured to said outlet means.

3,190,245
APPARATUS FOR THE HEATING OF CARBONACEOUS MATERIALS BY THEIR PARTIAL COMBUSTION TO CARBON DIOXIDE
Morgan G. Huntington, Washington, D. C. assignor to Huntington Chemical Corporation, Salt Lake City, Utah
Filed Apr. 12, 1962, Ser. No. 186,920
2 Claims. (Cl. 110—28)



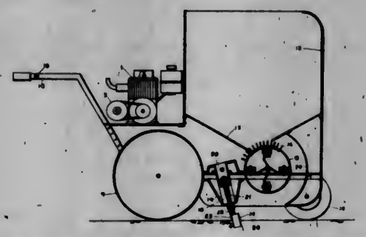
1. An apparatus for controlled partial combustion of solid carbonaceous fuel to carbon dioxide comprising:
(a) a pressurized vertical vessel,
(b) means for gas isolating at least a portion of the vessel,
(c) gyratory feed means for feeding hot solid carbonaceous fuel continuously downward through the vessel adjacent the walls thereof as an annular cascade,
(d) means for introducing controlled amounts of oxidizer gas and inert gas through the side walls of the vessel into the annular cascade of solid fuels at a predetermined horizon for primary combustion.
(e) a conically-shaped secondary combustion member positioned above the horizon of the oxidizer gas introducting means and open toward the bottom of the combustion chamber defining a secondary combustion zone therein and therebelow for the combustion of carbon monoxide to carbon dioxide,
(f) means for introducing oxygen through the conically shaped secondary combustion member for burning carbon monoxide in the secondary combus-

tion zone to carbon dioxide and allowing the heat to be radiated on to the annular cascade of solid fuel.

(g) a turbulence arrestor plate positioned below the level of the oxidizer gas introducing means and aiding the conical shaped secondary combustion member in preventing solid carbonaceous fuel from entering in a space within the annular curtain cascade above the level of the oxidizer gas introducing means,

(h) and a passageway in the apex of the conically-shaped combustion member for withdrawing the products of combustion.

3,190,246
MACHINE FOR PLANTING PLANT RHIZOMES OR STOLONS
Robert Lee Neal, 2025 Wellington Road, West Palm Beach, Fla.
Filed June 4, 1962, Ser. No. 199,700
3 Claims. (Cl. 111—1)



1. A machine for planting plant rhizomes or stolons comprising a bin for containing a mass, a spreading drum forming at least a part of the bottom of the bin for removing rhizomes or stolons from the bin and discharging them on the ground surfaces in a random manner, and a planting bar mounted rearwardly of the spreading drum and including a plurality of reciprocating members for pushing the rhizomes or stolons into the ground surface, a trailing roller located rearwardly of the spreading drum and reciprocating members for packing soil around the rhizomes or stolons which have been inserted into the ground, said drum including a plurality of radially projecting teeth extending into the bin and rotatable with the drum for dispensing rhizomes or stolons from the bin onto the ground surface, said reciprocating members being mounted on a rigid planting bar, a drive shaft having eccentrics thereon, rods connecting the eccentrics to the planting bar, guide means for the planting bar for guiding the movement of the planting bar in generally a vertical direction, said planting bar including a plurality of planting fingers thereon having a very small transverse dimension while having a relatively long longitudinal dimension for enabling the fingers to engage a rhizome or stolon laying on the ground surface and force it into the ground surface during movement of the planter.

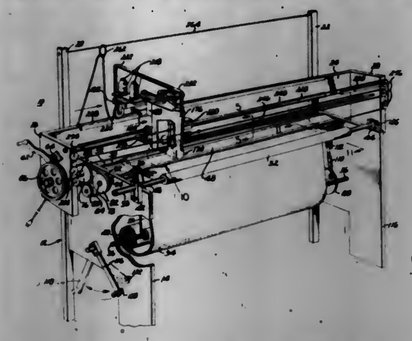
3,190,247
APPARATUS AND METHOD FOR MANUFACTURING PLEATED COMPOSITE MATERIAL
Gregory J. Schifano, Arcadia, and Jerrel M. Morris, Sierra Madre, Calif., assignors of thirty-three and one-third percent to Earl H. Belk, Long Beach, Calif.
Filed Mar. 19, 1963, Ser. No. 266,229
8 Claims. (Cl. 112—2)

4. Apparatus for manufacturing pleated composite material, said apparatus comprising:

a frame for carrying elongated sheets of unpleated material and including a pleating area having a transverse opening;

transversely extending gathering means mounted to said frame for movement through said transverse opening and into said unpleated material to form an elongated seam portion therein overlying said gathering means;

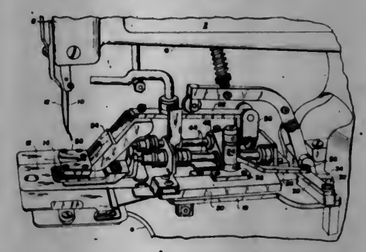
forming means extending through said transverse opening and operative to traverse said transverse opening for progressively engaging and disengaging the



interior of said seam portion along the length thereof to tauten said seam portion;

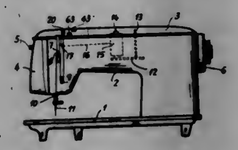
and securing means mounted to said frame and coupled with said forming means for traversing said transverse opening with said forming means to secure together said unpleated material at said seam portion contemporaneously with operation of said forming means.

3,190,248
ATTACHMENT FOR SEWING EYES
Mervin L. Gehringer, 86 Noble St., Kutztown, Pa.
Filed Jan. 18, 1962, Ser. No. 167,099
1 Claim. (Cl. 112—105)



In a sewing machine, for sewing buttons having two or four holes and having a supporting frame, an overhanging head support thereon on which a head is attached mounting a single needle, a cloth supporting plate mounted so as to be longitudinally movable on said frame under said head, a presser foot mounted between said plate and head and a rotary cam having a slot and driven by said machine below said supporting plate for controlling the movements of said supporting plate; the improvement comprising linkage means including a pin on said linkage means engaging said slot, said linkage means being pivotally connected, at one end to said frame, and at the other end, to said cloth supporting plate and presser foot, said linkage means including bent lever means to effect only longitudinal reciprocations of said presser foot and cloth supporting plate, in spaced parallel relationship to and below said head support, said presser foot including spring biased holding means shaped to receive an eye having two loops so that said loops extend longitudinally of said head support and of the base of said presser foot, said presser foot and cloth supporting plate being driven by said linkage means and being movable in unison under the control of said pin and slot to cause said needle to sew thread alternately inside and outside of each of said loops, in succession and along a straight line in spaced parallel relationship to said head support and onto a garment mounted on said cloth supporting plate, whereby the eye is rapidly and automatically sewn to the cloth.

3,190,249
TENSIONING DEVICE FOR THE UPPER THREAD IN A SEWING MACHINE
Fritz Gegauf, Jr., Steckborn, Thurgau, Switzerland, assignor to Fritz Gegauf Aktiengesellschaft, Bernina-Nähmaschinenfabrik, Steckborn, Thurgau, Switzerland
Filed Dec. 20, 1962, Ser. No. 246,205
Claims priority, application Switzerland, Jan. 10, 1962, 250/62
5 Claims. (Cl. 112—254)



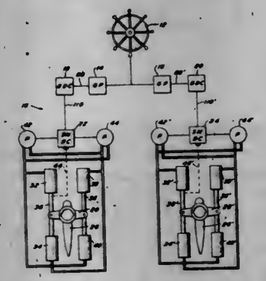
1. In a sewing machine including a vertical standard supporting a substantially horizontal upper arm having an upper surface and depending side and end surfaces, and thread control means on a side surface of said arm; an upwardly opening slot extending transversely of the upper surface of said arm between said side surfaces and substantially above said thread control means; an upper thread tensioning device within said arm beneath said upper surface and between said side surfaces, and having spring biased thread tensioning disks, the thread engaging surfaces of said disks extending transversely of said arm and being located within said slot; and tension adjusting means operatively associated with said disk, and including a manual adjuster operatively associated with said tension device and extending to the exterior of said arm.

3,190,250
SHEET METAL TOOL
Milton Hinden, 15 Bay Link, Massapequa, N.Y.
Filed Mar. 5, 1963, Ser. No. 262,959
2 Claims. (Cl. 113—1)



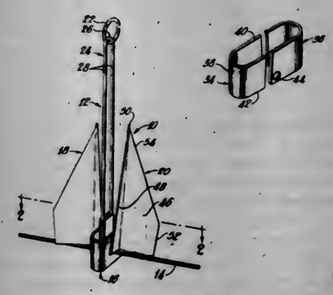
1. A tool for deforming a portion of a sheet metal air turning blade disposed within a dished portion formed on the outer surface of a blade rail comprising an extended shank portion, a handle lever formed at one end of said shank portion and a blade forming portion at the other end of said shank portion, said blade forming portion comprising spaced apart jaws defining therebetween a slot extending across said other end in the direction of the longitudinal axis of said shank, the opposed lateral terminal portions of both said jaws to one side of said axis being disposed further from said axis than the opposed lateral terminal portions of said jaws to the other side of said axis, said slot extending further to one side of said axis than to the other side of said axis.

3,190,251
VESSEL HAVING TWIN RUDDERS WITH CONTROLLED TOE-OUT
August W. Kumpf, Conshohocken, Pa., assignor to C. H. Wheeler Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 8, 1962, Ser. No. 215,721
14 Claims. (Cl. 114—163)



1. In a steering system for a large vessel comprising first and second rudders, a first ram group for selectively rotating said first rudder, a second ram group for selectively rotating said second rudder, each ram group including a storage motion differential control, a bias differential control unit coupled to each storage motion differential control and to a gyropilot unit, said bias differential control units including means for moving said rudders in opposite directions from a streamline position, and said rudders being adapted to assume identical right or left angular positions in response to a signal from said bias differential control units.

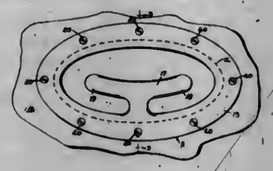
3,190,252
LIGHTWEIGHT ANCHOR
Charles M. Keepers, 1422 Morrison St., Fremont, Ohio
Filed Nov. 12, 1963, Ser. No. 322,692
9 Claims. (Cl. 114—208)



9. A boat anchor comprising a shank, a stock, a pair of flukes, and a yoke, said yoke comprising a pair of substantially identical yoke members, each having a crown portion and a long leg and a short leg, said long leg having an opening which receives said stock, said yoke mem-

bers disposed in opposed relationship with the ends of the long legs abutting the ends of the short legs, and means for holding said yoke members together.

3,190,253
DOCK ROPE ANCHOR
Paul W. Grimm, Coeur d'Alene, Idaho, assignor to Spokane Steel Foundry Co., Spokane, Wash., a corporation of Washington
Filed Nov. 15, 1963, Ser. No. 324,046
1 Claim. (Cl. 114—218)



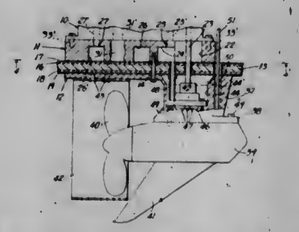
A dock rope anchor formed as an integral metal casting and adapted to be mounted within an aperture formed through the decking of a boat dock comprising:

a continuous oval ring including an axially open section with an exterior cross sectional configuration complementary to the inside of the dock aperture;

a flange directed radially outward from said ring at one axial end thereof;

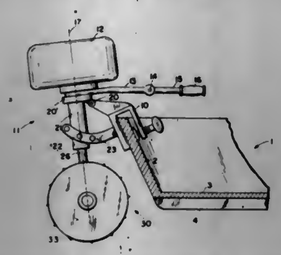
and a bifurcated cleat at the end of said ring including the flange, said cleat intersecting one side of said ring along its minor axis and extending inwardly of said ring, said cleat being spaced equidistantly from the ring along its entire length at both sides of its joinder to said ring, the external surfaces of said ring, flange and cleat being coplanar.

3,190,254
OUTBOARD TO INBOARD CONVERSION UNIT
Robert H. Meibauer, 25 Windy Hollow Way, Staten Island, N.Y.
Filed May 18, 1964, Ser. No. 368,068
15 Claims. (Cl. 115—.5)



8. In outboard to inboard conversion units of the character defined, a power head conversion plate, in connection with which power heads of numerous different designs are adapted to be mounted, said plate having three widely extended areas opening through the lower surface thereof, one of said areas comprising a water intake area, a second area comprising a water exhaust area, the third area comprising a gas exhaust area, means in said plate placing all of said areas in communication with a power head mounted on the upper surface of one side portion of the plate, the other side portion of the plate having an extension, upon which an exhaust system assemblage is adapted to be mounted, and the second and third areas projecting onto said extension to place both of said areas in communication with said assemblage.

3,190,255
DEMOUNTABLE OUTBOARD COMBINATION HULL BOAT AND SLED DRIVING MEANS
Winston Orine Olson, 412 Hilton Drive, Madison, Wis.
Filed Nov. 26, 1963, Ser. No. 327,579
13 Claims. (Cl. 115—1)



1. In combination with an elongated vehicle having a stern and a bow, said vehicle floatable on water,

drive means which comprises:

an air cooled engine at the stern of the vehicle,

at least one driving wheel,

supporting means to support said wheel on a shaft below said motor, the axis of said shaft being in fixed relation to the motor, said wheel being rotatable about the axis of said shaft,

means for said motor to drive said wheel rotatably,

said wheel provided with paddle blade members,

said wheel further provided with sharp ice engaging pointed portions,

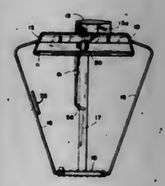
mounting means for detachably connecting said drive means to said vehicle at the stern of said vehicle,

means connecting said drive means to said mounting means to provide for rotation of said drive means in a mode corresponding to yaw with respect to said vehicle,

the axis of such yaw rotation being at the stern of the vehicle,

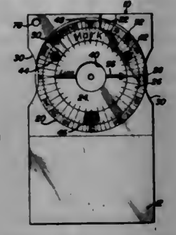
said drive means hingedly attached to said mounting means to rotate on a transverse axis with respect to said vehicle.

3,190,256
UNDERWATER VEHICLE
Emerson D. Bule, Port Tobacco, Md. (Star Rte. 1, La Plata, Md.)
Filed June 18, 1964, Ser. No. 376,060
16 Claims. (Cl. 115—22.2)



1. An underwater vehicle, comprising a buoyancy chamber having an opening in the bottom thereof adapted to receive air exhausted from a diving apparatus, air conduit means mounted within said buoyancy chamber and having an opening therein within the chamber, said air conduit means being movable up and down in said buoyancy chamber, one end opening out through the top of said buoyancy chamber, and means on said buoyancy chamber for holding a passenger beneath the open bottom of the buoyancy chamber.

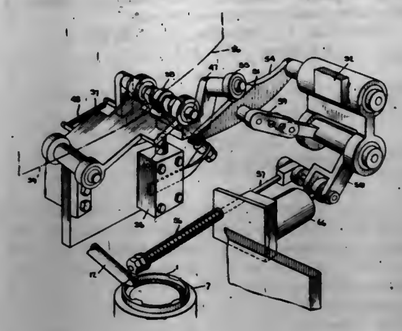
3,190,257
SAILING INDICATOR FOR STARTING LINE, COURSE AND WIND DIRECTION
Joseph A. Blythe, Jr., P.O. Box 1985, Jackson, Miss.
Filed Nov. 4, 1963, Ser. No. 321,172
8 Claims. (Cl. 116—133)



1. An indicating device for selectively registering several sets of indicia with each other comprising a pair of spaced panel members, spaced filler means disposed between said panel members and defining a shallow generally cylindrical recess extending between said panel members, a center disk and inner and outer concentric rings disposed about said disk and in said recess, one of said panel members including at least one transparent portion disposed in registry with said recess, first indicia on the other panel member visible from said recess and second, third, and fourth indicia on said disk and outer and inner rings respectively registrable with each other and said first indicia, diametrically opposite portions of said recess opening outwardly of the corresponding marginal edge portions of said panel members whereby diametrically opposite portions of the outer ring only are exposed for finger manipulation, at least one of said panel members having an opening therein through which access to said disk may be had for effecting rotation of the latter in said recess, the opposing sides of said panel members being disposed in frictional sliding contacting relation with the opposite sides of said disk, said outer ring being slightly diametrically compressible whereby its inner periphery may be frictionally engaged with the outer periphery of the inner ring to rotate the otherwise inaccessible inner ring relative to said panel members.

3,190,258
AUTOMATIC GASKET COMPOUND APPLYING MACHINE
Ernest L. Heffley and Louis J. Miller, Connellsville, Pa., assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Sept. 29, 1960, Ser. No. 59,264
13 Claims. (Cl. 118—2)

1. In an automatic machine for forming flowed-in rings in closure shells having a means to rotate and to move a plurality of the closure shells along an arcuate path and having a gasket fluid application nozzle mounted for motion above each of the closure shells, the improvement which comprises the combination of cam means comprising a cam and cam follower means to cause the simultaneous operation of a plurality of the nozzles to apply fluid to a plurality of closure shells therebelow, an air piston in each fluid nozzle, and an air switch operatively coupled to said air piston and to said cam follower to operate the nozzle under the control of said cam, means comprising a proximity detector adjacent said arcuate path adapted to detect the absence of a closure shell below one of the nozzles, latch means to deactivate said one nozzle, and a coupling between said latch and said detection means comprising a movably mounted second cam, an air cylinder operatively coupled to said second cam, a valve to control said air cylinder, and an amplifier electrically coupling said detector to said valve.



3,190,259
ADHESIVE APPLICATOR FOR CARTON SEALING MACHINES
Francis A. Craig, Hanehouse, and Eugene F. Cloutier, Wilshire, Pa., assignors to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1962, Ser. No. 246,590
8 Claims. (Cl. 118—2)

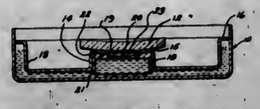


1. In an apparatus for applying adhesive to the surface of a panel having substantial thickness and movable relative thereto, a glue head comprising a troughlike member defining an adhesive receiving pocket and having a forward wall comprising convering surfaces defining a line of convergence, orifices in said wall located substantially on said line of convergence, means cooperating with said forward wall for closing said orifices at times, and means for supplying adhesive under pressure to said pocket; a backup member, means mounting said glue head for rocking movement toward and away from said backup member, means yieldably urging said glue head into engagement with said backup member with said forward wall at said line of convergence in contact therewith and said orifices substantially closed thereby, means for relatively moving said panel between said glue head and said backup member to cause a first rocking movement of said glue head to free said orifices by the contact of a converging surface of said troughlike member with the leading edge of said panel, and a return rocking movement of said glue head upon passage of a trailing edge of said panel beyond said glue head, whereby said orifices and portions of said glue head adjacent thereto are wiped by said trailing edge during said return rocking movement.

3,190,260
DEVICE FOR APPLYING A THIN COATING ON AN ARTICLE

William T. Merker, Orchard Park, N.Y., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed Feb. 13, 1963, Ser. No. 258,283
5 Claims. (Cl. 118—3)

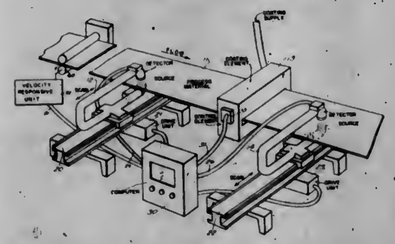


1. In a device of the character described comprising a combination of a container having vertically disposed side walls adapted to receive a liquid composition therein and a dish-like float adapted to be positioned on said liquid composition within said container, said dish-like float being so dimensioned vertically and the amount of liquid composition, when placed in said container, being so controlled as to locate the upper edge of said float a given distance below the upper edge of the side walls of the container, said dish-like float having a vertically disposed hollow central portion formed with a circular upper edge lying in a plane at a given distance below the upper edge of said float, said hollow central portion having a wall portion extending transversely thereof at a location below the upper circular edge of said hollow portion and said wall portion having a restricted perforation therein normally at a location above the level of the liquid composition and through which said liquid composition may be forced to flow when the dish-like float is moved in a downward direction within said container.

3,190,261
CONTROL SYSTEM

Garret F. Ziffer, Wayland, Mass., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Sept. 28, 1960, Ser. No. 58,940
6 Claims. (Cl. 118—8)

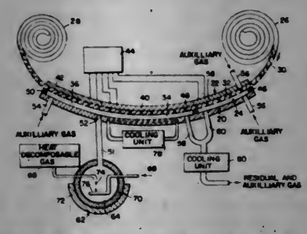


1. Apparatus for controlling a processing element adapted to effect a change in a physical characteristic of a continuously moving material strip comprising, a first transducer located upstream of said processing element and adapted to provide as an output a signal indicative of the value of said physical characteristic in the region adjacent to said first transducer; a second transducer located downstream of said processing element and adapted to provide as an output a signal indicative of the value of said physical characteristic in the region adjacent to said second transducer; a first delay unit having its input coupled to the output of said first transducer and adapted to provide as an output said first transducer output signals after a time delay equal to the time required for said material strip to travel from said first to said second transducer; a signal generator coupled to said second transducer output and said delay unit output and adapted to provide an output signal related to the difference between signals from said second transducer output and said first delay unit output; means coupling said signal generator output to said processing element; first drive means for scanning said first transducer transversely across said material strip; second drive means for scanning said second transducer transversely across said material strip; first position indicating means associated with said first transducer and adapted to provide continuously a signal indicative of the transverse position of said first transducer; second position indicating means associated with said second transducer and adapted to provide continuously a signal indicative of the transverse position of said second transducer; a second delay unit coupled to said first position indicating means and adapted to provide as an output said signals from said first position indicating means after a time delay equal to the time required for said material strip to travel from said first to said second transducer; a balancing amplifier coupled to the output of said second delay unit and said second position indicating means and adapted to provide an output whenever said second delay unit output is different from said second position indicating signal; said second drive means being responsive to said balancing amplifier output to drive said second transducer to occupy substantially the same transverse position that said first transducer occupied one delay period previously.

3,190,262
VAPOR DEPOSITION

Robert Bakish, Brighton, Ivan Marinow, Allston, and Charles A. Gellar, Chelsea, Mass., assignors to The Alloyd Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 20, 1961, Ser. No. 146,519
1 Claim. (Cl. 118—48)



An apparatus for depositing metal on an elongated sheet material, said apparatus comprising first means providing an outer concave surface and second means providing an inner concave surface, said outer concave surface and said inner concave surface being spaced apart a distance ranging from 1/32 to 5/32 inch and defining a concave path said path providing in sequence a preheat zone, a decomposition zone and a dwell zone, means for advancing an elongated sheet material through said concave path and tensioned against said inner concave surface, means for heating said inner concave surface substantially continuously throughout said decomposition zone, means for cooling said outer concave surface substantially continuously throughout said decomposition zone, means defining an entrance port and a first exit port at opposite extremities of said decomposition zone, means for directing a heat decomposable metal bearing gas through said entrance port, said decomposition zone and said first exit port, means for directing an auxiliary gas into said preheat zone and said dwell zone in order to shield the outer extremities of said preheat zone and said dwell zone from said heat decomposable gas, a first gasket at the outer extremity of said preheat zone, a second gasket at the junction between said preheat zone and said decomposition zone and a third gasket at the outer extremity of said dwell zone, means defining a second exit port in said preheat zone, said first exit port and said second exit port being contiguously located on opposite sides of said second gasket, and means for exhausting said first exit port and said second exit port, the profile of said concave path being such that it constitutes a relatively minor segment of a closed curve.

3,190,263
DOCTOR BLADE ASSEMBLY FOR COATING FLEXIBLE SHEET MATERIALS

Steven G. Belak, Claymont, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed July 31, 1961, Ser. No. 127,995
3 Claims. (Cl. 118—101)

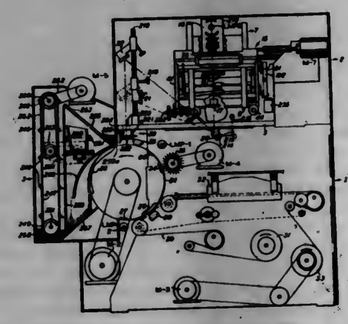


1. A doctor blade assembly for operating on a moving flexible sheet material coated with an adherent, thin, substantially-fluid film of a normally-solid coating composition, comprising wax and a substantial proportion of a relatively high molecular weight polymer which is very viscous when in the molten state, said assembly comprising, in combination: (*a*) two elongated doctor blades of rigid material, each of said blades having one longitudinal edge beveled at an angle of about 30° from the transverse axis of the blade to a point not closer than about 0.01 inch to the opposite face of the blade; and (*b*) means for holding said blades in a longitudinally-opposed, transversely-adjustable, coplanar relationship, and in a position such that the longitudinal axes of the blades are substantially perpendicular to the direction of sheet material movement with the beveled edges of said blades being opposed and oriented so that the bevels face against the direction of sheet material movement, the said holding means also permitting rotatable adjustment of the common plane of the blades in an arc perpendicular to the plane of the blades.

3,190,264
XEROGRAPHIC DEVELOPING APPARATUS

Robert A. Hunt, Wilbraham, Mass., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Original application Nov. 28, 1958, Ser. No. 776,848. Divided and this application Dec. 14, 1961, Ser. No. 159,269
1 Claim. (Cl. 118—637)



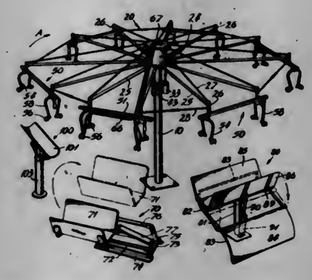
In an xerographic developing system for cascading developing material onto the surface of a xerographic plate, the combination of

a collecting bin for containing developing material,
a conveyor for elevating developing material from the collecting bin,
an inclined chute arranged to receive the material from the conveyor and to transport the material to the surface of the xerographic plate,
said chute having a slot formed thereon through which portions of the material fall,
a discharge bin arranged below the xerographic plate for receiving the material as it is cascaded over the xerographic plate,
said collecting bin and said discharge bin being arranged to effect gravity feed of the developing material from the discharge bin to the collecting bin,
said discharge bin including a baffle means positioned between the same and the collecting bin for limiting the quantity of developing material fed from the discharge bin to the collecting bin,
a xerographic toner dispenser positioned above said collecting bin and in discharging relationship thereto for dispensing toner therein, and
a deflecting plate arranged between said chute and said collecting bin and below the slot formed therein for receiving said portions of developing material as they fall through said slot, said deflecting plate extending into the path of dispensing toner and being adapted to direct said portions into contact with the toner being dispensed into said collecting bin whereby the dispensed toner becomes mixed with some of the material.

3,190,265
ANIMAL HANDLING APPARATUS

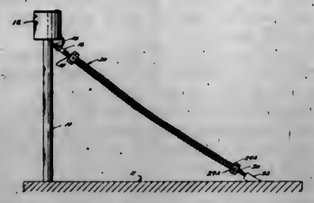
William Richard Clifford Geary, 1A Bibby Court, Moorabbin, Victoria, Australia

Filed Mar. 15, 1963, Ser. No. 265,530
Claims priority, application Australia, Mar. 19, 1962, 15,497/62
15 Claims. (Cl. 119—103)



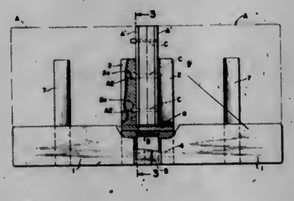
7. Animal handling apparatus comprising conveyor means movably supported in an elevated position, a plurality of spaced carriers fixed to and supported by said conveyor means, each of said carriers being adapted to suspend an animal by its four legs, means operable to actuate said conveyor means intermittently thereby to move the carriers along an endless path and to arrest them in succession at a plurality of stations including a loading station and an unloading station, and an animal rising or lowering unuit arranged at one of said stations, said unit comprising a trough-like cradle having downwardly converging side walls whereby an animal supported on its back therein is restrained against excessive body movements and means operable for raising and lowering said cradle.

3,190,266
FLUID APPLICATOR FOR ANIMALS
Jerry P. Malec, Omaha, Nebr., assignor to Malco Engineering Company, Omaha, Nebr., a corporation of Nebraska
Filed Jan. 23, 1963, Ser. No. 253,318
13 Claims. (Cl. 119—157)



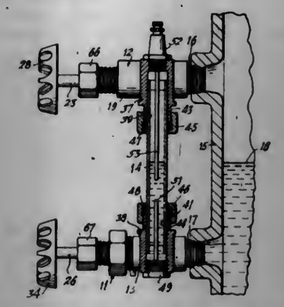
10. In a fluid applicator for animals,
a vertical post,
an elongated fibrous animal rubbing element,
means for anchoring one end of said rubbing element at a point remote from the bottom of said post,
a fluid pumping means connecting the upper end of said rubbing element to the upper end of said post,
said pumping means being adapted for connection to a source of fluid,
a piston in said pumping means,
a single rigid fluid discharge tube secured to said piston and extending downwardly into said rubbing element,
and means rigidly connecting said discharge tube to said rubbing element whereby pressure on said rubbing element will cause said discharge tube to actuate said piston.

3,190,267
LEDGER HANDREST FOR BOOKKEEPERS
Jack R. Creel, 2109 Pullman Circle, Pensacola, Fla.
Filed Jan. 16, 1964, Ser. No. 338,162
18 Claims. (Cl. 120—54)



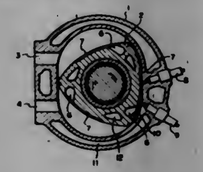
1. In combination with a ledger having a pair of covers between which a plurality of sheets are compressed by binder posts extending through the backbone of the ledger and through the sheets, said binder posts having heads on their outer ends extending beyond the backbone; a ledger handrest for use by bookkeepers or the like while posting in the ledger when opened, said handrest comprising a pair of hand supports disposed at the bottoms of their related exposed ledger sheets with their inner ends spaced apart in way of the backbone; parallel bars connected to and extending normal to the hand supports adjacent their inner ends and disposed under the covers of the opened ledger and adapted to contact the outer faces of the backbone; means connecting the bars for permitting separation of the bars to suit varying thicknesses of backbones, and for preventing relative rotation of the bars; and means for yieldably contracting the bars into contact with the backbone.

3,190,268
COMBINATION LOW-WATER CUT-OUT AND GAUGE GLASS
Hugh D. MacDonald, 208 Mt. Pleasant Ave., Hanover, N.J., and Floyd E. Sharrier, 120 Filbert St., Roselle Park, N.J.
Filed Feb. 26, 1963, Ser. No. 260,987
1 Claim. (Cl. 122—504)



A combination low water cut-out and gauge glass device for steam boilers, comprising an upper valve unit having a hollow body with an upper valve seat and adapted to be connected to a boiler above the normal water level therein through said valve seat, a lower valve unit having a hollow body with a first valve seat and adapted to be connected through said valve seat to said boiler below the normal water level therein, said lower valve unit body having a drain port and a second valve seat connecting said hollow body to said drain port, upper and lower valve stems threadably mounted in said upper and lower hollow bodies, respectively, a valve on the upper valve stem coacting with said upper valve seat for cutting off the hollow body of the upper valve unit from the boiler when the valve is closed and for admitting steam from the boiler to said hollow body when the valve is open, a pair of opposed valves longitudinally spaced along the lower valve stem in the hollow body of the lower valve unit, means to position said opposed valves so that in one position one valve engages the first valve seat and the other valve is spaced from the second valve seat to simultaneously cut off said hollow body from the associated boiler and open said drain port and in another position the first-mentioned valve is spaced from the first valve seat and the second-mentioned valve engages the second valve seat to simultaneously admit water from the boiler to said hollow body and close said drain port, the hollow body of each valve unit having a portion laterally offset from the longitudinal axis of the corresponding valve stem and provided with a chamber that communicates with the interior space of the hollow body outwardly of the valve seat thereof which is employed to cut off sad hollow body from the boiler, each offset portion having an opening that faces toward and is axially aligned with the opening of the other offset portion adapted to receive one end of a gauge glass tube, a gauge glass tube having one end removably secured in each of said openings of the offset portions, each offset portion having another opening axially aligned with and facing away from the opening that receives said gauge glass tube, an insulated probe electrode normally mounted in and closing the last-mentioned opening in the upper valve unit and extending into said gauge glass tube, a plug normally closing the last-mentioned opening in the lower valve unit to allow the insertion and removal of said gauge glass and a second probe electrode secured in said plug and extending upwardly into the gauge glass in spaced relation to the first-mentioned probe electrode to serve as a ground connection, and means adapted to connect said plug in an electronic circuit that is closed and opened by variations of the liquid level in the gauge glass tube below and above the lower end of the first-mentioned probe electrode, respectively.

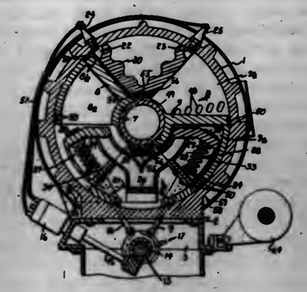
3,190,269
COMBUSTION CHAMBERS FOR ROTARY ENGINES
Hiroshi Tado, Suita-shi, Osaka, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed May 29, 1962, Ser. No. 198,510
Claims priority, application Japan, July 7, 1961, 36/23,692
1 Claim. (Cl. 123—8)



A rotary piston internal combustion engine of the epitrochoidal housing type, including a housing having an inner surface disposed about an axis, said inner surface having an epitrochoidal shape in a plane normal to said axis and enclosing a cavity, said epitrochoidal shape defining a major and a minor axis intersecting along said housing axis, a rotor disposed to rotate about its own axis as the rotor axis rotates about said housing axis, said rotor having a number of external peripheral surfaces of which adjacent surfaces intersect to form apieces which have continuous sliding contact with the inner surface of the housing, said apices defining between them a plurality of main combustion chambers, said rotor having a cavity forming an auxiliary combustion chamber adjacent the leading ends of each of said external surfaces, each of said auxiliary combustion chambers communicating with a recess in its associated external surface by an orifice having a substantially smaller cross-sectional area than the auxiliary chamber, said orifice opening in the direction opposite to the direction of rotation of the rotor, a first injector being situated in said housing adjacent the minor axis thereof and being arranged to inject fuel directly into the auxiliary chambers through said orifice as they pass the injector, a second injector situated in said housing and spaced apart from said first injector in the direction of rotor rotation, said second injector being arranged to inject fuel into each main combustion chamber as it moves past said second injector and after the fuel previously injected by said first injector into said auxiliary chamber has fired and is flowing through said orifice into said main combustion chamber.

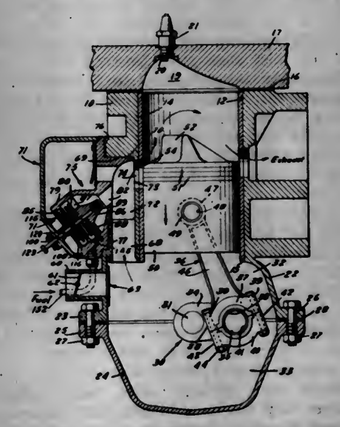
3,190,270
INTERNAL COMBUSTION ENGINE
Frederick R. Peterson, W. 1414 Mallon, Spokane, Wash.
Filed Aug. 13, 1962, Ser. No. 216,367
9 Claims. (Cl. 123—18)

1. In an internal combustion engine:
a rock shaft having fixed thereon piston members projecting outwardly from the shaft and away from each other;
a casing surrounding the pistons and providing chambers in which the pistons oscillate about the axis of the shaft;
a valved intake passage into each chamber below its piston for admitting gas for combustion;
a device in each chamber above each piston for igniting a gaseous fuel charge therein;
said casing having by-passes therein for conducting gas admitted below each piston around the piston into the respective chamber above the piston when



the piston is at the low point of its oscillation in the chamber;
said casing having exhaust passages therein for conducting the gases of combustion out of the chambers; and
each valved intake passage being through a valve seat unit that projects into the respective chamber, the pistons being recessed in their lower faces to receive the valve seat units.

3,190,271
FUEL-AIR INJECTION SYSTEM FOR INTERNAL COMBUSTION ENGINES
Austin Gudmundsen, Inglewood, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,390
16 Claims. (Cl. 123—29)



1. A fuel-air injection system for two-cycle internal combustion engines having a cylinder, a crankcase, a piston reciprocable in the cylinder, a crankshaft in said crankcase, a connecting rod operably connecting the piston to the crankshaft, said cylinder having an exhaust port and also having an inlet transfer port positioned therein to be uncovered by said piston when the latter approaches its innermost limit of movement, said crank-

case having a fluid inlet, a check valve controlling said inlet permitting fluid to flow into the crankcase through said inlet but preventing outflow of fluid through said inlet, a manually controlled valve controlling the flow of fluid into the crankcase through said inlet, and an air transfer passageway connecting the crankcase with the inlet transfer port of the cylinder, comprising:

(A) a housing defining a cylindrical chamber having an outlet portion at the inner end, said outlet portion being of reduced diameter and connected with the air transfer passageway between the crankcase and the inlet transfer port of the cylinder, said outlet being aligned with the inlet port of the cylinder, said housing also having a pulse disc cylinder at the outer end thereof;

(B) a fuel nozzle within said chamber having its inner end extending into the outlet portion but in spaced relation to the walls thereof, to thereby provide a restriction for effecting a high velocity air jet at the discharge end of the said fuel nozzle, said nozzle having a fuel bore in alignment with said outlet portion and the inlet transfer port of the cylinder, there being a counterbore at the inner discharge end of said nozzle;

(C) a plug secured in the outer end portion of said counterbore, said plug having a calibrated fuel discharge orifice therein;

(D) a ball valve in said counterbore adapted to seat on the outer end of said fuel conducting bore;

(E) yielding means urging said ball valve into seating engagement with the discharge end of said nozzle fuel bore;

(F) means defining a fuel inlet passageway communicating with the nozzle bore intermediate the end thereof;

(G) a casing defining a compressed air storage chamber having a wall spaced from the outer end of said housing and generally parallel to the plane of said outer end of the housing, said wall having a bore therethrough in axial alignment with the bore of said nozzle;

(H) a pair of parallel, laterally spaced walls defining a recess at the outer side of said casing wall;

(I) a plunger in said bore of the casing wall and the bore of said nozzle, the inner end of said plunger being normally spaced outwardly of the junction of the fuel inlet passageway and the nozzle bore, the outer end of said plunger having a head thereon;

(J) a pulse disc slidably disposed on said plunger, leaf spring means secured to said plunger inwardly of the pulse disc and including a pair of resilient, oppositely extending spring fingers normally spaced from the inner side of the pulse when the mechanism is at rest;

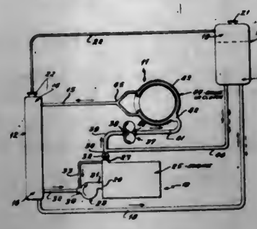
(K) a stop means on said plunger outwardly of the pulse disc limiting outward movement of the pulse disc on said plunger and also limiting outward movement of said plunger by engagement with the portion of the wall of said casing preventing said pulse disc from moving out of the pulse disc cylinder;

(L) means on said plunger limiting inward movement of the pulse disc on said plunger;

(M) a wedge-shaped plunger stop slidable in the recess between said parallel walls, said wedge-shaped plunger stop having a longitudinally extending slot therein in which the plunger is received, the head of said plunger being adapted to engage said plunger stop when said plunger is actuated inwardly, said pulse disc being movable longitudinally inwardly by fluid pressure in said compressed air storage chamber beyond the inner end of said pulse disc cylinder;

(N) and a light spring yieldingly urging the pulse disc outwardly.

3,190,272
COOLING SYSTEM
Edward J. Falk, St. Louis, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Apr. 26, 1963, Ser. No. 276,052
10 Claims. (Cl. 123—41.09)



1. A cooling system including a fluid cooled friction brake or clutch device system and an engine cooling system, reservoir means for cooling and storing fluid and having a warm fluid inlet side connected to said friction device system and a cool fluid outlet side, pumping means connected between the outlet side of said reservoir means and said friction device system for continuously circulating cooling fluid therethrough for return to said reservoir means, and other means for circulating cooling fluid from the outlet side of said reservoir means through said engine cooling system and discharging it to said pumping means.

3,190,273
PISTON FOR INTERNAL COMBUSTION ENGINE
Carl F. Bachle and Walter F. Isley, both of Grosse Pointe, Mich., assignors to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Jan. 3, 1964, Ser. No. 335,568
4 Claims. (Cl. 123—41.35)

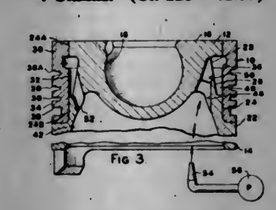


Fig 3

1. In an internal combustion engine a piston assembly comprising,

(a) a piston member having a head portion,

(b) said head portion being provided with a top planar surface and a first annular exterior surface extending on an axis substantially normal with respect to said top surface,

(c) said first annular surface being provided with a plurality of axially spaced piston ring grooves,

(d) an annular recess being provided in said head portion at the juncture of said top planar surface and said first annular surface to form a second annular surface spaced radially inwardly from said first annular surface and concentric therewith and intersecting said top planar surface and an annular radially extending surface disposed intermediate said piston ring grooves and said top planar surface and intersecting said first and second annular surfaces,

(e) a combustion chamber cavity extending into said head portion from said top planar surface,

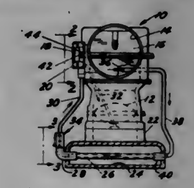
(f) an annular cavity registering with said recess at the juncture of said radially extending surface and said second annular surface,

(g) a collar member being provided with an annular radially extending surface engaging said radially extending surface of said head portion and an annular axially extending surface engaging said second annular surface of said bead portion.

(h) said engaging surfaces of said head portion and said collar member being secured one to the other by electron beam welding and said collar member closing said annular cavity in said secured position, and

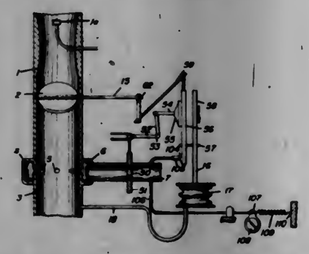
(i) means circulating a coolant through said annular cavity.

3,190,274
CHOKE STOVE HEAT REGULATOR VALVE
William O. Manning, Jr., Livonia, and William E. McCollough, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 21, 1962, Ser. No. 181,342
7 Claims. (Cl. 123—119)



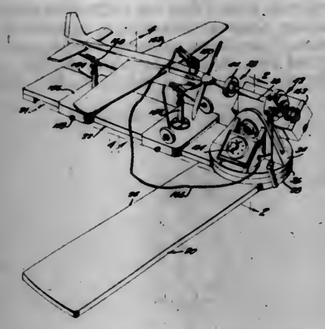
1. In an internal combustion engine including an exhaust manifold having a stove therein and a carburetor having an induction passage controlled by a choke valve, automatic means for operating said choke valve, said automatic means including a housing, a thermostatic spring positioned in said housing, a conduit for communicating heated air from said stove to said housing, and thermostatic means in said conduit for reducing the temperature of said heated air prior to its entry into said housing.

3,190,275
EXPLOSION ENGINES
Max Yves Antonin Marie Serruys, 102 Rue du Bac, Paris, France
Filed Mar. 25, 1963, Ser. No. 267,510
Claims priority, application France, Mar. 29, 1962, 892,677; Aug. 27, 1962, 907,839; Jan. 29, 1963, 922,978
6 Claims. (Cl. 123—124)



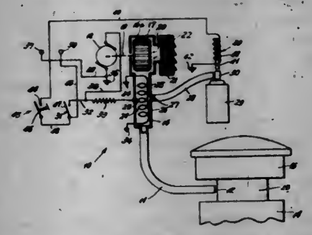
1. In an internal combustion engine having an ignition and a carburetor comprising an engine inlet and a throttle valve; the improvement comprising a regulating unit coupled to said throttle valve, additional air supply means disposed downstream of said carburetor, means sensitive to the pressure drop existing in said inlet conduit, control means connected to said regulating unit and to said pressure drop sensitive means for regulating, when the engine propels an associated vehicle, the quantity of additional air supplied to said additional air supply means and, when the engine is propelled by an associated vehicle, for slightly reopening the throttle valve and for retarding the advance of the ignition.

3,190,276
STARTER FOR INTERNAL COMBUSTION ENGINES
Thomas M. Diggs, 1349 Otis St. NE., Washington, D.C.
Filed Aug. 15, 1963, Ser. No. 302,308
5 Claims. (Cl. 123—179)



1. A starter mechanism for rotating an output component of a combustion engine for starting the same comprising a base, a power shaft rotatably supported on said base, means on said shaft adapted to engage an output component, a manually operable reel operatively connected to said shaft, a flexible member operatively connected with the reel for rotating the reel and shaft, spring means connected to said reel for rewinding the flexible member thereon, a clutch mechanism in said shaft to enable rotation of the means adapted to engage an output component independent of said shaft, said base including adjustable means adapted for supporting an engine with the output component in alignment with the shaft.

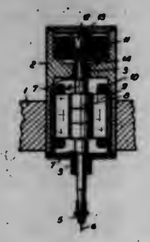
3,190,277
STARTING UNIT FOR INTERNAL COMBUSTION UNITS
Richard E. Tessier, Thomaston, Conn., assignor to Marva Devices, Inc., Stamford, Conn., a corporation of Connecticut
Filed Dec. 3, 1962, Ser. No. 241,600
9 Claims. (Cl. 123—187.5)



1. A unit for aiding in the starting of an internal combustion engine having a carburator and air intake means, comprising a casing remote from the air intake means and provided with a conduit communicating with the engine between the carburetor and the intake means; an air blower communicating with the atmosphere for forcing a stream of air into said casing and through said conduit into said engine intake means; a pressurized source of readily combustible fuel; means connecting said source of

fuel to the casing including a normally closed valve; heating means for heating the air stream passing through said casing to the conduit and the engine intake means, and also heating the fuel entering the casing when said valve is open; and manually operable means for controlling operations of said blower, said valve and said heating means, said air stream propelling the fuel entering the casing through the later and the conduit to the air intake of the engine.

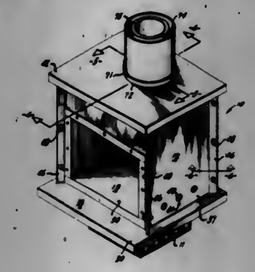
3,190,278
MACHINE FOR PERFORATING STONES
Jean Schluchter, Geneva, Switzerland, assignor to Marie-Louise Spira-Klein, Geneva, Switzerland
Filed Feb. 19, 1963, Ser. No. 259,701
Claims priority, application Switzerland, Feb. 25, 1959, 70,106
9 Claims. (Cl. 125—30)



1. An improved high speed drilling machine energized from external power sources for perforating stones and similar hard materials comprising: a casing, a shaft, having oppositely disposed ends and a longitudinal axis, mounted for rotation in said casing about, and reciprocation along, said longitudinal axis; drilling means mounted in one of said oppositely disposed ends of said shaft; bearings supporting said shaft, mounted adjacent said oppositely disposed ends; motor means for rotating said shaft at high speeds, said motor means comprising a mechanically unconnected rotor portion and a stator portion, said motor means being energized from one of said power sources through its stator portion thereby eliminating frictional power connection with moving parts, the rotor portion being mounted on said shaft intermediate said bearings thereby insuring dynamic stability of the shaft and rotor at said high speeds; an alternating current electromagnet means, energized from another of said power sources, fixedly mounted opposite the other of said oppositely disposed ends of the shaft, said electro-magnet means being adapted to magnetically attract and repel said shaft when supplied with alternating current from the other of said power sources and to thereby reciprocate said shaft along its longitudinal axis at twice the frequency of supplied alternating current according to the changes produced by said alternating current in the polarity of the electro-magnet means, whereby said shaft is simultaneously rotated and reciprocated without frictional loss from connections with said power source, said shaft being thereby rotated and reciprocated at increased speeds and efficiency for given power supplies.

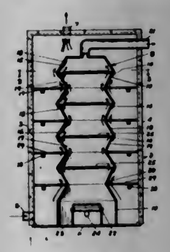
3,190,279
FIREPLACE
George G. Davis, 490 Highland Ave., Cotati, Calif.
Filed Jan. 22, 1962, Ser. No. 167,551
7 Claims. (Cl. 126—63)

1. A fireplace comprising: a fabricated sheet metal enclosure including a base plate, a top cover, a pair of side walls having ventilation apertures, a rear wall having ventilation apertures and a short front wall, said top cover having downwardly depending mounting means for said side and rear walls rigidly affixed to its lower surface, and said base plate having upwardly depending mounting means for said side and rear walls rigidly affixed to its upper surface, releasable mounting means for detachably securing said walls to the mounting means of said top cover and said base plate, said short front wall providing an opening into said enclosure; a welded steel plate fire box inside said enclosure and separated therefrom by an air space on all sides, top and bottom, said fire box including a forwardly converging heat reflection plate with adjustable damper means, said fire box having a pair of upright rearwardly converging side plates extending downwardly below the hearth plate and forming support



means for said fire box for seating upon said base plate, said fire box also having a rimmed and flanged opening at its front in registry with the opening of said enclosure and a flue collar at its top, said base plate having a pair of rearwardly converging upwardly extending interior positioning flanges for engaging said side plates when said fire box is in its proper position, said fire box also having upwardly extending spacer and support means about said flue collar for engaging said top cover; and a welded sheet metal base with holes in at least one of its sides to permit the circulation of air therethrough, said base plate being detachably secured to and elevated by said base.

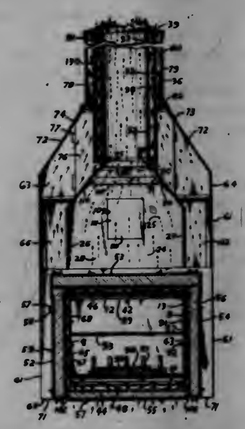
3,190,280
HEATING APPARATUS
Joseph Pirincin, 9909 Foster Ave., Cleveland, Ohio
Filed Mar. 11, 1963, Ser. No. 264,402
1 Claim. (Cl. 126—116)



In a hot air heater, the combination comprising a hollow, substantially closed metal casing having inlet and outlet means for the passage of air to be heated through the heater, a vertically extending, generally bellows-shaped combustion chamber disposed in centrally spaced relationship within said casing, a fuel burner mounted within and adjacent the bottom of said chamber, outlet

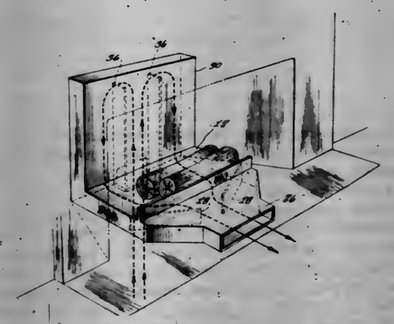
means adjacent the top of said chamber and extending through said casing for the discharge of products of combustion from said chamber, said chamber including a plurality of superposed generally circular, in plan, flues to provide a heat exchange reservoir for the products of combustion, each of said flues including upper and lower frusto-conical members attached together at their widest diameter, the opposed frusto-conical members between respective of said flues being attached together at their smallest diameter to provide a unitary, single walled structure for the passage of combustion products therethrough, each of said flues including horizontally extending baffle means disposed in the plane of the widest diameter of said flues, each of said baffle means including a flat, substantially square, sheet metal plate engageably attached at four corners thereof to the confronting interior surface of the respective flue, each of said baffle plates being provided with cut-out portions defining concave edges between said corners thereof which coact with the confronting interior surfaces of said flues to provide tortuous passageways therewith for the products of combustion from the burner to the outlet means from said chamber, and a plurality of superposed deflector means extending horizontally inwardly from said casing, each of said deflector means including a flat, sheet metal plate disposed in the plane of the smallest diameter of said flues and hence alternately relative to said baffle plates, said deflector plates extending into proximity with but spaced from the confronting exterior surface of said flues to provide tortuous passageways for the air to be heated from the inlet means to the outlet means through said casing.

3,190,281
FIREPLACE FLUE CONSTRUCTION
John V. Northwood, Lee's Summit, Mo., assignor to Sadie Miriam Northwood, Lee's Summit, Mo.
Filed Oct. 17, 1962, Ser. No. 231,062
2 Claims. (Cl. 126—120)



1. A prefabricated fireplace construction comprising:
(a) walls forming a solid-fuel burning firebox, means forming a draft opening in said firebox, sheet metal walls forming a smoke chamber extending upwardly from said firebox and having a lower part communicating with said firebox draft opening and an upper part,
(b) an upwardly extending flue pipe having an upper exhaust end and a lower end, said pipe lower end being of smaller cross-sectional area than said smoke chamber upper part and forming a communicating junction with said smoke chamber upper part for draining smoke and combustion fumes therefrom,
(c) an upwardly extending secondary sleeve surrounding and spaced from said flue pipe and forming a coaxial secondary conduit therewith, said secondary sleeve having an upper exhaust end and a lower mouth, said secondary sleeve mouth opening exteriorly of said smoke chamber adjacent said smoke chamber upper part for receiving heated air generated on the exterior of said smoke chamber upper part,
(d) walls forming an outer shell spaced outwardly from said firebox and said smoke chamber forming therewith air current passageways, means forming lower intake draft openings in said outer shell and communicating with said air current passageways,
(e) said outer shell having an upper part spaced generally upwardly from said smoke chamber upper part and substantially surrounding said secondary sleeve mouth, and
(f) an upwardly extending outer sleeve surrounding said secondary sleeve and spaced therefrom forming an outer conduit therebetween, said outer sleeve having an upper exhaust end and a lower intake end, said outer sleeve intake end communicating with said outer shell upper part for receiving heated air from said air current passageways,
(g) whereby said outer shell and outer sleeve remain relatively cool during severe fire conditions in said firebox.

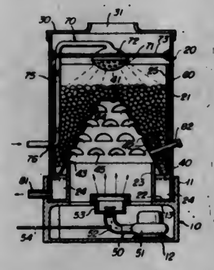
3,190,282
FIREPLACE SUPER HEATER
Walter T. Bauer, Ukiah, Calif.
(225 Granada Drive, Mountain View, Calif.)
Filed July 2, 1962, Ser. No. 206,574
1 Claim. (Cl. 126—131)



A fireplace heating device comprising, in combination, a hollow hearth, a tapered conduit and a hollow fireback, said hollow hearth comprising a horizontal member having said tapered conduit extending horizontally adjacent one end of said hollow hearth, said hollow fireback comprising an upstanding member adjacent the opposite end of said hollow hearth, said hollow hearth having parallel, spaced apart rectangular top and bottom walls, parallel, spaced apart side walls, end rear wall enclosing a central hollow area, said tapered conduit having a central hollow area communicating with said central hollow area of said hollow hearth, said tapered conduit having a top wall and a bottom wall which form an extension of said top and bottom walls of said hollow hearth, diagonal side walls, and an opening in the tapered conduit at the end opposite the side adjacent said hollow hearth, said diagonal walls converging toward said opening, said hollow fireback comprising a vertical front and rear wall, side walls and

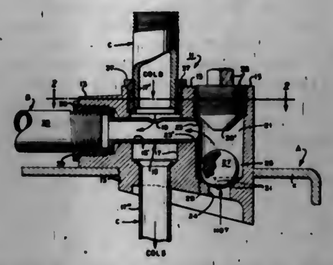
top end wall enclosing a central hollow area, the bottom wall of said hollow hearth having a single opening communicating with a vertical central portion of said central hollow area of said hollow fireback, a pair of upstanding baffle plates within said hollow fireback dividing said central hollow area of said hollow fireback, separating said vertical central portion from the vertical side portions within said central hollow area of said hollow fireback, said baffle plates being spaced from the said top end wall to provide communication of said vertical central portion and said vertical side portions of said hollow central area, an opening at the lower ends of each of said vertical side portions communicating with the central hollow area of said hollow hearth, a pair of baffle plates within said central hollow area of said hollow hearth extending diagonally and convergingly toward said tapered conduit, said baffle plates within said hollow hearth having an opening therebetween and an upstanding plate on the upper side of said top wall of said hollow hearth, and all of the above elements being sealingly attached together.

3,190,283
COMPACT INSTANTANEOUS WATER HEATER
Kingo Miyahara, 45 Miyamaecho, Meguro-ku, Tokyo, Japan
Filed Oct. 23, 1962, Ser. No. 232,411
2 Claims. (Cl. 126—359)



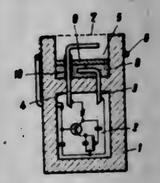
1. A compact water heater comprising, a casing, means defining a combustion chamber in said casing and coming a cap-like cover member defining an upper part of said combustion chamber in which combustion takes place, said cap-like member having through, elongated apertures extending in a circumferential direction for allowing hot gases of combustion to flow out of said combustion chamber, means on said cap-like cover member defining said apertures opening in a downward direction, a plurality of stacked heat-absorbing bodies disposed around and over said upper part of said combustion chamber in immediate contact therewith to be heated by said gases flowing out of said combustion chamber apertures, means to sprinkle water on the stack of said heat-absorbing bodies for heat transfer from said hot gases and said bodies to the sprinkled water percolating therethrough, means for collecting the heated water comprising means defining a hot water reservoir disposed at a level for receiving said water after percolating through said heat-absorbing bodies and disposed beneath and close adjacent to said stacked heat-absorbing bodies to hold the heated water outwardly of said combustion chamber and in contact with said combustion chamber at least partially circumferentially thereof, and a burner assembly in said combustion chamber for burning a fuel in said combustion chamber, whereby said compact water heater is of reduced dimensions and can heat relatively large amounts of water with an improved efficiency.

3,190,284
CONTAINER WITH MIXING DEVICE
Almont H. Koepf, Orinda, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Oct. 23, 1961, Ser. No. 146,948
11 Claims. (Cl. 126—362)



1. Apparatus for use in providing fluid at a predetermined outlet temperature by mixing fluid of a first temperature below the desired predetermined outlet temperature with fluid of a second temperature above said predetermined outlet temperature, said apparatus comprising in combination a container for receiving and storing the fluid of said second temperature, a mixing device affixed to said container, said mixing device being provided with a first inlet means in communication with the interior of said container, a second inlet means for the fluid of said first temperature, and a first outlet means and a second outlet means, said mixing device further including a valve means disposed adjacent said first inlet means and a mixing tube interposed between and communicating with said valve means and said first and second outlet means, said mixing tube being provided with an orifice means in open communication with said second inlet means for receiving fluid of said first temperature and for introducing the fluid of said first temperature into said mixing tube where it is adapted to mix with the fluid of the second temperature drawn from said container prior to the time the fluid is finally discharged through said first outlet means, said second outlet means also being interposed between and communicating with said mixing tube and said valve means, the cross-sectional dimension of said second outlet means being at a predetermined ratio to the cross-sectional area of the orifice means of said mixing tube.

3,190,285
CONSTRUCTION OF A BATTERY ELECTRODE FOR AN ENDO-RADIOSONDE
Herbert Muth, Neu-Ulm-Offenhausen, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed May 12, 1961, Ser. No. 109,746
Claims priority, application Germany, May 19, 1960, T 18,408
6 Claims. (Cl. 128—2.1)



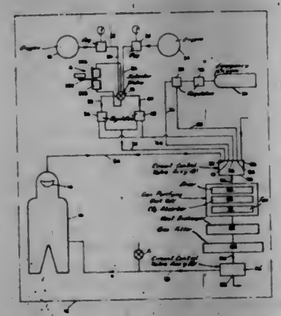
1. In the manufacture of battery electrodes for endo-radiosondes of the type having a battery and battery electrodes, the improvement comprising the steps of: constructing one of the battery electrodes of an alloy of a usual electrode material and a small amount of a substance which reduces gas formation in a battery, and then treating this electrode with an electrolyte for at least twenty minutes.

3,190,286
FLEXIBLE VIEWING PROBE FOR ENDOSCOPIC USE
Robert W. Stokes, Macedon, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Oct. 31, 1961, Ser. No. 148,975
7 Claims. (Cl. 128—6)



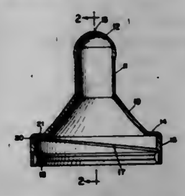
1. A flexible tubular viewing probe comprising, a plurality of hollow segments coaxially aligned with each other, a pair of pivot elements positioned in alternate 90 degree angular relationship intermediate said segments, means defining pairs of diametrically opposed holes in 90 degree angularly spaced relationship with recessed portions in said segments receiving a portion of said pivot elements providing concentric alignment and pivoting means for adjacent segments, a plurality of flexible members extending longitudinally through said elements and said segments, fastening means on the forward end of said probe fastening said flexible members, and means tensioning said members for pivoting adjacent segments on said elements relative to each other and thereby providing means for flexing said probe.

3,190,287
BREATHING SYSTEM
Henry A. Miller, Jr., Scotch Plains, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1960, Ser. No. 77,697
17 Claims. (Cl. 128—144)



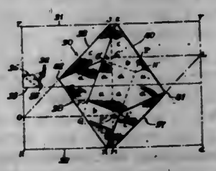
1. A breathing system for use in conjunction with a pressurized suit, said system comprising an oxygen supply source, a low pressure regulator, a second low pressure regulator, a selector valve intermediate the oxygen supply source and the regulators, means related to the valve for sensing when the flow provided by the first-named regulator varies from a predetermined amount, means for switching the flow of oxygen to the second regulator, gas treatment equipment in flow communication with said regulators, a conduit for the flow of exhaled gases from the suit to the gas treatment equipment, a second conduit for returning the treated gases to the suit together with oxygen received from said regulators, circuit control means operable to allow the exhaled gases and oxygen to flow through the gas treatment equipment and to bypass the flow of oxygen through the gas treatment equipment for delivery to the suit through said first-named conduit, whereby said second conduit serves to discharge exhaled gases from the suit, and a valve positioned in said second conduit for venting the discharged exhaled gases from the system when said circuit control means is operating to bypass the gas treatment equipment, said valve being operable when the ambient pressure is below a predetermined absolute pressure to limit the pressure in the system below a predetermined absolute value regardless of ambient pressure.

3,190,288
DISPOSABLE PLASTIC NIPPLE
William F. Butler and Robert A. Stewart, Oakland, Calif., assignors to Gerber Products Company, Oakland, Calif.
Filed July 26, 1962, Ser. No. 212,701
1 Claim. (Cl. 128—252)



A disposable plastic nipple comprising a body portion, a neck and feed tip projecting upwardly therefrom, said body portion having a horizontal outwardly extending flanged area at the downward end thereof adapted for sealing engagement with the top of a bottle rim, a cylindrical skirt vertically depending from the outer edge of said flanged area adapted for sealing engagement with the side of a bottle rim, an annular bead adjacent the lower edge of the interior of said skirt, and a pair of helical grooves defined on the interior side of said skirt and flanged area for venting of said nipple during use, each of said grooves commencing at the lower edge of said skirt and winding helically in opposite directions 180° with respect to said cylindrical skirt towards the upper edge thereof, and then communicating with the interior of said body portion inwardly across said flanged area, said grooves having cross sectional area and length adapted to permit ingress of air from thet atmosphere to the interior of said body portion while preventing egress of fluid from said body portion when the nipple is cooperatively engaged with a fluid container.

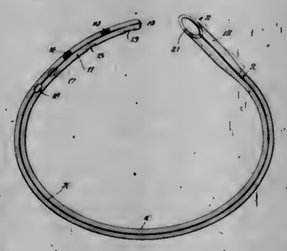
3,190,289
SURGICAL SPONGE
Donald Patience, Westmont, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Feb. 5, 1963, Ser. No. 256,333
2 Claims. (Cl. 128—296)



1. A surgical sponge free of exposed cut edges formed substantially of woven fabric comprising a bleached multi-

layered uncreased folded structure formed of bulked, open-mesh woven fabric, the threads of said fabric being distorted into sinuous and tortuous configurations emphasizing the three-dimensional character of said fabric when compared to the substantially planar character of ordinary surgical gauze, and constituting means whereby said fabric is bulked, said sponge having a weight per unit volume less than that of surgical gauze sponges formed of substantially planar gauze and having the same weight per unit area, said sponge being formed from a lengthwise-folded, three to six ply length of said bulked open-mesh woven fabric folded from both ends so that the end edges are in abutting to closely adjacent relationship to form a rectangular blank, said sponge comprising the central portion and inwardly folded opposite corner portions of said blank, the first folded pair of opposite corner portions of said blank having side edges in abutting to closely adjacent relationship centrally of said sponge, the second folded pair of opposite corner portions of said blank partially overlying the first folded corner portions and partially overlapping each other centrally of said sponge, thus forming a sponge with four major and two minor side edges, areas of said sponge having greater thickness extending along the line from the two opposite sponge corners at the junction of two major side edges and which include folded edges made by folding adjacent corners of the blank inwardly, the four remaining sponge corners each being at the junction of a minor side edge and a major side edge where the folded corner portions of the blank do not overlap.

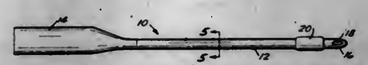
3,190,290
INTERCOSTAL CATHETERS
Ralph D. Alley, Loudonville, and David S. Sheridan, Argyle, N.Y., assignors to Brunswick Corporation, a corporation of Delaware
Filed Feb. 8, 1962, Ser. No. 171,906
6 Claims. (Cl. 128—348)



1. A catheter having a distal end and a proximal end comprising a tube of flexible material transparent to X-rays, a longitudinal line of X-ray opaque material embedded in said material, and an inlet opening interrupting said line of X-ray opaque material near the distal end.

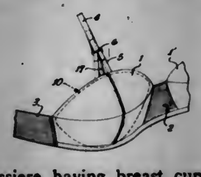
2. A surgical catheter having a distal end and a proximal end adapted to be withdrawn through a secondary incision during a surgical procedure subsequent to its insertion into the body through a primary incision comprising a tube of flexible material and a proximal end portion having an end opening lying substantially in a plane which forms less than a 45° angle with a centerline of said proximal end portion whereby a slanted end section is formed which is adapted to be grasped by forceps for withdrawing the proximal end portion through an incision, said slanted end section smoothly parting tissue surrounding the incision to allow for the passage of the proximal end portion without ripping said tissue during said withdrawal.

3,190,291
SELF-INFLATING BAG CATHETER
Frederic E. B. Foley, 841 St. Clair Ave., St. Paul, Minn.
Filed Oct. 8, 1962, Ser. No. 228,834
4 Claims. (Cl. 128—349)



1. A self-inflating bag catheter comprising an elongated flexible rubbery shaft for draining body fluids therethrough, said shaft having proximal and distal ends and having an inflatable sleeve mounted thereon adjacent said distal end, the proximal end portion of said shaft having a chamber therein, said shaft having an inflating passage therethrough intercommunicating said chamber and said inflatable sleeve, readily openable sealing means normally sealing off communication between said chamber and said inflating passage, an expansible fluid sufficiently impermeable to the wall of said chamber for storage therein maintained within said chamber in a compressed state for inflation of said sleeve upon opening of said sealing means, and means rigidifying the shaft wall forming said chamber to prevent distortion thereof by said inflating fluid.

3,190,292
BRASSIERE CONSTRUCTION INCLUDING BUST FORMS
Mabs R. Barnes, 4636 Los Feliz Blvd., Los Angeles, Calif.
Filed Mar. 29, 1963, Ser. No. 268,962
3 Claims. (Cl. 128—479)



1. In a brassiere having breast cups, each provided with an upper edge and a nipple covering portion, and retaining means for removable bust forms carried by said breast cups, the provision of:

a pair of preformed bust forms, each having a generally convex outer surface and a generally concave inner surface,

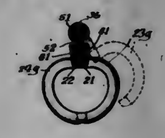
the upper edge portion of each bust form being thinner than other portions and curved to approximate the contour of the upper edge of a breast cup in which said form is to be received,

each such bust form being composed of a light weight, cellular and resilient organic foam composition,

the upper portion of each bust form containing embedded therein a sheet of bendable, weighted resinous composition, an edge of said sheet paralleling a central portion of the upper edge of said bust form, the sheet having an area and weight sufficient to maintain the upper edge of said form in contact with the body of the wearer and to impart a generally convex and fuller appearance to the outer surface of the cup above the nipple area.

3,190,293
BINDER
John D. Schneider, Deerfield, and John L. Nolan, Glenview, Ill., assignors to Hollister, Inc., a corporation of Illinois
Filed Dec. 13, 1962, Ser. No. 246,288
5 Claims. (Cl. 129—24)

1. A ring holder device comprising: first and second identical ring half members each comprising an elongate bar having inner and outer faces and upper and lower edges, said bars including a generally flat base portion, a plurality of ring halves extending from the lower edge of each outer face, a rocking portion near the upper edge having a generally cylindrical surface on the outer face and an inner face which flares outwardly away from the base inner face toward the upper edge, said first and second member being normally disposed with their respective base inner faces adjacent each other and with their ring halves mating to form a closed loop and define a closed ring holder position with said rocking portion inner faces flaring away from each other; a longitudinally slotted cylindrical tube covering said cylindrical surfaces and mounting said ring half assemblies for slidable movement relative to each other as well as swingable movement wherein said cylindrical surfaces rotate relative to said cylindrical tube to bring said rocking portion inner faces toward each other and said ring halves are spread apart to define an open position; locking means on each of said assemblies, said locking means including a projection on each bar opposing a similar projection on the other bar and slidably engageable with said opposing projection when the bars are slidably moved relative to each other, engagement of said projections corresponding to said closed and fully open positions to selectively retain said ring holder in either position; and a handle portion projecting laterally outwardly from opposed ends of said members affording a surface for grasping the members and manipulating the same for slidable and swingable movement between open and closed positions.



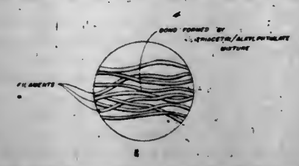
3,190,294
CIGARETTE FILTERS
Donald T. Dunlap, Charlotte, N.C., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Sept. 30, 1958, Ser. No. 764,338
5 Claims. (Cl. 131—208)



1. A shape-retaining cigarette filter plug comprising a plurality of crimped thermoplastic filaments of total denier ranging from about 60,000 to 120,000 and of individual denier ranging from about 3 to 16, all of said filaments because of their crimp contacting other filaments at a plurality of spaced locations, the outermost filaments being plasticized and cohered into a shape-retaining surface without loss of their filamentary character, said plug having a smooth surface.

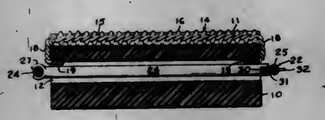
3,190,295
FILTER WITH COMBINATION PLASTICIZER
George P. Touey and John E. Kiefer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 21, 1962, Ser. No. 246,361
4 Claims. (Cl. 131—208)

1. As an article of manufacture a filter rod adapted for use in filtering tobacco smoke, said rod being comprised principally of a bundle of continuous substantially horizontally aligned plasticizable filaments some of which are intermingled carrying thereon from about 5 to 20 percent by weight of said filaments of a combination of compounds, said combination comprising a plasticizing ester mixed with a dialkyl orthophthalate wherein the



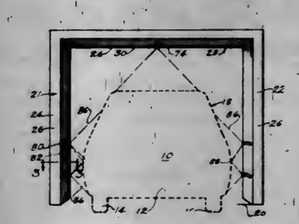
alkyl group is unsubstituted, said combination resulting in minimal diffusion of said ester into the filaments upon storage and assisting in bonding the filaments while at the same time improving the phenol removal ability of the filter rod.

3,190,296
HAIR CURLER WITH DETACHABLE BRUSH MEANS
George Noel Bolinger, Shelbyville, Ill., assignor to Sta-Rite Ginnie Lou, Inc., Shelbyville, Ill., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,760
5 Claims. (Cl. 132—41)



1. A hair curler comprising an elongated body of a material having a substantial degree of elasticity and provided with a longitudinal groove in the surface thereof, a brush unit including a rigid body and bristles projecting therefrom arranged in said groove with said bristles projecting beyond the surface of said body of material, for engagement with a strand of hair, said rigid body having ends lying beyond the ends of said body of material and turned longitudinally thereinto to be engaged thereby to hold said brush in said groove, said body of material beendwise deformable to release the ends of said rigid body therefrom.

3,190,297
SPRAY APPARATUS FOR AN AUTOMATIC CAR WASH
Walter T. Austin and Horance L. Haralson, both of 506 E. Howard Ave., Decatur, Ga.
Filed Sept. 16, 1963, Ser. No. 308,935
4 Claims. (Cl. 134—123)



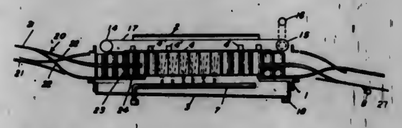
3. In a spray arrangement for an automatic car wash in which automobiles are moved,

(a) a support comprising opposed sides,

(b) a liquid supply means for each of said side frames,

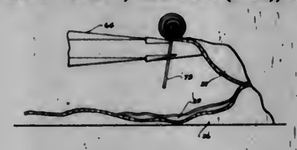
(c) spray nozzles mounted on each of said sides facing each other and being spaced vertically apart for oscillation,
(d) means for oscillating said respective nozzles,
(e) each of said nozzles having an orifice arranged to provide a substantially vertical and fan-shaped spray directed toward the side of an automobile moving adjacent thereto and said nozzles being spaced apart a distance with relation to the distance to said automobile to have the fan-shaped sprays intersect at the side of said automobile,
(f) said means for oscillating said spray nozzles including a member which connects spray nozzles on each of the sides with each other and with the liquid supply means, said member on each side being supported on that side and being disposed at an angle between 45 degrees and 90 degrees with the horizontal thereby locating said nozzles to spray on the side of a vehicle passing between nozzles on opposite sides.

3,190,298
MAGNETIC CONVEYOR AND CAN WASHER COMBINATION
William J. Faller and James Floros, Erie, Pa., assignors to Eriez Manufacturing Co., Erie, Pa., a corporation of Pennsylvania
Filed Aug. 14, 1963, Ser. No. 302,130
4 Claims. (Cl. 134—125)



2. In combination, a conveyor and can washer comprising
a belt supported on spaced pulleys,
a magnetic means comprising two laterally spaced pole plates supported above said belt and between said pulleys,
an inside surface of said belt in close proximity to said plates,
means to direct cans in inverted position to said belt with the bottoms thereof adjacent said belt,
means to move said cans to a position adjacent said plates whereby said cans are lifted toward said plates and moved along said plates by said belt,
and spray manifold having nozzles thereon for directing the spray of liquid into said cans.

3,190,299
AIR-SUPPORTED BUILDING STRUCTURE
Allen M. Moody, Framingham, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 1, 1963, Ser. No. 262,275
2 Claims. (Cl. 135—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A method of assembling and erecting an air erected and supported building structure over an object to be housed therein, said structure being quickly separable into two sections along a first line that extends between points substantially in the uppermost and lowermost regions of the structure by means of a quick release fastener, each of said sections being further separable into a lower side wall and an upper panel along a line spaced from said first line which method comprises, portionally anchoring the lower side walls, joining the two upper panels along said first line by means of said quick release fastener, positioning the joined upper panels over the object to be housed within said structure, connecting the marginal edges of the two upper panels to the opposed marginal edges of the lower side walls, and inflating the assembled structure by means of air delivered to the interior thereof under pressure.

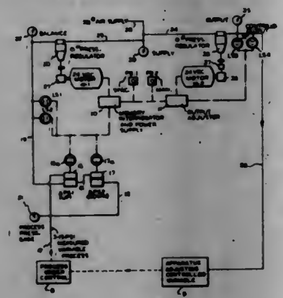
3,190,300
PORTABLE SHELTER ARRANGEMENT
Jack S. Wear'n, Redlands, Calif., assignor of twenty-five percent to Don B. Finkelstein
Filed Dec. 9, 1963, Ser. No. 329,618
1 Claim. (Cl. 135—5)



A portable collapsible shelter of the kind foldable to a closed position and extendible to an open position to form a canopy-like structure comprising, in combination:
a plurality of flexible, bendable spring-like rib members of substantially equal length and comprising a first rib member and a last rib member and at least one middle rib member intermediate said first and said last rib members, and at least said one intermediate rib member having a greater degree of flexibility than said first and said last rib members;
a flexible cover material extendible to form a doubly curved surface structure comprising a part of the surface of a body of revolution and having a plurality of transversely extending rib-receiving pockets on the inside thereof and having a pre-selected transverse length less than the length of said plurality of rib members and a width at the middle thereof substantially greater than the width at the ends thereof and one of said plurality of rib members removably contained in each of said rib-receiving pockets and formed into an arcuate shape thereby, and each of the ends of each of said plurality of rib members extending a pre-selected distance therefrom;
means for pivotally connecting each of the ends of each of said plurality of rib members each means comprising a pivot plate having a plurality of rib-receiving apertures therein in a pre-selected spaced array and a first end of each of said plurality of rib members pivotally and substantially permanently contained in said rib-receiving apertures in a first pivot plate in a sequential ordered array and the other end of each of said plurality of rib members pivotally and detachably contained in said rib-receiving apertures in a second pivot plate in said sequential ordered array to permit removal of said cover material from said plurality of rib members when said rib members are detached from said second pivot plate, and a guard plate on each side of said first and said second pivot plates and spacer means for spacing each of said guard plates a pre-selected distance from said pivot plates, and said plurality of rib members pivotally movable from a close juxtaposition throughout the length thereof in the closed position to a spaced apart condition in the open position, and said first rib member in said open position pivotally rotatable substantially 90 degrees from said last rib member;

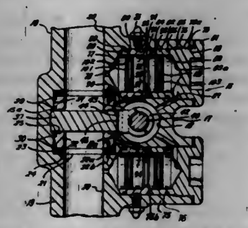
a first mounting plate rotatably coupled to said first rib member substantially at the center thereof and slidably movable in axial directions therealong and a second mounting plate rotatably coupled to said last rib member substantially at the center thereof and slidably movable in axial directions therealong;
a flexible, bendable spring-like strap means pivotally coupled to said first and said second mounting plates for spreading apart said first and said last rib members in the open position and yieldingly bendable into an arcuate curve therebetween adjacent the inside of said cover material for said plurality of rib members in the open position, and said strap member pivotally movable away from said cover material for allowing said plurality of rib members to pivot into the closed position and said strap means yieldingly bendable into a hoop-like curve substantially coplanar with said plurality of rib members in said closed position, and said plurality of rib members yieldingly bendable into a hoop-like curve around said strap means in said hoop-like curve in said closed position;
a first restraining means adjacent the said mounting plates for holding said plurality of rib members and said cover material in the closed position and a second restraining means for holding said pairs of pivot plates adjacent said strap means in said closed position;
a flexible, bendable, spring-like base rib member pivotally coupled to said first pivot plate and pivotally and detachably coupled to said second pivot plate, said base rib member pivotally movable on said first and said second pivot plates from a first condition adjacent said last rib member in said closed position to a second condition substantially coplanar and opposed to said last rib member in the open condition and said base rib member being substantially the same length as said plurality of rib members;
and a base cloth detachably coupled to said cover material adjacent said last rib member and having a pocket therein for receiving said base rib member along an outer periphery thereof to form said base rib member into a pre-selected arcuate shape for providing a ground cover cloth in the open position and said base cloth removable from said base rib member for the condition of said base rib member detached from said second pivot plate..

3,190,301
INTERMITTENT OPTIMAL CONTROLLER
James R. Hackman, Concordville, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 14, 1961, Ser. No. 117,151
4 Claims. (Cl. 137—92)



1. An intermittent optimal process controller for a process having a preselected variable as controlled variable comprising in combination pneumatic memory means sampling and retaining as a function of pneumatic pressure a measure of the magnitude of a process variable exhibiting an optimum value, upon which control is to be base at successive regular time intervals permitting a substantial process variable correction as a consequence of the immediately preceding adjustment of said controlled variable, pneumatic means sensing said process variable as a function of pneumatic pressure and opposing it to said measure of said process variable retained in said pneumatic memory means thereby generating a pneumatic pressure signal proportionate in magnitude to, and in accordance with the direction of change of, said process variable over said measure retained in said pneumatic memory means, and means responsive to said pneumatic pressure signal altering said controlled variable in a direction bringing said process variable towards said optimum value upon which said control is to be base and in an amount proportional to the amount said process variable changed since the immediately preceding sampling.

3,190,302
DUAL SEALED AUTOMATIC LUBRICANT SEALED GATE VALVE
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla.
Filed Jan. 15, 1962, Ser. No. 166,165
7 Claims. (Cl. 137—246.12)

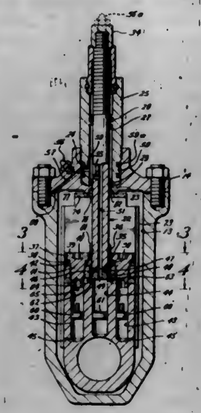


1. An automatic lubricant sealed gate valve including a housing having a gate chamber therein, upstream and downstream flow ports communicating with said chamber, a gate member movable in said chamber relative to the inner ends of said flow ports, sealant grooves disposed about the upstream and downstream flow ports between the related flow port ends and adjacent gate faces, and means for automatically sealing both the upstream and downstream sides of the gate member substantially simultaneously, said means comprising, a separate sealant reservoir communicating with each of said grooves for supplying sealant thereto, a first movable barrier in each reservoir responsive to the differential between the pressure in the upstream flow port and the pressure in said chamber to deliver sealant only to the upstream groove, a second and separate movable barrier in each reservoir responsive to the differential between the pressure in said chamber and the pressure in the downstream flow port to deliver sealant only to the downstream groove, and means for introducing sealant into said reservoirs.

3,190,303
AUTOMATIC PLASTIC SEALED GATE VALVE
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla.
Filed Dec. 24, 1962, Ser. No. 246,754
15 Claims. (Cl. 137—246.12)

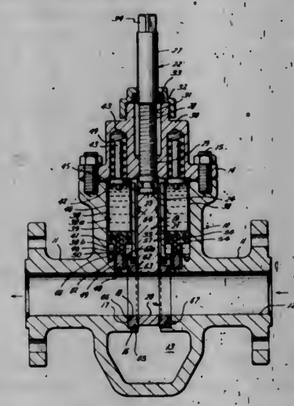
1. In a rising stem gate valve employing automatic plastic sealing, a gate and stem construction comprising, a one-piece, generally rectangular, flat-sided gate member

having a transverse through-conduit opening in the lower end thereof, a sealant reservoir enclosed in the body of the gate member, a barrier slidably disposed in the reservoir, a port providing communication between the exterior of the gate member and the reservoir below the barrier, a passage communicating with the reservoir above the barrier and opening to one of the side faces of the gate member, a stem for reciprocating the gate member,



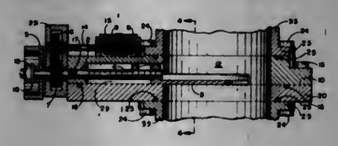
means securing the stem to the gate member arranged to permit limited relative lateral movement between the stem and the gate member, seal means comprising a ring member carrying annular packing elements thereon slidably disposed between the stem and the gate member to maintain a seal therebetween, and sealant supply passage means extending through the stem and said seal means into communication with said reservoir above said barrier.

3,190,304
AUTOMATIC PLASTIC-SEALED VALVE WITH TWO-STAGE SEALING
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla.
Filed Jan. 31, 1963, Ser. No. 255,360
4 Claims. (Cl. 137—246.12)



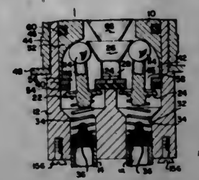
1. An automatic plastic-sealed valve including a housing having a flowway therethrough, a closure member for the flowway movable between positions opening and closing the flowway, a seat in the flowway engageable by the closure member, a full-port sealant groove disposed about the flowway between the seat and the closure member, a sealant reservoir in the housing having one end in communication with the interior of the housing, passage means arranged to connect the other end of the reservoir with said sealant groove in the flowway-closing position of said closure member, upper and lower spaced apart barrier members slidably disposed in said reservoir between the ends thereof, means biasing said barrier members toward each other, means limiting movement of the lower barrier member toward the upper barrier member, a passageway through the lower barrier member communicating the reservoir portion between the barrier members with the reservoir portion below the lower barrier member, and means for introducing sealant into both said reservoir portions, said lower barrier member having at least a portion of its lower face subject to downstream pressure whereby the product of the pressure acting on the area of its upper face is greater than the product of the pressure acting on the area of said lower face.

3,190,305
MIXTURE RATIO CONTROL VALVE
William A. Schulze, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 29, 1961, Ser. No. 163,366
2 Claims. (Cl. 137—255)
(Granted under Title 35, U.S. Code (1952), sec. 266)



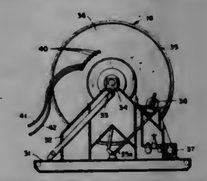
1. In a fluid system, a first source of fluid, a second source of fluid, a container for said fluids, feed lines connecting said sources with said container, the improvement residing in a valve disposed in said line connecting said first source to said container for controlling flow of said first fluid to said container for maintaining a predetermined ratio of said fluids in said container, said valve including a housing provided with upper and lower plates having inlet and outlet ports respectively disposed therein in alignment and an interior chamber intermediate said ports, a gate disposed in said chamber for reciprocating movement between a first position and a second position wherein said gate in its first position provides a fully open passageway from said inlet to said outlet and when in said second position provides a partially open passageway between said inlet and outlet, and said gate provided with an inwardly curved surface, means for moving said gate in a reciprocating movement including a boss secured to one end of said gate, a shaft secured in said housing and having one end in threaded engagement with said boss, said shaft disposed for rotation in said boss for movement of said gate, means for guiding said gate in the reciprocating movement and for limiting movement of said gate, said means including a recess formed in said upper plate and having a pair of substantially parallel surfaces extending about two thirds of the diameter of said inlet port and a pair of seating surfaces disposed in normal relation to said parallel surfaces to provide a seat for said gate, said means for guiding and limiting movement of said gate coacting with said gate so that when said gate is in said second position said inwardly curved surface cooperates with a wall of the chamber to cover only a major portion of said interior chamber to provide the partially open passageway.

3,190,306
SINGLE LEVER FAUCET
Robert A. Staat, Ludlow, and Aaron A. Staat, South Fort Mitchell, Ky., assignors to Bal-Cam, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed July 25, 1963, Ser. No. 297,723
13 Claims. (Cl. 137—328)



11. A mixing faucet comprising in combination, an upright hollow valve housing, a delivery spout carried thereon, said housing including a base having a lower substantially flat face, said base being provided with substantially parallel upright bores constituting two inlet ports for fluid and opening through said face, a pair of valves within the housing for controlling feed of fluid through the inlet ports from a source of supply, a valve seat plate spanning the inlet ports and having seats therein upon which the valves may seat when closed, the housing having a mixing chamber in communication with the delivery spout, and which mixing chamber is isolated from the inlet ports by said valve seat plate, an elongate valve actuating stem supported for longitudinal reciprocation within the housing including means for effecting actuation of the valves, an elongate hollow escutcheon having a top wall supporting the valve housing, and side and end walls depending from the top wall, an elongate escutcheon seal plate having side and end margins fitted within the confines of the depending side and end walls of the escutcheon, said side and end margins being inclined upwardly and outwardly to form elongate channels for receiving caulking material between the seal plate and the escutcheon side and end walls.

3,190,307
HOSE REEL AND HOSE SUPPORT SYSTEM
Douwe de Vries, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,693
8 Claims. (Cl. 137—355.17)



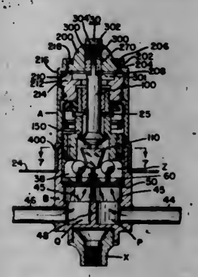
1. A hose reeling apparatus comprising
a frame having spaced-apart vertical uprights and a horizontal axle between said frame uprights,
a drum mounted for rotation about said horizontal axle,
vertical side plates carried in spaced relationship on said drum and extending radially from the axis thereof forming a hose storage area,
a hose adapted to be reeled on and off said drum,
a two-piece disconnectible hose coupling means comprising male and female coupling portions, one portion of said hose coupling means extending through and terminating outside one side plate of said drum at a point radially offset outwardly from said drum axis and adapted to be coupled to another hose from a pressure source, and
means normally securing one end of said hose to said portion of said hose coupling means on the drum side of said side plate.

3,190,308
SPOUT ASSEMBLY
Edward F. Winkle, Golf Manor, and John M. Zeigler, Fairfield, Ohio, assignors to P & W Tool and Die Company, Norwood, Ohio, a corporation of Ohio
Filed Feb. 20, 1963, Ser. No. 260,015
4 Claims. (Cl. 137—359)



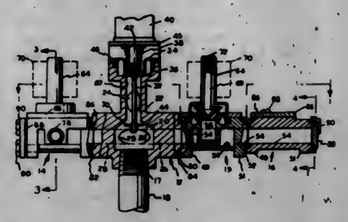
1. A spout assembly which comprises a tubular spout body having a cylindrical section adjacent one end thereof, means on the interior of the spout body adjacent said end thereof for attaching the spout body to a pipe end, there being an outwardly extending flange at said end of the spout body, a hollow housing mounted on the spout body, there being an inwardly projecting flange on the housing surrounding the cylindrical portion, the inwardly projecting flange of the housing being engageable with the outwardly extending flange of the spout body when in an extended position, and spring means resiliently urging the housing toward the extended position, the housing being engageable with a wall surrounding the pipe end when the spout is mounted on the pipe end.

3,190,309
SINGLE LEVER FAUCET AND VALVING PLATE THEREFOR
Robert A. Staat, Florence, and Aaron A. Staat, South Fort Mitchell, Ky., assignors to Bal-Cam, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 14, 1962, Ser. No. 216,835
21 Claims. (Cl. 137—454.6)



1. A water faucet comprising: a first housing having a fluid chamber therein and an outlet port; a second housing having a pair of fluid chambers and a separate inlet port for each of said chambers; a valving plate including a pair of ports each having an individual, independently mounted tiltable valving member associated therewith; means releasably interconnecting said housings for fixedly securing said valving plate between the chamber of said first housing and the chambers of the second housing for disposing the chamber of the first housing in selective, variable fluid receiving relationship with the chambers of the second housing via said valving plate ports and their respective valving means members, and means on said first housing operable for controlling and selectively actuating each of said valving members.

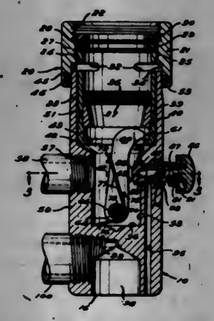
3,190,310
GANG VALVE ARRANGEMENT
Philip George Hensinger, Southfield, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 16, 1960, Ser. No. 76,354
3 Claims. (Cl. 137—583)



1. In a fluid flow control and vent valve, an inlet and vent valve body supporting at least one outlet valve, said inlet and vent valve body having an inlet passage, an outlet passage and a vent passage, said outlet valve controlling fluid flow through said outlet passage, said outlet valve having a fluid flow passage aligned with said outlet passage of said inlet and vent valve body, said outlet valve having an annular chamber formed therein in fluid communication with said fluid flow passage, a discharge passage initiating within the space defined by said annular chamber to cooperate therewith in defining an annular valve seat, a fluid flow control diaphragm spanning said annular chamber and seat, an aperture in said diaphragm positioned centrally of said discharge passage, a separate bleed aperture in said diaphragm communicating between said annular chamber and the backside of said diaphragm, a solenoid actuated piston movable to seal said central aperture from the backside of said diaphragm, a spring biasing said diaphragm toward said annular valve seat, said vent passage comprising an elongated bore, said bore having an inlet opening coaxial therewith and an outlet opening peripherally thereof, a valve seat formed on said vent passage inlet opening, a solenoid mounted on said vent passage coaxial to said bore, a valve closable against said seat, a connecting rod extending coaxially of said bore between said solenoid and said valve, a flexible diaphragm positioned transversely of said bore and connected to said rod in fluid-sealing relation to isolate said solenoid from fluid flowing through said vent passage, said diaphragm being spaced from said valve seat on the other side of said outlet opening, and means for locking said inlet and vent valve body and said outlet valve in assembled, operable fluid flow relation as an integral unit.

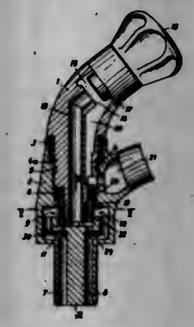
3,190,311
QUICK DISCONNECT COUPLING
Donald A. Boyce, Wickliffe, Basil S. Segro, Cleveland, and Philip W. Morse, Cleveland Heights, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 25, 1963, Ser. No. 311,429
4 Claims. (Cl. 137—583)

1. A quick disconnect fluid coupling comprising first and second coupling members, said first coupling member having an axial bore extending into one end, a chamber in said first member at the inner end of said bore, said second member having a cylindrical portion adapted to fit within said first member bore, sealing means carried by one of said members to make sealing engagement with the said member to prevent leakage from within the coupling to the exterior, said second member having an inlet bore extending axially therethrough, said second member having an inturned lip at the end thereof adjacent said chamber when said second member is interfitted within the bore of said first member, an outlet port on said first member from said chamber, a pivot shaft extending transversely across said chamber in said first member, a latch member pivotally mounted in said chamber on said pivot pin, said latch member having a hook portion at the end away from said pivot pin for engaging said inturned lip on said second member for securing said first and second members together, spring means in said chamber biasing said latch member into engagement with said inturned lip, a radial bore in said first member extending outward from said chamber to the exterior of said first member, a counterbore at the inner end of said radial bore, a valve seat intermediate said chamber and said counterbore, a vent passage extending from said



counterbore to the exterior of said first member, a valve member slidably mounted in said radial bore, an operating button on the outer end of said valve member, a valve poppet on the inner end of said valve member adapted to make sealing contact with said valve seat, spring means biasing said valve member radially outward to urge said valve poppet into sealing contact with said valve seat, whereby inward movement of said valve member initially moves said valve popet away from said valve seat to connect said chamber to said vent passage, and further movement of said valve member causes said valve poppet to engage said latch member and shift said latch member out of engagement with said lip on said second member.

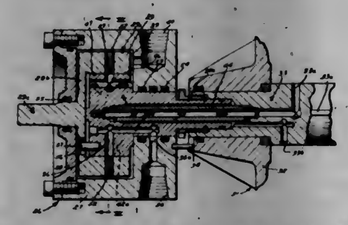
3,190,312
MIXING VALVES
Hans-Heinrich Claasen and Josef Acker, Lobberich, Rhineland, Germany, assignors to Rokal G.m.b.H., Lobberich, Rhineland, Germany, a German company
Filed July 3, 1963, Ser. No. 292,607
Claims priority, application Germany, Feb. 26, 1963, R 34,525
5 Claims. (Cl. 137—625.4)



1. A mixing valve for mixing hot and cold water having a single valve operating handle,

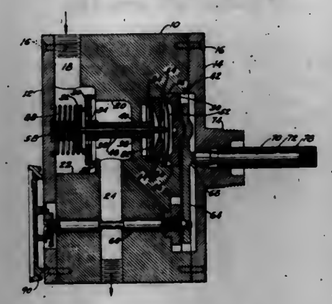
a valve housing having a mixing chamber and hot and cold water inlet canals,
said inlet canals having an opening leading into said mixing chamber at opposite sides,
said operating handle having a shaft portion extending into said mixing chamber,
a valve chamber in the outer end of said operating handle,
a flow canal in said shaft portion communicating with said valve chamber and said mixing chamber,
said mixing chamber having an open top communicating with said flow canal and a closed bottom having a cylindrical recess,
flexible means secured in said mixing chamber opposite said inlet canal openings and spaced from the base of said recess,
said shaft portion having an eccentric extension projecting into said recess,
a movable press member disposed in said recess between said eccentric extension and said flexible means for engagement by said excentric extension to move said flexible means relative to said openings during rotation of said operating handle.

3,190,313
VALVE CONSTRUCTION
Rollin Douglas Ramsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed June 18, 1962, Ser. No. 203,109
9 Claims. (Cl. 137—625.22)



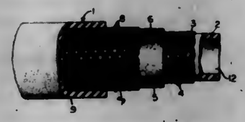
1. A rotary servo valve for a separate rotary fluid actuator having a shaft comprising in combination:
(a) a stationary housing having fluid inlet and return ports;
(b) a follow-up valve member rotatably supported in said housing and said member having means adapted to be drivably detachably coupled to the shaft of the actuator, said member having circular ports respectively connected by bores to said housing ports, and other ports respectively detachably connectable by other bores in said coupling means of said member with fluid passages in the actuator;
(c) a control valve member rotatably supported in said housing concentrically with said follow-up member and having a sealing face in sealing relation to said follow-up member adjacent to said ports thereof, said control valve member having a portion accessible from outside said housing through which a control torque may be applied;
(d) circular plugs disposed in said control valve member flush with said sealing face and concentric with said circular ports, and operative to effectively close them, and hence said valve, when said valve members are in a neutral position; and
(e) groove-defining means in said sealing face of said control member and interconnecting adjacent pairs of said circular plugs, said groove means being operative to interconnect one of said circular ports with one of said other ports when said plugs are displaced from said circular ports.

3,190,314
THERMOSTATIC GAS VALVE
Charles D. Vieos, St. Louis, and Carl A. Smith, Lemay, Mo., assignors to White-Rodgers Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 30, 1962, Ser. No. 190,938
3 Claims. (Cl. 137—630.15)



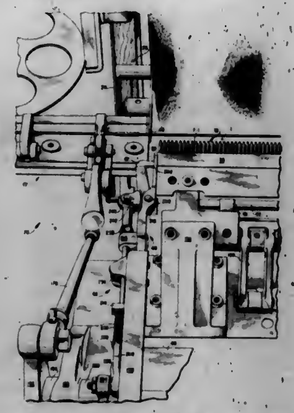
1. In a thermostatic valve, a body member having a passage therethrough, a first normally closed perforated disc valve controlling said passage, a second normally closed disc valve seating on said first valve and closing the perforations therein, a hollow stem on said first valve, a stem on said second valve extending through said hollow stem and projecting beyond the end thereof, a thermostatic actuator, a snap disc between said actuator and said valve arranged to abut said second valve stem and impart a snap action valve opening motion thereto as it is moved from one position to another by said actuator as it responds to decreasing temperature, said snap disc being capable of being flexed beyond said other position by said actuator as it responds to further decreasing temperature, and motion multiplying means between said disc and said first valve stem and spaced from said disc when in its said one position and engaged by said snap disc only when in its said other position.

3,190,315
HOSE
Challen E. Taylor and Paul I. Puddington, Waukegan, and Winn I. Harkleroad, Mundelein, Ill., assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 10, 1962, Ser. No. 223,297
2 Claims. (Cl. 138—127)



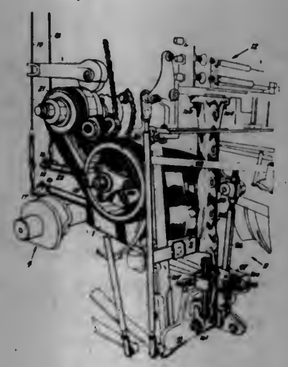
1. In a hose structure for carrying fluids under pressure which includes an inner layer of elastomer material, a pair of spaced reinforcing layers as strength members therein with each layer having interstices therein between the elements forming the reinforcing layers and an outer covering layer of elastomer material, the improvement comprising a layer of elastomer material between said reinforcing layers and having a multitude of lengths of staple textile fibres randomly disposed throughout the material of said layer to substantially prevent flow of said layer during vulcanization whereby the reinforcing layers are prevented from contacting each other when subjected to flexing and pressure during use, the interstices being filled by vulcanized integral extensions of said inner layer and outer covering layer.

3,190,316
WIRE GUIDE AND TUCKERS FOR WIRE CLOTH LOOMS
George E. Meckley, Abbottstown, Pa., assignor to Hanover Tool Company, Inc., Hanover, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1962, Ser. No. 247,047
15 Claims. (Cl. 139—127)



1. In a loom of the type which includes a frame; heddles and a fabric support having an edge extending transversely of the warp and spaced from the heddles; a weft strand feeder affixed on one side of said frame for cyclically projecting successive lengths of weft strands of greater length than the width of the warp transversely of the warp along a feed line spaced from said edge towards the heddles; a laybar and reed for beating fed weft strands towards said edge, a drive for cyclically moving said laybar and reed along a path between an "up" position wherein said reed is disposed between said feed line and said edge, and a "back" position wherein said reed is disposed between said feed line and said heddles coincidentally with shed opening and closing motions of said heddles; the improvement which comprise: a series of weft strand guide units having free end portions spaced from one another for interdigitating between warp strands, means mounting said units on said frame for shifting movement between an extended position in which said free end portions embrace said feed line and in the path of the laybar and reed, and a retracted position in which said units are disposed remotely from said feed line and out of the path of the laybar and reed, means timed with the laybar for cyclically extending and retracting said units respectively and coincidentally with the "back" and "up" motions of the laybar and reed, the free end portions of each of said units being constituted by separable pairs of elements having cooperating weft strand guide surfaces thereon, means mounting said elements for relative motion between a closed position wherein said guide surfaces mate to define a substantially closed eyelet and an open position wherein said elements are separate, said guide surfaces, in the closed position of said elements and the extended position of said units defining a series of axially spaced substantially cylindrical guides coaxial with said feed line, means for maintaining said elements closed throughout the feed motion of said feeder and for opening said elements coincidentally with the termination of the feed; weft strand end tucker means mounted on said frame for movement between an extended position in which tucking elements thereof are disposed in the path of the reed between said feed line and said edge and a retracted position in which said tucking elements are disposed out of the path of the reed and on that side of the edge which lies remote from the feed line, and means timed with the motion of the laybar and reed for extending and retracting said tucking elements respectively and coincidentally with the "back" and "up" motions of the reed and laybar.

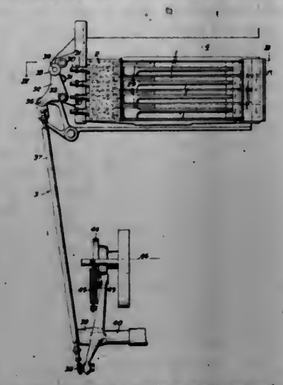
3,190,317
CONTROL DEVICE FOR THE LIFT BOX MOTION ON LOOMS
Jaime Picanol, "Casa Pairal Catalunya," Zandberg, Zillebeke-lez-Ypres, Belgium
Filed July 3, 1962, Ser. No. 207,371
Claims priority, application Belgium, Mar. 20, 1962, 615,295
2 Claims. (Cl. 139—179)



1. Control device for the lift box movements in a loom equipped with a pattern mechanism, including a gear case divided into two compartments, one of said compartments being entirely closed and forming an oil bath, driving means which are in continuous rotary motion and driven means which are controlled by the pattern mechanism of the loom, both said means being located in said one compartment, said driven means comprising a shaft, a crankshaft connected with said shaft and two groups of driven elements mounted upon said shaft, a separate crank carried by each driven element, a connecting rod hinged to said cranks, an oscillating lever hinged to said rod and a safety device connecting said lever with the lift box, said safety device consisting of a catch engaged into a notch and a return spring engaging said catch, and means located in the second compartment of said case and capable of positioning each compartment of the lift box in alignment with the shuttle track of the loom.

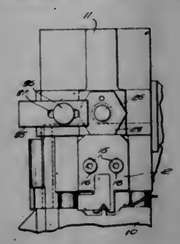
3,190,318
MECHANISM FOR LOCKING AND UNLOCKING THE SHUTTLE ON RISING BOX LOOMS
Jaime Picanol, "Casa Pairal Catalunya," Zandberg, Zillebeke-lez-Ypres, Belgium
Filed July 3, 1962, Ser. No. 207,247
Claims priority, application Belgium, Mar. 20, 1962, 615,291
8 Claims. (Cl. 139—187)

1. Apparatus for locking shuttles against the rear walls of the compartments in the rising box of a loom comprising: an elongated strip associated with each of said compartments; means supporting each strip adjacent its associated compartment and parallel spaced with the rear wall thereof while permitting transverse movement of said strip; a separate lever associated with each strip pivoted at one end to the rising box and operatively connected at its other end with said strip for imparting transverse movement to said strip when said lever is swung about its pivoted end; elastic means connected with said lever and tending to swing it in one direction for moving said strip transversely in the direction of said rear wall thereby locking a shuttle located in said compartment against said



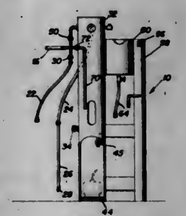
rear wall; a pusher for swinging said lever in an opposite direction for moving said strip transversely in a direction away from said rear wall for unlocking the shuttle; and means for actuating said pusher.

3,190,319
ADJUSTABLE CRIMPING TOOL
Joseph C. Collins, Providence, and Walter S. Gilmore, Riverside, R.I., assignors, by mesne assignments, to North American Philips Company, Inc., a corporation of Delaware
Filed Aug. 7, 1961, Ser. No. 129,857
1 Claim. (Cl. 140—105)



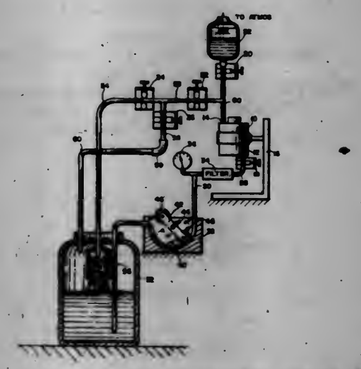
An adjustable crimping tool adapted to be mounted in the reciprocating ram of a press, comprising a block, a pair of plates mounted in the front of said block, the bottom edges of said plates constituting crimping tools for the bare wire and insulation of a conductor, said plate mounting comprising a pair of horizontally spaced bolts each extending through aligned vertical slots in said plates into said block, a second block above said first block, said second block having a recess above the upper edges of said plates, said second block having a horizontal bore extending rearwardly from said recess, a shaft mounted in said bore, and cam means mounted on said shaft in said recess for vertically adjusting the position of said plates, a coil spring in said bore bearing against said shaft, and means for removably locking said cam means in said recess against the action of said spring, said cam means comprising a polygonal indicating plate mounted at the front end of said shaft, a pair of polygonal plates mounted on said shaft behind said indicating plate, a lock pin extending from said indicating plate through said polygonal plates, the sides of said polygonal plates varying in distance from the centers thereof, the bottom side of each polygonal plate abutting the top edge of one of said crimping plates, said removable locking means comprising a plate having an elongated slot receiving a bolt for permitting movement of said plate from a locking position to an unlocked position slidably mounted in the front of said second block and extending over the front of said indicating plate in locking position.

3,190,320
RESIN TRANSFER PLANT
William R. Burgess and Charles D. Riley, El Paso, Tex., assignors to Continental Water Conditioning Corporation, El Paso, Tex., a corporation of Texas
Filed Nov. 28, 1961, Ser. No. 155,397
8 Claims. (Cl. 141—1)



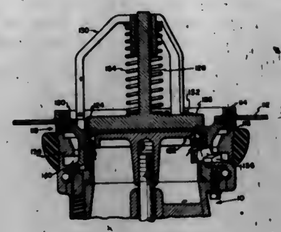
8. The method of handling water conditioning agents consisting of the steps of supporting in a vessel an inverted service unit having exhausted water conditioning agents therein with the top end of the service unit disposed adjacent the bottom of said vessel, hydraulically discharging exhausted agents from the inverted service unit into the vessel, and moving the service unit from its position with the top within the vessel towards a position with the top of the service unit at the top of the vessel hereby enabling the treating agents to discharge into the vessel.

3,190,321
PROCESS AND APPARATUS FOR FILLING AND FOR REMOVING CONTAMINANTS FROM THE FLOTATION CHAMBER OF A FLOTATION INSTRUMENT
John F. Robinson, La Canada, Calif., assignor to North American Aviation, Inc.
Filed July 3, 1961, Ser. No. 121,686
3 Claims. (Cl. 141—1)



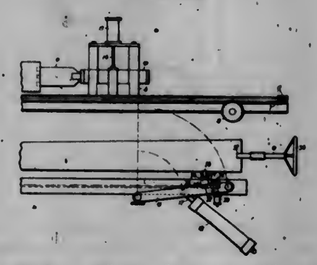
1. A process for removing contaminants and for filling the flotation chamber of a flotation instrument comprising the steps of: circulating the flotation fluid into the bottom and out of the top of said chamber; bleeding gases out of said fluid; and removing particles from said fluid.

3,190,322
AIRCRAFT UNDER-WING FUELING NOZZLE AND VALVE AND SEALING MEANS THEREFOR
Albert William Brown, Newport Beach, Calif., assignor to J. C. Carter Company, Costa Mesa, Calif., a corporation of California
Filed Oct. 3, 1962, Ser. No. 228,042
10 Claims. (Cl. 141—387)



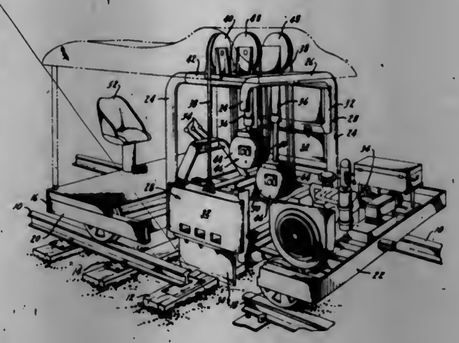
1. In a fueling nozzle characterized by a body portion having an outlet end and an outlet passage and a poppet element adapted to be extended beyond said outlet end to open said nozzle and retracted into said outlet passage to close said nozzle, the improvement which comprises a poppet sealing means of flexible, resilient material and ring-like configuration fitted at said outlet end, said sealing means having a lip extending inwardly from said body portion toward the center of said passage in position to engage the lower periphery of said poppet element when it is in retracted position, said lip having an upper surface adapted to provide a seat for said poppet when said poppet is in retracted position and a lower surface extending inwardly from said body portion into said passage adapted for exposure to fluid pressure within said nozzle to cause said lip to be pressed within said nozzle to cause said lip to be pressed firmly against said poppet in retracted position whereby the sealing effect of said sealing means against said poppet to provide fluid-tight closure of the outlet end of said nozzle is enhanced, said inwardly extending lip being near the upper end of said poppet sealing means and said sealing means having additionally an outwardly extending lip at its lower end, and said nozzle being characterized further by an internal circumferential groove near its outlet end within which groove said outwardly extending lip on said sealing means is fitted.

3,190,323
MECHANISM FOR ALIGNING TIMBER FOR SAWING
Nils Thure Georg Johansson, Bruzaholm, Sweden
Filed Mar. 28, 1963, Ser. No. 268,637
1 Claim. (Cl. 143—92)



Saw machine comprising a foundation, a stationary, longitudinally extending horizontal saw table supported on said foundation, a vertically cutting saw supported at one end of said table, a log holder displaceable along said saw table, means for moving said log holder back and forth along said table, means for raising and lowering said log holder with respect to said table, a log pre-aligning mechanism disposed below said table, said pre-aligning mechanism comprising an outer rectangular frame positioned below and parallel to said table, said outer frame being shorter than said table, a pivotally connected link extending from said foundation to each corner of said outer frame, said links being of such length that when raised to their vertical positions they will raise a log supported by said outer frame substantially into alinement with said log holder, means for raising and lowering said links from their horizontal to their vertical positions, an inner frame supported within said outer frame, means connecting said inner frame to said outer frame for raising and lowering said inner frame with respect to said outer frame, spaced apart longitudinally displaceable slides mounted on said inner frame, a transversely displaceable slide mounted on each of said longitudinally displaceable slides, means for moving said transversely displaceable slides transversely of said longitudinally displaceable slides and means on said transversely displaceable slides for supporting a log to be sawed, said last named means comprising two spaced apart rollers.

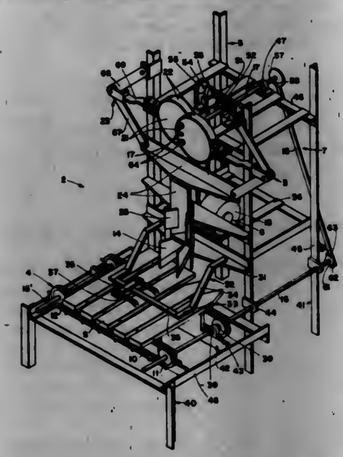
3,190,324
FLUID PISTON AND CYLINDER ASSEMBLY FOR USE IN RAILWAY TIE CUTTERS AND THE LIKE
Robert J. Foxx, Greenfield, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 27, 1962, Ser. No. 212,902
13 Claims. (Cl. 144—2)



1. In a device for cutting ties beneath the rails of a railroad track, a frame, wheels mounted on said frame for moving it over the railroad track, a weighted blade mounted on said frame for movement toward and away from the tie to be cut, means for moving said blade toward and away from the tie to be cut including a fluid ram and means for actuating it,

said ram including a cylinder, a first piston reciprocal in said cylinder and a chamber in said first piston, a second piston reciprocal in said chamber, inlet and outlet port means in said cylinder, passage means in said first piston extending toward and opening adjacent the cylinder wall, said passage means connecting said chamber with the inlet and outlet port means when the first piston is in one position, said passage means being closed by said cylinder during a portion of the movement of said first piston, an additional passage in said first piston connecting the inlet and outlet port means with said chamber, and a check valve in said additional passage.

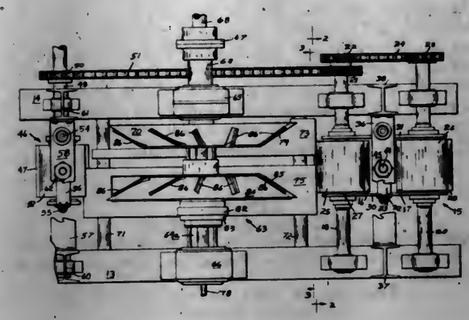
3,190,325
STAKE MAKING MACHINE
Elmer Mood, 501 N. Trinity St., Gilmer, Tex.
Filed July 2, 1962, Ser. No. 206,970
2 Claims. (Cl. 144—30)



1. An automated power machine for making and stacking articles pointed on one end, comprising in combination:

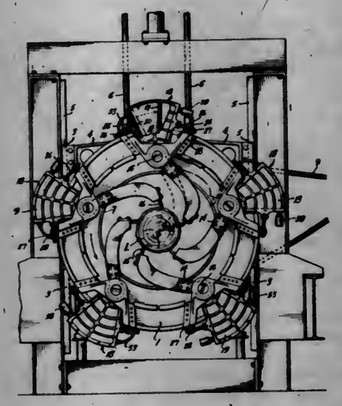
(a) a frame assembly supporting an article conveyor assembly and a power shearing assembly,
(b) a conveyor drive including spaced lugs in said conveyor assembly and a power shearing tool in said shearing assembly,
(c) V-shaped cutter blades in said shearing assembly and a V-shaped member in vertical alignment with said blades and in horizontal alignment with the top of said conveyor assembly,
(d) conveyor control means cooperating with said power shearing assembly and said conveyor assembly for applying power for moving said conveyor drive continuously in equally timed sequences a distance equal to one lug spacing whereat said lugs substantially align horizontally with said cutter blades,
(e) means for supporting said articles over said conveyor drive and between said lugs,
(f) stationary means to prevent upward movement of said articles during shearing operations,
(g) said power shearing tool supported in said power shearing assembly at a location closely adjacent one lateral edge of said conveyor drive,
(h) a single power means for applying a shearing stroke and a retraction stroke to said power tool and applying power to said conveyor drive.
(i) and means in said control means for moving said drive following each shearing operation and during said retraction stroke in such a manner as to cause said one end of one said article to be positioned in operating relation to said tool following each conveyor drive movement,
(j) stacking means at one end of said conveyor assembly for receiving said articles in a vertical stack,
(k) and means operated from said single power means in said stacking means cooperating with said control means to move said vertical stack a distance of one lug spacing after a predetermnied number of articles have been stacked.

3,190,326
CHIPPER APPARATUS
George Martin Standal, Chemainus, British Columbia, Canada
Filed May 27, 1960, Ser. No. 32,346
4 Claims. (Cl. 144—162)



1. A chipper apparatus adapted to form smooth edged lumber from rough stock comprising frame means, a pair of opposed coaxial cutting heads rotatably mounted on said frame means, each of said cutting heads being composed of a conical frustum and having mounted about the periphery thereof a plurality of projecting cutting knives, each knife having a bent cutting edge with one portion extending along the conical section of the head and the remaining portion extending along the inner face of the head, feed means adapted to propel stock between said pair of cutting heads, and synchronized drive means operatively connected to said cutting heads and said feed means whereby the knives are enabled to produce usable wood chips.

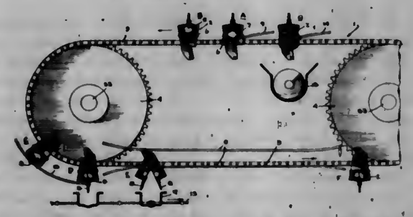
3,190,327
LOG BARKER WITH VANE-ACTUATED BARKING ARMS
George E. Robbins, Tacoma, Wash., assignor to Nicholson Manufacturing Company, Auburn, Wash., a corporation of Washington
Filed Nov. 30, 1959, Ser. No. 856,230
5 Claims. (Cl. 144—208)



1. In a rotary ring log barker, an arm projecting from the ring inwardly, pivot means mounting said arm on the ring for swinging of its inner end about an axis extending parallel to the axis of the ring, a housing carried by said ring adjacent to said pivot means and having end walls

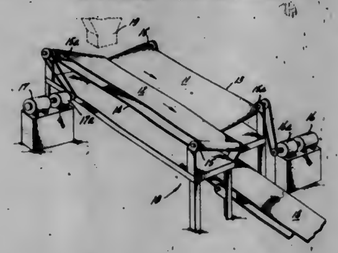
disposed respectively in planes substantially parallel to the axis of said pivot means, a vane slidably fitted in said housing and connected to said arm for swinging therewith relative to said housing about the axis of said pivot means, means for supplying fluid under pressure to said housing between said vane and one of said end walls for swinging said vane in a direction to urge said vane toward the opposite end wall and the swinging end of said arm inwardly, and combined venting and pneumatic snubbing means carried by said opposite end wall and including a cylinder having a vent aperture therein and a plunger received in said cylinder, movable relative to such vent aperture and engageable by said vane to be moved thereby into position closing such aperture for snubbing swinging of said vane toward said opposite end wall.

3,190,328
EGG BREAKING HEAD
Paul L. Twedt and Charles H. Cook, Springfield, Mo., assignors to Henningsen Foods, Inc., a corporation of Texas
Filed Oct. 29, 1962, Ser. No. 233,837
10 Claims. (Cl. 146—2)



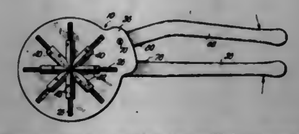
1. An improved egg breaking unit for mounting on a moving chain comprising a mounting plate adapted for attachment to a link of the chain having a pivot thereon, a pair of mounting blades pivotally connected to each other and to said mounting plate by said pivot, an egg supporting cup portion at adjacent ends of each of said blades, an egg holding member pivotally connected to each blade in spaced relation to said cup portions, and knife means pivotally connected to at least one of said blades for cutting the shell of an egg held between said cup portions and said egg holding members.

3,190,329
ARTICLE SCOURING CONVEYOR
Malcolm S. Bradway, 621 W. Maple St., Hinsdale, Ill.
Filed July 22, 1963, Ser. No. 296,762
6 Claims. (Cl. 146—49)



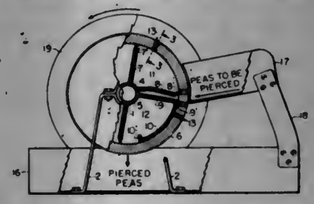
1. A system for scouring surfaces of regular and irregular shaped articles including a plurality of conveying belts having substantially identical conveying and supporting surfaces extending alongside one another, for movement along parallel paths, said surfaces having means thereon to impart a scouring action to objects placed upon said surfaces, said surfaces being disposed at angles to one another in upwardly divergent fashion so as to form a troughlike structure for supporting articles to be scoured therein, and means for moving said surfaces at different speeds with relation to one another such as to cause tumbling and slippage of objects on said surfaces while being conveyed and supported by said belts.

3,190,330
GARNISH CUTTER FOR FRUIT AND VEGETABLES
Robert E. Hawkins, Kansas City, Mo., assignor to Michael L. Antos, Kansas City, Mo.
Filed May 20, 1963, Ser. No. 281,704
5 Claims. (Cl. 146—203)



3. Apparatus for garnishing an edible, severable consumer product comprising:
a support having an inner periphery defining a product-receiving space and provided with a plurality of elongated, circumferentially spaced openings therein extending radially with respect to said space;
a blade for each opening respectively, each blade having a pair of interconnected, angularly disposed portions, the outer extremities of said portions defining a pair of outer, product-severing edges for the corresponding blade;
means extending into each opening respectively and coupled with a corresponding blade for mounting the latter for radial movement in opposed directions toward and away from said space, said blades being movable inwardly of said periphery and into product-severing and garnishing positions at which said outer edges of each blade are disposed in juxtaposition with proximal edges of adjacent blades, whereby a product in said space will be severed and garnished by said edges as said blades move toward and into said positions;
cam structure reciprocably mounted on said support and coupled with said blades for moving the latter in said opposed directions as said cam structure is reciprocated; and
means coupled with said cam structure for reciprocating the latter.

3,190,331
METHOD FOR PIERCING PEAS
Edison Lowe, El Cerrito, and Everett L. Durkee, El Sobrante, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
Original application Jan. 4, 1963, Ser. No. 249,541, now Patent No. 3,141,484, dated July 21, 1964. Divided and this application Dec. 3, 1963, Ser. No. 331,984
1 Claim. (Cl. 146—242)
(Granted under Title 35, U.S. Code (1952), sec. 266)



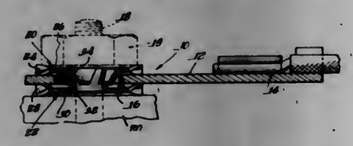
A method for piercing fresh green peas which comprises impaling peas on a piercing means solely by the action of a fluid pressure differential applied at a level sufficient to obtain effective piercing of the skin of the peas but insufficient to rupture or mash the peas, then ejecting the pierced peas from the piercing means solely by the action of a fluid pressure differential applied at a level sufficient to obtain a positive ejection but insufficient to cause rupture or mashing of the peas.

3,190,332
FLUID-TIGHT SAFETY DEVICE FOR FILLING, STORING AND EMPTYING FLEXIBLE CONTAINERS
Roger Albert Bernard, Conflans-Ste.-Honorine, France, assignor to Le Joint Francais, Paris, France, a French corporation
Filed Feb. 23, 1962, Ser. No. 175,176
Claims priority, application France, May 9, 1961, 855,070
3 Claims. (Cl. 150—8)



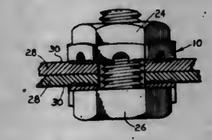
1. A fluid-tight safety device for filling, storing and emptying flexible containers having an aperture in the wall thereof, comprising a first side piece and a second side piece having relatively wide opposed faces and having the peripheral ends of the wall of the container adjacent the aperture inserted therebetween, said first side piece including an annular element inserted through said aperture and having a flange portion forming underneath the rim of the aperture in the wall of the container the opposed face for said first side piece, a plane washer adjacent the wall of the container arranged between the wall and said opposed face of the first side piece, and a counter washer having a flared open V-shaped cross section with the point of the V resting on said flange portion of said first side piece and the open end of the V extending toward said plane washer, said second side piece being arranged external to the container and being tightened along the external portion of the annular element of said first side to provide a tightening pressure on the rim of said aperture of the container against said plane washer, said annular element forming a passage orifice for the material to be contained in said container, said passage orifice having a stepped surface, an annular sealing ring arranged on a step of the orifice and a threaded stopper for said orifice for sealing said annular ring against the step of said orifice.

3,190,333
DUAL WASHER LOCKING DEVICE
James C. Lanius, Jr., Elgin, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,460
4 Claims. (Cl. 151—35)



1. In combination with an apertured workpiece, a locking device including a pair of sheet metal lockwashers with said apertured workpiece positioned therebetween, each washer having an annular body portion, yieldable locking teeth formed integral with and projecting axially and oppositely beyond the bounding planes of each of said body portions, and washer coupling means associated with the inner margins of said body portions and extending into the aperture of said workpiece for securing said washers against separation and for maintaining said washers in coaxial and relatively rotatable relation, said washer coupling means including a circumferentially disposed swageable section along at least one inner body margin overlying a complementary circumferential section along the other inner marginal sections, the teeth projecting from one side of one lockwasher positioned in operative association with an adjacent surface of the workpiece and the teeth projecting from one side of the other lockwasher positioned in operative association with the opposite adjacent surface of said workpiece whereby said lockwashers and said workpiece are secured against unauthorized separation with the lockwashers freely rotatable with respect to said workpiece, the teeth projecting from the other side of each lockwasher positioned to lockingly impinge opposed surfaces when clamped thereagainst.

3,190,334
LOCKING AND SCRAPING WASHER
Wilhelm K. Wigam, Hamburg, Germany, assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 24, 1963, Ser. No. 311,079
4 Claims. (Cl. 151—37)



1. A fastening assembly comprising a locking and work surface scraping washer made of sheet metal for use with cooperating rotary clamping members such as a nut and bolt to electrically connect previously coated flat metal sheets secured together by the rotary clamping members, said washer being provided with a plurality of upstanding flange portions substantially parallel to the axis of the washer, said flange portions being juxtaposed one another and configured to provide a polygonal shape for the reception of one complementary shaped rotary clamping member to permit rotation of the washer therewith during assembly with said sheets, but preventing rotation of the member when in assembled condition with said sheets, a plurality of spaced tongue portions on the washer each integrally joined to a pair of juxtaposed flange portions and extending radially inwardly substantially perpendicular to the planes of the flange portions for supporting the tongue portions along the direction in which they extend, said tongue portions defining a central opening at the inner end thereof, each of said tongue portions being provided with a pair of radial edges, each of said edges being formed along their entire length to axially extend uniformly from said tongue portion in a direction generally opposite to that of the flange portions to provide sharp scraper teeth in a common plane for impinging upon and cleaning an exposed surface of one of the secured metal sheets, when rotatably forced by the rotary clamping member into engagement therewith, the other rotary clamping member being associated with means for impinging upon and cleaning an exposed work surface of the other metal sheet when forced into engagement therewith by said other rotary clamping member to provide an electrical connection through the clamping members to each of the metal sheets.

3,190,335
TRACTION DEVICE FOR VEHICLE WHEELS
Morris Isaacman, 185 S. Flagg St., Worcester, Mass.
Filed Nov. 22, 1963, Ser. No. 325,655
3 Claims. (Cl. 152—216)



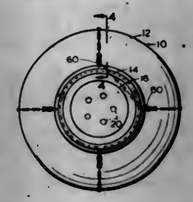
1. A traction device for vehicle wheels comprising the combination with a wheel for a vehicle having a pneumatic tire on the rim thereof, of a disc adapted to be secured to the wheel by the conventional wheel lugs, said disc being concentrically mounted with respect to the wheel and having a diameter approximately the same as the wheel, a series of fixed holders, each of which includes means forming a guide-way, mounted in radial relation on one side surface of the disc, said holders being equally circumferentially spaced thereon, an elongated member slidably arranged in the guide-way of each holder, a traction element on and arranged at right angles with respect to each member, the elements overlying the tread of the tire, and interengaging means between each member and its respective holder providing an adjustable limit for relative radial outward motion of the members and their traction elements, said means however allowing for relatively inward radial movement of the respective members so that as the periphery of the tire strikes the ground and becomes indented the traction element on each member can move relatively inwardly to accommodate the indentation of the tire, the means limiting radial outward motion of the members and traction elements comprising a rod on each member and interengaging means on each holder for its rod, said rods each being pivoted on its member, and the interengaging means on each holder including a block having a slot with undercut side portions to receive its rod with a manual snap fit.

3,190,336
TRACTION DEVICE FOR VEHICLES
George Batori, 63 Oakwood Ave., Hamburg, N.Y.
Filed Apr. 11, 1963, Ser. No. 272,491
4 Claims. (Cl. 152—227)



1. A traction device for tires having a U-shaped traction member, said traction device comprising an inside insert comprising a symmetrically shaped resilient steel strip straight in its middle part and on its two ends formed into inverted V-shaped parts, the continuation of the said V-shaped parts bent backwards, parallel to the legs of the V, these backward bent parts fixed to the sides of the traction member and the straight part of the insert connected to the middle part of the traction member, the sides of the traction member being free to flex in a transverse direction, a plurality of these traction members and inserts adapted to be mounted on the peripbery of a tire with the sides in radially inward position secured on both sides of the tire by side members.

3,190,337
TIRE CHAIN ASSEMBLY
Travis W. Williamson, 6930 Western Ave., Omaha, Nebr.
Filed Oct. 2, 1961, Ser. No. 146,033
4 Claims. (Cl. 152—233)



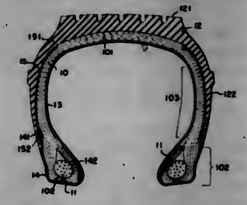
4. An anti-skid device for a rim-mounted tire comprising means attachable to said wheel for providing a plurality of fixed anchor lugs at spaced apart points adjacent the periphery of said rim on the outer and also on the inner side of said wheel, said lugs being in pairs, the lugs of a pair being disposed on the outer and inner sides of a wheel opposite each other, a plurality of flexible units for extending transversely around the outer side of a tire at spaced apart places around the largest periphery of the tire, said units each comprising a tread member for extending in a use position transversely across the exterior portion of the tire, and further comprising releasable means for securing one of the ends of said tread members to one lug of a pair and means for securing the other end of that tread member to the other lug of the same pair in such a way that the other end will not become detached if the respective flexible member is moved into a storage position extending across only one side of the wheel, said flexible units each having one end which is normally anchored to a lug and a transposable end which is released from its lug for movement to a storage position, the lugs being spaced such that when the transposable end of a given flexible unit is disconnected from a respective certain lug, then that transposable end can be connected for storage to a lug on that opposite side of said wheel from said certain lug and mounted on said attachable means, means for causing said flexible units to be taut while in storage positions and the outermost ends of said lugs projecting to the side of said wheel a distance sufficiently that when said flexible units are in storage positions they do not come into direct contact with said rim.

3,190,338
REPAIRED TIRE AND MAKING SAME
Merritt W. Wolfe, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 15, 1962, Ser. No. 230,573
4 Claims. (Cl. 152—370)



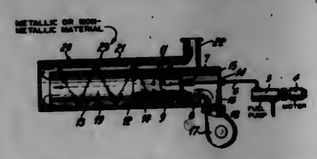
2. A repaired pneumatic tire constructed with a cord reinforced carcass and a vulcanizable elastomer, an irregular shaped cavity extending into the carcass, the cords in said cavity being elastomer-free and in intimate contact with a polyurethane patch, that has been formulated from a liquid reaction material prepared from the combination of (1) a degassed polyester polyol having an acid number not greater than 5, and (2) an organic diisocyanate, the combination of (1) and (2) being cross-linked by means of a diamine, said polyurethane patch positioned co-extensive with the walls of said cavity, the elastomer-free reinforcement cords of the carcass extending into the polyurethane patch material an appreciable extent whereby the reinforcement cords are capable of carrying a substantial tensile load across the patch area.

3,190,339
PNEUMATIC TIRE
Joseph Leibee, Westminster, and Lavera J. Ahles, Meadowood, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 24, 1963, Ser. No. 253,562
5 Claims. (Cl. 152—374)



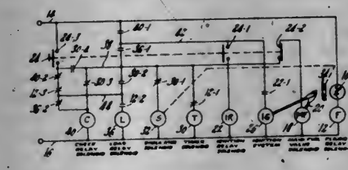
1. A pneumatic tire characterized by a structure comprising
(a) a carcass of essentially U-shaped cross section and comprising a plurality of plies of elastomer-embedded nylon cords, said carcass comprising (a') sidewall regions and (a") bead regions near the open ends of said U-shaped cross section,
(b) an elastomeric shell, including a tread portion, in overlying and surrounding contact with said carcass, said elastomeric shell being made up of predominantly styrene-butadiene rubber stock,
(c) chafer strips surrounding the bead regions of said carcass whereby to prevent direct contact between the ends of said U-shaped cross section and the metallic rim of an automotive vehicle wheel upon which said tire is to be mounted, and
(d) a sheet-like layer of halogenated butyl rubber stock covering the outer face of each sidewall region of the carcass and each bead region of said carcass, and extending circumferentially for the full tire circle, whereby to insulate the cords of said carcass against absorbing moisture from the environment.

3,190,340
HEATING APPARATUS FOR BURNING GASES OR LIQUID FUELS, ESPECIALLY FUEL OIL
Werner Hans Fritsch, Wuppertal-Barmen, Germany, assignor to Dr. Schmitz & Apelt, Industrieofenbau G.m.b.H., Wuppertal, Germany
Filed Sept. 5, 1962, Ser. No. 221,590
11 Claims. (Cl. 158—4)



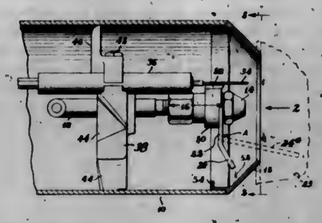
1. A heating apparatus for burning gaseous or liquid fuels, especially fuel oil, comprising, in combination, a cup-shaped combustion chamber having a closed end and an open end; combustion gas guide means communicating with said open end of said combustion chamber and forming therewith a resonance system; air passage means communicating at one end thereof with said combustion chamber intermediate the ends of the latter; air blower means connected to the other end of said air passage means for producing a continuous pressure on the air in said air passage means so that said air permanently tends to enter said combustion chamber, and fuel supply means communicating with said combustion chamber through said closed end thereof and including mechanical means for cyclically feeding fuel at a predetermined frequency into said combustion chamber to produce during combustion thereof compressional vibrations having timely spaced compression periods in said combustion chamber substantially preventing entrance of air from said blower during said compression periods whereby air is intermittently supplied through said air passage means to said combustion chamber at said predetermined frequency at times between said compression periods.

3,190,341
CHECKING SYSTEM FOR CONDITION RESPONSIVE APPARATUS
Philip Giuffrida, North Andover, Donald L. Graves, Woburn, and Elihu C. Thomson, Wellesley, Mass., assignors to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 24, 1963, Ser. No. 311,141
10 Claims. (Cl. 158—28)



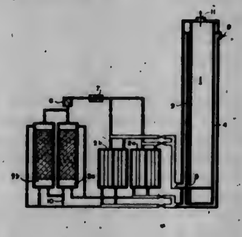
1. A combustion control system comprising a flame sensor adapted to sense the presence of flame in a supervised combustion chamber,
a flame relay controlled by said flame sensor to indicate the presence or absence of flame in the supervised combustion chamber,
a load control device responsive to said flame relay for controlling the flow of fuel to said combustion chamber,
simulator means for allowing said flame relay to be de-energized independently of the presence of flame in said combustion chamber,
a first timer operative to provide a first timing cycle,
flame relay responsive means for causing said first timer to initiate a timing cycle upon detection of flame in said combustion chamber by said flame sensor,
means responsive to said first timer to actuate said simulator means at the end of said first timing cycle,
means responsive to the de-energization of said flame relay to de-energize said load control device and to reset said first timer,
a second timer operative to provide a second timing cycle of longer duration than said first timing cycle,
said second timer being operatively connected to terminate the flow of fuel to said combustion chamber at the end of its cycle,
means for causing said second timer to initiate its timing cycle upon energization of said load control device,
and means responsive to the end of each cycle of said first timer to interrupt the cycle of and reset said second timer.

3,190,342
DRIBBLE VAPORIZER FOR AN OIL BURNER NOZZLE
Earl K. Smith, Peoria, Ill., assignor to Hart Heat, Inc., Peoria, Ill., a corporation of Illinois
Filed Feb. 17, 1964, Ser. No. 345,250
6 Claims. (Cl. 158—76)



1. In combination, a gun type pressure atomizing mechanical draft oil burner, a nozzle adaptor therefor, a nozzle mounted on said adaptor and adapted to be inserted into a combustion chamber, and an oil drip receiver, said oil drip receiver having a hub and a depending trough, and fastening means for securing the same to said adaptor, said fastening means being operable to effect drawing of the lower portion of the inner wall of said hub into tight metal-to-metal engagement with the lower portion of said adaptor to thereby prevent fuel dribbling from said nozzle creeping upstream along said adaptor, said depending trough receiving any drops of fuel dribbling from said nozzle, said depending trough being in heat exchange relationship with said nozzle and adaptor by reason of said metal-to-metal contact for vaporizing any accumulation of oil by using the residual heat of said nozzle and adaptor conducted to said oil drip receiver and the heat emanating from a combustion chamber following a burner operation.

3,190,343
METHOD AND APPARATUS FOR THE SPRAY DRYING OF HEAT SENSITIVE LIQUIFORM MATERIALS
Peter Hussmann, Florence, Italy, assignor to Birs Beteiligungs- und Verwaltungsgesellschaft A.G., Basel, Switzerland, a corporation of Switzerland
Filed Sept. 28, 1962, Ser. No. 227,673
Claims priority, application Germany, Oct. 5, 1961, B 64,255
30 Claims. (Cl. 159—4)

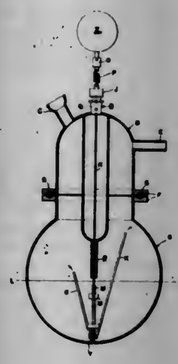


11. The method of supplying, for at least one diurnal period, a continuous supply of air into a drying tower having a jacket formed by an inner and an outer tower wall defining a space therebetween, said space being divided into a first and a second region by an intermediate wall and the walls of the first region being preconditioned by heat-exchange with atmospheric air at one temperature, which comprises

(a) during the day
cooling atmospheric air having a higher temperature in the first region by releasing its heat to the walls of the first region; then
dehumidifying the air by feeding it through a dehumidifying zone; then
passing the dehumidified air through the second region to exchange heat with the walls thereof, and then
feeding the dehumidified air having a temperature not exceeding about 60° C. into the drying tower continuously, and

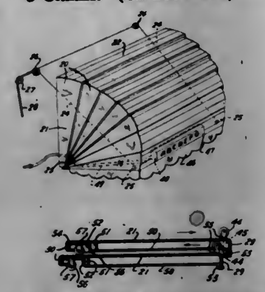
(b) during the night
heating atmospheric air having a lower temperature in the first region by absorbing heat from the walls of the first region; then
dehumidifying the air by feeding it through a dehumidifying zone; then
passing the dehumidified air through the second region to exchange heat with the walls thereof; and
feeding the dehumidified air having a temperature not exceeding about 60° C. into the drying tower continuously.

3,190,344
CENTRIFUGAL DEVICE FOR AGITATING, SPRAYING AND EVAPORATING LIQUIDS
Ralph M. Nester, 8 Crestfield Road, Wilmington, Del.
Filed Oct. 3, 1960, Ser. No. 60,015
9 Claims. (Cl. 159—6)



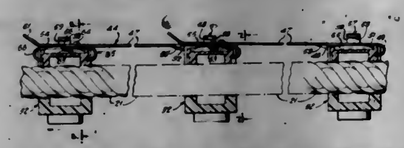
7. A device which comprises in combination a vessel adapted to hold material; positioned in said vessel a rotatable shaft capable of being rotated in a substantially vertical position and having one end adapted for attachment to a driving unit and having mounted thereon and at an angle to said shaft at least two tubes to be rotatable with said shaft, said tubes being mounted at different angles to said shaft thereby travelling in different paths upon rotation of said shaft, said tubes being open at their lower ends which are located near the bottom of said vessel, said tubes being of such lengths that their ends furthermost from the bottom of the vessel are near the upper walls of said vessel, and said tubes having an opening at their ends near said walls communicating with the said opening in the lower end through the bore in the tube and being positioned to spray material lifted through said tubes, upon their rotation, against the said walls; and means for driving said rotatable shaft comprising a motor and a flexible coupling fixed to said shaft and to the driving shaft of said motor.

3,190,345
SUN BLINDS OR SHUTTERS
Joseph Henry Rothwell, 7 Hillary Drive, Crowthorne, Berkshire, England
Filed June 7, 1962, Ser. No. 200,857
3 Claims. (Cl. 160—132)



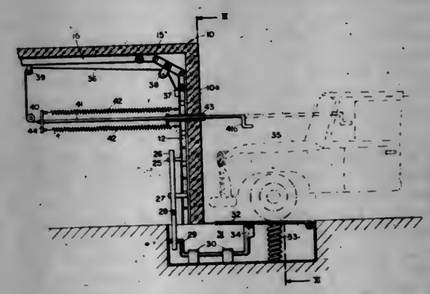
1. A sun blind formed by an extensible and collapsible hood comprising a plurality of inter-fitting hood sections each having two sides and a top portion, means for pivoting the lower ends of the sides of the hood sections to one another to permit the hood sections to swing about a common axis into and out of one another, sets of rollers and cooperating track plates interconnecting adjacent hood sections at each of their sides, means for mounting said rollers respectively externally on the sides of inner hood sections so as to extend substantially radially of the pivotal axis of the hood sections when the hood sections are in their extended position, means for mounting said track plates each internally on a side of a hood section next outermost to that carrying the related roller so that the track plate extends transversely of the axis of its roller and between such roller and the hood section carrying the roller, buffer stop means to cooperate with said rollers to limit pivoting movement of the hood sections, sets of guiding rollers and means for mounting said guiding rollers internally on the sides of the hood sections with their axes substantially radially of the pivotal axis of the hood section so that the guiding roller on each side of each hood section bears against the outer face of the next adjoining inward hood section.

3,190,346
VERTICAL VANE TRAVERSE MECHANISM
Joseph P. Arena, Long Island City, and Robert J. Smith, New Rochelle, N.Y., assignors to Verticals, Inc., Bronx, N.Y., a corporation of New York
Filed Nov. 21, 1962, Ser. No. 239,204
9 Claims. (Cl. 160—172)



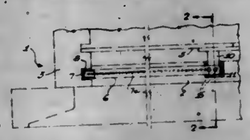
1. A vertical vane blind comprising a plurality of carriers relatively longitudinally movable between a contracted and expanded position, a substantially similar link having a trailing end section connected to each of said carriers and a leading end section and extending longitudinally into longitudinally movable overlapping relationship with the next successive link, mating separable interlocking means disposed on said trailing and leading end sections of each of said links, a first detent located on each of said carriers and spaced from and directed toward a face of the link trailing end section secured to the respective carrier, and a second detent located on a face of the leading end section of each of said links and in longitudinal alignment with said first detents and directly oppositely to said first detents, at least one of each of said first and second detents having an inclined cam defining surface whereby said interlocking means on successive links are urged into engagement when the respective trailing and leading end sections thereof are in registry.

3,190,347
GARAGE DOOR
Patrick Lee, Woodside, N.Y., assignor of one-half to Patrick McTernan, Long Island, N.Y.
Filed May 14, 1962, Ser. No. 194,552
11 Claims. (Cl. 160—189)



1. A control system for a vehicle-garage entry including a fixed frame lying in a vertical plane, a door in said frame and mechanism for displacing said door on said frame between an open position and a closed position, said system comprising a longitudinally extending actuating member mounted adjacent said door and coupled therewith while being linearly movable perpendicularly to said plane and transversely to said door substantially parallel to the ground between a withdrawn position and an extended position upon closure and opening of said door, respectively, said member in its extended position projecting outwardly from the frame and being accessible to an operator in the driver's seat of a vehicle in front of said door, a treadle depressible by said vehicle in front of said door, first operating means for said mechanism controllable via said member in said extended position for initiating closure of said door, and second operating means for said mechanism controllable by said treadle for initiating reopening of said door.

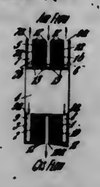
3,190,348
WINDOW SCREEN MOUNTING
Romuald Migneault and Fernand W. Migneault, both of 332 St. Andre St., Gatineau, Quebec, Canada
Filed Feb. 11, 1963, Ser. No. 257,641
2 Claims. (Cl. 160—369)



1. The combination with a window frame having a sill, jambs, a head piece, a screen receiving groove in said head piece and a screen receiving groove in one of said jambs, of a screen mounting comprising a retainer member having a base plate seated on and fixed to said sill, and a screen engageable shoulder fixed to said base plate and extending perpendicularly therefrom, said shoulder being located in opposed relation to said jamb groove and a screen seated on said sill and having a frame, said screen frame having one side edge portion disposed

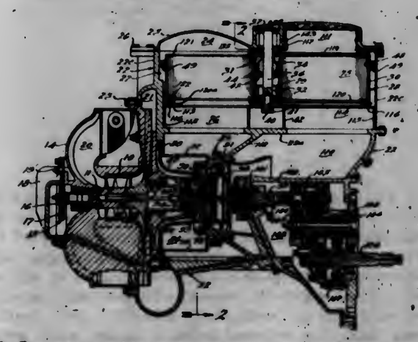
in said jamb groove and another side edge portion in engagement with said shoulder.

3,190,349
ROTARY REGENERATIVE HEAT EXCHANGERS
Waldemar Hryniszak, Newcastle upon Tyne, England, assignor to C. A. Parsons & Company Limited, Newcastle upon Tyne, England, a British company
Filed Aug. 12, 1963, Ser. No. 301,458
Claims priority, application Great Britain, Aug. 13, 1962, 30,974/62
2 Claims. (Cl. 165—7)



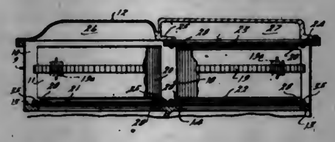
1. A rotary regenerative heat exchanger comprising a stationary housing, a rotor containing heat storing material mounted for rotation within said housing, means dividing said housing into separate compartments for fluid to be heated and fluid to be cooled whereby as the rotor rotates it passes alternately through a compartment for fluid to be cooled and a compartment for fluid to be heated, said means including sealing means acting on end faces of the rotor and at the peripheral edges thereof, said rotor being annular in form to define an inner duct and comprising at least one pair of annular discs comprising said heat storing material and mounted side by side in spaced relation along the axis of rotation of the motor, means conveying fluid to be cooled to the said inner duct in the rotor and thence into a compartment of said housing to flow in an axial direction through each disc and thence pass to an outlet in said compartment adjacent the outer periphery of each disc, means conveying fluid to be heated to a compartment of the housing through an inlet adjacent the outer periphery of each disc to flow through each disc in an axial direction to an outlet from the compartment adjacent the outer periphery of each disc, and means to prevent flow of fluid to be heated into said inner duct.

3,190,350
ROTARY REGENERATOR SEALING STRUCTURE
Richard Chute, Huntington Woods, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Sept. 12, 1960, Ser. No. 55,413
15 Claims. (Cl. 165—9)



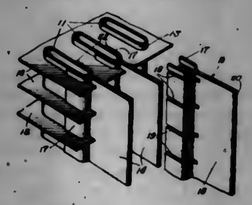
1. In a gas turbine engine, a supporting frame, a regenerator rotatably mounted in said supporting frame, means effecting a seal between said regenerator and frame for separating different gases including a sealing element in sliding contact with said regenerator, a resilient channel-shaped spacer extending lengthwise of said seal and having spaced sides joined at the channel base and yieldingly urged apart to provide a channel mouth opening to receive pressurized gases therein, one of said sides being secured to said element in fluid sealing relationship, the other of said sides having a sealing channel extending lengthwise of said seal, said sealing channel opening toward said one side and projecting toward its base in the direction away from said one side, a channel-shaped clamp extending lengthwise of said seal and mating with said sealing channel to receive the same within the channel of said clamp in fluid sealing relationship, and means for securing said clamp to said frame in fluid sealing relationship.

3,190,351
REGENERATOR SEAL
Giovanni F. Savonuzzi, Birmingham, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed July 3, 1961, Ser. No. 121,397
8 Claims. (Cl. 165—9)



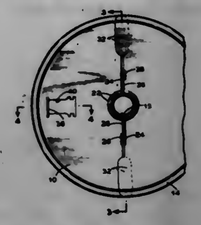
1. In a gas turbine engine, a rotatable regenerator having means for passage of gases therethrough, a gas passage conduit in communication with said regenerator, a fixed sector plate having an opening therethrough defining a portion of said conduit, said sector plate also having an inner side in sliding and sealing engagement with the rotating surface of said regenerator entirely around said opening, a fixed support defining a portion of said conduit and extending entirely around said opening, said support having a side extending angularly to and in proximity to an outer side of said sector plate opposite said inner side, a sealing element of circular cross section extending entirely around said opening in sealing engagement with both the side of said support and the outer side of said sector plate to effect a sealed juncture therebetween, and resilient means urging said sealing element obliquely against the latter two sides into said sealing engagement therewith.

3,190,352
RADIATOR TUBE PROTECTOR
Clyde S. Simpelaar, Racine, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin
Filed Aug. 23, 1962, Ser. No. 218,976
6 Claims. (Cl. 165—134)



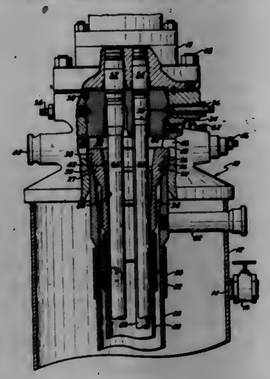
1. A vehicle radiator core, comprising: a plurality of spaced coolant tubes subjected when in use to a cooling air stream carrying entrained solid particles, the air stream flowing through said core from an upstream side of the core to a downstream side; and a tube protector for each tube comprising a sleeve closely abutting each said tube on the air receiving upstream side of said tube and a fin integral with each said sleeve extending upstream to said air stream.

3,190,353
HEAT TRANSFER FIN
Robert Storfer, 5 Berkley Lane, Syosset, N.Y.
Filed May 22, 1962, Ser. No. 196,824
5 Claims. (Cl. 165—182)



1. A heat transfer fin adapted to be placed about a cylindrical pipe or the like comprising a pair of separable half-sections, each half-section comprising a flat planar sheet of bendable heat-conducting material having a central pipe receiving portion, a tab integral with each half-section disposed at one side of said pipe receiving portion and extending at right angles to the plane of said half-section, the tabs on each half-section being in side-by-side relation, a projection integral with one of said tabs, said projection being bent about the other of said tabs to interconnect said half-sections, said tabs also serving as spacer means for positioning of additional heat transfer fins on the pipe.

3,190,354
PROCESS OF DRILLING A WELL AND INSTALLING CASING
Virgil D. Stone, Morgan City, La., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Mar. 28, 1960, Ser. No. 17,847. Divided and this application Dec. 27, 1962, Ser. No. 247,580
3 Claims. (Cl. 166—21)



1. A method of drilling and setting casing below the lower end of conductor pipe of a well while maintaining a blowout preventer secured to the well continuously during the drilling and the setting of casing, comprising securing a casing head to the upper end of the conductor pipe, securing a blowout preventer to the upper end of the casing head, running a drill having a diameter slightly less than the diameter of the opening in the blowout preventer downwardly through the blowout preventer and casing head and drilling a borehole to the desired depth below the lower end of the conductor pipe, underreaming the borehole below the lower end of the conductor pipe to the bottom of the borehole, running protector casing downwardly through the blowout preventer and suspending the protector casing from a protector casing hanger seated on a landing surface in the lower end of the casing head, said protector casing hanger having an upwardly facing landing surface, closing the upper end of the protector casing hanger and the blowout preventer, introducing a liquid under pressure into the casing head above the protector casing to test the seal between the protector casing hanger and the landing surface, after the tesing shows a tight seal betwen the protector casing hanger and the landing surface displacing cement down through the protector casing a cement the protector casing in the well, running a drill downwardly through the blowout preventer and the protector casing to drill a borehole below the lower end of the protector casing, running oil casing downwardly through the blowout preventer and the protector casing and suspending said oil casing from an oil casing hanger seated in the upwardly facing landing surface of the protector casing hanger, closing the upper end of the oil casing hanger, closing the blowout preventer, introducing a liquid under pressure into the casing above the end of the oil casing hanger to test the seal between the oil casing hanger and the protector casing hanger, after the testing shows a tight seal between the oil casing hanger and the protector casing hanger displacing cement downwardly through the oil casing to cement the oil casing in place, running a tubing string downwardly through the blowout preventer and the oil casing hanger, and hanging the tubing string from a landing surface in the upper end of the oil casing hanger.

3,190,355
WELL TREATING PROCESS
Cecil R. Clement, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 18, 1963, Ser. No. 259,422
12 Claims. (Cl. 166—22)

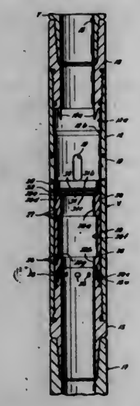
1. In an oil well wherein upper and lower strata have been produced and the lower stratum is to be reworked involving holding of pressure on said lower stratum with drilling mud, the process comprising the steps of:
(1) packing off said well intermediate said strata;
(2) thereafter, plugging said upper stratum by circulating drilling mud containing particulate metal in said well along said upper stratum to deposit metal and mud on the wall of the stratum;
(3) thereafter, removing the packing of step (1) and reworking said lower stratum, including maintaining substantial pressure on said lower stratum with drilling mud in said well;
(4) thereafter, again packing off said well intermediate said strata;
(5) thereafter, rendering the bridging metal fluid so as to unplug said upper stratum; and
(6) opening said well to production from both strata.

3,190,356
METHOD OF CEMENTING WELLS
Horace J. Beach, Cypress, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 16, 1962, Ser. No. 217,291
2 Claims. (Cl. 166—31)

1. A process for cementing oil and gas wells having a bottom hole temperature below 200° F. and containing a drilling mud which includes an organic drilling mud additive selected from the group consisting of ferrochrome

lignosulfonates, chrome-lignite, and chrome-lignins which retard the set of cements, comprising forming a pumpable cement slurry of Portland cement, water, formaldehyde, and sodium carbonate, the concentration of water in the slurry being about 35 to 55 percent by weight of the Portland cement, the concentration of formaldehyde in the slurry being about 0.2 to 3 percent by weight of the Portland cement, and the concentration of sodium carbonate being about 0.05 to 0.6 percent by wegiht of the Portland cement, displacing the slurry down the well into the space to be cemented, and maintaining the cement slurry in the space to be cemented until the cement sets.

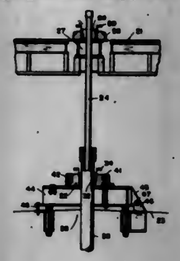
3,190,357
WELL TOOL AND METHOD OF USING SAME
Rufus P. Kirk, Odessa, Tex.
(1417 Sherwood Lane, Oklahoma City, Okla.)
Filed May 3, 1962, Ser. No. 192,120
15 Claims. (Cl. 166—44)



9. A method of producing well fluid through a tubing in a well casing, wherein the annulus between the tubing and the casing is packed off with a packer and wherein the tubing has a lateral opening above the packer, comprising the steps of:
(a) closing off fluid flow downwardly through the tubing below the lateral opening,
(b) circulating a fluid down the casing annulus and through said lateral opening for flow upwardly in said tubing to thereby displace the fluid previously in the annulus and tubing with a lighter density fluid,
(c) developing a predetermined fluid pressure differential across the closed off portion of the tubing sufficient to effect an opening of the tubing, and
(d) closing said lateral opening in response to said fluid pressure differential to discontinue circulation from the annulus to the tubing while enabling well fluid to be produced through the tubing.

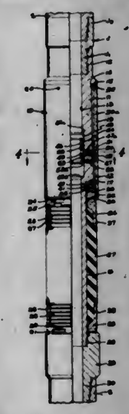
3,190,358
OFFSHORE WELL DRILLING APPARATUS
Glenn D. Johnson, Downey, and Bruce J. Watkins, Palos Verdes Estates, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 11, 1963, Ser. No. 308,267
6 Claims. (Cl. 166—66.5)

1. An offshore structure for carrying out well drilling and completion and well work-over operations, said structure adapted to be positioned at a selected offshore location in a manner sufficiently stationary to carry out operations wherein pipe means may be supported at two vertically-displaced levels, said structure comprising
an operating deck having a vertical first opening therethrough of a size sufficient to pass well tools and equipment therethrough.
an auxiliary lower deck poistioned below said operating deck and having a vertical second opening therethrough at least similar in size to said first opening in said operating deck and in vertical alignment therewith,
first pipe-engaging means supported by said operating



deck and arranged concentrically relative to said first opening in said deck,
second pipe-engaging means carried by said auxiliary deck and adapted to be positioned concentrically relative to said second opening in said auxiliary deck,
said second pipe-engaging means being movably positioned on said auxiliary deck for movement into and out of alignment with said opening in said deck, and
movable platform means interposed between said second pipe-engaging means and said auxiliary deck for movement into and out of alignment with said opening in said deck for supporting said second pipe-engaging means.

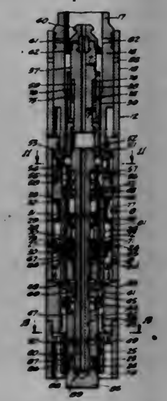
3,190,359
DRILL-DOWN PACKER
Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex.
Filed Apr. 10, 1961, Ser. No. 101,912
6 Claims. (Cl. 166—122)



1. A rotary drill string packer, comprising a tubular body insertable in a drill pipe string to form a part thereof, an annular flexible sealing means mounted about the body for radial expansion in response to axial compression thereof, pipe-gripping anchor elements mounted about the sealing means for radial movement therewith, a cylinder slidably disposed about said body in sealing engagement

therewith and operably engaged with one end of the sealing means for axially compressing the same, the interior of said cylinder defining a fluid pressure expansible chamber, fluid conduits through the wall of said body communicating the interior thereof with said chamber, a sleeve valve member slidable in the bore of said body between positions opening and closing said conduits, releasable means normally holding said sleeve valve member in the conduit-closing position, and plugging means insertable into the bore of the sleeve valve member to close off the bore of said pipe string, said sleeve valve member being movable to the conduit-opening position by fluid pressure from the interior of said body upon closing of the bore of the sleeve valve member.

3,190,360
WELL TESTER WITH RETRIEVABLE VALVE ASSEMBLY
David L. Farley, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Apr. 24, 1962, Ser. No. 189,822
20 Claims. (Cl. 166—226)



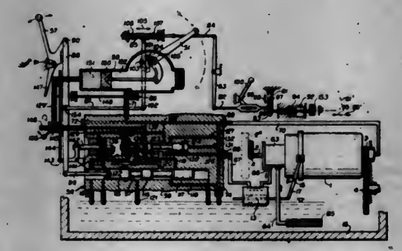
17. A well tester comprising, in combination: a housing adapted to be connected to a well pipe, a non-rotary retainer case telescopically mounted on said housing and extending below the housing, the retainer case having a shell provided with an axial bore, selectively operable means for controlling movement of said housing relative to said retainer case, a retrievable valve assembly adapted to pass through the well pipe and to seat within said housing, said valve assembly including a body forming a sliding seal within said shell bore, said valve body and said shell having tester ports for controlling flow of fluid into the interior of said valve body, means for moving said valve body axially in response to downward movement of said housing relative to said retainer case to move said tester ports into registry, said housing and said retainer case having lateral ports above said valve assembly aligned by additional downward movement of said housing to permit flow from outside to inside the well pipe above said valve assembly.

3,190,361
BEAN PULLERS
Bernard Lemanski, 308 Silver St., Bad Axe, Mich.
Filed Nov. 21, 1961, Ser. No. 154,933
3 Claims. (Cl. 171—83)

1. Bean plant cutting apparatus for attachment to a mobile superstructure comprising: support means having a front face and a rear face and mounted to be moved forwardly along a pair of rows of plants; a pair of elongated shoes thereon, angularly disposed relative to one another and having their rear ends in converging relation; said shoes having laterally extending grooves in their confronting faces; and a relatively thin elongated blade removably received in each groove and having a hook-shaped front end disposed in overlapped relation to the front end of the shoe and extending laterally beyond the groove adjacent the front surface of the shoe to anchor the blade against rearward movement.



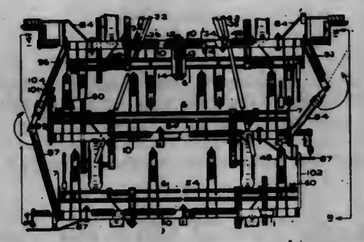
3,190,362
HYDRAULIC CONTROL MEANS FOR A LIFTING DEVICE OF AGRICULTURAL TRACTORS
Erwin Allgaier, Boll, Kreis Goppingen, Wurttemberg, and Kaspar Ritter, Kirchheim, Teckberg, Germany, assignors to Kopat Gesellschaft für Konstruktion, Entwicklung und Patentverwertung m.b.H. & Co. KG, Boll, Kreis Goppingen, Germany, a corporation of Germany
Filed Aug. 12, 1963, Ser. No. 301,585
Claims priority, application Germany, Aug. 11, 1962, K 47,479
6 Claims. (Cl. 172—4)



1. A hydraulic control means for lifting devices of agricultural tractors, comprising
a tractor,
an implement pivotally secured to said tractor,
a lifting device having swingable load arms pivotally connected with said implement and a control apparatus mounted in said tractor,
cam means rotatable with said load arms,
said lifting device being operatively connected with said control apparatus,
said control apparatus including means for automatically adjusting said lifting device into any one of a plurality of angular positions of said load arms,
a ground following sensing member operatively connected with said lifting device and
means for transmitting to said control apparatus from said ground following sensing member variations of the soil penetration depth of said implement,
said transmitting means including a lever operatively connected with said rotatable cam means intermediate its ends,
said transmitting means further including first linkage means extending from said ground following sensing member to one end of said lever,
second linkage means operatively connecting the other end of said lever with said control apparatus, and

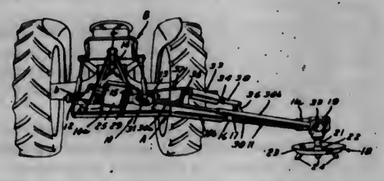
said adjusting means of said lifting device including a manually operated lever operatively connected with said second linkage means and preselecting the angular position of said load arms.

3,190,363
TRIPLE SECTION ROTARY ROD WEEDER
George Henry Morris, 37 6th Ave. N., Yorkton, Saskatchewan, Canada
Filed Feb. 26, 1964, Ser. No. 347,485
4 Claims. (Cl. 172—44)



1. In a rotary rod weeder having a center section mounted for travel on supporting wheels and wing sections outwardly wheel supported, the center section having arms fixed to the outer ends thereof and the wing sections having arms fixed to their inner ends for coupling the sections together by which the wing sections may be moved into reversed following relation to the center section for travel of the sections as a compact unit on their supporting wheels; means for attachment of the wing section arms to the center section arms for pivotal movement of the sections vertically and horizontally in relation to each other, locking bars fixed to the outer ends of the wing sections projecting rearwardly, said bars having jaws on their outer ends, means for detachable engagement of the locking bar jaw of one wing section with the coupling arm on the opposite side of the center section when said one wing section is moved into reversed following relation to the center section, and a bracket on the inner end of said one wing section with which the jaw on the locking bar of the other wing section is engageable when said other wing section is moved into reversed following relation to said one wing section.

3,190,364
ROTARY CULTIVATOR EQUIPMENT
Frederick G. Maloney, Yakima, Wash., assignor to Edwards Equipment Company, Yakima, Wash., a corporation of Washington
Filed July 3, 1963, Ser. No. 292,577
3 Claims. (Cl. 172—111)



2. Tractor carried ground cultivating equipment, comprising:

(a) an attached frame structure positioned rearwardly of the rear wheels' axle of the tractor including a fixed generally transverse frame part and an elongate movable boom extending forwardly at an angle thereto and pivoted at its inner end on said fixed frame part for swinging movements to a position of use extending to one side of the tractor and to a raised substantially vertical position of non-use, said boom extension having an angularly deflected outer end portion adapted in said use position to extend generally forwardly and occupy a position outwardly spaced and substantially aligned with the tractor rear wheels;

(b) a rotatable ground working tool supported on the outer end portion of said boom extension and having a substantially vertical axis of rotation in said use position of the boom, said tool including a dished head member having an upturned peripheral margin and a bottom surface for sliding engagement with a ground surface thereunder, said bottom having a plurality of exterior inclined projecting ground working teeth;

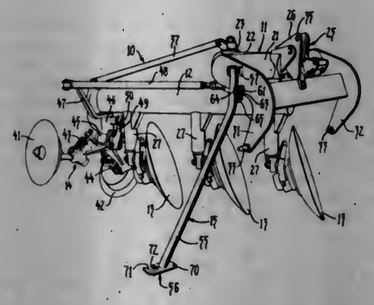
(c) an angle-gear at said outer end of said boom having a driving connection with said tool and an input shaft;

(d) an angle-gear on the fixed frame part inboard of the boom pivoted end having a driving connection with a power take-off of said tractor and an output shaft;

(e) a telescoping shaft having its ends respectively connected through universal joints with said output and input shafts; and

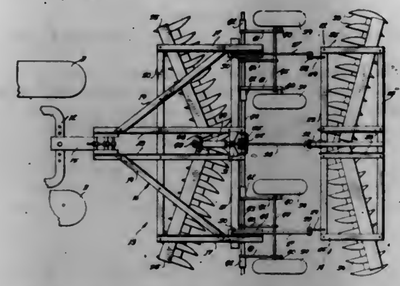
(f) fluid cylinder-piston actuator means connecting said fixed frame part and said boom, and being energizable to move said boom between its use and non-use positions, said boom and said telescoping shaft in said non-use position having their lowermost ends in spaced apart relation to form a stabilized support for the elevated working tool.

3,190,365
PARKING STAND FOR TWO-WAY PLOWS
Howard G. Thompson, Livonia, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Apr. 27, 1962, Ser. No. 190,623
5 Claims. (Cl. 172—219)



1. A two-way plow comprising, in combination, a main frame adapted to be coupled to a tractor hitch, a plow beam pivoted about a vertical axis on said main frame, a plurality of plow elements mounted on said beam, means for shifting said beam about said axis so as to aline said elements off to one side or the other of said main frame, a stand leg pivotally secured to said main frame and having a support position providing a point of support well spaced from the line of plow elements when the latter are alined off to said one side, and latch means releasable only when said elements are alined to said one side for securing said leg in an elevated transport position.

3,190,366
AGRICULTURAL IMPLEMENT
Otto E. Johnson, Hinsdale, and Louis B. Garriott, Jr., Westmont, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 5, 1963, Ser. No. 256,366
9 Claims. (Cl. 172—413)



1. In an implement adapted for attachment to a tractor and including earthworking units in tandem, said units comprising longitudinally spaced front and rear frames, earthworking tools mounted on said frames, hitch means on said front frame for connection thereof to the tractor, laterally spaced generally parallel links extending between and pivotally connected at their ends on transverse axes to said front and rear frames to accommodate translational movement of the rear unit vertically relative to the front unit and engageable with a portion of said front unit to limit the downward movement of said rear unit relative to said front unit, ground engaging wheels mounted on the front frame between said units, power operated means mounted on the front frame operatively connected to said wheels for vertically adjusting them to raise and lower said units, and means in the mounting of the wheels on the front frame accommodating upward movement of said front frame relative to the wheels, independently of said power operated means.

3,190,367
AGRICULTURAL GROUND CONDITIONING IMPLEMENT
Arnold F. Kopaska, Guthrie Center, Iowa
Filed Jan. 27, 1964, Ser. No. 340,377
12 Claims. (Cl. 172—456)



1. An agricultural ground conditioning implement adapted to be pulled behind a tractor or the like, said implement comprising,

a first frame assembly including a center member and wing members,

hinge means for connecting said wing members to opposite ends of said center member for pivotal movement therebetween about vertical and horizontal axes,

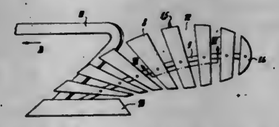
a second frame assembly including a center member and wing members,

hinge means for said second frame connecting the wing members to opposite ends of said center member for pivotal movement therebetween about vertical and horizontal axes,

and wheel means for each of said members of one frame assembly,

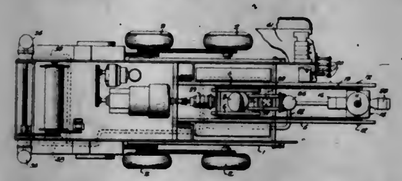
a wheel support means pivotally connected to each of said frame members of said one frame assembly and vertically adjustably connected to the adjacent frame member of the other frame assembly, and said wheel means for each of said members being rotatably connected to the wheel support means pivotally connected thereto.

3,190,368
MOLDBOARD PLOWS
Ary van der Lely, Maasland, Netherlands, assignor to C. van der Lely N.V., Maasland, Netherlands, a limited-liability company of the Netherlands
Filed May 19, 1961, Ser. No. 111,357
Claims priority, application Netherlands, June 10, 1960, 252,529
6 Claims. (Cl. 172—756)



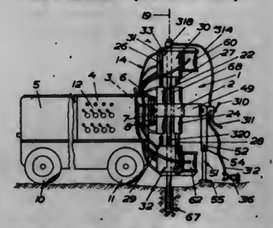
1. A moldboard for a plow having a plowshare, said moldboard having an edge portion attached to the plowshare and an array of vanes secured to said edge portion, said vanes having leading and trailing edges, the ends of said vanes being secured to said edge portion intermediate their leading and trailing edges, said vanes being connected to said edge portion with their leading edges away from and their trailing edges into the soil with reference to the normal movement of soil over said moldboard.

3,190,369
ROTARY PERCUSSION ROCK DRILLING APPARATUS
Harley G. Pyles, Fairmont, W. Va., assignor, by mesne assignments, to Galis Manufacturing Company, Fairmont, W. Va., a corporation of West Virginia
Filed Jan. 24, 1963, Ser. No. 255,424
14 Claims. (Cl. 173—23)



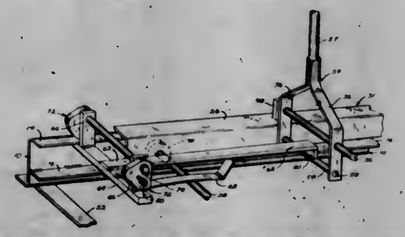
1. Rotary percussion rock drilling apparatus comprising, a wheeled frame, a drill pot having means to receive a drill bit in longitudinal extension therefrom, means to rotate the drill bit mounted in the drill pot, an oscillator of the type developing thrust alternately in opposite linear directions connected to the drill pot, means for driving the oscillator and producing a linear thrust in opposite directions parallel to the longitudinal axis of the drill bit, a boom supporting at one end the drill pot and mounted at the other end on the frame for swinging movement of the drill pot supporting end to move the drill pot along straight lines, and means interposed between the frame and the boom to swing the boom and move the drill pot and impose a continuing selected force through the boom upon the drill pot in the direction of extension of the drill bit from the drill pot.

3,190,370
DRIVE AND FEED DEVICE FOR A STRING OF ROTARY DRILL STRING ELEMENTS
Alf Gunnar Kvello-Aune and Per Fredrik Tröften, both of Trondheim, Norway, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Apr. 17, 1962, Ser. No. 188,044
Claims priority, application Norway, Apr. 17, 1961, 139,873
10 Claims. (Cl. 173—37)



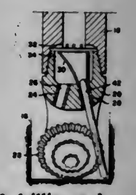
10. Drive and feed device for a string of rotary drill string elements comprising a frame, a first drill chuck rotatably mounted and carried on said frame and operable independently to engage and to disengage said drill string, a second drill chuck rotatably mounted and carried on said frame axially aligned and spaced from said first drill chuck and operable independently thereof to engage and to disengage said drill string, means for power feeding and for power retracting at least one of said chuck forming a power linkage between said one chuck and the frame, an independently rotatable tubular shaft in each chuck forming a passage for a drill string and couplings between the drill string elements, radial openings in said shaft, chuck jaws operable through said openings to engage a drill string extending through said shaft, power driving means for rotating said shafts selectively simultaneously and independently at different speeds for drilling, and power cylinder means in said drill chucks adjacent said jaws for movement thereof in and out of said radial openings for engaging or disengaging drill string elements.

3,190,371
JACK STRUCTURE FOR AN EARTH BORING MACHINE
James W. Maxwell, 2209 Walnut St., Cedar Falls, Iowa
Filed Dec. 22, 1961, Ser. No. 161,624
12 Claims. (Cl. 173—141)



6. In combination with an earth boring machine having supporting rails, and
a carriage movably mounted on said rails,
a boring means secured to said carriage;
a jack means including a lever means pivotally secured to said carriage,
gripping means normally engaging said rails,
and connecting means pivotally connected to both said lever means and said gripping means to cause said gripping means to grip said rails when said lever is moved in one direction, and to release said rails when said lever is moved in a second direction, said gripping means being adapted to be selectively pivotally movable between two operative positions so that while in one of its operative positions each gripping means will grip said rails when said lever is moved in each direction and to release said rails when said lever is moved in a second direction.

3,190,372
METHODS AND APPARATUS FOR DRILLING BORE HOLES
Ford L. Johnson, Newtown Square, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Mar. 5, 1962, Ser. No. 177,623
5 Claims. (Cl. 175—2)



1. The method of drilling a bore hole through earth strata comprising the steps of:
effecting rotary drilling with a hollow drill stem driving a drill bit having a solid central portion and a non-axially aligned jet opening to form a bore hole of a first depth,
introducing a multiple charge torpedo into said hollow drill stem at the surface of the bore hole,
effecting axial passage of said torpedo downwardly through said hollow drill stem to the vicinity of said bit,
orienting said torpedo so as to pass at least partially through said non-axial jet opening to arrive at a position adjacent the earth strata forming the bottom of said bore hole,
detonating a first charge of said multiple charge torpedo to form a cavity in said strata forming the bottom of said bore hole,
explosively propelling a second charge of said multiple charge torpedo into said cavity,
detonating said second charge to effect fracturing of the material forming said cavity, and
continuing rotary drilling through said strata by said drill bit.

3,190,373
METHOD AND APPARATUS FOR PLUGGING WELLS
Gerald H. Weathersby, 408 W. Forrest, Victoria, Tex.
Filed Aug. 22, 1962, Ser. No. 218,689
10 Claims. (Cl. 175—72)

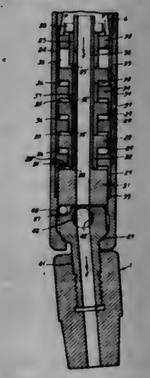


1. As an article of manufacture, a casing, said casing comprising, in combination:

an elongate hollow center section;
a closure member removably attached to each end of said center section, each said closure member having means engageable with said center section for fastening the closure member thereto, so that said center section and said closure members together define a closed casing, said center section and said closure members being formed of a water soluble material.

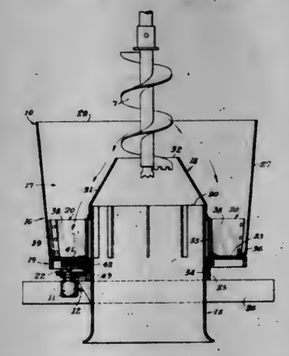
7. A method of solving lost circulation problems during drilling, particularly those caused by large caverns and the like, comprising the steps of:
(a) dropping a first group of soluble casings having a lost circulation material therein into the hole being drilled;
(b) compressing the casings therein;
(c) waiting for a period of time until the casings dissolve and the material at least partially solidifies; and
(d) drilling a hole through said at least partially solidified material.

3,190,374
SOIL DRILLING APPARATUS HAVING MEANS TO CHANGE THE DIRECTION OF THE DRILL
Jean Caperan and Paul Alyre, Grenoble, France, assignors to Etablissements Neyrpic, Grenoble, France, a corporation of France
Filed Dec. 22, 1960, Ser. No. 77,725
7 Claims. (Cl. 175—74)



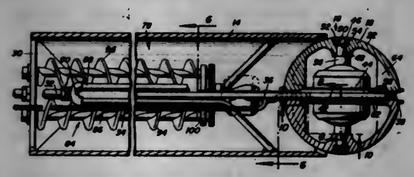
2. A device for use in earth drilling apparatus, comprising an upper section providing a tubular piston housing for connection to a drill string in fixed relation thereto, a lower section for connection to a drilling unit including a motor, means movably joining the upper end of said lower section to the lower end of said upper section, means for conducting drilling fluid from said drill string through said upper section, past said joining means and through said lower section to said drilling unit, a plurality of pistons mounted in said upper section and connected in aligned relation for movement longitudinally of said upper section as a unit, said pistons being annularly-shaped, and including a central tubular member to which said pistons are connected, and means on said upper section forming an operating chamber for each of said pistons, means for simultaneously subjecting an upper transverse surface of each of said pistons to the forward thrust of the drilling fluid at the entry end of said upper section, means for simultaneously subjecting a lower transverse surface of each of said pistons to the force of the fluid returning from the drilling operation so that said pistons are activated by the resultant of such forces, movable means connected to said pistons and subjected to the combined push of the latter for movement thereof toward said joining means, said movable means being connected to said lower section and operable when advanced toward said joining means to pivot said lower section on said joining means.

3,190,375
DIRT DISCHARGING MEANS FOR AUGER-DRILL RIG
Charles E. Pearson, El Monte, Calif., assignor of one-third to Lee H. Booker, South Gate, and one-third to Melvin W. Salvage, Downey, Calif.
Filed Sept. 30, 1963, Ser. No. 312,408
9 Claims. (Cl. 175—88)



1. A drill rig comprising:
(a) a longitudinally movable auger for rotationally boring a hole in the ground,
(b) a fixed housing concentric with the auger and having a central opening in which the auger freely moves, said housing having a lateral discharge opening and receptive of soil dislodged from the auger when raised out of the hole, and
(c) rotational means movable in the housing to move the soil therein to and through the discharge opening, said means comprising a rotational plate closing the bottom of the housing, the plate being adapted to allow the auger to pass through it, and a multiplicity of upright vanes affixed to the rotational plate.

3,190,376
BORING HEAD
Eugene A. Christensen, 9365 Pershing Ave., Orangevale, Calif.
Filed Jan. 30, 1962, Ser. No. 169,833
17 Claims. (Cl. 175—102)



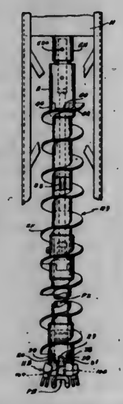
1. An earth boring device comprising tubular casing means, mounting plate means fixed to the casing means and projecting forwardly therefrom, motor means mounted by the plate means for rotation about an axis spaced forwardly of the casing means, rotatable hub means connected to the motor means in complete enclosing rela-

tion thereto on opposite sides of the plate means and extending into and out of said casing means to form therewith an annular inlet passage, and earth cutting means externally mounted on the rotatable hub means for dislodging and displacing earth rearwardly into said casing means through said inlet passage in response to rotation of the hub means by the motor means.

3,190,377
EARTH BORING EQUIPMENT FOR CORE RECOVERY

Theodore E. Rassieur, University City, Mo., assignor to Central Mine Equipment Company, St. Louis, Mo., a corporation of Missouri

Filed Mar. 30, 1960, Ser. No. 18,570
3 Claims. (Cl. 175—257)



1. In an earth boring tool adapted for core recovery, including a hollow main bit, a sectional tubular drill string of pipe sections having the same external size and the same internal size connected end to end to form a smooth unobstructed inner surface and at one unconnected end to a hollow main bit, a pilot bit of a size to be movable into said hollow main bit through said tubular drill string and adapted to be independently manipulated by an auxiliary drill string extending through said main drill string and connected to said pilot bit, the improvement in said earth boring tool of means for separately connecting said pipe sections end to end and to said hollow main bit comprising,

(a) a collar secured to the outside of a pipe section spaced from one end thereof to form therewith an externally stepped tubular end,

(b) a collar secured to the outside of a pipe section to overhang one end thereof to form therewith an internally stepped tubular end,

(c) means forming circumferentially spaced jaws on the radial outer face of each of said collars arranged to interlock when said externally stepped tubular end is telescoped with said internally stepped tubular end so as to lock said pipes against relative rotation axially thereof,

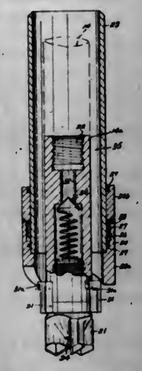
(d) apertures formed in one of said collars and in one of said pipe ends located to register when said jaws are interlocked,

(e) and pin means removably secured in said apertures and projecting from the outside of said drill string into both apertures to the inside surface of the pipe section only to provide for unobstructed passage of said pilot bit.

3,190,378
APPARATUS FOR SIMULTANEOUSLY DRILLING AND CASING A WELL HOLE

Paul H. Davey, Sr., and Paul H. Davey, Jr., both of 600 Franklin Ave., Kent, Ohio

Filed Sept. 18, 1962, Ser. No. 224,335
4 Claims. (Cl. 175—257)



1. In combination, a length of well casing, a hollow shoe concentric with and rotatably mounted on the lower end of said casing, the shoe having cutting means for drilling downwardly, a drill rod located centrally of the casing having a drill bit at its lower end, inwardly projecting means rigid with the shoe, and outwardly directed pull-down members on said drill rod having horizontal portions effective to engage above said projecting means when the drill bit is a predetermined distance below the shoe and to pull said shoe and said casing downwardly after the bit, said pull-down members also having vertical portions effective to engage the projecting means so that a rotation of the drill rod causes rotation of the shoe in a direction effective to operate the cutting means.

3,190,379
AUGER TOOTH WITH SIDE EDGE BLADE

William M. Troeppl, Santa Clara, and Gerald A. Petersen, Sunnyvale, Calif., assignors, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.

Filed Oct. 21, 1963, Ser. No. 317,540
6 Claims. (Cl. 175—385)

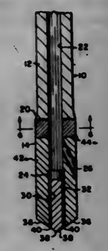


6. An auger having a head extending outwardly to opposite sides of the axis of rotation of said auger and formed with a plurality of tooth holders on each side of said axis, a tooth in each said tooth holder, each said tooth being removable, the outermost tooth on at least one side of said auger having a proximal portion formed with means for removable attachment to a cooperating toothholder and a distal portion, said distal portion having substantially parallel side edges and forwardly converging top and bottom faces terminating in a blunt transverse distal end, said distal portion having along one side edge a depending side edge blade transverse to the general direction of said tooth, said side edge blade having a bottom front corner which as viewed in side elevation is disposed forwardly of a reference plane along said distal end perpendicular to said general direction of said tooth, said blade lying on the outermost edge of said auger.

3,190,380
DRILLING TOOL AND METHOD OF MAKING THE SAME

Floyd R. Anderson, Denver, Colo., assignor to Gardner-Denver Company, a corporation of Delaware

Filed Sept. 2, 1960, Ser. No. 53,676
5 Claims. (Cl. 175—410)

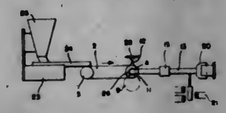


5. In a drill rod: an elongated metal shaft having an enlarged extension, said extension at one end having a slot opening to said one end and extending thereinto; a work-cutting element disposed in said slot and joined to said extension by a layer of connecting metal; said rod comprising first, second, and third longitudinal segments having differing degrees of hardness and strength; said first segment including said shaft and being of highest hardness and strength; said second segment located intermediate the ends of said extension and being of lowest hardness and strength; and, said third segment entirely surrounding said slot and being of intermediate hardness and strength.

3,190,381
WIDE-RANGE CONVEYOR-TYPE BATCH WEIGHER

Ernst Eberhardt and Hansgeorg Specht, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed May 6, 1963, Ser. No. 278,368
Claims priority, application Germany, May 5, 1962, B 67,131
6 Claims. (Cl. 177—120)

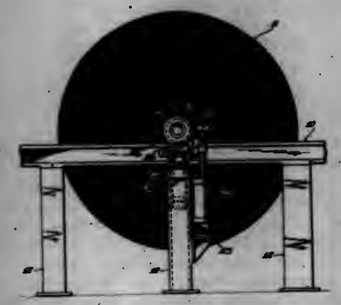


1. A belt type batch weighing apparatus for bulk goods comprising an endless belt passing over an outer guide roller and a cylindrical inner driving roller, said rollers being mounted in bearings in a frame, a motor attached to the frame and arranged beneath the driving roller for driving the latter, said belt, frame rollers and motor forming the first arm of a balance, a sliding weight beam with at least one sliding weight forming the second arm of the balance and attached to the frame in Z-shaped arrangement, a central cross band axis between the frame and the sliding weight beam for oscillating suspension of the frame and the motor associated therewith and also the sliding weight beam in the neighbourhood of the discharge zone of the belt, lateral guide plates over the lower flight of the belt, a trough beneath the upper flight of the belt, a differential transformer for frictionless scanning of the deflection of the sliding weight beam, an eddy current brake for damping oscillations of the sliding weight beam and a regulator controlled by the differential transformer and having an indicating means for control of a feeder ending over the outer guide roller and supplying the bulk goods to be weighed.

3,190,382
WEIGHING SYSTEM

Gerald H. Zimmerman, Claymont, Del., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,475
8 Claims. (Cl. 177—132)

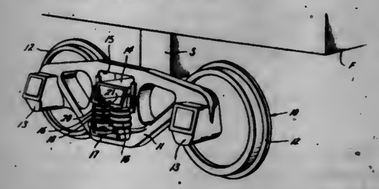


1. In an apparatus for weighing rolls of paper and the like, spaced rails spaced above the ground and extending at an incline and forming a track for a roll of paper, vertical housings on the insides of said rails, a support pad extending over the top of each housing and having a push rod depending therefrom within an associated housing, a base for said housing, a weight determining means interposed between said base and push rod, said support pads supporting a roll of paper out of contact with said rails for weighing, means for guiding said push rods along said housings and compensating for off-centered loads on said support pads and push rods comprising spaced self-aligning bushings mounted on said push rods and having slidable engagement with the cylindrical walls of said housings, and retractible stop means positionable to accommodate a roll of paper to ride up onto said support pads and to stop the roll of paper in generally centered relation with respect to said support pads.

3,190,383
LOAD INDICATOR

Forrest R. Fountain, Houston, Tex. (General Delivery, Rte. 2, Avoca, Tex.)

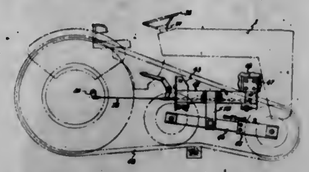
Filed Jan. 13, 1964, Ser. No. 337,194
4 Claims. (Cl. 177—137)



1. In a vehicle having a stationary portion and relatively movable portion under load, a load indicator device, comprising, spaced indicator elements mounted on the respective portions, one of said elements being displaceable relative to the other in response to loading of said vehicle, one of said indicator elements having luminescent properties to render the same visible in darkness

when light is directed thereon, and the other of said elements comprising shield means positioned to prevent impingement of light rays on said one element when said vehicle is in unloaded condition.

3,190,384
ENDLESS FULL TRACK TRACTOR AND CONTROL DEVICES
Conrad H. Dufresne, Merchant St. Extension, Barre, Vt.
Filed Jan. 15, 1964, Ser. No. 337,808
7 Claims. (Cl. 180—6.7)



4. In a tractor having a frame provided with right and left rearward driving wheels, each formed with a tread portion, a source of power, a differential mechanism connecting said source of power with said driving wheels and individual brakes for each of said driving wheels, the combination of a forward supporting strueture fixedly mounted on said frame, rocking beams hingedly mounted on said supporting structure for independent rocking movement on aligned transverse horizontal axes, one such beam on each side of said tractor, forward right and left supporting wheels mounted forwardly on each side of said supporting structure, said supporting wheels on each side having tread portions aligned with the tread portion of the corresponding driving wheel under all operating conditions, operating means on said tractor for applying either or both of said brakes, a separate manual steering device mounted on said tractor adjacent said brake operating means and movable selectively in opposite directions, means for applying one of said brakes when said manual steering device is moved in one direction and for applying the other of said brakes when said steering device is moved in the other direction and flexible endless tracks each mounted over the rearward driving wheels and forward supporting wheels on each side thereof on which said tractor travels.

3,190,385
DRIVE AND STEERING MECHANISM FOR WHEELED VEHICLES OR IMPLEMENTS
Edward James Allport, Cooksville, Ontario, Canada, assignor to Massey-Ferguson Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Apr. 12, 1961, Ser. No. 102,517
4 Claims. (Cl. 180—6.66)



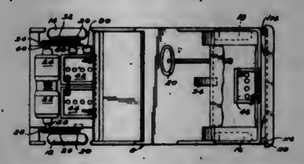
1. Combined driving and steering means for a self-propelled vehicle having a pair of axles, and ground wheels mounted to said axles comprising, in combination, a continuously driven main shaft, an independent drive connection from the main shaft to the respective axles, each said drive connection including a pair of adjustable sheave V-pulleys fixed to and rotatable with the main shaft, a V-pulley connected to drive each axle, an idler pulley, a single endless V-belt trained over said axle pulley and said idler pulley and having its opposite reaches trained over the respective adjustable pulleys, means for adjusting each pair of V-pulleys to drivingly engage one pulley with the belt and simultaneously disengage the other pulley with the belt, and control means for operating the adjusting means for both pairs of adjustable V-pulleys in unison.

3,190,386
MOTORIZED STEERABLE NESTABLE SERVICE CART
James H. Swinny, 212 Linton Ave., Natchez, Miss.
Filed Apr. 25, 1963, Ser. No. 275,572
14 Claims. (Cl. 180—19)



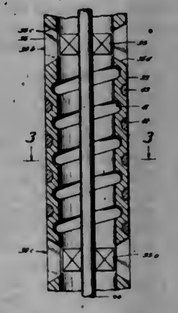
6. A nestable dirigible motorized service cart comprising a service cart having an undercarriage and a basket supported thereby in spaced relation thereabove, said basket having a forwardly pivotal rear wall and said undercarriage being rearwardly open, said basket and said undercarriage both converging forwardly, wheel means supporting the rear portion of said undercarriage, and dirigible motorized wheel assembly means supporting the forward portion of said undercarriage.

3,190,387
ELECTRIC DRIVE MECHANISM AND METHOD OF OPERATING SAME
Douglas Dow, 1052 Seminole St., Detroit, Mich.
Filed Aug. 10, 1962, Ser. No. 216,240
9 Claims. (Cl. 180—65)



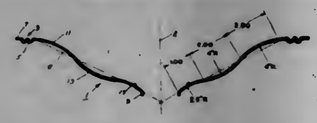
1. In a variable speed electric drive assembly for driving a variable load and adapted to be energized by electrochemical sources of direct current energy: a direct current current motor for connection to the variable load to drive or be driven by the same and having a high resistance field winding and a relatively low resistance armature winding; a pair of electrically independent electrochemical sources of direct current at least one of which is rechargeable; an armature circuit including the armature winding and the rechargeable one of said pair of sources of current electrically connected together; a field circuit electrically and operably independent of the armature circuit including the field winding and the other of said sources of current electrically connected together; said rechargeable source of current comprising a serially connected plurality of electro-chemical cells; one end of said serially connected plurality being connected to one side of said armature winding, switch means for connecting the other side of said armature winding into said plurality of serially connected cells at various points to vary the number of such cells which are serially connected across the armature winding; and said field winding connected to its source of current in the field circuit for uninterrupted energization of the field winding during all variations in the voltage of the armature circuit.

3,190,388
ACOUSTIC LOGGING TOOLS WITH ACOUSTIC ATTENUATING STRUCTURE
Edward I. Moser and George H. Pardue, Houston, Tex., assignors to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed May 16, 1961, Ser. No. 110,471
6 Claims. (Cl. 181—.5)



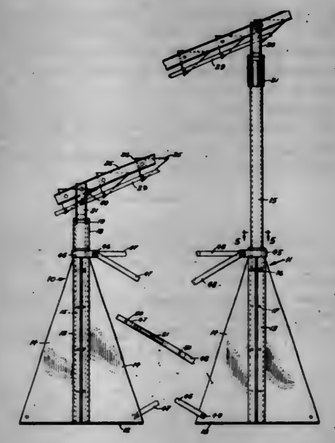
1. Apparatus for use in well bores comprising: an elongated, rigid tubular member of a material having a relatively high characteristic acoustic velocity; at least two acoustic transducers in a fixed, spaced relationship relative to one another along a section of said tubular member; said tubular member having a configuration between said acoustic transducers arranged to alter the intensity and time of arrival of detectable acoustic energy traveling through and longitudinally of said tubular member, such configuration including interruptions in the longitudinal continuity of said tubular member to provide tortuous alternative paths for passage of acoustic energy, which paths are longer than the longitudinal spacing between said transducers, and material secured to said member in said interruptions, said material having a high density and low modulus of elasticity relative to the material of said member and being adequate to change the weight of the tubular member independently of its unit spring rate and thereby further alter the intensity and time of arrival of detectable acoustic energy.

3,190,389
LOUDSPEAKER CONSTRUCTION
Adelore F. Petrie, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed June 20, 1963, Ser. No. 289,266
7 Claims. (Cl. 181—32)



1. In a loudspeaker of the type responsive solely to relatively low frequencies, a loudspeaker cone comprising an annular apex area of minimum diameter, first and second annular sound radiating sections integrated into a generally conical overall configuration, said first sound radiating section having an inwardly concave shape with respect to the central axis of the cone and disposed on one side of a reference cone, said first sound radiating section being disposed adjacent said apex area, thereby enabling said cone to function as a woofer, said second sound radiating section having an inwardly convex shape with respect to the central axis of the cone and disposed on the other side of said reference cone, said first and second sections being dimensioned relative to each other and arranged relative to said reference cone so that they may provide equal and opposite radiation during a predetermined portion of the frequency range of operation of the loudspeaker, thereby to enhance the smoothness of response of said loudspeaker.

3,190,390
COMBINATION SCAFFOLD AND LADDER
George I. Daniel, 302 S. Ingleside Drive, Albany, Ga.
Filed Apr. 1, 1964, Ser. No. 356,581
5 Claims. (Cl. 182—1)



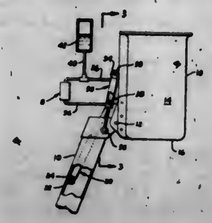
3. A scaffold and ladder combination comprising a pair of vertically adjustable supports, a yoke including a cross member with transversely mounted ends on each support, a ladder including rails and a plurality of pivotally mounted steps including treads of substantial length and width, control bar means pivotally connected to each step and to a transversely extending end of one yoke, means to pivotally connect said rails of said ladder to said one yoke while preventing longitudinal movement of said ladder with respect to said one yoke, the pivotal cennections of said control bar means to said steps and to said one yoke being in parallelogram relation with respect to the pivotal connection of each step to said control bar means and the pivotal connection of each step to said rails, and means on the other yoke slidable along the length of the ladder and cooperating with the rails of said ladder to provide for supporting said ladder in different angular positions with respect to said first yoke.

3,190,391
SAFETY DEVICE FOR A BASKET
Lee M. Hoard, San Lorenzo, Calif., assignor to Utility Body Company, a corporation of California
Filed Dec. 2, 1963, Ser. No. 328,784
10 Claims. (Cl. 182—2)

6. Safety apparatus for a platform hinged to a boom and capable of being angularly raised and lowered from a support therefor comprising:

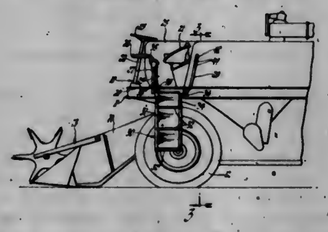
(a) means for varying the angle between said boom and said platform and for maintaining the said platform in a horizontal orientation;

(b) means for preventing a sudden change in the angle described by said boom and said platform on failure of said first means, said means comprising an hydraulic cylinder-piston-piston rod assembly having means connecting the said assembly to the said platform and to the said boom;
(c) an hydraulic fluid line connecting one side of the



piston of the cylinder of said assembly and the other side of the piston of the cylinder of said assembly;
(d) and a valve in the said line, said valve being set to prevent the flow of hydraulic fluid from the one side of said assembly to the other side of said assembly except on application of pressure in excess of that represented by the rotational moment of the said platform and its maximum normal load when said platform is in use.

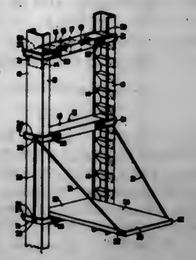
3,190,392
FOLDING LADDER FOR COMBINES
Robert Ashton, Islington, Ontario, and Wilbert Weber, Nashville, Ontario, Canada, assignors to Massey-Ferguson Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Jan. 31, 1963, Ser. No. 255,234
4 Claims. (Cl. 182—97)



1. In a combine having an elevated operator's platform with a ladder extending downwardly from an access opening through the plane of said platform, the improvement comprising means pivoting said ladder along an inclined axis extending through points above and approximately in the plane of said platform enabling the ladder to fold upwardly alongside the platform and across said opening.

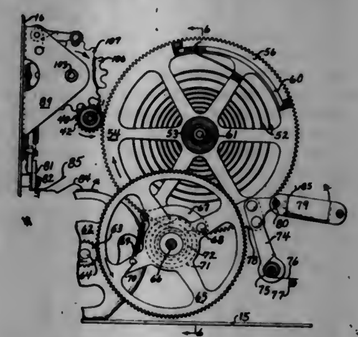
3,190,393
LADDER HAVING REMOVABLE RUNGS
Michael P. Alfano, 3821 S. Union Ave., Chicago, Ill.
Filed Oct. 10, 1963, Ser. No. 315,268
2 Claims. (Cl. 182—194)

1. A ladder having removable rungs, comprising a pair of equally spaced and parallel side members in channel form having a plurality of equally spaced blocks that are triangular when viewed from the end secured to the inner side thereof in which is removably placed and secured a plurality of equally spaced spring-loaded rungs and each one of the rungs embodying a hollow rectangular holder having a stationary brace member in the center thereof against each outward side of which is located a coil spring that presses against a sliding block that has its outer end resting on top of one of the blocks that is secured to the said side member of the said ladder and a substantially



U-shaped band having a hinge in the middle, extending around each upright at each end of each step with the ends of each band secured to the corresponding rung.

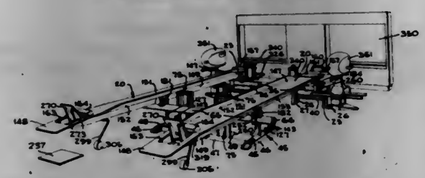
3,190,394
SPRING MOTOR, WITH MOTOR REWIND FOR CALCULATING MACHINES AND THE LIKE
William S. Gubelmann, deceased, late of Convent, N.J., by Walter S. Gubelmann, executor, Oyster Bay, N.Y., assignor to Realty & Industrial Corporation, Morristown, N.J., a corporation of Delaware
Application Oct. 7, 1960, Ser. No. 61,322, now Patent No. 3,098,609, dated July 23, 1963, which is a division of application Ser. No. 194,273, Nov. 6, 1950, now Patent No. 2,969,177, dated Jan. 24, 1961. Divided and this application Nov. 21, 1962, Ser. No. 239,380
9 Claims. (Cl. 185—40)



3. A drive mechanism for a calculating machine having a frame, said drive mechanism comprising a shaft journaled on said frame, an input gear secured to said shaft for rotation therewith, an output gear spaced axially from said input gear and rotatably mounted on said shaft, a spring coiled about said shaft between said input and output gears and fixed at its inner end to said input gear and at its outer end to said output gear for rotating said output gear and for being wound upon rotation of said input gear relative to said output gear; motor means for winding said spring; a gear train connecting said motor means with said input gear and comprising a drive gear; a detent pivotally mounted on said frame and engaging said drive gear for normally holding said gear train and said input gear against rotation; a normally de-energized electromagnetic means for disengaging said detent means from said drive gear upon commencement of winding of said spring by said motor means and energization of said electromagnetic means; circuit means connected to said motor means and said electromagnetic means for connecting them to an electric power source, and a normally open switch means interposed in said circuit means and operable responsive to said output gear upon a predetermined

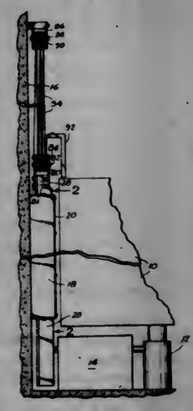
amount of rotation of said output gear by said spring for closing said circuit means for operating said motor means and energizing said electromagnetic means, said switch means being operable responsive to said input gear upon a predetermined amount of rotation of said input gear by said motor means for opening said circuit means again, thereby to stop operation of said motor means and de-energize said electromagnetic means.

3,190,395
VEHICLE SUPPORTING RACK
Melvin H. Lill, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 18, 1961, Ser. No. 132,473
37 Claims. (Cl. 187—8.67)



1. In combination, mounting means, elongated, substantially horizontal, front and rear rails borne by said mounting means in opposed, transversely spaced, substantially parallel relation to each other, an elongated vehicle support having opposite end portions adjacent to said rails, rollers individually rollably engaging said rails for rolling movement therealong and being connected to said support for rotation relative to said support about axes extended transversely of said rails, said rails and rollers having substantially complementarily engaging convex and concave surfaces, elevational adjustment of one of the end portions of said support relative to its opposite end portion being accommodated by the engaging convex and concave surfaces adjacent to said one end portion, and powered means for effecting said elevational adjustment.

3,190,396
ELEVATOR CONTROL MECHANISM
Lewis D. Sturm, 3529 NE. Broadway, Portland, Oreg.
Filed June 7, 1962, Ser. No. 200,716
3 Claims. (Cl. 187—28)



1. Elevator control mechanism comprising a control box, a rigid selector bar disposed vertically in said box and projecting through the upper end thereof, said selector bar being weighted and having free suspended and slidable movement in said box, at least one elongated, plate-like switch engaging member secured longitudinally on said selector bar and having a width dimension whereby to project laterally from said bar, ratio drive means connected to the upper end of said selector bar and adapted to be driven by an elevated car for raising said selector bar through a reduced distance relative to the distance travelled by the elevator car as the latter moves between floors, and a plurality of elevator car operating control switches mounted in a straight row in said control box and in the path of travel of said switch engaging member, said elevator car operating control switches being disposed in a selected spaced disposition for selectively operating an elevator, said switch engaging member being of greater length than the row of said switches whereby to engage all the latter in selected phases of operation.

3,190,397
BRAKE SHOE INCLUDING A WEAR-INDICATING MEANS
Pierre Camille Sudres, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed Feb. 13, 1963, Ser. No. 258,251
Claims priority, application France, Feb. 16, 1962, 888,251
1 Claim. (Cl. 188—1)



A brake shoe comprising a support member having a fixing hole extending therethrough, a friction lining on said support member, and a shielding member of a material other than the material of the friction lining disposed against said support member between said friction lining and said support member so as to constitute the bottom of said hole, said shielding member overlying only the marginal edges of said hole and extending outwardly beyond the hole about the periphery of the hole and extending into the friction lining beyond the contour of the support member, the material of said shielding member emitting a squealing sound in use upon exposure thereby to give an audible indication that the brake shoe should be replaced.

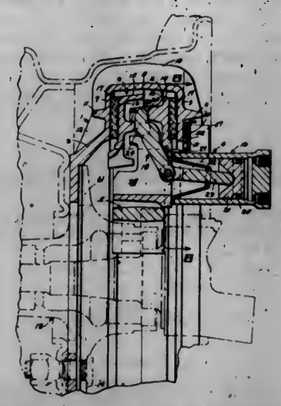
3,190,398
SPREADING TYPE DISK BRAKE
Edwin R. Evans, Orchard Lake, Mich.; The Detroit Bank and Trust Company, executor of said Edwin R. Evans, deceased
Original application Mar. 7, 1956, Ser. No. 570,064, now Patent No. 2,999,565, dated Sept. 12, 1961. Divided and this application July 24, 1961, Ser. No. 126,104
3 Claims. (Cl. 188—72)

1. A disk brake comprising a rotatable member having a pair of spaced rotatable disk surfaces, a pair of arcuate brake shoes movable axially toward said disk surfaces, said shoes being in the form of circular segments of limited circumferential extent and having arcuate friction faces respectively engageable with said disk surfaces in response to such movement thereof, said shoes being of a strong rigid construction to resist distortion, force applying means for forcing said shoes axially toward said disk surfaces for pressure engagement of their friction faces with said disk surfaces, said force applying means acting on each shoe so that the resultant force acts along a straight line which coincides with the centroidal axis of the arc of mean radius of the friction face of each shoe so that wear on the friction faces along any radial line is uniform, said centroidal axis being spaced from the

center of the arc of the friction face of each shoe a distance equal to

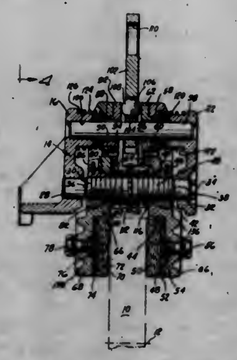
$$\frac{R \sin \frac{1}{2}a}{\frac{1}{2}a \text{ in radians}}$$

where R is one-half the tume of the inner and outer radius of the arcuate friction face thereof, and "a" is the angle subtended by the arc, said force applying means including a pivoted lever of a strong, rigid construction to resist distortion, each shoe having an elongated straight



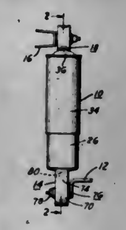
bearing surface extending through a substantial portion of the chordwise extent thereof, and said lever having elongated straight cam surfaces coextensive with said bearing surfaces and having extended linear contact therewith.

3,190,399
LEVER ACTUATED, SPOT TYPE DISC BRAKE WITH AUTOMATIC ADJUSTING MEANS
Glen L. Bowen, Detroit, and Robert W. Lemon, Farmington, Mich., assignors to G. L. Bowen & Co., Oak Park, Mich., a corporation of Michigan
Filed Sept. 3, 1963, Ser. No. 306,229
6 Claims. (Cl. 188—73)



1. A disc brake mechanism comprising a housing, a rotary brake disc mounted externally of said housing, a pair of brake shoes situated one on each side of said brake disc, each brake shoe being supported by a brake operator in the form of a lever, an intermediate portion of each lever being mounted upon said housing, a radially outward portion of each lever carrying a cam member, a brake operating lever pivotally mounted upon said housing, a cam element carried by said brake operating lever intermediate said cam members whereby said brake shoes are urged into frictional engagement with said brake disc upon movement of said brake operating lever in one direction about its pivotal axis, a ratchet wheel, a threaded shaft supporting said ratchet wheel, a universal connection between said threaded shaft and one of said brake operators, a pawl connected to the radially inward end of said brake operating lever and having its free end engaging said ratchet wheel, said pawl being adapted to rotate said wheel upon movement of said brake operating lever to an extreme position in a direction opposite to the direction of movement of said brake operating lever upon application of said brake.

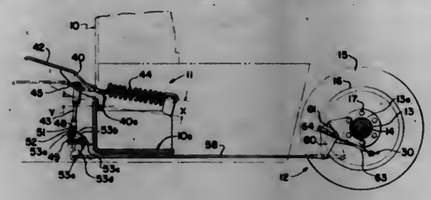
3,190,400
SHOCK ABSORBER
Harold E. Schultze, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,451
1 Claim. (Cl. 188—88)



In a shock absorber, a first cylinder, a second cylinder located concentrically within said first cylinder in spaced relationship therewith for forming a fluid reservoir therebetween, cap means having a tubular member snugly received within said first cylinder for closing one end thereof, base valve means for closing one end of said second cylinder, said cap means' tubular member extending around and beyond said base valve means, said cap means and base valve means cooperating to form a passageway between said second cylinder and said fluid reservoir, said base valve means restricting fluid flow between said second cylinder and said fluid reservoir, a bearing mounting means including a ring portion having an outer diameter substantially equal to the diameter of said first cylinder, said ring portion being located out of direct heat conductive relationship with said cap means and said base valve means, strut elements located on either side of said ring portion directed tangentially therefrom and being attached to said cap element adjacent the outer periphery thereof in alignment with the wall of said first cylinder whereby a portion of the heat generated by said base valve means is dissipated through said tubular member and by said first cylinder before passing through said strut elements, said strut elements and said cap elemeans cooperating to form an air space between said cap element and said ring portion to prevent direct conductive heat flow from said base valve means to said ring portion.

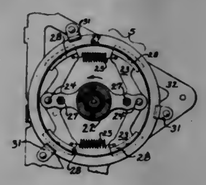
3,190,401
SPRING APPLIED BRAKE CONTROL LINKAGE
Clifford C. Bigley and Arthur E. Dahlquist, Minneapolis, Minn., assignors to Minneapolis-Moline, Inc., Hopkins, Minn., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,132
3 Claims. (Cl. 188—167)

1. A control mechanism for controlling the rotation of a rotary member relative to a fixed member, comprising, friction means for normally engaging said rotary member for preventing rotation thereof, lever means having one end pivotally mounted on said fixed member for pivotal movement about a first axis between a set position wherein said friction means engages said rotary member and a released position wherein said friction means is disengaged with said rotary member, said lever means provided with operating means at the other end adapted for manual engagement by an operator to move said lever means to said released position, linkage means connected between a pivot axis intermediate the ends of said lever means and said friction means, means for controlling the engagement thereof with said rotary member in response



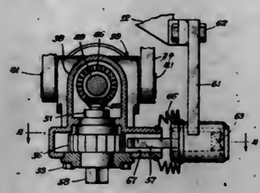
to the position of said lever means, and biasing means remote from said friction means and said rotary member having one end pivotally connected to said lever means at a first point intermediate the ends thereof and having its other end connected to said fixed member at a second point located on a line extending through said first point and passing close to said first axis when said lever means is in one of said positions, which line is movable farther from said first axis when said lever means is in said the other of said position for increasing the moment of said biasing means on said lever means during movement of the latter between said two positions.

3,190,402
SPEED RESPONSIVE GOVERNOR FOR CALCULATING MACHINES AND THE LIKE
William S. Gubelmann, deceased, late of Convent, N.J., by Walter S. Gubelmann, executor, Oyster Bay, N.Y., assignor to Realty & Industrial Corporation, Morristown, N.J., a corporation of Delaware
Application Oct. 7, 1960, Ser. No. 61,322, now Patent No. 3,098,609, dated July 23, 1963, which is a division of Ser. No. 194,273, Nov. 6, 1950, now Patent No. 2,969,177, dated Jan. 24, 1961. Divided and this application Nov. 21, 1962, Ser. No. 239,381
7 Claims. (Cl. 188—185)



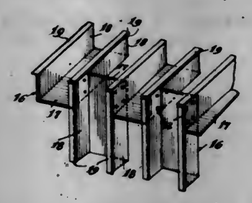
7. A speed-responsive governor for a machine having a continually impelled rotatable drive unit, said governor comprising a stationary brake drum, a member internal said drum and connected to said drive unit for rotation therewith, carrier arms pivoted on said member, a shoe mass on each carrier arm responsive to centrifugal forces for clutching said brake drum to retard the speed of rotation of said drive unit whenever said drive unit tends to exceed a predetermined maximum speed and wherein each said shoe mass is pivotally mounted on its respective carrier arm for limited angular movement for permitting self alignment of each said shoe mass with said brake drum upon contact of said shoe mass with said drum, and resilient means engaging said carrier arms for normally holding said shoe masses out of contact with said brake drum.

3,190,403
SLACK ADJUSTER
Eldon Wayne Bushnell, Lansing, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Nov. 29, 1963, Ser. No. 326,833
3 Claims. (Cl. 188—196)



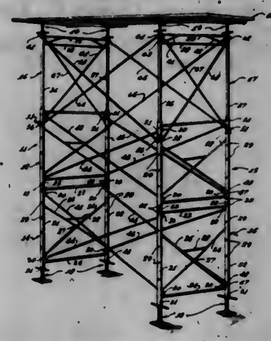
1. In slack adjuster for a railway car brake, a housing, an internally threaded nut journaled for rotational and non-axial movement in said housing, an adjusting screw in threaded engagement with said nut, a ratchet member journaled in said housing and provided with ratchet teeth, gear means interconnecting the nut and ratchet member for common rotational movement, a pawl mounted for reciprocative movement into and out of contact with said ratchet teeth to rotate said ratchet member responsive to movement of said housing transversely of the line of travel of the pawl, and an abutment screw on said housing operative responsive to movement of the housing in one direction to engage and move the pawl out of contact with said teeth.

3,190,404
BUILDING CONSTRUCTION
Gerald G. Greulich, Fort Lauderdale, Fla., assignor to The Ceco Corporation, a corporation of Delaware
Filed May 22, 1961, Ser. No. 111,660
8 Claims. (Cl. 189—1)



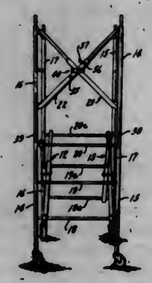
8. A building structure having a rigid stable frame provided with flexible joints at the foundation and the apex of the roof, comprising a plurality of spaced vertically disposed parallel channel members, a plurality of spaced parallel angularly disposed channel members meeting at the apex of the roof and interengaging with the vertically disposed channel members at the eaves, a rigid knee joint formed at the interengaging ends of the channel members, an upwardly bent tongue on the end of the angularly disposed channel members opposite the knee joint and abutting a like tongue of another angularly disposed channel member at the apex of the roof, means securing said abutting tongues together to form a flexible joint, an inwardly bent tongue on the lower end of each vertically disposed channel member, and anchoring means securing said last mentioned tongues to the foundation of the building.

3,190,405
EXTENDABLE SHORE
Robert K. Squire, Los Angeles, Calif., assignor to Superior Scaffold Co., Torrance, Calif., a corporation of California
Filed June 30, 1961, Ser. No. 120,985
8 Claims. (Cl. 189—13)



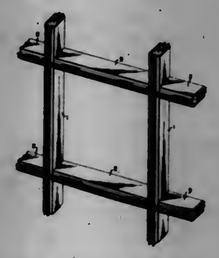
1. An extendable shoring scaffold comprising: a pair of horizontally spaced base frames; bracing elements interconnecting said base frames; a pair of horizontally spaced extension frames mounted on said base frames in telescoping relation; adapter pins adjustably mounted in said base frames and engaged by said extension frames to support the extension frames and the load carried thereby; and vertically diagonal bracing elements of standard effective length interconnecting points on said extension frames and said adapter pins to rigidify said extension frames, said standard length bracing elements interconnecting the same points on the extension frames and the adapter pins regardless of the position of the adapter pins in the base frames and the amount of telescoping of the extension frames in the base frames.

3,190,406
COLLAPSIBLE STRUCTURE
John A. Usher, 7412 S. Shore Drive; John R. Usher, 7441 S. Shore Drive; and James F. Usher, 7412 S. Shore Drive, all of Chicago, Ill.
Filed Sept. 17, 1962, Ser. No. 223,885
7 Claims. (Cl. 189—20)



7. For use in a collapsible framework structure, a pair of crossed, variable-length brace members, and means removably connected with said brace members, said means including a set of tie bars, each of said tie bars being separably, pivotally connected to an outer surface of one of said brace members, and spacer members extending between and removably secured to said tie bars to couple said brace members together in abutting relationship and to hold said tie bars in pivotal connection with said brace members.

3,190,407
PARTITION WITH A METAL FRAMEWORK
Jean Joseph Arthur Grisard, 93 Blvd. St. Michel, Etterbeek, Belgium, and Marcel Jean Arthur Grisard, 51 Ave. des Croix du Feu, Brussels, Belgium
Filed July 13, 1960, Ser. No. 42,653
Claims priority, application Belgium, July 17, 1959, 460,313, Patent 580,807; June 24, 1960, 39,868, Patent 592,242
1 Claim. (Cl. 189—34)



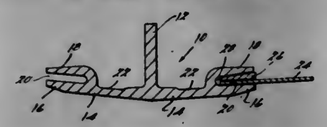
A partition wall comprising parallel spaced uprights, parallel spaced cross-beams interconnecting said uprights, each of said uprights and cross-beams having an identical rectangular cross-section and comprising at least one reinforcement web extending between two opposite parallel faces of said rectangular cross-section, each of the other two opposite parallel faces having a longitudinal opening and flanges connected to the edges of said opening and extending outwardly perpendicular to said web and forming a continuous panel-embracing and supporting rabbet, connecting means consisting of at least one strip extending perpendicularly through each upright and connected with the web of the adjacent cross-beam for interconnecting said uprights and cross-beams with the webs thereof located in a same vertical plane, panels bearing against the rabbets of said uprights and cross-beams, and enclosing the spaces between said uprights and cross-beams, and cover-strips engaged in the openings of said uprights and cross-beams for holding said panels in said rabbets.

3,190,408
JOINING MEANS
Adolf Helmer Petterson, Goteborg, Sweden, assignor to Profile System International, Oslo, Norway
Filed Jan. 30, 1961, Ser. No. 85,906
Claims priority, application Sweden, Jan. 9, 1960, 170/60
7 Claims. (Cl. 189—36)



1. Means connecting a panel member to an elongated member, said elongated member comprising first elongated rib means formed integrally therewith and having a first surface on one side thereof, second elongated rib means formed integrally with said elongated member disposed substantially parallel to said first rib means, a second surface on said second rib means in facing relationship to said first surface on said first rib means and generally parallel thereto when said rib means are unstressed, each of said rib means being formed of resiliently deflectable metal and having a materially greater width than thickness to permit a resilient bending of said rib means with respect to one another and each of said rib means tapering in cross-section away from said elongated member, said rib means receiving a portion of the panel member therebetween and being spaced apart a distance greater than the thickness of said portion of the panel member, and elongated wedge means having a wedge-shaped cross section inserted between said rib means, small thickness edge first, when said portion of the panel member is disposed therebetween, the outside cross-sectional configuration of said wedge means being sufficient when thus inserted to cause a resilient bending of said rib means away from one another whereby the panel member will be clamped therebetween primarily by the resilient bending stresses in said rib means.

3,190,409
JOINING MEANS
Adolf Helmer Petterson, Goteborg, Sweden, assignor to Profile System International, Oslo, Norway
Continuation of application Ser. No. 78,681, Dec. 27, 1960. This application Jan. 8, 1962, Ser. No. 164,768
Claims priority, application Sweden, Jan. 9, 1960, 170/60
5 Claims. (Cl. 189—36)



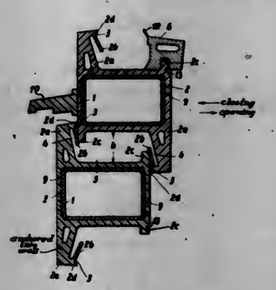
1. Means connecting a panel member to an elongated member, said elongated member comprising first elongated rib means formed integrally therewith and having a first surface one one side thereof, second elongated rib means formed integrally with said elongated member and disposed substantially parallel to said first rib means, a second surface on said second rib means in facing relationship to said first surface on said first rib means and generally parallel thereto when said rib means are unstressed, each of said rib means being formed of resiliently deflectable metal and having a materially greater width than thickness to permit a resilient bending of said rib means with respect to one another, said rib means receiving a portion of the panel member therebetween and being spaced apart a distance greater than the thickness of said portion of the panel member, elongated wedge means having a wedge-shaped cross section inserted between said rib means, small thickness edge first, when said portion of the panel member is disposed therebetween, the outside cross-sectional configuration of said wedge means being sufficient when thus inserted to cause a resilient bending of said rib means away from one another whereby the panel member will be clamped therebetween primarily by the resilient bending stresses in said rib means, and means defining a resiliently deflectable section in said elongated member extending longitudinally thereof remote from said rib means, said section being more flexible than said rib means in the same direction.

3,190,410
BOX GIRDERS
Ivar Mölstad, Halmstad, Sweden, assignor to Aktiebolaget Malcus Holmquist, Halmstad, Sweden, a corporation of Sweden
Filed Mar. 8, 1962, Ser. No. 178,466
Claims priority, application Sweden, Mar. 10, 1961, 2,578/61
3 Claims. (Cl. 189—37)

1. A box girder made of sheet metal comprising two substantially symmetrical longitudinal halves secured together, each half forming a lateral side and half the top and bottom sides of the girder, each half being bent to form a top tubular section including the upper portion of the lateral side, the half of the top side, a central vertical portion extending downwardly from the inner edge of the half of the top side and a portion extending outwardly from the central vertical portion at a point intermediate the top and bottom of the vertical side, the two halves being positioned with said central vertical portions contiguous and being welded together centrally to form joints along the top and bottom sides, respectively, and individual transverse stiffening plates positioned at intervals within each half.



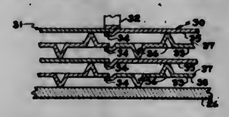
3,190,411
WINDOW AND DOOR STRUCTURAL ELEMENT
Heinz Pasche, Ahrensburgerstrasse 44, Hamburg-Wandsbek, Germany
Filed Dec. 6, 1962, Ser. No. 242,801
Claims priority, application Germany, Dec. 8, 1961, P 28,397
5 Claims. (Cl. 189—75)



1. A structural member for making the frame structures of closure members such as windows and doors, comprising a tubular metallic member of rectangular section, a unitary extruded tubular sheathing of synthetic thermoplastic material covering said metallic member, said sheathing being provided with opposed side walls, oppositely extending ribs on said sheathing in substantially the same plane as said side walls, certain of said ribs being of increased width to project a greater distance beyond said side walls than other of said ribs, relatively thin sealing ribs formed on the outer ends of said ribs of increased width extending in a direction opposite to the direction of said rib of increased width and directed inwardly toward the sheathing, said relatively thin ribs being adapted to contactually engage one of the other of said oppositely extending ribs on an adjacent structural member, said other ribs and said ribs of increased width of adjacent structural members being adapted to cooperate when the structural members are used for window and window frame structures to form an air chamber enclosed by walls connecting said side walls and the interengaging ribs, each of said certain ribs of increased width being provided on a portion of its free end with a sharp edge which projects at an obtuse angle and cooperates with the adjacent

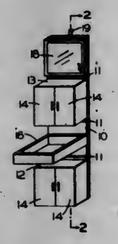
surface of the relatively thin sealing rib to form a longitudinal recess, whereby when a rib of increased width is engaged by one of said other oppositely extending ribs of an adjacent structural member a sealing suction chamber will be formed in said recess and effectively seal the joint therebetween by an insulating air space.

3,190,412
ALL-METALLIC INSULATION
Donald P. Rutter, Bernardsville, and Paul J. Paetzold, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed May 25, 1960, Ser. No. 31,702
9 Claims. (Cl. 189—85)



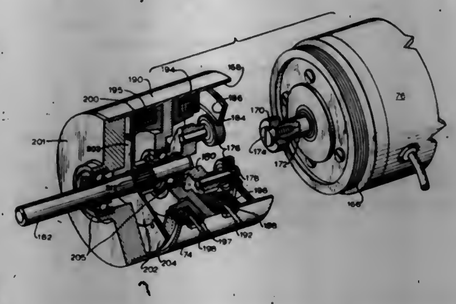
1. A thermal insulating media comprising a plurality of metallic heat reflective shields arranged in sets, each set comprising: a plurality of shields arranged in parallel layers, and protuberances of definite and defined configuration extending between said layers and being integral with at least one of said shields, said protuberances maintaining said shields in spaced but yieldable relation, the shields in one set having recessed termini to provide bearing surfaces for the shields of the next adjacent set and to position the reflective surfaces of the shields of said adjacent set on the same plane with the reflective surfaces of said one set.

3,190,413
CAMPING KIT
Claude W. Liles, 1525 Hawthorne Lane, Charlotte, N.C.
Filed Oct. 28, 1963, Ser. No. 319,376
1 Claim. (Cl. 190—12)



In a portable camping kit a frame consisting of four sections, each section being connected to its adjacent section with hinge means; said hinges allowing said four frame sections to fold in the same direction only, a mirror secured to the upper section of said frame on the inner face of the frame, a handle secured to the central portion of the outer face of the upper section of said frame, a cabinet secured to the inner face of the second section of said frame said cabinet having suitable located shelves and partitions, a frame work rigidly mounted on the third section of said frame said framework extending outwardly from said frame, a water tight basin removably located within said framework, a second cabinet secured to the fourth section or lower section of said frame said cabinet having shelves and partitions suitably located. with latch means to hold the hinged sections of said frame in its folded box-like configuration.

3,190,414
COMBINATION MOTOR-TRANSMISSION-BRAKE
John A. Maurer, New Brunswick, N.J., and Eugene W. Elliott, Barrington, Ill., assignors to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed Feb. 21, 1963, Ser. No. 260,283
9 Claims. (Cl. 192—4)



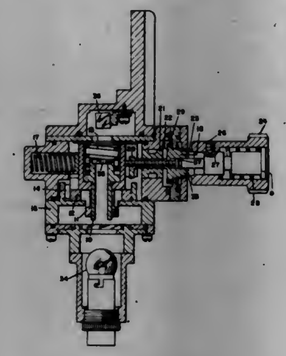
1. An improved electrically actuated transmission-brake comprising a housing, a shaft supported for rotation in said housing and extending therefrom, brake ring means secured to said first shaft and concentric thereabout, planetary gear means comprising a planet carrier, a ring gear and a sun gear, and having its planet carrier secured to said shaft, its ring gear axially slideable upon the planet gears carried by the planet carrier, and its sun gear centered between the planet gears and in engagement therewith, first ring shaped electromagnet means secured in said housing in close proximity to said ring gear, said first ring shaped electromagnet means being adapted when energized to attract said ring gear and by frictional engagement therewith to prevent the rotation of said ring gear, and second ring shaped electromagnet means secured in said housing in close proximity to said brake ring means, said second ring shaped electromagnet means being adapted when energized to attract said brake ring and by frictional engagement therewith to retard the rotation of said shaft.

3,190,415
FREE-WHEELING HUB WITH COASTER BRAKE
Hans Joachim Schwerdhöfer, Paul Dotter, and Max Kimpflinger, all of Schweinfurt (Main), Germany, assignors to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Jan. 24, 1962, Ser. No. 168,443
Claims priority, application Germany, Jan. 28, 1961, F 33,087; Feb. 3, 1961, F 33,128
10 Claims. (Cl. 192—6)



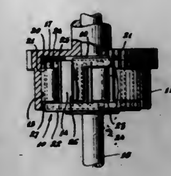
1. In a wheel hub with coaster brake for a bicycle and the like, in combination,
(a) a hub shell having an axis and defining an axial cavity, said shell having a bearing race in said cavity;
(b) an internal bearing member arrangement having a first portion in said cavity formed with a bearing race opposite the bearing race of said hub shell, said first portion radially flaring from said bearing race thereof in a direction outward of said cavity, and a second portion in said cavity axially inward of said first portion, said second portion being provided with an engagement face of a diameter larger than the internal diameter of the bearing race of said first portion;
(c) a plurality of anti-friction members interposed between said bearing races for rolling contact therewith;
(d) annular cage means formed with a plurality of spaced recesses respectively receiving said anti-friction members and constituting therewith an annular anti-friction assembly, said arrangement including means for giving said anti-friction assembly axial access to said bearing race of the first portion diameter;
(e) expandable brake sleeve means in said cavity having an axially flaring engagement face for engagement with said engagement face of said internal bearing member arrangement; and
(f) actuating means for axially moving said brake sleeve means toward said bearing member arrangement while said faces are engaged.

3,190,416
CLUTCH AND BRAKE POSITIONING DEVICE
James E. Harter, Webster, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 29, 1963, Ser. No. 327,162
2 Claims. (Cl. 192—17)



1. In a coordinate positioning device wherein an object positioning mount is supported upon laterally and longitudinally movable members, the combination therewith of
a hollow shaft coupled at one end to said longitudinally movable member and having at the other end a face gear,
a solid shaft threaded through said hollow shaft and having one end in engagement with said laterally movable member,
a hollow control member coupled to the other end of said solid shaft and having a face gear,
means biasing the face gear of said control member into mesh with the face gear of said hollow shaft, said control member being movable against said biasing mean to disengage said gears for rotating said solid shaft independently of said hollow shaft, and
means including a brake member encircling said hollow shaft and a connecting actuating member for applying a braking force to said hollow shaft, said brake actuating member and control member being so located with respect to one another that they are simultaneously operable by a single human hand.

3,190,417
OVER-RUNNING CLUTCH
Walter H. Bacon, 39 Dogwood Road, North Haven, Conn.
Filed Apr. 5, 1963, Ser. No. 270,954
4 Claims. (Cl. 192—45)



1. In a clutch mechanism of the over-running type for coupling in driving engagement two rotatable companion parts when a driving force is applied to one of those parts one of which has a hollow cylinder portion having an open end with a race formed on the internal periphery of the cylinder portion to receive the other part which comprises a unitary cartridge, said cartridge comprising a cam member rotatable about a central axis, a hollow cylindrical casing having an open end and a closed end fixedly mounted at its said closed end adjacent one end of said cam member so that said casing is concentric with said axis, a closure member fixedly mounted adjacent the other end of said cam member and said casing with the periphery of said closure member being concentric with said axis and aligned with the peripheral surface of said casing whereby said cam member is substantially enclosed by said casing and said closure member, said casing provided with a plurality of circumferentially spaced apertures to receive a wedging roller, a plurality of cam surfaces on said cam member located opposite said apertures and forming laterally converging spaces with said casing respectively, a wedging roller received in each of said apertures having a diameter such that when said roller is reposing on said cam surface at the point of maximum radial height of said converging space said roller will not make driving engagement with such race when said cartridge is received in such cylinder portion, the lateral width of each said aperture being such as to permit said roller to make driving engagement with such race when said roller is moved laterally on said cam surface respectively when said cartridge is received in such cylinder portion and such driving force is applied to one of such parts, resilient biasing means guided by said closure member and said closed end and engaging said roller urging said roller against one edge of said aperture when said cartridge is not received in such cylinder portion and urging said roller into a position of driving engagement with such race when said cartridge is received in such cylinder portion respectively, and means for limiting the outward radial movement of said rollers.

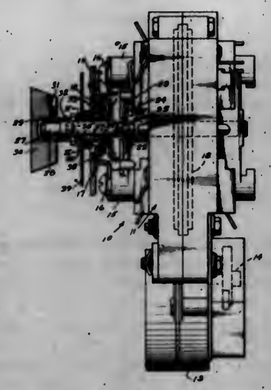
3,190,418
CONSTRUCTION FOR SEQUENTIAL TIMER SHAFT
Lee A. Woolley, Kokomo, Ind., assignor to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana
Filed Nov. 8, 1962, Ser. No. 236,379
8 Claims. (Cl. 192—67)

5. A manual drive mechanism for a sequence timer, comprising in combination:
(a) a timer shaft adapted to be supported for rotation about its axis, and being manually shiftable axially between two positions;
(b) actuator means comovably secured to said timer shaft and adapted to open a switch in a first of said

positions and to close the switch in the other of said positions;

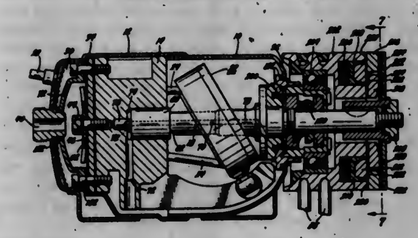
(c) detent means comprising a part of said shaft and operative to hold said shaft in said two positions;

(d) spring means so acting on said shaft as to aid



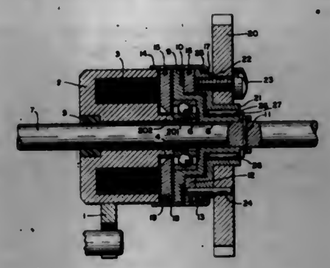
manual shaft movement into said first position wherein said switch is open, and as to oppose shaft movement into said other position wherein said switch is closed, whereby a somewhat lesser manual force is needed to open the switch than to close it.

3,190,419
ELECTRO MAGNETIC CLUTCH WITH RING LIKE ARMATURES
John H. Heldorn, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application July 15, 1959, Ser. No. 827,346, now Patent No. 3,092,307, dated June 4, 1963. Divided and this application July 25, 1961, Ser. No. 126,683
2 Claims. (Cl. 192—84)



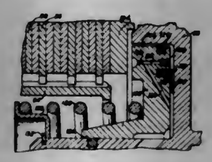
1. In combination, a casing, a drive shaft extending through one wall of said casing, a pulley rotatably supported on the end wall of said casing, one portion of said pulley surrounding the outer end of said drive shaft, an electromagnet disposed in the outer face of said pulley, a pair of ring-like armatures, means for drivingly connecting said pair of ring-like armatures to said shaft, resilient means for supporting said pair of ring-like armatures on said connecting means for relative axial movement with respect to one another, a first of said ring-like armatures being located away from the outer face of said pulley a greater distance than the second of said ring-like armatures, said pair of ring-like armatures upon energization of said electromagnet moving selectively into engagement with the outer face of said pulley with said second ring-like armature engaging said pulley ahead of the engagement by said first ring-like armature.

3,190,420
ELECTROMAGNETIC FRICTION CLUTCH
Richard S. Kampf, Denver, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,456
4 Claims. (Cl. 192—84)



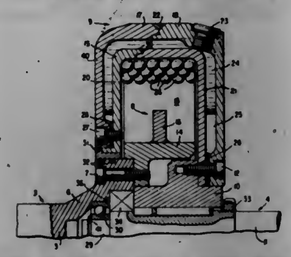
4. An electro-magnetically operated clutch, including in combination, a driving element, a driven element, clutch means for operatively connecting or disconnecting said driving and driven elements, and means for causing engagement and disengagement of said clutch means including, a stationary housing of material suitable for conducting magnetic flux and having pole faces thereon, a coil of electrically conducting wire wound on said housing so as to induce a magentic flux in said housing when said coil is energized, a ring-shaped armature located opposite the pole faces of said housing for limited movement relative thereto, a light-weight tubular retainer ring slidably mounted on said housing, and means securing said retainer ring to said armature so that said retainer ring is moved by said armature when said coil is energized and thereby causes engagement of said clutch means.

3,190,421
FLUID CLUTCH WITH CUSHIONED ENGAGEMENT
George W. Schulz, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 17, 1963, Ser. No. 281,136
4 Claims. (Cl. 192—85)



1. A fluid clutch comprising a driving clutch member, a driven clutch member, one of the said members defining a fluid pressure cylinder, a first friction element carried by one clutch member, a second friction element carried by the other clutch member, an annular piston disposed within said cylinder, a fluid pressure seal carried by said piston including a portion situated in static sealing engagement with the adjacent walls of said cylinder during relative movement of said piston and cylinder whereby said piston and cylinder define a pair of radially spaced fluid pressure chambers, and means for establishing restricted fluid communicating between said chambers.

3,190,422
CENTRIFUGAL CLUTCH WITH VIBRATION DAMPER
Manfred H. Burckhardt, Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Apr. 7, 1961, Ser. No. 101,578
5 Claims. (Cl. 192—105)



1. A centrifugally operated friction clutch, especially for motor vehicles, comprising

driving clutch means,

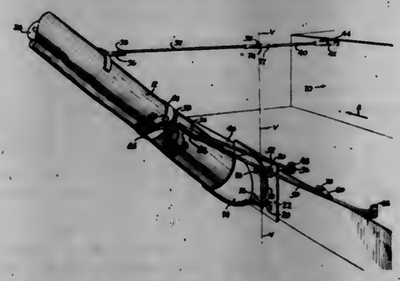
driven clutch means surrounding said driving clutch means,

said driving clutch means comprising a drive shaft and entrainment means secured to said drive shaft and including a ring member and at least one radially secured entrainment disk connected to said ring member, said entrainment disk together with said ring member effectively providing chambers disposed between said driving and driven clutch means,

and operating means operative to provide a force-locking engagement between said driving and said driven clutch means during the occurrence of a centrifugal force acting on said operating means, said operating means consisting of a plurality of essentially globular clutch bodies within said chambers,

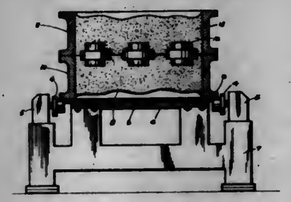
said driven clutch means comprising a driven shaft and a double-walled housing secured thereto and enclosing said driving clutch means, said housing consisting of an outer drum-shaped housing part, an inner drum-shaped housing part nested within and spaced from said outer drum-shaped housing part, and vibration damping and sealing means connecting said housing parts together to form a sealed hollow space therebetween, and a sound-absorbing material arranged in said hollow space.

3,190,423
CHUTE SUPPORT FOR COMBINE
Maurice H. Wenning, Moline, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 16, 1964, Ser. No. 338,126
8 Claims. (Cl. 193—2)



1. In a combine or the like having a frame, and an elongate upwardly inclined discharge chute mounted at its lower end on said frame for pivotal movement about a generally vertical axis between an outwardly projecting operating position and a transport position adjacent one side of said frame displaced approximately 90° about said axis from said operating position; elongate tension means coupled at one end to said chute adjacent the upper end thereof, a link coupled at one end to said frame and coupled at its other end to the other end tension means, said link and said tension means being in longitudinal tensioning alignment with each other when said chute is in said operating position to support the upper end of said chute from said frame, support arm means mounted at one end on said frame for pivotal movement between a first position and a second position, a coupling assembly mounted on the other end of said support arm means, first coupling means on said chute engageable with said coupling assembly when said support arm means is in said first position to lock said chute against pivotal movement from its operating position, and second coupling means on said link adjacent said other end of said link engageable with said coupling assembly when said support arm means is in said second position to maintain tension in said tensioning means when said chute is in said transport position.

3,190,424
CONVEYOR WITH FALL OUT PLATE FOR FOUNDRY FLASKS
Russell W. Taccone, Erie, Pa., assignor to Taccone Corporation, North East, Pa., a corporation of Pennsylvania
Filed Oct. 24, 1962, Ser. No. 232,777
3 Claims. (Cl. 193—35)



2. In combination, a bottom plate and a conveyor adapted to carry a plurality of flasks open at the top and bottom and adapted to contain sand molds formed thereon to be conveyed on said conveyor,

said conveyor comprising spaced rows of wheels,

said wheels each having a flange at the outer side of the support periphery thereof,

said wheels adapted to support a plurality of said flasks,

said bottom plate extending laterally from a position adjacent one said row of wheels to a position adjacent the other,

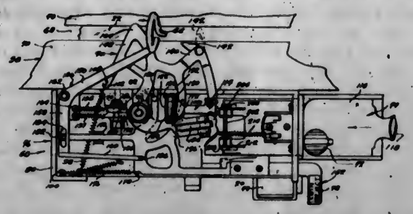
said plate terminating at a position spaced from the inside edges of said wheels,

said plate being slightly below the uppermost part of said support periphery of said wheels, said flasks having a lower edge resting on said support periphery of said wheels and disposed in close proximate relation to said plate whereby sand which falls from said flasks is moved along said plate by said flasks to a fall out area at the end of said plate.

3,190,425
COIN OPERATED LATCH DEVICE
Jerry L. Milanos and Angelo Milanos, both of 203 W. Water St., Hillsboro, Ill.
Filed Aug. 12, 1963, Ser. No. 301,482
14 Claims. (Cl. 194—1)

1. A coin operated latch device comprising, coin receiving means, a latch operable between a first position and a second position, means including an actuating mem-

ber operable upon said coin receiving means receiving a coin for positioning said latch in said second position, means for releasably retaining said latch in said second position, and coin return means operable between a normal position and a coin return position and when in said



normal position for releasably retaining a coin, and upon movement to said coin return position and operation of said actuating means to move said latch to said second position for releasing the last said coin and for releasing said latch from said second position for movement to said first position.

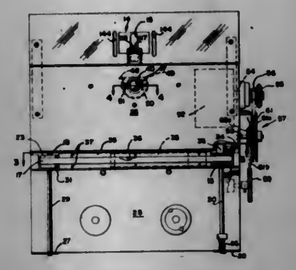
3,190,426
MONEY-HANDLING DEVICES
Bernard S. Cahill, Kirkwood, and Daniel J. Schepflin, St. Louis County, Mo., assignors to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed Apr. 3, 1961, Ser. No. 100,272
14 Claims. (Cl. 194—4)



14. In a change-making device, a coin-ejecting assembly, a currency-ejecting assembly, a coin storage tube associated with said coin-ejecting assembly, a currency storage tube associated with said currency-ejecting assembly, a currency-identifying unit that can grip and move bills of different denomination and that has an electric channel responsive to bills of one denomination and that has a second electric channel responsive to bills of higher denomination, said second electric channel being disabled but permitting the first said electric channel to continue operation whenever the supply of currency in said currency storage tube becomes disabled.

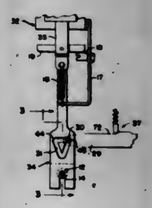
3,190,427
AMBULATORY TYPEWRITER APPARATUS HAVING ONLY ONE DRIVING MEANS
Svend R. Pedersen, Lafayette, Calif., assignor to Pedersen Electronics, Lafayette, Calif., a corporation of California
Filed Jan. 16, 1963, Ser. No. 251,858
8 Claims. (Cl. 197—2)

1. In a typewriter of the type which is adapted to move over a print-receiving surface, and which has a driving power train including motive means for intermittently advancing the typewriter in a predetermined direction across the surface in response to typing thereon, a transport assembly comprising a frame disposed to generally receive the weight of the typewriter, a pair of rollers driven by the motive means and spaced apart in a direction corresponding to the direction of movement of a line of typing, a single endless belt trained around said rollers for cyclic movement to move said typewriter in said direction,



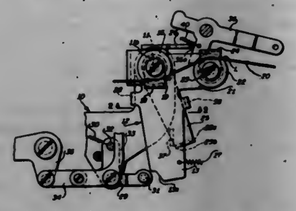
said single belt being the sole traction means for said typewriter, said belt serving to support said frame from said print receiving surface, and a rotatable sphere carried by said frame to continuously engage said surface to support the typewriter during typing upon said surface, said sphere being disposed laterally to one side of said belt and extending downwardly beneath said typewriter sufficiently whereby the weight of the typewriter during typing is transmitted to said surface via said belt and said sphere.

3,190,428
AUXILIARY CASE SHIFT MECHANISM FOR TELETYPEWRITER RECEIVERS TO PREVENT GARBLE
Robert J. Ramig, Jr., Niles, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,208
6 Claims. (Cl. 197—71)



1. In a case shift mechanism for a teletypewriter, a case shift code bar positionable to one or the other of two operating positions, means responsive to predetermined telegraph code signals to move said code bar to one or the other of said operating positions, a second and separate means for moving the case shift code bar, which means is independent of the signal responsive means and comprises a cam follower member carried by said code bar, a cam assembly containing a triangular cam channel in which said cam follower member is disposed and retained, and means for operating said cam assembly to drive said follower member and impart momentum to said code bar from either one of said operating positions to the other.

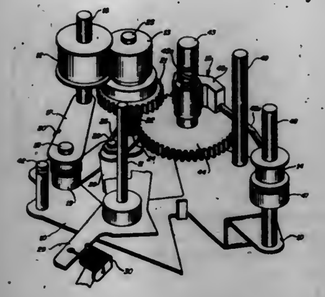
3,190,429
SPACE BAR LINE LOCK AND ESCAPEMENT INTERLOCK MECHANISM
Theodore N. Madison, Thompsonville, and Ludwick Szeluga, Wapping, Conn., assignors to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Jan. 28, 1963, Ser. No. 254,292
5 Claims. (Cl. 197—108)



1. A typewriter carriage return band controlled mechanism for operation during carriage return movement of the typewriter carriage return drawband, in combination,
a frame,
a lever comprising first, second, third and fourth arms, means to mount said lever on said frame for pivotal movement only in relation to said frame,
a first pulley rotatably supported on said frame for engagement by said drawband,
a second pulley rotatably mounted on said first lever arm and movable therewith upon pivotal movement of said lever and engaged by said drawband, said second pulley being so located with respect to said first pulley during letter spacing movement of the drawband so as to form a loop therein whereby carriage return operation of said band causes tensioning thereof to straighten said loop thereby causing said drawband to exert pressure on said second pulley to pivot said lever and accordingly all of said lever arms,
spring means interconnecting one of said lever arms and said frame to bias said first lever arm on which said second pulley is mounted to maintain said loop during and at the end of letter spacing travel of said drawband,
a space bar trigger movably mounted on said frame and operatively associated with the second of said lever arms, said second lever arm including means to lock said trigger upon pivotal movement of said lever,
a line lock operating crank pivotally mounted on said frame and operatively associated with said third lever arm and movable thereby into locking position upon pivotal movement of said lever,
an escapement disabling crank mounted on said frame for movement between escapement disabling and enabling position,
and means operated by said fourth lever for moving said escapement crank to escapement disabling position upon pivotal movement of said lever.

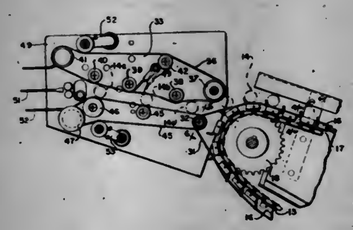
3,190,430
RIBBON HANDLING MECHANISM
Robert E. McGrath, Feeding Hills, Mass., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Oct. 17, 1962, Ser. No. 231,102
5 Claims. (Cl. 197—151)

1. In a carbon ribbon handling mechanism for a matrix writing machine having a printing head mounted on a carriage that travels horizontally during the printing operation, said mechanism comprising, in combination, a rotatable ribbon supply spool mounted on such carriage, the axial depth of such supply spool being substantially greater than the width of the carbon ribbon,
a ribbon take-up spool of the same axial depth as said supply spool,
means rotatably mounting said take-up spool on said carriage,
a pair of ribbon feeding rollers rotatably mounted on said carriage and adapted to embrace and feed a carbon ribbon,



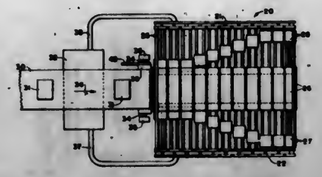
means for rotating said take-up spool and at least one of said rollers whereby ribbon is fed by said rollers to said take-up spool,
and means disposed in the path of ribbon travel between said rollers and said take-up spool for alternately raising and lowering the ribbon during the feeding thereof whereby the ribbon is spirally cross wound on said take-up spool.

3,190,431
ARTICLE FEEDING DEVICE FOR A PACKAGING MACHINE
Thomas E. Dugle, Indian Hill, and Roland W. Wagner, Sharonville, Ohio, assignors, by mesne assignments, to Warrick Equipment Corp., Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 22, 1963, Ser. No. 274,749
5 Claims. (Cl. 198—22)



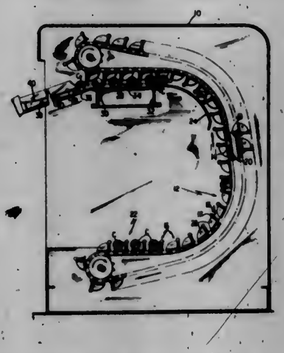
1. In a machine for handling cylindrical articles, the combination of an endless article conveyor comprising a plurality of article buckets arranged in tandem fashion, each of said article buckets being constructed to hold one article with the axis thereof extending transversely of the article conveyor, said article conveyor having a substantially horizontal main course and a downwardly extending discharge section at a discharge end of the main course, upper and lower belt conveyors mounted adjacent the discharge section, said belt conveyors having spaced article engaging courses adapted to engage the articles therebetween, a roller supporting one end of the lower belt conveyor adjacent the discharge section and a transfer belt running in the buckets of the article conveyor and mounted on said roller adjacent the lower belt conveyor to transfer the articles from the article conveyor to the belt conveyors.

3,190,432
CONVEYOR SWITCHING DEVICE
Frank B. Vanderhoof, Wharton, N.J., assignor to Scale Specialties, Inc., Boonton, N.J., a corporation of New Jersey
Filed Aug. 29, 1963, Ser. No. 305,385
9 Claims. (Cl. 198—31)



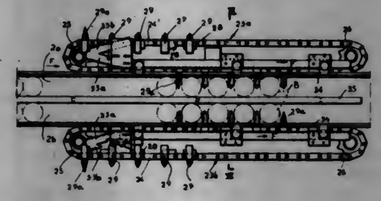
1. A conveyor switching device for separating received articles into a plurality of groups, a sensing means for determining the classification of an article within a predetermined range of values, a plurality of carrier bases propelled by a power means to receive the articles from a supply source, said bases movable in a neutral direction when the sensing means classifies the articles within a first predetermined range of values, a plurality of control coupling means mounted adjacent to the bases, said coupling means adapted to be coupled to the bases whenever the sensing means classifies an article outside said predetermined range of values, said coupling means also controlled by a cam follower and cam to move in a direction which differs from said neutral direction.

3,190,433
CAN ALIGNING APPARATUS
Leonard Carl Blankschein, Jr., Berwyn, Ill., assignor to Cities Service Oil Company, New York, N.Y., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,725
4 Claims. (Cl. 198—33)



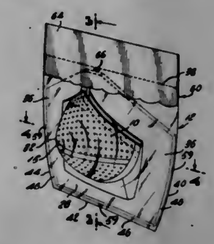
1. A can aligning apparatus capable of aligning randomly oriented magnetic and non-magnetic cylindrical cans of the type having a greater length than diameter and a bottom at one end and an open opposite end comprising:
(a) an endless conveyor positioned in a generally inverted C-shape path;
(b) a plurality of horizontally positioned can supporting and lifting flights for carrying said cans on their sides along the conveyor, the ends of such cans remaining randomly oriented;
(c) a plurality of spacing elements in each flight, said spacing elements being aligned in vertical planes, the horizontal space between said spacing elements being greater than the length of each can and less than twice the length thereof;
(d) a supporting plate for retaining the cans partly within said flights as the conveyor advances into the over-hanging portion of the inverted C-shape path;
(e) a slide positioned to receive the cans rolling on their sides from said supporting plate, said slide slanting downwardly away from the conveyor;
(f) a plurality of first guide means attached to said supporting plate and positioned between said supporting plate and said flights, each of said guide means at one end being aligned with the spacing elements of the flights to receive and guide said cans and converging at the opposite end to approximately the length of said cans so as to direct the cans to predetermined positions along the top of said slide;
(g) a plurality of second guide means positioned on said slide, each of said second guide means being spaced apart approximately the length of said cans and aligned with said first guide means to receive the cans rolling onto said slide;
(h) a plurality of balancing edges positioned on the slide centrally of said second guide means, whereby the randomly oriented cans carried by said flights are separated and directed by means of said spacing elements and said first guide means onto said balancing edges, thereby separating said cans into streams on either side of said balancing edge with each can aligned with its open end upward.

3,190,434
GROUPING AND SPACING DEVICE
Edgar Jean Marcel Dardaine, Poissy, France, assignor to E. P. Remy & Cie, Poissy, France, a corporation of France
Filed Oct. 30, 1962, Ser. No. 234,112
Claims priority, application France, Nov. 7, 1961, 878,224, 878,225
6 Claims. (Cl. 198—34)



1. A device for positioning miscellaneous objects such as bottles, boxes and the like, comprising at least one conveyor belt onto which said objects are disposable in predetermined rows while said conveyor belt is travelling at a constant speed with a view of having them seized and transported in predetermined spacial relationship by gripping heads traveling continuously above said conveyor belt and a grouping device comprising a plurality of spaced stop members carried by supports mounted on at least one endless chain traveling in a direction parallel to the direction of translation of said conveyor belt, said stop members being adapted to be inserted between two of said objects so that said objects travel at the same speed as said stop members and are distributed over the belt into separate homogeneous groups, each having a predetermined number of objects contacting one another, a distributing device, disposed in relation to the direction of travel of said belt, after said grouping device, said distributing device comprising a plurality of pin members carried by supports mounted on at least one endless chain traveling in a direction parallel to the direction of translation of said belt, some at least of said pins being mounted so as to be capable of sliding in relation to said supports toward a first retracted position and a second extended position in which they project between the objects of one of said groups so as to space them from one another on said conveyor belt, said grouping device and said distributing device being driven in synchronized relation to each other and to said gripping heads, the velocity of said stop members being much lower than the velocity of said conveyor belt and in relation with the number and size of said objects, and the velocity of said pin members being lower than the velocity of said conveyor belt and equal to the velocity of said gripping heads.

3,190,435
GARMENT RETAINING PACKAGES
Eugene Schlanger, 8100 Bay Parkway, Brooklyn, N.Y.
Filed Mar. 16, 1962, Ser. No. 180,160
5 Claims. (Cl. 206—7)



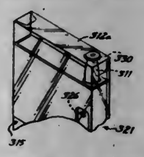
1. A package for retaining a brassiere comprising a pair of bust-receiving cups and other material for holding the cups assembled and for holding the brassiere on the body of a wearer, the package providing means for displaying the brassiere with its cups distended to their bust-receiving shape, the brassiere being made of materials the cross-section of which is substantially uniformly thin, each distended cup defining a substantially convex exterior and a substantially complementary concave interior, the cups being nested upon one another with the convex exterior of the inner cup seated in the concave interior of the outer cup, and with the other material housed in the concave interior of the inner cup, the cups so nested forming a cup-shaped article to be packaged, the package comprising a plurality of translucent members made of relatively stiff material capable of retaining its shape, each member having a mid-section shaped to a form substantially conforming to the shape of the cup-shaped article and having boundary portions outside of said mid-section merging substantially into a common plane, the boundary portions of one member having a boundary section off-set from the common plane of those portions, one mid-section providing a convex exterior shape substantially complementary to and received in the concave interior of said inner cup of the cup-shaped article with the other material housed in said concave interior of the inner cup seated on said one mid-section, and the other mid-section having a concave interior shape complementary to the convex exterior of said one mid-section and also to and received over the convex exterior of said outer cup of the cup-shaped article received over the one mid-section, means for retaining the boundary portion of the other member and the boundary section seated against each other to space the mid-sections from each other and provide between them a cavity substantially having the shape of and receiving and housing the cup-shaped article.

3,190,436
PROTECTIVE SHEATH FOR CLINICAL THERMOMETERS
Marcus Diamant, 1 Kungsgatan, Halmstad, Sweden
Filed June 25, 1963, Ser. No. 290,363
Claims priority, application Sweden, July 27, 1962, 8,287/62
8 Claims. (Cl. 206—16.5)



1. A protective sheath for a clinical thermometer comprising, in combination:
(a) an elongated tubular body of supple material having an open longitudinal end portion and a closed longitudinal end portion, said body defining a cavity therein, said cavity extending between said end portions and being adapted to receive said thermometer, and
(b) a tab member fastened to said closed end portion and normally projecting therefrom.

3,190,437
DISPENSING CIGAR PACKAGE
Bernard J. Tamarin, Whitemarsh, Pa., assignor, by direct and mesne assignments, to Pull-Packaging, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed June 30, 1964, Ser. No. 379,146
19 Claims. (Cl. 206—41.2)



7. In a portable package for generally cylindrical articles arranged side by side, an end closure openable to dispense at least one of the articles, an opening through a side wall alongside at least one of the articles of be dispensed, and a laminar sheath covering at least the opening and the end closure, a portion of the sheath located remote from the edge of the opening nearest the end closure being bonded to one of the articles through the opening.

3,190,438
DISPLAY CONTAINER
James F. Cain, Marvin H. Grabosky, and Walter D. Gurdack, Philadelphia, Pa., assignors to Bayuk Cigars Incorporated, Philadelphia, Pa., a corporation of Maryland
Filed Dec. 14, 1962, Ser. No. 244,630
4 Claims. (Cl. 206—45)

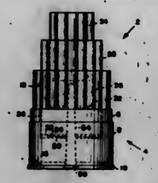
1. A display container for a plurality of upstanding objects comprising
a container body having an upstanding casing portion

and a bottom portion with an opening therein and with a surface for the support of a portion of the said objects,

a platform having a periphery spaced inwardly from the casing portion and a surface for the support of at least a portion of said objects,

said platform having an opening therein,

means forming a nest adjacent the bottom portion receiving the platform with the opening in the platform



aligned with the opening in the bottom portion and the supporting surfaces of the bottom portion and the platform lying substantially in the same plane,

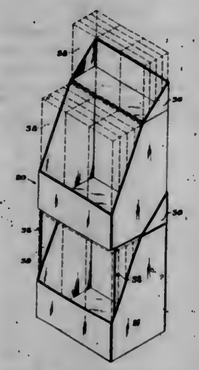
a rod inserted through the opening in the bottom portion and into the opening in the platform with a portion engaging the platform and elevating the platform to a level below the level of the top of the objects supported on the bottom portion to display the objects supported on the platform.

3,190,439

COMBINED SHIPPING CARTON AND DISPLAY STAND

Edmund F. Parker, Bennington, Vt., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 1, 1963, Ser. No. 277,230
3 Claims. (Cl. 206—45)



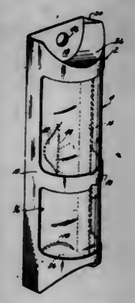
3. A display stand formed at least partially of a plurality of stacked shipping containers, each of said containers being generally rectangularly shaped having front and rear walls and including corrugated side walls with the corrugations defining vertical passageways to a bottom wall of each said container, each said container having said bottom wall secured to lower ends of said opposite side walls, a front upper corner of each container cut away except along a top portion of each container, said front wall including a cut-out area intermediate its bottom and said corner, said corner of each container being folded back upon said top portion to form a shelf, one of said containers supporting another container thereabove, a rear bottom corner of said other container resting in the shelf of said one container, at least a pair of rigid support rods, a stem portion of each rod being engaged in one of said passageways of said one container and resting on the bottom wall thereof, a generally right angularly disposed leg extending from each stem portion and engaged between the bottom wall and lower end of a side wall of said one container, each said stem portion being of sufficient length so as to space the bottom wall of said other container from the contents of said one container, said space and said area providing for ready removal of the contents of said one container.

3,190,440

CURVILINEAR WINDOW CONTAINERS AND BLANKS THEREFOR

Charles E. Palmer, Somers, Conn., assignor to Monsanto Company, a corporation of Delaware

Filed Sept. 9, 1963, Ser. No. 307,391
16 Claims. (Cl. 206—45.31)



1. A window container having a substantially segmental cross section and inwardly curved end wall closure panels comprising a frame of relatively rigid and opaque sheet material and a window of synthetic plastic sheet material, said frame having a back wall panel, a cover panel arching over said back wall panel providing said container with a substantially segmental cross section, end wall closure panels hingedly connected to the ends of said cover panel along inwardly pointing arcuate fold lines the radial dimension from the center of said arcuate fold to the free end wall closure panels in an inwardly curving configuration, and a locking panel underlying said back wall panel with locking flaps hingedly connected at the ends thereof, said cover panel having a window aperture therein spaced inwardly from the ends thereof and of lesser dimension that said window, the marginal portions of said cover panel adjacent said aperture overlapping corresponding marginal portions of said window and said window conforming to the curve of said cover panel, said back wall panel having means thereon engaged with said locking flaps to secure said container in erected position against the biasing pressure of said arched cover panel and window.

3,190,441

DOUBLE-WALLED END-SEALED CONTAINER

Anders Ruben Rausing, Simontorps Säteri, Bjuntarp, Sweden

Filed May 4, 1961, Ser. No. 107,749
Claims priority, application Sweden, May 4, 1960, 4,403/60
1 Claim. (Cl. 206—46)

A liquid-filled sealed package of the kind produced through flat-pressing and heat-sealing a double wall tube element along two relatively narrow substantially transverse zones, one at each end of the tube element, for enclosing a filling material quantity introduced therein, said tube element comprising an inner seamless thermoplastic tube of substantially uniform wall thickness and an encircling longitudinally seamed body-serving outer tube of the same length as said inner tube and also of substantially uniform wall thickness, said outer tube being spaced from said inner tube except at said transverse seal zones, characterized therein that said inner tube at



the two ends of the package, is further sealed off along a substantially transverse zone offset inwardly from the respective transverse seals between said inner and outer tubes.

3,190,442

PACKAGING METHODS

William F. Gauss, Pittsburgh, Pa., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,468
8 Claims. (Cl. 206—46)

1. A package comprising an article in a container, said container having inner walls and outer walls, and at least one bag positioned between the inner walls of the container and the external surfaces of the said article, said bag having disposed therein a cellular plastic material which substantially fills the volume of the container and maintains the said bag in intimate contact with the exterior surfaces of the article and the inner surfaces of the container.

3,190,443

NON-STICKING LIFT TABS FOR QUICK REMOVAL OF PRESSURE ADHESIVE LABELS

Lewis A. Kingsley, Beverly Hills, Calif. (% Kingsley Machine Co., 850 Cahuenga Blvd., Hollywood, Calif.)

Filed Dec. 17, 1962, Ser. No. 245,233
2 Claims. (Cl. 206—59)



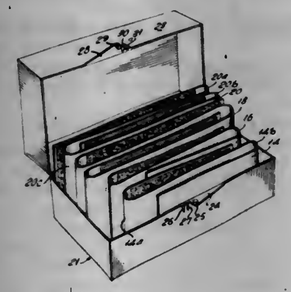
1. A roll of foil for a roll leaf hot stamping machine comprising: a rolled strip of cellophane backing having a pigmented surface thereon, a label having one face thereof coated with a pressure sensitive adhesive and overlapping the outer extremity of the foil roll to prevent unravelling thereof, a lift tab of non-adhesive material adhered to the adhesive of said label along the edge thereof overlying said roll and extending outwardly from said edge to prevent adherence of said edge to the roll, said lift tab being of a plastic material having an electrostatic attraction to said cellophane backing.

3,190,444

ROTATING TOURNIQUETS

Arthur W. Kelson, New York, N.Y., assignor to Propper Manufacturing Company, Inc., Long Island City, N.Y., a corporation of New York

Filed Jan. 24, 1964, Ser. No. 340,106
1 Claim. (Cl. 206—63.2)

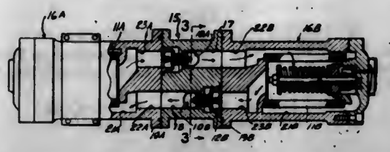


A rotating tourniquet package comprising a plurality of elongated elastic bands, each of said bands having a respective Velcro pile portion connected to one end thereof across the width of said bands and extending longitudinally for a predetermined length, each of said bands having a respective Velcro hook portion connected to the other end of said bands on the face opposite the face containing said pile portion across the width of said band and extending longitudinally for a predetermined length from said other end, the predetermined length of the respective Velcro pile and hook portions of each band extending a sufficient distance to allow said band to be placed about a limb without restricting arterial blood flow, said plurality of elongated bands comprising four in number, two of said elongated bands being of equal length and being longer than the remaining two bands and being adapted to be placed about the thigh of a patient, the two remaining shorter bands being of equal length and being adapted to be placed about the upper arm of a patient, a container for receiving said plurality of elongated bands, each of said plurality of elongated bands being foldedly received in said container with the lateral edges of said elongated bands perpendicular to the bottom of said container so a particular band may easily be removed therefrom, each of said longer bands being folded inwardly on itself along transverse lines proximate to the termination of each of the Velcro portions and along an intermediate transverse line wherein each Velcro portion of the longer of said bands is in contact with a plain surface of said band thereby preventing the Velcro portions from contacting one another and from contacting Velcro portions of the remaining bands in said container, each of the shorter of said bands being folded along transverse lines on itself whereby said Velcro portions are in contact with opposite sides of the center portion of said shorter band to maintain said Velcro portions out of contact with one another and out of contact with the Velcro portions of the remaining bands in said container, whereby said plurality of elongated bands may easily be removed from said container and respectively placed about the limbs of a patient with the Velcro end portions of said bands overlapped and interengaged so the respective bands constrict the respective limbs of the patient to prevent return of venous blood flow from the constricted limbs to the heart.

3,190,445
FLUID SYSTEM FITTINGS

Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan

Filed Sept. 10, 1962, Ser. No. 222,295
3 Claims. (Cl. 210—117)



1. A filtering means for a reverse flow fluid system comprising

(a) a central mounting block having a first and a second port therein each adapted for connection with a fluid system,

(b) a first and a second enclosed filter device mounted on opposed faces of said mounting block, each filter device having a fluid inlet and a fluid outlet passage,

(c) a first passage being provided in said mounting block connecting said fluid inlet passage of said first filter device and said fluid outlet passage of said second filter device with said first mounting block port, and a second passage being provided in said mounting block connecting said fluid inlet passage of said second filter device and said fluid outlet passage of said first outlet passage of said first filter device with said second mounting block port,

(d) a first check valve means and a second check valve means each mounted in said mounting block,

(e) said first check valve means being mounted in said first passage intermediate said fluid outlet passage of said second filter device and said first port and being operable to block fluid flow in a direction from said first port to said fluid inlet passage of said second filter device and to permit fluid flow from said fluid outlet passage of said second filter device to said first port,

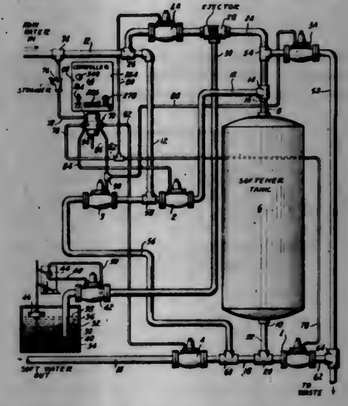
(f) said second check valve means being mounted in said second passage intermediate said fluid outlet passage of said first filter device and said second port and being operable to block fluid flow in a direction from said second port to said fluid outlet passage of said first filter device and to permit fluid flow from said fluid outlet passage of said first filter device to said second port.

3,190,446
AUTOMATIC CONTROL MEANS FOR A WATER SOFTENER SYSTEM

David E. Griswold, Newport Beach, Calif., assignor to Donald G. Griswold, Newport Beach, Calif.

Filed Oct. 28, 1960, Ser. No. 65,731
13 Claims. (Cl. 210—126)

1. A water softener system, comprising: a tank containing a bed of zeolite or similar water softener material, said tank having an inlet and an outlet; a supply conduit for a liquid to be treated connected with said inlet; a supply valve connected in said supply conduit controlling the flow of liquid to said inlet; a service conduit for treated liquid connected with said outlet; a service flow control valve connected in said service conduit; a waste conduit connected with said inlet; a waste valve connected in said waste conduit; a backwash conduit connected at one end thereof with said supply conduit upstream of said supply control valve and connected at its opposite end with said outlet; a backwash valve connected in said backwash conduit upstream of the point of connection of said backwash conduit with said outlet; a drain conduit connected at one end with said outlet, said drain conduit being connected at its other end with said waste conduit downstream of said waste valve; a drain valve connected in said drain conduit upstream of its point of connection with said waste conduit; a by-pass conduit connected at one end with the tank inlet and at the other end with said supply conduit upstream of the supply valve; a by-pass valve connected in said by-pass conduit; a regenerating fluid conduit connected at one end with said by-pass conduit at a point between said by-pass valve and said tank inlet, and connected, at the other end, with a supply of regenerating fluid; a regenerating fluid supply valve connected in said regenerating fluid conduit; means controlling said regenerating fluid supply valve during a regenerating cycle to supply a predetermined quantity of regenerating fluid through said regenerating fluid conduit and thereafter to close said valve; and control means operating said supply valve, service flow control valve, waste



valve, backwash valve, drain valve, and by-pass valve in accordance with a predetermined program schedule to effect, in sequence, service, backwashing, regeneration, slow rinse and fast rinse of the water softener material in said tank, said control means being constructed and arranged to maintain said by-pass valve and said drain valve continuously open, and said supply valve, said service flow control valve, said waste valve and said backwash valve continuously closed, during regeneration and subsequent slow rinse of the water softener material in said tank, said regenerating fluid supply valve being constructed and arranged to be open at the beginning of regeneration when said by-pass valve and said drain valve are opened by said control means, and being constructed and arranged to be closed by said means controlling said regenerating fluid supply valve at the end of regeneration and before slow rinse begins, and while said by-pass and said drain valves remain open.

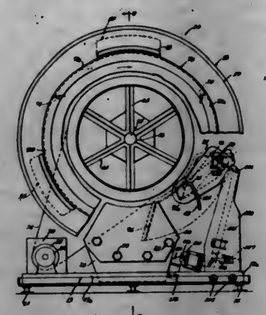
3,190,447
ROTATABLE RECEPTACLE BALANCING APPARATUS WITH ROLLER BEARING DEFLECTOR MOUNTING

William F. Scott, Benton Harbor, and Albert D. Ishoy, Hartford, Mich., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware

Filed Mar. 23, 1961, Ser. No. 97,899
6 Claims. (Cl. 210—144)

1. Apparatus for counter-balancing a rotating receptacle comprising a base, support means on said base including bearings for journalling said receptacle, a receptacle journalled in said bearings, counterbalancing means on said receptacle including a plurality of circumferentially positioned pockets for receiving liquid, and means for introducing liquid into said pockets selectively comprising conduit means having a nozzle for directing a stream of

liquid towards said pockets, and a movable baffle interposed between said nozzle and said pockets, a shaft connected to said baffle and rotatable about its own axis to pivotally move said baffle for alternately interrupting and introducing the flow of liquid into certain of said pockets, means on said support means supporting and journalling said shaft for rotation, a thin leaf spring forming a reaction member having one end connected to said shaft

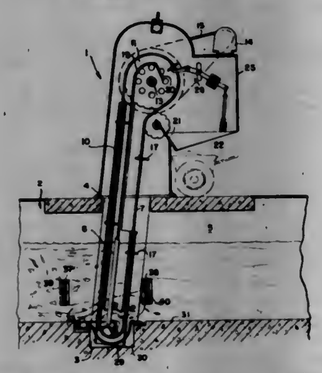


radially outwardly of its axis, said reaction member extending transversely relative to said axis, and means connecting the other end of said reaction member to said base, whereby relative movement of said support means and said base induced by rotation of unbalanced loads in said receptacle will alternately place said reaction member in tension and compression so the resulting flexing and buckling thereof will oscillate said shaft to control the pivotal movement of said baffle.

3,190,448
BAR SCREEN WITH VELOCITY-CONTROL BAFFLES

William F. Johnston, Delafield, and Anthony Geinopolos, West Allis, Wis., assignors to Rex Chainbelt Inc., a corporation of Wisconsin

Filed Jan. 8, 1962, Ser. No. 164,885
6 Claims. (Cl. 210—162)

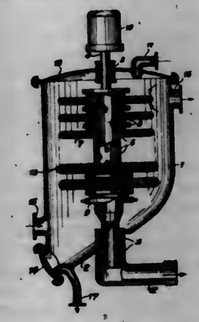


1. In combination with a bar screen and means defining a channel to direct flow through the screen, said channel means including a floor having a recess extending across the channel, said screen including rakes having means for moving the same around the lower end of the screen to a position in front of the screen for subsequent upward movement to remove the debris from the screen and the channel, said channel further including means which partially close said recess in its normal position and which is movable to a second position allowing for said movement of said rakes; first and second vertical baffles extending across the channel respectively and directly in front of said means and directly behind said recess and bar screen, said baffles being spaced from each other and below the level of the flow and from the floor of the channel so that at any given channel flow and velocity the flow beneath and between the baffles is of sufficient velocity to transport at least most of the sand over said recess irrespective of the rate of flow over the baffles.

3,190,449
FILTER APPARATUS

Hans Muller, Im Allemendli, Erlenbach, Zurich, Switzerland

Original application June 11, 1956, Ser. No. 590,656. Divided and this application May 20, 1959, Ser. No. 814,427
3 Claims. (Cl. 210—173)



2. In a filter apparatus, in combination, a housing having a substantially cylindrical configuration over most of its length and having a lower portion of a reduced cross sectional area as compared to the remainder of said housing; a discharge opening located at said lower portion of said housing; an elongated hollow shaft substantially coaxial with said housing supported for rotation about its axis by said housing; a plurality of filter elements communicating with the interior of said hollow shaft and carried thereby for rotation therewith; drive means operatively connected to said shaft for rotating the latter at high speed so as to throw off by centrifugal action solid particles settling on said filter elements; and means communicating with the interior of said housing for directing a hot gas therethrough so as to heat the interior of said housing and so as to dry particles settling on said filter elements to facilitate thereby removal of the dried particles from said filter elements by centrifugal action, whereby dried particles may be removed through said discharge opening without removing said filter elements from said housing.

3,190,450
FILTER FOR A CRYSTAL PURIFICATION COLUMN

Frederick L. Stoller and Howard W. Goard, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

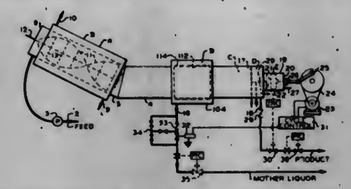
Filed Aug. 6, 1962, Ser. No. 215,190
1 Claim. (Cl. 210—179)

An apparatus for the separation of mother liquor from a slurry, composed of mother liquor and crystals whereby an improvement in the rate of flow of slurry through the apparatus and a reduction in the loss of crystals to the mother liquor being separated therefrom is achieved, in combination:

(a) a purification chamber;

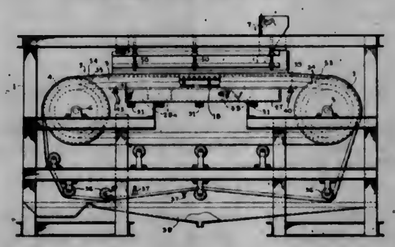
(b) melt means positioned in one end of said chamber;

(c) an open ended cylindrical filter housing, positioned in said chamber upstream from said melt means;
(d) an open ended cylindrical perforated member positioned in said housing and forming an annular space therewith;
(e) cover means for enclosing said annular space;
(f) an open ended cylindrical coarse screen member positioned inside of said perforated member and being in contact therewith, said coarse screen being composed of parallel wire members supported by intermeshing parallel wire members forming openings therebetween having a surface area intermediate the surface area of the perforations in said perforated member and the openings in a fine screen hereinafter described;
(g) an open ended cylindrical fine screen member, comprising a first and second series of wire members, positioned inside of said coarse screen member and in contact therewith, said first series of wire members



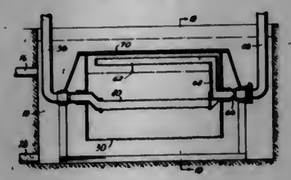
being positioned axially parallel with the cylindrical filter housing and spaced to provide the desired openings for passage of mother liquor from the interior of said cylindrical filter housing into the annular space formed in said cylindrical filter housing, said first series of wire members being supported transversely by said second series of wire members which are parallel to each other and in alignment with the sides of said filter housing and having a spacing substantially greater than said first series of wire members;
(h) means for passing a slurry, composed of mother liquor and crystals, axially across said fine screen and thence toward the melt means, so that the crystals are in contact with the fine screen;
(i) means for applying a series of pressure pulsations to the slurry contents in said chamber;
(j) means for removing mother liquor from said annular space in the cylindrical filter housing;
(k) means for removing melt from said one end of said purification chamber.

3,190,451
ENDLESS BELT FILTER
Arthur A. Holland, 1705 N. 12th Ave., Pensacola, Fla.
Filed Sept. 4, 1962, Ser. No. 221,295
2 Claims. (Cl. 210—251)



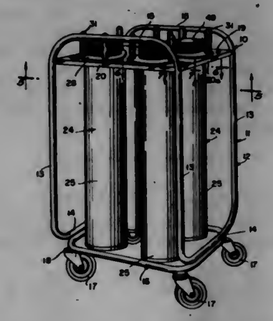
1. A filter machine comprising a frame, a pair of end drums mounted in said frame, one of said drums defining the feed end of said machine and the other of said drums defining the discharge end of said machine, an endless belt mounted on said drums and having an upper horizontal path of travel between said drums, said belt being of one-piece form and having a top surface, a bottom surface, a multiplicity of transversely extending grooves in said top surface, said grooves being in uniformly spaced order throughout the circumference of said belt and each said groove extending throughout the major portion of the width of said belt but terminating inwardly of each edge of said belt, ribs defining said grooves and each having converging side walls terminating in an apex, said top surface having continuous, flat, uninterrupted edge portions substantially coplanar with said apexes, each said groove having a bottom wall and an aperture therein disposed substantially midway between the ends thereof, a continuous section of less width than the overall width of said belt on said bottom surface, and a plurality of filtrate-collecting chambers each communicating with a plurality of said apertures, said section constituting the bottom wall of said chambers, walls extending substantially perpendicularly from said section and separating said chambers from each other, said chambers being arranged in uniformly spaced order about the circumference of said belt and having a cumulative circumferential extent at least 90% that of said belt, said section being arranged substantially midway between the edges of said belt and having a single discharge opening leading from each of said chambers to the external surface thereof, each said drum having an annular recess receiving said belt section, an endless filter medium seated on said rib apexes and in engagement with the entire area of said top surface edge portions, a suction box mounted in said frame and having a top surface engaging and supporting said belt during said upper path of travel, said discharge openings being in communication with said box during said upper path of travel, and a cake-forming box adjustably suspended from said frame and surmounting said belt in said upper horizontal path of travel, said box having a pair of side walls and a rear wall joining said side walls, each said side wall having a flexible skirt surmounting and aligned with one of said top surface edge portions, said skirt having a flexed portion engaging said filter medium to press said filter medium against said top surface edge portion, and means for adjusting the position of said box in a perpendicular direction with respect to said filter medium.

3,190,452
GRANULAR BED FILTER
Michael James Martin, Princes Highway, Springvale, Victoria, Australia
Filed Feb. 15, 1962, Ser. No. 173,430
Claims priority, application Australia, Feb. 16, 1961, 1,529/61
4 Claims. (Cl. 210—278)



1. A filter comprising a chamber for liquid to be filtered, a substantially horizontally disposed hollow drum arranged within the chamber so as normally to be immersed in the liquid therein, a filter bed of granular material, contained in and almost completely filling the drum whereby a free space is formed within the drum and above the surface of the bed, a screen forming the peripheral wall of said drum, the said screen being so constructed as to retain the granular material while permitting liquid to pass freely therethrough, means supporting the drum for rotation about a substantially horizontal axis passing longitudinally therethrough, a first hollow collector member arranged approximately centrally within the drum, means forming a passage communicating with the interior of said hollow collector member and the exterior of the chamber for the discharge of filtrate from the filter and means to alternatively supply wash liquid thereto thereby to backwash the filter bed, a second hollow collector member, said second collector member being arranged longitudinally in a fixed position within the rotatable drum and near the top thereof so as to remain stationary when the drum is rotated, said second collector member being normally disposed within the aforesaid free space and serving to collect waste wash liquid when the filter bed is backwashed, and means forming a passage communicating with said second collector member and the exterior of the chamber for the discharge of waste wash liquid from the filter, and means for rotating the drum about said axis.

3,190,453
PORTABLE DISH-DISPENSING APPARATUS
Robert J. Shelley, 7009 SW. 62nd Court, Miami, Fla.
Filed Mar. 10, 1964, Ser. No. 350,700
4 Claims. (Cl. 211—49)



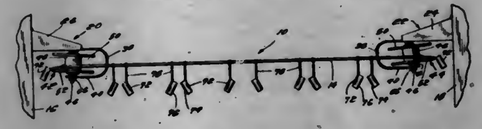
1. A tubular dish-dispensing unit comprising an elongated tubular body having a closed lower end wall and having an open upper end, a tubular dish-supporting member movably mounted within the said tubular body adjacent the said upper end thereof and including a horizontally extending top wall providing a dish-supporting platform, a screw member having its upper end portion attached to the said horizontally extending dish-supporting platform of the said tubular dish-supporting member centrally thereof and depending therefrom into the body of the said tubular dish-supporting member, a plate arranged within the said tubular body of the said dish-supporting member below the said horizontally extending dish-supporting platform thereof, said plate having threaded mounting means centrally arranged therein and threadedly and adjustably mounted on the said screw member for movement toward and away from the said horizontally extending dish-supporting platform, an elevating coil spring arranged within the said tubular body of the said dish-dispensing unit and having an upper end portion bearing against the said plate, and a threaded clamping member threadedly and adjustably mounted on the screw member below the said plate whereby the position and height of the said dish-supporting platform relative to the open upper end of the said tubular body may be effected by lifting the said tubular dish-supporting member upwardly through the said opening in the upper end of the said tubular body and rotating the said plate on the said screw member and clamping the said plate in position of use by manually adjusting the said threaded clamping member on the said screw member against the undersurface of the said plate.

3,190,454
DISPLAY STAND
Sheldon C. Brooks, Minneapolis, Minn., assignor to Tri-State Displays, Inc., Minneapolis, Minn.
Filed June 21, 1963, Ser. No. 289,666
3 Claims. (Cl. 211—71)



1. In a device for supporting containers,
(a) a vertical standard having a hollow central portion which comprises four vertical, substantially flat central walls joined one to another by vertical edge portions thereof so that a cross section of said central portion defines substantially a polygon with proximate central walls being at substantially right angles to one another,
(b) each of said central walls having a respective pair of spaced, outwardly extending, generally parallel vertical walls which together with its respective central wall defines a channel of generally rectangular configuration,
(c) the walls of each pair of outwardly extending walls each having at the outer edge thereof a lip extending toward the lip of the other related outwardly extending wall,
(d) each pair of lips being spaced from one another so as to define a bolt receiving slot leading into its related channel,
(e) a plurality of brackets mounted to said standard, each of said brackets having a connecting portion which bears against the outer portion of a related pair of said outwardly extending walls,
(f) each bracket having hole means aligned with its related slot, and
(g) nut and bolt means provided for each bracket and extending through said hole means of its related bracket in a manner to extend into its related channel and engage the inside surface of its related two lips so as to press its related bracket against its related pair of outwardly extending walls and thus secure its related bracket to said standard.

3,190,455
CLOTHESLINE CONSTRUCTION
Harold Hartshorn and Manuel Sousa, Johnston, R.I., assignors to Ram-Rah, Inc., a corporation of Rhode Island
Filed Jan. 29, 1963, Ser. No. 254,717
2 Claims. (Cl. 211—119.03)



1. In a clothesline construction, a pair of spaced-apart supports, a pair of brackets, each of which is fixed to a support against movement and including a bottom plate and side plates joined to said bottom plate, said bottom plate being generally horizontal, a pulley mounted for rotation on each of said brackets, each of said pulleys being fixed to the horizontal bottom plate of a bracket and including a shaft, a sleeve mounted on said shaft for movement with respect thereto and opposed parallel flanges secured to said sleeve, the plane of said flanges being perpendicular to the axis of said shaft, each of said

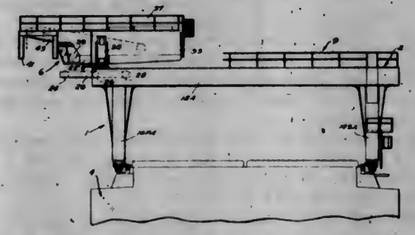
shafts being fixed to the bottom plate of one of said brackets such that the shafts are located in nonparallel relation with respect to each other and are inclined with respect to the vertical and said bottom plate, said parallel flanges thereby being inclined with respect to the horizontal, and a clothesline extending around the sleeves of said pulleys to define spaced parallel lines from which clothes are suspended, said spaced parallel lines extending in a generally horizontal plane and engaging only the sleeves of said pulleys and being out of contact with the parallel flanges thereof in order to prevent the clothesline from riding off the pulleys.

3,190,456

SHIPBOARD CARGO TRANSFERRING APPARATUS

Douglas E. Holt, Mequon, Alexander V. Kore, West Allis, and Max Dechantsreiter, Milwaukee, Wis., assignors to Harnischfeger Corporation

Filed July 11, 1963, Ser. No. 294,329
10 Claims. (Cl. 212—14)



1. Shipboard cargo transferring apparatus comprising:
a gantry crane;
gantry drive means for mounting the crane on the deck of a vessel for translational fore and aft movement thereover;
a trolley assembly comprising a lower trolley frame and an upper trolley frame;
trolley drive means mounting the lower trolley frame on the crane for translational port and starboard movement relative thereto;
trolley rotation means rotatably mounting the upper frame on the lower trolley frame;
a superstructure on the upper trolley frame and adapted to extend over the side of the vessel; and
load engaging means suspended from the superstructure for moving a cargo load,
whereby the vessel may be loaded or unloaded from either the port or starboard sides thereof.

3,190,457

MOBILE CRANE WITH PIVOTABLE BOOM MOUNTED FOR ALTERNATE USE AS A TOWER

Knut Elis Lindén, 7 Tallmatargatan, Vasteras, Sweden

Filed June 12, 1963, Ser. No. 287,392
Claims priority, application Sweden, June 25, 1962, 7,039/62
1 Claim. (Cl. 212—70)

A mobile crane comprising a vehicle, a mast, a pair of combined locking and pivot pins fixed to said mast adjacent one end, a second pair of combined locking and pivot pins fixed to said mast at a location longitudinally spaced from said first pins, a mast supporting structure on said vehicle, a pair of bearings on said structure for pivotally receiving said first pins, said bearings having transverse slots to permit movement of said first pins into and out of said bearings, latch means for releasably retaining said first pins in said bearings, a second pair of bearings on said structure disposed to pivotally receive said second pins, said second bearings having transverse slots to permit movement of said second pins into and out of said second bearings, second latch means for releasably retaining said second pins in said second bearings, cable means for pivotally moving said mast about the axis of said second bearings from a horizontal inoperative position to a vertical operative position wherein said first pins are received and latched in said first bearings, and second cable means



for pivotally moving said mast about the axis of said first bearings to inclined operative positions with said second pins released from said second bearings, whereby said mast may be positively latched at longitudinally spaced points in vertical operative position and upon release of said second latch means is pivotally movable to inclined operative positions.

3,190,458

HEAVY DUTY BUFFING DEVICE

Andrey L. Zanow, Cleveland, Ohio, assignor to National Castings Company, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 241,285, Nov. 30, 1962. This application Mar. 1, 1965, Ser. No. 438,461
9 Claims. (Cl. 213—43)



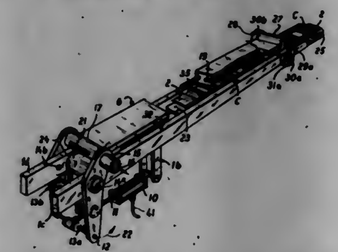
1. A hydraulic buffer which undergoes lengthwise contraction in response to loading comprising:
(A) a cylinder having a head substantially enclosing its front end, and an open rear end;
(B) an assembly comprising: a piston reciprocable in said cylinder, and a piston rod for the piston extending rearwardly of said open rear end of said cylinder;
(C) a cylinder extension joining with the cylinder at said open-end and extending in coaxial relation with the rod and the cylinder rearwardly from the cylinder;
(D) said assembly having an elongate opening co-extensive with at least a portion of said extension;
(E) annular sealing means disposed between the rod and the inner surface of the extension carried by the rod lengthwise of the extension in fixed longitudinal relation with the rod, said means preventing passage of fluid from the space adjacent to the forward side of said means to region adjacent the rear side thereof;
(F) a reservoir connected with said cylinder for the transfer of liquid from one to the other;
(G) means for conducting liquid between said space and a liquid storage region comprising the cylinder and the reservoir;
(H) said rod having duct means extending from an intermediate portion of the sealing means spaced between its front and rear ends for receiving any liquid escaping by the portion of the sealing means forwardly of the duct means; and
(I) check-valve means and duct means opening only for passage of liquid from said space to said opening.

3,190,459

METHOD OF AND APPARATUS FOR HANDLING CIGARETTES AND LIKE ELONGATED ARTICLES

Horst Kochalski and Willy Ruderisat, Hamburg-Lohbrugge, Harry David and Otto Erdmann, Hamburg-Bergedorf, Ludwig Rode, Neu Bornsen, and Hans Sack, Hamburg-Neuengamme, Germany, assignors to Hauni Werke, Körber & Co., KG., Hamburg-Bergedorf, Germany

Filed Mar. 22, 1962, Ser. No. 181,669
Claims priority, application Great Britain, Mar. 23, 1961, 10,676/61; Apr. 13, 1961, 13,293/61; Apr. 24, 1961, 14,708/61; May 5, 1961, 16,341/61; May 18, 1961, 18,163/61; June 2, 1961, 19,979/61; Aug. 14, 1961, 29,241/61; Aug. 28, 1961, 30,911/61; Sept. 18, 1961, 33,415/61; Nov. 8, 1961, 39,977/61; Nov. 9, 1961, 40,146/61
21 Claims. (Cl. 214—1)



1. In an apparatus for handling elongated articles, particularly for stacking cigarettes in storing devices, in combination, conveyor means for advancing a series of articles in an elongated path so that the articles are substantially perpendicular to the longitudinal direction of said path; and means for removing rows containing predetermined numbers of articles from said path, said last mentioned means comprising vacuum generating means, a movable lifter located above and comprising a plurality of elongated equidistant holding means adjacent and substantially perpendicular to said path, said lifter defining channel means communicating with said vacuum generating means and having intake ends opening into each of said holding means so that suction produced by said vacuum generating means in said intake ends lifts the articles off said conveyer means and into the respective holding means, and means for moving said lifter with reference to said conveyor means in response to accumulation of a predetermined number of articles in the holding means.

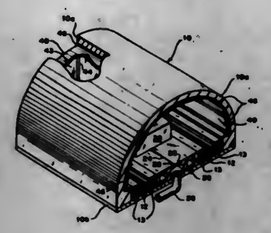
3,190,460

AIRBORNE CARGO-HANDLING AND TIE-DOWN SYSTEM

Norman N. Rubin, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 4, 1963, Ser. No. 262,805
11 Claims. (Cl. 214—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A cargo-handling unit for supplying air bearing at the load comprising:
an elongated load-supporting member of an elastic, incompressible, and deformable material having an outer load-bearing face and confined side and bottom faces,
said member including an interior passageway extending approximately lengthwise of the member for receiving gas under pressure and a relief space extending parallel to and adjacent said interior passageway forming a side wall,
said member having a slit along its length angularly



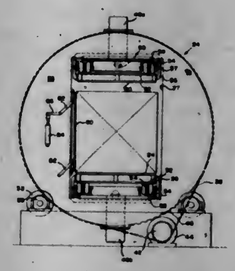
extending from said interior passageway to said load-bearing face thereby providing over-running lips which normally in contact seal said slit; whereby when a load is applied to said member said side wall beneath the load collapses with said relief space spreading said lips sufficiently to allow the gas under pressure to escape and act against the load.

3,190,461

LOAD HANDLING APPARATUS

William R. Postlewaite, Menlo Park, Calif., assignor, by mesne assignments, to John H. Kemp, Jr., Atherton, Calif.

Filed July 16, 1963, Ser. No. 295,367
7 Claims. (Cl. 214—1)



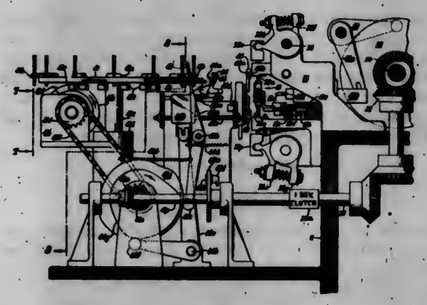
1. A machine for transferring goods from a first set of pallets to a second set of pallets, comprising:
an inlet conveyor,
means alongside and adjacent said inlet conveyor adapted to supply a second set of pallets sequentially to said inlet conveyor,
and an inverter assembly located to receive pallets from said inlet conveyor,
said inverter assembly comprising a first pallet support and a second pallet support vertically spaced from and opposing said first support,
means interconnecting said pallet supports to permit the same to be rotated in unison about a horizontal axis,
each said pallet support being movable on said interconnecting means in a vertical direction toward and away from each other,
means for rotating said interconnecting means about said horizontal axis through increments of 180° to

bring said first and second pallet supports in sequence to the top and to the bottom of said inverter assembly,

means for imparting reciprocating motion to each said pallet support in said vertical direction, and

means associated with each pallet support for clamping the sides of the pallet supported thereby.

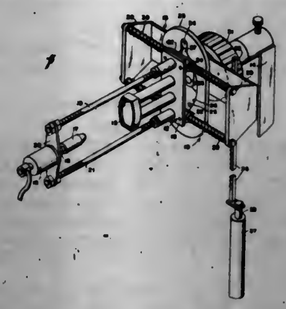
3,190,462
TRANSFER MECHANISM FOR ASSEMBLING APPARATUS AND METHODS
Stanley J. Gartner, Emporium, Pa., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Application Feb. 7, 1962, Ser. No. 171,745, which is a division of application Ser. No. 406,930, Jan. 29, 1954, now Patent No. 3,069,749, dated Dec. 25, 1962. Divided and this application Sept. 19, 1963, Ser. No. 310,046
11 Claims. (Cl. 214—1)



1. The combination with a mount machine including at least one conveyor-supported stem block having a passage to receive a stem having leads molded in a header with leads extending in opposite directions from said header, said stem block including a hollow insert for the extension therein of the leads extending in one direction, of a loading station including an intermittently indexed carrier, at least one stem holder on said carrier including a blade movable into a transfer position relative to said stem block, said holder carrying a stem having the leads extending in the other direction parted and oriented about said blade, means including a transfer blade alignable with the holder blade for receiving a stem from said holder and for inserting said stem into said stem block with stem leads extending into said insert, and transfer means movable from said holder blade toward said transfer blade for displacing the stem from said holder blade to said transfer blade while retaining the initial lead orientation.

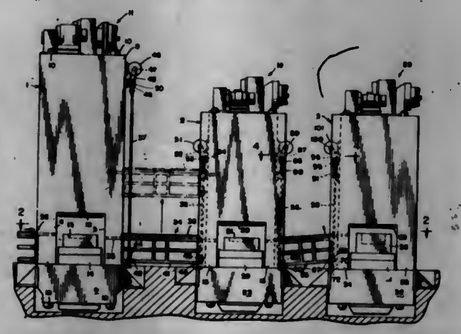
3,190,463
WORK ADVANCING AND ROTATING APPARATUS
Alvin Michael Cohan, Englewood, N.J., assignor to American Production Machine Company, Union City, N.J., a corporation of New Jersey
Filed Nov. 26, 1963, Ser. No. 326,080
3 Claims. (Cl. 214—1)

1. A device for advancing an article into a working position, rotating the article through a working path in such working position and then withdrawing the article from such working position to further rotate the article out of such working position which includes a rotatable head mounted for rotation about a fixed axis, a cross-head slidably mounted on said rotatable head for reciprocation on said rotatable head along a path transversely positioned with respect to said axis between a retracted position centered on said axis and a working position radially displaced from said axis, means on said rotatable head normally biasing said cross-head to said retracted



position, means for rotating said head, and control means for moving said cross-head from said retracted position to said working position as said rotatable head is advanced through a limited angular position.

3,190,464
ELEVATING AND TILTING MECHANISM FOR FEEDING DEVICES
Einar K. Johansen, Oak Park, and Thomas W. Bannon, La Grange Park, Ill., assignors to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed July 5, 1963, Ser. No. 293,039
6 Claims. (Cl. 214—1.1)



5. Elevating and tilting mechanism for a feeding device adapted to feed a workpiece from one metal working machine to a second metal working machine comprising,

(a) a plurality of support members, at least two of which are located at one side of said device adjacent one machine, and at least two of which are located at the other side of said device adjacent the other machine,

(b) means mounting said device on said support members including

(1) a linkage connection between said device and the support members at one side only thereof, and

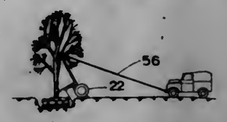
(2) a pivot connection between said device and the support members at the other side thereof, and

(c) means to operate said support members for

(1) elevating said device through a distance sufficient for a person to walk thereunder and thus have access to the machines at either side thereof, and

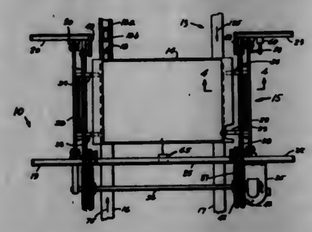
(2) for elevating one side of said device through a distance greater than the other side thereof, whereby tilting of the device will occur.

3,190,465
TREE TRAILER
Christopher John Newman, 1 Stocks Road, Aldbury, near Tring, England
Filed Mar. 19, 1962, Ser. No. 181,504
5 Claims. (Cl. 214—3)



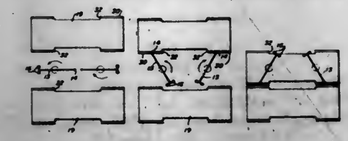
1. A trailer for the carriage of a tree, comprising a frame, two coaxial road wheels supporting the frame, a tow-bar extending substantially horizontally from said frame, a towing hitch at the end of said tow bar, a pillar secured to said frame and extending upwardly therefrom, a clamp supported intermediately of the length of and on said pillar and arranged to embrace and grip the trunk of the tree, said clamp having an outer portion pivotable relatively to said pillar and an inner portion for gripping said trunk, and cable means extending from said clamp through a guide on said tow bar, the inner and outer portions of said clamp each including two semi-cylindrical parts secured to one another and arranged to be closed around the trunk and having anti-friction bearings permitting said rotation.

3,190,466
BIN STACKER AND DE-STACKER MECHANISM
Charles P. Hostetler, Redlands, Calif., assignor to Fruit Equipment Service, Redlands, Calif., a corporation of California
Filed Sept. 18, 1963, Ser. No. 309,740
3 Claims. (Cl. 214—6)



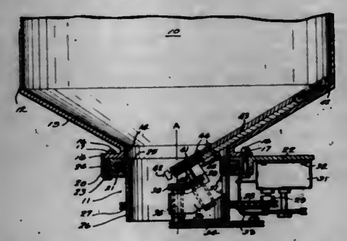
1. A bin de-stacking device comprising two racks adapted to receive a stack of bins comprising a first bin disposed on a second bin riding on a conveyor system, said bins each having an outwardly extending flange on opposite sides thereof, each of said racks being disposed on opposite sides of said conveyor track and provided with a reciprocating lift means and having a vertically disposed groove, said lift means comprising a plurality of dogs operable to engage with said flanges of said first bin when said stack is disposed between said racks, said dogs being attached to a plate slidably engaged on each of said racks to move in a vertical plane, a control shaft attached to said dogs adapted to ride in said groove on said rack as said plate moves vertically, said control shaft causing said dogs to be disposed away from said flanges of said second bin when said plate is moving in an upward direction, said control shaft causing said dogs to be engaged with said flanges of said first bin to lower said first bin onto said conveyor system when said plate is lowered.

3,190,467
AUTOMOBILE PARKING SYSTEM
Ralph M. English, 4049 34th St., San Diego, Calif.
Filed Dec. 26, 1962, Ser. No. 246,934
2 Claims. (Cl. 214—16.1)



1. In an automobile parking system of the type having a multiplicity of parking spaces disposed vertically and horizontally on each side from an elevator shaft with elevation means disposed therein, an improved conveyer mechanism comprising a plurality of pallets, each of said pallets being of suitable dimensions and strength for the carriage of an automobile thereon, and cam means comprising a pair of reversible centrally supported cam bars, each of said cam bars comprising first and second arms extending in diametrically opposite directions, each of said first arms having a first cam on one end thereof for pulling and pushing said pallet transverse to said shaft, and each of said second arms having a second cam on the other end thereof for pushing said pallet transverse to said shaft and means for rotating said cam bars in opposite directions to each other in a first cycle of operation for loading said elevator means with a pallet from a first side thereof, a second cycle of operation for unloading said pallet to said first side thereof after the loading thereof from said first side, a third cycle of operation for unloading said pallet to second side of said elevating means after the loading thereof from said first side, a fourth cycle of operation for loading said pallet from a second side of said elevating means, a fifth cycle of operation for unloading to said second side of said elevating means after the loading thereof from said second side, a sixth cycle of operation for the unloading of said pallet from said elevating means to said first side thereof after the loading thereof from said second side thereof.

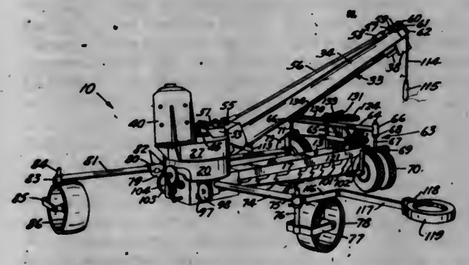
3,190,468
BIN UNLOADER
Erich J. Kocher, Milwaukee, Wis., assignor to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 20, 1963, Ser. No. 325,050
5 Claims. (Cl. 214—17)



1. In a cylindrical hopper for receiving and discharging material, a conical bottom wall for said hopper provided with a central discharge opening, a discharge chute depending from said bottom wall at the discharge opening thereof, a scraper carried by said discharge chute and extending angularly therefrom into said hopper and adjacent to and parallel with the conical bottom wall thereof for loosening and directing material from within said hopper toward its discharge opening, power means for driving said scraper, and means for mounting and de-

tachably securing said discharge chute and said power means on the bottom wall of said hopper whereby said chute and said scraper are removable with said power means as a unit along a plane substantially parallel with the plane of said conical bottom wall.

3,190,469
SILO UNLOADER
Warren C. Huffman, Winthrop, Minn.
Continuation of application Ser. No. 214,974, Aug. 6, 1962. This application Aug. 18, 1964, Ser. No. 391,362
9 Claims. (Cl. 214—17)



1. Silo unloading apparatus for use in unloading silage from silos, said apparatus comprising an elongate horizontally oriented auger type cutter and conveyor mechanism for cutting and conveying silage material longitudinally of said mechanism,

a mobile support structure supporting said cutter and conveyor mechanisms for horizontal travel upon the surface of the silage material within the silo and with one end of said conveyor mechanism positioned adjacent the center of the silo and the other end thereof being disposed adjacent the inner wall surface of the silo,

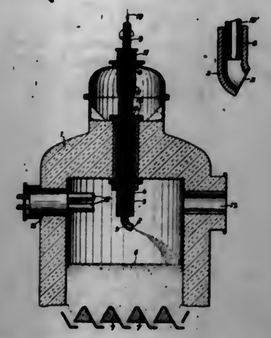
means for driving said mobile support structure to swing said conveyor mechanism about said one end thereof in a circular horizontal path,

a second elongate conveyor mechanism having one end thereof disposed in close proximity to said one end of said first mentioned conveyor mechanism and having its other end thereof projecting outwardly through an opening in the silo,

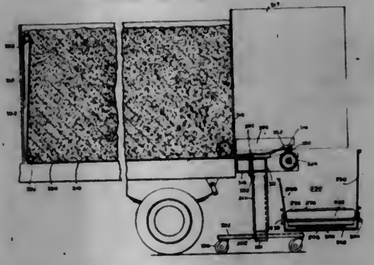
impeller means interposed between the respective one ends of said conveyor mechanisms and including a pair of multi-bladed rotating impellers arranged in close cooperative relation, one of said bladed impellers being revolvable about a horizontal axis disposed above said first conveyor mechanism and the other of said bladed impellers positioned above said one impeller and being revolvable about a vertical axis, said multi-bladed impellers cooperating with each other to receive and impel the material from said first mentioned conveyor mechanism to said second mentioned conveyor mechanism whereby the silage is conveyed outwardly of the silo.

3,190,470
APPARATUS FOR DISTRIBUTING SOLIDS
Friedbert Ritter, Buschhof, near Konigswinter, Germany, assignor to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed Feb. 25, 1959, Ser. No. 795,513
Claims priority, application Germany, Mar. 5, 1958, K 34,235
4 Claims. (Cl. 214—18.38)

1. An apparatus for distributing solids uniformly in thin layers onto and over the entire surface of a circular shaped area of a reaction furnace chamber which comprises a tube arranged substantially vertically and mounted for rotation about its longitudinal axis, the lower discharge end of said tube being curved outwardly away from its vertical axis, a stationary tube disposed within the rotatable tube and extending the length of the straight part thereof, the upper end of the stationary tube being adapted to receive granular or pulverulent materials, and means to rotate the rotatable tube at varying rates over a predetermined period of time.

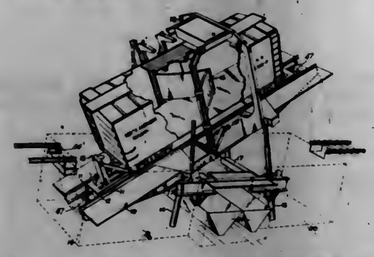


3,190,471
HARVESTER UNLOADER
Wellington W. Porter, R.D. 2, Waterloo, N.Y.
Filed Apr. 18, 1963, Ser. No. 274,044
5 Claims. (Cl. 214—44)



1. A harvest truck unloading apparatus comprising a frame adapted to be disposed transversely of and adjacent to the rear unloading end of a harvest truck, a platform supported upon said frame, means to vary the height of said platform whereby to align it substantially on a level with a truck bed to be unloaded, said platform being of a length longer than the width of a truck to be unloaded, and adapted along one side thereof to abut the rear unloading end of a truck, end members secured to said platform projecting beyond the other side thereof, a roll journalled in said end members with its upper surface approximately tangential with said platform, said roll being of a length at least as great as the width of the truck bed, and having a hook disposed thereon extending lengthwise therealong for receiving the hook end of an elongate flexible fabric adapted to cover the bed of a truck before the loading thereof, power means including speed reduction gearing for driving said roll to draw a fabric hooked thereon across said platform, and reel the fabric upon said roll and to draw harvest supported on said fabric across said roll for gravitational discharge, a clutch for disengaging said driving means from said roll to permit free unreeling of a flexible fabric therefrom, and conveyor means disposed beneath said roll and adapted to convey harvest gravitating thereon from said gravitational discharge.

3,190,472
GRAIN DUMPER
Leslie R. Nash and Robert G. Day, Port Arthur, Ontario, Canada, assignors to Seabar Equipment Ltd., Ontario, Canada
Filed June 13, 1963, Ser. No. 287,680
Claims priority, application Canada, Apr. 3, 1963, 872,420
3 Claims. (Cl. 214—47)



1. In an end tilt grain car dumping mechanism including a material receiving pit having load-bearing end walls and side walls for supporting a tiltable cradle structure mounted over said pit, a foundation structure comprising a plurality of spherical pivot members mounted on said side walls and a well assembly disposed in each of said end walls; said well assemblies being adapted to support the ends of lead tracks terminating at said end walls; and a tiltable cradle structure mounted over said pit, said cradle structure including,

(a) a plurality of wing members extending externally from said cradle to project over said side walls;

(b) sockets formed in the lower surface of said wing members, each socket being adapted to cooperate with an associated spherical pivot member on the side walls so as to pivotally mount said cradle for tilting;

(c) said cradle including a longitudinal channel portion in each end thereof;

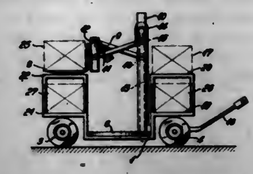
(d) a pair of trolleys mounted and movable in said channel and well assemblies; each said trolley having rollers thereon and including a combined car clamp and cradle lock adapted, in a first position, to secure the ends of said cradle to the adjacent well assemblies in said end walls simultaneously clamping said car on the cradle and, in a second position, to free the ends of said cradle from the well assemblies simultaneously unclamping the car from the cradle; the cradle lock of each trolley including movable members suspended therefrom and adapted in said first position, to expand and engage said cradle channel and the associated well assembly;

(e) a trip device in each well assembly for actuating the movable members to said first position; and

(f) a plurality of hydraulic cylinders mounted to said pit side walls adjacent the spherical members for raising sequentially each end of the cradle in a tilting operation.

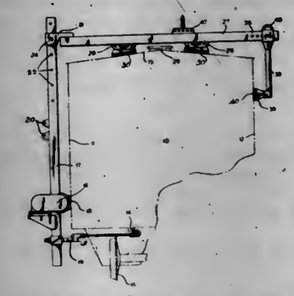
3,190,473
SIDE-LOADING TRUCK WITH AN ECCENTRICALLY MOUNTED LOAD HANDLING MECHANISM
Jakob M. J. Loef, Moosburg, Upper Bavaria, Germany, assignor to Steinbock G.m.b.H., Moosburg, Upper Bavaria, Germany
Filed May 15, 1963, Ser. No. 280,529
10 Claims. (Cl. 214—75)

1. A side-loading truck comprising a chassis provided with a laterally open well and including on opposite sides of said well, individual first and second superposed load bearing elements, rotatable means in said well and having a vertical axis of rotation, an elevator mechanism extending upward from said rotatable means and mounted eccentrically thereon with respect to said axis for rotation with the rotatable means, extendible load carrying means vertically displaceable on said elevator mechanism, and



means to extend said load carrying means laterally outwards from said well and over said load bearing elements depending on the positioning of said elevator mechanism by said rotatable means whereby the load carrying means may deposit and remove individual loads from each of the load bearing elements.

3,190,474
CAR VIBRATING MECHANISM
Arland L. Borgeson, Glenview, Ill., assignor to National Conveyor & Supply Co., a corporation of Illinois
Filed Apr. 10, 1963, Ser. No. 272,063
11 Claims. (Cl. 214—83.3)

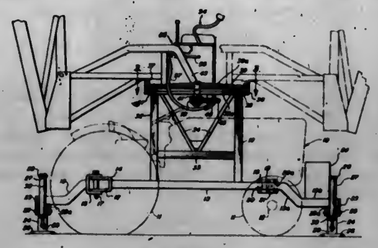


1. A car vibrating structure including an elongated upright support with vibration producing means thereon, an arm removably attached to said support and extending laterally from said support at an upper portion of said support, depending mounting pad means on said arm and formed and adapted for engagement with the top of a car to thereby support said arm and support thereon, means on said arm formed and adapted for engagement with the side of a car, said mounting pad means being positioned between said support and said last named means, means on said support for transmitting the vibratory forces to the side of a car, and means on said support for connecting the lower portion of said support to a lower portion of a car.

3,190,475
TRACTOR SUPPORTED IMPLEMENT MOUNTING
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 2, 1961, Ser. No. 142,151
2 Claims. (Cl. 214—132)

1. In an implement adapted to be mounted on a tractor, frame means adapted to be fixedly secured to the tractor and including an upstanding support portion extending therefrom, first circular plate means mounted on said support portion and having bearing means centrally thereof and peripheral flange portion means extending therefrom, said flange portion means including a plu-

rality of pairs of vertically spaced shafts extending inwardly therefrom, each of said shafts having a bearing roller mounted thereon, second circular plate means mounted between said rollers, said second plate means having a central shaft extending therefrom through said bearing means, a power-receiving pulley having a helical cable-receiving groove therein mounted on said central shaft, double-acting hydraulic power means including a cylinder and piston means having a pair of piston rods extending axially therefrom, each of said piston rods be-



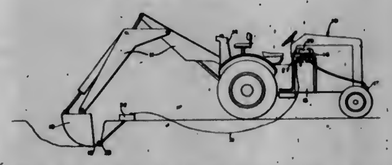
ing connected to said first plate means whereby actuation of said power means causes said cylinder to slide relative to said piston rods, a pair of guide pulleys mounted on said first plate means, cable means having ends fixed to respective ends of said cylinder and extending about said guide pulleys and said power-receiving pulley whereby sliding movement of said cylinder causes said cable means to drive said power-receiving pulley thereby rotating said second plate means at least one complete revolution, and means for actuating said power means.

3,190,476

LINE OR PIPE DETECTOR FOR EARTH MOVING MACHINERY

Earl Smith, 117 N. 13th St., Arkadelphia, Ark., and William R. Sherman, Jr., 801 N. Jefferson, Magnolia, Ark.

Filed July 8, 1963, Ser. No. 293,320
3 Claims. (Cl. 214—138)



1. For use with a sub-surface pipe line of electrically conducting material and a surface meter in electrically conducting relation to the pipe line, an engine-propelled earth working machine carrying an electrical system for the vehicle including a direct current battery, a reservoir for hydraulic fluid and a hydraulically operated earth working implement movable relatively to the machine and controlled by an operating box on the vehicle, a pipe line detector and implement deactivator comprising

(a) an engine-driven pump,
(b) a supply line from the reservoir to the pump,
(c) a hydraulic valve,
(d) a pipe line from the pump to the valve, said valve having
(e) selective means for supplying the pumped hydraulic fluid under pressure to the operating box and for recycling the pumped fluid from the valve back to the reservoir,
(f) a solenoid connected to operate the valve having
(g) one terminal connected to the said battery, and
(h) an electrical lead from the other terminal of the solenoid adapted to be applied to the surface meter,
(i) so that when the earth working implement contacts the sub-surface pipe line circuit will be closed through electrically conductive sub-surface pipe line, meter, solenoid and battery for shifting the valve from a position establishing hydraulic fluid connection between the pump and operating box to a closed hydraulic circuit connection between the pump and reservoir for deactivating the implement and recycling the fluid to the reservoir.

3,190,477

METHOD FOR EXPEDITING THE TRANSPORTATION OF CONTAINERS ON RAIL-BORNE AND ROAD VEHICLES

Engelbert Ewers, Kirchborchen 1, near Paderborn, Germany

Filed Apr. 10, 1961, Ser. No. 101,922
Claims priority, application Germany, Apr. 22, 1960, E 19,245
9 Claims. (Cl. 214—152)



1. A method of transferring containers at a railroad station onto a freight train having a plurality of cars, comprising the steps of prearranging containers to be loaded onto the train along an edge of a platform in a row and according to reported spacing of free spacing of cars of the freight train; transferring the prearranged row of containers in transverse direction onto a plurality of transfer means carried by transporting means extending along said edge without changing the spacing of said containers; moving said transporting means in longitudinal direction along said freight train to an aligned position in which said plurality of transfer means are aligned with the free spaces in said cars; and transferring the containers by means of said transfer means in transverse direction directly from said transporting means to said free spaces of said aligned cars while said transporting means are in said aligned position.

3,190,478

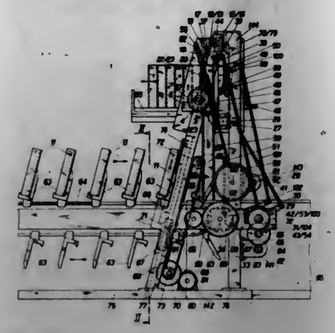
FEEDING DEVICE

Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany

Filed May 1, 1962, Ser. No. 191,604
Claims priority, application Germany, May 2, 1961, Sch 29,645
10 Claims. (Cl. 214—307)

1. A device for feeding elongated articles contained in a plurality of magazines, comprising a front part, a rear part, a bottom member, means for releasably connecting said front part to said rear part, means for releasably connecting said bottom member to said front part, said front part, said rear part and said bottom member being shaped and arranged to constitute, when connected, a holder for a magazine, means at a first working place for turning said holder into an oblique, inverted position with said bottom member uppermost of said holder and for turning said holder back into an upright, vertical position with said bottom member lowermost of said holder, said rear part being fixed to said turning means, means for introducing said magazine into said holder when at said first working place and in its oblique position, means for jointly displacing said front part and said bottom member to a second working place while said rear part is released from said front part and remains at said first working place, an abutment for carrying the introduced magazine together with said front part and said bottom member to said second working place, means

for separating said bottom member from said front part when at said second working place to allow emptying said magazine, means for returning said front part and



said bottom member to said first working place, and means for re-connecting said front part to said rear part and said bottom member.

3,190,479

HAND TRUCKS

Vivian L. Ott, 6100 Sylvan Ave., Norfolk, Va., and John Branch Beaman, Jr., 815 Church St., Ahoskie, N.C.

Filed Dec. 27, 1962, Ser. No. 247,651
3 Claims. (Cl. 214—373)



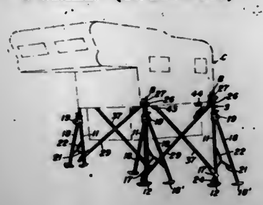
1. A hand truck of the character stated, comprising running gear embodying an axle and a pair of wheels thereon, a frame having a forward side and supported on the axle to extend substantially vertically in the use of the truck and embodying a pair of elongate upwardly converging parts having their divergent lower ends attached to said axle, an elongate handle bar having a straight lower end portion connected to said parts at and above the convergent ends thereof and disposed in alignment with and perpendicular to said axle, said handle bar having a first angle therein above the said ends of the frame parts and extending in a second portion from said angle obliquely upwardly away from said forward side of the frame and then having a second angle therein and extending from the latter angle in a third portion which is approximately parallel with the said lower end portion, a hand grip carried by the upper end of the handle bar, and a hook member attached to the handle bar above the convergent ends of the frame parts upon the forward side of the truck.

3,190,480

PICK-UP CAMPER LIFTS

Blas Ambrose Maynez, Mountain View, Calif. (1035 Bayshore Blvd., Burlingame, Calif.)

Filed May 31, 1960, Ser. No. 33,051
3 Claims. (Cl. 214—515)



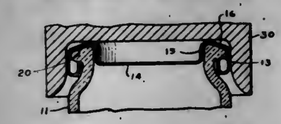
1. For use with a camper having laterally extending pins near the base of the body thereof, a leg comprising an upright standard having a transverse hole near the end for rotatably mounting said leg on one of said pins, a second standard having its upper portion swingably connected to said first mentioned standard near the upper end thereof, means for yieldably forcing said second standard to swing outwardly with respect to said first mentioned standard, a chain connecting the two standards together near the lower ends thereof, and a coiled spring having one end connected to one of said standards and the other end adapted to be connected to selected intermediate points on said chain.

3,190,481

CONTAINER AND CLOSURE THEREFOR

William H. McKnight, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Aug. 29, 1962, Ser. No. 220,290
2 Claims. (Cl. 215—39)



1. In combination with a wide-mouth glass container having a radially outwardly-extending annular bead portion bordering the open mouth portion of the container with the annular bead portion having a substantially flat exterior under surface, a closure of readily deformable sheet material comprising, a shallow-walled cup-like portion having a substantially flat continuous bottom portion complementarily positioned downwardly within and substantially closing said open mouth portion, said cup-like portion having a bounding wall portion extending upwardly about the periphery of said bottom portion, a radial continuation of said wall portion overlying the upper surface of said annular bead, a tensioned U-shaped channel extending downwardly from said radial continuation, and a free edge of said U-shaped channel extending vertically upwardly in compressive abutment with the substantially flat under surface of said annular bead portion to securely maintain the closure upon the container.

3,190,482

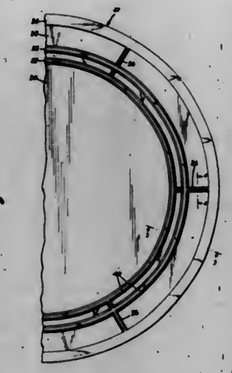
SEALING DISC FOR CONTAINER CLOSURE

Roger B. Staub, Somerville, and Peter H. Hofer, Berkeley Heights, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,311
2 Claims. (Cl. 215—40)

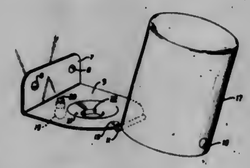
1. A closure seal for a container closure adapted for use on a container having an open mouth and a sealing surface surrounding the orifice of said mouth, said closure

seal comprising a plastic disc having: at least two concentric circular beads spaced apart and protruding from both sides of said disc; and at least three equally spaced transverse ribs connecting each pair of adjacent protruding



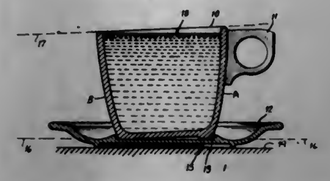
beads, each of said transverse ribs having at least a portion thereof at least as thick as the thicker of the beads which it connects, so that said closure seal will stack vertically with like closure seals and slide without interlocking.

3,190,483
WASTE CONTAINER
Charles F. Roble, Alameda, and Ray O. Stenson, Oakland, Calif., assignors to Gilro Machine & Stamping Co., a corporation of California
Filed Oct. 1, 1963, Ser. No. 313,052
1 Claim. (Cl. 220—18)



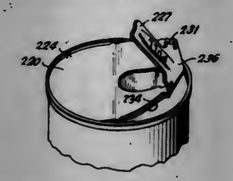
An industrial waste disposal device comprising:
(a) a bracket adapted to be mounted on a supporting surface and having one leg thereof extending horizontally to a forwad terminal end;
(b) a hinge mounted upon the forward terminal end;
(c) an open top waste container attached at a single point on its upper edge to said hinge, the waste container being movable between a first position wherein the container rests against the underside of the horizontal bracket leg and a second position in which the container is inverted for discharge of waste therein;
(d) a ball latch provided between the horizontal leg of the bracket and the side of said waste container opposite the point of attachment of the hinge to releasably hold the waste container against movement and in the first position; and
(e) a funnel shaped passage for waste provided in the horizontal leg of the bracket and adapted for discharge of material placed therein into the waste container.

3,190,484
CUP AND SAUCER
Wadsworth W. Mount, Warren Township, Somerset County, N.J. (Mountain Ave., Plainfield, N.J.)
Filed Mar. 22, 1962, Ser. No. 181,551
1 Claim. (Cl. 220—23.83)



A cup having a top rim in a plane perpendicular to the center line of the cup, a bottom downwardly spaced from said top rim and in a plane at a slightly inclined angle to a second plane parallel to the top plane, whereby the cup is slightly higher on one side than on the opposite side, and a single handle at the rim on the high side of the cup whereby the cup is adapted to nest with like cups and with cups of standard shape.

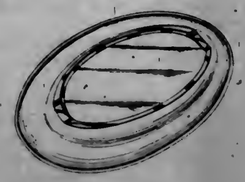
3,190,485
RECEPTACLE HAVING MEANS FOR PROVIDING A POUR OPENING IN A WALL THEREOF
Angelo Ralph D'Andrea, 6357 Green St., Philadelphia, Pa.; James Joseph Walsh, 321 Casino Ave., Cranford, N.J.; and William F. Becker, Jr., 6357 Green St., Philadelphia, Pa.
Filed Oct. 19, 1961, Ser. No. 146,107
18 Claims. (Cl. 220—48)



1. Container which can be opened by hand without a tool and having a frangible sheet on the inner side of a wall of the container and becoming a part thereof, characterized in that a pull tab capable of being grasped by human fingers is carried by said wall, the said frangible sheet being irremovably secured to a part connected to the pull tab and by removing said part from the wall, the frangible sheet is broken and removed simultaneously.

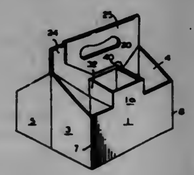
3,190,486
DISHWARE CONSTRUCTION
William J. Rech, Neshannock Township, Lawrence County, Pa., assignor to Shenango China, Inc., New Castle, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1959, Ser. No. 846,571
1 Claim. (Cl. 220—70)

A piece of ceramic dishware having an elliptical central well portion, an integral rim, and a pair of integral, arcuate rib feet of substantially equal and uniform height on the periphery of said well portion and adopted to support said dishware on and engage a planar horizontal surface, said arcuate rib feet being located symmetrically on opposite sides of the longitudinal areas of the elliptical well portion and having their ends spaced from each other, the arcuate lengths of the rib feet being substantially greater than the arcuate length of the spacing between the ends of opposite feet, whereby the ratio of the projected length of said foot ribs along said longitudinal center line included beneath said well area to the length



of said center line is substantially greater than the arcuate length of the spacing to the arcuate length of the rib feet.

3,190,487
ARTICLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed July 29, 1963, Ser. No. 298,258
12 Claims. (Cl. 220—115)



1. An article carrier comprising a bottom wall, opposed side walls joined to said bottom wall along opposite side edges thereof, end walls joined at the ends of said side walls and extending transversely inward therefrom, riser panels joined at the inwardly extending edges of said end wall panels and extending medially inward of the carrier, said riser panels having respectively joined thereto in alignment with the joined edges of said end walls at one end of the carrier a pair of outer handle panels and at the other end of the carrier a pair of inner handle panels, said pair of inner handle panels being in face contacting relation and said pair of outer handle panels being disposed about said inner handle panels to form a composite handle for the carrier, coincidental hand gripping apertures formed in said handle panels, a cushioning panel disposed on one side of the carrier handle and positioned approximately midway between the end panels, said cushioning panel being secured at its upper portion to the handle, an anchoring tab formed along each side edge of said cushioning panel adjacent the bottom thereof, and means fastening said anchoring tabs to said riser panels.

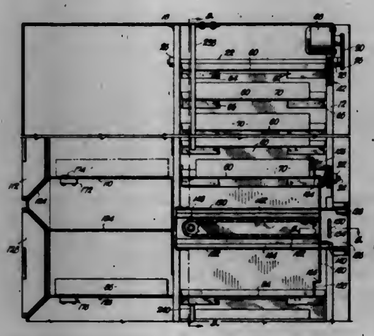
3,190,488
ARTICLE DISPENSER WITH SUPERPOSED RESERVE SUPPLY
Alvin W. Holstein, Brentwood, and Harry H. Pryor and Robert D. Stayton, St. Louis, Mo., assignors, by mesne assignments, to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 302,505
26 Claims. (Cl. 221—11)

1. Article dispensing apparatus comprising fixed supporting means for supporting a row of articles to be dispensed in a first tier, means for releasably holding a reserve row of articles in a second tier directly above the first tier, said holding means being movable from a reserve-row-supporting position for supporting articles in said reserve row by their bottoms to a retracted position clear of articles in said reserve row to permit said reserve row to drop, means for dispensing articles from the first tier, and means for moving said holding means to its said



retracted position to release said reserve row to drop down from the second tier to the first tier after emptying of the first tier.

3,190,489
MACHINE FOR SELECTIVELY VENDING PLATTERS OR THE LIKE
Spencer L. Childers, Kansas City, and Le Roy D. Gore, Independence, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed June 19, 1963, Ser. No. 289,065
6 Claims. (Cl. 221—13)



1. In a vending machine:
a plurality of supports, each for receiving a product to be vended;
conveyor means operably associated with each of said supports respectively and including a plurality of product-bearing shelf structures, each of which is for slidably receiving thereon a product to be subsequently vended from a corresponding support, each conveyor means being shiftable in increments to sequentially dispose individual, loaded shelf structures thereof adjacent to and in alignment with the corresponding support to position the product carried by the aligned structure for sliding movement onto the corresponding support;
mechanism common to said supports including a plurality of intercoupled, reciprocable pusher members operably associated with corresponding supports for

movement in unison toward and away from the supports along paths of travel which bring the members into engagement with any products on the aligned structures to move each engaged product onto the corresponding support; and

control means operably associated with said conveyor means and said mechanism and responsive to removal of a product from any of said supports for actuating only the conveyor means corresponding to the empty support to shift the same one of said increments to align one of the loaded structures thereof with the empty support, and for thereafter actuating the mechanism to slide the product off said one structure and onto the empty support, said control means including means operably associated with said supports for sensing said removal, means responsive to said sensing means for actuating the conveyor means corresponding to the empty support, and means responsive to completion of incremental shifting of the last mentioned conveyor means for actuating said mechanism.

3,190,490

BAG HOLDING AND DISPENSING MEANS

Hercules Membrino, 280 Rte. 202, Malvern, Pa.

Filed Mar. 31, 1964, Ser. No. 356,199
2 Claims. (Cl. 221—26)



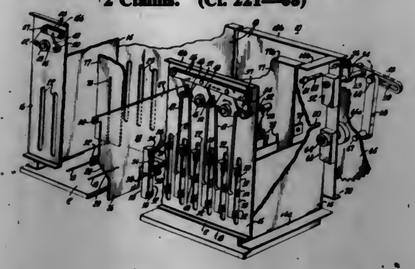
1. A combination bag and bag holding and dispensing device comprising a retaining means in the form of a generally flat sheet, a framed portion on one face of the sheet, said framed portion being defined by oppositely-disposed linear pockets, said pockets having open edges facing each other and being defined by marginal portions of said sheet which are folded over into parallelism with the main portion of said sheet and secured to said main portion at each of their ends to form said pockets, said main portion constituting the rear wall of said retaining means, a stack of superimposed flattened bags, a fastening means adjacent one end of said framed portion between said linear pockets, said fastening means being constructed to releasably retain said stack of flattened bags against said sheet within said framed portion, each bag having a rear wall, a front wall and an open top, said front wall and rear wall being connected by longitudinal edges, the rear wall of each bag extending beyond the front wall at said open top, said longitudinal edges of said bags being releasably positioned within the corresponding linear pockets, said fastening means securing said rear walls of said bags between said linear pockets to said rear wall of the retaining means, and the front wall of each bag being free to be pulled away from the rear wall of the corresponding bag while the last mentioned rear wall is secured by said fastening means.

3,190,491

ARTICLE HANDLING HOPPER

Herbert W. Marano, Summit, N.J., assignor to Consolidated Cigar Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 9, 1963, Ser. No. 271,692
2 Claims. (Cl. 221—68)



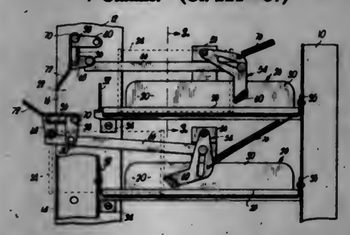
1. An article handling apparatus comprising a hopper including a base plate and front and rear walls, said front wall having a lower edge disposed above said base plate to delineate therewith a discharge opening, said front and rear walls having transversely-spaced pairs of longitudinally aligned vertical slots formed therein and said base plate having transversely-spaced longitudinally extending slots formed therein corresponding to respective pairs of said vertical slots, a longitudinally extending vertical panel slidably registering with each pair of said vertical slots and a corresponding of said longitudinal slots, an oscillatable rocker lever associated with each pair of successive longitudinal panels for swinging about a longitudinally extending pivot axis located between said respective pairs of panels, means connecting opposite sides of said lever to corresponding of said respective pairs of panels, each of said rocker levers including a leg projecting transversely thereof from said corresponding pivot axis, and oscillating means including a transversely extending rod connected to each of said legs and a first rocker arm connected to said connector rod and a second rocker arm connected to and rockable with said first rocker arm and a rotating crank member including a crank pin and a link connecting said second rocker arm to said crank pin, and a pusher member including pusher elements registering with said passageways and longitudinally reciprocatable toward and away from said discharge opening.

3,190,492

ARTICLE ADVANCEMENT MECHANISM FOR INCLINED SHELF VENDING MACHINE

Herman R. Craven, Prairie Village, Kans., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed May 10, 1963, Ser. No. 279,386
7 Claims. (Cl. 221—87)



1. In an article dispensing machine of the type wherein the article is manually removed from the machine by a customer grasping and pulling the article therefrom:

means defining a station for receiving and supporting an article to be dispensed;

structure adjacent said article station presenting an opening for manual removal of the article therethrough, said opening being of dimensions rendering an article at said station relatively inaccessible for manual grasping thereof through said opening;

control gate means on said structure selectively movable by said customer from a normal position obstructing said opening to a location clearing the article for manual removal from the station;

pusher means adjacent the station and movable along a path to shift an article at said station partially through said opening for ready grasping of the article by the customer; and

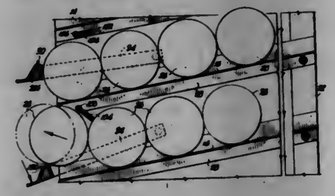
linkage means operably coupling the control gate means to said pusher means for shifting the latter along said path in response to movement of the control gate means toward said location thereof, said linkage means including lost motion means operable to permit the control gate means to be moved a sufficient distance toward said location thereof to clear the article before the pusher means is shifted by the control gate means to move the article to a position extending through said opening.

3,190,493

MECHANISM FOR VENDING CYLINDRICAL PRODUCTS

Elmer C. Johnson, Raytown, and Herbert L. Keller, Independence, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed Aug. 20, 1962, Ser. No. 218,077
8 Claims. (Cl. 221—125)



1. A vending machine comprising:

a frame;

an inclined shelf carried by said frame for supporting a number of articles to be vended and disposed for permitting gravitational movement of said articles in one direction toward a visually observable, customer accessible station adjacent the lowermost end thereof;

lever means including a leg swingably mounted adjacent one end thereof on said frame and a retaining portion secured to said leg adjacent the opposite end thereof, said lever means being biased to normally maintain said retaining portion in a first position adjacent said lowermost end of the shelf in engagement with and blocking customer access to an article at said station and across the path of travel of the articles to prevent further gravitational movement of the articles toward said station, said lever means being manually shiftable to effect swinging of the leg and thereby shifting of said retaining portion to a second position in continued blocking relationship to gravitational movement of the articles on the shelf but permitting manual removal in said one direction of the lowermost article from said shelf;

means carried by said frame and coupled with said lever means for preventing the removal of the remaining articles from said shelf when said lever means is in said second position and after the lowermost article has been removed; and

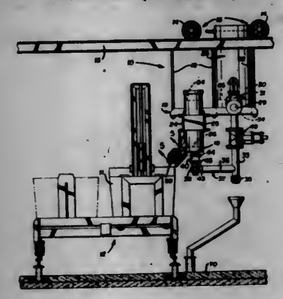
control means including coin-actuated mechanism operably coupled with said lever means for permitting the movement of the retaining portion to said second position only after the deposit of proper coinage in said coin-actuated mechanism has been made.

3,190,494

METHOD AND APPARATUS FOR FILLING MOLDS WITH SLIP

Fred L. Derror, Lucas, Ohio, assignor to Mansfield Sanitary, Inc., Perrysville, Ohio, a corporation of Ohio

Filed Sept. 18, 1963, Ser. No. 309,615
9 Claims. (Cl. 222—1)



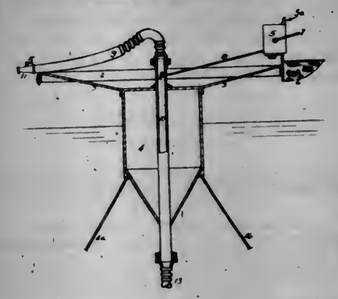
1. An apparatus for simultaneously pouring liquid slip into a plurality of mold means for slip casting ceramic shapes comprising, a plurality of metering reservoirs, each said metering reservoir having a side wall, a spout extending outwardly and downwardly from said side wall and communicating with said reservoir, said spout discharging slip from said metering reservoir by gravity, a valve means on each said spout for controlling the flow from said metering reservoir, a feed pipe for supplying liquid slip upwardly into each said metering reservoir, said feed pipe communicating with each said metering reservoir on a level lower than said spout.

3,190,495

SELF-SERVICE FLOATING FUEL STATION

Jerome H. Mandel, 98—01 67th Ave., Forest Hills, N.Y.

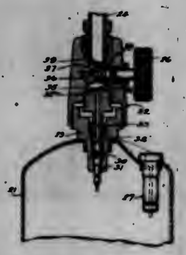
Filed Feb. 7, 1963, Ser. No. 256,954
4 Claims. (Cl. 222—2)



1. A fuel dispenser comprising, a buoy including float means for supporting said buoy in water with a portion of said buoy held above the water surface, fuel storage means on a fixed reference, feed means coupled between said storage means and said buoy for feeding fuel from said storage means to said buoy, said fixed reference being located at an elevation differential with respect to said buoy to create a head differential for causing fuel flow from said storage means to said buoy, and dispens-

ing means for dispensing a selected fuel quantity from said buoy to a craft alongside thereof, wherein said float means includes a body having an inner space sealed off in a water-tight manner, a tie-up ring substantially surrounding said body for mooring said craft thereto, and strut means intermediate said body and said tie-up ring for rigidly interconnecting them.

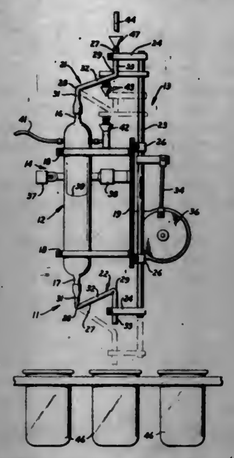
3,190,496
VALVE MEANS FOR PRESSURIZED GAS FUEL
John Welland, Jr., Wauwatosa, and Marvin J. Stroobants, Chilton, Wis., assignors to Western Metal Specialty Division, Western Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 14, 1963, Ser. No. 315,966
4 Claims. (Cl. 222—3)



4. A metering valve for attachment to a pressurized fluid fuel cylinder for controlling fluid flow from said cylinder to a fluid burning nozzle comprising, in combination, a valve body provided with fluid passage means communicable with said fluid burning nozzle and adapted to be secured to said pressurized fluid fuel cylinder, said valve body also being provided with adjustable valve means extending into said fluid passage means for controlling fluid fuel flow to said fluid burning nozzle, valve seat forming means engageable with said body to form an expansion recess at said fluid passage means, said valve seat forming means being provided with a bore therethrough for communicating fluid from said cylinder to said expansion recess, a normally flat pre-stressed metallic diaphragm interposed between said valve seat and said valve body and having an imperforate medial portion surrounded by an integral annular detent engageable with said valve seat for sealing said bore from said fluid passage means, said diaphragm also being provided with openings therein outwardly beyond said detent to allow fluid to pass therethrough to said fluid passage means when said diaphragm annular detent is unseated by pressurized fluid fuel from said cylinder.

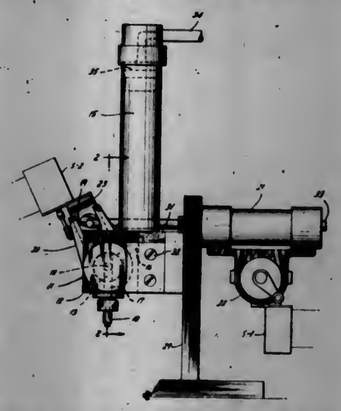
3,190,497
LIQUID COLLECTING APPARATUS AND A VALVE THEREFOR
Erik W. Anthon, Kensington, Calif., assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed May 28, 1962, Ser. No. 198,112
12 Claims. (Cl. 222—64)

1. A liquid collecting and dispensing apparatus capable of receiving and delivering a fixed volume of liquid, comprising a collecting container for receiving and discharging liquid, a valve unit containing a pair of valves with each valve disposed at opposite ends of the container and a movable member directly operatively connected to both of said valves to open one valve and simultaneously close the other valve, and actuating means responsive to a fixed predetermined volume of liquid in the container for moving said movable member and operating the valve unit, each of said valves comprising a plastic tube having a pinched area and holding means for holding the tube at an angle on each side of said pinched



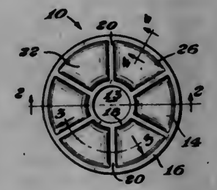
area, said holding means being relatively movable to adjust the angle of the tube at the pinched area between a closed acute angle and an open obtuse angle.

3,190,498
DISPENSING APPARATUS FOR FABRICATION OF TRANSISTORS AND THE LIKE
Carl F. Bayha, Hatfield, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,388
3 Claims. (Cl. 222—76)



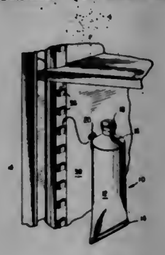
1. A system for feeding measured amounts of paste, comprising a ported reservoir structure for paste; a valve having a ported recess, said valve being movable in said ported structure and including limit switch means; a plunger reciprocable in said valve to discharge paste therefrom through said ported structure; first power means for reciprocably moving the valve in said ported structure; second power means for reciprocably moving the plunger in said valve; and control means including relay means controlling said several power means for successively actuating the first and second power means to move the valve and plunger, respectively, to first positions in said structure to cause filling of said recess with paste from said reservoir, for then actuating the first power means to move the valve to a second position thereof for discharge of paste, and for finally, when the valve has reached the second position, actuating the limit switch means to actuate the relay means and thereby the second power means to move the plunger to a second position thereof for said discharge.

3,190,499
DISPENSING CONTAINER
Alden B. Dow, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,395
17 Claims. (Cl. 222—94)



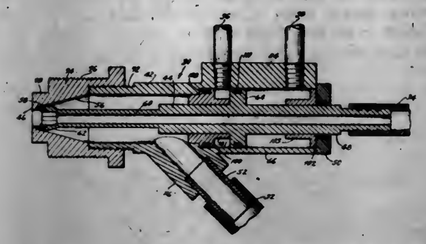
1. A pressure rupturable adhesive or glue containing and dispensing container comprising a base member, a rupturable membrane adhered to the base member about the periphery and about a generally centrally disposed area of the base member, the centrally disposed area adapted to receive a supporting projection, the base member in combination with the membrane defining a closed space having therein a flowable adhesive material, the membrane being further adhered to the base member by means of a plurality of seals which extend from the periphery of the base member to the centrally disposed portion of the base member adhered to the membrane thereby forming a plurality of sealed compartments, each of said compartments containing a flowable adhesive, each of the compartments having at least one edge adjacent the periphery of the base member and one edge edjacent the centrally disposed area of the base member.

3,190,500
HANGABLE TUBE DISPENSER
Charles F. Miles, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
Filed Sept. 7, 1962, Ser. No. 222,077
5 Claims. (Cl. 222—105)



1. In combination, a collapsible dispensing tube having a tubular body portion closed at one end and having at its other end a substantially conical end closure portion terminating in a dispensing nozzle, a cap threaded on said nozzle, and a hook spaced from said nozzle and said cap, said hook being directly affixed to said tubular body portion of said dispensing tube at the juncture of said body portion and said conical end closure portion.

3,190,501
FILLER, PARTICULARLY FOR FOAM MOLDING
Frank H. Lambert, Pompton Lakes, N.J., assignor to Champlain-Zapata Plastics Machinery, Inc., Caldwell, N.J., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,863
8 Claims. (Cl. 222—193)



1. A filler nozzle adapted to be connected to a molding device for supplying plastic beads to a mold cavity therein, said filler nozzle comprising

(a) an elongate hollow body having one end portion thereof adapted to be communicatively connected to the mold cavity and having an interior wall including a cylindrical first portion and a conical second portion adjacent to and converging toward said one end of said hollow body,

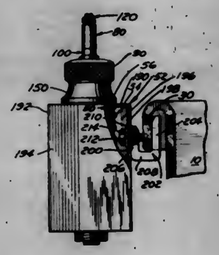
(b) means communicatively connected to said cylindrical first portion of said hollow body and adapted to be connected to a source of plastic beads for supplying plastic beads to the interior of said hollow body, and

(c) an elongate hollow valve rod disposed axially within said hollow body with one end portion thereof disposed within said conical second portion of said hollow body, said valve rod being adapted to be connected to a source of compressed air and having a constricted orifice in said one end portion thereof for air discharge at high velocity toward said one end of said hollow body, said valve rod being movable between an open position wherein said one end thereof is spaced a small predetermined distance rearwardly from said one end of said hollow body but forwardly of said bead supply means and air is discharged from the orifice in said one end thereof closely adjacent to and through said one end of said body to draw beads through said bead supply means and to carry the same through said one end of the body, and a closed position wherein said one end portion of said valve rod closes the opening through said one end of said hollow body to the passage of both air and beads.

3,190,502
APPARATUS FOR DISPENSING LIQUID SHAMPOO
Leroy H. Knibb, 181 E. Lake Shore Drive, Chicago, Ill.
Filed June 3, 1963, Ser. No. 280,510
5 Claims. (Cl. 222—146)

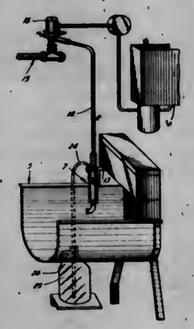
1. A head adapted to dispense liquid shampoo or the like and comprising a charge container having an exteriorly threaded upper rim region and a bottom wall provided with an inlet fitting adapted to be connected to a source of liquid under pressure, a closure cap threadedly received over the upper threaded rim region of the charge container, said closure cap including a closure wall provided with an opening therethrough, an elastomeric mounting sleeve fitting within said opening and provided at its lower end with a downwardly facing valve seat, a one-piece tiltable valve body projecting completely through the mounting sleeve and including an upper tubular dispensing nozzle above and an imperforate valve plate below said mounting sleeve, the upper face of said valve

plate normally cooperating with the valve seat to prevent egress of liquid from the charge container and into the dispensing nozzle and being operable upon axial tilting of the valve body to admit fluid from the charge container to the dispensing nozzle, and a manually operable control valve disposed within said dispensing nozzle and adapted to regulate the flow of liquid through the latter, said dispensing nozzle being interiorly threaded and provided adjacent to its lower end with an internal annular valve seat, said control valve comprising a cylindrical member



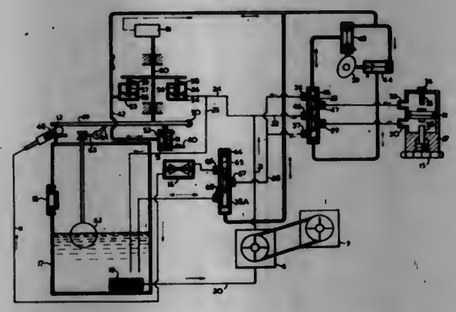
having an upper portion threadedly received within the dispensing head and projecting outwardly of the latter above the upper rim thereof, a lower imperforate valve plug cooperating with said annular valve seat, and an interconnecting reduced stem portion between the valve plug and upper portion, said stem portion being provided with a radial valve port therein establishing communication between the interior of the upper stem portion and the annular space surrounding the stem portion within the dispensing nozzle.

3,190,503
LIQUID ADDITIVE DISPENSER FOR CLEANSING SYSTEMS
Arnold R. Fjermestad, Albert Lea, Minn., assignor to National Cooperatives, Inc., Albert Lea, Minn., a corporation of the District of Columbia
Filed Oct. 16, 1963, Ser. No. 316,608
14 Claims. (Cl. 222—205)



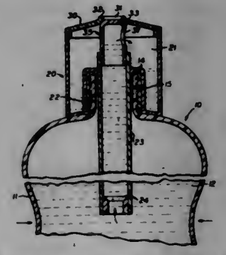
1. A liquid additive metering system comprising:
(a) a source of suction,
(b) a vertically extending tubular member having substantially closed end portions and having a bottom and a discharge outlet disposed adjacent its bottom,
(c) a conduit connecting said source of suction in fluid communication with the interior of said tubular member,
(d) said conduit extending into the upper end portion of said tubular member and terminating in a downwardly facing mouth at a level between the ends of said tubular member,
(e) said conduit being slidable longitudinally within said tubular member for vertical adjustment of the level of its said mounth therewithin,
(f) releasable means securing said conduit against sliding movement within said tubular member to hold said conduit mouth at a desired level and permit vertical adjustment thereof upon release of said means,
(g) valve means interposed within said conduit and movable between open and closed positions,
(h) means connected to said valve means for moving the same between open and closed positions as desired,
(i) a source of liquid additive,
(j) a second conduit connecting said liquid additive source in fluid communication with the interior of said tubular member at a point elevated relative to said source of liquid additive,
(k) a suction-responsive flap valve connected to said tubular member and extending across the exterior of said discharge outlet in opening and closing relation and constructed and arranged in position to close the same when suction is applied to the interior of said tubular member and being movable to open position by the weight of liquid additive contained in said tubular member when the interior of said tubular approaches atmospheric conditions,
(l) said tubular member having a small air-bleeder hole formed therein at a level above the level of said conduit mouth and bringing the interior of said tubular member into fluid communication with the exterior atmosphere, and
(m) a ball-type float disposed within said tubular member below said conduit mouth and having a diameter larger than that of said conduit mouth and slightly smaller than that of said tubular member.

3,190,504
APPARATUS FOR MIXING METERED QUANTITIES OF LUBRICATING OIL WITH GASOLINE
Stanley Victor Laver, Guildford, New South Wales, Australia, assignor to Gilbert & Barker Manufacturing Company (Australia) Pty. Limited, Alexandria, New South Wales, Australia, a corporation of New South Wales
Filed Dec. 18, 1963, Ser. No. 331,596
12 Claims. (Cl. 222—134)



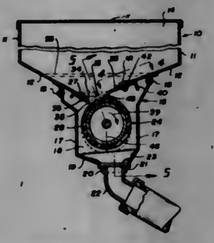
7. In apparatus for mixing metered quantities of oil with gasoline from a gasoline dispenser including a pump driven by an electric motor, and an electric supply circuit for said motor, the combination of a source of oil under pressure, a gasoline meter, means coupled to the gasoline meter for generating impulses as gasoline is delivered, a gasoline delivery nozzle, a blending nozzle detachably connected to the gasoline delivery nozzle, said blending nozzle having a mixing chamber for gasoline and oil, means for delivering oil from the said source to the mixing chamber in response to said impulses, an electric switch connected in said motor circuit, a housing for said blending nozzle, means operated by said blending nozzle with the latter received by said housing to close the said electric switch, and means for metering the amount of oil delivered for each impulse.

3,190,505
LIQUID DISPENSING
Dorothy Arbitman, 2150 Wallace Ave., and Jack Falerni, 2555 Cruger Ave., Bronx, N.Y.
Filed Oct. 15, 1962, Ser. No. 230,605
4 Claims. (Cl. 222—207)



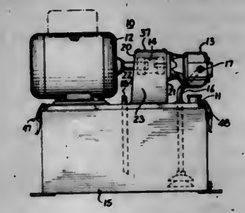
1. Fluid dispensing means permitting the flow of a given desired metered quantity of fluid, said means comprising: metering means confining a given desired quantity of fluid for dispensing, said metering means provided with liquid pouring means; fluid conducting means in communication with said metering means; a fluid supply source from which fluid may be supplied through said conducting means to said metering means; and valve means movable in said fluid conducting means in response to the pressure of the fluid in said fluid supply means to permit the flow of fluid to said metering means upon an increase in pressure in said fluid supply source to a given level, and a cessation of fluid flow to said metering means upon the attainment of equal pressures in said metering means and said supply means, whereby a desired quantity of fluid will be confined in said metering means for dispensing.

3,190,506
FERTILIZER DISTRIBUTOR ATTACHMENT
Edwin M. Selzler, 3410 31st St. SW., Calgary, Alberta, Canada
Filed July 8, 1963, Ser. No. 293,296
2 Claims. (Cl. 222—314)



1. A fertilizer attachment for seeding devices comprising in combination an elongated fertilizer hopper, an elongated fertilizer feed aperture in the base thereof, a fertilizer tube distributor casing secured to the underside of said hopper and communicating therewith via said fertilizer feed aperture, feed roller means journalled for rotation within said distributor casing and below said feed aperture, said feed roller means including a cylindrical feed roller and a resilient covering sleeve secured around said feed roller, means to drive said feed roller means, means secured to one of the boundary edges of said feed aperture cooperating with said feed roller means, for metering the quantity of fertilizer fed by said feed roller means from said hopper to said distributor casing, said means secured to said one boundary edge of said feed aperture, comprising an elongated plate, means adjustably securing said plate to said boundary edge for limited adjustment of said plate with relation to the surface of said feed roller means, said plate including a main securing portion and a downwardly angulated metering strip portion, the longitudinal edge of said metering strip portion being above and parallel to said feed roller means and in advance of the top dead center position of said feed roller means when viewed in end elevation.

3,190,507
HYDRAULIC POWER UNIT INCLUDING BED PLATE CONSTRUCTION
Norman F. MacMillin, Highland Park, Ill., assignor to MacMillin Hydraulic Engineering Corporation, Skokie, Ill., a corporation of Illinois
Filed Oct. 16, 1963, Ser. No. 316,743
5 Claims. (Cl. 222—383)

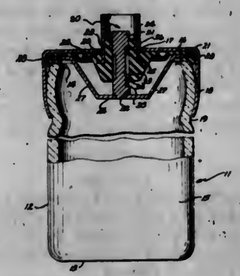


1. In an hydraulic power unit the combination comprising a horizontal bed plate of unitary cast construction and having a generally rectangular outline, an upstanding tower of hollow box shape cast integral with the bed plate and having first and second end walls together with side walls defining an upper edge lying in a substantially horizontal plane, motor mounting pads integrally cast with the bed plate adjacent the second end wall, said first end wall having a flat surface formed thereon and a hole bored therein for flange mounting of an hydraulic pump, said motor pads being perpendicular to said flat surface and in a plane which is spaced at a predetermined distance with respect to the hole axis so that a motor of standard size mounted on said pads and a pump mounted in said hole are automatically alined with one another, the second end wall of the tower having a relief formed therein for accommodating passage of the motor shaft for mounting of a coupling in said tower connecting the motor shaft with the pump shaft, and a flat closure plate secured to and registering with the upper edge of the tower for mechanically shielding the coupling therein.

3,190,508
METERING VALVE FOR FLUIDS UNDER PRESSURE
Kenneth M. Petersen, Canoga Park, Calif., assignor, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 5, 1963, Ser. No. 262,937
15 Claims. (Cl. 222—394)

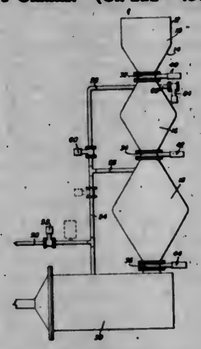
1. Valve means for effectuating the delivery of a metered quantity of fluid under pressure from a container comprising an outer valve housing having a central aperture, a flexible diaphragm of resilient material beneath said housing, the periphery of said diaphragm being sealed beneath said housing to the upper portion of the container, a reciprocable sleeve within said central aperture cooperating with said diaphragm, a valve core extending upwardly into said sleeve from the lower end thereof in slidable sealing relationship therewith, means to mount

said valve core rigidly with respect tc the container, said sleeve and said core cooperating to form a metering chamber, inlet valve means thereto and outlet valve means therefrom, said inlet valve means being open and said outlet valve means being closed when said sleeve is in its



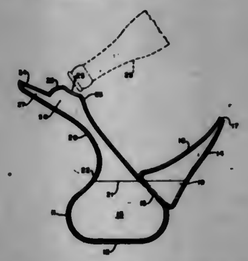
outermost position, and means to urge said diaphragm and said sleeve as a unit into the container thereby closing said inlet valve means and opening said outlet valve means to dispense a metered quantity of fluid under pressure from the metering chamber.

3,190,509
APPARATUS FOR CONTINUOUS GRAVITY FEED OF FLUENT MATERIALS
Martin J. Kirchhoefer, Wisconsin Rapids, Wis., assignor to Pulpamac, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Mar. 25, 1963, Ser. No. 267,526
3 Claims. (Cl. 222—450)



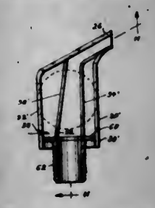
1. An apparatus for the gravity feed of fluent material in discrete batches intermittently withdrawn from a region of relatively low pressure and discharged as a continuous and uninterrupted stream into a region of relatively high pressure, said apparatus comprising a hopper constituting a region of relatively low pressure, a receptacle constituting a region of relatively high pressure, first and second chambers interposed between said hopper and receptacle, each of said chambers and receptacle being sealed from the atmosphere, an inlet and outlet for each of said hopper, chambers and receptacle, first, second and third connector establishing communication respectively between said hopper and first chamber, between said chambers and between said second chamber and receptacle, control valves in each connector, means sequentially operating said control valves and thereby establish a step by step flow of material from said hopper to said first chamber and between said chamber and means operating said control valve in said third connector and effecting a continuous and uninterrupted but variable rate flow between said second chamber and said receptacle, means for maintaining said relatively high pressure in said second chamber and receptacle, means for changing the pressure in said first chamber from said relatively low pressure of said hopper when the control valve of said first connector is open and admitting a batch of material from said hopper into said first chamber to said relatively high pressure when said control valve of said second connector is admitting material from said first chamber into said second chamber.

3,190,510
TOY FLASK
Ralph Gonzalez, Jr., 901 Rim Road, El Paso, Tex.
Filed May 24, 1963, Ser. No. 282,996
3 Claims. (Cl. 222—478)



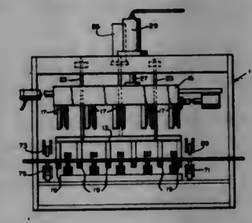
1. A toy flask for the use of children comprising
(a) a flask body enclosing
(b) a liquid containing chamber,
(c) a pouring spout communicating with the chamber at one side of the body,
(d) a filling neck connecting with the chamber at an upper portion thereof,
(e) said neck curved in a substantially opposite direction away from the direction of projection of the pouring spout from the flask body,
(f) said filling neck having in an upper portion thereof short of the upper end of the filling neck an enlarged space,
(g) said filling neck in the upper portion of said enlarged space having a liquid-receiving opening of a size to receive the necks of supply bottles, and
(h) said filling neck above the enlarged space having a hollow portion communicating with the enlarged space for accommodating surges incident to filling from the supply bottle.

3,190,511
PLASTIC BOTTLE POURER
John J. Daly, 438 W. 116th St., New York, N.Y.
Filed Sept. 18, 1963, Ser. No. 309,650
1 Claim. (Cl. 222—478)



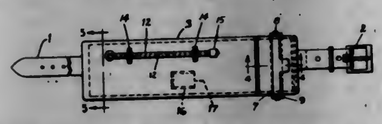
A pourer comprising a substantially rectangular-shaped hollow sectional body, said body having juxtaposed side walls closely spaced from each other, outer front and rear walls remotely spaced from each other, a top wall integral with the side walls and front and rear walls, said walls merging to define an integral spout at one end of the body and an integral circular socketed recess portion at the other end, an inner front wall, an inner rear wall spaced from the inner front wall, said side walls and inner front wall and inner rear wall defining a passage communicating with said recess and with the spout, a groove and flange connection between the sections of the body, said side, outer rear and inner rear walls defining a space therebetween, said outer rear wall having an air vent near the top thereof communicating with the atmosphere and with said space, said inner rear wall having an air vent near the bottom end thereof communicating with said space and with said passage, said circular socketed recess portion having internal screw threads for mounting on the threaded neck of a bottle, said side walls having circular flat smooth areas for receiving indicia thereon.

3,190,512
MULTIPLE-PLEAT FORMING AND FASTENING APPARATUS TO PREVENT STRETCHING AND TEARING
Herbert Nathanson, 212 Beach 87th St., Rockaway Beach, N.Y.
Filed Mar. 26, 1964, Ser. No. 354,855
4 Claims. (Cl. 223—30)



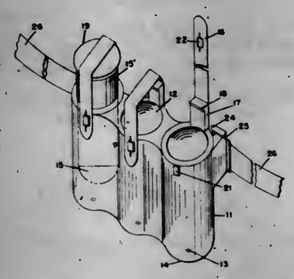
1. Apparatus for forming pleats in a sheet of drapery material and the like comprising a base member, a frame member in said base member having a plurality of spaced pleating stations mounted on said frame member, each of said pleating stations having a plurality of fixed crease-forming elements defining channels, and a plurality of movable creasing elements, one for each respective channel; reciprocating means mounted on said frame member for moving said movable creasing elements vertically into said channels in ordered relation beginning with an interior movable element location and progressing successively outward in opposite directions from the interior location, element by element and station by station, until a sheet interposed between the fixed and movable elements is impressed with creases at at least a plurality of said stations, and stapler fastening means mounted for reciprocating movement at each of said stations for securing the creases at each of said stations to form a pleat at the said station.

3,190,513
SKINDIVER'S BELT
Dudley Wheeler, Burlington, Vt.
(2927 W. Tower Ave., Cincinnati, Ohio)
Filed Jan. 14, 1963, Ser. No. 251,147
2 Claims. (Cl. 224—5)



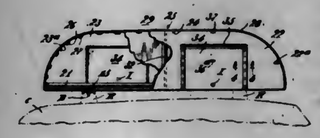
1. A skindiver's belt comprising a flexible inflatable or collapsible container portion of substantial length along the belt, an opening in the container and means for closing the opening, a transparent flexible material forming the outer wall of the container means within the container, for holding a watch so that it may be read while it is in place in the pocket of the container, a flexible tube attached to the outer wall of the container, the said tube having a removable closure for its end, and being adapted for inflating the skindiver's belt while it is in place around his body.

3,190,514
BANDOLEER FOR CARTRIDGE, 40 MM.
James M. Spilman, Rockaway, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 2, 1963, Ser. No. 327,562
3 Claims. (Cl. 224—20)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A cartridge carrier comprising a plurality of pockets, each of said pockets having a flap associated therewith, said flap being fixedly attached to one side of said pocket and removably attached to an opposite side of said pocket for retaining a cartridge, means carried by said flap for maintaining said cartridge in a fixed, suspended position within said pocket.

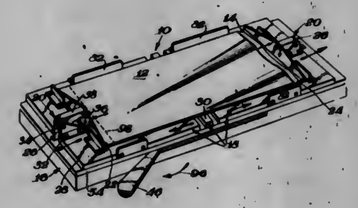
3,190,515
CAR TOP RECEPTACLE
Lester M. Vielle, S. Oxford Road, West Millbury, Mass.
Filed Apr. 30, 1963, Ser. No. 276,712
1 Claim. (Cl. 224—42.1)



A car top receptacle of the kind which comprises a floor carried by a rigid base frame designed to rest upon a conventional luggage carrier and having means for securing it to a luggage carrier, whereby the base frame and floor are held in spaced relation to the car top, the receptacle also comprising horizontally spaced, right and left vertical and parallel rigid side walls, means fixedly securing the lower edge portions of the respective side walls to the base frame, each side wall having therein at least one door giving access to the interior of the receptacle, the receptacle also having a roof consisting of a unitary sheet of aluminum having a smoothly polished light-reflecting exterior surface, said sheet of aluminum extending from one side wall to the other and having its opposite ends, respectively, secured to the front and rear

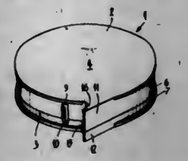
ends of the base frame, and means securing said sheet of aluminum to the upper edges of the side walls, characterized in that the roof includes arcuate end portions, each of approximately 90° of arc, the center of curvature of each of said arcuate end portions being approximately in the horizontal plane of the floor, the roof top merging smoothly with the respective arcuate end portions and inclining upwardly, at an angle to the horizontal of from 1.5° to 5° toward its midpoint, from its merger with the respective end portions, whereby when the receptacle is mounted upon a car top and the car is travelling at high speed there is developed such a downward component of the air pressure acting upon the forward end portion of the roof and the upwardly inclined forward portion of the roof top as to stabilize the receptacle and the vehicle upon which it is mounted.

3,190,516
MULTIPLE OFFICE FORM BURSTING APPARATUS
Paul A. Eriksen, 5 Cleveland Ave., McDaniel Heights, Wilmington, Del.
Filed May 7, 1964, Ser. No. 365,627
14 Claims. (Cl. 225—101)



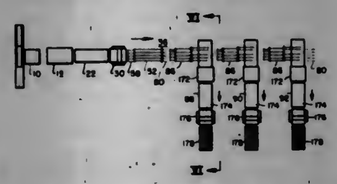
1. An apparatus for bursting the row of edge seams in multiple carbon office forms adjacent carbon bound edges at one side thereof comprising a base frame, a supporting surface means for receiving said forms mounted upon said base frame, a pair of clamps disposed at opposite sides of said table for grasping and releasing opposite side edges of said multiple forms, movable means connecting at least one of said clamps to said base frame and permitting their lateral relative movement, drive means for actuating said clamps to grasp and release and their lateral relative movement, an operating linkage connecting said drive means to said clamps for actuating them to grasp said opposite side edges and then move relatively laterally away from each other to burst said row of seams whereby the removal of said carbons and carbon bound edges en masse is facilitated, said clamps comprising lever means rotatably mounted upon base plates, said lever means including clamping bars that engage said base plates for grasping said side edges therebetween, said lever means including a horizontally extending leg disposed above said base plates and a vertically extending leg extending below said base plates and said supporting surface means, said clamping bars being connected to said horizontally extending legs and including rods that push outwardly in response to actuation by said drive means for rotating said horizontally extending legs downwardly whereby said side edges of said forms are grasped by said clamping bars moving downwardly into engagement with said base plates, and said laterally movable connection of at least one of said clamps to said base frame permitting further outward movement of at least one of said rods to push said clamps away from each other while grasping said side edges whereby said row of seams is completely burst to separate said carbon bound edges and carbons en masse from the remainder of said forms.

3,190,517
TAPE DISPENSING CONTAINER HAVING A SEALABLE DISPENSING OPENING
Arthur Graham Rice, East Brighton, Victoria, Australia, assignor to B.X. Plastics (Australia) Pty. Limited
Filed June 29, 1964, Ser. No. 378,564
Claims priority, application Australia, June 28, 1963, 32,463/63
4 Claims. (Cl. 225—44)



1. A container adapted for dispensing tape material therefrom, said container comprising a cylindrical top portion and a cylindrical bottom portion each of which includes a base and a depending skirt, the skirt of each said portion having an edge remote from the base thereof, one of said skirts including a section of reduced diameter extending from the edge thereof towards the associated base to enable the skirts of the sections to be axially interfitted for relative rotation and define a smooth external cylindrical surface, each skirt having an axial slot extending from the edge thereof towards the associated base and adapted for being placed in registry with the other slot whereby tape material may be dispensed from the container through the slots, and means on each skirt extending beyond the edges of the same skirt and positioned on said skirt to seal the slot in the other of the skirts in a particular relative position of the portions in which the slots are out of registry.

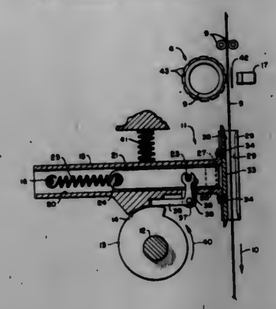
3,190,518
APPARATUS FOR CUTTING, TRANSPORTING AND DISTRIBUTING GLASS SHEETS
Thomas A. Insolio, Jeannette, Pa., assignor to American-Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 235,932
6 Claims. (Cl. 225—96.5)



1. Apparatus for cutting, transporting and distributing glass sheets, which comprises a primary conveying line and a secondary conveying line extending laterally from said primary conveying line, said primary conveying line including an indexing device arranged to support a stock sheet of glass in a horizontal position and align one longitudinal edge thereof along a predetermined line, a scoring device positioned to receive said stock sheet from said indexing device and to cut a plurality of transverse scores on one surface of said stock sheet at longitudinally spaced intervals, a breaker conveyor positioned to receive said scored stock sheet from said scoring device and to break said stock sheet along said transverse scores into a plurality of cross-cut strips, a distributing conveyor, a take-away conveyor positioned to receive said cross-cut strips from said breaker conveyor and to deliver them to said distributing conveyor, means for operating said take-away conveyor at a higher speed than said breaker conveyor to space said cross-cut strips on said take-away conveyor, and

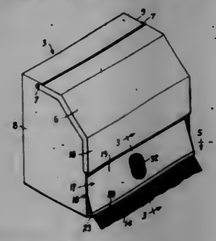
a transfer conveyor arranged to transfer cross-cut strips from said distributing conveyor to said secondary conveying line.

3,190,519
TAPE FEEDING MECHANISM FOR TELEGRAPH TICKER
Leonard A. Nash, Evanston, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Dec. 2, 1963, Ser. No. 327,344
6 Claims. (Cl. 226—164)



1. Tape feed apparatus for intermittently drawing a tape through a printing mechanism comprising,
a tape feed member having a tape engaging surface disposed to engage the back of a tape having printing on its front surface,
a tape clamp support,
tape clamps carried by said support for engaging restricted areas of the front surface of the tape along the edges thereof outside the printed area to clamp the tape to the tape engaging surface of the tape feed member,
a lever pivoted on the tape feed member for reciprocating said clamp support with respect to the tape feed member,
a cam for oscillating said tape feed member and for actuating said lever, and
spring means for urging said tape feed member and said lever to operative camming association with said cam.

3,190,520
CUTTER FOR NON-WOVEN FABRIC TOWEL DISPENSERS
Gerald W. Wyant, 4343 Mayfair Ave., Montreal, Quebec, Canada
Filed July 1, 1963, Ser. No. 291,651
Claims priority, application Canada, Apr. 8, 1963, 872,834
2 Claims. (Cl. 225—39)

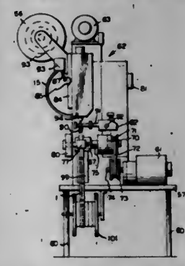


1. A dispensing cabinet for dispensing rolled non-woven towel of soft-fluffy texture having relatively low strength in the transverse direction, the said cabinet comprising an outer casing, a roll towel supporting structure within the said cabinet, a blade carrying member pivotally mounted in the said cabinet and forming a part of said outer casing, the said roll supporting structure and the said blade carrying member together forming a towel dispensing throat in said cabinet, a dispensing slot forming member disposed parallel to and spaced apart from the lower inner facing surface of the said blade carrying member, the lower horizontal edge of the said slot forming member being disposed below the adjacent lower horizontal edge of the blade carrying member, a towel cutting blade, of the thickness of a Gillette safety razor blade, secured to the inner facing surface of the blade carrying member, the said blade having a continuous, razor sharp cutting edge projecting slightly below the lowermost horizontal edge of the blade carrying member and slightly above the adjacent lower horizontal edge of the said slot forming member, the said blade carrying member being bias weighted to maintain a normally vertical front wall position of the said cabinet throat and taking up a pivotal position to hold the said towel against the throat forming portion of said roll supporting structure when a length of towel is being cut against the said blade.

ERRATUM

For Class 226—164 see:
Patent No. 3,190,519

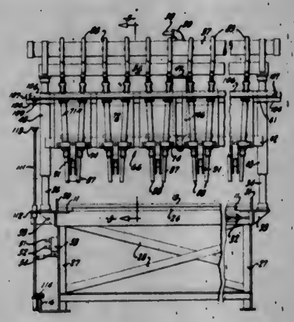
3,190,521
ZIPPER END STOP STAPLING MACHINE
Moses Perlman, 4410 14th Ave., Brooklyn, N.Y.
Filed June 14, 1960, Ser. No. 35,965
1 Claim. (Cl. 227—3)



A machine for attaching bottom stop staples to disconnected portions of a pair of stringers that have longitudinal edge portions connected to each other by interlocking elements, consisting of a stapler having an anvil and a reciprocating staple press plunger provided with a cam portion and being adapted for inserting staples at the bottom ends of the disconnected portions of said pair of stringers, a vertical push member extended from the lower extremity of said plunger, a vertical stop bolt slidably mounted beneath said plunger, resilient means tending to force said stop bolt toward said push member, a source of electric current, a feed roller mounted in alignment with the pair of stringers adapted for pulling the same through said stapler between the plunger and anvil thereof, an electric motor, an electric clutch interposed between said electric motor and said feed roller, a relay having a solenoid which, when energized, connects said electric clutch to said source of current so as to engage said electric clutch, a first switch operated by the cam portion of said staple press plunger interposed in the electric circuit of said relay solenoid for connecting and disconnecting the relay solenoid to the source of current according to the movement of said plunger, a sensing device pivoted to said stapler and directed toward the pair of stringers being located forward and adjacent said stop bolt and placed over those longitudinal edge portions of said stringers which are connected to each other and

being adapted for dropping in between the disconnected portions of the stringers as they are passing by said sensing device, and a second switch operated by said sensing device for alternatingly connecting said electric clutch and said relay solenoid to said source of current whenever said sensing device is dropped between the disconnected portions of said stringers and forced out of the same by connected stringer portions as the plunger is being reciprocated, said stop bolt being forced by said resilient means against said push member through a portion of disconnected stringers while said second switch is causing a disengaging of said clutch, thereby said stapler fastening a staple to an end of the aforementioned disconnected portion of said stringers, and while said plunger in its movement is approaching its lowest end portion said push member pushing said stop bolt out of the disconnected stringer portion, thereby the cam portion of the plunger causing said first switch to close the electric circuit of the relay solenoid for energizing said electric clutch so as to cause said first roller to move a portion of said pair of stringers through said stapler.

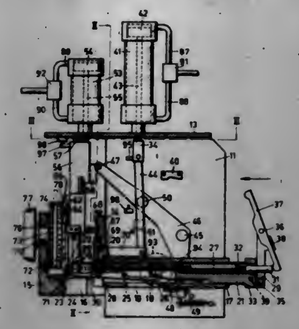
3,190,522
MECHANISM FOR STAPLING BEDSPRINGS TO BOX SPRING FRAMES
Thomas F. Winters, 1320 Egbert St., San Rafael, Calif.
Filed May 17, 1963, Ser. No. 281,169
7 Claims. (Cl. 227—40)



1. In a machine for fastening a plurality of bedspring coils to a bedspring frame, a table along which a frame may be slid, a carriage, guide means for guiding said carriage for reciprocation toward and away from said table, a plurality of stapling machines on said carriage, holding means for holding coils in proximity to said stapling machines, pneumatic means for energizing each said stapling machines including a valve for each said machine, and valve actuating means for actuating all said valves simultaneously, said holding means comprising for each pair of said stapling machines, a permanent magnet positioned in proximity to said stapling machines and at an angle thereto, such that when a spring is magnetically held by said holding means with a plurality of turns of said coils against said holding means, the lower end of said spring is positioned at the lower ends of said stapling machines.

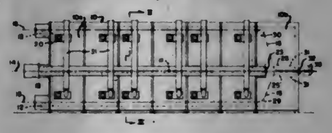
3,190,523
COMPONENT INSERTING MACHINE
Henri Carel Haverkorn van Rijsewijk, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 24, 1961, Ser. No. 134,034
Claims priority, application Netherlands, Sept. 17, 1960, 256,302
15 Claims. (Cl. 227—93)

1. A component inserting machine comprising a frame, an operatively connected assembly supported on said frame for inserting components having projecting leads in a printed circuit board; said assembly including gripping means having a pair of relatively movable jaws for gripping the lead wire of a component, feed means for feeding a component into position between said jaws, a first means operatively connected with said gripping means for opening said jaws for receiving a component, means cooperating with said gripping means for cutting the component leads, closure means cooperating with said



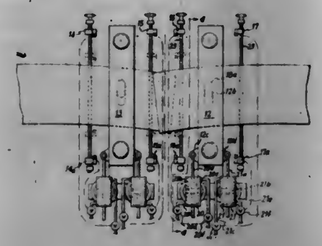
gripping means for closing and holding said jaws in closed position, a means connected with said gripping means for sequentially moving said jaws through an arcuate path into a plane substantially normal to a printed circuit board and also moving said jaws toward said circuit board within said last mentioned plane, another means connected with said gripping means for moving said component relative to said jaws, and a second means connected with said gripping means for opening said jaws, whereby a component is inserted in said circuit board.

3,190,524
FURNACES FOR HEATING AND ASSEMBLING METALLIC COMPOSITE UNITS
John B. Ulam, Canonsburg, Pa., assignor to Composite Metal Products, Inc.
Filed July 25, 1962, Ser. No. 212,298
9 Claims. (Cl. 228—4)



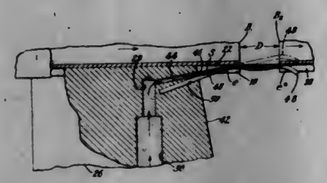
1. A furnace for heating and combining a plurality of strips to be formed into a single member comprising an elongated housing, having a heating portion and an exit portion, a conveyor means extending lengthwise of the housing intermediate the top and bottom thereof and adapted to convey a strip therethrough, a second conveyor means spaced from and on one side of said central conveyor adapted to carry a second strip therethrough, heating means acting on the adjacent sides of said strips in the heating portion, bending rolls acting on at least one of the two strips adapted to guide them into contact with one another in the exit portion and means applying pressure on said pieces in the exit portion to bond them and feed them out of said furnace as a single strand.

3,190,525
APPARATUS FOR ALIGNING COIL ENDS FOR JOINING
Matthew J. Foley and Robert S. Burns, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Original application Dec. 24, 1957, Ser. No. 705,053, now Patent No. 3,057,056, dated Oct. 9, 1962. Divided and this application May 16, 1962, Ser. No. 195,110
6 Claims. (Cl. 228—5)



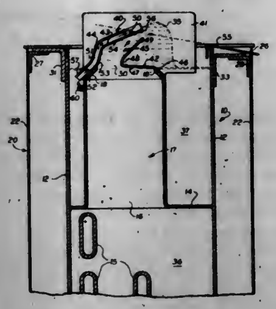
5. In an apparatus for welding metallic strips end to end, a shearing station, a welding station displaced from said shearing station along the path of strip travel, a pair of strip end clamps individually operable and jointly movable between said shearing station and said welding station, a pair of aligning clamps displaced along said path of strip travel from said shearing and welding stations respectively, means for moving each of said aligning clamps transversely of the path of strip travel and concurrently to rotate each of said aligning clamps in a horizontal plane to align the respective strip ends for clamping by said strip end clamps for shearing and welding of said strip ends.

3,190,526
APPARATUS FOR SOLDERING CANS
Frederick S. Sillars, Beverly, and William G. Birch, Danvers, Mass., assignors, by mesne assignments, to Campbell Soup Company, Camden, N.J., a corporation of New Jersey
Filed Dec. 19, 1961, Ser. No. 160,507
7 Claims. (Cl. 228—35)



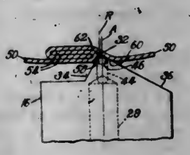
1. An applicator for soldering the side seams of can bodies moving in a predetermined path comprising a flexible solder conducting wire engageable along its length intermediate its ends with the seams of the bodies, a nozzle for projecting a stream of solder onto the surface of the wire along which the solder travels to be engaged by the bodies, and means for mounting the applicator with the initial position of said flexible wire intersecting the path of travel of the side seams so that the wire will upon contact flex and remain yieldingly engaged with said side seams.

3,190,527
MEANS FOR APPLYING OIL FILM TO SOLDER WAVE
Louis V. Tardoskegyi, Montreal, Quebec, Canada, assignor to Electrovert Manufacturing Co. Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Oct. 30, 1963, Ser. No. 320,616
11 Claims. (Cl. 228—37)



1. Wave soldering apparatus comprising, in combination, a tank containing molten solder; means dividing said tank into a solder supply section and a solder return section; pump means operable to pump molten solder from said return section to said supply section; a solder discharge nozzle in solder receiving communication with said supply section and extending upwardly of said tank to provide a laterally substantially rectilinearly extending standing wave of molten solder overflowing to said return section; and means maintaining a reservoir of liquid additive with its liquid surface substantially at the level of the exit of said nozzle for contact by the molten solder discharged from said nozzle; whereby the molten solder flowing past said reservoir will draw a film of additive therefrom to uniformly and completely cover the outer surface of said solder wave.

3,190,528
APPARATUS FOR SOLDERING CANS
Frederick S. Sillars, Beverly, Mass., assignor, by mesne assignments, to Campbell Soup Company, Camden, N.J., a corporation of New Jersey
Filed Oct. 17, 1961, Ser. No. 145,550
15 Claims. (Cl. 228—43)



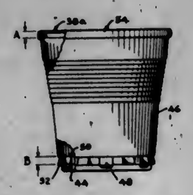
1. In a machine for applying solder to the side seams of moving can bodies each of which has a seam joint including a re-entrant groove, the combination of means for guiding the can for yielding movement along a predetermined path, nozzle comprising a rigid body having an upstanding inverted substantially V-shaped seam guide shaped to enter and engage the re-entrant groove to restrict movement of the can body to a linear path at the location where solder is applied, and a solder discharging passageway located at the terminal end of said seam guide measured in the direction of movement of said bodies and oriented to direct solder into the groove substantially in the direction of its linear movement.

3,190,529
SOLDER STRIP FEEDING ATTACHMENT FOR SOLDERING IRONS
Richard Bert Bellamy, State Park, Myrtle Beach, S.C.
Filed Feb. 8, 1963, Ser. No. 257,145
3 Claims. (Cl. 228—53)



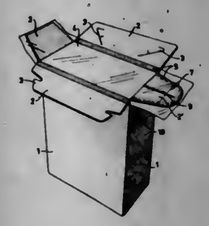
3. In a soldering device, an elongated heating unit, a soldering tip at the forward end of said unit, and a handle at the rearward end of the unit, mechanism for intermittently advancing a solder strip toward said tip comprising: a rigid rectangular framework having a substantially rectangular opening therein, two of the opposed sides of said opening being bounded respectively by a pair of straight parallel spaced rods extending longitudinally of said heating unit and the other two opposed sides of the opening being bounded by two spaced transverse bars respectively disposed forwardly toward and rearwardly from said tip, a third transverse bar disposed between said two spaced bars and mounted for rectilinear movement upon said rods toward and away from said tip, opposed gripping means mounted on said third bar substantially midway between said rods, said means being rigidly engageable respectively with opposite sides of the strip upon forward movement of the third bar and slidably engageable upon rearward movement thereof, a second opposed gripping means mounted on said rearwardly disposed transverse bar, said second gripping means being rigidly engageable respectively with opposite sides of the strip upon rearward movement of the third bar and slidably engageable upon forward movement of the third bar, means carried by said forwardly disposed transverse bar and alined with said first and second gripping means for guiding said solder strip toward the tip, and an L-shaped pivoted trigger having a forked end portion straddling said unit transversely and the ends of said fork being slidably engageable with said third bar at two points respectively adjacent said pair of rods, the opposite end portion of said trigger extending alongside said handle from said pivot, whereby the lateral components of the forces advancing said strip will be substantially eliminated by said two-point sliding engagement between said third bar and said forked ends.

3,190,530
THIN WALL CONTAINER WITH THICKENED RIM STRUCTURE
Bryant Edwards, Oak Park, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed May 10, 1961, Ser. No. 109,134
3 Claims. (Cl. 229—1.5)



1. A thin-walled one piece seamless container within the range of .002–.034 inch in thickness formed from thermoplastic thin sheet stock material, comprising a peripherally continuous side wall extending upwardly from a bottom wall and terminating in a rim area located adjacent the open upper end thereof, said rim area having a first rim portion integrally joined to said side wall and radially outwardly directed therefrom, and a second rim portion integrally connected to and extending upwardly from said first rim portion for interconnecting a seamless bead of solid cross section and generally curvilinear external contour located at the open upper end of said container with said first rim portion and said container side wall, said first and second portions of said rim area and said peripherally continuous side wall having a substantially uniform predetermined thickness within the specified range, said bead in both an axial and radial direction being at least twice said predetermined thickness and offset radially inwardly from said second rim portion toward the axis of said container whereby to provide both a rim area of increased strength and an undercut portion of rigid constructtion in a thin-walled container.

3,190,531
CONTAINER
Kjell Ingvar Holmstrom, Mellanvangsvagen 6B, Lund, Sweden
Filed Oct. 25, 1962, Ser. No. 233,104
Claims priority, application Sweden, Oct. 26, 1961, 10,628/61
2 Claims. (Cl. 229—7)

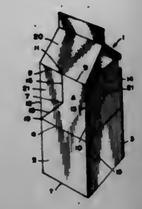


1. A container comprising a plurality of walls forming a hollow open ended body portion of the container, end closure flaps hingedly connected to each said wall along the openable end of the container, each said flap being substantially coextensive in width with the width of the corresponding wall of the container, a sealing sheet covering the open end of the hollow portion of the container and overlapping all of said flaps and all corner portions between said flaps when the flaps are swung outwards to lie in a substantially common plane, and said sheet being sealed to all of said flaps and said corner portions in a seal zone along a path around the container flaps, said seal zone including a reentrant portion on one of said flaps having an essentially U-shaped configuration such as will establish an outwardly opening pouring channel between said flap and said sealing sheet upon cutting off a part of said flap and sealing sheet along a cut line extending through said U-shaped reentrant portion of said sealing zone.

3,190,532
CONVERTIBLE CARTON
Owen T. Marsh, 5007 Lewisdale Court, Nashville, Tenn.
Filed Oct. 14, 1963, Ser. No. 315,880
7 Claims. (Cl. 229—8)

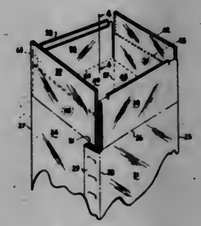
1. In a carton of substantially rectangular parallelepipedon configuration, means for converting said carton into a toy building block which comprise a plurality of lines on said carton delineating on opposite sides thereof identical flaps, each of said flaps having a substantially rectangular tab portion at the upper portion of one edge

thereof, each of said flaps also having a wider lower portion defined by a slanting edge extending from the lower



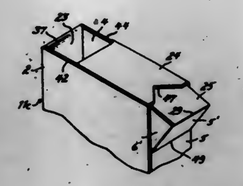
portion of said tab toward the opposite edge of said flap at the base thereof.

3,190,533
REINFORCED CONTAINER
Louis P. Larson, Glendale, Mo., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Oct. 23, 1963, Ser. No. 318,277
3 Claims. (Cl. 229—14)



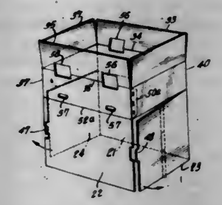
1. A reinforced container in the form of a slotted carton, the container having tubularly arranged wall panels with closure flaps on one end thereof formed from a unitary foldable blank having an inner ply section and an outer ply section with said sections in flatwise foldably connected relation, each section having corresponding foldably connected upright wall panels and end closure flaps, said sections providing a container with two ply thickness throughout the wall panels and closure flaps and the fold connections therebetween, a pair of said closure flaps disposed in mutually opposed relation with their respective end edges comprised in part of a fold connection determined by parallel lines of scoring between the inner and outer plies thereof with said plies in slidable relation, a major portion of the flap end edges between said fold connections determined by free cut edges defining a tab struck from the inner ply and coplanar with the outer ply, said end edge portions when folded being in substantially abutting relation along the mid-width of the container, a second pair of said closure flaps including inner and outer plies of unequal length, each flap comprising a short panel and a long panel overlying each other and each of said panels being free of connection between the plies and having free end edges in substantially abutting relation with the corresponding edge of the opposed flap and in offset relation between the plies, the said pairs of closure flaps being disposed in overlapping secured together relation and forming a four ply thickness closure throughout with the fold connections to the upright walls being of two ply thickness and lines of abutment between flap end edges being in offset spaced relation.

3,190,534
CONTAINER
Bernard Jacques Tamarin, Whitemarsh, Pa. (West Valley Green Drive and Hunt Lane, Flourtown, Pa.)
Substituted for abandoned application Ser. No. 591,374, June 14, 1956. This application July 17, 1959, Ser. No. 827,752
15 Claims. (Cl. 229—17)



12. In a unitary packaging blank of substantially uniform thickness throughout foldable to form a substantially rigid portable container having at one end thereof a closure piece movable therealong to uncover a dispensing opening therein, the improvement comprising a pair of reinforcing flaps adjoining an edge of the blank and adapted to be folded against and adherent to opposite inside walls alongside the opening and the covering closure piece when the blank is folded into container form, each such reinforcing flap having parallel to the fold by which it is joined to the edge of the blank a ridge spaced from the junction by a distance approximating the thickness of the closure piece and spaced parallel to and apart from the ridge of the opposite flap by a distance less than the width of the closure piece, being thereby adapted to provide underlying support for the movable closure piece when folded into container form.

3,190,535
SELF-LOCKING CONTAINER
Jay H. Nute, San Leandro, Calif., assignor, by mesne assignments, to The Flintkote Company, a corporation of Massachusetts
Filed Apr. 19, 1962, Ser. No. 188,822
2 Claims. (Cl. 229—37)



1. A container of paperboard or like material comprising a bottom wall, a pair of oppositely disposed side walls, the first side wall being hinged to an edge of said bottom wall, a pair of oppositely disposed four-ply end walls formed from a first set of end panels hinged to opposed edges of said bottom wall and from a second set of end panels hinged to opposed edges of said one side wall, said end panels being folded into superposed relation about a centrally disposed fold line parallel to and spaced from the end edge of said bottom wall, and the second side wall being hinged to one end of one of the end panels in the second set.

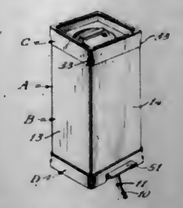
3,190,536
COMBINATION THREADED BOLT AND PACKAGING DEVICE THEREFOR
Joseph Schwartz, Fair Lawn, N.J., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Apr. 9, 1962, Ser. No. 185,955
4 Claims. (Cl. 229—40)



1. In combination, a particular bolt including an elongated shank carrying an enlarged head on the rear end thereof and provided with an external thread on the front end thereof, and a particular broken-off section of a packaging device fitted over the shank of said particular bolt and retained in place by friction therebetween; wherein said particular bolt is selected from a number of such bolts in a given series, wherein the external threads provided on the shanks of the different ones of the bolts in the given series have the same major diameter and the shanks of any adjacent two of the bolts in the given series have different lengths with a fixed incremental length difference therebetween, and wherein said packaging device comprising an elongated tubular body formed of paperboard stock, said body having four longitudinally extending lines of ruptured fibers therein that are disposed in substantially equally perimetrically spaced-apart relation so as to divide the same into four substantially identical connected panels, whereby said body may be readily collapsed for storage into an elongated substantially flat-like configuration having a width substantially equal to twice the width of one of said panels, and whereby said body may be readily erected for use into an elongated open-ended substantially box-like configuration having four sides respectively formed by said four panels, each of said panels having a width approximately equal to the major diameter of the external thread carried upon the shank of any one of the bolts in the given series so that said body in its erected position may be readily fitted thereover and retained in place by friction therebetween, said body having a plurality of perimetrically extending bands of ruptured fibers therein that are disposed in substantially equally longitudinally spaced-apart relation so as to divide the same into a plurality of substantially identical connected segments, each of said segments having a length approximately equal to the previously mentioned fixed incremental length, whereby a packaging section of said body may be readily broken-off from the remainder thereof after said body in its erected position has been fitted over the external thread carried upon the shank of any one of the bolts in the given series and with the broken-off packaging section of said body having an overall length approximately equal to that of the shank of the one bolt mentioned and including a corresponding number of said segments.

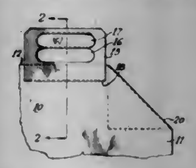
3,190,537
MILK CONTAINERS
Robert F. Meinecke, Stillwater, and Howard R. Kraft, St. Paul, Minn., assignors to Waldorf Paper Products Company, Ramsey County, Minn., a corporation of Minnesota
Filed Nov. 1, 1961, Ser. No. 149,296
4 Claims. (Cl. 229—45)

1. An end closure closing the end of an open ended tubular sleeve, the sleeve being formed of corrugated paperboard and having a cut score extending into a surface of the sleeve parallel to, and adjacent, an end thereof, the end closure comprising a closure panel and a marginal rim on said panel of channel shaped cross section and adapted to enclose said end of said sleeve, said rim having a plurality of projections on the inner surface of said channel shaped rim, said projections being



spaced from the base of said channel-shaped rim a distance not less than the distance between said cut score and said end of said sleeve, said projections being engageable with the surface of said sleeve including said cut score.

3,190,538
BAG HANDLE STRUCTURE
Joseph H. Vineberg, 235 Somerset St. W., Ottawa, Ontario, Canada
Filed Oct. 1, 1963, Ser. No. 312,973
1 Claim. (Cl. 229—54)

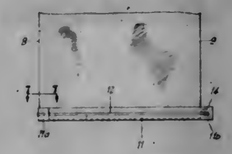


A bag comprising a pair of opposed side walls, each said side wall having an edge defining a bag mouth and a handle consisting of a unitary rectangular blank of flexible material having a pair of substantially identical opposed sections defined by a transverse fold line located substantially midway between the ends of said blank, each of said side walls having a slit therein substantially parallel to said edge, said slits being aligned, said blank extending through said slit of one said side wall with said fold line in substantial contact with an edge of said last-mentioned slit and said blank sections being disposed on opposite sides of said one side wall, one of said blank sections being adhesively secured to said one side wall, said blank sections having abutting portions projecting beyond said bag walls, each said abutting portion having a flap partially severed therefrom and forming a handhole, said handholes being aligned.

3,190,539
TAPE SEALED STITCHED END BAG
Edwin H. Pyle and Charles L. Swallow, Middletown, Ohio, assignors to Albemarle Paper Manufacturing Company, Richmond, Va., a corporation of Virginia
Filed Feb. 6, 1964, Ser. No. 342,998
1 Claim. (Cl. 229—62)

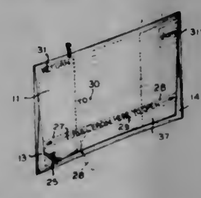
In a bag having a body formed from a plurality of superposed tubular plies of bag forming material, with the opposite ends of the plies terminating substantially coterminous to define essentially straight end edges, the tubular bag body having creases along its opposite side edges defining a pair of opposing bag walls, a line of stitching passing through said opposing bag walls and extending transversely throughout the entire width of the bag end along a line spaced inwardly from the straight end edge thereof, said line of stitching closing the bag

end with opposite end portions of the line of stitching extending freely beyond the opposite side edges of the bag body, a length of tape folded about the straight end edge of the bag body with its inner surface adhesively secured to the opposing walls of the bag body, said tape being of a width sufficient to cover and seal the line of stitching on both sides of the bag body, said tape being of a length sufficiently greater than the length of the line of stitching, including the extending end portions thereof, to provide opposing tab portions at each end of the tape which tab portions have areas thereof of a size capable



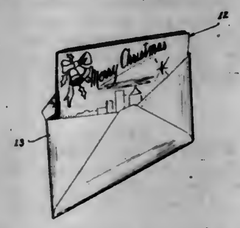
of being sealed together in face-to-face contacting relation lying outwardly beyond the extending end portions of the line of stitching, the opposing tab portions of the folded tape being sealed together in face-to-face contact with the extending end portions of the line of stitching completely enclosed and sealed therebetween, the said sealed together tab portions of the tape and the enclosed end portions of the stitching being folded inwardly along lines coinciding with the opposite side edges of the bag body, with the infolded tab portions adhesively secured to the underlying areas of the bag body.

3,190,540
COMBINATION MAILER, STATEMENT AND SELF-ADDRESSED RETURN ENVELOPE
Chester W. Shade, 307 N. Mars Ave., Clearwater, Fla.
Filed Oct. 7, 1963, Ser. No. 314,155
1 Claim. (Cl. 229—73)



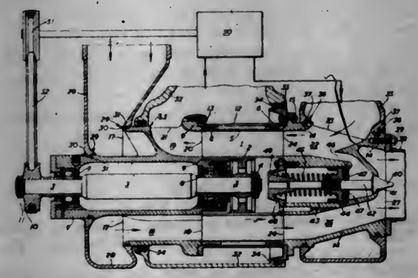
A combination mailing and self-addressed return envelope comprising a sheet having:
a body section of generally rectangular shape including closure flaps integral therewith on the upper and lower ends thereof,
said upper and lower closure flaps being of approximately the same size of said body section and extending substantially the full width thereof,
closure flaps on the ends of said body section integral therewith and extending substantially the full length thereof,
said upper and lower closure flaps of said sheet each having a strip of adhesive thereon positioned adjacent their outermost free edges,
both strips of adhesive on said upper and lower closure flaps being located on the same side of said sheet,
a pair of parallelly spaced lines of perforations formed in said upper flap adjacent said adhesive strip thereon and extending the full width of said flap,
one side of said body section and the corresponding sides of said upper and lower flaps containing said strips of adhesive being adapted to contain any desired written matter thereon,
the opposite side of said upper flap being adapted to contain a forwarding mailing address thereon,
the corresponding opposite side of said lower flap being adapted to contain a return mailing address thereon,
the relationship of the components of said envelope enabling the same envelope to be used for two-way mailing purposes.

3,190,541
GREETING CARD ASSEMBLY
Elizabeth R. McLaughlin, 7046 E. Moreland, and Evelyn Groschke, 7514 E. Virginia, both of Scottsdale, Ariz.
Filed Nov. 18, 1963, Ser. No. 324,532
10 Claims. (Cl. 229—92.8)



1. A greeting card assembly comprising
(a) a blank folded at least once along a line to form two substantially equal size panels, each such panel having an inner surface and said inner surfaces faeing each other,
(b) one such inner surface having a slot therethrough,
(c) pocket forming means including a piece of paper adhesively secured to a surface opposite said inner surface bearing said slot, said slot lying within an area defined by said piece of paper, and
(d) letter writing note paper with a portion thereof extendable into said pocket through said slot.

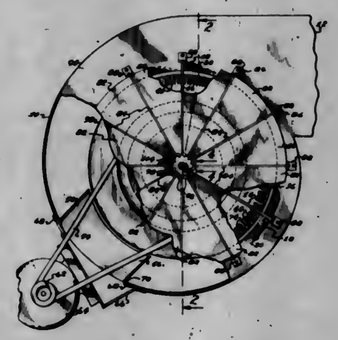
3,190,542
PRESSURE EXCHANGERS
John Percy Vickery, Farnborough, England, assignor to Power Jets (Research & Development) Limited, London, England, a British company
Filed Jan. 15, 1962, Ser. No. 166,188
Claims priority, application Great Britain, Jan. 30, 1961, 3,538/61
3 Claims. (Cl. 230—69)



1. A pressure exchanger, including:
(a) an open-ended cell ring;
(b) a stationary structure effective to close the ends of the cells but having therein passages, each with an

entry opening at one end and an exit opening at the other, to provide means of communication with the cells;
(c) means to rotate the cell ring;
(d) means defining external ducts, each with an entry opening at one end and an exit opening at the other, mounted on the stationary structure in communication with the passages;
(e) means defining a pair of co-axial cylindrical sealing surfaces on the stationary structure arranged around the axis thereof and spaced apart axially therealong with an opening of a passage in between;
(f) means defining a pair of co-axial cylindrical sealing surfaces on at least one of the external duct defining means adjacent one end thereof and with the opening at said end in between the sealing surfaces forming the pair;
(g) the sealing surfaces on the stationary structure and on the external duct defining means co-operating to permit relative adjustment between the external duct defining means and the stationary structure both in the direction of and angularly about the axis of the stationary structure, whilst maintaining an effective seal between the surfaces.

3,190,543
BLOWER CONSTRUCTION
Adam D. Goettl, 1944 W. Flower St., Phoenix, Ariz.
Filed Mar. 14, 1963, Ser. No. 265,291
3 Claims. (Cl. 230—117)



1. In a blower construction, the combination of: centrifugal blower housing having a pair of opposed axial inlets and centrifugal outlet means; a central shaft coaxial with said inlets; a rotor structure rotatable about the axis of said shaft and comprising a pair of rotor bucket structures having inlets opposed to each other; said buckets carried by said shaft and having adjacent end structures fixed together in a plane disposed at right angles to said shaft, said adjacent end structures provided with annular surfaces which diverge radially forming an annular belt pulley groove between said adjacent end structures; and a belt surrounding said belt pulley and extending outwardly through the side wall of said blower housing.

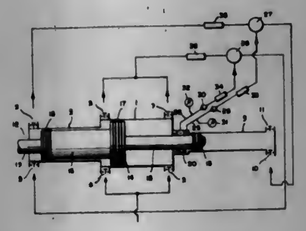
3,190,544
CAPILLARY FANS
John E. McDonald, Newton, Mass., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application Aug. 16, 1962, Ser. No. 217,341, now Patent No. 3,128,940, dated May 14, 1964. Divided and this application Mar. 26, 1964, Ser. No. 354,833
2 Claims. (Cl. 230—134)

1. A rotor for a centrifugal fan having a double inlet, comprising a circular centerplate having a rim with an inwardly curved depression in its center, an annular ring of fibrous material having a central portion around said rim,



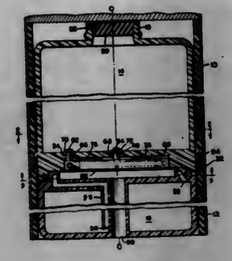
and a snap-ring, circular in section, around said central portion and pressing the inner surface of said central portion into said depression.

3,190,545
PISTON SEAL FOR A MULTISTAGE HIGH PRESSURE GAS COMPRESSOR
Heinrich Weber, Ludwigshafen (Rhine), and Heinrich Friedenreich, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed July 5, 1962, Ser. No. 207,608
Claims priority, application Germany, July 5, 1961, B 63,138
7 Claims. (Cl. 230—183)



1. A multistage compressor comprising a high pressure pumping chamber with a piston reciprocable axially therein, piston seal rings slidably contacting the wall of said chamber, a next lower pressure pumping chamber with a piston reciprocable axially therein, valved gas inlet means and valved gas outlet means on each of said pumping chambers, power means mechanically coupled to and reciprocally driving said pistons in opposite phase in the respective pumping chambers, a packing chamber at an axial end of said high pressure pumping chamber, the piston of said high pressure pumping chamber extending axially through said packing chamber, a plurality of U-ring packings fixedly mounted in axially spaced relationship in said packing chamber, the radially inner sides of said U-ring packings being in sealing contact with the last-mentioned piston, pipe means connecting said gas outlet means of said next lower pressure pumping chamber with said gas inlet means of said high pressure pumping chamber, additional pipe means connecting said first-mentioned pipe means and the space axially between said piston seal rings and the U-ring packing axially closest to said high pressure pumping chamber, and a nonreturn valve in said additional pipe means.

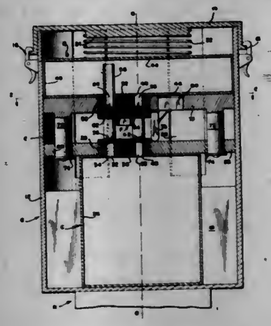
3,190,546
METHOD AND APPARATUS FOR SEPARATING LIQUID MIXTURES
Giovanni Raccuglia, Ann Arbor, and David L. Childs, Birmingham, Mich., and James J. Shanley, Bethesda, Md., assignors of one-third to Giovanni Raccuglia, one-third to David L. Childs, and one-third to James J. Shanley
Filed Mar. 27, 1959, Ser. No. 802,398
21 Claims. (Cl. 233—20)



12. A device for centrifuging liquid mixtures of a plurality of constituents of different densities to separate fractions of different densities comprising:
(a) a body including a first section and a second section,
(b) connecting means holding the sections in relative nonrotatable relation and in axial alignment with each other and with an axis of rotation,
(c) a main compartment in the first section having walls concentric to the axis of rotation,
(d) a second compartment in the second section,
(e) wall means forming a fluid-tight barrier preventing movement of fluids between the main compartment and the second compartment,
(f) an opening in the main compartment for communication with the second compartment,
(g) the entire opening in the main compartment being radially spaced a distance from the axis of rotation, said distance being less than the distance from the axis of rotation to the farthest point in the main compartment,
(h) an opening in the second compartment for communication with the main compartment, the opening in the second compartment being radially spaced a distance from the axis of rotation not substantially less than the first claimed distance,
(i) means connecting the two openings and forming therewith a continuous passageway, the continuous passageway being at all points spaced a distance from the axis of rotation not substantially less than the first claimed distance,
(j) means closing the passageway contiguous to the opening in the main compartment, means actuatable to open the passageway, and
(k) means for actuating the last claimed means during centrifuging.

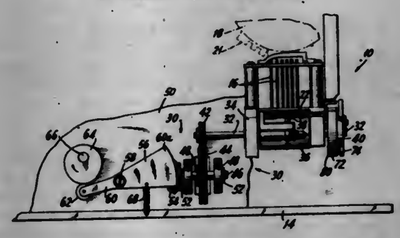
3,190,547
METHOD AND APPARATUS FOR CENTRIFUGALLY FRACTIONATING LIQUID MIXTURES
James J. Shanley, Bethesda, Md., assignor of one-third to Giovanni Raccuglia, Prospect, Ky., and one-third to David L. Childs, Ann Arbor, Mich.
Continuation of application Ser. No. 754,218, Aug. 11, 1958. This application July 29, 1963, Ser. No. 298,818
17 Claims. (Cl. 233—20)

1. In a centrifuge system,
(a) a container support mounted for revolution about an axis,
(b) a container carried by the container support for revolution about said axis,
(c) a main compartment formed in the interior of the container,
(d) means associated with the container support engaging the container and holding the container against movement relative to the support,
(e) a hollow member,
(f) a second compartment formed in the interior of the hollow member,
(g) connecting means holding the container and the hollow member against movement relative to one another,
(h) means associated with the connecting means operable to free the container and the hollow member for separation one from the other,



(i) means associated with the connecting means actuatable to constrain the container and the hollow member to controlled relative movement,
(j) passageway means extending between the main compartment and the second compartment placing the main compartment and the second compartment in fluid communication when open,
(k) valve means closing the passageway,
(l) valve actuating means actuated by said controlled relative movement to open the passageway,
(m) and means for initiating said controlled relative movement during centrifuging.
2. In a centrifuge system,

3,190,548
PUNCHED TAPE FEED
Albert Hohmann, Brooklyn, N.Y., assignor to Taller & Cooper, Inc., Brooklyn, N.Y., a corporation of New York
Filed June 5, 1963, Ser. No. 285,773
3 Claims. (Cl. 234—128)



1. A tape feed for feeding a gang perforated length of data tape from a reciprocable gang punch and feeding a length of imperforate tape to the gang punch for subsequent gang punching, comprising, a feed spindle mounted on and movable with the reciprocating gang

punch, gear means to rotate said spindle, a second gear means adapted to engage and rotate said spindle rotating gear means, means to cyclically rotate said second gear means first in one direction and then in the opposite direction, and said first gear means being disengaged from said second gear means in one direction and engaged with said first gear means during the rotation of said second gear means in the opposite direction.

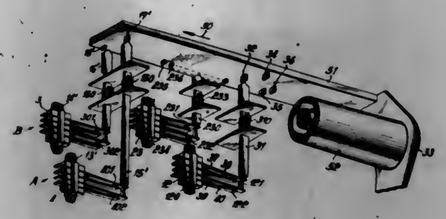
3,190,549
CLASSIFICATION LOCKOUT FOR VOTING MACHINES
Edward J. Crossland, Hugh H. Bright, and Charles K. Barton, Tulsa, Okla., assignors to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware
Filed July 30, 1962, Ser. No. 213,288
42 Claims. (Cl. 235—54)



1. In a voting machine the combination of means defining a plurality of columns each containing a plurality of slideable manually operable selectors each movable longitudinally of the column from a non-voting position to a plurality of different voting positions for permitting the voter to make his selections, said columns containing different issues to be passed upon by the voter, means associated with each column for simultaneously locking all of the selectors of that column against sliding movement to prevent manual movement of any of the selectors of that column by the voter, and means for rendering ineffective the locking means associated with those columns containing issues upon which the voter is eligible to vote so that the selectors in those columns are released to permit manual sliding movement.

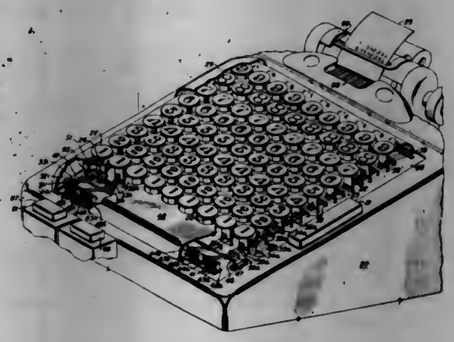
3,190,550
PROGRAM CONTROL DEVICE IN ACCOUNTING MACHINES
Felix Fischer and Viktor Körösi, Oberndorf (Neckar), Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany, a German body corporate
Filed June 28, 1961, Ser. No. 120,409
4 Claims. (Cl. 235—60.47)

1. In an accounting machine, the combination comprising a plurality of function switches for controlling a plurality of functions of the machine, programming means for actuating at least some of said function switches in a predetermined sequence to provide a program of functions for the machine, a plurality of routine-branching switches, each of said routine-branching switches having a break contact and a make contact, a main energizing circuit connected to said function switches and including said break contacts in series so that said main circuit will energize said function switches when none of said routine-branching switches is actuated, each of said routine-branching switches having an associated alternate energizing circuit connected to some of said function switches and including the make contact of the corresponding routine-branching switch so that said alternate circuit will be effective when said routine-branching switch is actuated, decision making means for arriving at a plurality



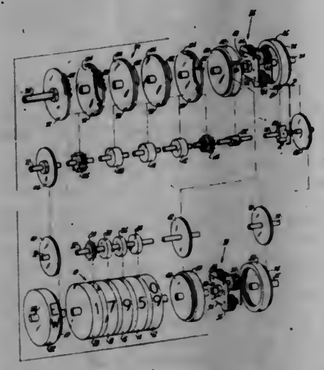
of logical decisions based on the operation of the machine, a program modifying switch operable to a plurality of positions in accordance with said decisions, and circuit means connecting said program modifying switch to said routine-branching switches for actuating each of said routine-branching switches in one of said positions of said program modifying switch to provide modified programs for the machine based on said logical decisions.

3,190,551
DECIMAL PARITY DIGIT APPARATUS
David B. Congleton, Torrance, Sydney Glazer, Los Angeles, and Merton C. Leinberger, Inglewood, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed July 16, 1963, Ser. No. 295,467
7 Claims. (Cl. 235—61)



1. Apparatus for generating a parity digit for a number set up on a keyboard of a calculating machine, comprising: a plurality of key columns on said keyboard, said keyboard including a parity key column, each of said key columns having a plurality of digit keys; switching means associated with each of said key columns; means for actuating each said switching means in accordance with the digit key depressed in a key column when the number is set up on the keyboard; circuit means for interconnecting the switching means into a series of circuits to provide an output dependent upon whether an odd or an even number of switching means are actuated; and energizing means including means responsive to the output of said circuit means for selectively setting one of the keys in said parity key column corresponding to the parity digit for the number set up on said keyboard.

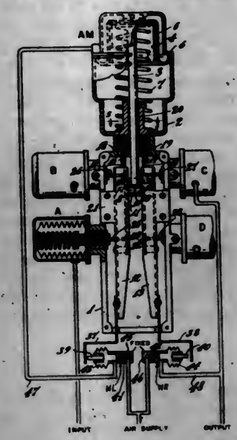
3,190,552
DRIVE SEQUENCING MECHANISM
Raymond H. Devanney, Berlin, Conn., assignor to Veeder-Root Incorporated, Hartford, Conn., a corporation of Connecticut
Filed Dec. 20, 1962, Ser. No. 246,238
26 Claims. (Cl. 235—132)



1. A counter mechanism comprising a counter having a plurality of counterwheels and transfer means therebetween, an input shaft, a first differential having a driving element operably connected to the input shaft and a pair of driven elements, a second differential having a driven element operably connected to the counter and a pair of driving elements, transmission means operably connecting the pair of driven elements of the first differential with the pair of driving elements of the second differential thereby providing two drive paths between the input shaft and counter, a drive control mechanism having a rotary input member operable for initiating a change in the drive of the counter, a rotary output member and means interconnecting the input and output members, said interconnecting means operatively connecting the output member with the input member after preselected movement of the input member, and drive selecting means driven by the output member of the drive control mechanism selectively activating the first and second drive paths whereby after the preselected movement of the input member of the drive control mechanism the drive selecting means is actuated to deactivate one of the drive paths and activate the other drive path to the counter.

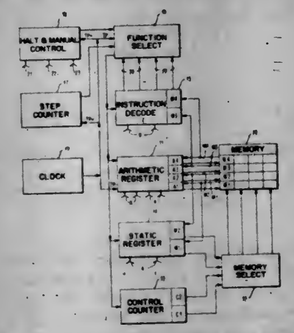
3,190,553
AUTOMATIC BALANCED WEIGHBEAM SYSTEM
Johannes Sorteberg, 540 Connecticut Ave., Darien, Conn.
Filed Aug. 8, 1962, Ser. No. 215,658
2 Claims. (Cl. 235—200)

1. A weighbeam system, comprising a weighbeam, end fulcrum points for said weighbeam, a fixed supporting structure for said weighbeam, and movable fulcrum means for said weighbeam, means for applying a force to each end fulcrum point of said weighbeam, means for balancing the moments on said weighbeam by movement of said movable fulcrum means, and means for keeping



the weighbeam in all balanced positions in the same fixed position in relation to the supporting structure.

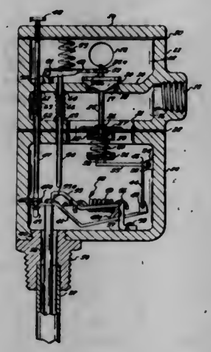
3,190,554
PURE FLUID COMPUTER
Arthur J. Gehring, Jr., and Marvin Jacoby, Fort Washington, and Trevor Drake Reader, Wayne, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 19, 1963, Ser. No. 289,110
26 Claims. (Cl. 235—201)



1. A fluid digital computer comprising, a fluid clock pulse source for generating periodic pressure pulses, a fluid step counter having n number of states, fluid conduit means coupling said clock pulses to said counter to advance said counter through a cycle of operation every n number of clock pulses, computer control means comprising a fluid instruction storage register, a fluid gating matrix and a plurality of fluid control lines, said gating matrix coupling the instruction register to said control lines and operative to develop on said control lines a pattern of fluid pressure signals according to the instruction stored in said storage register, said control lines being adapted to control the operation of the computer in accordance with the development of predetermined pressure levels on said control lines, and means coupling said step counter to said gating matrix to thereby cyclically control the development of said predetermined pressure levels on said control lines and thereby to cycle the operation of the computer.

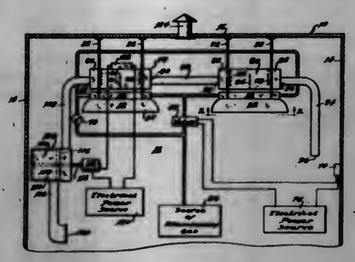
21. A fluid pulse generator comprising, a fluid gating device having a pair of input channels and at least one output channel, said gating device being operative to produce a predetermined output signal when the input pressure applied to the input channels of said gating device are both at similar predetermined levels, a first fluid pressure line coupled to one input channel of said gating device, means normally charging said first line with a fluid at a pressure level other than said predetermined level, a second fluid pressure line coupled to the other input channel of said gating device, a fluid pressure inverter, a fluid delay element, said inverter and delay element coupling said first line to said second line and providing said second input channel with a fluid pressure level corresponding to said predetermined level, and means for switching the pressure level in said first line to said predetermined pressure level whereby said gating device will produce said predetermined output signal having a duration corresponding to the delay interval of said delay element.

3,190,555
SNAP-ACTING AND MODULATING VALVE
Charles A. Wilson, Garden Grove, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed Aug. 9, 1963, Ser. No. 300,981
2 Claims. (Cl. 236—48)



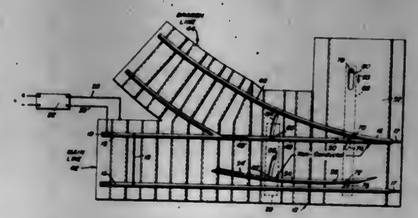
1. The combination comprising a valve body including an inlet, an outlet and an apertured wall therebetween; a valve seat at the aperture of said wall; a pressure regulator valve positioned in said body on the inlet side of said apertured wall and cooperable with said seat to control the flow of fluid therethrough; first means on the inlet side of said wall biasing said valve toward its closed position; second means on the outlet side of said wall biasing said valve toward its open position; pressure responsive means in said valve on the outlet side of said apertured wall and operably connected to said valve; condition responsive means on the outlet side of said wall and having an actuator for operating said valve; and separate motion transmitting means extending between said actuator and said first and second means, one of said separate motion transmitting means including snap-action means arranged to be actuated by said actuator upon initial movement thereof in a valve-opening direction to overpower said first means so as to free said valve to move to an open position under the bias of said second means, and the other of said separate motion transmitting means being arranged to variably load said second means to vary the pressure at which said valve will regulate.

3,190,556
RADIANT AND HOT AIR HEATING SYSTEM
Joseph A. Marland, La Grange, Ill., assignor to Marland Foundation, La Grange, Ill., a corporation of Illinois
Filed Sept. 10, 1963, Ser. No. 307,829
11 Claims. (Cl. 237—50)



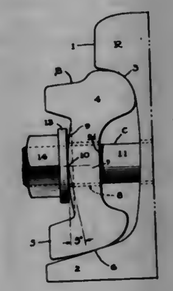
1. A combination radiant and hot air heating system comprising an infra-red generator having a porous plate disposed downwardly mounted and sealed on a housing, said housing having a cavity on one side of the plate, valve means for introducing illuminating gas into the cavity and maintaining the cavity at a gas pressure sufficient to force gas through the plate to permit the gas to burn on the opposite side of the porous plate at a relatively low temperature to produce substantial infra-red radiation, and an air impermeable circulating system having an inlet at one end disposed below the level of the porous plate and an outlet at the other end, said circulating system including a gas to gas heat exchanger in thermal communication with the exhaust gases and vapors generated at the side of the porous plate opposite the cavity and having an air tight passage disposed in the circulation system, whereby an object may be placed below the infra-red generator and in the radiation field of the infra-red generator and the outlet of the circulation system directed toward the space surrounding the object to heat the object by infra-red radiation and the surrounded space by a flow of heated air.

3,190,557
MODEL TWO RAIL ELECTRIC RAILROAD AND TURNOUT SWITCH THEREFOR
Jules Nagy, R.D. 2, Old Baptist Road, Collegeville, Pa.
Filed Nov. 27, 1962, Ser. No. 240,289
8 Claims. (Cl. 238—10)



1. A model two rail electric railroad comprising a pair of spaced apart conductor rails providing one conductor between a source of electricity and the longitudinally spaced apart conductive wheels of a model locomotive thereon, a conductive roadbed comprising a continuous sheet of conductive material shaped in the form of a plurality of spaced apart railroad ties, said conductive roadbed comprising the other conductor between the source of electricity and a conductive collector shoe depending from the locomotive between its wheels and between said conductor rails, the conductor collector shoe being long enough to continuously contact at least a pair of railroad ties of said conductor roadbed, insulating means physically supporting said spaced apart conductor rails on said conductor roadbed, and insulating intersecting rail crossing means, having a gap therein for said collector shoe to pass therethrough, in said spaced apart conductor rails providing a continuous, uninterrupted path of contact for the locomotive conductive collector shoe on said conductor bed and thus providing a continuous, uninterrupted circuit to one side of the electric motor of the locomotive through said collector shoes, said conductor rails providing a continuous, uninterrupted circuit to the other side of the locomotive motor through at least one of said spaced apart locomotive conductive wheels on said conductor rails.

3,190,558
RAIL JOINT BAR
William E. Griffiths, 1477 Bayview Ave., Toronto 17, Ontario, Canada
Filed Nov. 16, 1962, Ser. No. 238,839
4 Claims. (Cl. 238—243)



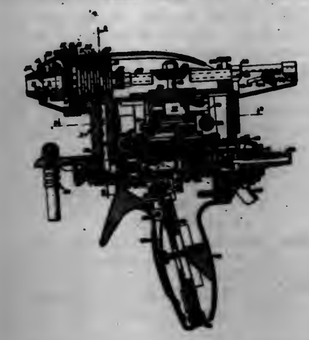
1. In a rail joint for connecting rail ends each having fixed fishing areas defined by webs, and head and base flanges,

vertically rigid rolled rail joint bars having pre-determined physical dimensions compatible with and engaging the bearing portions of said rail fishing areas, said bars including a web portion provided with longitudinally aligned bolt holes, said web having an inner face including a vertical planar surface extending at least the height of said bolt holes,

means for maintaining the rigid joint bars in effective clamping relationship to the related surfaces of the rails throughout the useful life of said joint bars, by causing clockwise or counter-clockwise rotation of the bars relative to the said bolt holes due to wear at the head and foot thereof,

said means comprising horizontal non-planar outer bolting face portions projecting outwardly from the outer faces of the webs at the location of the center lines of the bolt holes to provide a longitudinal horizontal bearing for transversely engaging the inner faces of the bolts and nuts to provide a limited linear bearing area concentrating the force of the axial pull on the bolts, only in the direction of and parallel to the axes of the bolts while avoiding concentration of bolt pressure above and below said horizontal bearing automatically to cause rotatable clockwise or counterclockwise rotation of the bars in the rail end fishing to compensate for wear and maintain uniform clamping forces solely in the direction of the axes of the bolts.

3,190,559
FLAME SPRAY CONSTRUCTION
Herbert Charlop, Brooklyn, N.Y., assignor to Metco Inc., Westbury, N.Y., a corporation of New Jersey
Original application Jan. 16, 1962, Ser. No. 166,614. Divided and this application Oct. 30, 1962, Ser. No. 238,822
12 Claims. (Cl. 239—84)



1. In a flame spray gun having a conduit for supplying combustion gas to a burnerhead and valve means for controlling the gas flow through said conduit, the improvement which comprises said valve means comprising a hollow cylindrical valve housing having an inlet at one end and an outlet at its opposite end, a hollow piston defining a gas flow passage therethrough slidably mounted in said valve housing, one end of said piston being dimensioned for gas-tight sealing engagement with one end portion of the interior of said housing, the other end of said piston being dimensioned to define a restricted gas flow passage with the other end portion of the interior of said housing, and means for axially sliding said piston in said housing.

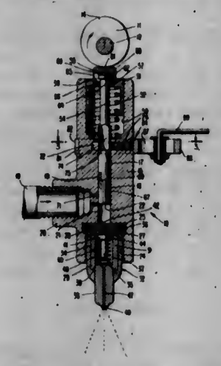
3,190,560
FLAME-SPRAYING TORCH
Donald C. Schilling, Fairview Park, Ohio, and Frank G. Lohnes, Glen Cove, and John P. Broderick, Bayside, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
Filed June 7, 1963, Ser. No. 286,343
4 Claims. (Cl. 239—85)



1. A flame-spraying torch comprising a gas injecting assembly having connecting means for attachment to a source of combustible gas, a tip section connected to the front of said torch, a powder injecting section connected between said tip section and said gas injecting assembly for entraining powder within the burning gases discharged from said torch, a longitudinal gas-conducting passageway through said powder injecting section, powder supplying passageway extending through said powder injecting section into communication with said gas-conducting passageway, means for connecting a supply of powder upon said powder injecting section at the outer end of said powder supplying passageway, a valving passageway extending through said powder injecting section intersecting

said powder supplying passageway, a valve insert of elastomeric material inserted within the portion of said valving passageway that intersects said powder supplying passageway, said insert including a bridge having a channel disposed in line with said powder supplying passageway, a plug securing said valve insert within said valving passageway and having an abutment disposed adjacent said channeled portion of said valve insert, manually-actuated plunger means disposed in said valving passageway adjacent the side of said channeled bridge of said valve insert remote from said abutment for controllably squeezing said channel together in conjunction with said abutment thereby metering the amount of powder passing through said powder supplying passageway, and said plug being removable to facilitate installation and replacement of said valve insert.

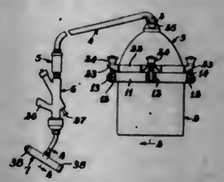
3,190,561
FUEL INJECTOR
Harlan I. Fuller and Millard R. Thomson, Sidney, N.Y., assignors to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed June 28, 1962, Ser. No. 206,028
22 Claims. (Cl. 239—90)



13. An injection pump comprising a casing having a bore therein, a plunger reciprocable in said bore, port means in the wall of said casing adapted to be opened and closed by said plunger, means for angularly adjusting said plunger comprising a plate-like member mounted in a radial slot in the wall of said casing for angular movement about the axis of said bore, said member including a bifurcated portion through which said plunger extends for angular movement therewith and axial movement relative thereto and an arm extending radially from said slot, means for reciprocating said plunger in the casing, and means for controlling the discharge of fuel from the pressure chamber in the bore.

3,190,562
DISPENSING APPARATUS
Harold T. Atwood and Charles J. Kopp, Chicago, Ill., assignors, by mesne assignments, to A & J Designers, Inc., Dolton, Ill., a corporation of Illinois
Filed Nov. 13, 1962, Ser. No. 236,940
5 Claims. (Cl. 239—323)

1. A dispensing device comprising an open top stretchable plastic bag for holding material to be dispensed, an upstanding metal sleeve positioned against the upper edge portion of said bag, a cover, means for holding the lower edge of said cover against the upper edges of said bag and metal sleeve, said cover having a discharge opening spaced above the upper edge of said bag, a discharge line connected at one end to said discharge opening, a dispensing nozzle comprising an outer tubular member and an inner tubular member rotatably mounted in said outer tubular member, and a fitting fixed to said outer tubular member, the other end of said discharge line being secured to said fitting, said outer tubular member having a longitudinal slot therein, said inner tubular member having a transverse slot in registration with said fitting and a plurality of orifices arranged in circumferentially spaced relationship, said transverse slot having sufficient length to maintain its registration with said fitting as said inner tubular member is rotated within said outer tubular member to selectively move one orifice arrangement in registration with said longitudinal slot.



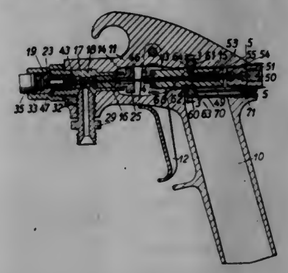
3,190,563
FLUID SPRAY DEVICE
Walter R. De Groot, Arlington County, Va., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed Nov. 20, 1963, Ser. No. 324,931
14 Claims. (Cl. 239—443)



1. A fluid spray device comprising:
(a) a tubular member having a plurality of circumferentially spaced slots therethrough, said slots being oriented such that planes extending radially outwardly from each of said slots are non-intersecting,
(b) an inner sleeve mounted concentrically within said tubular member, said sleeve having a plurality of circumferentially spaced apertures therethrough, and
(c) means drivingly connected to said sleeve for effecting movement of said sleeve relative to said tubular member, said movement of said sleeve in one direction causing said apertures to be radially aligned with their respective slots such that fluid flowing through said spray device effects a radial fluid curtain comprising a plurality of non-impinging fluid sprays, said movement of said sleeve in the opposite direction causing said apertures to be out of radial alignment with their respective slots preventing radial fluid flow therethrough.

3,190,564
SPRAY COATING APPARATUS FOR SPRAYING LIQUID COATING MATERIAL UNDER HIGH PRESSURE
Kurt Herman Liedberg, Skara, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Mar. 11, 1963, Ser. No. 264,324
9 Claims. (Cl. 239—578)

1. In spray coating apparatus of the character described for spraying liquid coating material under high pressure and having a body with a liquid chamber, means for supplying coating liquid under high pressure to said chamber, a spray nozzle in communication with said chamber, and a discharge orifice between said chamber and said spray nozzle, the combination which comprises a fluid tight packing material seal forming the wall of said chamber opposite to said orifice, said seal having a restricted guide passage therethrough axially aligned with said orifice, a control valve reciprocable in said chamber for the opening and closing of said orifice and said nozzle to the flow of coating liquid from said chamber, a stem connected to said control valve at the end thereof opposite said orifice and slidably but tightly projecting through said guide passage for providing the sole support and movement of said control valve, trigger means connected to said stem to open said control valve, and spring means in said chamber surrounding said stem between said valve and said seal for biasing said control valve to close said orifice and for preventing buckling of said stem during reciprocation thereof.

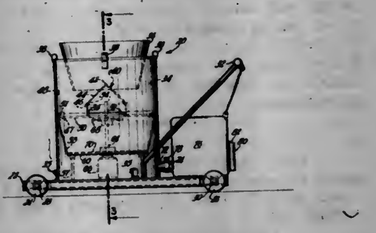


3,190,565
PROCESS FOR GRINDING RUBBER
William M. Jayne, Jr., Basking Ridge, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 24, 1962, Ser. No. 219,105
6 Claims. (Cl. 241—22)

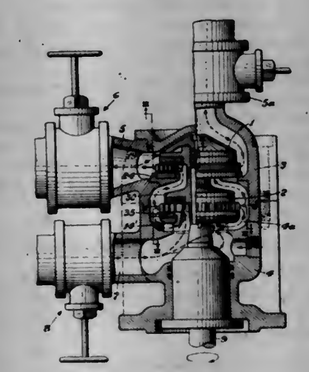
1. In the method of grinding materials which are characterized by tackiness, elasticity and a tendency to agglomerate, in a mechanical cutter or grinder which utilizes cutting blades, the improvement of adding polyolefin fines having a diameter at least sufficient to pass through a standard mesh screen of at least 40 mesh, simultaneously with or subsequent to the addition of the material to be ground to the cutter or grinder, said polyolefin selected from the group of polyethylenes and polypropylenes having an average molecular weight in excess of 15,000.

3,190,566
SAFE LEAF DISPOSAL APPARATUS
Wesley P. Cressy, 10 Charles Ave., and Vincent Geiger, 143 Lindberg St., both of Massapequa Park, N.Y.
Filed Apr. 3, 1963, Ser. No. 270,233
6 Claims. (Cl. 241—56)

1. A motor driven leaf disposal apparatus, comprising in combination:
(A) a hollow body member having first and second ends and an outlet port, said first end being open for the admission of leaves, said outlet port being proximate said second end and in communication with said first end;
(B) leaf supporting means disposed within said body member above said outlet port to receive said leaves, said supporting means having perforated side and bottom walls and a top wall, said top wall having a central leaf-admitting opening in longitudinally spaced opposition to said open end of said body member;
(C) a rotatable cutting blade driven by said motor, said blade positioned within said leaf supporting means proximate said bottom wall and adapted to comminute said leaves; and
(D) leaf particle collecting means removably secured to said outlet port; and
(E) a hood member having a base portion, said hood member being mounted above and in spaced relationship to said central leaf admitting opening and substantially coextensive therewith, the base portion of said hood member being substantially smaller than said leaf supporting member and substantially the same size as the central opening in said leaf supporting member.



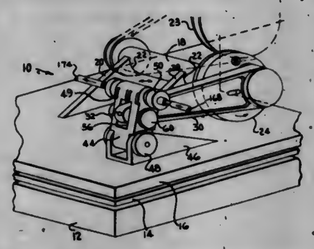
3,190,567
APPARATUS FOR THE TREATMENT OF PUMPABLE SUBSTANCES BY MEANS OF HIGH-FREQUENCY OSCILLATIONS
Peter Willems, 20–22 Steinhofhalde, Lucerne, Switzerland
Filed Jan. 17, 1963, Ser. No. 252,255
Claims priority, application Switzerland, Jan. 22, 1962, 711/62
5 Claims. (Cl. 241—162)



1. Apparatus for treating pumpable materials comprising a housing structure defining first and second axially successive compartments communicating directly with each other and respectively having an inlet for the material to be treated and an outlet for the treated material, a first rotor in said first compartment, a first stator in said first compartment, said first motor and stator having cooperating annular rows of rigid teeth cooperating upon rotation of said first rotor to disperse and homogenize the material during the radially outward passage of the material therebetween from an entrance surrounded by said first stator, said first stator being spaced from the wall surface of said first compartment to define therewith a conduit for recycling of the material back to said entrance,

a second rotor and a second stator in said second compartment, resilient blades on said second rotor and stator arranged in coaxial, radially contiguous, annular rows which alternately project from the second rotor and stator, the blades in each row being circumferentially spaced to define acoustic chambers therebetween and the circumferential thickness of the blades in each row being at least substantially equal to the circumferential dimensions of the acoustic chambers defined by blades in adjacent rows so that said acoustic chambers are alternately opened and closed during rotation of said second rotor, and means for controlling the back-pressure at said outlet, which back-pressure acts through said second compartment to control the recycling of the material through said first compartment.

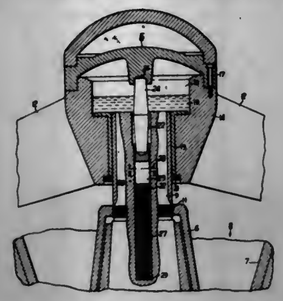
3,190,568
CELL DISINTEGRATING APPARATUS
David Freedman, 348 S. 3rd Ave., Highland Park, N.J., and John W. Ross, 11 Westwood Road, East Brunswick, N.J.
Filed Oct. 8, 1962, Ser. No. 229,141
7 Claims. (Cl. 241—171)



1. Cell disintegrating apparatus comprising
a vibration-absorbing base,
a support member secured to said base,
a cartridge-carrying arm pivotally secured at one end to said support member and adapted to be oscillated in a predetermined direction,
the other end of said arm having an aperture and a cartridge mounted in said aperture,
said cartridge having a longitudinal axis oriented horizontally and perpendicular to the direction in which said housing is adapted to oscillate,
abrasive means inside said cartridge for disintegrating organic material provided therein,
means coupled to said cartridge for feeding material thereto and for withdrawing material therefrom, and
drive means coupled to said arm for oscillating said housing at high speed in said predetermined direction whereby the material contained in said cartridge is disintegrated.

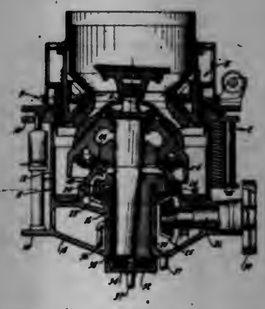
3,190,569
GYRATORY CRUSHER
Henry H. Polzin, Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 24, 1963, Ser. No. 282,951
4 Claims. (Cl. 241—211)

1. In a gyratory crusher including longitudinally extending inner and outer crushing members, means for resisting sudden relative longitudinal movement therebetween comprising: walls defining a first fluid chamber in one of said members; walls defining a second fluid chamber in the other of said members, one of said walls being complementary to both of said chambers and being movable to incease and decrease the volume of one of said chambers upon relative longitudinal movement between said members; and a restricted fluid passage connecting said first and second chambers to resist sudden changes of



fluid volume on said one of said chambers to resist sudden relative longitudinal movement between said members.

3,190,570
DRIVE FOR GYRATORY CRUSHERS AND THE LIKE
Loren G. Symons, North Hollywood, Calif., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Original application Nov. 14, 1961, Ser. No. 152,221, now Patent No. 3,140,834, dated July 14, 1964. Divided and this application Feb. 18, 1964, Ser. No. 345,686
2 Claims. (Cl. 241—215)

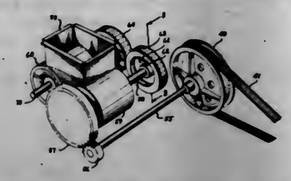


1. In a crusher, a main frame, a central hub in the frame with a generally vertical axis, and an eccentric rotatably positioned in the hub having an eccentric bore adapted to receive the lower end of the crusher's head shaft, the eccentric having a counterweight formed integrally at the upper end thereof overhanging, surrounding and extending below the upper end of the central hub, and a ring gear removably connected to the counterweight around the hub, below the upper end of the hub.

3,190,571
ROCK CRUSHER HAVING FRICTIONAL DRIVE FOR CRUSHER ROLLS
Charles H. Kimball, Phoenix, Ariz., assignor of one-half to Edgar T. Cyr, Tempe, Ariz.
Filed Nov. 29, 1963, Ser. No. 326,941
10 Claims. (Cl. 241—230)

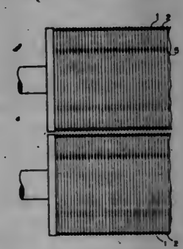
1. A rock crusher comprising:
(a) a first and a second crusher roll;
(b) means urging said rolls toward peripheral contact with each other;
(c) driving means for imparting rotation to said first roll;

(d) a first resilient tube mounted coaxially to said first roll and driven thereby;
(e) a second resilient tube mounted coaxially to said second roll for driving said second roll;



(f) said first and second tubes in driving frictional contact for imparting rotational force from said first roll to said second roll.

3,190,572
COFFEE GRANULATING APPARATUS
Jyunichi Goto, 519 Ohmiya, Fujimiya, Japan
Filed July 15, 1963, Ser. No. 295,030
Claims priority, application Japan, July 20, 1962, 37/29,856
1 Claim. (Cl. 241—235)



An apparatus for granulating a dry food stock, comprising a pair of opposing granulating rolls, each of said granulating rolls being provided with a plurality of ribs on the surface thereof all extending in the direction in which the rolls move where they oppose each other, each of said ribs being covered with a hard and smooth top made of a dielectric material, each of said ribs being provided with a plurality of recesses extending in an axial direction with respect to the shaft of said roll and the dimension of said rib in the direction toward the opposed ribs being smaller than each grain of said food stock prior to granulating, and means connected to said granulating rolls for moving said rolls at the same speed in opposite directions, whereby the food stock is subjected to cracking as the grains span the ribs of the granulating rolls along the boundary of a group of cells consisting of said grain without imparting either impact or friction or cutting action to said grain and with no occurrence of static electricity and no destruction of said cells.

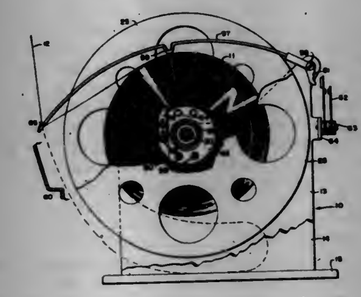
3,190,573
CRUSHER
Harold B. Bieha, Perry Township, Fayette County, Greenfield, Ohio (P.O. Box 110, Washington Court House, Ohio)
Filed Jan. 17, 1962, Ser. No. 166,881
11 Claims. (Cl. 241—236)

1. A breaker for frangible material comprising in combination, a pair of rotatable rolls each having alternate peripheral ribs and channels, the ribs of one roll fitting into the channels of the other roll with a running side clearance, and said ribs and channels having working faces spaced apart for the passage of fragible material therebetween, cooperating pressure applying elements on and projecting from the working faces of the rolls, said elements on one roll being misaligned with the elements on the other roll, whereby is effected the bending and the



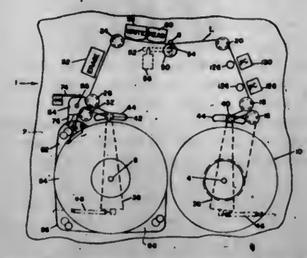
clean snapping of the material into pieces as distinguished from mashing it under roll pressure, and means for feeding frangible material between the working faces of the rolls.

3,190,574
TAPE SUPPLY REEL
Alfred Z. Purzycki, Mount Prospect, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed May 29, 1963, Ser. No. 284,141
2 Claims. (Cl. 242—55)



2. In a tape supply reel mechanism for a coil of tape composed of a number of convolutions of tape wound one upon another, the outer convolution of which is adapted to be pulled from the coil of tape to cause the coil of tape to rotate;
a frame means for said tape supply reel mechanism,
an axle means mounted in said frame means,
a hub means carried by said axle means for rotation about said axle means, said hub means supporting the coil of tape for rotation relative to said frame means, and
retaining means slidably mounted on said hub means for outward movement from the circumferential surface of said hub means to a position opposite the edges of the innermost convolutions of tape on the tape reel;
said hub means having first end surfaces in planes normal to its axis and spaced apart a distance equal to the width of a first predetermined width of tape for supporting said retaining means in a position to hold said first width of tape therebetween and having at least one other end surface also in a plane normal to its axis and spaced from one of the first end surfaces a distance equal to the width of a second narrower predetermined width of tape for supporting said retaining means in a position to hold said second width of tape therebetween.

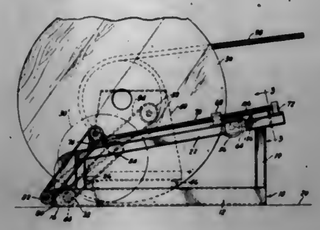
3,190,575
SELF-THREADING TAPE MECHANISM
Paul F. Hayner, Lexington, Mass., and Edgar R. Bernier and Kenneth E. Mayo, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 9, 1962, Ser. No. 178,667
8 Claims. (Cl. 242—55.13)



1. A magnetic tape recorder comprising a magnetic head, a spindle for a magnetic tape cartridge, a magnetic tape cartridge of the type including a structure which is fixed against continued rotation when tape is withdrawn therefrom or wound thereon, a storage reel, a flexible resilient leader attached at one end to said storage reel, the opposite end of said leader having a tape coupling element attached thereto, said tape coupling element having a hook at a free end thereof, means for transporting said leader back and forth between said storage reel and a position proximate to said fixed cartridge structure, means for stopping said leader transporting means automatically when the coupling element on said leader reaches said predetermined position proximate to said structure, means releasably locking said coupling element at said predetermined proximate position at a predetermined angle relative to said tape cartridge structure, cartridge positioning means located adjacent to said spindle for holding said cartridge on said spindle and determining first and second distinct positions between which said fixed cartridge structure may be rotated while said cartridge is on said spindle, in said first position a complementary coupling element on the free end of the tape on said cartridge being located to one side and short of the hooked end on said leader coupling element, in the second position the coupling element of said cartridge being located in the path followed by the hooked end of the coupling element on said leader as said leader coupling element is drawn toward said storage reel, and operating means including control means on said fixed cartridge structure, and operating means causing said locking means to move to a locking position when said cartridge is in said first position and to a release position when said cartridge is in said second position, whereby when said fixed cartridge structure is in said second position and said leader is moved in the direction of said storage reel its coupling element will hook onto said complementary coupling element so as to draw tape from said cartridge past said head to said storage reel.

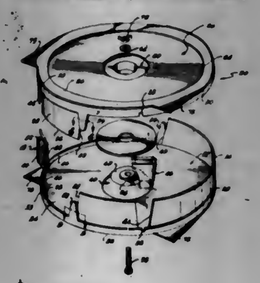
3,190,576
SHAFTLESS REELING MACHINE
John R. Stone, 945 S. Beaver St., York, Pa.
Filed Feb. 18, 1963, Ser. No. 259,281
11 Claims. (Cl. 242—66)

1. A reeling machine for handling relatively large or heavy reels for cable and the like and comprising in combination, a base frame positionable upon a floor surface for support and comprising side frame means spaced transversely apart to receive a reel therebetween by rolling action upon a supporting floor surface, first roll means extending transversely relative to said side frame means for rotation about an axis extending between and adjacent one end of said frame means, second roll means parallel to said first roll means and extending transversely relative to said side frame means between said first roll means and the opposite end of said side frame means, means to move one of said roll means toward and from the other to effect raising and lowering of a reel relative to said floor surface when said reel is positioned between said roll means, and means to drive one of said roll means



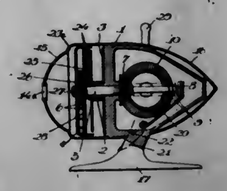
rotatably to effect rotation of a reel when supported between said roll means, one of said roll means being movable from said operative position transversely between said side frame means to a non-obstructing position wherein it does not extend transversely between said side frame means and thereby provides clearance to permit the positioning of a reel within said frame by rolling the same upon said supporting floor surface into operative engagement with the other roll means.

3,190,577
CONTAINER FOR ROLL MATERIAL
Jean M. Allen and Wilbur G. Allen, Carlsbad, Calif., assignors to Allen Machine Development Co., Carlsbad, Calif.
Filed Apr. 8, 1963, Ser. No. 271,397
11 Claims. (Cl. 242—71.1)



1. In a container for storing roll material, the combination of: a pair of structurally identical half sections, each section having a base member and taller and shorter cylindrical side walls extending from said base member, the taller side wall of each section being offset inwardly from the shorter side wall of the same section, the shorter side wall of each section overlapping the taller side wall of the other section in telescoping relation, the taller side wall of each section having a slot therein; and a pair of inserts, each insert being adapted to seat within the slot in one of said taller walls, one of said pair of inserts having a slotted aperture therein, the other said pair of inserts being imperforate.

3,190,578
SPINNING REEL
Takayoshi Kondō, Tokyo, Japan, assignor to Takeo Arizono, Tokyo, Japan
Filed Jan. 29, 1962, Ser. No. 169,293
4 Claims. (Cl. 242—84.2)



1. In a fishing reel, a frame including a transverse wall and a cylindrical boss integral with and extending from one surface of said wall centrally thereof, there being a bearing bore through said wall and boss centrally thereof, a shaft journalled in said bore for rotation and for axial translation from a first to a second position, the forward end of said shaft projecting forwardly of said boss, a spool mounted on said boss, a winding drum journalled on the projecting forward end of said shaft in parallel proximity with said spool, a spiral spring fixedly connected to said shaft and drum, means connected with said shaft to manually rotate the same, means carried by the drum responsive to axial translation of said drum to move from a first position beyond the surface of the drum to a second position coextensive with said surface.

3,190,579
SAFETY HARNESS
Eric Herbert Spouge, Harold Hill, and Arthur Herbert McFarlane, Basildon, England, assignors to Pacific Scientific Company, San Francisco, Calif., a company of California
Filed June 11, 1963, Ser. No. 287,148
Claims priority, application Great Britain, June 14, 1962, 22,908/62
1 Claim. (Cl. 242—107.4)



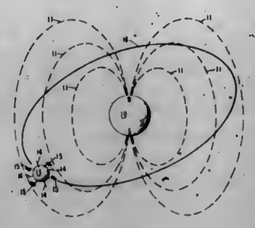
A safety harness comprising a hollow body, a spindle rotatably mounted in said body, a safety strap having one end portion attached to said spindle and wound thereabout, said strap extending outwardly of said body for attachment to a seat occupant's harness strap, a torsion spring within said body having its outer end fixed thereto and its inner end fixed to said spindle for normally retracting said safety strap inwardly of said body and wound around said spindle, an inertia member turnably mounted on said spindle, a pawl pivoted upon said inertia member and having a locking nose portion, a toothed ring provided within said body opposite said locking nose for engagement by the latter, spring means interposed between said inertia member and said pawl for normally holding said locking nose out of engagement with said toothed ring, said pawl having an arm projecting therefrom, said spindle having a recess for receiving said pawl arm, said pawl arm being positioned intermediate the pivot of said pawl on said inertia member and said spring means, said pawl arm projecting radially inwardly into said spindle recess, whereby centrifugal forces acting on said pawl tend to urge said locking nose out of engagement with said toothed ring in use, quick movement of said strap outwardly of said body due to sudden movement of the seat occupant beyond a predetermined acceleration determined by the mass of said inertia member and the strength of said spring means producing relative turning motion between said inertia member and said spindle to cause the compression of said spring means and actuation of said pawl arm to effect the movement of said pawl locking nose into locking engagement with said toothed ring to thereby lock the occupant in his seat.

3,190,580
THERMALLY-ISOLATED HIGH-SPEED BOBBINS
Robert J. Guerin, Providence, and Edmond H. Guerin, Jr., Woonsocket R.I., assignors to American Paper Tube Company, Woonsocket, R.I., a corporation of Rhode Island
Filed Feb. 26, 1963, Ser. No. 261,115
2 Claims. (Cl. 242—118.32)



1. A thermally-isolated bobbing structure for mating with a high-speed rotatable metal spindle, comprising a tubular bobbin molded of thermoplastic material which is susceptible to softening and melting at high temperatures, a thermally-isolating tubular paper seat member including layers of paper wound into a substantially incompressible tube, said layers of said paper seat member being impregnated with varnish which has relatively low thermal conductivity and resists deterioration by frictional contacting with metal surfaces of a spindle rotating at relatively high speeds, said paper seat member being fixed within said bobbin in position to engage and seat upon the tip seating surfaces of spindles by which the bobbin is driven, and said paper seat member having a radial thickness of at least about twelve thousandths of an inch at the site where said member engages and seats upon relatively-rotatable tip drive surfaces of spindles, whereby said paper seat member thermally insulates said thermoplastic material of said bobbin from friction-induced heat generated at inner surfaces of said paper seat member and whereby said paper seat member merely tends to become burnished by frictional engagements with the relative-rotatable tips of spindles.

3,190,581
METHOD AND APPARATUS FOR MAGNETIC STEERING
Raymond H. Wilson, Jr., 3937 1st St. SW., Washington, D.C.
Filed May 19, 1961, Ser. No. 111,403
18 Claims. (Cl. 244—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



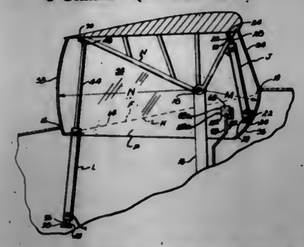
8. A device for controlling the orientation of a rotatable body in a magnetic field, comprising, magnetic means carried by said body, control means attached to said body and said magnetic means for adjusting the position of said magnetic means relative to said body, magnetic damping means attached to said body for generating a rotational damping force when interacting with said magnetic field and means for neutralizing said damping means when rotational motion is desired whereby said body may be caused to rotate to a desired position and then rapidly be brought to an angularly stable condition.

3,190,582
GROUND EFFECTS UTILIZING AND TRANSITION AIRCRAFT
Alexander M. Lippisch, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 2, 1964, Ser. No. 335,211
9 Claims. (Cl. 244—12)



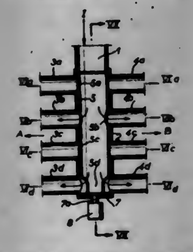
1. A craft capable of moving in the water, closely adjacent to the ground, on water, in the ground effect area, or as an aircraft, comprising generally triangular shaped airfoil means having from its center portion a downwardly extending leading edge to each end which forms one side of the triangle, and a pair of trailing edges forming the other two sides of the triangle with the trailing edges lying in substantially the same plane, said airfoil means being formed with an upper curved surface capable of producing lift as said airfoil means is moved through the air, and formed with a lower surface forming a pressure pocket capable of producing upward pressure as the craft is moved forwardly; and a pair of pontoons attached to said airfoil means at the ends of the leading edge and in the same plane as the trailing edges so as to provide planing surfaces together with said trailing edges as the craft is moved through a fluid.

3,190,583
VARIABLE LIFT WING
Willy G. Stoppe, Long Beach, Calif., assignor of one-half to Nancy Vos, Long Beach, Calif.
Filed July 17, 1963, Ser. No. 295,754
6 Claims. (Cl. 244—48)



1. In combination with an engine driven aircraft that includes a fuselage:
(a) a wing extending transversely across at least a portion of said fuselage;
(b) first means for pivotally connecting said wing to said fuselage;
(c) power means for pivoting said wing between a first position and a second position, which wing when in said second position tilts downwardly and rearwardly at a greater angle than when in said first position; and
(d) transparent rigid means attached directly to said wing for movement therewith as said wing pivots between said first and second positions, which transparent means protectively covers an opening formed in said fuselage from a windstream when said aircraft is in motion.

3,190,584
FLUID DISTRIBUTION DEVICE ESPECIALLY APPLICABLE TO CONTROL BY JET OF V.T.O.L. AIRCRAFT
Etienne Yves Jean Marie Gire, Fontaine-le-Port, and Auguste Laurent Meunier, L'Hay-les-Roses, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Apr. 21, 1964, Ser. No. 361,324
Claims priority, application France, Aug. 2, 1962, Patent 82,162
11 Claims. (Cl. 244—52)



1. A device for differentially distributing the flow of a source of fluid under pressure, comprising a number of receiving members, a plurality of groups each having an equal number of pipes leading respectively to the said receiving members, differential distributor means, and single actuating means for said distributor means, said differential distributor means being so related to the said groups of pipes that:
(a) in a mean position thereof the distributor means uncover equal passage areas of the pipes leading to the said receiving members, whereby the flow is equally divided therebetween,

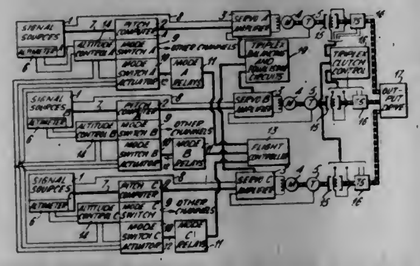
(b) in an extreme position thereof, the distributor means only uncover the pipes leading to one of the receiving members, while fully obturating the other pipes, whereby only the said receiving member is supplied with the whole flow of the source,
(c) in at least one position thereof intermediate the said mean and extreme positions, the distributor means uncover unequal passage areas of the pipes leading to the said receiving members, whereby the same are supplied with unequal flows of fluid,
(d) in any of the said three positions, at least one pipe is fully uncovered.

3,190,585
LANDING SYSTEM FOR AIRCRAFT
Heinz Busch, Friedrichshafen, and Silvius Dornier, Kressbronn, Germany, assignors to Dornier-Werke G.m.b.H., Friedrichshafen, Germany, a firm of Germany
Filed Feb. 5, 1962, Ser. No. 170,974
Claims priority, application Germany, Feb. 9, 1961, D 35,376
2 Claims. (Cl. 244—75)



2. A system for landing an aircraft including a sighting device mounted on the aircraft for sighting the landing point on the ground, the line of sight of said device being parallel to the flight path, and a pitch angle indicator mounted on the aircraft, said pitch angle indicator comprising indicating means movable at a right angle to the line of sight of said sighting device and in a plane containing the vertical axis of the aircraft, said indicating means being in the line of sight upon optimal gliding angle of the aircraft when approaching the landing point, said sighting device including a rear sight and a front sight, at least one of said sights being vertically adjustably mounted on the aircraft.

3,190,586
AUTOMATIC CONTROL SYSTEMS
David William Righton, Cheltenham, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company
Filed July 13, 1962, Ser. No. 209,623
Claims priority, application Great Britain, July 14, 1961, 25,526/61
17 Claims. (Cl. 244—77)



15. An automatic pitch control channel for an automatic flight control system of an aircraft, said control channel comprising more than two sub-channels for actuating concurrently with one another pitch control surface means of the aircraft, each said sub-channel individually comprising signal source means for providing signals in accordance with at least height and pitch manoeuvres of the aircraft; pitch computer means responsive to signals provided by said signal source means to provide a pitch demand signal, said computer means including means selectively switchable to any one of a plurality of different operational modes appropriate respectively to different successive phases of a landing manoeuvre; a servo system for actuating said pitch control surface means in accordance with the pitch demand signal provided by said pitch computer means; reference signal means for providing signals defining a plurality of different datum values related respectively to different aircraft heights at which different successive phases of said landing manoeuvre should be commenced, said reference signal means being coupled to said pitch computer means to define during each said phase the datum value of height appropriate to commencement of the next successive phase; signal discriminating means coupled to the reference signal means and to said signal source means to provide a switching signal when the aircraft height is substantially equal to the datum value of height then being defined by said reference signal means; and switching means for switching said pitch computer means to the operational mode appropriate to said next successive phase of said landing manoeuvre in response to the condition in which the signal discriminating means of a majority of said sub-channels emit said switching signal.

3,190,587
CONTROLLABLE SHAPE HULL STRUCTURE
Vollmer W. Fries, 1250 Edgewater Drive, Cleveland, Ohio
Filed Mar. 8, 1963, Ser. No. 263,897
9 Claims. (Cl. 244—106)

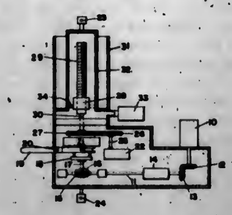


8. A flying boat hull structure comprising a rigid frame having an underside having a forward planing portion and a step at the rearward end thereof for efficient operation on water, a flexible boot mounted on said underside of said hull normally positioned therealong and conforming to the surface of said planing portion and step, said boot defining at least a portion of a pressure chamber, a source of pressure connected to supply fluid under pressure to said chamber, pressure in said chamber causing said boot to move away from said underside of said hull and assume a smoothly curved convex shape streamlined for efficient movements through air.

3,190,588
AIRCRAFT CANOPY ACTUATOR
Frank T. Pisano, Kirkwood, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 3, 1964, Ser. No. 357,333
7 Claims. (Cl. 244—121)
(Granted under Title 35, U.S. Code (1952), sec. 266)

4. An aircraft canopy actuator comprising motor means, mechanism for raising and lowering a canopy by said motor means, said mechanism having means for transmitting thrust through a different path when lowering said

canopy than that when raising the canopy, said mechanism including a lost motion connection permitting vertical ex-



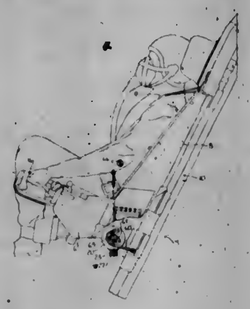
pansion of said canopy without rotation of said motion means.

3,190,589

EJECTION SEAT HAVING ROCKET MOTOR FOR SECOND STAGE PROPULSION

Hans Jörgen Theodor Mennborg, Linkoping, Sweden, assignor to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden

Filed Dec. 13, 1963, Ser. No. 330,471
11 Claims. (Cl. 244—122)



6. In an aircraft escape device of the type comprising a seat that is substantially symmetrical about a vertical plane and is jettisonably mounted in an aircraft, means for propelling the seat clear of the aircraft comprising:

(A) an elongated tubular casing having closed ends and having lengthwise spaced apart outlets through its tubular wall, at one side thereof, defining gas discharge nozzles which have their axes substantially normal to the axis of the casing and parallel to one another and which all open in the same direction;

(B) a plurality of solid fuel propellant elements in the casing arranged at spaced intervals along the length of the casing so as to define radially opening gas passages between adjacent elements by which combustion gas can flow in a substantially straight path substantially radial to the casing axis from each element to the nozzle nearest thereto;

(C) igniter means in the casing for initiating combustion of the fuel elements, said igniter means comprising

(1) a body of readily combustible material and

(2) a detonator at one end of the casing;

(D) means on the casing, actuatable from the exterior thereof, for detonating the detonator of the igniter means; and

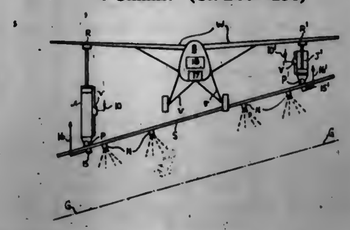
(E) means mounting the casing on the seat with its axis normal to said vertical plane and with its nozzles opening downwardly.

3,190,590

AERIAL SPRAYING OF SOIL OR CROPS THEREON

Walter Eugene Ripper, Docking, King's Lynn, Norfolk, and Kenneth Charles Garner, Cranfield, Bletchley, England, assignors to Ripper Robots Limited, Norfolk, England, a corporation of Great Britain

Filed Feb. 17, 1964, Ser. No. 345,350
Claims priority, application Great Britain, Feb. 21, 1963, 7,091/63
4 Claims. (Cl. 244—136)



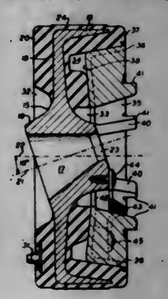
1. An aircraft including means for spraying the ground beneath it comprising a hollow spray bar, spraying nozzles on said spray bar, means suspending said spray bar from the aircraft at a position below the aircraft and transversely of the aircraft's heading, said means comprising at least one linear actuator, by which the spray bar can be raised and lowered relatively to the aircraft, electrical means controlling the extension of said actuator, a device for accurately measuring and signalling the instantaneous height above ground of the aircraft, at least one device mounted on the spray bar at a definite point thereof for accurately measuring and signalling the instantaneous height above ground of said point, means receiving demand signals for height above ground of the aircraft and of the spray bar respectively, means transmitting to said extension-controlling means said demand signals and the signals of said height measuring devices, said extension-controlling means including means for algebraically summing the signals it receives to produce, and transmit to the actuator an output signal representing the error of actuator extension, the actuator having control means responsive to said error signal for correcting the signalled error.

3,190,591

CORE ASSEMBLY FOR AN ENGINE MOUNT

Erling J. Bligard, Northford, and Romolo H. Racca, Cheshire, Conn., assignors to Cal-Val Research & Development Corp., Glendale, Calif., a corporation of Delaware

Filed Feb. 11, 1963, Ser. No. 257,486
5 Claims. (Cl. 248—5)



1. A core assembly for an engine mount having a disklike configuration and comprising a rigid core plate and elastomeric material joined together, said core plate having

(a) a hub located at the center of the disklike assembly with a through bore for receiving an engine mounting element,

(b) a web radiating from said hub, and

(c) a rim portion extending generally normal to said web and joined by said web to said hub,

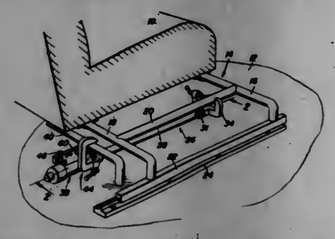
both said web and said rim portion being embedded in said elastomeric material, the periphery of the assembly being cylindrical with the exception of two relieved portions lying on diametrically opposed sides, and a pair of arcuate metal segments embedded in the elastomeric material parallel to the cylindrical periphery of the assembly and in symmetrically opposed relationship along a diameter normal to the diameter passing through the relieved portions.

3,190,592

SHOCK ABSORBER FOR VEHICLE SEATS

Joseph E. Grizzle, Jr., Jerseyville, Ill. (2704 St. Ambrose Lane, Godfrey, Ill.)

Filed Nov. 6, 1962, Ser. No. 235,714
7 Claims. (Cl. 248—20)



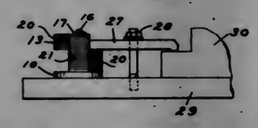
1. A mount for a seat comprising in combination, a fixed surface, a seat slidably mounted for movement in fixed spaced relation to said surface, said seat including a frame, track means mounted on the surface and the frame for slidably mounting the seat relative to the surface, anchoring means mounted on the surface, and a shock absorber secured to the anchoring means, said shock absorber including elongated rigid means, limit housing means slidably mounted adjacent one end on said rigid means for limited movement with respect thereto and centering means mounted within said housing means for biasing the rigid means to an adjusted position relative to the fixed surface, first clamp means securing said limit housing means to the anchoring means, second clamp means securing the other end of the rigid means to the frame, and adjustment means operatively connected to one of said clamp means for positioning the housing means relative to the clamp means to vary the adjusted position of the rigid means and the seat relative to the fixed surface without removal of the clamp means.

3,190,593

ADJUSTABLE SET-UP BLOCKS

Ralph E. Kreger, 2716 Vinsetta Blvd., Royal Oak, Mich.

Filed Jan. 14, 1963, Ser. No. 251,319
7 Claims. (Cl. 248—25)



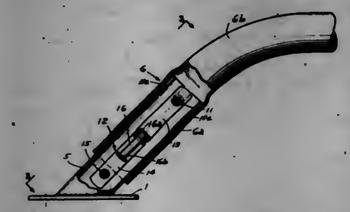
1. An adjustable set-up block assembly comprising a base, a stack of similar adjustment plates mounted on said base, alignable pivot apertures extending through said base and stack of adjustment plates, a resilient tension element extending through and adapted to hold said stack of plates and base in assembled relation, each of said plates having a recessed portion extending relatively close to its pivot aperture adapted to accommodate the end of a clamping dog and a diametrically opposed clamp supporting portion extending relatively far from its pivot aperture alternately alignable with the clamp supporting portion of said base through rotation of said plate about its pivot aperture, said base extending under the center of gravity of said assembly in all positions of adjustment.

3,190,594

OUTRIGGER POLE HOLDER

Christ Chion, Plainview, N.Y., assignor to Allen Marine, Inc., Hicksville, N.Y., a corporation of New York

Filed Oct. 8, 1963, Ser. No. 314,794
7 Claims. (Cl. 248—42)



1. An outrigger pole holder comprising a bracket for mounting the holder upon a support, a first tubular member secured at one end to said bracket at a slant in reference thereto, a second tubular member telescopically and rotatably engaged with said first member, said second tubular member constituting a receiver for a fishing pole, one of said members having at its free end several circumferentially spaced pairs of diametrically opposite lengthwise slots, a setting pin extending across a diameter of the other tubular member secured thereto and engageable with any selected one of said pairs of slots to lock said member against angular rotation in reference to the other member, and retaining means within said members limiting lengthwise displacement thereof in reference to each other to positions in which the two members remain in telescopic engagement, said retaining means including a first link secured to the slotted member, a second link secured to the setting pin in the other member, and a coupling link coupling said first and said second links lengthwise slidably in reference to each other within predetermined limits.

3,190,595

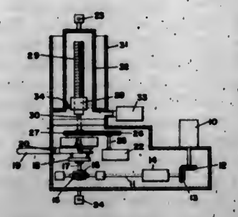
STANCHION

Ray Lavern Ferris, Thornton, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed July 22, 1963, Ser. No. 296,692
13 Claims. (Cl. 248—119)

1. A stanchion for supporting and hitching a trailer on a railway car, said stanchion comprising an upright strut pivotally connected at one end to a base, a fifth wheel plate pivotally connected to the other end of said upright strut, a diagonal strut pivotally connected at one end relative to said upright strut, means guiding the other end of said diagonal strut for sliding movement lengthwise of said base when said stanchion is moved between a collapsed position and an erect trailer supporting position, said guiding means including notch means disposed to preclude lengthwise movement of said sliding other end when said stanchion is in said erect position, latch means located in the path of movement of said slidable other end, said latch means being displaceable from said path of movement upon engagement of said slidable

canopy than that when raising the canopy, said mechanism including a lost motion connection permitting vertical ex-



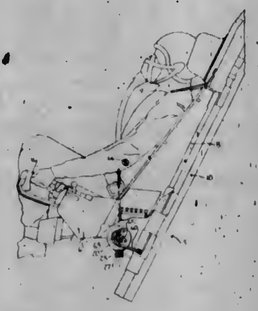
pansion of said canopy without rotation of said motor means.

3,190,589

EJECTION SEAT HAVING ROCKET MOTOR FOR SECOND STAGE PROPULSION

Hans Jörgen Theodor Mennborg, Linkoping, Sweden, assignor to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden

Filed Dec. 13, 1963, Ser. No. 330,471
11 Claims. (Cl. 244—122)



6. In an aircraft escape device of the type comprising a seat that is substantially symmetrical about a vertical plane and is jettisonably mounted in an aircraft, means for propelling the seat clear of the aircraft comprising:

(A) an elongated tubular casing having closed ends and having lengthwise spaced apart outlets through its tubular wall, at one side thereof, defining gas discharge nozzles which have their axes substantially normal to the axis of the casing and parallel to one another and which all open in the same direction;

(B) a plurality of solid fuel propellant elements in the casing arranged at spaced intervals along the length of the casing so as to define radially opening gas passages between adjacent elements by which combustion gas can flow in a substantially straight path substantially radial to the casing axis from each element to the nozzle nearest thereto;

(C) igniter means in the casing for initiating combustion of the fuel elements, said igniter means comprising

(1) a body of readily combustible material and

(2) a detonator at one end of the casing;

(D) means on the casing, actuatable from the exterior thereof, for detonating the detonator of the igniter means; and

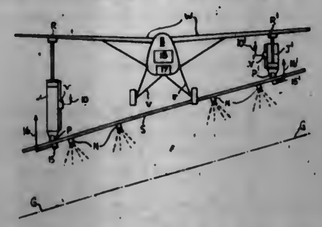
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3,190,590

AERIAL SPRAYING OF SOIL OR CROPS THEREON

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Filed Feb. 17, 1964, Ser. No. 345,350
Claims priority, application Great Britain, Feb. 21, 1963, 7,091/63
4 Claims. (Cl. 244—136)



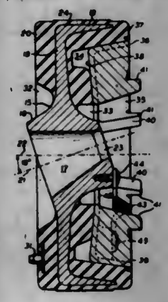
1. An aircraft including means for spraying the ground beneath it comprising a hollow spray bar, spraying nozzles on said spray bar, means suspending said spray bar from the aircraft at a position below the aircraft and transversely of the aircraft's heading, said means comprising at least one linear actuator, by which the spray bar can be raised and lowered relatively to the aircraft, electrical means controlling the extension of said actuator, a device for accurately measuring and signalling the instantaneous height above ground of the aircraft, at least one device mounted on the spray bar at a definite point thereof for accurately measuring and signalling the instantaneous height above ground of said point, means receiving demand signals for height above ground of the aircraft and of the spray bar respectively, means transmitting to said extension-controlling means said demand signals and the signals of said height measuring devices, said extension-controlling means including means for algebraically summing the signals it receives to produce, and transmit to the actuator an output signal representing the error of actuator extension, the actuator having control means responsive to said error signal for correcting the signalled error.

3,190,591

CORE ASSEMBLY FOR AN ENGINE MOUNT

Erling J. Bligard, Northford, and Romolo H. Racca, Cheshire, Conn., assignors to Cal-Val Research & Development Corp., Glendale, Calif., a corporation of Delaware

Filed Feb. 11, 1963, Ser. No. 257,486
5 Claims. (Cl. 248—5)



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(b) a web radiating from said hub, and

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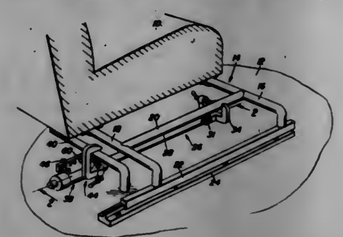
both said web and said rim portion being embedded in said elastomeric material, the periphery of the assembly being cylindrical with the exception of two relieved portions lying on diametrically opposed sides, and a pair of arcuate metal segments embedded in the elastomeric material parallel to the cylindrical periphery of the assembly and in symmetrically opposed relationship along a diameter normal to the diameter passing through the relieved portions.

3,190,592

SHOCK ABSORBER FOR VEHICLE SEATS

Joseph E. Grizzle, Jr., Jerseyville, Ill.
(2704 St. Ambrose Lane, Godfrey, Ill.)

Filed Nov. 6, 1962, Ser. No. 235,714
7 Claims. (Cl. 248—20)



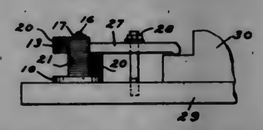
1. A mount for a seat comprising in combination, a fixed surface, a seat slidably mounted for movement in fixed spaced relation to said surface, said seat including a frame, track means mounted on the surface and the frame for slidably mounting the seat relative to the surface, anchoring means mounted on the surface, and a shock absorber secured to the anchoring means, said shock absorber including elongated rigid means, limit housing means slidably mounted adjacent one end on said rigid means for limited movement with respect thereto and centering means mounted within said housing means for biasing the rigid means to an adjusted position relative to the fixed surface, first clamp means securing said limit housing means to the anchoring means, second clamp means securing the other end of the rigid means to the frame, and adjustment means operatively connected to one of said clamp means for positioning the housing means relative to the clamp means to vary the adjusted position of the rigid means and the seat relative to the fixed surface without removal of the clamp means.

3,190,593

ADJUSTABLE SET-UP BLOCKS

Ralph E. Kreger, 2716 Vinsetta Blvd., Royal Oak, Mich.

Filed Jan. 14, 1963, Ser. No. 251,319
7 Claims. (Cl. 248—25)



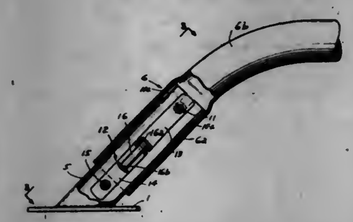
1. An adjustable set-up block assembly comprising a base, a stack of similar adjustment plates mounted on said base, alignable pivot apertures extending through said base and stack of adjustment plates, a resilient tension element extending through and adapted to hold said stack of plates and base in assembled relation, each of said plates having a recessed portion extending relatively close to its pivot aperture adapted to accommodate the end of a clamping dog and a diametrically opposed clamp supporting portion extending relatively far from its pivot aperture alternately alignable with the clamp supporting portion of said base through rotation of said plate about its pivot aperture, said base extending under the center of gravity of said assembly in all positions of adjustment.

3,190,594

OUTRIGGER POLE HOLDER

Christ Chion, Plainview, N.Y., assignor to Allan Marine, Inc., Hicksville, N.Y., a corporation of New York

Filed Oct. 8, 1963, Ser. No. 314,794
7 Claims. (Cl. 248—42)



1. An outrigger pole holder comprising a bracket for mounting the holder upon a support, a first tubular member secured at one end to said bracket at a slant in reference thereto, a second tubular member telescopically and rotatably engaged with said first member, said second tubular member constituting a receiver for a fishing pole, one of said members having at its free end several circumferentially spaced pairs of diametrically opposite lengthwise slots, a setting pin extending across a diameter of the other tubular member secured thereto and engageable with any selected one of said pairs of slots to lock said member against angular rotation in reference to the other member, and retaining means within said members limiting lengthwise displacement thereof in reference to each other to positions in which the two members remain in telescopic engagement, said retaining means including a first link secured to the slotted member, a second link secured to the setting pin in the other member, and a coupling link coupling said first and said second links lengthwise slidably in reference to each other within predetermined limits.

3,190,595

STANCHION

Ray Lavern Ferris, Thornton, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed July 22, 1963, Ser. No. 296,692
13 Claims. (Cl. 248—119)

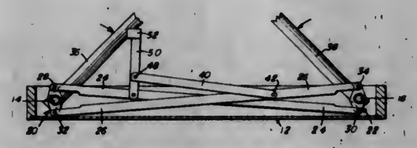
1. A stanchion for supporting and hitching a trailer on a railway car, said stanchion comprising an upright strut pivotally connected at one end to a base, a fifth wheel plate pivotally connected to the other end of said upright strut, a diagonal strut pivotally connected at one end relative to said upright strut, means guiding the other end of said diagonal strut for sliding movement lengthwise of said base when said stanchion is moved between a collapsed position and an erect trailer supporting position, said guiding means including notch means disposed to preclude lengthwise movement of said sliding other end when said stanchion is in said erect position, latch means located in the path of movement of said slidable other end, said latch means being displaceable from said path of movement upon engagement of said slidable

other end of said diagonal strut until said slidable other end is disposed within said notch, and means urging said



latch means to a position into said path of movement to retain said slidable other end captured within said notch.

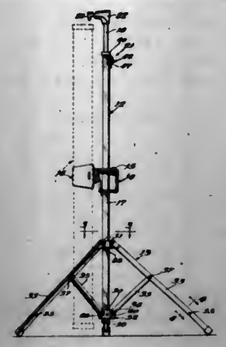
3,190,596
SUPPORTED STRUCTURE AND MECHANISM THEREFOR
Oscar H. Kaminky, 908 S. 6th St., Goshen, Ind.
Filed Mar. 6, 1964, Ser. No. 349,859
8 Claims. (Cl. 248—169)



1. A supported surface having a collapsible and extendable supporting mechanism which comprises, a planar surface being pivotally connected to two rotatable members, a pair of torque arms secured to each of said rotatable members, a pair of crossed linkage members cooperatively connecting said pairs of torque arms so as to rotate them in opposite directions, and toggle operating means, attached directly to said crossed linkage members and cooperatively connecting them for movement to and locking in a predetermined position, said toggle operating means consisting of a pair of toggle links whose outer ends are pivotally connected to different ones of said crossed linkage members and whose inner ends are pivotally interconnected to each other.

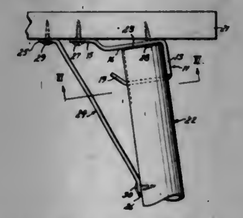
3,190,597
PORTABLE MOVIE SCREEN DEVICE
Hillard J. Bieschke, Schiller Park, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois
Filed Oct. 15, 1963, Ser. No. 316,215
10 Claims. (Cl. 248—171)

1. A movie screen stand, comprising: an upright standard including a main tubular member and a telescoping rod slidable in the tubular member; clamping means operable between the tubular member and the rod for retaining the rod in a preselected position of extension with respect to the tubular member; a leg unit on the standard for supporting the standard in upright position, the leg unit having a plurality of leg members swingable between a closed position adjacent the standard and a flared supporting position; a first latch member pivoted on the lower end portion of the standard for movement between a latching and an unlatching position, the first latch member being normally urged toward unlatching position and the telescoping rod yieldably holding said first latch member in latching position; and a second latch member on the leg unit positioned to engage the first latch member in latching position when the leg unit is in closed position, upward movement of the telescoping rod simultaneously



releasing the first latch member for movement to unlatching position and disengaging the latch members.

3,190,598
FURNITURE BRACKET
Samuel Wilf, 301 N. Highland Ave., Merion, Pa.
Filed Nov. 1, 1963, Ser. No. 320,716
10 Claims. (Cl. 248—188)



1. Bracket for attaching a leg to furniture or the like, comprising a seat portion adapted to rest at its one face against an item of furniture and to be secured thereto and to rest at its opposite face against one end of a leg for the item of furniture, a second, generally planar portion adapted to extend substantially parallel to and spaced from the seat portion and through an opening in a leg and adapted to be bent upon protruding therefrom on the opposite side to secure a leg, and a junction portion extending generally perpendicular to and interconnecting the other two portions and adapted to rest against the side of a leg..

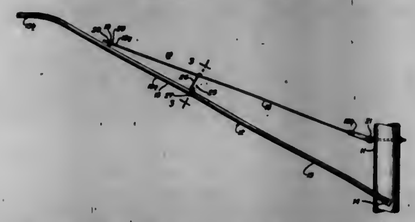
3,190,599
WALL AND CEILING HANGER
Joseph M. Margulis, Philadelphia, Pa.
Filed Apr. 19, 1962, Ser. No. 188,642
2 Claims. (Cl. 248—205)



1. A hanger for wall and ceiling use comprising a rigid housing, first securing means associated with said housing for securing said housing to a plane surface, hanger means, and a second securing means rotatably securing said hanger means to a wall of said housing so as

to allow movement of said hanger means through an arc of at least 90 degrees with respect to the plane of said wall of said housing, said housing being substantially a triangular prism, with the base thereof adapted to be placed against a plane surface, and said wall of said housing being a side wall lying in a plane disposed at an angle approximately 45 degrees with respect to the plane of said base, and said hanger means being a hook terminating in an angular tab extending from one end of a shank portion thereof, and the angle between the plane of said tab and the plane of the hook shank portion being approximately 135 degrees.

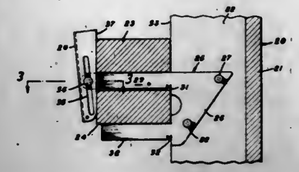
3,190,600
MAST ARM AND BRACE FOR LUMINAIRES
Alfred H. Stanley, Hinsdale, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 14, 1962, Ser. No. 237,665
4 Claims. (Cl. 248—221)



2. A supporting structure for supporting a luminaire and the like in laterally spaced relation to an upright member, said structure comprising a mast arm having one end adapted for attachment to said upright member and extending outwardly therefrom with a free end adapted to support a luminaire, a tie rod with its outer end connected to said mast arm and normally disposed to extend angularly away from said mast arm from the point of connection thereto, said rod having an inner end adapted for attachment to said upright member at a position spaced vertically above said one end of said mast arm, and bracket means extending between said mast arm and tie rod intermediate their ends for maintaining a selected angular spaced relation between said mast arm and said tie rod when said bracket means is disposed in an upstanding position generally normal to said mast arm, hinged clamping means interconnecting said bracket means and said mast arm for pivoting said mast arm between an upstanding position to a folded position substantially juxtaposed said arm, said bracket means including a channel shaped member having a central spacing web with end flanges integrally formed at upper and lower ends thereof and having slot means defined in said upper flange extending into said web portion receiving said tie rod and permitting said bracket means to pivot downwardly from said upstanding position toward said bracket means while said tie rod is extended through said slot means substantially juxtaposed said arm.

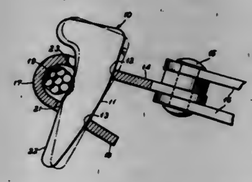
3,190,601
WALER-ATTACHMENT BRACKET
Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich.
Continuation of application Ser. No. 81,462, Jan. 9, 1961. This application Mar. 27, 1963, Ser. No. 268,434
3 Claims. (Cl. 248—221)

2. A bracket for securing walers to stud means, said bracket comprising: a plate having at least one aperture for receiving a fastening engaging said stud means, said plate having spaced arm portions extending in cantilever relationship, each adapted to receive a waler; wedge means having a U-shaped cross-section providing open and closed edges respectively and embracing one of said arm portions, said wedge means having a closed elongated slot disposed at an incline with respect to one of said edges; and a transverse member extending into said slot and permanently interconnecting said arm portion and said wedge means, said wedge means being slidable there-



on and having an extreme position parallel to said arm portion in which said closed edge abuts an edge of said one of said arm portions to support said wedge, and a position substantially perpendicular thereto for holding walers against said stud means.

3,190,602
CLAMPING DEVICE
Donald C. Reilly, Downers Grove, and Wayne R. Stuetzer, Chicago, Ill., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 12, 1963, Ser. No. 301,339
1 Claim. (Cl. 248—230)



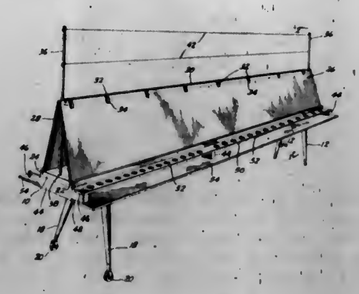
In clamping apparatus including a hanger having a surface adapted to embrace a stringer member, the improvement in means for securing said hanger surface in tight frictional engagement with said stringer comprising:
an elongated pin of resilient elastomeric material having front and rear faces diverging from each other at different angles along the length thereof to define a first narrow, tapered flexible portion at one end thereof, succeeded by a wider pocket portion provided with a locally deformable high friction zone along a mid portion thereof, succeeded in turn by a still wider third head portion at the opposite end thereof.

3,190,603
CLASSROOM EASEL
Mike A. Finnemann, St. Paul, Minn., assignor to Antler Corporation, St. Paul, Minn., a corporation of Minnesota
Filed Apr. 11, 1963, Ser. No. 272,482
4 Claims. (Cl. 248—450)

1. A classroom easel comprising:
(a) a horizontal baseboard having a pair of parallel grooves extending along the upper face thereof, each end of said baseboard being provided with a recess in its said upper face;
(b) a pair of panels hinged together at their upper edges, said grooves being of substantially the same width as the thickness of said panels so as to snugly receive the lower edges of said panels in said grooves and said grooves inclining toward each other at the upper face of said baseboard in order to maintain said panels at an inclination determined by said grooves so that said panels provide inclined work-

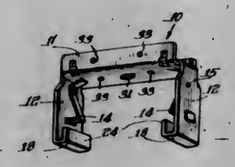
ing surfaces at either side of the easel for drawing paper and the like;

(c) means underlying said baseboard for supporting said panels at a desired working height, and



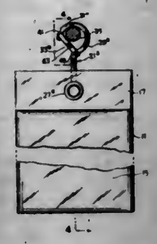
(d) a pair of rod members having their lower ends of a size to fit in said recesses in order to maintain said rod members vertical with an upper portion thereof extending between the upper edges of said panels.

3,190,604
BUS DUCT HANGER
George N. Jorgensen and Robert E. King, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 4, 1963, Ser. No. 306,458
2 Claims. (Cl. 248—317)



1. A bus duct hanger comprising an elongated main body portion, a pair of depending leg portions respectively pivotally mounted on said main body portion adjacent opposite ends thereof and normally extending generally perpendicularly thereto, the free end portion of each of said leg portions including an inwardly extending hook portion with an upwardly extending retaining flange, and a pair of generally Z-shaped spring members secured respectively to the inner surfaces of said leg portions and including lower retaining portions normally extending inwardly respectively from said leg portions in upwardly spaced relationship respectively to said inwardly extending hook portions and upwardly extending retaining flanges and resiliently movable outwardly respectively from said upwardly extending retaining flanges, whereby a bus duct can be suspended by said hook portions and prevented by said lower retaining portions from moving upward sufficiently to clear said upwardly extending retaining flanges, said spring members including upper retaining portions respectively extending inwardly from said inner surfaces of said leg portions angularly with respect to said main body portion when said leg portions are generally perpendicular thereto and being flatwise engageable with said main body portion upon outward pivotal movement of said leg portions thereby to limit said outward pivotal movement.

3,190,605
COMBINATION HANGER HOOK AND DISPLAY PLASTIC BAGS
Daniel Gilbert, 2680 E. 19th St., Brooklyn, N.Y.
Filed Oct. 16, 1962, Ser. No. 230,874
1 Claim. (Cl. 248—359)



In combination a suspending member and a display container, said suspending member comprising

(a) an annular grommet passing through the container;

(b) prongs, extending from said annular grommet and over the container;

(c) said suspending member formed integrally with said annular grommet;

(d) said suspending member having an opening adapting same for placement over and removal from a rod-like hanger, in interspersed relationship with other like suspending members, and without first having to remove from the hanger said other like suspending members;

(e) said suspending member including an open hook-shaped portion;

(f) a notch formed in said hook-shaped portion near the opening thereof; and

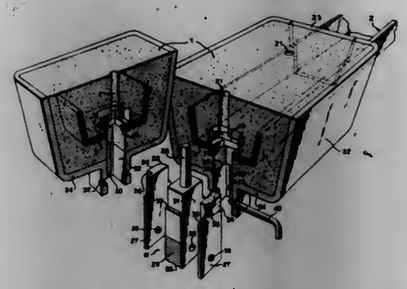
(g) a U-shaped latch pivotally secured to said suspending member adapted for seating in said notch to close the opening, in the hook-shaped portion; said prongs being integral with the grommet and serving to secure said grommet to the container.

3,190,606
SPANDREL TIE
Warren D. Wilbur, 13379 Pastel Lane, Mountain View, Calif., and Richard N. Tone, 1803 Mezes Ave., Belmont, Calif.
Filed July 13, 1962, Ser. No. 209,494
7 Claims. (Cl. 249—27)



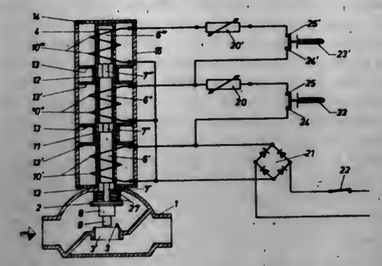
1. In a concrete form, opposed interior and exterior walls and a form deck extending from the upper end of said interior wall away from said exterior wall, said deck being formed with an opening therethrough, an elongated tie member having an off-set portion extended through said opening and a contiguous end disposed at the under side of said deck, means supporting said tie member in spaced relation to the upper side of said deck, and means mounted through said exterior wall and engaged with the opopsite end of said tie member and including take up means for adjusting the maximum spacing of said exterior wall and deck, said tie member being formed with a weakened section at said off-set portion adapted for breaking upon twisting of said first mentioned tie member end.

3,190,607
MOLDING DEVICE FOR PRODUCING RAILWAY SLEEPERS
Roger Paul Sonneville, 5 Ave. Leonie, Saint-Cloud, France
Filed Aug. 8, 1961, Ser. No. 130,118
Claims priority, application France, Aug. 10, 1960, 835,558, Patent 1,277,589
5 Claims. (Cl. 249—91)



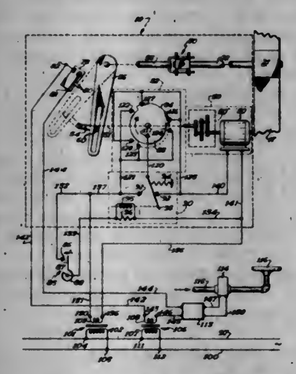
1. A molding device for producing a railway sleeper having two spaced concrete blocks held in a spaced condition by an elongated metal bracing element, said molding device comprising, a mold having side walls and a bottom for receiving concrete to be molded therein, one of said side walls having a notch for receiving an elongated element corresponding to the bracing element of the finished sleeper therein with said element having an end portion extending into the mold and extending outwardly thereof, means cooperative with said element for closing said notch when said element is in position, said bottom having a plurality of through, spaced openings corresponding in number to a plurality of cavities to be formed in a finished block of said sleeper, said mold being open opposite said bottom to allow introduction concrete therein, a plurality of mold cores receivable in a respective one of said openings in said mold bottom, one of said cores comprising a plurality of parts positionable next adjacent each other to form in the finished concrete block a cavity for receiving a securing bolt therein in an inverted position, said parts of said one core comprising an elongated central part and two other elongated parts positionable oppositely each other with said central part therebetween, said end portion of said bracing element having an aperture disposed for receiving said parts of said one core, said two other parts having lateral bosses for forming lateral extensions substantially immediately adjacent an underside of said end portion of said bracing element internally of the block on a longitudinal cavity formed extending into said block by said one core, said central part being withdrawable longitudinally from between said two other parts when disposed extending into said mold through a respective one of said openings on said bottom receiving said one core, said central part having a width sufficient to permit withdrawal of said other two parts from said elongated cavity subsequently to withdrawal of said central part from between said other two parts and said central part of said one core comprising an extension for causing said one core to extend from said bottom to the opening opposite said bottom to define an extension on said cavity on said block for providing a drain through said block, and said central part and said two other parts having shoulders abutting said end portion of said bracing element positioning said one core parts in position for molding said lateral extensions of said longitudinal cavity immediately adjacent said underside of said bracing element.

3,190,608
ELECTROMAGNETICALLY CONTROLLED VALVE
Richard Hassa, Osnabruck, Germany, assignor to G. Kromschroder Aktiengesellschaft, Osnabruck, Germany
Filed Feb. 7, 1962, Ser. No. 172,380
12 Claims. (Cl. 251—121)



1. An electromagnetically operated fluid valve apparatus adapted to be connected to a source of electrical power, said apparatus including: a valve body having a wall within said body dividing said body into an inlet chamber and an outlet chamber, said wall having an opening therethrough and defining an approximately planar valve seat about said opening on the inlet chamber side, an inlet connection to the inlet chamber, and an outlet connection to the outlet chamber; a closure fitted against said seat to seal said opening, said closure having a plug extending into said opening and spaced from the sides of the opening whereby when said closure is unseated the fluid flow through the opening may be varied by varying the position of the plug with respect to the plane of the seat; means to urge the closure against the seat; and solenoid actuated operating means connected to the closure and comprising a first electromagnetic device to first unseat the closure along a line approximately normal to the plane of the seat a distance sufficient to substantially balance the fluid pressures at opposite sides of the closure and a second electromagnetic device operable only after said first device has been actuated to thereafter move the closure further away from the seat and to displace the plug further from its position.

3,190,609
CONTROL DEVICES
Stanley S. Kintigh, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed May 16, 1962, Ser. No. 195,270
12 Claims. (Cl. 251—134)



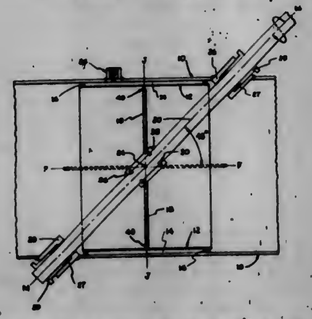
10. A compact operator for oscillating a flow control device between open and closed positions in a fluid conduit comprising: a case having one wall adapted to be mounted

on a fluid conduit; first and second spaced parallel plates mounted in said case; a uni-directional electric motor and gear train mounted on said first plate between said first plate and said wall; an output shaft from said gear train extending away from said wall; switching means associated with said output shaft for controlling the energization of said electric motor; a crank member driven by said output shaft; an operator shaft rotatably mounted on said second plate and extending in spaced substantially parallel relationship to the output shaft to said gear train and extending from said second plate in a direction toward said wall; means driven by said crank member and operably connected to said operator shaft for causing oscillating movement of said operator shaft between an open and a closed position upon rotation of said crank member, the effective length of said crank member and the distance between centers of rotation of said crank member and said operator shaft being such that rotation of said crank member through less than a complete revolution rotates said operator shaft from closed to open position and further rotation of said crank through the remainder of a revolution rotates said shaft in the opposite direction to closed position; an aperture in said wall to permit an operating rod to pass therethrough; and means associated with one end of said operator shaft and adapted to drivingly connect the operating rod thereto.

3,190,610
SELF-CLEANING ROTARY VALVE FOR CONTROLLING FLOW OF AEROSOLS

George W. Dingus, Pampa, Tex., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

Filed Sept. 27, 1961, Ser. No. 141,044
3 Claims. (Cl. 251—173)

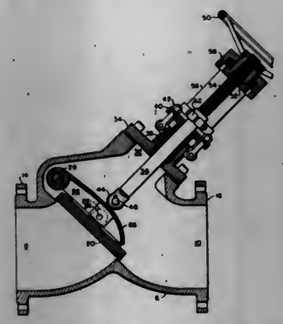


1. Apparatus for controlling the flow of hot gases and aerosols comprising a conduit, a substantially cylindrical, continuous metal body concentrically positioned within said conduit so as to form a chamber between said conduit and said body, means for concentrically positioning said body in said conduit, means for forming a gas tight seal between said conduit and said body, means for admitting a gas into said chamber and releasing said gas therefrom, a rotatable shaft extending transversely through said body so that the axis of said shaft intersects the horizontal axis of said body at an angle between 30° and 60° but so that said shaft does not pass through said chamber, a circular metal vane of substantially the same diameter as the inside of said body, said vane being attached securely to said shaft and mounted thereon in such a manner that the center of said vane coincides with the point of intersection of the axis of said shaft and the axis of said body and so that at some point during the rotation of said shaft, all of the radii of said vane are at right angles to the axis of said body, means for rotating said shaft, and means for maintaining a gas tight seal about said shaft at the points where it extends through said conduit.

3,190,611
CHECK VALVE WITH POSITIVE CLOSING MEANS

Norman F. Prescott, Wenham, and Alexander V. Hose, Marblehead, Mass., assignors to Atwood & Morrill Co., Salem, Mass., a corporation of Massachusetts

Filed Feb. 27, 1963, Ser. No. 261,293
1 Claim. (Cl. 251—266)



A check valve having positive closing means, comprising a valve body having an inlet and an outlet disposed on a flow axis, a valve seat intermediate the inlet and the outlet and disposed at an oblique angle of approximately forty-five degrees to said flow axis at inlet and outlet, the body having a curving passage between inlet and seat and a curving passage between seat and outlet, a valve disc, a support arm on which the valve disc is pivotally mounted adjacent its center for limited pivotal movement relative to said arm pivotal supporting means for said arm at one side of the flow passage downstream of the seat for supporting the valve disc for swinging movement into and out of engagement with the seat, an opening in the valve body generally opposite and aligned with the valve seat, a bonnet secured to the valve body over said opening, a stem extending through the bonnet along an axis substantially perpendicular to the plane of the valve seat and substantially centrally of the seat, a roller carried by the end of the stem within the body, means outside the body for advancing the stem through the bonnet with the roller in engagement with the support arm for the valve disc, means intermediate the stem and bonnet in axially-slidable engagement therebetween to maintain the pivot axis of the roller parallel to the pivotal axis of the support arm for the valve disc, said arm having a curved surface engaged by the roller and over which the roller moves as the stem advances, a tangent to said surface at the point of contact with the roller remaining substantially perpendicular to the stem over the range of movement of the roller along the arm as the valve disc is moved from open to closed position, the roller engaging the arm substantially in alignment with the pivotal connection between arm and valve disc when the disc is in closed position.

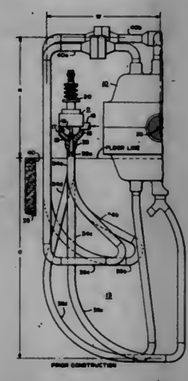
3,190,612
ELASTIC FLUID FLOW CONTROL APPARATUS

Joseph D. Conrad, Sr., Springfield, and Ozro N. Bryant, Nether Providence Township, Delaware County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 5, 1963, Ser. No. 262,948
5 Claims. (Cl. 253—39)

1. Steam flow control apparatus comprising
a steam turbine,
a foundation upon which said turbine is rigidly mounted,
said steam turbine including an inner and an outer casing,

a nozzle box disposed within said inner casing,
said nozzle box defining a nozzle chamber having an inlet of circular cross-section and an outlet of arcuate shape,
tubular structure of substantially uniform cross-sectional flow area extending through said outer casing and said inner casing and received in said nozzle box inlet,
said nozzle box defining a diffusion passageway interposed between said nozzle box inlet and said nozzle chamber;
a steam control valve structure rigidly mounted on said foundation,
said valve structure including
a valve body having a port,
conduit means for admitting steam at a high initial pressure to said valve body, and
a movable valve member associated with said port for controlling flow of steam from said steam chest,



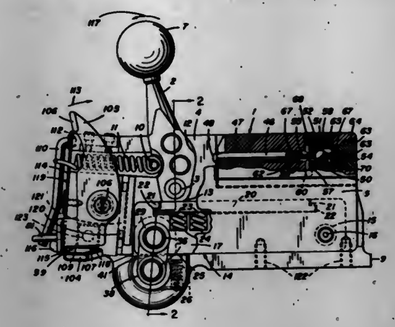
said valve member and said port having a cross-sectional area of sufficiently small value to cause steam to flow therethrough at a high initial velocity with attendant initial pressure drop,
metal piping providing a flow passage from said valve port to said tubular structure for conducting steam from said valve body to said nozzle chamber,
said piping being rigidly connected to said valve body at one end and to said outer casing at its other end and having a substantially uniform cross-sectional flow area substantially equal to that of said tubular structure,
whereby steam is conducted through said piping and tubular structure into said outer and inner casings at substantially the initial velocity;
said piping including at least one expansion loop; and
said diffuser means having a smoothly diverging passageway to convert the high velocity to pressure and recover the major portion of said initial pressure drop.

3,190,613
MECHANISM FOR ACTUATING POWERED WIRE TENSIONING DEVICE

Harold K. Embree, Hamilton, Ontario, Canada, assignor to Ovalstrapping Limited, Toronto, Ontario, Canada

Filed Dec. 16, 1963, Ser. No. 330,721
5 Claims. (Cl. 254—51)

1. A wire tensioning device comprising a first tensioning roll, a second tensioning roll mounted on a pivoted arm for movement relative to said first roll, operating means including a hand operated lever for pivoting said arm thereby to move said second roll from an inoperative position towards said first roll to an operative wire engaging position, said operating means further including a cam surface for controlling a motor which drives said first and second tensioning rolls in opposite directions

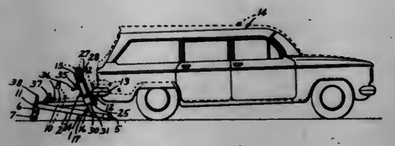


when the second roll is in said operative position, whereby to draw a wire to be tensioned between said rolls.

3,190,614
DEMONSTRATION DEVICE FOR LIFT-TYPE SHOCK ABSORBERS

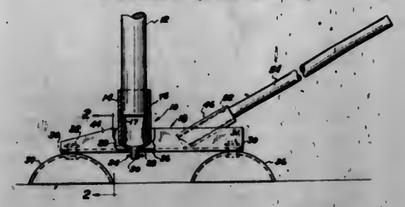
Herbert E. Evers, 415 4th St., Cloquet, Minn., and Howard J. Sunnarborg, Box 89, Esko, Minn.

Filed July 9, 1963, Ser. No. 293,825
3 Claims. (Cl. 254—93)



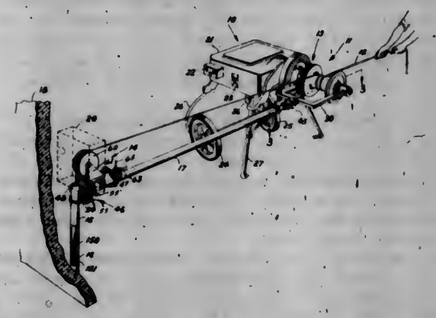
1. In a device for demonstrating the load leveling characteristics of a pair of lift-type shock absorbers of the piston-cylinder type having means associated therewith for introducing a compressible fluid under pressure thereinto and releasing the same therefrom, said device comprising:
(a) a generally rectangular mobile base frame,
(b) a lifting frame having a configuration generally similar to said base frame,
(c) means pivotally securing the rear end portions of said frames together for raising and lowering movements of the front end portion of the latter with respect to the former,
(d) vehicle bumper-receiving cradle means carried by the forward end of said lifting frame rearwardly of said front end portion of said base frame,
(e) laterally spaced upstanding lifting arms carried by the longitudinally intermediate portion of said lifting frame,
(f) means for pivotally securing the upper end portions of one each of one of said shock absorbers to the upper end portions of one each of said arms,
(g) means for pivotally securing the lower end portions of one each of said shock absorbers to the longitudinally intermediate portion of said base frame, and
(h) interconnecting means between said shock absorbers for simultaneously introducing compressible fluid under pressure into and releasing same therefrom to extend and retract same to thereby raise and lower said lifting frame.

3,190,615
MANUALLY-OPERATED TRAILER-MOVING DEVICE
Fred L. Tharp, 22944 Oakwood Ave., East Detroit, Mich.
Filed Feb. 6, 1963, Ser. No. 256,759
8 Claims. (Cl. 254—131)



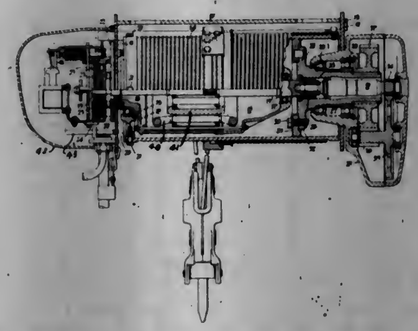
1. A manually-operated trailer-moving device for an uncoupled trailer having at its forward end a depending prop, said device comprising
a base structure,
forward and rearward ground-engaging feet connected to said base structure in longitudinally spaced relationship thereon, said feet extending downwardly from said base structure and constantly maintaining the bottom of said base structure at a level above the bottom of said feet during trailer moving operation of said device,
a trailer prop receiver mounted on said base structure intermediate said feet and adapted to hold the prop,
and an elongated handle lever secured to said base structure in substantially rigid relationship therewith and extending upwardly and rearwardly therefrom, whereby vertical swinging of said handle lever substantially correspondingly tilts said base structure and alternately lifts said feet of the ground.

3,190,616
CABLE THREADING APPARATUS
James F. Oleson, 4120 Lincoln Blvd., Venice, Calif.
Continuation of application Ser. No. 97,385, Mar. 21, 1961. This application Oct. 11, 1963, Ser. No. 316,793
9 Claims. (Cl. 254—134.3)



1. Apparatus for threading a bunched group of wires through a rigid conduit comprising;
a pull line engaged in gripping relationship with one end of the group of wires for aligning the wires in substantially parallel relationship;
a power unit;
a capstan assembly for receiving and winding said pull line whereby the group of wires is threaded through the conduit;
a driving connection between said power units and capstan assembly,
rigid, non-flexing mounting means including a straight thrust member firmly uniting said capstan assembly to the end of the conduit through which generated load forces are transmitted from the capstan assembly to the conduit;
a pulley assembly carried on the end of said mounting means immediately adjacent to the conduit end for directing said line rectilinearly from said capstan assembly into and out of the conduit without the line or group of wires contacting the end of the conduit and said line being substantially parallel to the thrust member,
the path of generated load force transmission to the conduit via said mounting means being substantially parallel to said pull line extending between said pulley assembly and said capstan assembly.

3,190,617
ELECTRICALLY OPERATED HOISTS
Arthur Thomas Charles Burrows, Stevenage, England, assignor to Geo. W. King Limited, Stevenage, England, a British company
Filed May 26, 1961, Ser. No. 112,862
Claims priority, application Great Britain, May 27, 1960, 18,824/60
4 Claims. (Cl. 254—186)



1. An electrically operated hoist comprising a frame including spaced end plates at least one of which is detachable, a hollow winding drum located between said end plates and free of said frame and plates, an electrical motor within said drum and including a cover and a drive shaft rotatable in said cover, transmission means including an outer housing supported on the detachable one of said end plates, said transmission means including an input shaft, means defining a splined connection drivingly coupling the drive shaft of the motor to the input shaft of the transmission means to enable relative axial movement between the drive shaft and the input shaft of the transmission means, a further plate adjacent the other of said end plates and detachably secured to one end of the cover of the motor, said cover being slidably supported at said one end by projecting through a central aperture in the other of the end plates of the frame, a brake unit mounted on said drive shaft and detachably secured to the further plate for exerting braking forces on said drive shaft, a sleeve rotatably mounted on the drive shaft and secured to one end of the winding drum, said sleeve extending within the housing of the transmission means, means rotatably supporting the sleeve within the housing of the transmission means, said transmission means including gearing in driving connection with said input shaft and said sleeve whereby the drive shaft of the motor can drive the gearing of the transmission means while the latter can in turn drive the winding drum via said sleeve, and means rotatably supporting the other end of the drum on the cover of the motor at a location adjacent the said other end plate, said brake unit, transmission means and drum and motor

constituting a rigid assembly supported from said frame only by said two end plates whereby with the further plate detached from the said one end of the cover of the motor, the motor, drum and transmission means may be removed as a rigid unit from the frame by detaching said one end plate and axially sliding said rigid unit in a direction away from said other of said end plates.

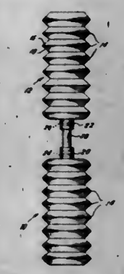
3,190,618
FLUID MIXER
Raphael Katzen, 3735 Dogwood Lane, Cincinnati, Ohio
Filed Apr. 30, 1963, Ser. No. 276,922
10 Claims. (Cl. 259—4)



1. In a fluid mixer having elongated concentric inner and outer tubular members defining an elongated annular mixing space therebetween with means at one end of said outer tubular member for introducing a first fluid into said mixing space, discharge means at the opposite end of said outer tubular member for withdrawing a fluid mixture from said mixing space, and means for introducing a second fluid from said inner tubular member into said mixing space adjacent said one end of said outer tubular member whereby said fluids are adapted to flow together through said mixing space towards said discharge means; the improvement which comprises a plurality of inclined semi-elliptical baffles extending between said tubular members within said mixing space, said baffles being spaced along the length of said mixing space at alternating generally opposed angles of inclination with respect to the longitudinal axis of said tubular members and being oriented alternately so as to block different circumferential halves of said mixing space whereby to provide a tortuous flow path for said fluids involving repeated impingement on and diversion by said baffles.

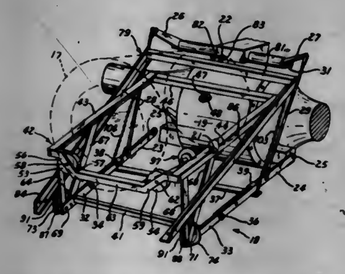
3,190,619
FLUID MIXING CONTAINER ASSEMBLY
Theodore B. Penney and Alfred R. Tavarozzi, Somerville, and Richard R. Knittel, Long Valley, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed May 27, 1963, Ser. No. 283,169
4 Claims. (Cl. 259—54)

1. An apparatus for mixing fluids within a pair of containers comprising; a first resiliently compressible container formed of a plurality of interconnected, compressible resilient bellows having an interior chamber and a second resiliently compressible container formed of a plurality of interconnected, compressible resilient bellows having an interior chamber; a first fluid within the interior chamber of said first compressible container and a second fluid within the interior chamber of said second compressible container, the maximum volume of the interior chambers of each of said compressible containers being at least equal to the volume of said first and said second fluid in combination; means for providing communication between the interior chamber of said first container and the interior chamber of said second container, whereby applying pressure to the walls of one



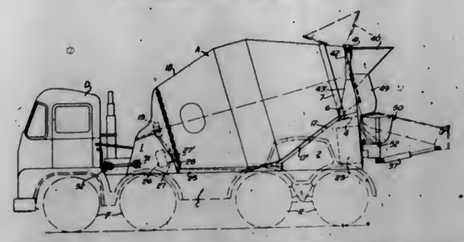
compressible container decreases the internal volume of said one container and causes the fluid within said one container to transfer to the other container and combine with the fluid within said other container, and applying pressure to the walls of said other compressible container decreases the internal volume of said other container and causes the combined fluids to transfer to said one container.

3,190,620
TRACTOR MOUNTED BULK MATERAL MIXER
Paul J. Saveraid, Cambridge, Iowa, assignor of fifty percent to Arthur J. Saveraid, Cambridge, Iowa
Filed July 17, 1963, Ser. No. 295,730
15 Claims. (Cl. 259—171)



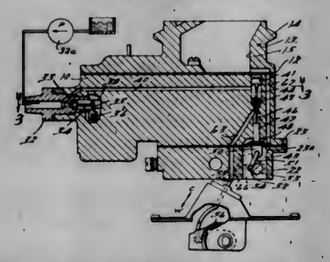
1. A bulk material mixer for use with a tractor equipped with a power take-off drive, vertically movable pivoted draft links and a control link pivot comprising:
(a) barrel means movable from a mix position wherein a portion of the barrel means is in driven engagement with said power take-off drive to a dump position,
(b) first frame means mounted on the draft links and having a section extended rearwardly from said draft links,
(c) second frame means pivotally mounted on the extended section of the first frame means,
(d) means on said second frame means for rotatably supporting said mixing barrel,
(e) control link means pivotally connected to the control link pivot and extended rearwardly from said pivot, and
(f) means operative to connect the control link means and the second frame means whereby upon upward movement of the draft links the second frame means pivots on the first frame means moving the mixing barrel to the dump position.

3,190,621
TRANSIT MIXER
Rowland Percy Green and Harold Raymond Cowley, Bath, Somerset, England, assignors to Stothert & Pitt, Limited, Bath, Somerset, England, a company of the United Kingdom
Filed Feb. 6, 1963, Ser. No. 256,569
16 Claims. (Cl. 259—177)



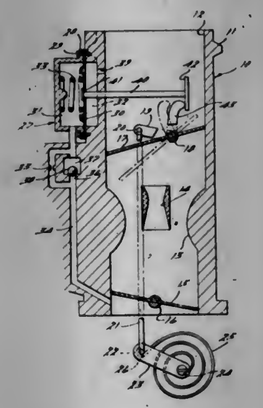
1. A truck mixer having a wheeled chassis and a mixing drum suspended for rotation about a fore and aft axis on the chassis, said drum comprising a cylindrical container which is closed at its end forward of the chassis and provided with an opening for discharge of its contents to the rear of the chassis, the means of suspension for the drum including front and rear pedestals arranged respectively adjacent the front and rear ends of the chassis, a two-part housing comprising a lower part fast with said front pedestal and an upper part detachably secured to said lower part, said two parts together providing a spherical internal seat, a journal at the forward end of said drum in vertical alignment with the axis of said chassis, a bearing assembly for supporting said journal on said housing and comprising an externally spherical bearing element mounted in said spherical internal seat and roller bearings within said spherical bearing element and rotatably supporting said journal, and roller bearings on the rear pedestal spaced transversely of said axis having rolling engagement with the drum at its rear end.

3,190,622
CARBURETOR COLD START AND WARM-UP MECHANISM
Jorma O. Sarto, Orchard Lake, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 17, 1961, Ser. No. 110,822
5 Claims. (Cl. 261—34)



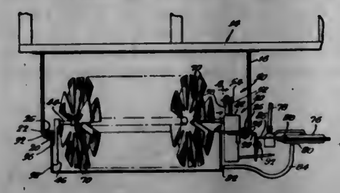
1. In a chokeless fuel charging means having an induction conduit for supplying a fuel-air mixture to an internal combustion engine, fuel inlet means for supplying fuel to said fuel charging means, means for supplying starting and warmup enrichment fuel to said conduit comprising a bypass fuel duct in communication with said inlet means and discharging into said conduit, a control valve in said bypass duct, actuating means responsive to predetermined operation of said engine and operably connected with said control valve to actuate the latter to control the fuel flow in said bypass duct, biasing means yieldingly urging said control valve to a closed position to block fuel flow in said bypass duct when said engine is inoperative, and means responsive to the fuel pressure at said inlet means upstream of said control valve when said engine is operating and being effective to overpower said biasing means to enable actuation of said control valve in response to operation of said actuating means.

3,190,623
AUTOMATIC CHOKE FOR CARBURETOR
Thomas M. Ball, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Aug. 1, 1961, Ser. No. 128,412
2 Claims. (Cl. 261—39)



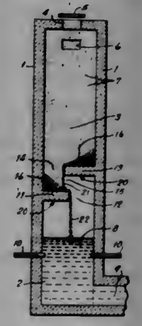
1. In a fuel charging system for an internal combustion engine, an air inlet induction conduit, a choke valve in said conduit pivotal between open and closed positions and having an integral element pivotal coaxially therewith, a throttle valve in said conduit downstream of said choke valve, temperature responsive means for yieldingly urging said choke valve toward said closed position during operation of said engine in a cold condition, and operating means responsive to the position of said throttle valve to reduce stalling of said engine during the first few seconds after being started in said cold condition and for opening said choke valve to a predetermined position to operate said engine immediately after said first few seconds, said operating means including a reciprocable plunger separable from said choke valve and adapted to move in one direction into engagement with said integral element to pivot said choke valve to said predetermined position and being separate from said element to enable pivoting of said choke valve toward its open position independently of said plunger, means yieldingly urging said plunger oppositely from said one direction, pressure actuated means responsive to a predetermined operating pressure, equal to the low pressure in said conduit at a location downstream of said throttle valve when the latter is closed and said engine is idling, for moving said plunger in said one direction into said engagement with said element to pivot said choke valve to said predetermined position, duct means for connecting said conduit at said location with said pressure actuated means to supply said operating pressure to the latter, and a time delay restriction in said duct means to retard transmission of said operating pressure to said pressure actuated means to delay opening of said choke valve for said first few seconds.

3,190,624
HUMIDIFIER AND DEODORIZER
Elmer J. McElreath, Glen Ellyn, Ill., assignor to Hamilton Humidity, Inc., Chicago, Ill., a corporation of Illinois
Filed July 6, 1961, Ser. No. 122,303
7 Claims. (Cl. 261—92)



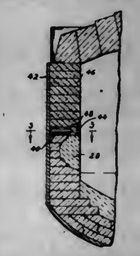
5. An evaporative humidifier adapted to be supplied as a portion of a hot air furnace system comprising: means providing an air duct having a horizontal portion, a water reservoir disposed below the horizontal portion, said reservoir being open at the top to communicate with the space within said horizontal duct portion, a shaft mounted for rotation with its axis horizontal and in an attitude transverse to the direction of air flow through said duct portion and adjacent the top of said reservoir, a plurality of parallel discs of water-absorbing material and secured to said shaft, the lower portions of the discs extending into the reservoir for absorbing water and the upper portions of said discs extending into the duct horizontal portion for the evaporation of water from said discs, drive means connected for rotating said shaft slowly, said discs having a plurality of equi-angularly spaced radial slots to provide a plurality of separate fingers, and the material of which said discs are formed being sufficiently flexible so as to cause said fingers to vibrate under the influence of an air stream passing through said duct horizontal portion.

3,190,625
PREHEATING PROCESS AND APPARATUS FOR VITRIFIABLE COMPOSITION
Edgard Brichard, Jumet, Emile Plumat, Gilly, Pierre Eloy, Lodelinsart, Alfred Jacobs, Montigny-sur-Sambre, and Maurice Boffe, Fleurus, Belgium, assignors to Glaverbel, Brussels, Belgium, a Belgian company
Filed Sept. 3, 1964, Ser. No. 394,171
Claims priority, application Belgium, Feb. 7, 1961, 477,301
12 Claims. (Cl. 263—11)



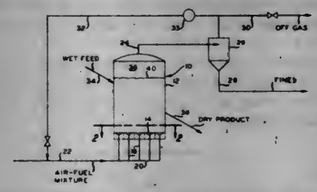
1. In a process for preheating a vitrifiable composition within a melting furnace by passing hot fumes emanating from a melting compartment including molten material countercurrently to said composition in a vertically-positioned, unobstructed, preheating shaft above said melting compartment, the improvement in combination therewith comprising feeding said composition at the top of said preheating shaft in such a manner that said fed composition falls freely in a dispersed condition through substantially the entire cross-section and length of said preheating shaft, separating and shielding said preheating shaft from radiation of said melting compartment with a substantially horizontal screen positioned therebetween and reflecting said radiation to said melting compartment from the lower surface of said screen.

3,190,626
SUPPORT MEANS FOR A REFRACTORY LINED FURNACE
William E. Schwabe, Niagara Falls, and Arnold Z. Sleeper, Bronxville, N.Y., Loren E. Bacon, Ramsey, N.J., and Charles A. Tsunis, Westport, Conn., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,191
2 Claims. (Cl. 263—46)



2. An electric arc steel-making furnace comprising a furnace shell wall having a lower ceramic refractory brick lining and an upper carbonaceous refractory brick lining about the interior of said shell wall, said linings abutting each other above the slag line of said furnace, a plurality of metallic studs secured to said furnace shell wall forming a supporting member for said upper carbonaceous brick lining, each of said bricks of the lowermost row of said upper carbonaceous lining being substantially supported by at least one of said studs and said studs being shielded by a refractory material and extending radially inward from said furnace wall at least two-thirds of the original thickness of said refractory linings.

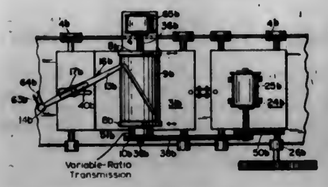
3,190,627
PROCESS AND APPARATUS FOR DRYING SOLIDS
Robert R. Goins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,682
13 Claims. (Cl. 263—21)



1. A fluidized bed dryer comprising in combination (a) an upright cylindrical shell enclosing a single unobstructed drying chamber having means for introducing particulate solids to be dried, means for withdrawing dried solids, and means in its top section for withdrawing gases; (b) a plurality of gas-fired radiant burners in the lower section of said chamber comprising upwardly-facing bowls providing substantial radiant surface for burning fuel gas thereon and means for burning said gas, said burners being the principal heat source within said chamber and combustion gas therefrom venting into said cham-

ber to supply fluidizing gas for solids; and (c) means for supplying fuel and air to said burners.

3,190,628
CUTTING APPARATUS FOR AN I-BEAM
Franz Litzka, Haus 3, Marktredwitz, Germany
Filed May 3, 1962, Ser. No. 193,073
4 Claims. (Cl. 266—23)



1. An apparatus for severing the generally horizontal web of an I-beam along an undulating pattern, comprising:

carriage means displaceable longitudinally upon said I-beam and having first and second wheel means rollingly engaging opposite flanges of said I-beam, respectively, for supporting said carriage means upon said I-beam;

a cylindrical groove cam journaled on said carriage means and formed with an endless peripheral undulating camming channel, said cylindrical groove cam having an axis of rotation extending generally parallel to said web and transversely to the direction of displacement of said carriage means;

a lever fulcrumed on said carriage means for pivotal movement generally parallel to said web at a pivotal portion having an axis transverse to said web and having a cam-follower portion slidably engaging said groove;

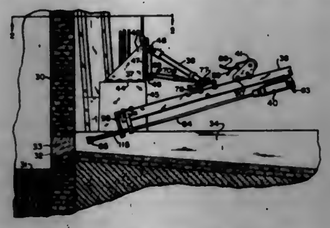
web-severing means mounted upon a further portion of said lever remote from said pivotal and cam-follower portions for displacement by said lever across said web to describe an undulating pattern conforming to that of said channel;

pattern-amplitude-adjusting means at one of said pivotal and cam-follower portions for varying concurrently both the distance between said pivotal portion and said other portion and the distance between said cam-follower portion and said other portion, thereby regulating the ratio between said distances and controlling the amplitude of the pattern obtainable with said cylindrical groove cam; and

drive means including a variable-ratio transmission interconnecting said cam and one of said wheel means for concurrently displacing said carriage means along said I-beam and rotating said cam, said cam being rotatable at selectively variable rates relative to the rate of displacement of said carriage means by said transmission for controlling the period of undulation of said pattern.

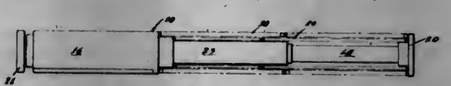
3,190,629
BLAST FURNACE TAPPING RIG
John D. Draper, Milwaukee, Wis., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1960, Ser. No. 76,405
6 Claims. (Cl. 266—42)

1. A blast furnace tapping rig comprising, a pneumatically operable percussion drill, a drill carrier member supporting said drill for axial movement to and from extended and retracted positions, means including a swingable arm for supporting said carrier member and said drill in the vicinity of the iron notch of the furnace for swinging movement from a position above and laterally of the iron notch to a position in which the drill bit is adjacent the iron notch and in fixed axial alignment with the hole to be tapped when the drill is in its retracted position, a control station located within viewing distance of the furnace remote from the iron notch vicinity, means controlled from said station for effecting swinging movement of said carrier member and said drill from one of its said positions to the other of its said positions, means at said station for also feeding



operating fluid to said drill to control the percussive operation thereof, a fluid motor fixedly mounted on said carrier member rearwardly of said swingable supporting arm, a chain connection between said motor and said drill for moving said drill axially along said carrier member to and from its extended and retracted positions, and means at said station for feeding pressure fluid to said motor to control the movement of said drill in both directions.

3,190,630
HYDRAULIC BUFFER
Rollin Douglas Rumsey, Buffalo, N.Y., and Andrey L. Zanow, Cleveland, Ohio, assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan, and National Castings Company, a corporation of Ohio
Filed Dec. 8, 1961, Ser. No. 157,981
17 Claims. (Cl. 267—1)

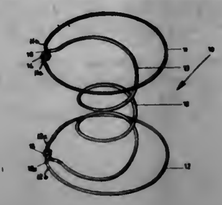


1. An hydraulic buffer adapted to be connected between a pair of relatively movable members comprising a cylinder, a piston in said cylinder, a piston rod on said piston extending outwardly of said cylinder, means for mounting the cylinder and the piston rod in free-swiveling relation to the pair of movable members including a follower retained in swivelling relation on the outer end of the piston rod by an axially extending stud, a reservoir housing surrounding the cylinder and defining a reservoir, spring means engaging the reservoir housing and said follower for free swiveling mounting of the piston rod relative to the movable member with which the follower is associated and urging the piston away from the cylinder, and means for metering fluid from the cylinder to the reservoir and to an area back of the piston, in response to closing action of the piston and means for metering fluid from the area back of the piston to the cylinder in response to return action of the piston to afford a two-way damping action.

3,190,631
COIL SPRING LOCK
Martin Kaiser, 66 Spencer Ave., Toronto, Ontario, Canada
Filed Dec. 24, 1962, Ser. No. 246,735
2 Claims. (Cl. 267—1)

1. An upholstery spring comprising: an upper end coil of substantially circular configuration; a lower end coil

of substantially circular configuration, the planes of said end coils being substantially parallel and substantially at right angles to the longitudinal axis of said spring; successive coils between said end coils; a free end of each one of said end coils wound about the juncture of an adjacent one of said successive coils and said end coil to form a knot; a first bend in both said end coils adjacent



said knots, said first bends being formed in a direction substantially in a plane parallel with said spring axis; and a second bend in both said end coils adjacent the opposite side of said knots, said second bends being formed in a direction substantially in a plane at right angles to said spring axis, both said first and second bends co-operating in securing said knots against movement on said coils thereby to maintain the dimensions of said spring.

3,190,632
SPRING ARRANGEMENT
Béla Barényi, Stuttgart-Valhingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Mar. 15, 1963, Ser. No. 265,473
Claims priority, application Germany, Mar. 20, 1962, D 38,406
14 Claims. (Cl. 267—1)



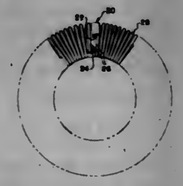
1. A spring arrangement constituted by a single individual leaf spring of rhomboidal shape,

said leaf spring having a wall thickness that increases in directions toward the mid-portion of the spring,

said mid-portion being provided with eye means extending lengthwise through said mid-portion in the longitudinal plane of the spring in a direction transverse to the lengthwise dimension of the spring,

and securing means including bolt means extending through said eye means.

3,190,633
COIL SPRING JOINT
Charles A. Jack, 4972 Pine, La Mesa, Calif.
Filed Aug. 5, 1963, Ser. No. 299,853
4 Claims. (Cl. 267—1)



2. A combination comprising:

(A) coiled spring structure having:

(1) a coiled end portion,

(2) a second coiled end portion,

(B) an element confined to the major part of a single turn of a helix and having confronting shoulders throughout the length thereof, said shoulders being arranged parallelly of the helix, said end portions being threaded into said element, the diameter of said element longitudinally of the axis of the helix being confined to approximately twice the inside minor diameter of the element transversely of the axis of the helix, and the material forming the coil springs having a diameter approximating the minor inside diameter of the element, the outer diameter of the coiled end portions of the spring structure, which are received by the element, being less than the adjacent parts of the spring structure, and the outside diameter of the element being substantially the same as the diameter of said adjacent parts of the spring structure.

3,190,634
HYDRAULIC BUFFER
Rollin Douglas Rumsey, Buffalo, N.Y., and Andrey L. Zanow, Cleveland, Ohio; said Rumsey assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Mar. 1, 1965, Ser. No. 438,460
20 Claims. (Cl. 267—1)



1. In a hydraulic buffer construction including a housing providing a reservoir therein and having a head portion and an opposite opening,

a working cylinder having one end mounted on said head portion and the opposite end located adjacent to said opening,

an extension cylinder having means thereon to secure it to said housing and in closing relation to said opening,

an end portion of the extension cylinder being telescopically supportingly disposed within the end portion of the working cylinder adjacent to said opening,

and a working piston in bearing relation within said working cylinder between said head portion and the telescoped end of said extension cylinder,

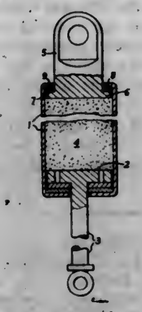
said working piston having a piston rod of smaller diameter than said extension cylinder projecting through and beyond the extension cylinder and provided with a supporting bearing slidably engaging within the bore of the extension cylinder substantially spaced from said working cylinder,

the telescopic disposition of said end portion of the extension cylinder in the working cylinder assuring concentricity of the working cylinder and the extension cylinder.

3,190,635
FLUID PRESSURE DAMPING DEVICES
Ernst Wustenhagen, Koblenz, and Wilfried Ferdinand Roos, Guls (Mosel), Germany, assignors to Stabilus, Industrie- und Handelsgesellschaft m.b.H., Koblenz-Neuendorf, Germany
Filed Jan. 14, 1964, Ser. No. 337,657
1 Claim. (Cl. 267—65)

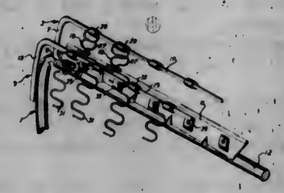
A fluid pressure damping device, the damping medium of which is under high pressure, comprising a cylinder, a piston, a piston rod attached to the piston and extending through a first wall of the cylinder, an end part extending through a second wall of the cylinder, a flange on the end

part within the cylinder, a corresponding annular surface on the said second wall of the cylinder, an elastic sealing ring between the flange and the said annular surface, the dimensions of which ring in the untensioned condition leave an annular gap between the outer surface of the ring and the cylinder free for the filling of the damping



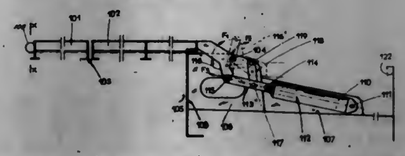
fluid and which ring after the filling of the damping element permanently closes off the annular gap in pressure-tight fashion by the internal pressure of the damping fluid alone, the device having at least one duct located such as to convey fluid from one end of the piston to the other.

3,190,636
SOFT TOP SEAT
Donald L. Ward, Hornchurch, and Alan P. Effeny, Upminster, England, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 12, 1963, Ser. No. 272,757
3 Claims. (Cl. 267—107)



1. In a motor vehicle passenger seat,
a seat back having an upstanding substantially rigid main frame,
said main frame having an upper transverse member extending across the width of said seat back.
a rear border wire secured to and extending upwardly from said main frame in substantially coplanar relationship thereto and having a transverse element extending in substantially parallel spaced relationship to and above said upper transverse member,
a front border wire having a substantially horizontally extending element paralleling said upper transverse member and said rear border wire transverse element at a height therebetween,
said front border wire lying forwardly of said main frame,
and spring elements extending fore and aft of the seat and coupled to said rear border wire transverse element and said horizontally extending element,
said rear border wire transverse element being resiliently deflectable about the longitudinal axis of said main frame upper transverse member toward said front border wire horizontally extending element under substantially forwardly directed force applied to the top of said seat.

3,190,637
CONTROL DEVICE FOR DOORS OR PANELS, NOTABLY FOR CLOSING OPEN SPACES AND THE LIKE
Henri Kummerman, Paris, France, assignor to International MacGregor Organization (I.M.G.O.) Saint Charles, Monte Carlo, Monaco, a body corporate of Monaco
Original application Jan. 14, 1958, Ser. No. 708,834. Divided and this application May 23, 1960, Ser. No. 31,178
Claims priority, application France, Jan. 24, 1957, 730,260, Patent 1,165,282; July 8, 1957, 742,736, Patent 1,178,281
2 Claims. (Cl. 268—75)

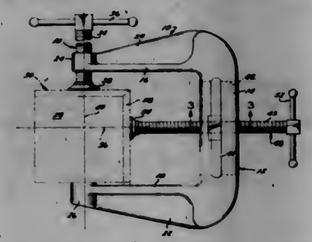


1. A device for controlling pivotally mounted panels intended to open and close an aperture in a horizontal deck of a ship comprising at least one panel, a lug member projecting laterally from said panel, a rigid structure fixed to the ship's deck adjacent the aperture, shaft means pivotally engaging said lug member and said rigid structure so that said panel may be swung thereon 180° between an aperture closing position and an aperture opening position, at least one jack means for actuating said panel to so swing it about said shaft means, said jack means being located adjacent to said shaft means and outside of said aperture and including a cylinder and hydraulically actuated pushing and retractable rod slidably movable in the cylinder, a first pivot pin located at a fixed position outside of said aperture for pivotally mounting said cylinder outside said aperture, first link means pivotally secured at one of its ends to the said pushing and retractable rod and at its other end pivotally secured to said lug member at a point spaced from said shaft means, a second link means acting as a crank arm and having one of its ends pivotally secured to said first link means intermediate the ends thereof, and a pivot pin mounted at a fixed location on said rigid structure to pivotally secure the other end of said second link means thereto, said shaft means, said last-named pivot pin and said second link means all being located above said pushing and retractable rod and said first-named link means when the panel is in the aperture closing position, and said pushing and retractable rod and said first-named link means are then aligned, and wherein in the aperture-closing position of said panel the pushing and retractable rod is fully retracted within said cylinder and the first-named link means then forms an angle of substantially 90° with an axis passing through said shaft means and the pivotal securing point of said first-named link means and said lug member, and wherein in the aperture-opening position of said panel said first-named link means is at an angle of substantially 90° with the axis of said pushing and retractable rod which latter then extends fully outwardly of said cylinder, whereby said panel may be rotated substantially 180° about said shaft means in a change from aperture-closing to aperture-opening positions.

3,190,638
CLAMP
Ward L. Court, 1927 Milan Ave., San Pedro, Calif.
Filed Nov. 4, 1963, Ser. No. 321,023
1 Claim. (Cl. 269—248)

A C-clamp comprising:
a generally C-shape frame having an elongated body and a pair of spaced jaws integral with and extending transversely of said body to define a space for

receiving a workpiece, said body having a first channel oriented along a longitudinal axis and extending through the thickness of said body, said body further having a second channel oriented along a longitudinal axis and extending through the width of said body and through said first channel;
a first screw element threadedly mounted upon one of said jaws and operative to apply clamping pressure along a first axis substantially parallel to the longitudinal axes of said first and second channels for holding a workpiece between said jaws;
a traveling nut slidably movable within said first channel and including a threaded opening extending along



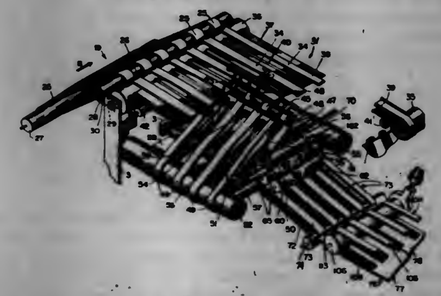
a second axis perpendicular to and intersecting said first axis and passing through said second channel, said nut having a flange located exteriorly of said first channel in overlying relation to said body for engagement therewith to prevent said nut from rotating about said second axis, said nut otherwise having a thickness slightly less than the width of said first channel whereby said nut is adapted for slidable insertion into siad first channel during assembly;
and a second screw element extending along said second axis and threaded through said opening of said nut, said screw element being freely movable within said second channel and operative to apply clamping pressure to a workpiece along said second axis.

3,190,639
WEB FOLDING APPARATUS
Bernard W. Johnson, Rochester, and Stanley Q. Grady, Webster, N.Y., assignors to Addressograph-Multigraph Corporation, a corporation of Delaware
Filed July 23, 1963, Ser. No. 297,065
7 Claims. (Cl. 270—61)



1. In an apparatus for making copies of an original on continuous copy material formed of successive fan-folded spans joined along fold lines, first guide means inclined generally downwardly in the general direction of the feed of the copy material, second guide means inclined downwardly in the general direction of the feed of the copy material and disposed below the first guide means to define a tapered converging throat the exit end of which is narrower than the length of a span; copy material receiving means positioned forwardly of the throat in the direction of the path of travel of said copy material and including a stop disposed forwardly of said throat and a rear stop spaced from said front stop by a distance equal to the length of a span and spaced from said first guide means less than the length of a span and positioned below the exit of said throat, and conveying means for moving the copy material against the first guide means so that alternate ones of the spans are buckled in the throat between the first and second guide means and propelled into the receiving means by the conveying means to cause the spans of the copy material to be stacked above each other with successive fold lines disposed on opposite edges of the stack.

3,190,640
FOLDING MACHINE
Robert L. Sjostrom, Boca Raton, Fla., assignor to Sjostrom Automations, Inc., Boca Raton, Fla., a corporation of Florida
Continuation of application Ser. No. 283,096, May 24, 1963. This application June 1, 1964, Ser. No. 374,873
18 Claims. (Cl. 270—66)



1. A machine for multiple folding a flexible sheet comprising,
a first conveyor means comprising a plurality of spaced endless parallel belts supported on rolls at the forward and rear ends of said machine and providing a portion on which sheets may be moved in a longitudinal forward direction,
a first folding means including a first pair of parallel adjacent rolls supported for opposite rotation on axes parallel to said longitudinal direction with said first pair of rolls positioned below and intermediate adjacent edges of two of said belts,
a second pair of rolls supported for rotation on axes parallel to the axes of said first pair of rolls with said second rolls spaced apart and with both of said second pair positioned below and lateral with respect to said first pair of rolls,
a third pair of rolls supported for rotation on axes parallel to the axes of said second pair of rolls with said third pair of rolls spaced apart farther than said second pair of rolls and with both of said third pair below said second pair,
a first plurality of endless parallel belts encircling one of said first pair and both of said third pair of rolls and bearing against the outer part of one of said second pair of rolls thereby providing one portion of said belts lying normal and in a plane parallel to and below said portion of the belts of said first conveyor means and a second portion extending angularly downwardly from said one of said first pair of rolls,
a second plurality of endless parallel belts encircling the other of said first pair and the other of said second pair of rolls and providing a portion thereof in facing relation with said second portion of said first plurality of belts and extending angularly downward whereby sheets folded by said first folding means will be carried angularly downwardly between said facing portions,
means at the lower part of said facing portions intermediate said second pair of rolls for engaging and redirecting sheets carried angularly downwardly onto said one portion of said first plurality of belts for

movement in a direction transverse to said longitudinal forward direction,

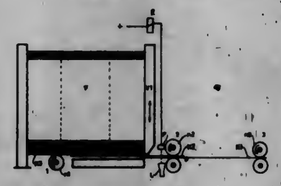
and means for effecting a second fold in said sheets after each has been carried onto said one portion of said first plurality of belts.

3,190,641

FEEDING AND SORTING DEVICE FOR PUNCHED CARDS AND THE LIKE

Erich Elsfeldt, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Oct. 15, 1962, Ser. No. 230,410
Claims priority, application Germany, Oct. 16, 1961, S 76,283
3 Claims. (Cl. 271—41)



1. A device for feeding and transporting like information carriers of the type of punched cards and magnetically marked cards and the like, having a supply of like cards stacked in a magazine at the bottom of which is formed a gap through which the respectively lowermost cards can be withdrawn, and having a plurality of feed-out rollers operating with different peripheral speed for successively accelerating the feed motion of withdrawn cards, whereby cards are transported from rollers operating with lower peripheral speed to rollers operating with higher peripheral speed and wherein said cards, during normal operation, are to be discharged from such magazine two at a time in superposed, mutually staggered relation, comprising sensing means at the exterior of said magazine disposed to sense the presence or absence of at least one card projecting from said magazine, a portion of said magazine defining said card discharge gap being movable into either of two operating positions, in one of which said gap is of a width corresponding to the thickness of two cards, and in the other of which said gap is of a width corresponding to the thickness of one card, means for effecting movement of said magazine portion between said operating positions, said sensing means being operatively connected to said last mentioned means for controlling the latter to provide a gap which will pass two cards from said magazine when the presence of at least one card is sensed by said sensing means, and provide a gap which will pass only one card, in the absence of a card at said sensing means.

3,190,642

DEVICE FOR SEPARATING STACKED SHEETS

Walter S. Smith, Naperville, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

Filed Feb. 28, 1963, Ser. No. 261,808
8 Claims. (Cl. 271—42)



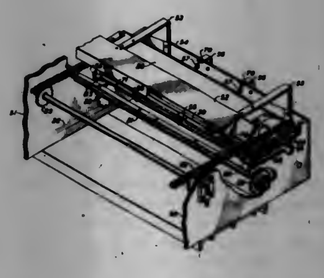
1. In a sheet separating device, in combination, a longitudinal rigid member having a passageway extending from end to end, a slide on the member and having encircling relation therewith, a closure element within the member adjacent the rear and forming a pressure seal for the passageway at said end, a flexible tube of pre determined length, said tube normally including an ap proximately circular outside wall and an inside wall joined by a reverse bend whereby as the tube unfolds the inside wall becomes an outside wall and which thus progressively increases in length, means provided by the slide for clamping and pressure sealing the terminal end of the outside wall to the slide, other means located within the passageway for closing and sealing the terminal end of the inside wall, and connecting means passing through the closure element for operatively connecting the slide to the said other means.

3,190,643

SHEET GUIDING APPARATUS

Gordon P. Tallile, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Mar. 1, 1962, Ser. No. 176,529
2 Claims. (Cl. 271—45)



1. In a xerographic reproducing apparatus including a sheet material conveyor system comprising a pair of endless chains and a gripper mechanism mounted on said chains to grasp the leading edge of a sheet of material and convey it through a path past various xerographic processing stations, a xerographic drum containing a powder image to be transferred to the sheet material and positioned to come into contact with sheet material carried by the gripper mechanism of the conveyor, an electrostatic discharge device positioned beneath the xerographic drum at the point the xerographic drum contacts the sheet material in the conveyor system and adapted to apply an electrostatic charge to the opposite surface of the sheet material from that in contact with the xerographic drum so that the powder on the xerographic drum will be attracted to the sheet material, and a heat fuser positioned adjacent to the conveyor at a point past the xerographic drum to bond the powder to the sheet material, the improvement comprising

a plurality of thin disc shaped members with a series of extended points about the periphery mounted on support brackets at positions along the conveyor with the points of the disc shaped members immediately above the sheet material carried by the conveyor,

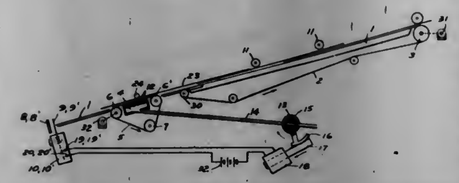
the disc shaped members being rotatably mounted on the brackets so that upon contact with the sheet material they will rotate across the surface of the sheet material making contact only with the extended points about the periphery whereby the sheet material is held in the flow path of the conveyor without causing damage to the powder image on the surface of the sheet material.

3,190,644

SHEET-FEEDING DEVICE

Adolf Schwebel, Offenbach (Main), Germany, assignor to Mabeg Maschinenbau G.m.b.H., Nachf. Heuse & Pleines G.m.b.H. & Co., Offenbach (Main), Germany, a firm

Filed Dec. 12, 1962, Ser. No. 244,195
Claims priority, application Germany, Jan. 27, 1961, M 51,319
6 Claims. (Cl. 271—46)



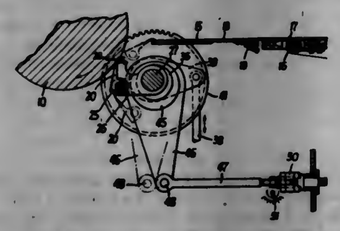
1. A sheet-feeding device for sheet processing machines, said device comprising a main conveyor means for feeding sheets placed thereupon along a feed path, marker means at the end of said feed path spaced therefrom by a gap, an auxiliary conveyor means disposed in said gap for feeding sheets from the end of said feed path toward abutment with said marker means, said auxiliary conveyor means feeding sheets placed thereupon at a lower rate of feed than said main conveyor means, an aligning means disposed in said gap, said aligning means including a pair of normally actuated but releasable sheet gripping means disposed spaced apart transverse of the direction of travel of the sheets on said conveyor means, and a control means including a release means for each of said gripping means, said release means being disposed transversely spaced apart anterior of the marker means for engagement with the leading edge of the foremost sheet, engagement of said leading edge with both release means effecting release of both gripping means and engagement of said leading edge with one release means due to misalignment of the sheet effecting release of the respective gripping means only, whereby the misaligned sheet is caused to turn about the still actuated gripping means as fulcrum into a position of alignment in which the second release means is also engaged for effecting release of said still actuated gripping means.

3,190,645

SHEET-FEEDING DEVICE FOR PRINTING PRESSES

Robert Reinartz, Augsburg, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg, A.G., Augsburg, Germany, a corporation of Germany

Filed Jan. 3, 1962, Ser. No. 164,186
Claims priority, application Germany, Jan. 28, 1961, M 47,832
3 Claims. (Cl. 271—51)



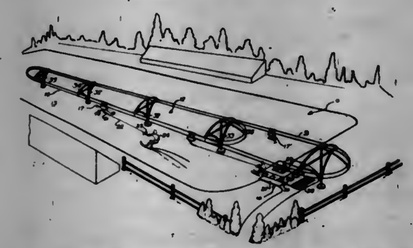
1. In a printing press sheet-feeding mechanism of the character described for feeding individual sheets of paper to be printed from a feed table to an impression cylinder for engagement with sheet grippers thereon, the combination which comprises swinging pre-gripper means for gripping an edge of a sheet paper on said feed table at one edge thereof and leading it to the surface of said impression cylinder for engagement with said grippers thereon, means for mounting said pre-grippers below said feed table for swinging movement back and forth between said edge of said feed table and said impression cylinder, drive means for swinging said pre-grippers intermittently along one path from said feed table to said cylinder and a different path returning from said cylinder to said table, and means for adjusting both said paths horizontally with respect to said cylinder but without vertical or horizontal displacement with respect to said feed table at the point in said swinging movement where said pre-grippers are adjacent said edge of said feed table, said adjusting means being disposed substantially perpendicularly below said edge of said feed table for horizontal displacement of the axes of said swinging movement of said pre-gripper means.

3,190,646

WATER SKIING FACILITY

Arnold H. Forsman, 347 Ilo Lane, Danville, Calif.

Filed July 25, 1961, Ser. No. 126,661
5 Claims. (Cl. 272—32)



3. In a water ski towing system, a plurality of tow units, each of said ski tow units comprising a wheeled truck for rollably engaging an overhead rail, a body housing depending from said truck, motive means carried within said housing and coupled in driving relation to the wheels of said truck independent motive control means attached to said motive means for individually controlling each of said tow units, a tow arm depending from said housing, and a tow rope extending from said tow arm.

3,190,647

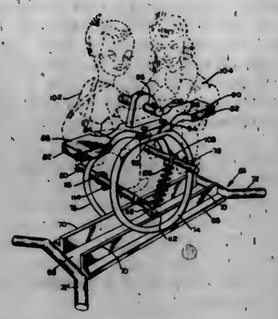
SPRING MOUNTED AND ROLLING EXERCISE TOY

Frances H. Songer, 2722 Cove Circle NE., Atlanta, Ga.

Original application Mar. 17, 1959, Ser. No. 799,872, now Patent No. 3,046,011, dated July 24, 1962. Divided and this application Dec. 15, 1961, Ser. No. 168,568
4 Claims. (Cl. 272—56)

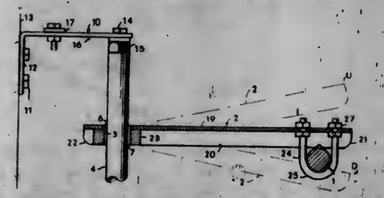
4. In a rolling toy exercise device a base member normally resting substantially flat upon the ground, guide means on said base member, a rolling member comprising a circular member mounted on said base member adjacent and controlled by said guide means, an elongated child's seat board on the top of said rolling member having a child's seat on each end thereof, first spring means resisting the rolling movement of said device in one direction thereof, another opposing spring means resisting the rolling movement of said device in the other direction thereof, whereby said device rolls in said guide and is limited in forward and reverse movement by the resistance of said spring means, said circular member being sufficient in length measured along the circumference to permit a child on the seat board to pass beyond the normal vertical when moving from a down to an up position against

the action of said spring means in one direction and against said opposing spring means in the other direction, thereby allowing a child to accomplish the sensation of rolling over on his head as he propels the device from one direc-



tion upwardly and over beyond the vertical in the other direction, and in like manner permitting the child on the other side to return the device in the other direction and to experience the same sensation.

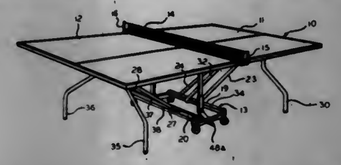
3,190,648
TORQUE LOCK EXERCISE APPARATUS
Thomas Kallenbach, Elmhurst, N.Y.
(Box 704, East Setauket, N.Y.)
Filed May 21, 1962, Ser. No. 196,417
1 Claim. (Cl. 272—79)



Torque lock exercise apparatus comprising a pair of stationary vertical cylindrical posts disposed in parallel laterally spaced relationship, a pair of torque lock bars each having a hole in its rear area presenting a cylindrical wall surface in surrounding relation to a separate one of the posts, there being slight play of equal degree between each post and the opposed wall area of the related hole whereby each torque lock bar is capable of being tilted in a vertical plane relative to its post to an extent as determined by the degree of such existing play, and a horizontally disposed pressure bar mounted transversely of the forward ends of such torque bars wherein the pressure bar has limited turning movement in its mounting relative to the torque bars, a pair of sleeves is removably fixed upon the pressure bar, each sleeve presenting in the same plane a flat shoulder in close spaced relation to the underside of a separate one of the torque bars whereby slight turning of the pressure bar in either direction abuts the shoulder of each sleeve against the related torque bar to transmit a component of force angularly upon the torque bars.

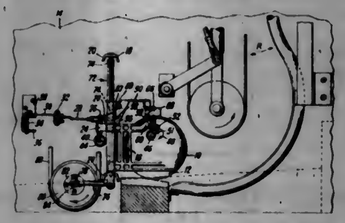
3,190,649
FOLDABLE GAME TABLE
Harold Heisler, Plainfield, Ill., assignor to Midwest Folding Products Mfg. Corp., Roselle, Ill., a corporation of Illinois
Continuation of application Ser. No. 841,323, Sept. 21, 1959. This application Feb. 1, 1962, Ser. No. 170,374
4 Claims. (Cl. 273—30)

2. In a table structure, a pair of table sections, underframe structure supporting said sections for selective movement between a position of use in which the sections are longitudinally aligned in substantially planar relation and a folded position of storage in which said sections are oriented in facing, substantially parallel adjacency, a pair of brackets respectively supported by said table sections for pivotal movement about longitudinally extending axes between a first position corresponding to the position of use of said sections in which the brackets are disposed laterally outwardly of the longitudinally edges of said table and a second position corresponding to the folded



position of said sections in which the brackets are disposed inwardly of such longitudinal edges, and linkage connecting said brackets with said frame structure to effect such pivotal movement of said brackets, said linkage comprising cam structure connected with said sections along the adjacent transverse edges thereof for drawing said edges toward each other when the sections are moved into the position of use thereof and for displacing such edges from each other when the sections are folded, said brackets being responsive to the movement of said cam structure for effecting the aforesaid pivotal movement of said brackets.

3,190,650
BALL DOOR WITH POSITIVE CLOSING MECHANISM
John Zuercher, Mansfield, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 14, 1962, Ser. No. 202,560
16 Claims. (Cl. 273—49)

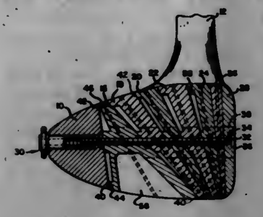


7. Bowling ball handling and return apparatus for use with a bowling alley having a pit at one end, kickbacks at opposite sides of said pit, one of said kickbacks being provided with a ball opening through which balls roll out of said pit, said apparatus comprising a door, supports mounting said door for movement into and out of closed position in said opening, means normally urging said door to closed position in said opening, and other means for positively moving said door to closed position when a bowling pin obstructs the movement of a bowling ball through said opening, and mechanism for actuating said last-named means to cause said door to push said pin back into said pit.

3,190,651
GOLF CLUB INCLUDING DETACHABLE BALL STRIKING FACES OF VARIOUS LOFTS
Albert E. W. Thomas, 146 Waldorf Drive, Dayton, Ohio
Filed Sept. 10, 1962, Ser. No. 222,476
9 Claims. (Cl. 273—79)

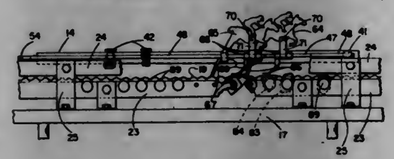
1. A golf club arrangement comprising; a shaft, a head fixed to the lower extremity of the shaft and projecting

laterally therefrom, said head having a notch in the side opposite the shaft with a forwardly facing back wall and a side wall extending forwardly from one edge of the back wall, a plurality of angular, complementary segments receivable in said notch in stacked relation in supporting engagement with said walls, and fastening means extend-



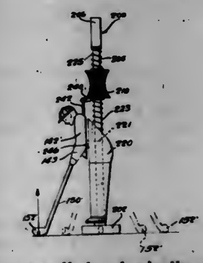
ing completely through said segments and head in the region of the center thereof and detachably engaging said segments for detachably holding said segments in stacked, operable position in said notch, each segment having a front or outer face presenting a different angle to the vertical.

3,190,652
RACING GAME APPARATUS
Walter D. Dunn, 28 Evelyn Place, Malden, Mass.
Filed Aug. 16, 1962, Ser. No. 218,215
5 Claims. (Cl. 273—86)



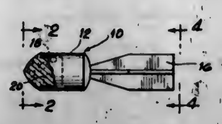
1. A competitive race track game comprising
(I) a stationary horizontal foundation,
(II) a stationary horizontal elevated track assembly provided with a continuous undulatory track bed positioned above said foundation, and having a straight back stretch, a straight home stretch, a semicircular near turn and a semicircular far turn,
(IIA) said track comprising a multiplicity of stationary parallel undulatory strips, spaced from each other on transverse track bed supports, said track assembly being provided with belt supporting free-wheeling pulleys positioned vertically adjacent said track bed supports, an outside track rail, adapted to support the lead bar of a flexible movable chassis positioned above said track bed, and an outside track guide positioned adjacent said outside track rail,
(III) a multiplicity of horizontal revolvable free-wheeling retarder bars provided with fixed vertical protruding impingement fingers positioned between said foundation and said track bed, said fingers being rigidly attached to said retarder bars and extending upwardly between the spaces separating said undulatory strips and being adapted to impinge directly on slidable game pieces,
(IIIA) said retarder bars being transversely positioned across said back stretch and said home stretch,
(IV) said movable chassis comprising a continuous flexible belt and rider monorails superimposed horizontally above said track bed and adapted to be moved as a unit in a horizontal plane parallel to said track bed and to follow the contour of said track,
(V) and a multiplicity of slidable game pieces positioned unattached on said chassis and adapted to be intermittently contacted by said fingers to retard the forward motion of said pieces by varying indeterminate amounts, said pieces being provided with a hinged portion adapted to be moved up and down by contact with said undulatory strips.

3,190,653
STRIKER ASSEMBLY FOR PROJECTING GAME ELEMENTS
Otto Karthaus, Apt. 28, 40 Clearview Heights, Toronto, Ontario, Canada
Filed Oct. 29, 1962, Ser. No. 233,656
Claims priority, application Canada, Nov. 8, 1961, 835,561, Patent 648,654
3 Claims. (Cl. 273—87.4)



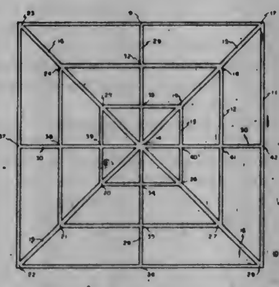
1. A physically-controlled, physically-supported and physically-manipulated striker assembly for simulating the movements of the club or stick of a game such as golf or hockey or the like, comprising;
detached support means for engagement on and physical movement over a horizontal game board surface;
bearing means on said support means;
said bearing means comprising a vertically extending shaft terminating at the uppermost portion of said assembly; and
an operator-controlled-and manipulated striker means on said shaft;
said striker means comprising a sleeve journaled on said shaft and freely rotatable thereon in a horizontal plane by manipulation of and physical engagement by a user's fingers;
said striker means comprising a lower, laterally projecting portion movable in said horizontal plane with rotation of said sleeve for striking a game element,
said sleeve being vertically, displaceably mounted on said vertically extending shaft,
said support means comprising a base element having a lower planar surface,
said striker means including a surface on said laterally projecting portion in substantially coplanar relation with the lower planar surface of said base element;
said vertically extending shaft including an uppermost, finger-receiving portion extending transversely of said vertical shaft at the upper terminal end thereof, said striker means including a lower mounting portion secured to said sleeve for rotation therewith on said vertically extending shaft, an upper body portion journaled on said lower mounting portion on a pivotal axis normal to said vertically extending shaft, said upper body portion including said lower, laterally projecting portion of said striker means, and
force-transmitting cam means on said upper body portion, means engaged between said cam means and said sleeve for pivoting said upper body portion with respect to said lower body portion when said sleeve is reciprocated on said shaft.

3,190,654
TARGET HIT-INDICATING GAME
John T. Ross, 2353 Exmoor Ave., Highland Park, Ill.
Filed Apr. 23, 1962, Ser. No. 189,390
3 Claims. (Cl. 273—102.1)



1. In the combination of a projectile, a blowgun adapted to impel said projectile, and a target, said projectile comprising a head portion and said target including a surface portion, said head portion being porous and retaining water within its pores, said water being releasable onto said target when said blowgun is operated to cause said projectile to strike said target, said surface portion of said target including a water reactive material comprising a water soluble dye which forms a visible spot when said water is so-released whereby a visible indication of the location of impact is provided.

3,190,655
GAME BOARD HAVING CONCENTRIC CLOSED PATHS CONNECTED BY LINEAR PATHS INTERSECTING AT CENTER
Thomas Louie, 601 Harless Place, West Hempstead, N.Y.
Filed Aug. 12, 1963, Ser. No. 301,281
3 Claims. (Cl. 273—131)

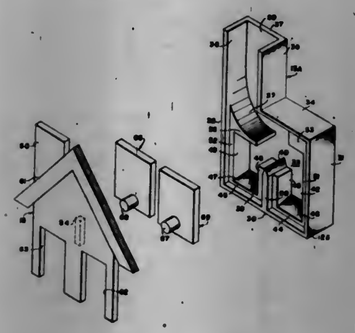


1. A board game comprising
(a) a playing board having
(1) first, second, and third concentric closed paths thereon, said first closed path being the farthest of said paths from the center of said concentric paths, said third path being the closest to said center, and said second path being at a distance from said center intermediate that of said first and third paths, and
(2) fourth, fifth, sixth and seventh angularly displaced paths intersecting at said center and connecting diametrically opposite points on said first path, each intersection of two or more of said paths being defined as a point, and
(b) first and second sets of playing pieces, each playing piece in each of said sets having a first portion and a second portion, means whereby said first and second portions may be selectively exposed to view, the first portions of the playing pieces in each set bearing a marking distinctive of that set and the second portions of the playing pieces of both sets being identical, each of the playing pieces in said first and second sets being of such form as to be operatively positionable on the board regardless of whether said first or second portion is exposed.

ERRATUM

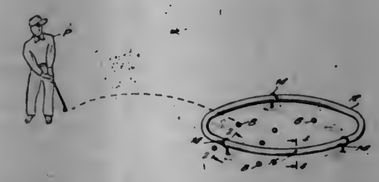
For Class 273—134 see:
Patent No. 3,191,184

3,190,656
FREE-CHOICE AMUSEMENT AND EDUCATIONAL DEVICE
Joseph A. Welsbecker, 1220 Wayne Ave., Erlton, Cherry Hill, N.J.
Filed Aug. 21, 1963, Ser. No. 303,526
7 Claims. (Cl. 273—138)



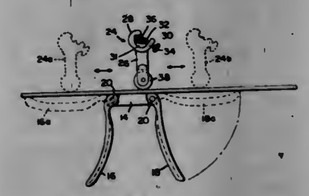
1. A free-choice apparatus comprising an enclosed housing of light-impermeable material concealing the interior thereof and having an upper opening and a plurality of lower openings, said housing being provided with an internal passageway extending downward from said upper opening and having a plurality of branches communicating with respective lower openings, said passageway and branches being configured for gravitational travel of pellets from said upper opening to said lower openings in a random relation, a plurality of light-impermeable openable closures respectively associated with said lower openings, and manually actuable means for selectively opening said closures for chance location of pellets in said lower openings.

3,190,657
INFLATABLE GOLF PRACTICE TARGET
Morgan Ackley Johnson, 1704 Shore Road, Linwood, N.J.
Filed Feb. 11, 1963, Ser. No. 257,617
1 Claim. (Cl. 273—181)



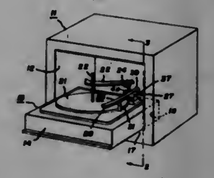
A golf practicing target comprising an inflatable annular member formed of a flexible material, said member having a flexible air valve which is insertable therein, said air valve comprising a tubular projection from said annular member and a plug member insertable in said tubular projection, said plug member hinged to said tubular member and said valve being insertable into said annular member when said annular member is inflated, and a plurality of leg mounting members for supporting said annular member in a horizontal spaced relation to the ground in the inflated condition thereof, said leg mounting members comprising a hook portion and a straight portion, said hook portion adapted to fit around said annular member and said straight portion providing the spacing function, said hook portion and straight portion being so arranged that the leg mounting members can be removed from said inflatable annular member, said inflatable annular member deflated and the whole stored in a small volume.

3,190,658
PRACTICE PUTTING GUIDE
John F. Kane, 28 Robinhood Road, Natick, Mass.
Filed July 2, 1963, Ser. No. 292,344
3 Claims. (Cl. 273—192)



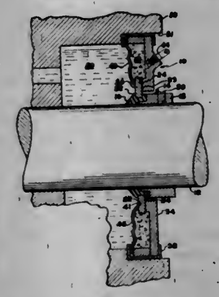
1. A putting guide for use in improving a golfer's stroke during practice putting comprising the combination of: a guide member having an outwardly facing flat guide surface, said guide member having attached thereto leg engaging members suitably spaced and contoured to be held comfortably between a golfer's knees; a guide clamp separate from and freely movable relative to said guide member, means for removably mounting said guide clamp in a radially extending fashion on the shaft of a putter with one end of said clamp disposed laterally from the longitudinal axis of said shaft, whereby said guide member may be held between a golfer's knees with said outwardly disposed flat surface aligned with the cup and, the putter having said guide clamp attached thereto swung by said golfer in a controlled swing by maintaining the laterally disposed end of said guide clamp in constant contact with the flat guide surface of said guide member.

3,190,659
PHONOGRAPH
Jerry A. Meyer, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed May 28, 1962, Ser. No. 198,219
5 Claims. (Cl. 274—2)



1. In a record player arranged to be pivoted about a horizontal axis from a horizontal playing position to a vertical non-playing position within a housing, an elongated tone arm pivotally mounted between front and rear ends thereof on said record player for horizontal and vertical motion of said front end, a needle carried on the front end of said tone arm for playing a record, means for permitting the front end of said tone arm to be raised about its pivotal mounting a substantial distance when said record player is in the horizontal position thereby to permit inspection and replacement of said needle, and structural means coacting with said tone arm near the rear end thereof for limiting the upward movement of said tone arm to an extent permitting the tone arm to play records and at the same time preventing said arm from flopping back to a damaging extent when the record player is pivoted to the vertical position.

3,190,660
MECHANICAL SEAL FOR FLUID TRANSFER MEANS
Herman G. Koch, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 13, 1961, Ser. No. 159,070
2 Claims. (Cl. 277—59)



1. A fluid tight mechanical sealing structure comprising, in combination:
(a) a rotary shaft journaled to rotate in a housing,
(b) said housing defining a fluid chamber containing a fluid to be sealed;
(c) an annular seal member journaled for rotation with said shaft and having a first sealing face;
(d) cooperating closure means comprising an end cap closing off a recess portion of the housing through which said shaft extends;
(e) said closure means defining a stationary and annular sealing face at an edge portion thereof and in mutual engagement with said first sealing face to form a primary seal; and
(f) a flexible and resilient diaphragm member transverse to said shaft extending from said seal member having an edge portion maintaining a close running fit and forming therewith a secondary seal, and defining with said closure means a lubricant chamber, said diaphragm being directly exposed to said fluid and sufficiently responsive to increased pressure to urge lubricant from said lubricant chamber toward said primary seal.

3,190,661
VENTED SEAL WITH STATIONARY SPACED SEALING MEMBERS
Edward C. Wahl, Arlington Heights, George Schulz, Naperville, and Raymond H. Andresen, Barrington, Ill., assignors to Gits Bros. Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 8, 1962, Ser. No. 171,973
2 Claims. (Cl. 277—75)

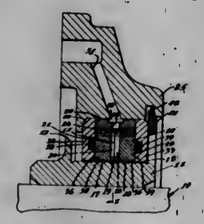
1. A rotary seal assembly comprising,
a rotary member having a cylindrical rotating outer surface,
a pair of carbon sealing rings each having an inner cylindrical surface with a non-engaging close running clearance between said inner and outer surfaces, and having annular radial axially outwardly facing surfaces,
said rings having an inner recessed groove between them,
and each having a portion of radial passages to co-

actingly form passages therebetween leading outwardly from between the rings for the escape of fluid,

a housing surrounding the rings and having passages communicating with said ring passages for dumping fluid,

a pair of holding rings supported in said housing having radial surfaces facing the radial surfaces of said sealing rings,

an annular resilient ring between each sealing ring and holding ring positioned between the radial surfaces thereof to frictionally hold the sealing rings with the sealing rings being radially displaceable to



be self-centering with respect to the cylindrical rotating outer surface,

an outer ring supported in the housing having circumferentially facing shoulder means,

said sealing rings having shoulder means engaging the shoulder means of the outer ring and preventing rotation of the sealing rings,

and a radially outwardly expandible locking ring having a radial surface engaging the radial outer surface of one holding ring,

said housing having a radial shoulder axially engaging a radial surface of the other holding ring,

and said housing having an inwardly opening recess receiving said locking ring.

3,190,662
MULTI-PIECE PISTON RING ASSEMBLIES
George C. Mayfield, 8518 Antler Ave., Richmond Heights, Mo.
Filed Apr. 13, 1964, Ser. No. 359,518
10 Claims. (Cl. 277—140)



1. In combination with a piston having a ring groove, a ring assembly including a cylinder-engaging ring element and a spacer-expander having a side face for engagement with said cylinder-engaging ring element, the improvement which comprises, said spacer-expander:

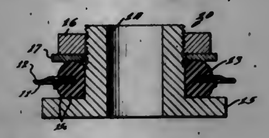
(i) having gap-ends abutting each other when the internal periphery thereof is greater than the external periphery of the bottom, but less than the external periphery of the land, of said ring groove,

(ii) being circumferentially incompressible when said gap-ends abut,

(iii) having a plurality of peripherally spaced tabs extending axially beyond the side face thereof at the inner periphery thereof,

and a resilient finger cantilevered from at least some of said tabs and extending substantially peripherally therefrom for a distance substantially greater than the peripheral dimension of said tabs, said fingers lying in substantial part axially beyond said side face and disposed to engage the inner periphery of said cylinder-engaging ring element.

3,190,663
STATIC SEAL CONSTRUCTION
Neil C. Stilwell, P.O. Box 752, Kokomo, Ind.,
Filed June 5, 1962, Ser. No. 200,216
12 Claims. (Cl. 277—227)

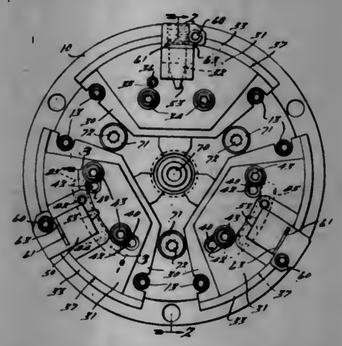


1. In a static seal construction:

(a) a pair of separate sheet-like layers of elastic heat sealable material having means providing an aperture therethrough; and

(b) a plurality of radially spaced heat seals joining said layers together and extending about the aperture in substantially concentric relation to each other.

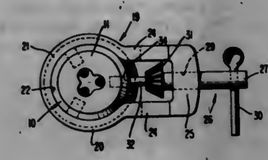
3,190,664
DIAPHRAGM GEAR-CHUCK
George Hohwart, Farmington, and Paul Toth, Allen Park, Mich., assignors to N. A. Woodworth Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 30, 1962, Ser. No. 220,438
15 Claims. (Cl. 279—1)



1. In a diaphragm chuck having a diaphragm and means for flexing said diaphragm, that improvement which comprises, a plurality of jaw members secured to said diaphragm circumferentially thereof about the axis of said diaphragm, at least one of said jaw members comprising, a fixed mounting portion, a circumferentially adjustable work engaging member mounted on said mounting portion, and a gage member interconnecting said mounting portion and work engaging member for locating said work engaging member.

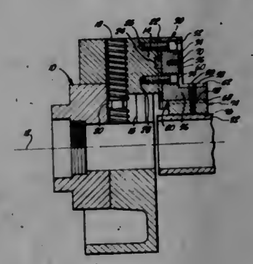
3,190,665
KEY OPERATED CHUCK
Janos Sztricsko, 489 Dundurn St. S., Hamilton, Ontario, Canada
Filed July 11, 1963, Ser. No. 294,281
5 Claims. (Cl. 279—1)

4. A key for a chuck having a circular body with a cylindrical wall, at least one radial bore in the wall and a ring gear disposed about the wall for tightening the chuck, said key comprising a ring adapted to fit over and substantially encircle the circular body and engage the ring gear, said ring having an inner cylindrical face adapted to snugly fit the cylindrical wall and to extend from the level of the gear above the level of the bore,



an extension projecting outward from a side of the ring opposite a portion engaged with the wall, a bearing carried by the extension, a rotatable pin slidable in the bearing, a pinion gear on the pin and pilot pin on said pin adapted to fit the bore, said pilot pin and pinion gear being aligned with the bore and ring gear when the ring engages the ring gear.

3,190,666
HOLDER AND JAW INSERTS COMPRISING THE TOP JAW FOR A CHUCK
Ernest J. Testa, Whittier, Calif., assignor to Texan Tool Manufacturing Company, Santa Fe Springs, Calif.
Filed Aug. 6, 1963, Ser. No. 300,314
11 Claims. (Cl. 279—123)



10. A top jaw for a chuck comprising, in combination,

(a) a holder having first and second mounting surfaces lying in inserting planes;

(b) at least one of said mounting surfaces having a grooved formed in it;

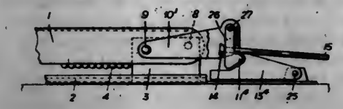
(c) means for securing said holder on the jaw of a chuck so that one of the holder mounting surfaces extends roughly perpendicular to the chuck axis and the groove formed in one of said mounting surfaces lies generally in a common plane with the chuck axis;

(d) a jaw insert having a chucking surface and first and second mounting surfaces which mate with the mounting surfaces of said holder to dispose the chucking surface so that the holder acts as a back support for the jaw insert;

(e) one of said jaw insert mounting surfaces having a tongue extending along it which mates with said groove; and,

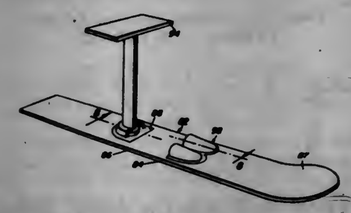
(f) means for detachably securing the jaw insert on the holder with said mounting surfaces and tongue and groove in engagement.

3,190,667
SAFETY SKI BINDING
Anton Wiedermann, Bad-Gastein, Austria, assignor to Wiener Metallwaren- und Schnallenfabrik Schar-Smolka, Schwechat, Austria
Filed Feb. 13, 1963, Ser. No. 258,208
Claims priority, application Austria, Feb. 21, 1962, A 1,470/62
3 Claims. (Cl. 280—11.35)



1. A safety ski binding operable, upon increased tension on a binding cable, to release all tension on the binding cable, comprising, in combination, guide rails; a carriage slidable on said rails; spring means biasing said carriage toward one end of said rails; a binding lever having a pivot end pivoted to said carriage and having a free end extending toward said one end of said rails in the binding tensioning position of said lever, said lever being swingable away from said rails to release tension on the binding; traction plate means pivoted at one end to said binding lever between the ends of the latter and having an opposite end connected to the binding cable; said lever and said traction plate means constituting a toggle joint with the pivot of said traction plate means, in the locking position of said lever, being nearer to said rails than is the pivot of said lever; cooperating abutment means positioned nearer said rails than are said pivots, one abutment means being movable with said lever responsive to cable tension and the other abutment means having a mounting fixed relative to said rails; said abutment means being spaced out of engagement during normal tension on said cable with said binding lever in the locking position; said abutment means being interengageable upon increased or abnormal tension on the cable to form a pivot point, spaced longitudinally from the pivot of said traction plate means, for effecting movement of said pivot of said traction plate means outwardly relative to said rails and outwardly of the pivot of said lever to swing said lever to the binding release position and an intermediate lever pivotally suspended at one end on said traction plate means; said cable being secured to said intermediate lever between the ends of the latter; said one abutment means being formed on the free end of said lever.

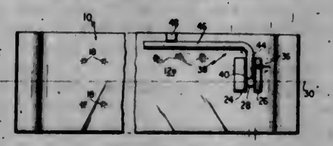
3,190,668
SKI CONSTRUCTION
William Husak, Carwensville, Pa. (1708 N. Terrell, Midland, Tex.)
Filed Apr. 9, 1963, Ser. No. 271,763
3 Claims. (Cl. 280—12)



1. A ski construction comprising a generally horizontally disposed ski having an elongated body portion terminating at its forward end in an upwardly curving toe portion, an upright standard, means securing the lower end of said standard to said body portion intermediate

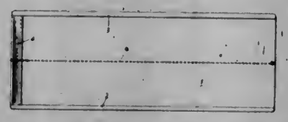
its opposite ends, and seat means secured to the upper end of said standard, said means securing the lower end of said standard to said body portion comprising means on said body portion defining an elongated channel open at one end, closed at the other end and extending longitudinally of said body portion, said channel opening upwardly as well as outwardly of said one end, the lower end of said standard including a diametrically enlarged end portion projecting outwardly from opposite sides of the standard, said channel being of a cross-sectional size and shape snugly and removably receiving said diametrically enlarged end portion through said one end thereof and closely embracing the portion of said standard immediately above said diametrically enlarged end portion.

3,190,669
MOTOR SKID BASE
Peter Walzak, Chicago, Ill., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Dec. 3, 1963, Ser. No. 327,739
5 Claims. (Cl. 280—12)



1. A skid base for mounting and transporting portable equipment or the like comprising a substantially flat plate member having inclined, upwardly projecting front and rear portions to facilitate movement of the skid base over ground or floor abutments, equipment mounting means on said plate member to which portable equipment can be attached so as to be mounted on the top face of said flat plate member, guide means integrally mounted on said top face of said flat plate member adjacent an aperture in said plate member, hook means adapted to project through said aperture, comprising an offset flange portion which is positioned in said guide means and held tightly in place by an adjustable lock means, said hook means further comprising an L-shaped portion whose base member is integral with and perpendicular to said offset flange portion so that when said hook means projects through said flat plate member and is tightly secured to said guide means, the leg member of the L-shaped portion forms a hook by which the skid base and portable equipment thereon can be suspended from a support.

3,190,670
SNOW VEHICLE
Norman M. Reed, Walton, Ky., assignor to Development Consultants, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 4, 1963, Ser. No. 327,983
6 Claims. (Cl. 280—18)



1. In a snow vehicle of the type having a bottom member providing an elongated broad bearing surface, stabilizing means comprising an elongated flexible member, said flexible member extending longitudinally of and substantially the length of said bearing surface; the ends of said member being affixed to said vehicle, the remainder of said member being free to flex transversely of said bearing surface, and means tending to urge said member to an unflexed linear position parallel to the long axis of said bearing surface.

3,190,671
SLED WITH TILTABLE RUNNERS CONTROLLED BY A TILTING RIDER SUPPORT
Sergio Fabris, Mussolente, Italy
Filed Jan. 9, 1963, Ser. No. 250,383
4 Claims. (Cl. 280—21)



1. A ski-sled comprising a pair of skis arranged in laterally spaced apart relation, a platform centrally disposed with reference to the pair of skis, and rod means interconnecting the platform with said pair of skis to locate the platform above the skis and to rock the skis in the same direction and concurrently with the platform responsive to rocking movement of the platform, said rod means comprising a front and back group of rods with each group having four rods including one pair of inner rods pivotally connected at their upper end portions to a substantially common pivot on the platform with the lower end portion of one of said rods pivotally connected to one ski and the lower end portion of the other of said rods pivotally connected to the other ski and with each group of four rods including another pair of outer rods pivotally connected at their lower ends to the skis and at their upper ends to the platform with the outer rods spaced outwardly in substantially parallel relation with the inner rods with the spacing of the pivots between the upper ends equal to the spacing of the pivots between the lower ends to define parallelograms between each of said pivots of the outer and inner rods and the ski and platform located therebetween and a cross-brace rod between the pairs of inner rods.

3,190,672
SULKY ATTACHMENT
Albert S. Swanson, Minneapolis, and Merville O. Kroll, Hopkins, Minn., assignors to G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota
Original application Dec. 8, 1958, Ser. No. 778,995. Divided and this application Nov. 13, 1962, Ser. No. 236,933
3 Claims. (Cl. 280—32.7)



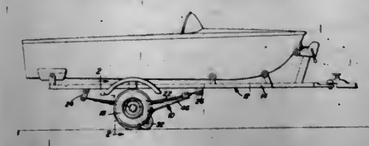
1. For a self powered walk behind unit having a unit frame, wheels mounted on the unit frame to mount it for movement and a handle mounted on said unit frame to extend upwardly and rearwardly therefrom, a sulky attachment attachable to said unit frame for being pulled in a forward direction by said unit frame and alternately moved to a supported folded up position at least in part overhanging said unit frame, said sulky attachment comprising a seat, a frame having a draw bar portion and a seat mounting portion joined to one end portion of said draw portion, at least one wheel mounted on said frame portion and mounting said seat in spaced relation to said draw bar adjacent the juncture of said draw bar portion and said seat mounting portion, an elongated member pivotally connected at one end to the other end of said draw bar portion for pivotal movement about a horizontal pivot axis and means for connecting the other end of said elongated member to the rear portion of said unit frame for pivotal movement about a generally vertical axis, said elongated member, draw bar portion and seat mounting portion being of relative lengths to position the draw bar portion to one side of said handle and the seat in overlaying relationship to said unit frame when said draw bar is pivoted about said horizontal axis and the elongated member about said vertical axis to said folded up position.

3,190,673
PUSH CART FOR SELF-SERVING STORES
Berth Wilhelm Ölander, Hagersten, and Sven Gustav Jonsson, Stockholm, Sweden, assignors to Heinrich Fischer KG, Winterlingen, Wurttemberg, Germany
Filed Nov. 7, 1962, Ser. No. 235,975
3 Claims. (Cl. 280—33.99)



1. A push cart for self-serving stores, which includes: a U-shaped frame comprising two spaced legs extending at an acute angle with regard to a horizontal plane and also comprising a transverse arm interconnecting the upper ends of said legs, first wheel means respectively arranged at the lower ends of said legs for supporting the same, a transverse supporting member interconnecting said legs at points between said transverse arm and said first wheel means, auxiliary legs having one end thereof respectively connected to said first mentioned legs at points between said first wheel means and said transverse supporting member, second wheel means connected to the other ends of said auxiliary legs for supporting same, said auxiliary legs extending from their points of connection with said first mentioned legs downwardly at an acute angle with regard to a horizontal plane through said first and second wheel means in a direction toward the projection of said transverse arm upon said last mentioned horizontal plane, and basket means having one end thereof tiltably connected to said transverse arm for tilting movement about the axis thereof and having its opposite end provided with handle means, said basket means being tiltable selectively from a storage position in which the longitudinal extension of said basket means is approximately in vertical direction to a use position in which the longitudinal extension of said basket means is substantially in horizontal direction, said transverse supporting member being spaced from said transverse arm by such a distance that in said use position said basket means is supported at the bottom thereof by said transverse supporting member.

3,190,674
EMERGENCY TRAILER WHEEL
Loyd H. Carter, Rte. 2, Box 151, North Augusta, S.C.
Filed Oct. 14, 1963, Ser. No. 315,766
8 Claims. (Cl. 280—150)



1. An emergency wheel assembly for quick attachment to a trailer structure having an axle and a leaf spring comprising in combination, a wheel, upstanding support means rotatably supporting said wheel at its lower end for rotation about a horizontal axis, bracket means including a pair of hooks supported from the upper end portion of said support means for attaching said wheel assembly to the trailer axle, and bearing surface means defined by said upper end portion of said support means for supporting the weight of the trailer structure by engagement with said leaf spring.

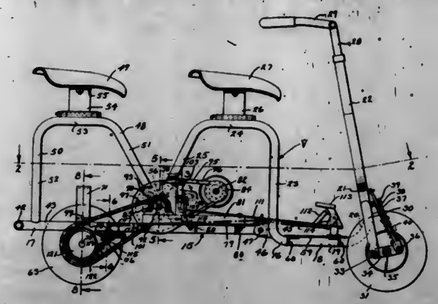
3,190,675
WIDE-RIMMED, SEATLESS UNICYCLE
Chun-Yi Tang, P.O. Box 3272, International Station, Seattle 14, Wash.
Filed June 28, 1963, Ser. No. 292,213
18 Claims. (Cl. 280—221)

1. A wide-rimmed unicycle comprising a wide, generally cylindrical rim and substantially parallel ends, the dimension of said rim between the edges thereof being at least about one-quarter the diameter of said ends, said unicycle further comprising pedal means arranged outwardly of said ends in oppositely offset relation to the rotational centers of said ends, and oppositely directed rim inset sectors operating to laterally tilt the drum slightly, with one edge of said sectors lying substantially in a plane including said pedal means.

3,190,676
SCOOTER TYPE VEHICLE
Edward C. Junge, 1318 Williamson St., Madison, Wis.
Filed Sept. 29, 1961, Ser. No. 141,885
1 Claim. (Cl. 280—273)

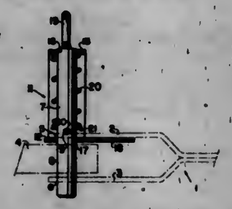
An all purpose vehicle of the scooter type comprising a main frame including a front section and a rear section, said front section including side frame bars having upturned front terminals and inverted U-shaped rear terminals, a drive's seat supported by the inverted U-shaped rear terminals, a steering post carried by the upturned front terminals, ground engaging means carried by the steering post, said rear frame section including parallel side bars and upstanding inverted U-shaped side seat frame bars, a seat carried by said seat frame bars, ground

engaging means carried by the opposite sides of the rear frame section, and means rigidly securing the front frame



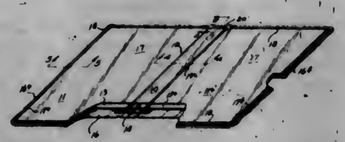
section and rear frame section together at two spaced points.

3,190,677
CLEVIS WITH SPRING-OPERATED PIN
Ralph C. Robbins, R.R. 1, Clama Park, Ill.
Filed Apr. 8, 1964, Ser. No. 358,190
4 Claims. (Cl. 280—515)



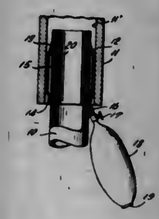
1. In combination, a bifurcated clevis having aligned apertures in each arm thereof, an enclosed frame removably positioned on one arm of said clevis, said frame having a bottom wall positioned under said one arm with an aperture aligned with the aperture therein, said frame having at least one upwardly extending sidewall joining a top wall having an aperture aligned with the apertures in said clevis, a pin movably positioned in the apertures in said frame and said clevis, a retaining member in said pin positioned above said one arm and within said frame, spring means positioned within said frame between said retaining member and the top wall of said frame, and said spring means urging said pin and said frame in opposite directions against said one arm of said clevis to hold said frame and pin securely thereon.

3,190,678
CASINGS FOR BOOKS
Everett A. Peterson, Roslyn Heights, and Harold W. Peterson, Roslyn, N.Y., assignors to Peterson Electronic Die Co., Inc., Mineola, N.Y., a corporation of New Jersey
Filed Nov. 9, 1962, Ser. No. 236,594
3 Claims. (Cl. 281—29)



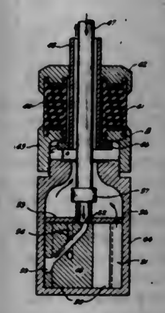
1. A casing for books comprising a backbone, a side filler board on each side of said backbone, the adjacent edges of said backbone and filler boards being spaced from each other, a cover sheet for said boards on the inner and outer faces thereof, said cover sheets spanning said spaces and forming a hinge connection between said backbone and filler boards, a reinforcing strip for said hinge connection, said strip being of greater length and width than said backbone and extending laterally and longitudinally outwardly with respect to said backbone, said lateral portions extending across said hinge connections and overlapping the adjacent portions of said filler boards, the longitudinally extending portions of said strip being folded over the upper and lower edges of said backbone onto the inner face of said backbone and filler boards and upon itself at the hinge connection, said lateral and folded-over portions being secured only to each other and to the cover sheets at the hinge portions, and only to said cover sheets over said filler boards and backbone.

3,190,679
HOSE CONNECTOR
Frank P. Lester, 75 Mercer Ave., Hartsdale, N.Y.
Filed May 20, 1963, Ser. No. 281,726
3 Claims. (Cl. 285—8)



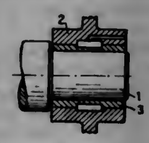
1. Apparatus for securing a tubular member within a faucet spout comprising an inflatable element surrounding one end of said member and adapted to be inserted in said spout, a second inflatable element surrounding said member externally of said spout, fluid transfer means interconnecting said elements, and mechanical means for compressing said second element with said first element within the spout and for holding said second element in the compressed condition to secure said member within the spout.

3,190,680
FLEXIBLE COUPLING
George P. Maly, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed June 6, 1960, Ser. No. 34,137
3 Claims. (Cl. 285—49)



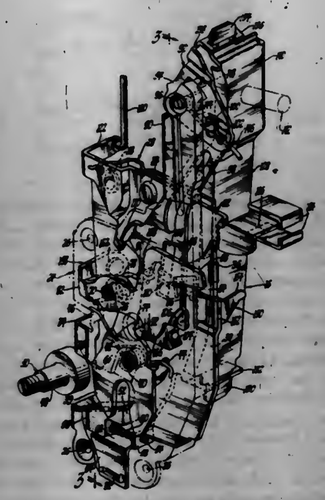
1. A flexible, vibration dampening coupling for attaching fluid supply and exhaust conduits employed at lesser internal than external pressures to a fluid actuated vibrator comprising: a hollow cylindrical body attached only at its opposite ends to a metal plate and the radial surface of a metal cap, the outer cylindrical surface of said body being out of contact with said plate and said cap and being exposed to said external pressure, said body comprised of an elastomeric material and comprising the sole structural linkage between said plate and said cap, a plurality of metal rings embedded within said body at spaced intervals along its length so as to isolate said rings from each other and from metal contact with said conduits, a first conduit attached to and extending through a centrally disposed bore in said plate, the hollow interior of said body and a central bore in the radial portion of said cap, said conduit terminating a substantial distance within the interior of said cap, a ring attached to the lower end of said first conduit, said ring being of lesser diameter than said interior diameter of said cap, said conduit and said ring being out of contact with said cap, said cap threaded about its lower interior periphery for connection to the housing of said vibrator and a second conduit concentrically extending through said first conduit to said vibrator.

3,190,681
COMBINATION OF TWO MEMBERS SHRUNK ON EACH WITH THE INTERPOSITION OF A SLEEVE
August Albert Liebe, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 16, 1962, Ser. No. 209,981
Claims priority, application Netherlands, July 24, 1961, 267,473
4 Claims. (Cl. 287—52)



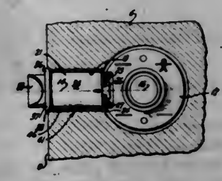
1. A joint comprising two telescoping, spaced first and second members and a sleeve interposed therebetween, said first and second members having surfaces interfitting with the interior and exterior surfaces of said sleeve respectively, an enclosed chamber defined by an annular groove in adjacent surfaces of one of said members and said sleeve, the axial surfaces defining said annular groove being axially co-extensive and the side walls defining said annular groove being radially aligned, a conduit means connecting said enclosed chamber to the atmosphere, said one of said members and the sleeve being secured together by a shrink fit, said chamber dividing the surfaces engaged by said shrink fit into two parts, the axial extent of each of said first parts being equal and less than the axial extent of said axial chamber surfaces, the clearance between the other of said members and said sleeve being such that the reduction in radial dimensions of said sleeve by said shrink fit causes said other member to be bound to said sleeve, said conduit means being connectable to a fluid pressure source whereby the above parts which have been shrunk together may be expanded and one of said parts moved to an axially displaced position wherein one of said engaging surfaces may drop into the annular groove in the opposed surface of the adjacent member thereby permitting the three members to be radially disconnected.

3,190,682
CLOSURE LATCH
Robert M. Fox, Detroit, and Edwin H. Klove, Jr., Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1963, Ser. No. 273,523
7 Claims. (Cl. 292—216)



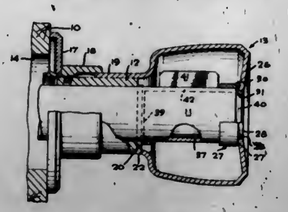
1. A closure latch comprising, in combination, a latch frame, a bolt mounted on said frame for movement between latched and unlatched positions, detent means for holding said bolt in latched position, a main operating lever movably mounted on said frame, an intermittent member coupled to said operating lever for releasing said detent means, and an auxiliary lever coupled adjacent one end thereof to said main operating lever and fulcrumed adjacent the other end thereof on said latch frame for movement in a plane generally parallel to the plane of movement of said main lever, said auxiliary lever being adapted to be engageable by operating means to operate said main operating lever.

3,190,683
RETAINER AND TUBULAR LATCH HOUSING
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company
Filed Feb. 7, 1963, Ser. No. 256,851
3 Claims. (Cl. 292—337)



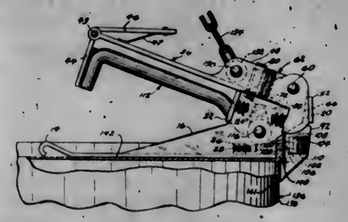
3. An article of manufacture for use with a tubular latch housing of predetermined length comprising a longitudinally split sleeve of springy material having a length nearly as great as said predetermined length and having projections outstanding from different points spaced apart around and along the sleeve, said projections having free side and end edges defining fingers all directed toward one end of said sleeve.

3,190,684
KNOB OUTER END STABILIZER
Fred J. Russell, 3800 Don Felipe Drive, Los Angeles, Calif.
Filed Oct. 8, 1962, Ser. No. 229,152
3 Claims. (Cl. 292—347)



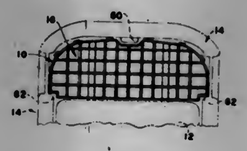
1. In a door lock having a hub, a spindle rotatably mounted in the hub, a hand-hold having a hollow interior and a neck in non rotatable engagement with the spindle, an inside wall of said neck forming a bore in communication with said hollow interior and in rotatable engagement with the exterior of said hub, a face area on the hand-hold having an opening, and a hand-hold face closure comprising a cap on the outer end of the spindle, at least a portion of said cap projecting through the opening and comprising a supporting connection between the outer end of the spindle and the hand-hold face, and lock-operating means having at least a portion thereof located within said spindle, and another portion thereof located exteriorly with respect to the spindle, said other portion and said spindle having an aggregate breadth no greater than the breadth of said bore of the neck at the junction thereof with said hollow interior, said supporting connection having an opening therethrough, walls of said opening having a position fixed with respect to the spindle and the hand-hold face and comprising a communicating passage between the lock-operating means and the exterior of the hand-hold face.

3,190,685
AUTOMATIC RELEASABLE GRAPPLE TONGS FOR BARRELS AND THE LIKE
Cecil W. Bopp, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Filed Nov. 26, 1963, Ser. No. 326,077
18 Claims. (Cl. 294—90)



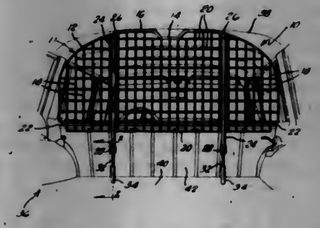
1. In a grapple tong device,
an elongated lower bracket,
an elongated upper bracket pivotally secured to said lower bracket,
means on said brackets for limiting their pivotal movement with respect to each other,
a tongue element pivotally secured to said upper and lower brackets,
a locking jaw portion on said tongue element adapted to engage the rim of a barrel,
a lever means movably secured to said lower bracket,
said lever means movably engaging said tongue element and being adapted to frictionally bind said tongue element against movement at times,
contact means on said upper bracket to engage said lever means when said brackets are pivoted towards each other to disengage said tongue element from binding engagement with said lever means,
and means on said upper bracket to connect a lifting means thereto.

3,190,686
ADJUSTABLE BARRIERS FOR VEHICLE INTERIORS
Leonard Smiler, 20159 Warrington, Detroit, Mich.
Filed May 4, 1964, Ser. No. 364,375
8 Claims. (Cl. 296—24)



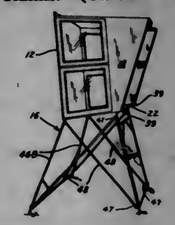
1. In combination with a vehicle having an interior floor and a ceiling, a barrier assembly comprising
(a) a barrier having an upper substantially horizontally extending portion and at least one vertical leg assembly fixed to said barrier to extend downwardly from said barrier,
(b) said leg assembly comprising a first elongated leg member fixed to said barrier, a second elongated leg member movable axially along said first leg member, and means for locking said first leg member at any one of a plurality of predetermined axial positions whereby the axial length of said leg assembly may be varied, and
(c) said leg assembly further comprising a fine adjustment screw means carried at the free end of said second leg member to adjust the length of said second leg member and to engage said vehicle floor and to urge said upper portion of said barrier against said ceiling of said vehicle to thereby rigidly mount said barrier assembly within said vehicle.

3,190,687
SECTIONALIZING BARRIER FOR AUTOMOBILES
Wallace M. L. Johnson, 861 Clayland St., St. Paul, Minn.
Filed June 20, 1963, Ser. No. 289,228
2 Claims. (Cl. 296—24)



1. A barrier for separating the interior of an automobile into fore and aft sections comprising:
(a) a panel including an upwardly bowed wire constituting the upper edge thereof and additional intersecting horizontal and vertical wires forming the remainder of the panel;
(b) a pair of tubular members extending downwardly from said upwardly bowed wire to a locus beneath the lowermost of said additional wires;
(c) a pair of internally threaded sleeves fixedly connected to the lower ends of said tubular members;
(d) a threaded rod carried by each sleeve and having its upper end projecting into the particular tubular member to which its sleeve is affixed and its lower end projecting downwardly,
(e) a tubular elongated flexible cup member frictionally retained on the lower threaded end of each rod,
(f) whereby each rod can be threadedly adjusted to the extent necessary to force at least a portion of said upwardly bowed wire against the underside of the automobile's roof.

3,190,688
METHOD AND MEANS FOR MOUNTING A CAB ON A TRACTOR
Marvin L. Westrum and Dalton M. Westrum, Stratford, Iowa, assignors to WGW Engineering, Inc., Stratford, Iowa, a corporation of Iowa
Filed Jan. 17, 1964, Ser. No. 338,477
3 Claims. (Cl. 296—102)



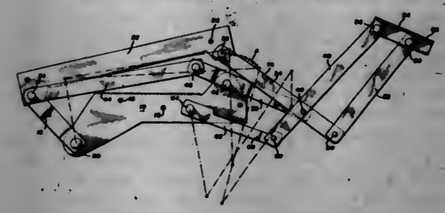
2. In combination,
a tractor having a driving station at its rearward end,
a cab structure adapted to be normally disposed over said driving station and having means for pivotally and detachably securing it along its rearward lower edge to the rearward end of said tractor,
a cab supporting stand normally disposed in an upright position on the ground, said stand having a plurality of legs, each of said legs having a pair of adjustable members adjustable longitudinally of each other to adapt the stand for being adjusted to the desired height relative to said tractor, said stand having forward and rearward sides relative to said tractor, said forward side being adjacent said tractor when said stand is in its normally disposed upright position and behind said tractor,
releasable connecting means on the top of said stand, said connecting means including spaced apart fasteners adjacent said forward and rearward sides of said stand,
anchor means on the rear side of said cab, said anchor means including fasteners adjacent the top and bottom sides of said cab, said fasteners on said cab being spaced apart for engagement with said fasteners on said stand,
said cab adapted to be placed on said stand with the releasable connecting means on the top of said stand in engagement with the anchor means on the rear of said cab with said fasteners adjacent the rear of said stand and the top of said cab in engagement and the fasteners adjacent the front of said stand and the bottom of said cab in engagement, said cab and said supporting stand forming a rigid elongated unit, said first mentioned means on said cab adapted to be pivotally and detachably secured to the rear end of said tractor and by lifting upwardly on the lower ground engaging end of said stand said cab may be pivoted to its normal upright position over the driving station on said tractor.

3,190,689
COLLAPSIBLE ROOF CONSTRUCTIONS
Maurice Calthorpe, 14848 Manuella Ave., Los Altos Hills, Calif.
Filed Mar. 5, 1963, Ser. No. 262,868
6 Claims. (Cl. 296—137)



1. A collapsible roof construction for a vehicle to provide more headroom therein, comprising a base frame adapted to be attached to the vehicle, said base frame including a rear frame member extending transversely across the vehicle and having front and rear edges, a roof top located over said base frame, and means connecting said roof top to said base frame for movement relative thereto between a lower collapsed position where said roof top is closely adjacent to said frame and an upper expanded position where said roof top is situated over said frame at a greater distance therefrom than when said roof top is in said collapsed position, said connecting means also connecting said roof top to said base frame for longitudinal movement relative thereto, when said roof top is moved between said collapsed and expanded positions thereof, so that said roof top in its expanded position is longitudinally displaced with respect to said base frame as compared to the position which said roof top has with respect to said base frame when said roof top is in its collapsed position, said connecting means including a rear arcuately movable panel hingedly connected at the bottom thereof to the base frame and hingedly connected at its upper end to the roof top, said rear panel being hingedly connected at said bottom thereof to said rear frame member adjacent said front edge thereof.

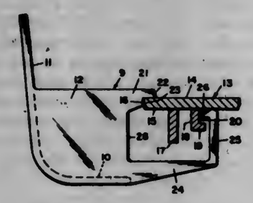
3,190,690
RECLINING CHAIR FIXTURE
Ned W. Mizelle, High Point, N.C., assignor, by mesne assignments, to General Steel Products, Inc., High Point, N.C., a corporation of North Carolina
Filed June 24, 1960, Ser. No. 38,649
13 Claims. (Cl. 297—89)



1. In a reclining chair having a stationary base, a seat unit, and a leg rest; a fixture for supporting said unit and said leg rest upon said base for co-ordinated movement between a first rest position of said chair wherein said seat unit is upright upon said base and said leg rest is retracted, a second rest position of said chair wherein said unit is reclined upon said base and said leg rest is extended in leg supporting relationship to said unit, and a third rest position of said chair wherein said seat unit is disposed intermediate said upright and said reclined positions and said leg rest is extended in leg supporting relationship with said unit, said fixture comprising a pivotally constrained closed linkage including a base link adapted to be fixedly attached to said base, a seat link adapted to be fixedly attached to said seat unit, a leg

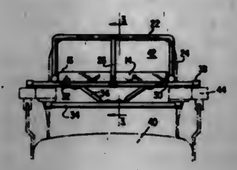
rest link adapted to be fixedly attached to said leg rest, a first link mounted on said seat link for movement about a first pivot on the forward end of said seat link and coupled to said leg rest link to move about said first pivot in accordance with movement of said leg rest relative to said seat unit, a second link mounted at one end for movement about a second pivot on the rearward end of said seat link in accordance with movement of said seat unit relative to said base and mounted at its other end upon a fixed pivot on the rearward end of said base link, a control link mounted intermediate its ends for movement about a fixed pivot on the forward end of said base link, a third pivot pivotally interconnecting one end of said control link to said first link at a location spaced from said first pivot, and a constraining link pivotally connected at one end of said second link and at its other end to the other end of said control link.

3,190,691
SEAT ATTACHMENT FOR TABLE TOPS
Edward L. Desjardins, 1117 Waller Ave., Winnipeg, Manitoba, Canada
Filed Apr. 29, 1963, Ser. No. 276,550
1 Claim. (Cl. 297—174)



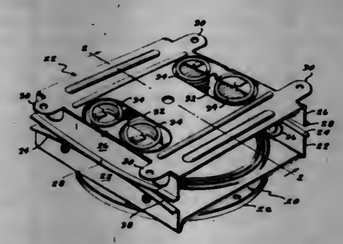
The combination of a table top having upper and lower surfaces and a marginal edge, a cleat secured to the lower surface of said top in inwardly spaced relation from said marginal edge, said cleat having an inwardly projecting lip spaced downwardly from said top and forming an inwardly opening recess between the lip and the lower surface of the top, and a readily applicable and removable seat attachment for said table top, said seat attachment being devoid of moving parts and comprising a seat body, a pair of transversely spaced arms integral with and projecting forwardly from said seat body, the forward end portions of said arms being undercut to provide a pair of fingers supportably resting on the upper surface of said top and a pair of vertical abutment faces at the underside of said fingers in engagement with said marginal edge of said top to normally prevent movement of the seat body toward the marginal edge of the top, at least one keeper member projecting forwardly from said seat body below said cleat and having an upturned forward end disposed inwardly of the cleat, said upturned end of said keeper member being in supporting abutment with the lower surface of said top, and a rearwardly projecting hook portion provided on said upturned end, said hook portion normally extending into said recess between said lip and the lower surface of the top to prevent movement of the seat body away from the marginal edge of the top, the horizontal distance between said upturned end of said keeper member and portions of said body below said arms being such as to permit withdrawal of said hook portion from said recess when the seat body is raised so as to position said abutment faces of said fingers above the upper surface of said top, whereby to facilitate instant removal of the seat attachment from the table top.

3,190,692
CHILD'S SAFETY SEAT FOR BARBER CHAIR
Thomas J. Collier, 109 N. Hanson St., Easton, Md.
Filed Mar. 2, 1964, Ser. No. 348,490
1 Claim. (Cl. 297—251)



An auxiliary seat for a barber's chair comprising a seat portion, a pair of support members mounted on said seat portion in spaced parallel relation to one another with the ends of said members projecting beyond the ends of said seat portion, the ends of said support members overlying and engaging the upper surface of the arms of the barber's chair for supporting the seat portion thereon, a web member affixed to the central portion of one of said support members, a locking member connected to said web member in spaced parallel relation to said one of said support members, said locking member underlying and engaging the lower surface of the arms of the barber's chair for locking the seat portion and the ends of said support members thereon.

3,190,693
SWIVEL ROCKER SPRING UNIT
Parks C. Underdown, Sr., Fort Smith, Ark., assignor to Hickory Springs Manufacturing Co., Inc., a corporation of North Carolina
Filed Nov. 29, 1962, Ser. No. 240,894
6 Claims. (Cl. 297—263)

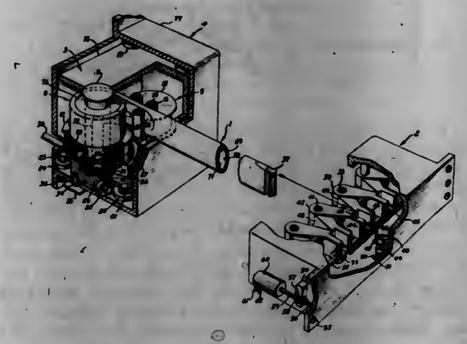


1. A swivel rocker spring unit comprising a base member having opposite sides thereof formed to present upwardly facing rocker supports extending lengthwise of said sides, a composite complementary bracket structure having corresponding opposite side portions extending from an integral attaching portion formed therebetween, said corresponding opposite side portions being formed to present downwardly facing rocker portions spaced to ride said rocker supports, and a pair of rocker springs attached to said attaching portion of the composite bracket structure and to said base member adjacent each of said opposite sides for holding said unit in assembled relation.

3,190,694
SAFETY BELT SYSTEMS FOR VEHICLES
Peter Isaac, 9 Crown Hill Road, Apt. 410, Toronto, Ontario, Canada
Filed Apr. 22, 1963, Ser. No. 274,637
11 Claims. (Cl. 297—388)

1. A safety system for a vehicle to prevent occupants of said vehicle from being thrown from their seat due

to inertial forces including a selectively supple, selectively rigid, inflatable strap which may be caused to traverse in front of at least one occupant of said seat, storage means for storing said strap when not in use, said storage means comprising a reel to which said strap is attached and upon which it may be wound, means for extending said strap from said storage means, means for returning said strap to said storage means, said safety system also in-



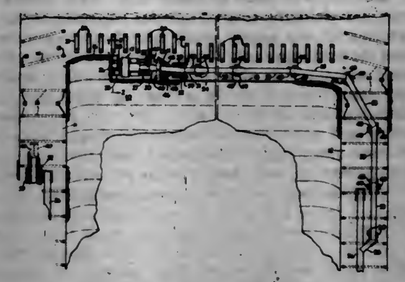
cluding means for rendering said strap selectively supple by deflation and selectively rigid by inflation and a latching mechanism for latching the extended end of said strap when said strap is in front of at least one occupant of said seat.

3,190,695
CHURCH KNEELER
Arno M. Jacobi, Belmont, Calif., assignor to Walter Jacobi & Sons, Inc., Belmont, Calif., a corporation of California
Filed July 22, 1963, Ser. No. 296,667
9 Claims. (Cl. 297—426)



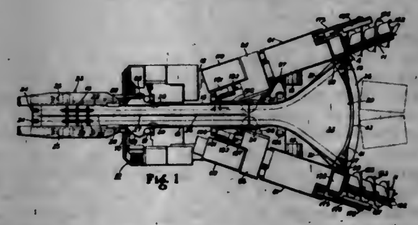
1. A kneeler pivotally mounted for swinging movement between two end positions including upward movement from a normally substantially horizontal position, comprising spring means associated with the pivotal mount of the kneeler biased to urge the kneeler toward the upward end position at all locations of the kneeler, said spring means urging the kneeler upward from its horizontal position with a force less than the gravitational force of the kneeler, control means operable for damping the movement of the kneeler toward each end position and said control means containing a fixed support located within the angle of swinging movement, and a spring mounted between a pivotal mounting on the kneeler and a pivotal mounting on said support whereby the spring is placed under pressure by the kneeler during the first part of the kneeler movement and the spring pressure is released beyond the dead center position for driving the kneeler during the second part of the movement at a controlled rate, with fluid means cooperating with the spring in controlling the rate.

3,190,696
LONGWALL MINING SYSTEM
Kenneth W. Stalker, Western Springs, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 14, 1963, Ser. No. 251,316
6 Claims. (Cl. 299—11)



1. A system of mining a block of coal between two headings comprising the steps of supporting the roof along the face of the block between the headings closely adjacent the face by mechanical roof supporting units, driving a longwall face by multiple boring operation initiating at the rib of the first heading of said two headings and during this driving operation following the multiple boring operation with a first series of cascading conveyors extending along the first heading and following the multiple boring operation along the longwall face and carrying away the mined material and loading the mined material in the first heading, storing a second series of cascading conveyors in the second of said headings, advancing the roof supporting units toward the face as the multiple boring operation progresses and during the boring operation removing the cusps between the boring devices to provide a level floor and roof, and at the termination of the face driving operation withdrawing the first series of cascading conveyors into the first heading, and advancing the roof supporting units towards the newly driven face and at the same time reversing the multiple boring operation followed by the second series of cascading conveyors for the full extent of the face driving operation.

3,190,697
LATERALLY SWINGABLE CONVEYORS FOR CONTINUOUS MINING MACHINE
Joseph Gonski, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 30, 1960, Ser. No. 59,771
8 Claims. (Cl. 299—64)

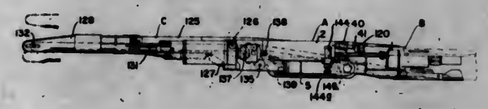


1. A continuous mining machine of the class described comprising, a mobile main frame, an apron extending forwardly of a forward end of said main frame and inclined downwardly from said main frame toward the ground, a pair of feeder frames vertically pivoted on said main frame at opposite sides thereof, a side cutting mining head supported on each feeder frame, means mounting said mining heads on said feeder frames to

extend forwardly thereof beyond the forward end of said apron, power means connected between said main frame and said feeder frames for moving said feeder frames and mining heads toward and from each other across said apron, two shoes guided for movement along the forward end of said apron, two laterally flexible endless conveyors extending along said main frame and apron and changing their directions of travel at the forward end of said apron about said shoes to convey the mined material upwardly along said apron, each conveyor having an outer flexible side wall extending upwardly along said apron from an associated shoe, and means connecting said feeder frames with said conveyors for moving said conveyors including said flexible side walls and shoes along said apron toward each other upon feeding movement of said mining heads toward each other.

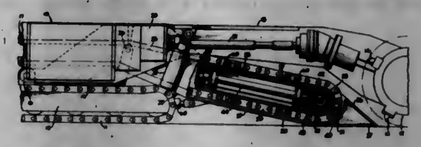
7. A gathering conveyor system comprising, a main frame, an apron extending forwardly of said main frame and inclined downwardly from said main frame toward the ground, a pair of orbitally movable laterally flexible endless chain and flight conveyors guided for movement along said apron and main frame, said apron having an arcuate forward end portion having a pair of shoes mounted thereon for slidable movement therealong, each shoe having a direction changing sprocket journaled thereon and forming a direction changing member for an associated chain and flight conveyor, flexible side walls extending along opposite sides of said apron and having connection with the outer sides of said shoes and forming outer flexible side walls for the portions of said conveyors traveling upwardly along said apron, power means for driving said conveyors to turn about said sprockets and move upwardly along said apron, and other power means for moving said side walls, shoes and the forward end portions of said apron inwardly along the forward end portion of said apron toward each other during travel of said endless chains upwardly along said apron, to effect a gathering operation.

3,190,698
MINING MACHINE
Einar M. Arentzen, Charleroi, and Harry Jack, North Charleroi Borough, Pa., assignors, by mesne assignments, to Lee-Norse Company, Charleroi, Pa., a corporation of Delaware
Filed Mar. 2, 1959, Ser. No. 796,455
3 Claims. (Cl. 299—64)



1. A mining machine cutter arm comprising a vertical shaft, a rigid arm mounted at its inner end for movement in a horizontal arc about said shaft as an axis, means for driving the shaft, a cutter head assembly at the outer end of the arm rotatable about a vertical axis, sprocket wheels on the said shaft and the cutter head assembly, a cutter chain passing around said sprockets for driving the cutter head assembly from the shaft, a plurality of cutter wheels on the rotatable cutter head assembly spaced vertically from each other and from the chain, and breaker bits on the cutter head assembly between the cutter wheels and between the cutter wheels and the chain sprocket, the breaker bits extending a less distance from the axis of rotation of the cutter head assembly than the cutter wheels; the aforesaid vertical shaft having a crank on its lower end, a gathering arm below the cutter arm, the crank being engaged with the gathering arm for oscillating said gathering arm in a path below the cutter arm and said shaft of the cutter assembly such as to sweep material from the area at the back of the cutter head toward the rear end of said rigid arm.

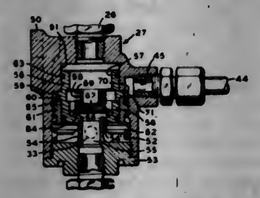
3,190,699
MATERIAL FEEDER MEANS FOR CONTINUOUS MINING MACHINE
Donald A. Ward, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 14, 1962, Ser. No. 244,612
8 Claims. (Cl. 299—64)



1. In a continuous mining machine, a main frame, a boom transversely pivoted to said main frame and extending in advance thereof, a rotary mining head supported on said boom for rotation about an axis extending transversely of said main frame, a conveyor extending along said main frame beneath said boom and having an inclined elevating forward end portion extending in advance of said main frame into engagement with the ground, said inclined elevating forward end portion of said conveyor having an inclined material carrying plate having an endless chain and flight conveyor movable upwardly therealong, and feeder means extending laterally from opposite sides of said material carrying plate and upwardly therealong into the space between the upper and lower runs of said chain and flight conveyor and having material feeding surfaces in the plane of the top surface of said material carrying plate.

6. In a conveyor having an inclined elevating frame structure having engagement with the ground at its forward end and having a scraper blade extending across the forward end thereof and beyond opposite sides thereof, a chain having flights extending laterally beyond opposite sides thereof, a direction changing idler at the forward end of said frame structure rearwardly of said scraper blade and changing the direction of travel of said chain and flights, a material carrying plate along which said chain and flights move, and feeder means for said chain and flights including aprons extending upwardly along opposite sides of said material carrying plate in the plane thereof and including feeder conveyors extending along said aprons from the outer sides thereof and having material carrying surfaces in the planes of said aprons and said material carrying plate, said feeder conveyors changing their direction of travel at their discharge ends in the space between the upper and lower runs of said chain and flights.

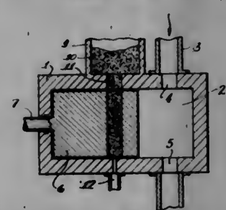
3,190,700
AIR RATIO CHANGER AND SYSTEM
Cyril B. Fites, St. John, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Aug. 10, 1961, Ser. No. 130,671
9 Claims. (Cl. 303—48)



1. A control valve for controlling fluid pressure applied from a source to a motor of a fluid pressure system comprising a housing, a pair of fluid pressure responsive members cooperable to provide differential areas and adapted for concerted and independent movement in said

housing, means within said housing including said members providing a pressure fluid flow passage for connection between said source and motor, valve means in one of said members for controlling pressure fluid flow through said flow passage, said members being concertedly movable in response to applied fluid pressure from said source to move said valve means to a position in said flow passage establishing flow of the applied fluid pressure therethrough to said motor, the established fluid pressure at said motor acting on said members to oppose further concerted movement thereof and being in a predetermined ratio with the applied fluid pressure, and other means within said housing defining with said members a fluid pressure chamber, the other of said members being independently movable to a disabled position in said housing in response to fluid pressure in said chamber in excess of that at said motor and said one member being thereafter independently movable in response to the applied fluid pressure to actuate said valve means and establish another ratio between the applied and established fluid pressures different than the predetermined ratio.

3,190,701
PIPELINE TRANSPORTATION OF SOLIDS
Norbert Berkowitz and Erik J. Jensen, Edmonton, Alberta, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company
Filed Feb. 1, 1963, Ser. No. 255,636
4 Claims. (Cl. 302—66)

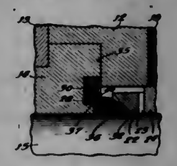


1. A method of transporting a particular solid substance which comprises forming an extrudable paste of said substance and a loading liquid, forming from said paste a multiplicity of discrete, substantially coherent bodies, and injecting said discrete bodies in successive order into a pipeline containing a flowing stream of carrier liquid immiscible with said loading liquid.

ERRATUM

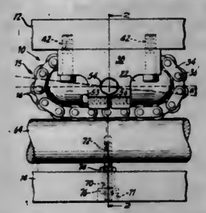
For Class 303—48 see:
Patent No. 3,190,700

3,190,702
SEALING STRUCTURE FOR PISTON AND CYLINDER DEVICE
Francis S. Flick, Oak Park, Ill., assignor to Flick-Reedy Corporation, a corporation of Illinois
Filed May 23, 1961, Ser. No. 112,090
7 Claims. (Cl. 308—3.5)



4. In a piston and cylinder device, an annular seal for sealing between relatively reciprocating parts, comprising: a metallic member having an annular surface for guiding said parts in said reciprocation, said member having an annular portion extending longitudinally in the direction of reciprocation and having a shoulder adjacent but spaced from said annular surface; a clamping member opposed to said metallic member and forming a finite cavity therewith for receiving a resilient seal, said clamping member facially abutting said metallic member and said resilient seal along a line generally perpendicular to the axis of the reciprocating parts; and an annular resilient one-piece seal having a lip portion extending longitudinally in the direction of said reciprocation for sealing between the relatively movable parts, and a base portion extending generally radially therefrom into said cavity, said base having a heel at the junction of said lip portion and base portion with a step at the heel seated on said shoulder, said shoulder holding the base of the seal within said cavity and the heel of the seal away from the relatively reciprocating surface sealingly engaged by the sealing lip portion.

3,190,703
BEARING STRUCTURE
John B. Thomson, 1029 Plandome Road, Manhasset, and Robert C. Magee, Manhasset, N.Y.; said Magee assignor to said Thomson
Filed June 25, 1962, Ser. No. 204,971
1 Claim. (Cl. 308—6)

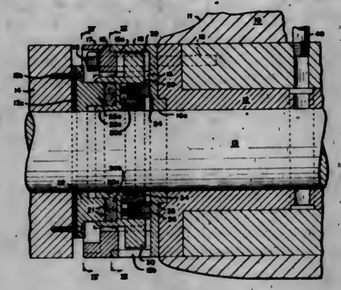


A recirculating anti-friction roller bearing unit for linear motion to be mounted on a member and to bear against a round way, said member and round way being relatively linearly movable with respect to each other and comprising in combination, a recirculating circuit of concave rollers, a race member with an elongated rounded bearing surface, said circuit being endless and movable about said race member to bring said rollers alternately into bearing contact and out of bearing contact between the opposing surfaces of the rounded race member and the round way when the unit is mounted to bear against a round way, a mounting member on which said race member is rockably mounted, whereby the load is distributed over all of the rollers in contact with the race member and round way, said concave rollers being free to move circumferentially as well as roll longitudinally with respect to the race way, and said concave rollers being guided along the bearing surface of the race member by interaction of the concave rollers and the round way, said interaction tending to produce self-alinement and to reduce skewing of the concave rollers.

3,190,704
STERN BEARING PACKING GLANDS
Harold A. Guthans, 2201 Springhill Ave., Mobile, Ala.
Filed June 7, 1961, Ser. No. 115,404
5 Claims. (Cl. 308—36.2)

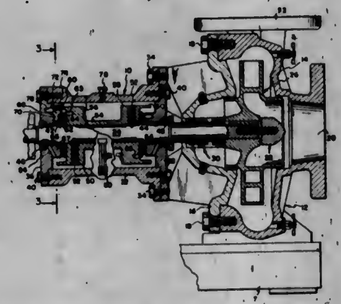
1. A bearing gland for propeller shafts and the like subject to external pressure comprising a housing means extending from a bearing surrounding a propeller shaft, packing carrier means within said housing and surrounding said propeller shaft movable with the propeller shaft in all directions substantially parallel and transverse to the axis of the propeller shaft, an annular well in said

carrier means spaced from and parallel to the shaft, a retainer ring fixed to the shaft and having an axially extending annular flange spaced from and movable with the propeller shaft slidable in said well and packing



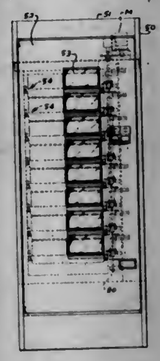
means in the well slidably sealingly contacting the flange and resilient positioning means in the housing between the carrier means and housing resiliently urging said carrier and packing toward the flange.

3,190,705
SHAFT BEARING LUBRICATING DEVICE
Edwin G. Keller, West Hartford, and Kenneth A. Ober, North Coventry, Conn., assignors to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Connecticut
Filed Aug. 24, 1962, Ser. No. 219,144
4 Claims. (Cl. 308—127)



1. In a construction of the character described which includes a substantially horizontal shaft and a pair of bearings which are spaced axially along said shaft with a portion of said shaft between said bearings, an enclosing structure surrounding said shaft and said bearings throughout the axial extent of said bearings, said enclosing structure forming an oil enclosure and sump extending between said bearings, a rotor mounted upon and fixed to said portion of said shaft between said bearings, said rotor having a pair of oppositely disposed annular flanges respectively adjacent said bearings and having a radius such that they pass through oil in said sump during rotation and draw all above the level of said bearings, the construction including wall structures respectively at said bearings and each being provided with an oil opening extending radially inwardly from the adjacent annular flange to the surface of the shaft at the adjacent bearing whereby oil delivered to said opening flows by gravity to the shaft surface, and a pair of baffles positioned respectively adjacent said flanges and mounted in fixed relationship with respect to and in substantially radially alignment with the adjacent of said oil openings, each of said baffles having a mounting pin which projects axially into the adjacent wall of said enclosure, each of said baffles being substantially flat with a portion positioned in the adjacent oil opening and having portions presenting oil deflecting edges each of which is positioned in spaced relationship with respect to a surface of one of said flanges whereby oil which adheres to said flanges in said sump is deflected therefrom by said baffles, said baffles presenting substantially radial surfaces extending from the respective of said deflecting edges to the adjacent oil opening to provide a flow path for oil deflected from each of said flanges into the adjacent oil opening.

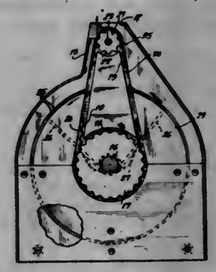
3,190,706
COMMODITY VENDING MACHINE
Creel W. Hatcher, Gladwyne, and Harry W. Clauss and John E. Mellor, Warminster, Pa., assignors to Rudd-Melikian, Inc., Hatboro, Pa., a corporation of Pennsylvania
Filed Nov. 20, 1963, Ser. No. 325,091
23 Claims. (Cl. 312—97)



1. Apparatus for sequentially vending commodities comprising a generally rectangular commodity tray, an odd number of boxes positioned on said tray and slidably shiftable through a closed circuit having two files through and between the adjacent ends of which the boxes are shifted, driving means mounted on the tray engageable with said boxes on the tray for transferring boxes at the end of a file from one file to the other and for moving each of said files from one end of the tray to the other, means operated by said driving means operable to stop said power driving means when one of the boxes is at a point in said circuit partway between the two files, an enclosure surrounding said tray, and an access opening in said enclosure sized and positioned to provide access to only the box occupying a preselected position on the tray.

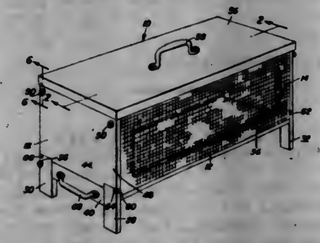
3,190,707
CARD INDEX FILE
Edward Eisenberg, Roosevelt, and Roman A. Sicho, Poestenkill, N.Y., assignors to Rockaway Metal Products, Corp., Inwood, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,576
7 Claims. (Cl. 312—184)

1. A card filing device comprising a case, opposed side walls, a front and a rear wall on said case, a first horizontal shaft in the case supported between the side walls, a drive wheel spaced from each end of the first shaft and secured thereto, a second horizontal shaft in the case above the first shaft, a driven wheel on the second shaft spaced from each end thereot, a continuous belt interconnecting each drive wheel and driven wheel, horizontal corrugations in the said belts, a substantially annular groove in each of the side walls around the first shaft, a frusto-conical groove in each of the side walls at the top thereof, said frusto-conical grooves communicating at the bottom thereof with the annular grooves, opposed flaps within the case journaled at their lower ends upon the first shaft, spring means to urge the flaps toward each other, a plurality of cards carried within the case between the



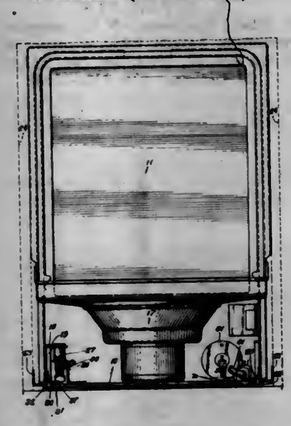
flaps, outwardly extending pins on said cards slidably received at their ends within the side wall grooves and belt corrugations, and means to rotate the first shaft and drive the belts to individually raise and lower the cards within the case.

3,190,708
COLLAPSIBLE BOX WITH LEGS
Lewis N. Trimnal, 2214 James St., Cayce, S.C.
Filed Apr. 17, 1963, Ser. No. 273,601
2 Claims. (Cl. 312—213)



1. A collapsible container comprising an elongated rectangular horizontal bottom having opposed end edges and opposed side edges; a pair of flat elongated legs secured to each end edge adjacent the opposite ends thereof, each leg being orientated vertically and having one longitudinal edge thereof aligned with, or in the same vertical plane as, the adjoining side edge of the bottom, said legs projecting both vertically above and vertically below the bottom, the projection of the legs vertically below the bottom being sufficient so as to space the bottom in substantial spaced relation to a supporting surface; a pair of end walls, each of said end walls being of the same thickness as the legs and consisting of a lower portion and an upper portion, each lower portion being fixedly secured to an end edge of the bottom between and coplanar with the legs thereon, the upper and lower edges of each lower portion terminating inwardly of the upper and lower ends of the legs, each upper portion being pivotally secured to and between the pair of legs secured to one end edge for movement between a first vertical position coplanar with the legs and the corresponding lower portion, and a second inwardly extending horizontal position with the lower edge of the upper portion coplanar with the outer face of the corresponding lower portion, each upper portion including a pair of integral laterally extending coplanar side flanges forming, in the first vertical position, vertical coplanar extensions of the corresponding legs; and a pair of side walls, each side wall being positioned along one side edge of the bottom and being pivotally mounted on and between one leg on one end edge of the bottom and the corresponding leg on the other end edge for movement between a first vertical position with its outer face coplanar with the side edge, and a second inwardly extending horizontal position with its lower edge coplanar with the side edge, said side walls being pivotally mounted in vertically offset planes so as to enable one to overlie the other in their horizontal positions, said end wall upper portions being pivotally mounted in the same plane vertically above the plane of pivotal mounting of the upper side wall; the projection of the legs vertically above the bottom being approximately equal to the combined height of the horizontally positioned side and end walls.

3,190,709
DISHWASHER MOUNTING APPARATUS
Ival G. Dutcher, White Bear Lake, and Walter C. Barnard, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Nov. 14, 1962, Ser. No. 237,636
8 Claims. (Cl. 312—228)

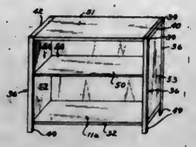


1. In a device accessible primarily from a front when installed for normal operation and requiring service connections, apparatus comprising: a base member attachable to a support; a working section; spaced means supporting said working section above and from said base member and releasable from said base member whereby access space is provided between said working section and base member; service means on said working section; and service members on said base member releasably receiving said service means, said service means and service members being accessible exteriorly of said spaced supporting means and in said access space that is between said base member and working section for releasable interconnection.

3,190,710
KNOCK-DOWN FURNITURE AND METHOD OF ASSEMBLY
Paul E. Freeman, Tallahassee, Fla., assignor to LokTrim Corporation, Tallahassee, Fla., a corporation of Florida
Filed Mar. 8, 1962, Ser. No. 178,289
4 Claims. (Cl. 312—263)

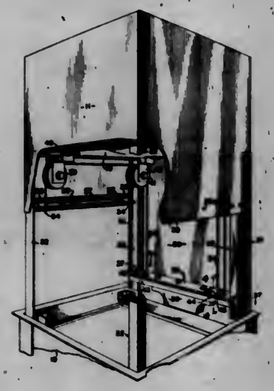
1. A knock-down article of furniture comprising a plurality of separate elements including two side members, said elements adjacent their horizontal and vertical meeting edges having engaging mitered edges, each of the elements provided with rabbets adjacent their mitered edges, a plurality of substantially identical channel members having angularly inturned flanges, said flanges engaging within the rabbets adjacent each mitered joint, the upper ends of the vertical channel members being notched

to provide upwardly extending tabs, said tabs engaging the terminal edges of the horizontal channel members



which are disposed along the upper edges of the two side members, the said channel members enclosing the joints and supporting the furniture in its assembled condition.

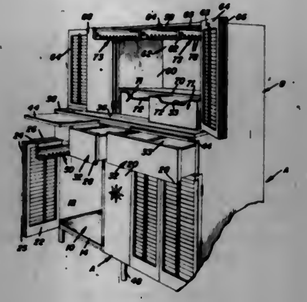
3,190,711
DISHWASHER DOOR AND COUNTERBALANCE APPARATUS
Arthur W. Haas, Rochester, N.Y., assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Oct. 22, 1962, Ser. No. 232,164
11 Claims. (Cl. 312—284)



1. In a dishwashing machine, in combination, means defining a washing and rinsing space, a door for enclosing a portion of the space, means for guiding the door as it is moved with respect to the space to and from a closed position, a counterweight for assisting in raising and lowering the door, two continuous cables each having its ends anchored to the door and an intermediate portion anchored to the counterweight to operatively connect the door to the counterweight, and a pulley system for each of the cables.

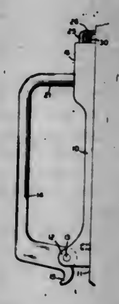
3,190,712
INTERIOR DECORATOR'S CABINET WITH SLIDABLE RACKS
Georgia F. Fielden, 5 E. Bijou St., Colorado Springs, Colo.
Filed June 14, 1962, Ser. No. 202,566
2 Claims. (Cl. 312—311)

1. In a cabinet construction of the class described, a cabinet selection embodying at least one storage compartment open at its front and provided with door means, that portion of said section directly above the compartment having an open front drawer housing with a sliding drawer therein, said drawer housing having a horizontal top wall, a horizontal panel slidingly mounted in the housing above the open top of the drawer and independently slidable and providing a shelf, a surface portion of said top wall providing a ledge-like fixed shelf and thus providing the user with fixed and movable shelves, track means mounted in an upper portion of said compartment, and a hook-equipped rack slidable in the track means, said door means



comprising hingedly mounted folding doors having spaced blocks mounted on upper outwardly disposed surfaces, said blocks being coplanar, aligned and having inner ends which are spaced apart, said drawer having a front panel with a central lower edge portion bridging the space between the inner spaced ends of the blocks and being accessible for fingerprinting needs.

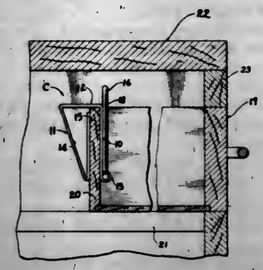
3,190,713
CHASSIS LATCH HANDLE
John L. Vander Sande, North Haledon, and Frank Wheeler, Little Falls, N.J., and Benjamin Carl Beehner, Van Nuys, Calif., assignors to Camloc Fastener Corporation, Paramus, N.J., a corporation of New York
Continuation of application Ser. No. 823,551, June 29, 1959. This application Jan. 9, 1963, Ser. No. 250,310
7 Claims. (Cl. 312—320)



1. A latching assembly for holding a first member in a home position on a mounting member on which said first member can be moved into and out of said home position including in combination a handle having ends, means for mounting said handle for pivotal movement on said first member between open and closed positions, interengageable means on one of said ends and on said mounting member for moving said first member into said home position as said handle moves to its closed position, means forming a hook on the other end of said handle, a latch adapted to engage said hook, means for mounting said latch for sliding movement on said first member and resilient means for urging said latch to a position at which it engages said hook as said handle moves to said closed position.

3,190,714
DRAWER STOP
Harry D. Swensen, Rte. 1, West Farmington, Ohio
Filed Oct. 18, 1962, Ser. No. 231,376
4 Claims. (Cl. 312—348)

1. A device for installation on a drawer to prevent unintentional withdrawal thereof, comprising a body providing spaced legs for disposition on oppoiste sides of a drawer back, one of said legs being disposed inside said drawer in abutment with said drawer back and the other being disposed outside the drawer and spaced from the drawer back, said legs being connected together by a bridge which overlies the drawer back and said other leg being doubled over on itself to provide a portion resiliently biased toward said one leg to yieldably grip the drawer back therebetween, and a finger carried by said body and normally projecting above the top of the drawer back for engagement with a portion of the structure in which the drawer is slidable to prevent drawer withdrawal, said finger being



shiftable downwardly from said normal poistion for disengagement from the structure portion aforesaid to provide for drawer withdrawal.

CHEMICAL

3,190,715
PROCESS OF IMPARTING WASH AND WEAR PROPERTIES TO CELLULOSIC TEXTILES AND FINISHING SOLUTIONS FOR USE IN SUCH PROCESS
Alex F. Gordon, Black Mountain, N.C., assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 15, 1962, Ser. No. 173,337
9 Claims. (Cl. 8—116)

1. The process of finishing cellulosic textiles which comprises applying to the textile an aqueous solution containing from 2% to 16% of an acetal produced by reacting at least one mol of formaldehyde per mol of glycol having not more than 6 carbon atoms in the glycol molecule, and from about 2% to 10% by weight of a synergistic catalyst mixture, the components of said mixture being present in approximately equal amounts and containing an acid salt of a primary aliphatic amine having no more than 6 carbon atoms and a quaternary ammonium salt having the formula

$$R—O—CH_2—NR^1R^2R^3\ Hal$$

in which R is alkyl having from 12 to 18 carbon atoms, $NR^1R^2R^3$ is selected from the group consisting of heterocyclic tertiary amines and aliphatic tertiary amines, the aliphatic chain containing from 2 to 6 carbon atoms, and Hal is halogen, and heating the thus treated textile to a temperature of from 220° F. to 350° F.

3,190,716
PROCESS OF FINISHING CELLULOSIC FABRICS WITH ALDEHYDE-CONTAINING SOLUTIONS AND SAID SOLUTIONS
Alex F. Gordon, Black Mountain, N.C., assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 15, 1962, Ser. No. 173,336
11 Claims. (Cl. 116.4)

1. The process of finishing cellulosic textiles which comprises applying to the textile an aqueous solution containing an aldehyde from the group consisting of formaldehyde, formaldehyde polymers containing not more than 6 carbon atoms, glutaraldehyde, glyoxal, acrylic aldehyde and methylacrylic aldehyde, in amount of from 1% to 10% by weight, calculated as 100% formaldehyde, in the case of formaldehyde and formaldehyde polymers, in amount of from 2% to 20% by weight in the case of acrylic aldehyde and methylacrylic aldehyde, and in amount of from 4% to 40% by weight in the case of glutaraldehyde, and from about 2% to 10% by weight of a synergistic catalyst mixture being present in approximately equal amounts and containing an acid salt of a primary aliphatic amine having no more than 6 carbon atoms and a quaternary ammonium salt having the formula

$$R—O—CH_2—NR^1R^2R^3\ Hal$$

in which R is alkyl having from 12 to 18 carbon atoms, $NR^1R^2R^3$ is selected from the group consisting of heterocyclic tertiary amines and aliphatic tertiary amines, the aliphatic chain containing from 2 to 6 carbon atoms, and Hal is halogen, and heating the thus treated textile to a temperature of from 220° F. to 350° F.

3,190,717
PROCESSES AND COMPOSITIONS FOR TREATMENT OF COTTON AND OTHER CELLULOSIC FABRICS
Joseph C. King, Greenville, S.C., assignor to Metro-Atlantic, Inc., Greenville, S.C., a corporation of Rhode Island
No Drawing. Filed Apr. 9, 1962, Ser. No. 185,799
6 Claims. (Cl. 8—116.4)

1. A process of cross linking cellulosic fabrics which comprises padding them with dilute formaldehyde and then aging them for 10–20 hours and then drying, aging for 8–16 hours and curing.

3,190,718
PROCESS OF HEAT TREATING A TOW OF POLYESTER FILAMENTS WHILE UNDER TENSION TO MODIFY THE PROPERTIES THEREOF
Werner A. P. Schoeneberg and William D. Parkey, Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 28, 1960, Ser. No. 25,249
18 Claims. (Cl. 8—130.1)

1. The process which comprises heat treating under tension a tow of polyester filaments carrying substantially uniformly on the surfaces thereof a member selected from the group consisting of a polyalkylene glycol, an ether of a polyalkylene glycol, an ester of a polyalkylene glycol, an ether of an alkylene glycol, diacetone alcohol, diacetin, an alkanolamine and a lower alkyl phosphate.

3,190,719

PROCESS FOR DIRECT AND SELECTIVE RECOVERY OF VANADIUM VALUES FROM AQUEOUS SOLUTIONS THEREOF

Andrew D. Kelmers, Newport Beach, Calif., and William Koenen, Pompton Plains, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Aug. 15, 1962, Ser. No. 217,194
7 Claims. (Cl. 23—22)

1. A process for selectively recovering highly pure vanadium values at high yield from iron, phosphorus and aluminum contaminated aqueous vanadium containing solutions comprising:

(1) providing an aqueous iron, phosphorus and aluminum contaminated starting solution containing quadrivalent vanadium values,

(2) adjusting the pH of said solution to about 0.0±0.1,

(3) heating said solution and maintaining its temperature at about 25 to 80° C., while

(4) oxidizing said quadrivalent vanadium values to the pentavalent state with an oxidizing agent, while manitaining the pH of said solution below about 0.1, thereby causing precipitation of approximately 80 weight percent of the vanadium values in said solution as hydrated vanadium oxides, then

(5) adjusting the pH of said aqueous solution to be within the range of from about 0.3 to 1.0 by the addition of at least one reagent selected from the group consisting of ammonium hydroxide and ammonia, thereby causing further selective precipitation of the remaining vanadium values in said solution as ammonium polyvanadates,

(6) digesting said aqueous solution containing the precipitates for about one hour at a temperature ranging from about 25 to 80° C., and

(7) separating said precipitates from the solution by filtration.

3,190,720

PROCESS FOR THE SELECTIVE RECOVERY OF VANADIUM OXIDE FROM ALKALINE LIQUORS

Mayer B. Goren, Golden, Colo., assignor to Kerr-McGee Oil Industries, Inc., a corporation of Delaware

No Drawing. Application Feb. 28, 1961, Ser. No. 92,138, which is a continuation of application Ser. No. 662,001, May 28, 1957. Divided and this application Nov. 22, 1963, Ser. No. 325,767
12 Claims. (Cl. 23—23)

1. A process for the preparation of a vanadium oxide product from an alkaline liquor containing dissolved vanadium values and dissolved phosphorus values as a contaminating impurity comprising precipitating the vanadium oxide product from the liquor at a pH of about 0.5–1.7 and a temperature between about 60° C. and the boiling point of the liquor, the pH of the liquor being adjusted by addition of an acidic substance to provide a pH of about 0.5–1.7, the pH of the liquor being adjusted rapidily and in the matter of not more than a few minutes when passing through the pH range of about 3½ to below 2 to thereby inhibit the precipitation of red cake, the vanadium values being substantially all in the quinquevalent state during precipitation of the vanadium oxide product and the foregoing pH limits being based upon the pH value of the liquor at a temperature of 25° C.

3,190,721

METHOD OF REMOVING IRON FROM SODIUM AND POTASSIUM SULFATES

Wilbur Simon, Crystal Lake, and George Andelfinger, Woodstock, Ill., assignors to Morton Salt Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,360
14 Claims. (Cl. 23—121)

1. A process for upgrading crude sulfates which comprises fusing a crude sulfate selected from the group consisting of sodium and potassium sulfate and containing iron compounds in an amount of from 0.2 to 3.0 weight percent expressed as ferric oxide as an impurity, with an alkaline material in the presence of a siliceous material, and thereafter separating the fused sulfate from the resulting siliceous residue containing iron impurities.

3,190,722

METHOD OF REMOVING IRON FROM SODIUM AND POTASSIUM SULFATES

Wilbur Simon, Crystal Lake, Ill., assignor to Morton Salt Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,361
13 Claims. (Cl. 23—121)

7. A process comprising fusing a crude sulfate, selected from the group consisting of sodium and potassium sulfates containing from about 0.2 to about 3 weight percent of iron compounds calculated as ferric oxide, with an alkaline material selected from the group consisting of alkali and alkaline earth metal oxides, hydroxides, and carbonates, removing iron compounds floating on the surface of the fused crude sulfate, cooling the fused sulfate to a solid state, comminuting said solid product, and magnetically separating magnetic iron oxide formed in said process from the resulting pulverulent mass.

3,190,723

PROCESS FOR PRODUCING METAL OXIDES IN PREDETERMINED PHYSICAL FORMS

Howard W. Jacobson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 17, 1961, Ser. No. 145,592
12 Claims. (Cl. 23—140)

1. A process for producing metal oxides in a predetermined structural form comprising reacting at temperature of 700 to 950° C. in an enclosed reaction zone carbon in the structural form desired in the oxide, a vaporous halide of a metal selected from the group consisting of chromium, columbium, iron, molybdenum, tantalum, titanium, tungsten, vanadium, and zirconium, and an amount of a reducing agent in excess of the stoichiometric quantity required to completely reduce said halide to metal, said reducing agent being selected from the group consisting of aluminum, hydrogen, and combinations thereof when the metal selected is from the group consisting of columbium, iron, molybdenum, tantalum, tungsten and vanadium, and being selected from the group consisting of aluminum and combinations of aluminum with hydrogen when the metal selected is from the group consisting of chromium, titanium and zirconium, to produce a metal carbide, contacting the metal carbide with oxygen, at a temperature of 500 to 1000° C. to cause an exothermic reaction, and recovering a metal oxide having the structural form or the carbon reactant.

3,190,724

TEST FOR A MICROORGANISM DAMAGED COTTON

Jack Compton, Charlottesville, Va., and Winston H. Reed, Shelton, and Donald S. Buell, Trumbull, Conn., assignors to Institute of Textile Technology, Charlottesville, Va., a corporation of Virginia

No Drawing. Filed July 9, 1962, Ser. No. 208,342
8 Claims. (Cl. 23—230)

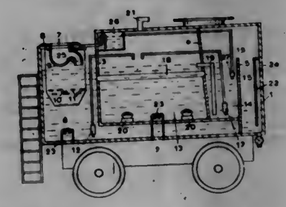
1. The method of determining microorganism damaged cotton which comprises maintaining a solution consisting essentially of a pH indicator solution substantially free of oxygen and under pressure of a propellant gas which is inert with respect to the indicator solution and will not significantly alter the pH of the indicator solution, spraying the indicator solution on cotton fibers in the form of a fine mist with sufficient pressure to wet and penetrate the cotton fibers substantially uniformly and comparing the color of the indicator solution on the cotton sample with the color of the indicator solution at various pH's to determine the extent of damage, if any, to the cotton.

3,190,725

APPARATUS FOR THE TREATMENT OF NIGHT SOIL

Michael A. van den Berg, Klipfontein, Boksburg North, Transvaal, Republic of South Africa, assignor to Wright Anderson (South Africa) Limited, Boksburg North, Transvaal, Republic of South Africa

Filed Apr. 15, 1963, Ser. No. 272,985
Claims priority, application Republic of South Africa, May 10, 1962, 62/922
5 Claims. (Cl. 23—259.1)



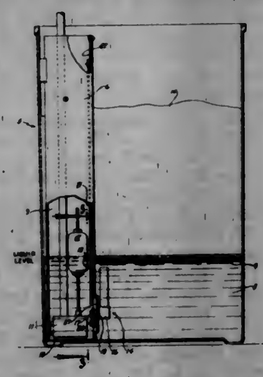
1. Transportable apparatus for the aerobic digestion of night soil comprising a mixing chamber, an inlet for discharge of night soil into the mixing chamber, an aeration chamber, a vent connecting the aeration chamber to atmosphere, an aerator in the aeration chamber, and a settlement chamber for retention of a body of activated sludge and supernatant effluent, means for transferring activated sludge from the settlement to the aeration chamber, means for transferring the contents of the mixing chamber to the aeration chamber, the contents of the aeration chamber to the settlement chamber and returning supernatant effluent from the settlement chamber to the mixing chamber.

3,190,726

BRINER WITH ADJUSTABLE BRINE DRAW-OFF

John Rudelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 18, 1961, Ser. No. 103,743
2 Claims. (Cl. 23—267)



1. In apparatus comprising a vessel in which brine is generated and from which brine is periodically withdrawn, valved means at the bottom of the vessel through which brine is withdrawn and through which fresh water is filled into the vessel for generation of brine to replace that which was withdrawn, and a float actuator which is movable up and down and operatively connected with the valved means to terminate filling of fresh water into the vessel when liquid therein rises to a predetermined level, means for accurately predetermining the amount of salt withdrawn from the vessel in solution at each withdrawal of brine therefrom, said means comprising: upright partition means in the vessel defining at one side thereof a control compartment in which the valved means and its float actuator are located, and the top of which compartment is above said predetermined level, said partition means also cooperating with the vessel to define a brine compartment at the other side of the partition means; a foraminous horizontal supporting member extending across the brine compartment and adapted to support a store of salt, said supporting member being disposed a small distance below said predetermined level so that the bottom portion of a store of salt on the supporting member can be contacted by water in the vessel, for generation of brine, when the vessel is filled, and so that the amount of liquid in the vessel is independent of the amount of salt comprising such store; said partition means being imperforate except for a hole therein defining the bottom of a zone that extends upwardly to said predetermined level; an adjustable transfer tube in one of the compartments constituting the sole means of communicating it with the other compartment; means mounting the transfer tube on the partition means with one end portion of the tube at a fixed location and projecting through said hole in the partition means for communication with said other compartment, while providing for adjustment of the tube to dispose the mouth of its other end portion at different levels within said zone, whereby fresh water entering the control compartment can be transferred via the tube to the brine compartment to fill the same to said predetermined float-defined level only after the level of liquid in the control compartment rises to the level of said mouth of the transfer tube, while all brine withdrawn from the brine compartment is constrained to flow through the transfer tube to the control compartment, so that such brine withdrawal from the brine compartment is terminated when the brine level in the brine compartment drops to that of said mouth of the transfer tube, and the amount of brine thus withdrawn is dependent upon the level to which said mouth of the tube is adjusted in said zone; and means for releasably holding the transfer tube with said mouth thereof at any one of a number of different levels throughout said zone.

3,190,727

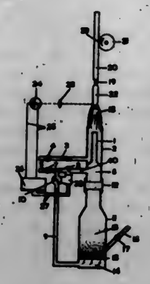
APPARATUS FOR MELTING POWDERED MATERIAL BY MEANS OF A FLAME ELEVATED TEMPERATURE

Ate Vunderink, Bussum, Netherlands, assignor to Ronette Piezo Electrische Industrie N.V., Amsterdam, Netherlands, a corporation of the Netherlands

Filed May 10, 1961, Ser. No. 109,067
Claims priority, application Netherlands, June 25, 1960, 253,106/60
4 Claims. (Cl. 23—273)

1. In apparatus for melting powdered material by means of a flame of elevated temperature and for precipitating said molten material in the form of a rod, including a burner comprising two concentric tubes, means to supply combustible gas to the outer of said tubes, a catching surface adjacent and in vertical axial alignment with said burner for precipitated material, means to move said catching surface away from the burner in a vertical direction, powder dosing means including a closed vessel having a perforate bottom surface, means to supply powder to the interior of said vessel, means to supply oxygen under pressure to the bottom of said supply of powder below said perforate surface in the vessel to create a fluidized bed of powder, conduit means connecting an upper region of said fluidized bed of powder with said inner

burner tube to inject said powder into said flame, and a common oxygen source having two outlet pipes and proportioning valve means, one of said outlet pipes being in communication with said inner burner tube above the fluidized bed of powder, the outer outlet pipe being in communication with the under side of the fluidized bed,

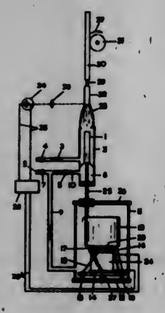


said proportioning valve means being adjustable to simultaneously control the rate of flow of oxygen to one pipe inversely to the rate of flow to the other pipe, and photoelectric means responsive to material precipitated on said catching surface to regulate said proportioning valve means.

3,190,728
APPARATUS FOR MELTING MATERIAL BY MEANS OF A FLAME OF ELEVATED TEMPERATURE

Ate Vunderink, Bussum, Netherlands, assignor to Ronette Piezo Electrische Industrie N.V., Amsterdam, Netherlands, a corporation of the Netherlands

Filed May 10, 1961, Ser. No. 109,068
Claims priority, application Netherlands, Oct. 27, 1960, 256,337/60
6 Claims. (Cl. 23—273)

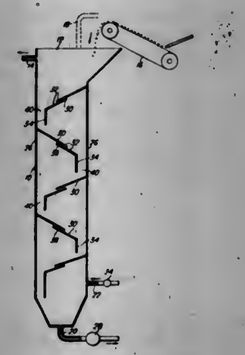


1. In apparatus for melting powdered material by means of a flame of elevated temperature and for precipitating said molten material in the form of a rod, including a burner comprising two concentric tubes, means to supply combustible gas to the outer of said tubes, means to supply oxygen to the inner of said tubes, powder dosing means including a closed chamber, conduit means having an inlet end in communication with said closed chamber and an outlet end in communication with said inner burner tube, a catching surface for precipitated material adjacent said burner and positioned in vertical axial alignment therewith, means to move said catching surface away from the burner in a vertical direction at a constant rate, means to supply oxygen under pressure to the closed chamber of the powder dosing means, powder supply means within said closed chamber, a trough-shaped powder-carrying channel means contained within said chamber and open along its length to said powder supply, said channel means terminating in a discharge portion having gradually reduced powder-carrying capacity, said discharge portion being positioned adjacent the inlet end of said conduit means to cause powder to be injected into said conduit means by the flow of said oxygen under pressure into said inlet end to support combustion at said burner, means to move powder into said channel means and toward said discharge portion, and means to vary rate of said injection of powder.

3,190,729
BAFFLED REACTOR TOWER

James Ratcliffe Emmett, Ponteland, Newcastle-upon-Tyne, and James McGrath, Newcastle-upon-Tyne, England, assignors, by mesne assignments, to Weir Water Treatment Limited, Purley, England, a British company

Filed Aug. 2, 1961, Ser. No. 128,731
Claims priority, application Great Britain, Aug. 4, 1960, 27,098/60
2 Claims. (Cl. 23—283)

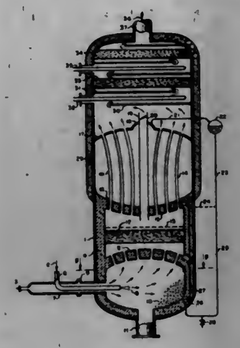


1. A column for effecting continuous counter-current contact between a particulate solid material and a liquid, a particle-inlet and a liquid-outlet adjacent the top of said column, a particle-outlet and a liquid-inlet adjacent the bottom of said column, a plurality of baffle assemblies arranged within the column to provide a zig-zag path for said particles, each baffle assembly comprising a downwardly sloping planar baffle extending from one wall of the column, said baffle having a length less than the distance across the column along the line defined by the slope of the baffle, a second planar baffle spaced beneath and parallel to the first baffle, the contiguous ends of the two baffles overlapping each other to form a liquid passageway therebetween, the other and lower end of the second baffle being spaced from the wall of the column, and a third baffle extending downwardly from the lower end of the second baffle parallel to said wall, the third baffle together with the wall portion adjacent thereto forming a chute through which the solid particles pass from one chamber to the next, each successive baffle assembly being spaced from and extending in a direction opposite to the baffle assembly immediately above, the space between the contiguous ends of the two baffles being such that the proportion of liquid flowing upwardly through the chute is insufficient to fluidize the particulate solid material fed downwardly therethrough.

3,190,730
INTEGRATED HYDROCARBON CONVERSION COLUMN

Paul Korwin, Flushing, and George Russell James, Armonk, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 3, 1962, Ser. No. 214,625
6 Claims. (Cl. 23—288)



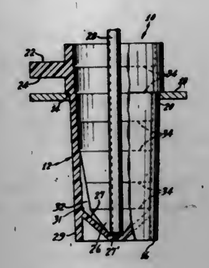
1. Gas reform furnace with integral converter and waste heat boiler comprising a vertically disposed cylindrical vessel, said vessel having a bottom furnace section defined by an inner refractory lining and upper refractory partition, said partition being provided with a plurality of substantially vertical openings for passage of process gas, inlet means below said partition for passage of an oxygen-containing gas and partially reformed synthesis gas into said furnace section, a bed of secondary reform catalyst supported within said vessel above said partition, a waste heat boiler section within said vessel above said catalyst bed, said waste heat boiler section comprising a plurality of substantially vertical fire tubes extending upwards from a bottom refractory-lined mounting to an upper support cover, together with means to pass boiler feed water into said boiler section external to said tubes and steam removal means extending external to said vessel from said cover, said inner refractory lining extending upwards within said vessel to said refractory-lined mounting, a heat exchanger for gas cooling above said waste heat boiler section, a bed of CO-oxidation catalyst supported within said vessel above said heat exchanger, and an upper outlet above said bed of CO-oxidation catalyst for removal of converted process gas from said vessel.

3,190,731
SAMPLE-SUPPLY CUPS FOR ANALYSIS APPARATUS

Edwin C. Weiskopf, Brewster, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York

Filed Mar. 8, 1961, Ser. No. 94,286
3 Claims. (Cl. 23—292)

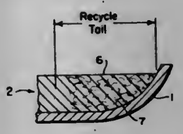
1. A small cup-like receptacle for a sample liquid for use in connection with automatic analysis apparatus, said receptacle being adapted to be mounted in an opening of a horizontal support, said receptacle having a small volumetric capacity of the order of a fraction of a cubic inch and being of greater depth than width and having a downwardly tapering inner wall part forming the inner bottom portion of the receptacle, the apex of said tapering inner wall part being truncated by a flat surface, so as to facilitate the aspiration of a maximum quantity of the liquid sample from the receptacle through a tube inserted in the cup and positioned with its inlet end close to the bottom of the cup, and an integral horizontal external part projecting laterally from the side of the cup and positioned near the top thereof so that said part is adapted to be positioned over the upper surface of said horizontal support when the cup is mounted thereon, said part also extending a substantial distance peripherally of the cup and having a flat-surface area for sample identification marking, said receptacle having an external shoulder below and adjacent to said horizontal part for supporting the receptacle in the opening of said horizontal support, said cup also having a flat bottom part for supporting the cup when it is not supported by said shoulder in the opening of said horizontal part.



3,190,732
ZONE REFINING METHODS AND APPARATUS

Noble E. Hamilton, Belmont, Mass., assignor to Clevite Corporation, a corporation of Ohio

Filed Nov. 22, 1960, Ser. No. 71,000
5 Claims. (Cl. 23—301)



1. In a continuous zone refining process wherein a charge of fusible material is moved at a predetermined rate relative to a heating device to cause a liquid zone to traverse the charge, the step of inserting a mass of fibrous material in the liquid zone of the material being refined to prevent mixing of liquids from the extremes of the zone, the fibrous material being insoluble in the liquid zone, chemically non-reactive with the charge material, non-sublimable at the maximum temperature of the liquid zone and having a melting temperature higher than the maximum temperature of the liquid zone.

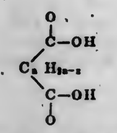
3,190,733
CORROSION INHIBITOR

Olen L. Riggs, Jr., Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

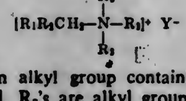
No Drawing. Filed Sept. 21, 1960, Ser. No. 57,402
7 Claims. (Cl. 44—70)

5. A composition comprising a major proportion of hydrocarbon oil and between about 1 and about 500 parts per million by weight based on the hydrocarbon

oil of a corrosion inhibitor consisting essentially of from about 92 to 60 percent by weight of an acid having the formula:



wherein n varies from 10 to 42 and x varies from 6 to 10 and a quaternary ammonium compound having the formula:

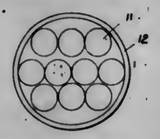


wherein R_1 is an alkyl group containing 6–15 carbon atoms, R_2 is aryl, R_3's are alkyl groups containing 1–4 carbon atoms, and Y is a halogen.

3,190,734
RUST INHIBITING COMPOSITION
John W. Nelson, Lansing, Ill., assignor, by mesne assignments, to Sinclair Research Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 27, 1959, Ser. No. 829,514
5 Claims. (Cl. 44—71)

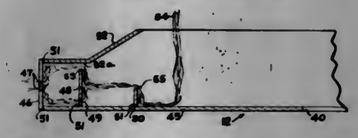
1. A light, normally liquid petroleum distillate having a viscosity not exceeding that of petroleum gas oil into which has been incorporated an amount sufficient to inhibit corrosion of ferrous surfaces of a petroleum distillate compatible, N-di-alkyl, bis(hydroxyphenyl) carboxylic acid amide, wherein the carboxylic acid radical is in an aliphatic chain of 4 to 8 carbon atoms, each alkyl group of said N-di-alkyl group containing at least 16 carbon atoms.

3,190,735
METHOD OF MAKING A FIBER OPTICAL BUNDLE
Narinder S. Kapany, Chicago, Ill., assignor, by mesne assignments, to American Optical Company, a voluntary association of Massachusetts
Filed June 10, 1959, Ser. No. 819,492
1 Claim. (Cl. 65—4)



The method of making a bundle of aligned optically insulated transparent fiber members consisting of the steps of: longitudinally aligning a multiplicity of transparent rod members formed of a material having a predetermined refractive index in side-by-side relation within the lumen of a transparent cylinder member which is formed of a material having a lower index of refraction than the index of said rod members, said rod members being selected so as to have substantially the same coefficient of thermal expansion as said cylinder member, and said cylinder member being selected so as to have a lower melting point than that of said rod members, and heating such combination to a temperature above the softening point of said cylinder member to allow the material comprising said cylinder member to flow into the volume surrounding said rod members before the rod members are drawn out, and then heating such combination to soften said rod members while drawing such combination to concurrently lengthen and reduce the diameter of said rod members into fibers and to cause the material of lower refractive index to form insulating coatings about said fibers and to hold said fibers together as an elongated unitary flexible bundle.

3,190,736
ROTOR FOR THE FORMING OF GLASS FILAMENTS
Stanley G. Benner, South Plainfield, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Aug. 21, 1962, Ser. No. 218,347
4 Claims. (Cl. 65—15)



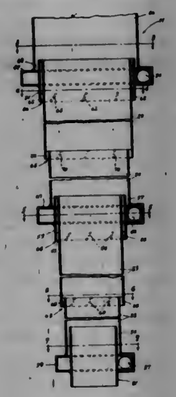
1. A rotor, for use in rotary systems of fiberization wherein a supply of molten material is deposited on the base of a rotor and urged by centrifugal force through openings in a peripheral wall of the rotor to produce filaments of molten material to be attenuated into fibers comprising:

(a) a base having at least one broad surface area for receiving a supply of molten material,
(b) means for rotating said base about an axis extending generally perpendicular to said broad surface area,
(c) means connecting said base to said rotation means,
(d) a first annular wall secured to said base and forming the peripheral wall thereof,
(e) said peripheral wall having a plurality of openings therein at approximately the axially medial portion thereof and solid wall portions on each axial side of said medial portion,
(f) means for depositing a supply of molten material onto the broad surface area of said base to be urged by centrifugal force in a radially outward direction,
(g) means radially opposite said medial portion and connected to said rotor for rotation therewith for dividing said supply of molten material into a plurality of streams moving in a radially outward direction,
(h) said dividing means spacing said streams from each other in an axial direction a distance greater than the axial extent of said medial portion of said peripheral wall containing said openings so that said radially moving streams are intercepted by the solid portion of said peripheral wall to form layers of molten material axially spaced from said medial portion from which portions thereof move axially over the inner peripheral surface of said peripheral wall from opposite directions toward said openings therein.

3,190,737
GLASS BEAD FURNACE AND METHOD OF MAKING GLASS BEADS
Elmer L. Schmidt, St. Louis, Mo., assignor to Flex-O-Lite Manufacturing Corporation, St. Louis, Mo., a corporation of Missouri
Filed July 7, 1960, Ser. No. 41,358
8 Claims. (Cl. 65—21)

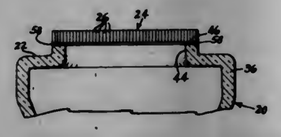
1. In a method of producing small glass beads in a furnace tube, the steps of introducing a combustion gas at a burner end of the tube, charging small glass particles entrained in air into the combustion gas at the burner end and directing the same toward an opposite end of the tube, producing combustion with the combustion gas and said air and charging said glass particles and the combustion gases toward the opposite end of the tube, and introducing air under pressure adjacent the burner end of the tube and tangentially to the interior of the tube and around the entire inner periphery of the tube to establish a circulating protective cushion of air along the interior periphery of said tube.

4. A heat treating furnace comprising a draft tube, a source of heat at one end of said tube so disposed as to direct heat into said tube, an inlet conduit in the heated end of the tube, means for introducing under pressure a material to be heat treated into said inlet conduit whereby said material may be directed into the



heat in said tube to be heat treated and means for establishing a cushion of air around the interior periphery of said tube to provide cooling and establish a barrier against contact by said material, said last named means comprising a conduit connected substantially perpendicular to the axis of the tube having an outlet opening into the interior of said tube and around the entire inner periphery of the tube adjacent the inner wall surface, and means for charging air under pressure through said conduit to provide an air current along said inner wall surface of the tube.

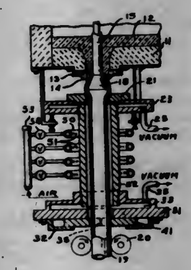
3,190,738
METHOD FOR UNITING AN ABRADED ELEMENT TO AN ENVELOPE
Lee O. Upton, Sturbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Nov. 28, 1960, Ser. No. 72,182
10 Claims. (Cl. 65—31)



1. The method of connecting a first member of glass to a second member of glass having one of its surfaces abraded to a precontrolled shape, said method comprising etching said abraded surfaces of said second member to a depth such as to remove sharp irregularities of cracks, caused by the abrasion thereof, placing said members one upon the other with a solder glass disposed between said members throughout areas thereof to be connected, said solder glass being characterized in that its melting temperature is below that of the glasses of said first and second members and heating said glass members and solder glass to a temperature sufficient to render said solder glass fusible to said members.

5. The method of forming an integral glass structure embodying a member formed of fused glass fiber elements and a glass envelope comprising forming an opening extending through said envelope, abrading the edge portions of said opening to a desired shape, acid etching said abraded portions to a depth sufficient to remove sharp irregularities of cracks resulting from said abrading, placing a relatively thin layer of a glass material characterized in that its melting temperature is below that of the materials of said member and envelope upon the portion of said envelope to which said member is to be attached, seating said member upon said glass material and heating the resultant assembly to a temperature such as to cause said glass material to melt and fuse to the adjoining areas of said member and envelope.

3,190,739
TUBE DRAWING
Richmond W. Wilson, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 15, 1961, Ser. No. 152,498
7 Claims. (Cl. 65—85)



1. The method of expanding molten glass tubing, as it is being continuously drawn, to a desired cross sectional size and configuration; which includes passing such tubing through the bore of a tubular die whose bore affords a space of a cross section and size substantially corresponding to the transverse configuration and size to which the tubing is to be expanded, supplying atmospheric pressure internally of the tubing being formed while creating negative pressure in said space to expand the tubing into contact with such die and maintaining the die at a temperature at which it chills the tubing contacted by it to cause the same to contract away from such die slightly during its continued passage therethrough.

3,190,740
ANHYDROUS HERBICIDAL CONCENTRATE
Frederick J. Wolter, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,177
1 Claim. (Cl. 71—2.6)

An anhydrous herbicidal concentrate comprising 30 parts of 3-(p-chlorophenyl)-1,1-dimethylurea, 3 parts of lecithin and 67 parts of mineral oil, said urea having an average particle diameter of less than 5 microns.

3,190,741

PROCESS FOR PRODUCING A SLOW-ACTING NITROGENOUS FERTILIZER MIXTURE CONTAINING CROTYLIDENEDIUREA

Hans Brandeis, Ludwigshafen (Rhine), Harro Petersen, Mannheim, and Rolf Fikentscher, Ludwigshafen (Rhine) Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed July 9, 1963, Ser. No. 293,830
Claims priority, application Germany, July 18, 1962, B 68,080
3 Claims. (Cl. 71—28)

1. A process for producing a slow-acting nitrogenous fertilizer mixture containing crotylidenediurea and other condensation products of urea and acetaldehyde, said process comprising reacting at 30–100° C. urea and acetaldehyde in a molar ratio of 1:1.05 to 1:1.5, respectively, in water maintained at an acid pH of at least 1.5, maintaining the pH of the reaction mixture at 1.5–3.0 toward the end of the reaction and thereby forming insoluble condensation products of urea and acetaldehyde consisting essentially of crotylidenediurea in a motor liquor, then adjusting the pH of the motor liquor to a value in the range of 5–9, and then drying the insoluble condensation products formed in the reaction together with at least a portion of said adjusted mother liquor in an amount sufficient to produce crude crotylidenediurea with only small amounts of nitrogen compounds capable of being split off by cold urease solution in the range of 2.43% to 8.9%.

3,190,742

PROCESS FOR PRODUCING A SLOW-ACTING AND QUICK-ACTING NITROGENOUS FERTILIZER MIXTURE CONTAINING CROTYLIDENEDIUREA

Hans Brandeis, Ludwigshafen (Rhine), Harro Petersen, Mannheim, and Rolf Fikentscher, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,330
Claims priority, application Germany, Sept. 20, 1962, B 68,918
3 Claims. (Cl. 71—28)

1. A process for producing a slow-acting and quick-acting nitrogenous fertilizer mixture containing crotylidenediurea and other condensation products of urea and acetaldehyde, said process comprising reacting at 30–100° C. urea and acetaldehyde in a molar ratio of urea to acetaldehyde in the range from equal mols up to 2:1, respectively, in water maintained at an acid pH of at least 1.5, maintaining the pH of the reaction mixture at 1.5–3.0 toward the end of the reaction and thereby forming insoluble condensation products of urea and acetaldehyde consisting essentially of crotylidenediurea in a mother liquor, then adjusting the pH of the mother liquor to a value in the range of 5–9, and then drying the insoluble condensation products formed in the reaction together with a sufficient portion of said adjusted mother liquor to produce a fertilizer composition having a nitrogen content disengageable with urease of 10 to 50%, the values for said nitrogen content disengageable with urease from a cold aqueous solution and a hot aqueous solution being about equal.

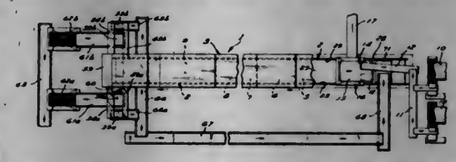
3,190,743

METHOD AND APPARATUS FOR MANUFACTURE OF PELLETS OR THE LIKE

Melvin J. Greaves, Cleveland, Ohio, assignor to Arthur G. McKee & Company, Cleveland, Ohio, a corporation of Delaware

Filed Mar. 1, 1962, Ser. No. 176,635
19 Claims. (Cl. 75—5)

1. The method of treating particulate material on a traveling support having a bottom and upwardly extending side walls and a charging end and a discharge end, which method includes the steps of depositing on said support near its charging end a transversely extending layer of said particulate material which has previously traveled over said support and been subjected to treatment thereon as a side layer adjacent at least one of its side walls, moving said particulate material on said grate through a treating zone providing treating conditions including heating, separating the material discharged at the discharge end of said traveling support into a side layer portion comprising material from adjacent at least one of said side walls and a product portion comprising the remander of the material discharged from said support, returning said side layer portion of material to the charging end of said support and utilizing it to form said transversely extending layer, whereby material which travels over said support in at least one side layer thereof is



subjected to two treatments thereon, first as a side layer and second as a transversely extending layer.

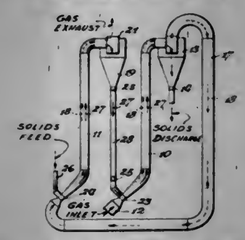
8. Apparatus for treating particulate materials comprising a generally horizontally disposed traveling support having a charging location and a discharge location and comprising a bottom and upwardly extending side walls; means for moving said traveling support so it travels from its charging location toward its discharge location; means for depositing particulate material on said support; means for subjecting said particulate material carried on said support to treatment including heating as said support travels; and diverting means at the discharge location of said support for segregating as layers the particulate material adjacent the side walls of said traveling support from the remainder of the particulate material discharged by said support.

3,190,744

PROCESS FOR MAGNETIC REDUCTION OF IRON ORE

Richard E. King, Birmingham, Ala., assignor to Northern Natural Gas Company, Omaha, Nebr., a corporation of Delaware, and W. S. Moore Company, Duluth, Minn., a corporation of Minnesota

Filed Jan. 9, 1963, Ser. No. 250,386
14 Claims. (Cl. 75—26)



1. The process of treating a ferruginous ore material having at least a portion of its iron content in the form of non-magnetic oxygen-containing compounds reducible to magnetite, said process comprising the steps of:

providing said ore material as finely divided particles;

providing a stream of heated gases consisting essentially of at least one gas selected from a first group consisting of carbon monoxide (CO) and hydrogen (H_2) and at least one gas selected from a second group consisting of carbon dioxide (CO_2) and water vapor (H_2O), with said stream of gases being free of uncombined oxygen and at a temperature below the fusion point of said ore material;

providing said stream of gases with a ratio of first-group gases to second-group gases which is reducing to said ore material at said temperature;

introducing said stream of gases into one end of a closed, longitudinally extending reaction zone and moving the stream of gases through said reaction zone;

introducing said particles of ore material into said one end of said reaction zone with the particles having a downward velocity component at the time of said introduction;

forming a free suspension of said particles in said stream of gases, with said suspension moving through the reaction zone from said one end to the other end thereof;

reducing said non-magnetic oxygen-containing compounds in said particles to magnetite, during movement of the suspension through said reaction zone, to render said particles magnetic;

controlling the ratio of first-group gases to second-group gases and the temperature of said stream of gases in the reaction zone to prevent over-reduction of the ore particles to metallic iron or to wustite and to maintain magnetite at the other end of the reaction zone;

separating said ore particles at said other end of the reaction zone from said stream of gases;

the movement of said stream of gases, from the time the ore particles become suspended in the stream of gases until the stream of gases reaches the other end of the reaction zone, consisting of movement in a direction having an upward component;

and magnetically separating the magnetic particles from the non-magnetic particles in said ore material, without further reduction of the ore material.

3,190,745

METHOD OF IMPROVING BLAST FURNACE PERFORMANCE USING RAW PETROLEUM COKE

Alfred A. Triska, Chicago, Ill., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 17, 1962, Ser. No. 224,232
2 Claims. (Cl. 75—41)

1. A method of assisting in restoring a shaft furnace to normal operating temperature after the temperature of said furnace has been reduced below said normal operating temperature because of scaffolding, which comprises adding to the shaft furnace as extra coke raw petroleum coke, having a volatile matter content between about 8% and about 15% and an ash content less than about 1%, in an amount sufficient to increase said reduced operating temperature toward said normal operating temperature.

3,190,746

PROCESS FOR USE OF RAW PETROLEUM COKE IN BLAST FURNACES

Alfred A. Triska, Chicago, Ill., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,080
8 Claims. (Cl. 75—42)

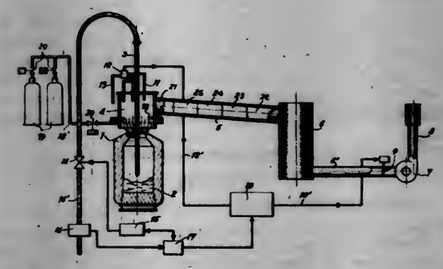
1. In the process of producing ferrous metals and ferro-alloys in a blast furnace wherein a charge comprising coke, ore and flux is heated to reduce said ore by oxidation of said coke, the improvement which comprises employing raw petroleum coke produced in a delayed coker as at least a part of the coke charged to said furnace, said raw petroleum coke having a volatile matter content between about 8 and about 20 percent.

3,190,747

SYSTEM FOR RECOVERING WASTE GASES FROM A METAL REFINING ZONE

Gérald Namy, Saint-Etienne, and Jacques Dumont Fillon, Metz Queuleu, France, assignors to Institut de Recherches de la Siderurgie Francaise, Saint-Germain en Laye, France, a Professional Institution of France and Compagnie des Ateliers & Forges de la Loire, St. Etienne, France, a French company

Filed July 17, 1962, Ser. No. 210,371
Claims priority, application France, July 27, 1961, 869,205, Patent 1,223,518
1 Claim. (Cl. 75—60)



A method of safely exhausting waste gases rich in carbon monoxide and emanating from a zone wherein ferrous metal is refined by oxygen in a refining cycle, which method comprises:

(a) receiving the waste gases in a chamber spaced from the refining zone, the waste gases while flowing through the space between the refining zone and the chamber being in contact with air of the surrounding atmosphere at all times;

(b) exhausting the received waste gases from the chamber through a conduit leading from said chamber;

(c) controlling the exhaust draft in said conduit at the start and at the end of each refining cycle to cause air from said atmosphere to enter said chamber and to oxidize carbon monoxide in the received waste gases to carbon dioxide; and

(d) controlling the exhaust draft during the remainder of the refining cycle in such a manner that pressures inside said chamber and in said surrounding atmosphere are substantially equal,

(1) whereby the increased exhaust draft at the start and the end of each refining cycle draws a gas plug consisting mainly of nitrogen and carbon dioxide through the conduit, said gas plug separating waste gas portions rich in carbon monoxide from the air of the atmosphere.

3,190,748

PREPARATION OF OXALATE MAGNETIC PARTICLES

William C. Landgraf, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,818
5 Claims. (Cl. 75—108)

1. In a process where an aqueous mixture of metal salts comprising iron and cobalt salts selected from the class consisting of sulfates and chlorides is reacted with an oxalic compound selected from the class consisting of oxalic acid and organic esters of oxalic acid to precipitate iron and cobalt oxalates, the precipitate recovered and reduced to form a magnetic pigment, the improvements comprising: subjecting the mixture of said metal salts and said oxalic compound to the action of ultrasonic vibrations.

3,190,749
ALLOY ARTICLE HAVING A POROUS OUTER SURFACE AND PROCESS OF MAKING SAME

Richard A. Fleming, North Tonawanda, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 23, 1963, Ser. No. 296,900
10 Claims. (Cl. 75—122)

2. An article comprising an alloy consisting essentially of from up to 80% by weight nickel and the remainder being essentially at least one additional alloying metal selected from the group consisting of titanium, zirconium, vanadium, niobium, tantalum, chromium, molybenum, tungsten, manganese, iron, and cobalt; said article being characterized in having a porous outer surface containing interstices along the grain boundaries extending inwardly in a direction normal to the surface, said interstices being substantially circular in cross section with the total cross sectional area of the individual interstices being essentially constant along their inward length.

3,190,750
METHOD OF MAKING ALUMINUM ALLOYS

John O. Staggers and Henry K. Bruner, Cambridge, and Daniel L. Edlund, New Concord, Ohio (all % Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York, N.Y.)

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,876
3 Claims. (Cl. 75—135)

1. A method of making vanadium-aluminum alloys containing from 45% to 90% of aluminum and from 10% to 55% of vanadium, which comprises providing in a reaction vessel, a pool of aluminum, establishing, during a start-up period, a slag cover on the pool of aluminum by charging onto the pool of aluminum a start-up charging mixture consisting essentially of an exothermic reaction mix and flux, the exothermic reaction mix consisting essentially of V_2O_5 and Al, the flux consisting essentially of lime and fluorspar, the weight ratio of said flux to said exothermic reaction mix in said charging mixture being between 0.17:1 and 0.40:1, and the weight ratio of lime to fluorspar in said flux being between 1.4:1 and 2.8:1, and after a slag cover has been established, charging onto the slag, during a running period, a charging mixture consisting essentially of an exothermic reaction mix and flux, the exothermic reaction mix consisting essentially of V_2O_5 and Al, the flux consisting essentially of lime and fluorspar, the weight ratio of said flux to said exothermic reaction mix in said charging mixture being between 0.05:1 and 0.15:1, and the weight ratio of lime to fluorspar in said flux being between 0.20:1 and 1.0:1, whereby the V_2O_5 and Al react to form alumina which is absorbed by the slag and vanadium metal which alloys with the aluminum in the pool.

3,190,751
COPPER-BASE CASTING ALLOY

William S. Blazek, Cleveland, Ohio, assignor to Precision Metalsmiths, Inc.

No Drawing. Filed May 15, 1963, Ser. No. 280,727
10 Claims. (Cl. 75—153)

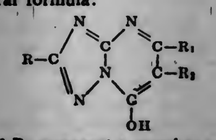
1. A complex copper-zinc alloy consisting essentially of zinc in the range of from 8.0% to 20%, tin in the range of from 1.5% to 4.5%, at least .6% beryllium, a trace to 1.10% of the combined elements phosphorus, silicon, aluminum, manganese and iron, and the balance copper, said alloy being devoid of other elements materially active as reducing elements to prevent the formation of a powdery, non-tenacious oxide complex.

3,190,752
HIGH EDGE GRADIENT SILVER HALIDE EMULSION

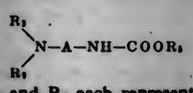
Yoshihide Hayakawa, Kosaiji, Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, and Yosuke Nakajima, Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, Japan, assignors to Fuji Photo Film Co., Ltd., Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, Japan, a corporation of Japan

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,452
Claims priority, application Japan, Dec. 26, 1961, 36/47,418
1 Claim. (Cl. 96—107)

A photographic emulsion of silver halide characterized in that in order to increase the edge gradient of image the said emulsion contains (1) at least one compound selected from the group consisting of 4-hydroxy-1,3,3a,7-tetrazaindenes which are represented by the following structural formula:



in which R and R_1 represent a member selected from the group consisting of hydrogen atom and alkyl groups and R_2 represents a member selected from the group consisting of hydrogen atom, alkyl groups, carboxy groups, carboalkoxy groups, and (2) at least one compound selected from the group consisting of N-[(dialkylamino)alkyl] carbamates which are represented by the following structural formula:



in which R_3, R_4 and R_5 each represents an alkyl group containing not more than 4 carbon atoms, R_3 and R_4 may combine to form a ring, A represents an alkylene group containing not more than 5 carbon atoms, and the total number of carbon atoms contained in R_3, R_4, R_5 and A is not less than 9, and the mineral acid salts of said carbamates.

3,190,753
PROCESS FOR MODIFYING MILK FAT

Wilbur S. Claus, North Hollywood, and Edward M. Brooks, Arleta, Calif., assignors to Carnation Company, Los Angeles, Calif., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,675
4 Claims. (Cl. 99—54)

1. A process for the manufacture of a modified, substantially anhydrous fat composition which process comprises: treating a substantially anhydrous milk fat with above about 1.0% papain lipase at a temperature in the range of about 70° F. to about 180° F. in the presence of from about .2% to about 20% by weight water for a period sufficient to increase the free fatty acid content to from about 8% to about 20%.

3,190,754
QUICK-COOKING WHEAT PROCESS

Richard D. Mathews, Palo Alto, Calif., assignor to Idaho Wheat Commission, an unincorporated association

No Drawing. Filed May 6, 1963, Ser. No. 278,449
3 Claims. (Cl. 99—80)

1. The process of rendering wheat quick-cooking comprising immersing the wheat in a solution containing from 5% to 15% sodium hydroxide and from 0.5 to 3% of a non-toxic ammonium salt for a time sufficient for the solution to penetrate the wheat, washing the alkaline material out of the wheat, neutralizing and drying the wheat.

3,190,755
PROCESS FOR PREPARING A SNACK PRODUCT WITH A RIPPLED SURFACE

Merle F. Peden, Jr., Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

Filed July 26, 1963, Ser. No. 297,892
7 Claims. (Cl. 99—81)



1. The process of preparing an edible snack product having a rippled surface comprising extruding an extrudable dough into a strand 1/32 to 1 inch in diameter, case hardening the extruded strand until the outside thereof becomes brittle while the inside thereof remains soft and plastic, flattening the case hardened strand, and puffing the flattened strand to produce the rippled surface snack product.

3,190,756
PROTOPECTIN COMPOSITIONS AND METHODS OF MAKING THE SAME

Walter Aurell, deceased, late of Orangeburg, N.Y., by Josephine Aurell, executrix, Kings Highway, Orangeburg, N.Y.

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,528
13 Claims. (Cl. 99—90)

4. A composition comprising protopectin particles having the surfaces thereof coated with an effective amount of a material comprising a leavening agent in admixture with an edible hydrophobic substance.

3,190,757
PREPARING A FLUFFED PRODUCT FROM MAPLE SUGAR SYRUP

Joseph C. Underwood, Sr., Plymouth Meeting, and Aaron E. Wasserman, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Sept. 21, 1962, Ser. No. 225,401
1 Claim. (Cl. 99—139)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A process for the preparation of a fluffed product from maple syrup comprising heating a maple syrup at a temperature in the range of about 16 to 17° F. above the boiling point of water to concentrate it to about 75% sugar, admixing the resulting hot concentrated syrup with about 1% by weight of a substantially pure monoglyceride selected from the group consisting of monoglycerides of saturated and unsaturated monocarboxylic fatty acids having 12 to 20 carbon atoms and mixtures thereof, allowing the resulting mixture to cool to about 155° F., and blending the mixture with incorporation of air until the desired consistency is obtained.

3,190,758
FORMING AND PACKAGING OF PIE CRUST

Theodore F. Hauf, Milwaukee, Wis., assignor to Robert A. Johnston Company, Milwaukee, Wis., a corporation of Wisconsin

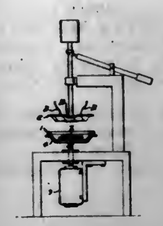
Filed Jan. 30, 1963, Ser. No. 255,003
8 Claims. (Cl. 99—172)

7. The method of forming and packaging a dry non-sticky flowable agglomerate material in contiguous relationship with the interior of a pan, comprising the steps of:

(a) placing a mound of said material in the bottom of said pan,

(b) confining said mound between said pan and a lid having outwardly extending curved ridges therein,

(c) causing relative rotation between said pan and lid so that centrifugal force and the mechanical action of said ridge will cause the material to move outwardly from said mound toward the edge portion



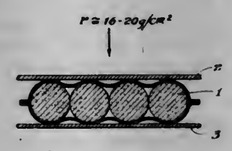
of the pan so that the material is deformed into the configuration of the pan,

(d) and simultaneously with (c): applying a downward pressure on said material.

3,190,759
PROCESS FOR MAKING STERILIZED SAUSAGE PACKAGES

Rudolf Stryk, Wiesbaden-Biebrich, and Gerhard Müller, Kelkheim-Munster, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

Filed Oct. 13, 1960, Ser. No. 62,494
Claims priority, application Germany, Oct. 14, 1959, K 388,971
5 Claims. (Cl. 99—187)



1. A process for making a sterilized package of sausages which comprises heating sausages which are bagged in a substantially exhausted, sealed thermoplastic bag in side-by-side relation to a temperature of about 90 to 121° C. for a time sufficient for sterilizing the sausages and at an external air pressure higher than the vapor pressure of the water at sterilizing temperature and exposing the walls of the bag to a mechanical squeezing pressure of at least 16 gs. per cm.² during said heating such that the walls press the sausages between them, the bag being of a thermoplastic which, under the conditions of said heating, resists water and steam and also does not shrink substantially.

3,190,760
MILK FOOD PRODUCT AND METHOD FOR MAKING SAME

Harry A. Morgan, Jr., Palos Verdes Estates, Calif., assignor of five percent to Lon Hocker, St. Louis, Mo., and five percent to Aaron S. Lapin, Beverly Hills, Calif., and of seventy-seven percent to Morgan Associates, Palos Verdes Estates, Calif., a partnership

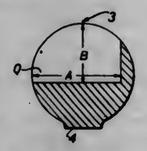
No Drawing. Filed Nov. 13, 1962, Ser. No. 237,361
8 Claims. (Cl. 99—201)

1. A process for manufacturing a milk food product which is substantially insoluble in water and has a crisp quality comprising adding moisture to powdered milk in an amount sufficient to form a plastic mass, separating said

mass into bits whereby said bits are formed into a predetermined shape, and drying the bits to a moisture content of less than 6%.

8. The product made by the process recited in claim 1.

3,190,761
DEHYDRATION OF BRUSSELS SPROUTS
Norman Bernard Hazeldine, Bedford, and Marian Kathleen Withers, Kempston, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed June 4, 1962, Ser. No. 199,715
Claims priority, application Great Britain, June 5, 1961, 20,163/61
9 Claims. (Cl. 99—204)



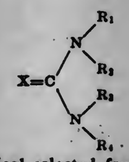
1. A process for dehydrating Brussels sprouts in which in each sprout before dehydration there are made at least two cuts extending from the periphery of the sprout to within about 0.2 centimeter of the geometrical center of the sprout, said cuts thus lying substantially in the planes of great circles, at least one of these cuts intersecting the base of a cone having (a) an axis coincident with the axis of the butt, (b) a vertex coincident with the geometrical center of said sprout, (c) a generatrix forming an angle of 45° with the axis of said butt, and (d) an intersection with the surface of said sprout encircling said butt and at least one other cut intersecting the base of a cone having (a) an axis coincident with an extension of the axis of said butt, (b) a vertex coincident with the geometrical center of said sprout, (c) a generatrix forming an angle of 45° with said extension, and (d) an intersection with the surface of said sprout encircling the apex of said sprout, at least one of these cuts at the level of the center of the sprout having a length at least equal to 75% of the diameter of the sprout; with the provisos that the cuts are so arranged that they do not divide the sprout into at least two separate pieces, and that if none of the said cuts passes through the butt at least one additional cut is made to pass therethrough, said additional cut being of such a depth as to ensure that the butt is dehydrated during the dehydration process to about the same extent as the remainder of the sprout and being so arranged with respect to the other two cuts that the three cuts do not divide the sprout into at least two separate pieces and the sprout remains structurally intact.

3,190,762
USE OF SILANES AS CONCRETE ADDITIVES
Barber C. Carlson and Robert C. Hartlein, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Jan. 28, 1963, Ser. No. 254,402
54 Claims. (Cl. 106—90)

1. A method which comprises incorporating in a concrete mix from 0.05 to 3 percent by weight based on the weight of the Portland cement in the concrete of a silane of the formula $ZSi(OR')_3$, wherein Z is a member selected from the group consisting of hydrocarbon groups and substituted hydrocarbon groups in which the substituent is bonded to the silicon atom through at least one carbon atom, and R' is selected from the group consisting of alkyl radicals of from 1 to 3 inclusive carbon atoms, $—CH_2CH_2OR'''$ and $—CH_2CH_2OH$ where R''' is an aliphatic hydrocarbon radical of 1 to 3 inclusive carbon atoms, whereby an improved concrete is obtained.

3,190,763
PROCESS FOR THE ANTI-STATIC FINISHING OF HIGH MOLECULAR WEIGHT COMPOUNDS
Dietrich Schloede, Frankfurt am Main, Felix Schülde, Neuenhain, Taunus, and Fritz Rochlitz, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Dec. 11, 1961, Ser. No. 158,585
Claims priority, application Germany, Dec. 17, 1960, F 32,784
6 Claims. (Cl. 106—186)

1. A composition of matter consisting essentially of (a) a synthetic plastic of high molecular weight selected from the group consisting of polystyrene, a copolymer of styrene with butadiene, a copolymer of styrene with acrylonitrile, a copolymer of styrene with vinyl carbazole, polyvinyl chloride, a polyterephthalate, a polyolefin, a polycarbonate, polyacrylonitrile, a polyacrylic acid ester, a polymethacrylic acid ester, a polyamide, a polyurethane, a polyvinyl ester, a polyacetal, a polymer of a fluoroolefin, a cellulosic polymer, an unsaturated polyester, and an epoxy resin, said plastic having incorporated therein and distributed therethrough, (b) 0.1–7% by weight, based on the plastic, of a compound of the formula:

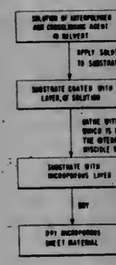


wherein X is a radical selected from the group consisting of oxygen and sulfur, R_1 is a radical selected from the group consisting of —H and $—CH_3$, R_2 is an alkyl group containing 1–20 carbon atoms, and R_3 and R_4 are each selected from the group consisting of —H, -phenyl, and -alkyl, the alkyl groups containing 1–20 carbon atoms each, and R_3 and R_4 may be substituted by a radical selected from the group consisting of an amino group, a hydroxy group, and a carbonyl group.

3,190,764
METHOD OF BONDING A RUBBERY COMPOSITION TO A REINFORCING ELEMENT
James A. Cardina, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed June 28, 1961, Ser. No. 120,197
5 Claims. (Cl. 117—62.2)

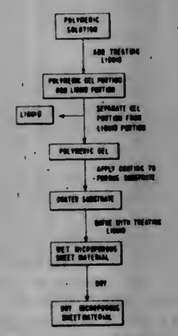
1. A process for treating a reinforcing element of a polyester resin to improve its ability to adhere to a rubbery composition which comprises treating the reinforcing element with an adhesive composition comprising a dispersion of a polyepoxide, the components of a heat-convertible phenol/aldehyde resin, and a diene rubber latex to deposit on said element from about .5 to about 10% solids of said polyepoxide, and from about 1% to about 20% solids of said resin and rubber latex wherein the ratio of resin to rubber latex ranges from 1/10 to 2.5/10, heating the adhesive composition at a temperature insufficient to cause a substantial reaction of the components of said adhesive composition but at a temperature sufficient to solidify the adhesive composition, the components remaining substantially unreacted because of the absence of an epoxy curing agent, applying a second adhesive composition containing components including a heat-convertible aldehyde resin and a rubber latex chemically reactive with the chemically reactive components of the said first adhesive composition to the reinforcing element and then heating the reinforcing element at a tempearture from about 350° F. to about 410° F. for from about 2 to about 5 minutes in order to convert the components of both adhesive compositions into a homogeneous resinous mass.

3,190,765
VAPOR PERMEABLE SHEET MATERIAL AND METHOD OF MAKING SAME
Edward Lung Yuan, Cornwall on the Hudson, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 26, 1961, Ser. No. 119,322
17 Claims. (Cl. 117—63)



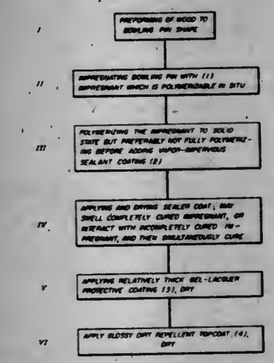
1. A method of making microporous sheet material which comprises (1) applying to a substrate a layer of polymeric solution comprising (a) a substantially water-insoluble interpolymer containing combined free carboxyl, (b) a water-miscible organic solvent for said interpolymer, and (c) a polyvalent metal oxide cross-linking agent; (2) bathing the layer with a water-containing liquid which is a nonsolvent for said interpolymer and is miscible with said organic solvent until the layer is coagulated into a cellular structure of interconnected micropores and is stabilized against collapse of the micropores; and (3) drying the bathed layer.

3,190,766
METHOD OF MAKING VAPOR PERMEABLE SHEET MATERIALS
Edward L. Yuan, Cornwall on the Hudson, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 31, 1961, Ser. No. 148,851
8 Claims. (Cl. 117—63)



1. A method of making vapor permeable sheet materials which comprises (a) admixing a treating liquid with a solution of polymer in an organic solvent in an amount sufficient to render the resulting mixture separable into a polymeric gel portion and a liquid portion, said solvent and said treating liquid being at least partially miscible with each other, and said treating liquid being a nonsolvent for the polymer; (b) separating and removing the gel portion from the liquid portion; (c) coating a porous substrate with a layer of gel; (d) bathing the layer of gel with a treating liquid as defined in step (a) until the layer is coagulated into a cellular structure of interconnected micropores and until the layer is substantially free of said organic solvent; and (e) drying the resulting microporous layer, said polymer having a maximum elastic deformation strength of at least 100 pounds per square inch from the time the layer of gel has been bathed until it has been dried.

3,190,767
BOWLING PIN AND PROCESS OF MAKING SAME
James P. Tomany, Darien, Conn., and Willard E. Estey, Morris Plains, N.J.; said Willard E. Estey assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 5, 1960, Ser. No. 91,563
(Filed under Rule 47(a) and 35 U.S.C. 116)
12 Claims. (Cl. 117—72)



1. The method of encasing a wooden bowling pin body in a plastic protective cover comprising impregnating said body to fill the pores to a depth of at least 0.04 inch with a liquid epoxy resin composition which has a consistency capable of permeating said body and is polymerizable in situ, at least partially polymerizing said composition and thereby converting said composition to solid composition anchored as an integral structure in said wooden body, and thereafter applying to said bowling pin body a vapor impervious resinous film and drying the same to provide a sealing coat uniformly and tenaciously bonded to the solidified resinous impregnating composition and a synthetic resin protective layer.

3,190,768
METHOD FOR GALVANIZING STEEL
Wilbert H. Wright, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed July 24, 1961, Ser. No. 126,327
1 Claim. (Cl. 117—93.2)

Continuous process for dull coat galvanizing of steel strip comprising

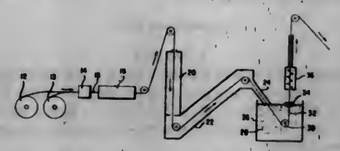
applying a molten metal coating to steel by passing steel strip continuously through and out of a bath of molten zinc-aluminum alloy,

then while the coating on the steel strip is still molten moving the coated steel strip into a zone of electro-

magnetic induction having a frequency between 9600 and 450,000 cycles per second to heat the steel by electromagnetic induction,

coordinating the energy input and frequency of the electromagnetic induction and speed of the coated steel strip to heat the steel rapidly in the zone of electromagnetic induction to cause migration of iron molecules and heat from the steel into the coating to alloy iron from the steel with the zinc of the coating,

the heating of the coated steel in the zone of electromagnetic induction being at a rate sufficient to produce migration of the iron molecules to the outer surface of the coating to prevent running of the coating, and



maintaining the aluminum content of the bath between 0.10 and 0.27% and the temperature of the strip in the electromagnetic induction zone between 1050° and 1400° F. to obtain an iron content of between 10 and 20% in the coating forming an iron-zinc alloy coating of columnar crystals having a uniform matte, dull tone finish surface.

3,190,769

MEANS FOR AND METHOD OF MAKING ZIRCONIA GLASS COATINGS

Thomas Vasilos, Winthrop, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Continuation of application Ser. No. 25,972, May 2, 1960. This application July 1, 1963, Ser. No. 295,273
4 Claims. (Cl. 117—105.2)

1. A rod for flame spraying to coat articles comprising essentially zirconia and glass particles in the proportions of 60–85% zirconia and the balance 40–15% borosilicate glass, respectively, by weight, said particles being sintered into an integral rigid structure.

4. A process of making an impervious substantially zirconia coating on a substrate comprising flame spraying a composite of essentially presintered zirconia and glass particles on said substrate, the zirconia and glass particles being in the proportions of 60–85% zirconia and the balance 40–15% borosilicate glass, respectively, by weight.

3,190,770

METAL CONDUCTOR COATED WITH POLYESTER OUTER LAYER AND POLYIMIDE INNER LAYER

Edward Lavin, Longmeadow, Albert H. Markhart, Wilbraham, and Charles F. Hunt, Springfield, Mass., assignors to Shawinigan Resins Corporation, Springfield, Mass., a corporation of Massachusetts

No Drawing. Filed Apr. 24, 1961, Ser. No. 104,781
8 Claims. (Cl. 117—218)

1. A metal conductor coated with at least one outer layer of a polyester composition comprising the polymeric reaction product of an acid selected from the group consisting of terephthalic acid, isophthalic acid and mixtures thereof, with an α,ω-dihydric alcohol and a polyhydric alcohol containing at least three hydroxyl groups, and with at least one inner layer of a polyimide composition comprising the polymeric condensation product of an aromatic tetracarboxylic acid with a diamino compound selected from the group consisting of aromatic diamines containing from 6 to 16 carbon atoms and saturated aliphatic diamines containing up to 6 carbon atoms.

3,190,771

FILAMENT FOR VACUUM DEPOSITION APPARATUS AND METHOD OF MAKING IT

William E. McLean and Gaylord A. Swartz, Independence, Kans., assignors to Electra Manufacturing Company, Kansas City, Mo., a corporation of Missouri

Filed Jan. 11, 1962, Ser. No. 165,505
9 Claims. (Cl. 117—227)



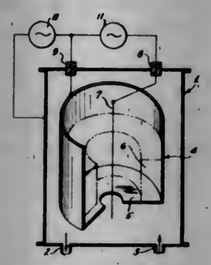
2. The method of forming an adherent coating of alloy on a base of high melting point metal which comprises the steps of forming on the base a substantially uniform layer of a vaporizable metal alloy powder having mixed therewith a minor portion of a thermosettable which is thermally decomposable to produce vaporizable decomposition products and a low ash residue subjecting the base in the presence of vacuum to a temperature which is sufficiently high as to decompose the resin and vaporize the decomposition products and to produce a sintered layer of metal powder, and then increasing the temperature while maintaining the vacuum to melt the sintered layer so that the alloy becomes wettingly adherent to the base and distributed substantially uniformly over the surface thereof.

3,190,772

METHOD OF HARDENING WORK IN AN ELECTRIC GLOW DISCHARGE

Bernhard Berghaus, Grand Hotel Dolder, and Hans Bucek, Toblerstrasse 54, both of Zurich, Switzerland

Filed Feb. 10, 1961, Ser. No. 88,497
12 Claims. (Cl. 148—16)



1. A method of treating metallic work pieces at an elevated temperature by means of an electric glow discharge, comprising the steps of: placing said work pieces in an ionized gas at subatmospheric pressure; substantially surrounding said work pieces with at least one electrode; creating a first high-energy electric glow discharge on said electrode to heat the same whereby only a part of the heat energy necessary for creating said elevated temperature is radiated to said work pieces; and creating a low-energy electric glow discharge on those surfaces of said work pieces which are to be treated to produce ion bombardment, penetration thereof and the remainder of the heat energy necessary for creating said elevated temperature.

3,190,773

VAPOR DEPOSITION PROCESS TO FORM A RETROGRADE IMPURITY DISTRIBUTION p-n JUNCTION FORMATION WHEREIN THE VAPOR CONTAINS BOTH DONOR AND ACCEPTOR IMPURITIES

Richard L. Anderson, Madrid, Spain, and John C. Marinace, Yorktown Heights, and Mary J. O'Rourke Ingham, Huntington, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 14, 1961, Ser. No. 103,103
4 Claims. (Cl. 148—175)

3. The method of providing a retrograde impurity distribution in a vapor grown body of germanium comprising the steps of positioning in a sealed container a first conductivity type laden source of germanium, a monocrystalline substrate of germanium and an opposite type conductivity type impurity laden source of germanium, each in separate discrete locations in the presence of a vapor of a compound of a transport element and germanium, epitaxially vapor growing a first conductivity type portion on said germanium substrate and during said vapor growth depositing in a portion of said container in the vicinity of the location of said opposite conductivity type determining impurity laden germanium source a quantity of a solid first conductivity type impurity bearing material, establishing an equilibrium during which no significant vapor growth takes place, simultaneously vaporizing said solid first conductivity type impurity type bearing material and said opposite conductivity type impurity laden source of germanium and vapor growing a quantity of germanium on said first grown portion of said germanium on said substrate.

3,190,774

COATED AMMONIUM NITRATE COMPOSITIONS OF IMPROVED STORAGE STABILITY

Joseph F. Wilson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,900
15 Claims. (Cl. 149—7)

15. An explosive composition comprising a major amount of ammonium nitrate, coated with a coating agent, and a minor amount of a combustible carbonaceous material, said coating agent comprising in admixture a minor amount of an alkali metal salt of an alkylaryl sulfonic acid and a major amount of a silica-alumina having an SiO_2 content of 60 to 80 weight percent, an Al_2O_3 content of 7 to 14 weight percent, and an Na_2O content of 3 to 10 weight percent.

3,190,775

TREATED AMMONIUM NITRATE

Hans H. Ender, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 14, 1960, Ser. No. 68,613
38 Claims. (Cl. 149—8)

23. A solid propellant composition comprising coated particulate ammonium nitrate that is coated with an organosiloxane comprising groups represented by the formula:

$$RSiO_{1.5}$$

wherein R is a member selected from the group consisting of the ethyl, vinyl, amyl, and phenyl groups, said coating being present in an amount of from 0.1 to 3.0 parts by weight per 100 parts by weight of ammonium nitrate; and a solid organic polymeric fuel which serves as a matrix for the coated particulate ammonium nitrate.

3,190,776

COATED AMMONIUM PERCHLORATE AND PROPELLANT COMPOSITIONS

Hans H. Ender, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 14, 1960, Ser. No. 68,614
41 Claims. (Cl. 149—8)

40. A process for producing solid propellant compositions, said process comprising hardening a mixture containing coated particulate ammonium perchlorate wherein the coating is of an organosiloxane comprising groups represented by the formula:

$$R'SiO_{1.5}$$

wherein R is a member selected from the group consisting of methyl, ethyl, vinyl, amyl, and phenyl groups, said organosiloxane being present in an amount of from 0.1 to 3.0 parts by weight per 100 parts by weight of ammonium perchlorate, and a liquid organic compound that can be cured to form a solid organic polymeric fuel.

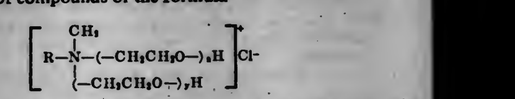
3,190,777

FLUIDIZING AGENTS FOR WATER-BEARING EXPLOSIVE COMPOSITIONS

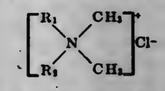
Cyril J. Breza, Thorofare, N.J., Joseph D. Chrisp, Claymont, Del., and Hartwell H. Eassmacht, Wenonah, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 1, 1963, Ser. No. 277,087
11 Claims. (Cl. 149—57)

1. Water-bearing explosive compositions fluid at a temperature of lower than about —10° F. comprising a stable blend of (a) at least one water-soluble inorganic oxidizing salt, (b) at least one fuel, (c) at least 5% by weight of water based on the total composition, and (d) about from 0.25 to 10% by weight, based on the total composition, of fluidizing agent selected from at least one of the group consisting of compounds of the formula



wherein x plus y equals 2 and R is oleyl; caprylamine; sodium alkyl aryl polyether alcohol sulfonates; stearyl dimethyl benzyl ammonium chloride; polyoxyethylated fatty alcohols; compounds of the formula



wherein R_1 and R_2 are selected from the group consisting of 12 to 18 carbon atom alkyl radicals; dimethyl formamide; glycerol monooleate; 1-hydroxy-2-methoxy-4-allyl benzene; calcium cyanamide; formamide; dimethyl sulfoxide; ethylene carbonate; glycerol; acetonitrile; acetic acid; glycolic acid; methyl Cellosolve; methanol; ethanol; furfuryl alcohol; diethylene glycol; sodium acetate; hexamethylene tetramine; acrylonitrile; acetamide; glycine; tetraethylsilicate; ammonium formate; acrylamide; N,N-dimethylacetamide; and dioxane.

3,190,778

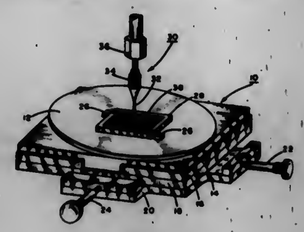
METHOD OF FABRICATING MASKING SHEETS

Reinhard Dahlberg, Freiburg, Breisgau, Germany, assignor to Clevite Corporation, a corporation of Ohio

Filed June 19, 1961, Ser. No. 118,172
Claims priority, application Germany, June 18, 1960, J 18,298
6 Claims. (Cl. 156—62)

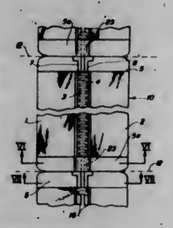
1. A method of fabricating thin metallic sheets containing minute, closely spaced perforations, which includes; providing a plate of relatively hard, effectively translucent material having on a major surface a thin

effectively opaque coating of relatively softer material; engraving said surface so as to selectively remove portions of said coating in a precise predetermined pattern of fine intersecting lines; providing a sheet of metal foil having a photosensitive coating; exposing the photosensitive coating of said metal foil to photoeffective illumination through said pattern to produce an image of said pattern on the photosensitive coating without change of scale; subjecting the exposed metal foil to a development



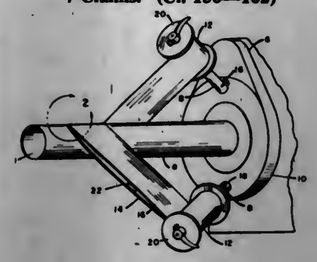
treatment effective to cause removal of unexposed portions only of the photosensitive coating; and thereafter subjecting the thin metal sheet to a metal plating treatment effective to deposit a metal layer on areas of the thin metal sheet free of the photosensitive coating to form a metal foil containing perforations corresponding in size, configuration and location to areas of the photosensitive coating exposed and remaining on said thin metal sheets and removing the metal foil from said thin metal sheet.

3,190,779
METHOD OF FINISHING SLIDE FASTENERS
Hans Porepp, Essen-Bredeney, Germany, assignor to Opti-Holding A.G., Glarus, Switzerland, a Swiss body corporate
Filed July 19, 1961, Ser. No. 125,195
4 Claims. (Cl. 156—66)



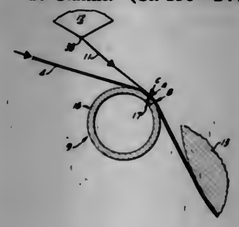
1. A method of finishing a slide-fastener structure including two slide-fastener chains of meshed thermoplastic coupling members carried on two parallel coplanar stringer tapes, comprising the steps of applying transverse strips of thermoplastic material across said tapes and meshed coupling members at predetermined longitudinally spaced-apart locations, fusing said strips and coupling members at said locations into a moldable mass, shaping said moldable mass at each of said locations into a raised central bottom stop bridging said tapes and coupling members and two transversely separated top stops longitudinally adjoining said bottom stop and extending along the confronting tape edges, and cutting said structure into sections at said locations between said top and bottom stops, each of said sections consisting of two halves interconnected by its bottom stop.

3,190,780
METHOD OF APPLYING PROTECTIVE WRAPPINGS TO PIPE
Frank E. McNulty and Robert M. Nee, Tulsa, Okla., assignors to Nee & McNulty, Inc., a corporation of Oklahoma
Filed May 19, 1961, Ser. No. 114,277
7 Claims. (Cl. 156—162)



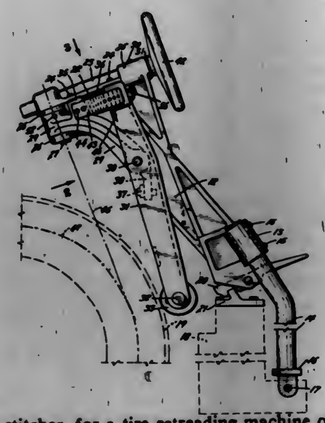
1. A method of wrapping a pipe covered with a hot flowable coating of enamel which comprises, affixing the free ends of a plurality of layers of protective sheet-like material to the enameled surface of said pipe, at least the outer layer of said material being impervious to said enamel, maintaining substantially no tension on the inner layer of said material next to said enamel while exerting substantially all the tension required to effect the wrapping operation on the other of said layers, and thereafter spirally wrapping said pipe with said material while said enamel is in a hot flowable condition, said layers being superposed on one another and unwound from the same source onto said pipe.

3,190,781
METHOD AND APPARATUS FOR LAMINATING SHEET MATERIAL
Peter J. Metz, Jr., Castro Valley, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed May 22, 1962, Ser. No. 196,785
10 Claims. (Cl. 156—244)



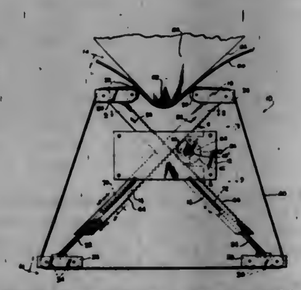
1. The continuous method of laminating a flexible tacky sheet onto a flexible porous web which comprises providing a relatively narrow tubular structure having a convex curved portion and perforate portion therein, continuously moving and guiding said porous web in a convex bend over said curved portion into contact with said curved portion at locations both ahead of and beyond said perforate portion to provide vacuum seals at such locations, continuously moving said tacky sheet in angular relationship with respect to and into contact with the upper face of said porous web at a location on said convex bend closely adjacent to and ahead of said perforate portion, and continuously maintaining a partial vacuum in said tubular structure to act against the underside of said porous web through said perforate portion to effect adhesive bonding of said tacky sheet to said porous web as they move continuously together over said perforate portion.

3,190,782
TIRE STITCHER
Elby Edward French, Littleton, Colo., assignor to O.K. Tire and Rubber Co., Littleton, Colo., a corporation of Colorado
Filed June 7, 1963, Ser. No. 286,337
10 Claims. (Cl. 156—410)



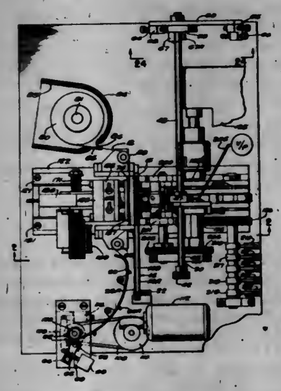
1. A stitcher, for a tire retreading machine of the type having means for rotating a tire carcass, comprising: a main frame member; means for mounting said main frame member so that it may be swung forwardly in the plane of and over said carcass; a pair of pivot arms, pivotally secured at their forward extremities on the forward extremity of said main frame, there being one of said pivot arms pivoted to swing rearwardly along each side of said main frame member; a roller lever pivotally mounted on each pivot arm, said pivot arms extending downwardly to a position in spaced relation to said tire carcass; a press roller mounted on the lower extremity of each pivot arm; resilient means urging said rollers into contact with said carcass; and means for simultaneously rotating said pivot arms about their pivot axes to cause said rollers to travel outwardly and forwardly about said carcass.

3,190,783
EDGE APPLYING DEVICE
Johann Tarnok, 15–16 Jefferson Ave., Brooklyn 27, N.Y.
Filed Mar. 12, 1963, Ser. No. 264,588
8 Claims. (Cl. 156—489)



1. A device for applying edging to table tops, desk tops and other furniture tops, said device comprising a frame, clamp means adapted to secure said frame to a table top, a pair of criss-crossed racks on said frame. each of said racks being independently movable longitudinally of itself relative to said frame, forwardly toward the edge of said table top and rearwardly away from said edge, rollers mounted at the forward and back ends of said racks, a relatively flexible band mounted on said rollers, said band being engageable, intermediate the rollers at the forward end of said racks, with edging placed against the corner of such table top, pinions rotatably mounted on said frame and independently engaging said racks, and key means engageable with at least one of said pinions to rotate said pinion and thereby to drive the rack with which it is engaged, whereby said rack may be driven forwardly to press said band against said edging and thereby force the edging against said table top edge.

3,190,784
MEANS AND TECHNIQUES FOR UNITIZING
John J. Heydon, Fullerton, and Ohmer V. Clawson, Costa Mesa, Calif., assignors, by mesne assignments, to The Sciomics Corporation, Canoga Park, Calif., a corporation of California
Filed Oct. 24, 1960, Ser. No. 64,482
18 Claims. (Cl. 156—513)

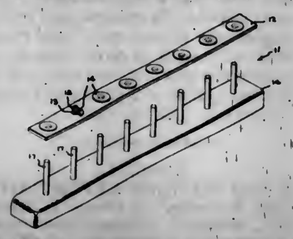


1. In a unitizing machine of the character described comprising, a stationary support, a member slidably mounted on said support, a cutting die member mounted on said member and having inner and outer peripheral cutting edges, a stationary vacuum chuck on said support, said chuck having an outer peripheral cutting edge, a film guide slidably mounted on said chuck and having an inner peripheral surface cooperating with said cutting edge on said chuck for shearing film therebetween, said film guide having aligned apertured portions through which a film extends, spring means acting between said film guide and said chuck to normally allow film to be threaded through said aligned apertured portions, a stationary die member mounted on said support and having an inner peripheral edge cooperating with the outer peripheral edge of the first-mentioned die member to shear tape therebetween, said stationary die member having a surface adjacent said film guide, said spring means biasing said film guide towards said stationary die member to clamp a card between said stationary die member and said film guide, a movable pressure plate carried by the first-mentioned member, second spring means acting between said pressure plate and said first-mentioned member, said pressure plate having a surface adjacent said stationary die member, tape feed means for feeding tape between said pressure plate and said adjacent surface of said stationary die member, the inner peripheral edge of the first-mentioned die member cooperating with said cutting edge on said chuck to shear an apertured portion in a card therebetween, and means for moving the first-mentioned die member on said support.

3,190,785
DISPENSER FOR MASKING TABS

Ralph L. Comet, 14–1B Lloyd Court, Nutley, N.J.

Filed May 1, 1962, Ser. No. 191,558
2 Claims. (Cl. 156—584)

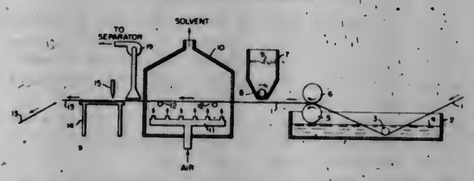


1. A masking tab dispensing assembly comprising in combination:
   (a) an elongated flat supporting body formed with longitudinally-spaced apertures,
   (b) tacky adhesive-coated masking tabs detachably engaged on said body overlying and closing the respective apertures,
   (c) and an elongated tab-removing and holding base member provided with upstanding rods spaced to register with said apertures,
   (d) said rods being engageable through the apertures to disengage the tabs from said supporting body when the supporting body is moved downwardly over the bar and rods, and retain said tabs adhesively on the top ends of the rods in positions for easy removal.

3,190,786
DECORATIVE LAMINATED PAPER

Jacques R. Magill, Shirley, and Walker Hamilton, Jr., Leominster, Mass., assignors, by mesne assignments, to Fitchburg Paper Company, a corporation of Delaware, wholly owned subsidiary of Litton Industries, Inc., a corporation of Delaware

Filed May 10, 1961, Ser. No. 109,030
2 Claims. (Cl. 161—5)



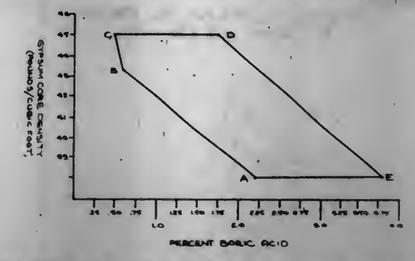
1. A paper laminate comprising a plurality of sheets of resin impregnated paper in stacked array and bonded together by the said resin, the sheet at one outside surface being a transparent overlay sheet having particles of metal bonded to its inside surface, and the next adjacent sheet being a print sheet having a decorative surface adjacent to said inside surface of said overlay sheet, the said metal particles thereby lying adjacent to said decorative surface and being separated from the outer surface of the laminate product by the said overlay sheet.

3,190,787
GYPSUM BOARD

Robert E. Muller, Wilmette, and Paul L. Heukels and Brendan M. O'Kelly, Palatine, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 4, 1963, Ser. No. 262,745
9 Claims. (Cl. 161—161)

1. A light weight gypsum board consisting essentially of a monolithic cellular core of boric acid modified set gypsum and a paper cover sheet encasement, said cellular gypsum core having a density of from 38 to 45 pounds per cubic foot and containing boric acid in an amount falling within the area defined by the straight lines connecting the points A, B, C, D and E, wherein said points



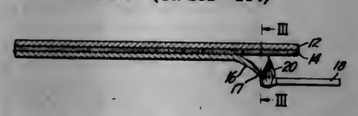
are located on a rectangular Cartesian coordinate plot of core density in pounds per cubic foot and percent by weight of boric acid in said core, said points being located by the following coordinates:

Point	Core density	Boric acid
A	38.0	2.2
B	43.3	.6
C	45.0	.5
D	45.0	1.8
E	38.0	3.8

3,190,788
PRESSURE-SENSITIVE ADHESIVE TAPE

Allen V. Loos, Arlington Heights, Ill., assignor to Mystik Adhesive Products, Inc., Northfield, Ill., a corporation of Illinois

Filed Nov. 3, 1958, Ser. No. 771,389
1 Claim. (Cl. 161—164)



An article of manufacture comprising a backing having a longitudinal axis extending therewith 0.5 mil to 20 mils thick selected from the group consisting of aluminum and lead foil, and having first and second planar surfaces, a layer of pressure-sensitive adhesive adherently disposed upon said backing and covering one of said surfaces, and a film 0.5 to 4 mils thick of oriented unplasticized polyvinyl chloride disposed upon said layer in surface engagement therewith, with the orientation of the unplasticized polyvinyl chloride being substantially coaxial with said longitudinal axis of said backing and said orientation being sufficient to permit shrinking of said film upon heating to a temperature greater than its deorientation temperature whereby said film breaks its surface engagement with said layer.

3,190,789
CALCIUM SILICATE-FILLED PAPER

Louis B. Taylor, Pittsburgh, Pa., assignor, by mesne assignments, to Pittsburgh Plate Glass Company

No Drawing. Filed Feb. 18, 1960, Ser. No. 9,440
11 Claims. (Cl. 162—181)

6. In a process for the manufacture of paper, wherein a furnish is prepared, the step which comprises adding to said furnish a hydrated calcium silicate pigment having an SiO_2/CaO mole ratio limited by a maximum value of about 5:1 and a bound water content limited by a maximum value of about 15 percent by weight of said pigment and adjusting the pH to a value within the range of about 4.5–6.5.

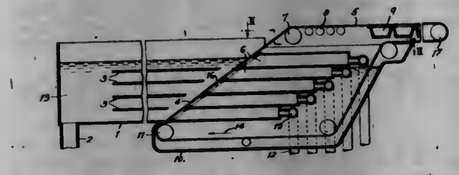
7. In a paper product which is prepared by forming a sheet from a furnish comprising pulp, sizing material and a filler and subsequently drying said sheet, the improvement which comprises employing as a filler a calcium silicate pigment having an SiO_2/CaO mole ratio limited by a maximum value of about 5:1 and a bound water content limited by a maximum value of about 15 percent by weight of said pigment and adjusting the pH of said furnish to a value within the range of about 4.5–6.5.

10. A paper furnish having a pH within the range of about 4.5–6.5 comprising as a filler a hydrated calcium silicate pigment having an SiO_2/CaO mole ratio limited by a maximum value of about 5:1 and a bound water content limited by a maximum value of about 15 percent by weight of said pigment.

3,190,790
METHOD AND APPARATUS FOR PREPARING CONTINUOUS WEBS OF FIBROUS MATERIAL

Theodor Ploetz, Hosel, Kreis Mettmann, and Klaus Wimmer, Hilligegossen, near Bielefeld, Germany, assignors to Feldmuhle Aktiengesellschaft, Dusseldorf-Oberkassel, Germany

Filed Apr. 24, 1962, Ser. No. 189,778
Claims priority, application Germany, Apr. 26, 1961, F 33,764; July 14, 1961, F 34,434
13 Claims. (Cl. 162—212)



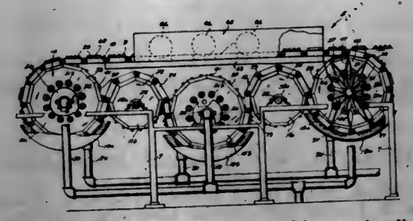
1. A method of preparing a continuous web of fibrous material which comprises:
   (a) moving a continuous screen in an upward direction, said screen having two faces;
   (b) separately guiding a plurality of continuous streams of suspensions of fibrous particles in a liquid in respective linear paths into simultaneous contact with respective portions of one face of said screen, said portions being offset in said upward direction, each path extending in a predetermined direction transverse of the upward direction of movement of the associated screen portion;
   (c) substantially retaining said particles of each stream on the respective face portions;
   (d) passing at least a portion of the liquid in said stream through the associated screen portion from said one face to a corresponding portion of the other face of said screen; and
   (e) separately guiding the passed liquid of each stream away from said portion of said other face in a linear path extending in said direction.

8. In an apparatus for preparing a continuous web of fibrous material, in combination:
   (a) a continuous screen having two opposite faces;
   (b) drive means for moving said screen in a path extending in an upward direction;
   (c) first guide means for separately guiding liquid fiber suspensions in linear streams to a first face of respective portions of said screen, said portions being offset in said upward direction, and said streams being transverse of said screen;
   (d) pressure means for passing at least a portion of the liquid of each stream through the respective portions of said screen from said first face to the second face thereof; and
   (e) second guide means for separately guiding the passed liquid of each stream away from said second face of said screen in a linear path substantially parallel to the corresponding stream.

3,190,791
PULP MOLDING MACHINE WITH MOLDS FORMING AN ENDLESS CHAIN

James M. Potter, Flagstaff, Ariz., assignor to Banker's Life & Casualty Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 4, 1961, Ser. No. 156,668
4 Claims. (Cl. 162—219)



1. Pulp forming apparatus, comprising a plurality of drums, the longitudinal axes of said drums being generally horizontal and substantially parallel to each other, an endless conveyor trained around and between said drums, said drums being partially submerged in stock, said conveyor comprising a plurality of perforated sections, a porous fabric on said perforated sections, and a porous die on said conveyor in overlying relation to said fabric, drive means associated with said drums to rotate said drums and transport said conveyor, whereby parts of said conveyor are periodically submerged in stock, vacuum means connected to said partially submerged drums whereby pulp is successively deposited on said porous die and said fabric as a continuous web during the periods of submergence, and press and drying means to dry the web.

4. The method of manufacturing molded pulp articles comprising the steps of disposing a porous die having the desired conformation upon an endless porous fabric, conveying the die and the fabric through a quantity of stock while maintaining vacuum conditions on the side of the fabric opposite the die, thereby depositing a layer of pulp on the die and the fabric to provide a molded pulp article as an integral portion of a continuous web, drying the web on the forming die, and then separating the continuous web from the die and fabric, the forming and transporting of the molded pulp article through the processing steps being conducted while maintaining the die dimensions constant and while flexing the fabric intermediate the dies.

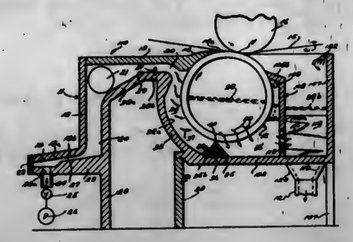
3,190,792
CYLINDER TYPE PAPER MAKING MACHINE

Edward D. Beachler, Louis M. Stuebe, and Thomas G. McKie, Beloit, Wis., assignors to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin

Filed Nov. 9, 1961, Ser. No. 151,283
3 Claims. (Cl. 162—264)

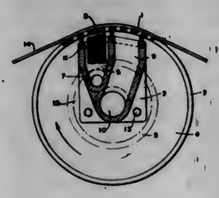
1. In a paper machine comprising a vat having a shaped wall member supported therein, a foraminous cylinder rotatably supported in said vat in spaced relation with said wall member along a portion of the circumference of said cylinder, gate means spanning the space between said cylinder and said wall member and dividing said space into a stock flow passage and into a water flow passage, and conduit means supplying stock to said stock flow passage whereby fibers in said stock are blocked by said cylinder and the water in said stock flows into said cylinder and is cast therefrom through the side of the cylinder and into

the water flow passage, the improvement of baffle means within the vat providing a deaerating channel in fluid com-



munication with said water flow passage receiving the water therefrom and removing any air bubbles entrained therein.

3,190,793
APPARATUS FOR CLEANING PAPER-MAKING MACHINE FELTS
Otto Martin Starke, Duren, Rhineland, Germany, assignor to O. Dorries A.G., Duren, Rhineland, Germany, a firm
Filed Aug. 30, 1961, Ser. No. 134,898
Claims priority, application Germany, Sept. 24, 1960, D 34,346
10 Claims. (Cl. 162—278)



1. Apparatus for cleaning papermaking machine felts comprising rotatable roller means having an apertured cylindrical wall, housing means non-rotatably mounted within said roller means, means defining a pressure chamber and means defining a suction chamber within said housing means and both opening to the surface of said cylindrical wall, an inlet for the supply of cleaning liquid to said pressure chamber, a high frequency oscillation generator mounted in said pressure chamber, and a suction connection communicating with said suction chamber, the arrangement being such that, during use of the apparatus, a felt to be cleaned is passed partly around the roller means so as at least to contact those portions of said cylindrical wall at which are located the pressure and suction chambers.

3,190,794
COLLOIDAL IODINE COMPOSITION FOR PROTECTION OF TOBACCO AGAINST VIRUS AND FUNGUS INFECTION
Wilbert Moody Wilson, Helmetta, N.J., assignor to George W. Helme Company, Helmetta, N.J.
No Drawing. Filed May 2, 1963, Ser. No. 277,479
2 Claims. (Cl. 167—17)

1. A viricidal-fungicidal free flowing iodine containing dusting composition of matter for dusting growing tobacco plants consisting of finely ground tobacco dust and sufficient aqueous colloidal solution of about one-tenth of one percent to about thirty-five percent protective colloid and of about 10 to 16 percent colloidal iodine content to give an iodine content of about two to about four percent to said composition.

3,190,795
ISOTHIOUREIDOMETHYL ANTHRACENE COMPOUNDS AND PESTICIDAL COMPOSITIONS
William H. Hensley, Raleigh, N.C., and Glenn A. Carte, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,861
8 Claims. (Cl. 167—30)

1. 9-(isothioureidomethyl)anthracene hydrochloride.
2. 9,10-bis(isothioureidomethyl)anthracene.
4. 9,10 - bis(N - thiocarbamoylisothioureidomethyl)anthracene dihydrochloride.

3,190,796
PROCESS FOR INHIBITING THE GROWTH OF *MICROCOCCUS AGILIS* WITH 11β-HYDROXY-11-(2-PYRIDYLMETHYL)-PREGNANE-3,20-DIONE
Gunther S. Fonken, Charleston Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Apr. 25, 1963, Ser. No. 275,489
2 Claims. (Cl. 167—30)

1. A process for inhibiting the growth of *Micrococcus agilis* comprising the contacting of viable *Micrococcus agilis* cells with a member selected from the group consisting of 11β-hydroxy-11-(2-pyridylmethyl)pregnane-3.20-dione and the acid addition salts thereof.

3,190,797
BIOCIDAL AGENTS
Jakob Biedler, Riehen, near Basel, Ernst Model, Basel, and Robert Zinkernagel, Riehen, near Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 16, 1960, Ser. No. 49,818
Claims priority, application Switzerland, Aug. 17, 1959, 77,045/59
3 Claims. (Cl. 167—33)

2. The method of protecting an organic substrata against fungi and bacteria which comprises applying thereto a composition of matter consisting essentially of 4,5,6,7-tetrachloro-2,3-dihydrobenzoxazole-2-one in solution in an aqueous medium.

3,190,798
ANTHELMINTIC COMPOSITION AND METHOD OF USING SAME
Sydney M. Ehrlich, deceased, late of New Rochelle, N.Y., by Hannah Ehrlich, New Rochelle, N.Y., and H. Sheldon Kaufman, executors, Forest Hills, N.Y., assignors to The Selney Company, Inc., a corporation of New York
No Drawing. Filed Oct. 31, 1962, Ser. No. 234,563
2 Claims. (Cl. 167—53)

1. A composition for combating helminth infection in aminals comprising a feed having a piperazine fumarate admixed therewith in an amount between 0.2 and 1.0% by weight of said feed..

3,190,799
PROCESS FOR PREPARING INHALATION THERAPY
Sheldon Cohen, Reseda, and Gerald A. Laursen, Van Nuys, Calif., assignors, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Mar. 21, 1963, Ser. No. 266,793
2 Claims. (Cl. 167—54)

1. A method of treating a pharmaceutically acceptable acid addition salt of 1-(3,5-dihydroxyphenyl)-1-hydroxy-2-isopropylaminoethane containing a 1 to 3 carbon atom lower alkanol of crystallization to yield a material adapted to preparation of a stable pressurized suspension thereof which comprises reducing the particle size of said salt such that 95% by weight of the particles have a diam-

eter of less than 10 microns and heating the resulting finely divided material to a temperature between about 40° C. and about 100° C. for a time sufficient to reduce the quantity of said lower alkanol of crystallization to less than 0.1% by weight.

3,190,800
METHOD OF PRODUCING DEPRESSANT EFFECT
Arthur Furst, Palo Alto, Calif., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 29, 1961, Ser. No. 141,608
1 Claim. (Cl. 167—65)

A method of producing depressant activity in an animal which comprises the administration to said animal of a non-toxic but effective amount of O isopropyl isonicotinyl hydroxamate.

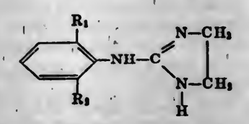
3,190,801
ANTIBIOTIC DISTAMYCIN AND METHOD OF PRODUCTION
Federico Arcamone, Graziana Canevazzi, and Arpad Grein, Milan, Italy, and Franco Bizioli, Buenos Aires, Argentina, assignors to Societá Farmaceutici Italia, Milan, Italy, a corporation of Italy
Filed Mar. 9, 1962, Ser. No. 178,675
Claims priority, application Italy, Dec. 12, 1956, 18,229/56
8 Claims. (Cl. 167—65)

6. A antibiotic, distamycin A, characterized by U.V. absorption maxima at 237 and 305 mμ and an infrared absorption spectrum, as shown in the accompanying drawing, being further characterized in that, when treated with concentrated sulfuric acid a brown-yellow color appears whilst the Sakaguchi reaction for guanidino groups is negative and the Ehrlich test is positive giving a coloration from purple to green, and in that it is insoluble in chloroform, ethyl acetate, acetone, ether and diluted alkalies whilst it is soluble in water and lower alcohols and in that it shows no optical rotation in alcohol solution and in that its decomposition point is 183–185° C. (without melting) and in that it contains nitrogen, and has the following average element analysis: 49.36 carbon, 6.11 hydrogen and 23.49 nitrogen.

7. An antibiotic, distamycin B, characterized by U.V. absorption maxima at 344, 362, 381, 404 mμ characteristic for a heptaenic chromophore, and an infrared absorption spectrum as shown in the accompanying drawing, being further characterized in that, when treated with concentrated sulfuric acid it gives a violet color and in that it is insoluble in methanol and ethanol, whilst it is soluble in ethylcellosolve, pyridine and other aliphatic or aromatic bases in glacial acetic acid, and in dimethylformamide and that it shows optical rotation $[\alpha]_D^{20}=+305°\pm5$ (c.=0.1 in dimethylformamide) and in that its decomposition point starts from 180° C. without melting till 370° C. and in that its analysis shows about 54.00% carbon, 7.6 hydrogen and 1.71 nitrogen.

3,190,802
SHAVING COMPOSITION AND METHOD OF USING SAME
Karl Zelle, Karl-Heinz Hauptmann, and Helmut Stahle, Ingelheim, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany
No Drawing. Filed Oct. 1, 1962, Ser. No. 227,528
Claims priority, application Germany, Oct. 9, 1961, B 64,319
9 Claims. (Cl. 167—85)

1. A shaving soap having uniformly distributed therein from 0.1 to 5% by weight, based on the total weight, of a compound selected from a group consisting of 2 - (phenylamino) - 1,3 - diazacyclopentenes - (2) of the formula



wherein R_1 and R_2 are selected from the group consisting of methyl, ethyl and chlorine, and their non-toxic, demratologically acceptable acid addition salts.

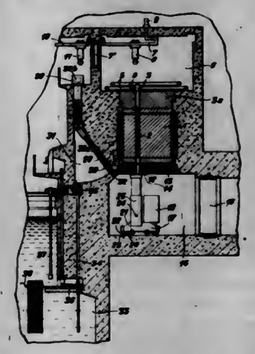
3,190,803
PVP-FORMAMIDINE SULFINIC ACID COLOR STRIPPING MEDIUM
Günther Vogt, Am Muhlweg, Schifferstadt, Pfalz, Germany
No Drawing. Filed July 24, 1962, Ser. No. 212,157
9 Claims. (Cl. 167—88)

1. A color stripping medium consisting of an aqueous alkaline solution of about 1 to 2 percent of formamidine sulfinic acid and of 5 to 8 percent of polyvinyl pyrrolidone, the percentages being by weight of the solution, and the pH of the solution not exceeding 9.

3,190,804
METHOD FOR PRODUCING, SEPARATING, AND PURIFYING PLUTONIUM
Glenn T. Seaborg, Chicago, Ill., Joseph W. Kennedy, Santa Fe, N. Mex., and Arthur C. Wahl, Berkeley, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 27, 1945, Ser. No. 637,484
4 Claims. (Cl. 176—16)

1. A process for the production of plutonium which comprises subjecting a mixture of U^{238} and a fissionable isotope to a self-sustaining neutronic chain reaction, aging the reacted material, the combined time of reaction and aging being sufficient to produce a total transuranic fraction comprising at least 90 percent plutonium, and separating plutonium from the aged reacted material.

3,190,805
FUEL ELEMENT CHANGING AND TRANSPORTING APPARATUS FOR NUCLEAR REACTORS
Edwin Straub, Frauenfeld and Ernst Bosshard, Winterthur, Switzerland, assignors to Sulzer Frères, S.A., Winterthur, Switzerland, a corporation of Switzerland
Filed Jan. 30, 1961, Ser. No. 85,891
Claims priority, application Switzerland, Feb. 12, 1960, 1,592/60
12 Claims. (Cl. 176—30)



1. In combination with a nuclear reactor of the type comprising moderator means having opposite sides, a plu-

rality of tubular elements extending through said moderator means from one side to the opposite side thereof, each of said tubular elements comprising an outside tube and an inside tube placed inside and spaced from said outside tube, one of said tubes being made of material containing fissionable material, and a coolant flowing through said tubes in opposite directions:

a connecting head placed at one end of each of said tubular elements and permanently placed outside of said moderator means at one of said sides thereof,

a cover means at the side of said moderator means where said connecting heads are placed,

each of said connecting heads comprising a connecting member made fast on said cover means and forming a coolant inlet disconnectably connected to one of said tubes of the respective tubular element, and a coolant outlet disconnectably connected to the second tube of the respective tubular element,

a retaining means operatively associated with each of said connecting members and releasably connected to one of the tubes of the respective tubular elements, and

an apparatus placed at the side of said moderator means opposite the side where said connecting heads are placed,

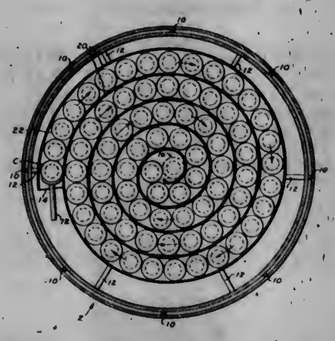
said apparatus including means for inserting said tubular elements at said opposite side into said moderator means and presenting said tubular elements to said connecting members for retention thereon by said retaining means and for receiving said tubular elements from said moderator means after release of said retaining means.

3,190,806

CONTINUOUSLY REFUELED NUCLEAR REACTORS

John B. Mangieri, Perry Hall, and Jack A. Hunter, Baltimore, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Oct. 9, 1962, Ser. No. 229,411
11 Claims. (Cl. 176—32)



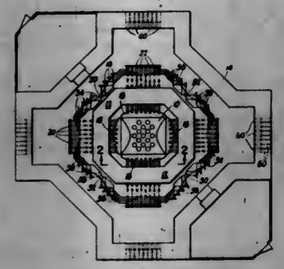
1. Refueling means for successively supplying fuel elements to a nuclear reactor having a pressure vessel, comprising a core adapted to fit within a nuclear reactor pressure vessel, the core having a port for the admission of fuel elements into the core, an exit port for the removal of fuel elements from the core, and a continuous track within the core extending from the inlet port to the exit port and constructed to receive a plurality of fuel elements perpendicularly with respect to the plane of the track and in lengthwise abutting relationship whereby the admission of a fuel element into the core through the inlet port moves all fuel elements therein along the track toward the exit port.

3,190,807

PRESSURE TUBE REACTOR

Frank Bevilacqua, Clearwater, Fla., assignor, by mesne assignments, to Combustion Engineering, Inc., a corporation of Delaware

Filed Sept. 7, 1960, Ser. No. 54,536
10 Claims. (Cl. 176—59)



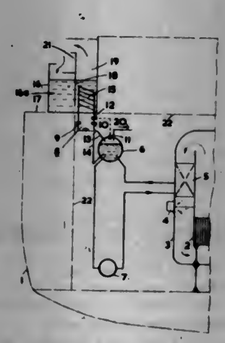
1. A pressure tube reactor having a plurality of pressure tubes extending through a moderator container having a neutron moderator material therein, said tubes being formed into a plurality of groups with said groups being disposed in adjacent relation one after the other and with the tubes in alternate groups being parallel, said tubes in adjacent groups being disposed at a sufficient angle to one another so they emerge through different regions of said container and are laterally displaced from each other, the tubes in all the groups being in spaced parallel planes and the tubes in each respective group being disposed generally in not more than two juxtaposed parallel planes, said pressure tubes having a fissionable material disposed therein and means for passing a cooling fluid through each tube.

3,190,808

NUCLEAR REACTOR POWERED STEAM GENERATING SYSTEMS

John Alan Dodd, Wallasey, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed May 31, 1961, Ser. No. 113,731
Claims priority, application Great Britain, June 1, 1960, 19,475/60
4 Claims. (Cl. 176—65)



1. A nuclear reactor powered steam generating system comprising, in combination; a reactor core, a heat exchanger disposed above the reactor core, means defining a closed circuit for convection flow of reactor coolant through the reactor core and one heat exchange side of the heat exchanger, a steam drum above the heat exchange, a main steam outlet from said drum, means defining a closed circuit for convection flow of feed water through the steam drum and the other heat exchanger side of the heat exchanger, a vented storage tank disposed above the steam drum, a mass of vapor-forming liquid within the tank, a steam condenser immersed in said liquid, and means defining a closed circuit for convection flow of steam through the steam drum and the steam side of the steam condenser.

3,190,809

PROCESS FOR THE PREPARATION OF 11α-HYDROXY-Δ^4-3-KETO STEROIDS FROM 11-UNSUBSTITUTED Δ^5-3-HYDROXY AND 3-ACYLOXY STEROIDS USING *PSILOCYBE CAERULESCENS* VAR. *MAZATECORUM*

Carlos Casas-Campillo, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed May 6, 1963, Ser. No. 278,415
Claims priority, application Mexico, May 31, 1962, 67,568
3 Claims. (Cl. 195—51)

1. A process for the preparation of an 11α-hydroxy-Δ^4-3-keto-steroid in one incubation from the corresponding steroid starting material selected from the group consisting of an 11-desoxy-Δ^5-3-hydroxy steroid and an 11-desoxy-Δ^5-3-acyloxy steroid of the androstane, pregnane, cholestane and sapogenin series which comprises subjecting said steroid starting material to the oxygenating action of enzymes produced by the microorganism *Psilocybe caerulescens* var. *mazatecorum*.

3,190,810

PRODUCTION OF 6-DEMETHYLTETRACYCLINES

Philip Andrew Miller, Valley Cottage, N.Y., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,753
5 Claims. (Cl. 195—80)

1. A process for producing an antibiotic selected from the group consisting of 6-demethyltetracycline, 7-chloro-6-demethyltetracycline and 7-bromo-6-demethyltetracycline which comprises cultivating a chlortetracycline-producting microorganism of the genus Streptomyces capable of producing said antibiotics in an aqueous nutrient medium containing assimilable sources of carbohydrate, nitrogen and inorganic salts under submerged aerobic conditions, said medium having added thereto a small but effective amount of a compound selected from the group consisting of dl-ethionine and l-ethionine.

3,190,811

METHOD OF PRODUCING A BACTERIOLOGICAL INSECTICIDE

Charles W. Molander, 14816 Bora Drive, La Mirada, Calif.

No Drawing. Filed June 14, 1963, Ser. No. 287,754
2 Claims. (Cl. 195—96)

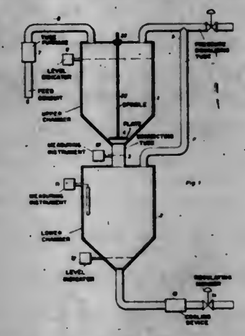
1. A process for producing an insecticidal substance exercising an inhibiting action on insect larvae and pupae of the family Muscidae in the order Diptera, comprising, fermenting the organism *Bacillus thuringiensis* var. *thuringiensis* under aerobic conditions in an aqueous nutritive media containing by weight approximately 3.0% beet molasses, 0.6% yeast, 0.3–1.5% corn steep liquor, 0.2% KH_2PO_4, and 0.6% animal stick liquor, at a pH of 6.8 at a temperature of 30° centigrade for a period of up to 16 hours to prevent sporulation, centrifuging the resulting culture medium, and filtering the resulting supernatant liquid containing substantial insecticidal activity therein devoid of any spores and devoid of sporulation.

3,190,812

DEVICE FOR THE CONTINUOUS PRODUCTION OF HARD PITCH

Heinz Puls, Gelsenkirchen-Schalke, Germany, assignor to Rutgerswerke-Aktiengesellschaft, Frankfurt am Main, Germany

Filed Jan. 17, 1961, Ser. No. 83,338
Claims priority, application Germany, Jan. 22, 1960, R 27,160
2 Claims. (Cl. 196—107)



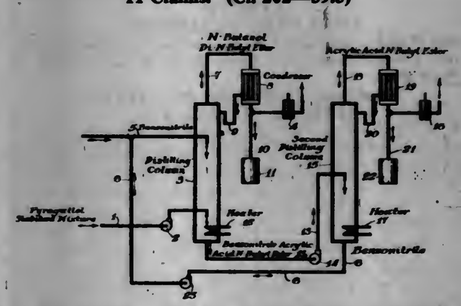
1. A device for the continuous production of hard pitch from a softer pitch, pitch-containing materials and pitch-forming starting materials, essentially consisting of a tube furnace and a pressure vessel comprising at least two thermally insulated adjacent chambers which receive no heat supply and are arranged one above the other, adjacent chambers being connected by a tube, said chambers receiving from said tube furnace heated starting material flowing in downward direction to the highest chamber and from there to adjacent chambers arranged below said highest chamber means for alternately closing and opening said tube in order to effect alternate charging and discharging the chambers and means for equalizing the pressure in said chambers.

3,190,813

PROCESS FOR SEPARATING ACRYLIC ACID N-BUTYL ESTER FROM MIXTURES CONTAINING BUTANOL

Wilhelm Vogt, Klaus Gehrmann, and Kurt Sennewald, Knapsack, near Cologne, and Hans Cöln, Hurth, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

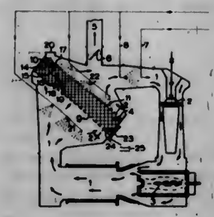
Filed Nov. 23, 1962, Ser. No. 239,515
Claims priority, application Germany, Dec. 16, 1961, K 45,456
11 Claims. (Cl. 202—39.5)



1. A process for separating acrylic acid n-butyl ester from a mixture containing acrylic acid n-butyl ester and n-butanol by extractive distillation, which comprises adding to the mixture to be extracted a member selected

from the group consisting of nitrobenzene and benzonitrile as a distillation auxiliary, distilling off n-butanol as head product of the resultant mixture, and separating the resulting residue which consists of the distillation auxiliary and acrylic acid n-butyl ester by fractional distillation.

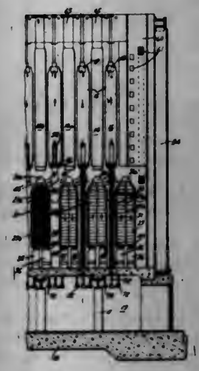
3,190,814
APPARATUS FOR TREATING COAL BRIQUETTES AND THE LIKE
Georg Kardaun and Theodoor J. van der Gugten, Stein, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
Filed June 21, 1961, Ser. No. 118,728
Claims priority, application Netherlands, June 23, 1960, 253,011
8 Claims. (Cl. 202—129)



1. Apparatus for treating coal briquettes and the like comprising: a passage for circulating a gas in a closed circuit, an elongated container disposed within the passage, said container having side walls and a perforated bottom wall, said container extending across the entire area of the passage such that a gas circulating through the passage must flow through said container, said perforated bottom wall sloping downward along the length of said container at an angle to the horizontal substantially corresponding to the natural slope of the briquettes to be treated, filling means for filling said container with briquettes, said filling means being disposed adjacent the upper end of said perforated bottom wall, means to relieve the static pressure on the briquettes, and discharge means for discharging briquettes from said container, said discharge means being disposed adjacent the lower end of said perforated bottom wall, and gas circulating means for circulating treating gas in a closed circuit through the passage, through said perforated bottom wall, and through said container for treating the briquettes in the container.

3,190,815
COKE OVEN BATTERIES
Frans Wethly, Manhasset, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Sept. 27, 1961, Ser. No. 141,197
12 Claims. (Cl. 202—144)

1. A coke oven battery comprising alternate coking chambers and heating walls, each heating wall having twin flues therein; a massive regenerator partition wall beneath each heating wall; a pair of regenerators extending crosswise of the length of the battery and positioned beneath each coking chamber and in the space between adjacent regenerator partition walls, the division wall between the regenerators of each pair of said regenerators being formed by placing the checkers in said space back to back, the regenerators lengthwise of the battery being arranged in pairs of of air inflow regenerators alternating with products of combustion outflow regenerators; oblong ports through which each pair of regenerators beneath each coking chamber is communicably connected with the heating flues on the opposite sides of said coking chamber thereabove, said oblong ports of the interior flues being of gradually increasing width from the pusher to the coke side of the battery; risers in said interior flues positioned above and extending from said oblong ports in a vertical direction along the height of the flues through which risers



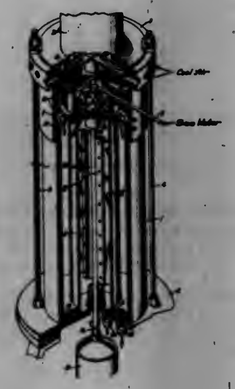
air to support combustion is supplied to the flues at a height intermediate the length of the flues; gas burners in the base of the flues adjacent said risers; means for supplying fuel gas to the burners in said flues; a bus flue in the base of each regenerator; and a single chimney flue at one side of said battery with which said bus flues communicate.

3,190,816
SOLAR DISTILLATION
Oswald T. Adamec, 23 Union Square E., Mount Vernon, N.Y.
Filed Dec. 16, 1958, Ser. No. 780,742
7 Claims. (Cl. 202—234)



1. A solar distiller of sea water comprising a first structural means with an extensive top area commercially utilizable by heavy vehicles and having the property of thermal absorption and conductivity of solar heat, a series of tubular metal conduits spaced in and embedded within said structural means beneath said top surface to receive the heat absorbed by the structural means and for transferring the heat to sea water flowing therethrough, a second structural means supporting said first structural means, a vaporization chamber in said second structural means for receiving and vaporizing heated water and having means for delivering moisture receptive air to move from an end area of the chamber through the chamber, means for delivering the sea water flowing through said conduits to said vaporization chamber substantially in said end area, means for spraying heated sea water into said chamber to evaporate a part thereof, condensation means separate from said first and second structural means and having cooling and condensing surfaces, said cooling surfaces conveying evaporating sea water to cool said condensing surfaces, means for delivering the moisture-laden air from said vaporization chamber for condensing the moisture therefrom and forming purified water.

3,190,817
COMPRESSION DISTILLATION APPARATUS
Franz J. Neugebauer, Schenectady, and Edward L. Lustenader, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 26, 1957, Ser. No. 705,401
8 Claims. (Cl. 202—236)



1. In a still, a stationary heat exchanger and phase separation barrier forming an evaporation chamber on one side and another chamber on the other side, said barrier comprising a vertically arranged cylinder of thermally conductive material forming on one of its sides an evaporating surface in heat transfer relationship with the opposite side of the barrier, means for continuously applying distilland to said evaporating surface, rotary means for spreading and flowing said distilland in a thin substantially stationary film on said evaporating surface, means including a pump for withdrawing from said evaporating chamber vapor evolved from said film of distilland and directing such vapor after discharge from said pump into intimate contact with the opposite side of said barrier for heating the same so as to transfer heat to said film on said evaporating surface to effect the evolution of vapor therefrom.

3,190,818
COKE OVEN BRACING MEANS
Carl Otto, 8 The Beachway, Manhasset, N.Y.
Filed Feb. 6, 1963, Ser. No. 256,614
12 Claims. (Cl. 202—268)



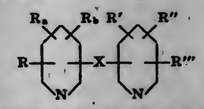
1. An industrial furnace having two sides and a roof, bracing means comprising a pair of opposed vertical members, one for each side, in operative engagement with said sides, said vertical members extending above said roof, a pair of tie rods securing said vertical members to each other adjacent their bottoms and adjacent the roof, a horizontally extending member for each vertical member secured thereto above said roof and extending inwardly over the roof of said furnace, and vertically extending means for each horizontally extending member operatively engaging said horizontally extending member and said roof and being under compression.

3,190,819
PROCESS FOR MAKING CAPACITORS AND CAPACITIVE CIRCUIT ELEMENTS
Leon I. Maissel and Norman W. Silcox, Poughkeepsie, and Charles L. Standley, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,420
3 Claims. (Cl. 204—38)

3. In the process for making capacitive circuit elements on insulating ceramic surfaces, where said ceramic surfaces have a roughness profile characterized by a peak to valley distance greater than 6 microinches, the steps comprising:
depositing an anodizable metal film on said ceramic surface;
inserting said anodizable metal film as the anode in an electrolysis cell;
applying an anodizing voltage to electrolytically generate oxygen at said film surface to form an oxide layer thereon; increasing the anodizing voltage while the anodizing current density is essentially level, said voltage being increased up to a value of 15 volts; and maintaining said anodizing voltage at said level until said anodizing current density asymptotically levels off to approach zero;
reversing the polarity of said anodizing voltage for a period between about 30 seconds to 120 seconds;
reapplying said anodizing voltage and maintaining said anodizing voltage at a level of less than 15 volts until an oxide layer of about 200 Angstroms is formed on the surface of said film; and, thereafter,
depositing a metal counter-electrode on the anodized surface of said anodizable metal.

3,190,820
ELECTRODEPOSITION OF BRIGHT NICKEL
Hans Günther Todt, Berlin-Tempelhof, Germany, assignor to Schering A.G., Berlin, Germany
No Drawing. Filed Sept. 28, 1961, Ser. No. 141,311
Claims priority, application Germany, Oct. 8, 1960, Sch 28,590
15 Claims. (Cl. 204—49)

1. A nickel plating electrolyte containing between about 0.001 and about 0.1 grams per liter of a primary brightener selected from the group consisting of compounds of the formula



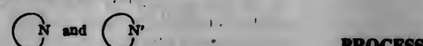
wherein the substituents R, R_a, R_b, R', R'' and R''' are radicals attached to a carbon atom of a pyridine ring of said compound, and are selected from the group consisting of hydrogen, lower alkyl, lower alkylene, lower hydroxyalkyl, formyl, halide, lower haloalkyl, lower alkanoyl, cyano, hydroxy, sulfo, amino, and lower alkylamino radicals; wherein one substituent of the two groups consisting of R, R_a and R_b and R', R'' and R''' may also be a divalent radical C_4H_4 attached to two adjacent carbon atoms of said pyridine ring, forming thus a portion of a benzene ring; and wherein X is an unsubstituted olefinically unsaturated hydrocarbon chain of two to five carbon atoms; and the lower haloalkyl N addition products of said compounds.

3,190,821
NICKEL PLATING BRIGHTENER
Hans Günther Todt, Berlin-Tempelhof, Germany, assignor to Schering, A.G., Berlin, Germany
No Drawing. Filed Jan. 23, 1962, Ser. No. 168,229
Claims priority, application Germany, Feb. 10, 1961, Sch 29,218
12 Claims. (Cl. 204—49)

3. An electrolyte for the electrodeposition of bright ductile nickel coatings comprising in aqueous solution at least one nickel salt and a brightener which is an organic heterocyclic nitrogen compound of the formula



wherein *n* is an integer between 1 and 5,

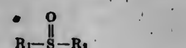


are nitrogen bearing rings selected from the group consisting of pyridinium, diazinium, benzopyridinium, and benzodiazinium rings, and the C-substitution products thereof wherein a carbon atom of the nitrogen bearing ring is connected to a radical selected from the group consisting of lower alkyl, lower alkenyl, lower alkoxy, lower alkylamino, lower alkanoyl, hydroxy, cyano, amino, halide and formyl radicals, R^- is an anion selected from the group consisting of carboxyl radical, and the sulfo radical and R'^- is an anion selected from the group consisting of a halogen and a hydroxyl radical.

3,190,822
PROCESS FOR ELECTROLYTICALLY ETCHING VALVE METAL SURFACES
John Burnham, 10960 Verano Road, West Los Angeles, Calif.
Filed Jan. 9, 1961, Ser. No. 81,396
10 Claims. (Cl. 204—141)

1. A process for electrolytically etching an inert valve metal selected from the group consisting of tantalum, niobium and titanium which comprises:

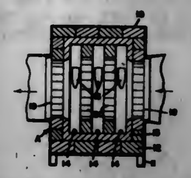
electrochemically etching an inert valve metal member comprising an inert valve metal selected from the group consisting of tantalum, niobium and titanium in an electrolyte including a non-aqueous solvent and an ionogen solute dissolved in said solvent, said solute providing halogen radicals in said electrolyte, said electrolyte also including an additive having the general formula



in which R_1 and R_2 are lower alkyl or aryl radicals, said additive being soluble in said electrolyte, said additive being capable of forming a solvated complex with ions of said inert valve metal removed from said inert valve metal member during the electrochemical etching of said inert valve metal member, said electrolyte being substantially ketone free and containing no more than 1,000 p.p.m. of water, said additive being present in an amount sufficient to form such a complex.

3,190,823
SELECTIVE OXIDATION DEPOLLUTION PROCESS AND APPARATUS
Robert Bloxham, Livermore, Calif., assignor to Coast Manufacturing and Supply Company, Livermore, Calif.
Filed Jan. 13, 1961, Ser. No. 82,599
13 Claims. (Cl. 204—157)

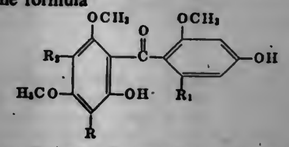
1. A method for the depollution of air which comprises establishing a flow of air containing oxidizable pollutants through an infra-red ray emitting zone, generating infra-red radiation adjacent to said flow, directing said flow of air so that it is predominantly out of contact with the locus of the infra-red generation, and



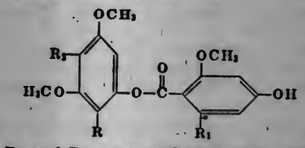
bombarding said flow with infra-red radiation to oxidize at least some of said pollutants to innocuous products.

3,190,824
PROCESS FOR PREPARING BENZOPHENONES
David Taub, Metuchen, Norman L. Wendler, Summit, and Chan-Hwa Kuo, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 19, 1961, Ser. No. 145,033
4 Claims. (Cl. 204—158)

1. The process for preparing a benzophenone compound of the formula



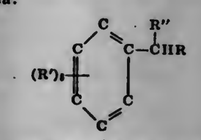
where R and R_2 are selected from the class consisting of fluorine, chlorine and hydrogen, wherein at least one of R and R_2 is hydrogen, and R_1 is selected from the class consisting of hydrogen and lower alkyl that comprises exposing a compound of the formula



where R, R_1 and R_2 are as defined above, to ultra-violet light for a period of less than about 72 hours.

3,190,825
BROMINATION OF AROMATIC COMPOUNDS
Earl S. Huyser, Lawrence, Kans., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 19, 1961, Ser. No. 125,091
7 Claims. (Cl. 204—163)

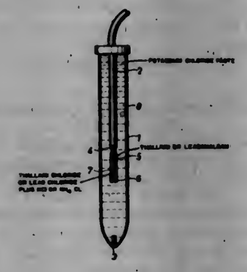
1. A method for the selective replacement of benzylic hydrogens by bromine atoms in a compound having the general formula:



wherein R is selected from the group consisting of hydrogen, and alkyl radicals containing up to 4 carbon atoms and having not over three carbons attached to any carbon atom, and R′ is a radical individually selected from the group consisting of hydrogen, alkyl radicals containing up to 4 carbon atoms, alkoxy, fluorine, chlorine, bromine, ester group containing radicals containing from 2 to 4 carbon atoms in such radicals, R″ is selected from

the group consisting of hydrogen and methyl radicals, with the further limitation that when all R's are hydrogen R″ is methyl, which method comprises contacting said compound with a brominating agent selected from the group consisting of bromotridichloromethane, carbon tetrabromide, dibromodichloromethane, 1-bromo-1,1-dichloroethane and their mixtures and maintaining the reaction mixture at a temperature between about 0° C. and about 130° C., in the presence of a free radical initiating catalyst until at least a portion of the reactants have reacted.

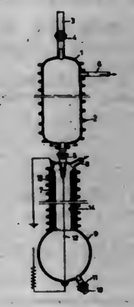
3,190,826
COMPARISON AND DERIVATION ELECTRODE FOR POTENTIOMETRIC MEASUREMENTS
Hermann Fricke, Mainz-Mombach, Germany, assignor to Jenaer Glaswerk Schott & Gen., Mainz, Germany, a German corporation
Filed Jan. 19, 1960, Ser. No. 3,376
Claims priority, application Germany, Feb. 5, 1959, J 15,978
1 Claim. (Cl. 204—195)



A standard electrode for use in electrometric devices for making potentiometric measurements, comprising a first container, a second container disposed within said first container in spaced-apart relationship thereto, subdivided into first and second communicating sections including in said first section a thallium amalgam having a thallium concentration of 40% by weight as electrode metal, a salt mixture for determining the potential of the electrode consisting of thallium chloride and potassium chloride in said second section and electric current conducting means extending into the first container to a location within the first section of said second container.

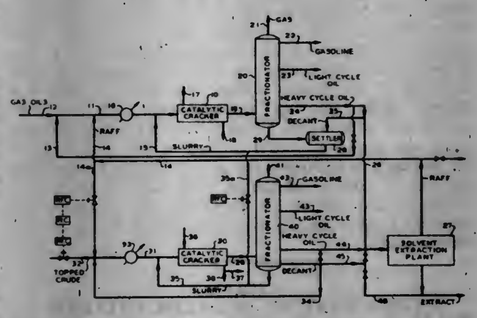
3,190,827
APPARATUS FOR CLEANING LIQUIDS
Johannes Antonie Kok and Casper Ebeline Gerardus Martinus Maria van Vroonhoven, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 4, 1961, Ser. No. 142,915
Claims priority, application Netherlands, Oct. 6, 1960, 256,599
5 Claims. (Cl. 204—302)

1. A filter apparatus for removing solid particles from a flowing liquid comprising a casing, a sleeve-shaped electrode in said casing, a central vertical electrode arranged substantially along the central axis of said sleeve-shaped electrode and spaced therefrom, a filter mass of porous, electrically non-conductive material secured to the inner wall of said sleeve-shaped electrode, means for supplying liquid to be purified to the outer peripheral surface of said central electrode whereby the liquid is distributed on said surface as a downwardly flowing film, means for applying high voltage energy between said sleeve-shaped electrode and said central vertical electrode whereby an electric field is created, said film being atomized under the influence of said electric field emanating from said central electrode and directed toward said filter mass, and a container for collecting purified liquid being arranged below the central electrode and in communication with said



casing, said container being provided with a discharge device, and said filter mass consisting of glass particles which are sintered together.

3,190,828
CATALYTIC PROCESS FOR CRACKING OILS CONTAINING METALLIC CONTAMINANTS
Elbert H. Daniel, Carol C. Akers, and Norris W. Mitchell, Phillips, Tex., and Sam E. Forsyth, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 228,892
9 Claims. (Cl. 208—78)



1. In a process for treating hydrocarbon fluids wherein a hydrocarbon stream having a low metal contaminant content of not more than about 65 to 75 p.p.m. is catalytically cracked at a high conversion level of about 50 to 70 percent conversion in a first catalytic cracking zone at a temperature in the range of about 905 to 930° F., and a hydrocarbon stream having a high metal contaminant content of at least about 200 p.p.m. is catalytically cracked at a low conversion level of about 30 to 40 percent conversion in a second catalytic cracking zone at a temperature in the range of about 870 to 900° F., the improvement comprising solvent extracting the heavy cycle oil and decant oil from said first and second cracking zones; passing a portion of raffinate from the solvent ex-

traction step to the feed to the second cracking zone in an amount sufficient to provide a ratio of about one volume of raffinate per 4 to 16 volumes of fresh feed; and passing the remaining raffinate to the first catalytic cracking zone.

3,190,829
PROCESS FOR REMOVING METALS FROM A MINERAL OIL WITH AN ALKYL SULFONIC ACID

John G. Erdman, Allison Park, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,042
9 Claims. (Cl. 208—252)

1. A process for removing a heavy metal constituent from a mineral oil containing the same comprising contacting a mineral oil containing a heavy metal constituent in the liquid phase at a temperature of about 10° to about 250° C. with an alkyl sulfonic acid which is liquid at the treating temperature for a time and in an amount sufficient to reduce the heavy metal content of the oil and separating a mineral oil of reduced heavy metal content from an alkyl sulfonic acid phase.

3,190,830
TWO STAGE HYDROGENATION PROCESS

John Rowland and Warren Nevin Norton Knight, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,224
Claims priority, application Great Britain, Mar. 7, 1962, 8,773/62
10 Claims. (Cl. 208—255)

1. A process for the separation of aromatics from a feedstock mixture containing, in a major proportion, said aromatics and mono-olefins, and a minor proportion of gum-forming constituents, comprising the steps of: contacting said feedstock in a first hydrogenation stage with a supported nickel catalyst which, under operating conditions, contains a major proportion of nickel in elemental form, in the presence of a gas in which the reactant thereof consists essentially of hydrogen and at an elevated temperature, whereby at least a substantial proportion of the gum-forming constituents are destroyed; passing at least a portion of the product stream from said first stage to a second, olefin removing, hydrogenation stage and contacting said portion with a hydrogenation catalyst different from said supported nickel catalyst of said first stage in the presence of hydrogen and at an elevated temperature whereby at least a substantial proportion of the monoolefins in said portion are converted into paraffins; and recovering the aromatics from the product stream of said second stage.

3,190,831
HYDROGENATING ASPHALTIC MIXTURES

Earl M. Honeycutt, West Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,265
8 Claims. (Cl. 208—264)

1. Process for making high octane gasoline and for making improved products from asphaltic mixtures which comprises catalytically reforming hydrocarbons to produce reformate and hydrogen, and contacting substantially all of said reformate and said hydrogen without intermediate separation, with an asphaltic hydrocarbon mixture under hydrogenation conditions at a temperature in the range from 775 to 950° F. in the presence of a metallic hydrogenation catalyst, whereby said mixture is hydrogenated in the presence of said reformate as diluent to reduce the Ramsbottom carbon content of said mixture, and whereby the asphaltic material in said mixture inhibits hydrogenation of aromatics in said reformate that would otherwise occur through contact of said reformate with said catalyst.

3,190,832
FULL OIL PHASE DRILLING FLUIDS

Joseph U. Messenger, Calgary, Alberta, Canada, assignor to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed May 18, 1961, Ser. No. 110,902
14 Claims. (Cl. 252—8.5)

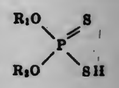
1. A full oil phase drilling fluid comprising a predominant amount of petroleum oil, which oil contains an asphaltene constituent and has a carbon residue of at least 5 percent by weight, and the reaction products formed by the addition to said oil of a sulphonating agent for said asphaltene constituent of said oil in an amount equivalent to between about 1.8 and 6.0 pounds of available sulphur trioxide per barrel of said oil and by the addition thereafter to said oil of a compound selected from the group consisting of a silicate and an aluminate of an alkali metal in an amount of at least half that required to react stoichiometrically with the reaction product of said asphaltene constituent with said sulphonating agent, said drilling fluid containing not more than 4 percent by weight of water.

3,190,833
OXIDATION-RESISTANT LUBRICATING COMPOSITION

Alan Rhodes, Willoughby, Ohio, assignor to The Lubrizol Corp., Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 14, 1961, Ser. No. 102,933
12 Claims. (Cl. 252—32.7)

1. A lubricating composition comprising a major amount of lubricating oil and from about 0.01% to about 3.5% by weight of an oxidation-inhibiting agent prepared by a process comprising treating an oil-soluble Group II metal salt of a phosphorothioic acid having the structural formula



wherein R_1 and R_2 are substantially hydrocarbon radicals containing a total of at least 7.6 aliphatic carbon atoms per atom of phosphorus with from about 0.1 up to about 0.5 mole of an epoxide selected from the class consisting of alkylene oxides having up to about 10 carbon atoms, arylalkylene oxides having up to about 6 carbon atoms in the alkylene radical, chlorostyrene oxides, epichlorohydrin, butyl 9,10-epoxy-stearate, expoxidized interpolymer of isobutene and butadiene, epoxidized interpolymer of isobutene and isoprene, epoxidized soy bean oil and epoxidized tung oil.

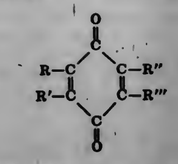
3,190,834
LUBRICANT COMPOSITIONS COMPRISING CHLORINATED QUINONES

Kenneth H. Gee, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 28, 1961, Ser. No. 120,166
18 Claims. (Cl. 252—33.4)

1. A lubricating composition comprising essentially a mineral lubricating oil containing about 0.1–10 percent by weight, sufficient to give a total base number above about 3 to the composition, of an overbased metal sulfonate having a total base number of at least 100 and containing metal equal to at least a 200 percent excess over that required to form the normal metal sulfonate, said metal being chosen from the class consisting of

alkali metals and alkaline earth metals, and about 0.01–0.2 percent by weight of a chlorinated quinone represented by the formula



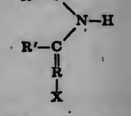
wherein R, R', R'' and R''' represent members of the class consisting of hydrogen, chlorine and aliphatic hydrocarbon groups containing from 1 to about 30 carbon atoms, at least one of which represents chlorine, and wherein R and R' taken together may represent an unsaturated hydrocarbon group forming a fused ring with the quinone group of the formula, said composition without the said chlorinated quinone being deficient in silver lubricating properties and said chlorinated quinone imparting substantially improved silver lubricating properties to the said composition.

3,190,835
METAL DEACTIVATORS

Wilhelm C. Brezesinska Smithuysen, Daniel van Velzen, Jacob C. Caron, and Wim de Bruine, all of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 28, 1961, Ser. No. 120,178
Claims priority, application Netherlands, July 29, 1960, 254,361
7 Claims. (Cl. 252—47)

1. A liquid hydrocarbon oil, normally containing trace amounts of alkali and polyvalent oxidative catalyzing metals, having improved oxidative stability containing 0.1–150 p.p.m. by weight of a complexing agent capable of forming complexes with polyvalent metals in the presence of alkali having the structural formula



wherein R' is selected from the group consisting of hydrogen, alkyl, aryl, aralkyl and alkaryl, with the proviso that the carbon atoms within the R' groups which are in the beta position relative to N can be members of a non-acetylenically-unsaturated 5-membered heterocyclic ring in which N is the hetero atom, R is selected from the group consisting of imino and alkylene having from 1 to 3 carbon atoms, and X is a heterocyclic nitrogen-containing radical, bonded to R in the 2-position, selected from the group consisting of 2-thiazolyl, 2-pyridyl, 2-quinolyl, and 2-isopyrrolyl.

3,190,836
WATER-SOLUBLE LIQUID DETERGENT COMPOSITIONS

Robert C. Taylor, King of Prussia, and Elizabeth J. Meehan, Fort Washington, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 3, 1962, Ser. No. 207,410
6 Claims. (Cl. 252—153)

1. A water-soluble liquid detergent composition consisting essentially of from about 50 weight percent to 60 weight percent of a mixture of an anionic surface-active agent and a nonionic surface-active agent, the remainder of the composition consisting of a solvent for said mixture of surface-active agents, said mixture of surface-active agents consisting of from about 40 weight percent to 50 weight percent of an aqueous solution of triethanolamine C_{10}–C_{18} alkyl benzene sulfonate of about 60 weight percent concentration and from about 50 weight percent to 60 weight percent of the condensation product of one mole of octyl phenol with 5 moles of ethylene oxide, said solvent consisting of from about 80 weight percent to 100 weight percent of hydrocarbons boiling in the range of 175° F. to 600° F., having a total aromatic content of at least about 28 weight percent and from about 20 weight percent to 0 weight percent of tetrahydrofurfuryl alcohol.

3,190,837
MAKING INDIVIDUAL CAPSULES BY DUAL DEPOSITION (FROM LIQUID)

Carl Brynko and Joseph A. Scarpelli, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed Dec. 31, 1958, Ser. No. 784,020
13 Claims. (Cl. 252—316)

1. A process for the collective and simultaneous manufacture of capsules, each having core material surrounded by capsular wall material, which comprises

(a) establishing a system consisting of a dispersion of particulate entities of water-insoluble matter, each of which is to become the core of a capsule, in an agitated aqueous dispersion medium in which the particulate entities are substantially insoluble, said medium containing dissolved therein film-forming hydrophilic colloid materials, at least one of which is gelable, consisting of different kinds of molecules which combine to form coacervate complex units under coacervating conditions;

(b) changing the conditions of said system to increase the interaction between the molecules of the colloid materials to effect coacervation, in which said colloid materials contract to form colloid-rich coacervate complex units, some of which units deposit in a liquid state, as a first liquid deposit, around each core entity to a thickness at which such deposition ceases, leaving remnant coacervate complex units of colloid material in solution, and leaving each core entity surrounded by a liquid wall deposit of gelable complex coacervate film-forming hydrophilic colloid material units;

(c) changing the condition of the system to cause decoacervation to take place for a time sufficient to decoacervate any remnant undeposited complex units of the hydrophilic colloid material, but insufficient to cause substantial decoacervation of the deposited material;

(d) adding to the system and dissolving therein additional film-forming hydrophilic colloid material to form a rejuvenated aqueous colloid-containing medium, which additional film-forming hydrophilic colloid material consists of molecules which combine with the molecules of the colloid materials in the system to form colloid-rich coacervate complex units;

(e) again changing the conditions of the system to cause coacervation wherein the interaction between the molecules of the colloid-rich materials in the rejuvenated aqueous medium causes the colloid molecules therein to make new colloid-rich complex coacervate units, which new units deposit in a liquid state onto the first deposit of liquid complex colloid units around each core entity to form a further liquid deposit of colloid material complex units over and around the first deposit, and coherent thereto; and

(f) finally, after such second deposit has been made,

cooling the so-formed deposited wall of coacervate colloid material around each capsule core entity to gel.

3,190,838

CATALYST SYSTEMS COMPRISING ALUMINUM TRIHALIDE NITROMETHANE AND A THIRD COMPONENT

Henricus M. Buck and Luitzen J. Oosterhoff, Leiden, Netherlands, and John H. Lupinski, Schenectady, N.Y., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 5, 1960, Ser. No. 73,521
Claims priority, application Great Britain, Dec. 7, 1959, 41,481/59; Aug. 25, 1960, 29,379/60, 29,380/60
6 Claims. (Cl. 252—429)

1. A catalyst composition comprising an aluminum trihalide, nitromethane and at least one compound selected from the group consisting of tetranitromethane, potassium nitrate, potassium nitrite, potassium chlorate and phosphorous pentoxide wherein the components are present in approximately equimolar quantities.

3,190,839

PROCESS FOR PREPARING RANEY-NICKEL HYDROGENATION CATALYSTS OF SELECTIVE ACTIVITY

Ulrich Hauschild, Hannover, and Martin Stahl, Sonthofen, Allgau, Germany, assignors to Kali-Chemie Aktiengesellschaft, Hannover, Germany

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,497
Claims priority, application Germany, Oct. 5, 1960, K 41,825
7 Claims. (Cl. 252—430)

1. A process for the preparation of selectively active Raney-nickel hydrogenation catalysts for preparation of H_2O_2 over an anthraquinone compound without hydrogenation in the nucleus of said anthraquinone compound, comprising treatment, prior to the hydrogenation, of a conventional Raney-nickel hydrogenation catalyst with an aldehyde of the formula

R—CHO

wherein R is selected from the group consisting of H, alkyl radicals having 1 to 5 C-atoms and aryl radicals, said treatment with the aldehyde being carried out in a solvent selected from the group consisting of water and a lower alcohol.

3,190,840

METHOD OF PREPARING A CHROMIUM OXIDE AND ALPHA-ALUMINA CATALYST COMPOSITION AND THE PRODUCT THEREOF

Regine Blais, 22 Rue de Valmy, Charenton, France, Denis Papée, 6 Rue Adolphe Yvon, Paris 16, France, and Roland Gauguin, 201 Ave. de Neuilly, Neuilly-sur-Seine, France

No Drawing. Filed Aug. 9, 1960, Ser. No. 48,357
Claims priority, application France, Aug. 12, 1959, 802,673
7 Claims. (Cl. 252—465)

1. A dehydrogenation catalyst for hydrocarbons which consists essentially of the calcined combination in the form of an alpha-solid solution of aluminum oxide containing at least 10% by weight of the alpha modification of aluminum ovide and 2–25% by weight calculated as chromium sesquioxide of a chromium compound selected from the group consisting of chromium oxide and compounds of chromium capable of thermal decomposition to chromium oxide, said catalyst being characterized by a rhombic form having a specific surface less than 50 $m.^2$/per gram.

2. A method for preparing a dehydrogenation catalyst for hydrocarbons which comprises combining aluminum oxide containing at least 10% by weight of the alpha modification of aluminum oxide with a chromium compound selected from the group consisting of chromium oxide and compounds of chromium capable of thermal decomposition to chromium oxide, and calcining the combination at a temperature within the range of 700–950° C. to form directly an alpha solid solution of aluminum oxide and chromium oxide in rhombic form having a specific surface less than 50 $m.^2$/per gram.

3,190,841

THERMOPLASTIC 5-ALLYLISOCYANURATE POLYMER

William C. Francis, Overland Park, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,936
13 Claims. (Cl. 260—2)

1. A process for manufacturing thermoplastic polymers comprising reacting a compound selected from the group consisting of organic dibromides, dichlorides and diiodides having from about two to twenty-two carbon atoms with at least an equimolar amount of a salt of cyanuric acid and at least an equimolar amount of a third reactant selected from the group consisting of organic monobromides, monochlorides and monoiodides, at least twenty mole percent of said third reactant being selected from the group consisting of allyl and substituted allyl bromides, chlorides and iodides, in an inert reaction medium at an elevated temperature to yield a polymeric product in which there are at least two isocyanurate nuclei per molecule.

3,190,842

PREPARATION OF OPEN CELL POLYURETHANE FOAM HAVING AN INERT LIQUID ENTRAPPED THEREIN

Arthur F. Ringwood, Schenectady, and Charles T. Boutin, Cohoes, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,858
3 Claims. (Cl. 260—2.5)

1. A method of forming a body of substantially open cell polyurethane foam material containing from about 30 to 100 parts by weight of an integral liquid per 100 parts by weight of polyurethane, said liquid being chemically nonreactive with respect to the polyurethane, comprising the steps of mixing said liquid with an organic polyisocyanate and a reactive organic material selected from the group consisting of polyethers and polyesters, and reacting said mixture in a suitable mold in the presence of an amine catalyst mixture of about 1 to 10 parts per 100 parts by weight of the polyisocyanate and the reactive material of a mixture of a 50 to 50 parts by weight each of amine and water to form said open cell polyurethane foam and simultaneously entrapping said liquid in the cells of said foam.

3,190,843

PROCESS OF MAKING A MODIFIED POLYVINYL ALCOHOL FOAM

Hans Höfelmann, Wiesbaden-Biebrich, Robert Braun, Wiesbaden, Karl Heinz Kahrs, Frankfurt am Main, Fritz Winkler, Kelkheim-Munster, and Wolfgang Zimmermann, Frankfurt am Main-Unterliederbach, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Mar. 13, 1961, Ser. No. 94,987
Claims priority, application Germany, Mar. 17, 1960, K 40,193
8 Claims. (Cl. 260—2.5)

1. A process for the preparation of a sponge material which comprises reacting at a temperature between 20 and 70° C. in the presence of an acid catalyst

(a) at least one aldehyde selected from the group consisting of formaldehyde and an acidic aldehyde said acidic aldehyde being selected from the group consisting of glyoxylic acid, butyraldehyde sulfonic acid and benzaldehyde disulfonic acid and

(b) a foamed aqueous solution comprising hydrolyzed polyvinyl acetate which has been reacted with a compound selected from the group consisting of (A) polyethylene glycol, (B) polypropylene glycol and (C) a monomer selected from the group consisting of maleic, crotonic, itaconic, fumaric, acrylic, methacrylic, vinyl sulfonic, vinylphosphonic acids, and alkylesters of said acids wherein the alkyl group contains from 1–2 carbon atoms.

3,190,844

PROCESS FOR PRODUCING IMPROVED POLYURETHANE FOAMS USING AN AROYL AZIDE BLOWING AGENT

Charles R. Milone, Chillicothe, and Henry A. Pace, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,520
7 Claims. (Cl. 260—2.5)

3. The process of producing an electrically transparent resin foam which comprises admixing (1) water, (2) a wetting agent, (3) a blowable material composed of a saturated alkyd resin having an acid number ranging from 15 to 65 derived from the condensation of polyhydric alcohols and saturated polycarboxylic acids, (4) from 85–115 mole percent of the theoretical amount of organic diisocyanate required to react with the active hydrogen present in the alkyd resin and water, and (5) from 1 to 25% by weight, based on the weight of the alkyd resin, of an aroyl azide which decomposes at temperatures ranging from 25° C. to 150° C. and heating until foaming is completed.

3,190,845

COAL TAR COATING COMPOSITION

Robert H. Goodnight, Kansas City, Mo., assignor to Cook Paint & Varnish Company, Kansas City, Mo., a corporation of Delaware

No Drawing. Filed Jan. 30, 1961, Ser. No. 85,472
4 Claims. (Cl. 260—28)

1. A coating composition consisting essentially of a cold stable, dry granular mixture of hard coal tar pitch, solid glycidyl polyether resin and solid epoxy curing agent, said curing agent being active only at an elevated temperature which is at least as high as the melting point of said mixture, said mixture having a melting point and curing point of at least 250° F. and including from 20 to 60 parts resin and from 40 to 80 parts of pitch based on 100 parts by weight of the resin/pitch total and from 15 to 100 parts curing agent per 100 parts of resin.

3,190,846

PREPARATION OF A LATEX OF REDUCED PARTICLE SIZE

Sydney Lipton, Bayonne, and Myron W. Belaga, Cranford, N.J., and Roland Timothy Kelley, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 10, 1959, Ser. No. 832,827
2 Claims. (Cl. 260—29.7)

1. A process for preparing a latex having reduced particle size from a polymer chosen from the group consisting of a copolymer of 70–99.5 wt. percent of a C_4 to C_7 isoolefin with 30–0.5 wt. percent of a C_4 to C_{10} multiolefin and its bromination and chlorination products which comprises:

(1) preparing a solution of said polymer dissolved in a liquid hydrocarbon solvent,

(2) dispersing said solution in water as the continuous phase in the presence of an emulsifier to form a latex having a large initial particle size,

(3) passing said latex to a feed zone,

(4) withdrawing said latex from the bottom of said feed zone,

(5) homogenizing said withdrawn latex and introducing it into the first of a plurality of adjacent reservoirs,

(6) returning latex from the upper portion of said first reservoir to said feed zone,

(7) successively repeating said process steps throughout said plurality of reservoirs by

(a) withdrawing latex from the bottom of each immediately preceding reservoir, homogenizing said withdrawn latex and introducing it into the next subsequent reservoir,

(b) returning latex from the upper portion of said subsequent reservoir to said immediately preceding reservoir,

(8) withdrawing latex from the bottom of the last of said plurality of reservoirs and

(9) stripping solvent from said last withdrawn latex to form a dispersion of said polymer in water, said polymer having a reduced particle size.

3,190,847

AGGLOMERATION AND CONCENTRATION OF SYNTHETIC LATEX

Joseph M. Mitchell and David C. Chalmers, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,268
Claims priority, application Canada, Dec. 2, 1961, 837,301
19 Claims. (Cl. 260—29.7)

1. The process for agglomerating the particles of an aqueous latex containing a rubbery polymer of a butadiene-1,3 monomer to provide an aqueous latex of the thus agglomerated particles, the process comprising dispersing a crosslinked polyurethane in said latex whereby to agglomerate the latex particles and thus permit the latex to be concentrated to a higher degree at equivalent viscosity than is possible in the absence of such polyurethane, said polyurethane being added in amount of from about 0.01 to about 7.0 parts by weight per 100 parts by weight of the polymer solids in the latex and being characterized by a solubility in water at 25° C. of from about 0.01 to about 10.0 grams per 100 grams of water.

3,190,848

CURING OF PLASTICIZED OLEFIN-TYPE POLYMERS CONTAINING TERMINAL EPOXY AND HYDROXY GROUPS

Henry L. Heiss and Robert C. Wheat, both of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 22, 1961, Ser. No. 111,492
9 Claims. (Cl. 260—30.4)

1. A process for producing a polymeric product which comprises mixing a plasticizer containing at least 1 of the functional groups selected from the group consisting of hydroxy and epoxy groups with a polymer having substantially higher molecular weight and containing a hydroxy group and an epoxy group on at least 1 end of the polymer molecule, said polymer being a polymerizate of a vinylidene-containing monomer selected from the group consisting of conjugated dienes having 4 to 12 carbon atoms per molecule, vinyl-substituted aromatic compounds, vinyl-substituted pyridine and quinoline compounds, acrylic and alkacrylic acid esters, nitriles, N,N-disubstituted amides, vinylfuran and N-vinylcarbazole, and curing the resulting plasticized polymer by reaction with a polyfunctional coupling reagent reactive with the functional group of said plasticizer and

selected from the group consisting of polyisocyanates having the formula $R(NCO)_m$ wherein m is 2 to 4 and R is a polyvalent organic radical containing 2 to 30 carbon atoms, polybasic acids containing from 4 to 10 carbon atoms and having from 2 to 4 carboxy groups, anhydrides of said acids, acid chlorides of said acids, polyamines having 2 to 12 carbon atoms and 2 to 5 amino groups, and chloromethylphosphonic dichloride.

3,190,849

COMPOSITIONS COMPRISING A VINYLIDENE HALIDE RESIN PLASTICIZED WITH AN ALKYL XYLYL SULFONE

John Robert Campbell, Creve Coeur, and Roger E. Hatton, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application July 8, 1960, Ser. No. 41,485, now Patent No. 3,102,148, dated Aug. 27, 1963. Divided and this application Oct. 31, 1962, Ser. No. 234,855

5 Claims. (Cl. 260—30.8)

1. A composition comprising a vinylidene halide resin wherein at least about 70% by weight of the monomer units are vinylidene halide units any balance being monomer units derived from an ethylenically unsaturated monomer copolymerizable therewith and a plasticizing amount of an alkyl xylyl sulfone wherein the alkyl group contains from 8 to 14 carbon atoms.

3,190,850

VINYLIC FILLER PIGMENTS

Oliver W. Burke, Jr., 1238 Berkshire Road, Grosse Pointe Park, Mich.

No Drawing. Filed Oct. 15, 1954, Ser. No. 462,611

23 Claims. (Cl. 260—38)

1. A colloidal sized pigment consisting essentially of individually colored vinylic filler particles as hereinafter defined: said vinylic filler being made up essentially of polymer particles in the colloidal size range of about 5 millimicrons to about 0.5 micron average diameter; said particles being three-dimensionally cross-linked so that each particle is non-soluble in any solvent that does not break down its primary chain structure; said particles having been prepared by cross-linking polymerization, in aqueous dispersion, of monomer material polymerizable therein and selected from the class consisting of the polymerizable monomers containing at least one carbon-to-carbon unsaturated group with the further limitation that the selected monomer material comprises cross-linking monomer material containing a plurality of such carbon-to-carbon unsaturated groups in at least a sufficient amount to effect, in said cross-linking polymerization, enough cross-linking within the particles to render them non-soluble as aforesaid; said individual vinylic filler particles having combined thereon a coloring component of a size such that the resulting pigment particles are still in the colloidal size range of about 5 millimicrons to about 0.5 micron average diameter, said coloring component being selected from the class consisting of inorganic and organic colors and color components, and combinations of any thereof and having been deposited, from solution in the aqueous phase of said aqueous dispersion, onto the surfaces of the polymer particles formed by the cross-linking polymerization in said aqueous dispersion, said particles further comprising on their surface, in resinous state, a condensation product selected from the class consisting of the phenol-aldehyde and amino-aldehyde resinous condensation product, said condensation product-surfaced particles still being in the colloidal range of about 5 millimicrons to about 0.5 micron average diameter.

3,190,851

PROCESS FOR PRODUCTION OF HOMOGENEOUS RUBBER-SILICIC ACID MIXTURES

Günther Maass, Marl, Kreis Recklinghausen, and Paul Bernemann, Haltern, Westphalia, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany, a corporation of Germany

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,744

Claims priority, application Germany, Aug. 21, 1961, C 24,917

1 Claim. (Cl. 260—41.5)

Process for the production of a homogeneous rubber-silicic acid mixture which comprises mixing hydrochloric acid with a mixture of a sodium silicate solution and a latex of a mixed polymeride of a diolefine and a monoolefine, said mixture of sodium silicate solution and latex containing from 25 to 60 g. per liter of sodium chloride and from 40 to 70 g. per liter of rubber, and separating, washing and drying the resulting precipitate.

3,190,852

POLYOLEFINS STABILIZED WITH A COMBINATION OF DIALKYL THIODIPROPIONATES AND POLYPHENOLS

Marshall E. Doyle, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 31, 1962, Ser. No. 213,605

2 Claims. (Cl. 260—45.85)

1. Stabilized polypropylene composition comprising

(I) solid polymer consisting substantially of propylene produced by a low-pressure polymerization process and containing residue of a group IV metal compound, combined with

(II) up to 1 percent by weight of an inhibitor against thermal degradation thereof, consisting of a synergistic combination of

(1) at least 0.05 percent by weight of a dialkyl beta-thiodipropionate wherein the alkyl group contains from 12 to 18 carbon atoms, and

(2) at least 0.05 percent by weight of 1,3,5-trimethyl-2,4,6-tri-(3,5-di-tert-butyl-4-hydroxybenzyl)benzene,

said compounds (1) and (2) being present in a ratio in the range from 1:1 to 5:1, and said percentages being based on the weight of polypropylene.

3,190,853

POLYESTERS OF 2,8-DIBENZOFURANDICARBOXYLIC ACID

William H. Watson, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 20, 1961, Ser. No. 160,955

15 Claims. (Cl. 260—47)

1. A moldable linear polyester characterized by the presence of recurring ester units of 2,8-dibenzofurandicarboxylic acid and a dihydroxy compound of 2 to 20 carbon atoms having the hydroxyl group directly attached to a divalent organic radical selected from the group consisting of arylene, aralkylene and alkylene.

3,190,854

ORGANOMETALLIC POLYMERS OF DIKETONES

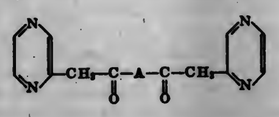
John D. Behun, Southgate, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Original application Jan. 16, 1959, Ser. No. 787,110. Divided and this application Oct. 12, 1961, Ser. No. 144,570

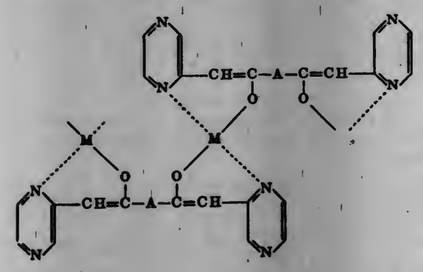
16 Claims. (Cl. 260—63)

1. A process for preparing organometallic polymers

having high temperature stability, which comprises (1) dissolving a diketone of the following formula:



wherein A is a divalent hydrocarbon radical selected from the group consisting of alkylene radicals having from about 4 to 12 carbon atoms, meta-phenylene, para-phenylene, meta-biphenylene, para-biphenylene, meta-oxydiphenylene, para-oxydiphenylene, meta-xylene, para-xylene and naththylene in a solvent therefor, (2) adding a divalent metal salt in which the metal atom is selected from the group consisting of beryllium, copper, nickel, zinc, cobalt, iron palladium manganese calcium, strontium, barium and cadmium thereto at a temperature from about 20° C. to about the reflux temperature of said solvent until an organometallic polymer is formed, said polymer containing recurring polymeric units as shown:



where M is the divalent metal atom of the divalent metal salt previously defined and A is the divalent hydrocarbon radical previously defined.

3,190,855

WATER-SOLUBLE STEROIDS AND A METHOD FOR PREPARING THE SAME

Takuichi Miki, Hyogo, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Aug. 30, 1962, Ser. No. 220,565

9 Claims. (Cl. 260—63)

1. 21-monoester of prednisolone with a copolymer of 1 to 5 parts by weight of vinylpyrrolidone and 1 part by weight of maleic anhydride, the copolymer having a molecular weight of from 2000 to 70,000.

3,190,856

POLYAMIDES FROM BENZOPHENONETETRACARBOXYLIC ACIDS AND A PRIMARY DIAMINE

Edward Lavin, Longmeadow, Albert H. Markhart, Wilbraham, and Robert E. Kass, Springfield, Mass., assignors to Shawinigan Resins Corporation, Springfield, Mass., a corporation of Massachusetts

No Drawing. Filed June 27, 1961, Ser. No. 119,846

4 Claims. (Cl. 260—65)

1. A soluble, flexible polyamide resin that is the polymeric condensation product of an aromatic primary diamine containing from 6 to 16 carbon atoms with the dianhydride of an acid selected from the group consisting of 2,2',3,3'-, 2,3,3',4'-, 3,3',4,4'-benzophenonetetracarboxylic acids and mixtures thereof.

3,190,857

DESTRUCTION OF UNREACTED ISOCYANATO GROUPS IN POLYURETHANE ELASTOMERS BY EXPOSURE TO STEAM

Ernest E. Fauser, Cuyahoga Falls, and Frank S. Farson, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 29, 1959, Ser. No. 849,435

4 Claims. (Cl. 260—77.5)

1. In a process for preparing processable polyurethane elastomers exhibiting during aging substantial resistance to change of its Tinius Olsen flow value as measured at the temperature of 212° F. and 500 pounds per square inch pressure, the steps comprising (1) preparing a processable polyurethane elastomer by (A) forming a reaction mixture comprising 0.9 to 2 mols of an organic polyisocyanate for each mol of a reactive hydrogen-containing compound having a molecular weight of about 750 to no greater than 10,000, (B) reacting together the ingredients of said mixture to form a reaction product, and (C) subjecting said reaction product to a heat treatment until it has a Tinius Olsen flow value of about 182, and (2) subjecting the product of 1(C) in sheet form to steam vapor for a time sufficient to destroy any free isocyanate groups present, said reaction product having been formed into a sheet having a thickness of about .25 inch after step 1(B) and prior to step 2; said reactive hydrogen containing compound being selected from the class consisting of polyesters, polyesteramides and polyether glycols.

3,190,858

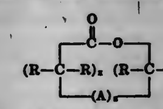
POLYMERIZATION OF CYCLIC ESTERS

Eugene F. Cox and Fritz Hostettler, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 3, 1959, Ser. No. 856,906

15 Claims. (Cl. 260—78.3)

1. A process which comprises polymerizing a cyclic ester characterized by the following formula:



wherein each R, individually, is selected from the group consisting of hydrogen, alkyl, aryl, alkaryl, aralkyl, cycloalkyl, halo, haloalkyl, alkoxyalkyl, alkoxy, aryloxy, a portion of an aromatic hydrocarbon nucleus which nucleus is fused to the cyclic ester ring, and a portion of a saturated cycloaliphatic hydrocarbon nucleus which nucleus contains from 4 to 10 carbon atoms and which is fused to the cyclic ester ring; wherein A is selected from the group consisting of an oxy group, a thio group, and a divalent saturated aliphatic hydrocarbon group; wherein x is an integer in the range of from 1 to 15 inclusive; wherein y is an integer in the range of from 1 to 15 inclusive; and wherein z is an integer selected from the group consisting of zero and one; with the provisos that (a) the sum of $x+y+z$ cannot equal three, (b) the total number of atoms forming the cyclic ester ring does not exceed 18, and (c) the total number of organic substituents attached to the carbon atoms contained in the cyclic ester ring does not exceed four; with from about 0.001 to about 10 weight percent, based on the total weight of cyclic ester, of an organometallic compound characterized by the following formula:

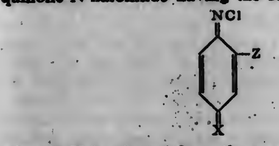
$$R'—M—R''_a$$

wherein M is selected from the group consisting of aluminum, indium, and gallium; wherein a is an integer having a value of 2; wherein R' is a monovalent hydrocarbon radical free of ethylenic and acetylenic unsaturation; and wherein each R'', individually, is selected from the group consisting of hydrogen, halo, alkoxy, aryloxy,

and a monovalent hydrocarbon radical free of ethylenic and acetylenic unsaturation; under substantially anhydrous conditions; for a period of time sufficient to produce a polymer.

3,190,859
VULCANIZATION OF ELASTOMERS WITH QUINONE-N-HALOIMIDES
Peter E. Wei and John Rehner, Jr., Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 14, 1961, Ser. No. 116,937
10 Claims. (Cl. 260—79.5)

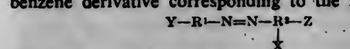
1. A curable composition of matter comprising an elastomeric ethylene-alpha olefin copolymer and a quinone-N-haloimide having the formula:



wherein X is selected from the group consisting of O and NCl and Y and Z are selected from the group consisting of H and halogen atoms.

3,190,860
AZO POLYMERIC COMPOSITIONS CAPABLE OF BEING INTEGRALLY COLORED AND WHICH ARE RESISTANT TO ULTRA-VIOLET LIGHT
Joseph Fertig, New York, N.Y., Albert I. Goldberg, Berkeley Heights, N.J., and Martin Skoultchi, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 26, 1962, Ser. No. 205,220
7 Claims. (Cl. 260—80.5)

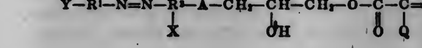
1. A composition comprising a solid film forming polymer of at least one ethylenically unsaturated monomer selected from the group consisting of styrene, methyl styrene, the acrylic and methacrylic acid esters of aliphatic alcohols, acrylic acid, methacrylic acid, acrylamide, acrylonitrile, methacrylonitrile, vinylidene chloride, vinyl chloride, vinyl acetate, ethylene, and propylene; together with at least one ethylenically unsaturated azobenzene derivative corresponding to the formula:



wherein R^1 is a phenyl radical, wherein R^2 is a radical of the benzene series selected from the group consisting of phenyl and naphthyl radicals, and wherein X is an ethylenically unsaturated group selected from the class consisting of acryloxy and methacryloxy groups and Y and Z represent hydrogen.

3,190,861
AZOBENZENE CONTAINING POLYMERIC COMPOSITIONS CAPABLE OF BEING INTEGRALLY COLORED AND WHICH ARE RESISTANT TO ULTRA-VIOLET LIGHT
Joseph Fertig, New York, N.Y., Albert I. Goldberg, Berkeley Heights, N.J., and Martin Skoultchi, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 26, 1962, Ser. No. 205,218
1 Claim. (Cl. 260—86.1)

A copolymer of an ethylenically unsaturated monomer and an ethylenically unsaturated azobenzene derivative corresponding to the formula:



wherein R^1 is a phenyl radical, wherein R^2 is a radical of the benzene series selected from the group consisting of phenyl and naphthyl radicals, wherein Q is a radical selected from the group consisting of hydrogen and methyl radicals, wherein X and Y represent hydrogen, wherein A represents a radical selected from the group consisting of oxygen and carboxy radicals such that when A is a carboxy radical it is attached to said R^2 radical through the carbon atom of said carboxy radical and wherein the azo bridge and said A radical are separated from one another by n carbon atoms of said R^2 radical wherein n is a positive integer greater than 1 but not exceeding 4.

3,190,862
COPOLYMERS OF ETHYLENE AND METHYL SUBSTITUTED α,ω-DIOLEFINS
Luigi Boghetich, Texas City, and Raymond H. Reinhard, Galveston, Tex., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed May 24, 1961, Ser. No. 112,232
1 Claim. (Cl. 260—88.2)

A copolymer composition produced by copolymerizing ethylene and from 0.1 mol percent to 10 mol percent based on the ethylene fed of a methyl substituted α,ω-diolefin chosen from the group consisting of 3,3-dimethylpentadiene-1,4; 3,3,4,4-tetramethylhexadiene-1,5; 3,3,5,5-tetramethylheptadiene-1,6; and 3,3,6,6-tetramethyloctadiene-1,7 at a pressure from about 5,000 to about 50,000 p.s.i. and a temperature from about 100° C. to about 400° C. in the presence of a free radical catalyst to initiate the polymerization.

3,190,863
REACTION PRODUCTS OF DECABORANE WITH ALKENYL PYRIDINE
Joseph Green, Dover, N.J., and Barney Groten, West Lafayette, Ind., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Nov. 15, 1960, Ser. No. 69,518
7 Claims. (Cl. 260—88.3)

1. A process for the preparation of solid polymeric reaction products of boranes and alkenyl pyridines which comprises reacting a borane selected from the class consisting of decaborane and a lower alkyl decaborane with a lower alkenyl pyridine.

3,190,864
MOULDING COMPOSITIONS OF TETRAFLUOROETHYLENE WITH STABILIZERS TO PREVENT BLACK SPECKS
Laurence Stanley John Shipp, Stevenage, and Ronald Philip Smith, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed June 9, 1961, Ser. No. 115,923
Claims priority, application Great Britain, June 22, 1960, 21,850
14 Claims. (Cl. 260—92.1)

1. A moulding composition comprising polytetrafluoroethylene powder in admixture with from 2 to 200 parts per million parts by weight of said powder of a compound that is a stabilizer which prevents the formation of black specks when a preform of said powder is heated to sinter it at a temperature of at least 327° C. and that evolves oxygen when heated at a temperature within range 100–400° C., said compound being selected from the group consisting of ammonium, alkali metal and alkaline earth metal salts of chloric, perchloric, bromic, perbromic, iodic and periodic acids.

3,190,865
CHLOROPRENE POLYMERIZATION PROCESS
Kenneth L. Miller, Lyndon, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 2, 1961, Ser. No. 149,508
8 Claims. (Cl. 260—92.3)

1. In the polymerization of chloroprene in an aqueous emulsion in the presence of from 0.01 to 0.04 part mole per 100 parts of chloroprene of a dialkyl xanthogen disulfide wherein the alkyl groups contain from 1 to 8 carbon atoms, at a temperature of from about 15 to 25° C. and at a pH of from about 5 to 11, the improvement comprising carrying out the polymerization in the presence of a catalyst system comprising per 100 parts by weight of chloroprene

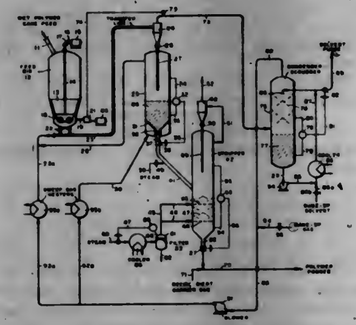
(a) 0.00065 to 0.0013 part mole of an organic hydroperoxide,
(b) 0.1 to 0.3 part by weight of an inorganic water-soluble persulfate, and
(c) at least 0.05 part by weight of a compound selected from the group consisting of an inorganic water-soluble hydrosulfite, an inorganic water-soluble pyrosulfite and mixtures thereof;

with the proviso that components (a) and (b) of said catalyst system be added separately to the polymerization system before polymerization is initiated with polymerization then being initiated and maintained by the addition of component (c).

3,190,866
OLEFIN POLYMERIZATION PROCESS
Roger M. Nagel, Pennington, and Malconis Gabliks, New Brunswick, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Apr. 10, 1961, Ser. No. 101,668
5 Claims. (Cl. 260—93.7)

1. A method for polymerizing butene-1 which comprises contacting butene-1 with a catalyst comprising a titanium tetrahalide and a trialkyl aluminum compound wherein the alkyl groups contain 2 to 10 carbon atoms and a stannous halide in a molar ratio of one mol of titanium tetrahalide, about 0.5 to 10 mols of trialkyl aluminum, and about 0.1 to about 0.5 mol of stannous halide.

3,190,867
PROCESSING OF SOLID POLYMER
Morey E. Oldweiler, Whippany, N.J., and Michael A. Moore, Houston, and William A. Brookshire, Baytown, Tex., assignors, by direct and mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,558
12 Claims. (Cl. 260—93.7)



1. A method of processing a wet non-aqueous solvent-containing solid polymer of an alpha-olefin having 2 to 8 carbon atoms in the molecule, said wet polymer containing from about 20% to 55% by weight of solvent, which comprises introducing said wet polymer into an elongated transfer zone, forming a first disperse phase suspension of said polymer in said transfer zone in a heated gasiform fluidizing medium comprising a hydrocarbon at a temperature within the range from about 230° F. to about 330° F. and flowing said suspension in said disperse phase at a superficial gas velocity from about 5 to about 75 feet per second through said transfer zone and thereby maintaining said polymer below its melting point and removing solvent therefrom, separating said suspension into solid polymer containing from about 2% to about 15% by weight of solvent and gasiform fluidizing medium, forming said separated polymer into a dense fluidized bed with a heated gasiform fluidizing medium comprising a hydrocarbon at a temperature below the melting point of the polymer and within the range from about 160° F. to about 185° F. at a superficial gas velocity from about 0.2 to about 2 feet per second, to reduce further the solvent content of said polymer to about 0.05% to about 1.5% by weight, forming a second disperse phase above said first dense bed and introducing said second disperse phase into said heated gasiform fluidizing medium forming said first disperse phase suspension, withdrawing said reduced solvent-containing polymer from said first dense bed and forming said withdrawn reduced solvent-containing polymer into a second dense fluidized bed with a heated inert gasiform medium at a temperature below the melting point of the polymer and higher than the temperature of the heated gasiform medium introduced into the first dense bed within the range from about 170° F. to about 300° F. at a superficial gas velocity from about 0.2 to about to about 2 feet per second to reduce the solvent content of the polymer to less than 100 p.p.m. and recovering said polymer from said second fluidized bed.

3,190,868
RECOVERY OF POLYMER FROM SOLUTION
John Mitacek, Carl L. Mariz, and Edward N. Pennington, all of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 20, 1960, Ser. No. 63,888
18 Claims. (Cl. 260—94.7)

1. In the process of recovering a rubbery polymer prepared by polymerizing a monomer mixture containing at least a major proportion of a conjugated diene from a solution thereof in a solvent by steam stripping to produce rubber crumb in the aqueous phase, the improvement comprising adding during said stripping (1) a dispersing agent selected from the group consisting of water soluble polymeric substances containing a carbon chain having a plurality of —COOH groups, water soluble derivatives of polymeric substances containing a carbon chain having a plurality of —COOH groups, and (2) ions of a metal selected from the group consisting of calcium, strontium, barium, aluminum, iron, cobalt and nickel.

3,190,869
PROCESS FOR N-TRIFLUORACETYLATING AMINO ACIDS AND PEPTIDES
Friedrich Weygand, Pullach, Isartal, and Adolf Röpsch, Dortmund, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Feb. 15, 1960, Ser. No. 8,503
Claims priority, application Germany, Feb. 17, 1959, F 27,722
4 Claims. (Cl. 260—112)

1. Process for N-trifluoracetylating a starting material selected from the group consisting of α-amino carboxylic acids and peptides composed thereof, said acids and peptides having at least one hydrogen substituted on an

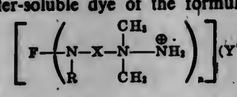
amino nitrogen atom, which comprises heating said starting material with at least one mol of trifluoracetic acid phenylester per amino group present in the starting material at a temperature in the range of about +50 to +160° C.

3,190,870
METHOD OF PREPARING COLORED MODIFIED CLAY
Ira D. Elkins, Cushing, Okla., assignor to Kerr-McGee Oil Industries, Inc., a corporation of Delaware
No Drawing. Filed June 29, 1960, Ser. No. 39,720
6 Claims. (Cl. 260—144)

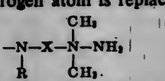
1. A method of preparing a colored modified clay comprising the steps of reacting an aqueous solution of a salt of an organic amine with clay exhibiting a base exchange capacity to replace inorganic cations of the clay with organic amine cations of the said salt and produce a modified clay, and thereafter reacting the said organic amine cations of the modified clay with a dye-forming component reactive therewith to produce a dye-modified clay, said dye being selected from the group consisting of azo dyes and triphenyl methane dyes.

3,190,871
WATER-SOLUBLE REACTIVE DYES
Guenther Auerbach, Basel, Arthur Barthold, Reinach, Basel-Land, and Jakob Benz, Oberwil, Basel-Land, Switzerland, Kurt Brennecisen, Grenzach, Germany, and Roland Entschel, Philippe Grandjean, and Curt Mueller, Basel, August Schweizer, Muttenz, Basel-Land, and Walter Wehrli, Riehen, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland
No Drawing. Filed Apr. 23, 1962, Ser. No. 189,268
16 Claims. (Cl. 260—146)

1. A water-soluble dye of the formula



wherein
F is a water-soluble dye grouping of which one exchangeable hydrogen atom is replaced for each

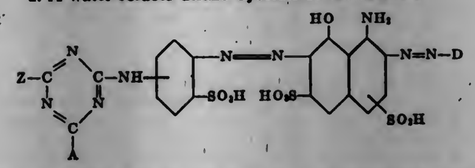


grouping, said water-soluble dye grouping being selected from the class consisting of
(a) unmetallized monoazo dye groupings bearing from 2 to 5 HO_3S— groups and selected from the group consisting of
(1) benzene-azo-naphthalene dye groupings,
(2) benzene-azo-5-pyrazolone dye groupings,
(3) naphthalene-azo-naphthalene dye groupings, and
(4) diphenyl-azo-naphthalene dye groupings;
(b) chromium, cobalt and copper complexes of the unmetallized monoazo dye groupings;
(c) disazo dye groupings bearing from 3 to 6 HO_3S— groups and selected from the group consisting of
(1) benzene - azo - benzene-azo-naphthalene dye groupings and
(2) benzene - azo - naphthalene-azo-benzene dye groupings;
(d) 1-amino - 2 - sulfo-4-arylaminoanthraquinone dye groupings having a total of from 3 to 4 sulfonic acid groups and wherein the aryl is hydrocarbon and is from mononuclear to binuclear; and
(e) copper-phthalocyanine sulfonic acid dye groupings containing from 4 to 5 water-solubilizing substituents selected from the group consisting of —SO_3H and —SO_2—NH_2,

R is a member selected from the group consisting of hydrogen and lower alkyl,
X is a member selected from the group consisting of a divalent radical of the pyrimidine series bearing two halogen atoms with an atomic weight between 35 and 81, each halogen atom being bound to a carbon atom and one halogen atom being in the position 5, a divalent radical of the pyrimidine series bearing one halogen atom with an atomic weight between 35 and 81 bound to a carbon atom and bearing a hydrogen atom in the position 5; a divalent radical of the symmetrical triazine series bearing a lower alkoxy radical; a divalent radical of the symmetrical triazine series bearing an unsubstituted amino group; a divalent radical of the symmetrical triazine series bearing a sulfophenylyamino group; and a divalent radical of the symmetrical triazine series bearing a disulfophenylamino group,
$Y^{\ominus}$ is an anion, and
n is one of the integers 1 and 2.

3,190,872
WATER-SOLUBLE DISAZO DYESTUFFS
Fritz Oesterlein, Basel, and Henri Rint, Arlesheim, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 21, 1962, Ser. No. 196,451
Claims priority, application Switzerland, May 23, 1961, 5,975/61; Nov. 21, 1961, 13,517/61; Mar. 15, 1962, 3,139/62
7 Claims. (Cl. 260—153)

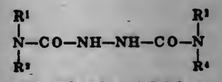
1. A water-soluble disazo dyestuff of the formula



wherein Z is a halogen atom of an atomic number of 17 to 35, A is a member selected from the group consisting of a chlorine atom, amino, lower alkylamino, lower hydroxyalkylamino, lower alkoxyalkylamino, morpholino, cyclohexylamino, lower sulfoalkylamino, lower alkoxy and phenoxy, and D represents a member selected from the group consisting of phenyl and naphthyl, which have as sole substituent a member selected from the group consisting of sulfonic acid and carboxylic acid groups.

3,190,873
OXIDATION OF HYDRAZOAMIDES TO AZOAMIDES
Neil William Woodrow Porter, Loughborough, England, assignor to Whiffen & Sons Limited, Willows Works, Loughborough, Leicestershire, England, a company of Great Britain
No Drawing. Filed Oct. 20, 1961, Ser. No. 146,427
Claims priority, application Great Britain, Oct. 25, 1960, 36,513/60; Nov. 29, 1960, 40,884/60
11 Claims. (Cl. 260—192)

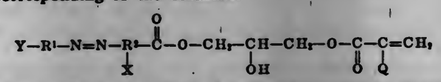
1. A process for the oxidation of hydrazoamide of the formula



wherein each of R^1, R^2, R^3 and R^4 is a member selected from the group consisting of hydrogen, substituted and unsubstituted alkyl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted aryl and substituted and unsubstituted aralkyl, the substituents of the substituted members being selected from the group consisting of chloro and nitro, to the corresponding azoamide which comprises contacting the hydrazoamide with chlorine in a non-alkaline medium containing from about 1 to about 20 percent by weight, based on the weight of the hydrazoamide, of a bromine compound selected from the group consisting of bromine and a bromide, the amount of reacting chlorine being maximally about the stoichiometric amount.

3,190,874
ETHYLENICALLY UNSATURATED ESTERS OF AZOBENZENE
Martin M. Skoultchi, New York, N.Y., Albert I. Goldberg, Berkeley Heights, N.J., and Joseph Fertig, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,861
6 Claims. (Cl. 260—196)

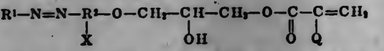
1. An ethylenically unsaturated azobenzene derivative corresponding to the formula:



wherein R^1 is a radical of the benzene series selected from the group consisting of phenyl and naphthyl radicals, wherein R^2 is a phenyl radical, wherein Q is a radical selected from the group consisting of hydrogen and methyl radicals, and wherein X is a substituent radical selected from the group consisting of hydrogen and hydroxy radicals and wherein Y is a substituent radical selected from the group consisting of hydrogen, hydroxy, methyl, chloro, methoxy and phenyl radicals.

3,190,875
ETHYLENICALLY UNSATURATED ETHERS OF AZOBENZENE
Martin M. Skoultchi, New York, N.Y., Albert I. Goldberg, Berkeley Heights, N.J., and Joseph Fertig, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,862
6 Claims. (Cl. 260—196)

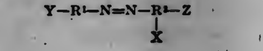
1. An ethylenically unsaturated azobenzene derivative corresponding to the formula:



wherein R^1 is a phenyl radical, wherein R^2 is a radical of the benzene series selected from the group consisting of phenyl and naphthyl radicals, wherein Q is a radical selected from the group consisting of hydrogen and methyl radicals, wherein X is a substituent radical selected from the group consisting of hydrogen and phenyl radicals and Y is a substituent radical selected from the group consisting of hydrogen, methyl, chloro, methoxy, carboxymethyl and phenyl radicals; said oxygen and azo bridges in R^2 being separated by *n* carbon atoms, wherein *n* is a positive integer which is a multiple of two not exceeding four.

3,190,876
ETHYLENICALLY UNSATURATED AZOBENZENE DERIVATIVES
Martin M. Skoultchi, New York, N.Y., Albert I. Goldberg, Berkeley Heights, N.J., and Joseph Fertig, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,860
6 Claims. (Cl. 260—197)

1. An ethylenically unsaturated azobenzene derivative corresponding to the formula:



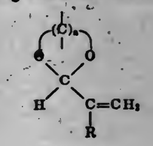
wherein R^1 is a phenyl radical, wherein R^2 is a radical of the benzene series selected from the group consisting of phenyl and naphthyl radicals, and wherein X is an ethylenically unsaturated group selected from the class consisting of acryloxy and methacryloxy groups and Y is a substituent radical selected from the class consisting of the hydrogen, chloro, methoxy, and alpha-naphthol azo ortho-methoxy phenyl radicals; wherein Z, when R^2 is a phenyl radical, is a substituent radical selected from the class consisting of the hydrogen, methyl, hydroxy and phenyl radicals; and wherein Z, when R^2 is a naphthyl radical, is hydrogen.

3,190,877
CRYSTALLINE SODIUM SALT OF 5'-GUANYLIC ACID AND A METHOD FOR PREPARING THE SAME
Joichi Ishibashi and Kikuo Ito, Hikari, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed Feb. 13, 1963, Ser. No. 258,160
Claims priority, application Japan, Feb. 15, 1962, 37/6,137
7 Claims. (Cl. 260—211.5)

1. Crystalline disodium salt of 5'-guanylic acid.
2. A method for preparing crystalline disodium salt of 5'-guanylic acid, which comprises dissolving a member selected from the group consisting of 5'-guanylic acid and the sodium salt of 5'-guanylic acid in a solution having an alkaline pH, leaving said member in said solution until amorphous disodium salt of 5'-guanylic acid is precipitated, and leaving said amorphous salt in said solution until crystalline disodium salt of 5'-guanylic acid is formed.

3,190,878
COATING COMPOSITION COMPRISING VINYL CYCLIC ACETAL, AN ORGANIC COBALT SALT AND A VINYL POLYMERIZATION INITIATOR
Carol K. Ikeda, Wallingford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 2, 1960, Ser. No. 25,857
22 Claims. (Cl. 260—23.5)

1. A composition consisting essentially of a vinyl cyclic acetal compound, an organic cobalt salt selected from the class consisting of cobalt(ous) salts of half esters of dicarboxylic acids and cobalt(ous) salts of monocarboxylic acids, and a free radical-producing vinyl polymerization initiator selected from the class consisting of alkyl, aralkyl, acyl and aroyl peroxides, alkyl and aralkyl hydroperoxides, peroxyacids, peroxyesters, peroxyaldehydes, peroxyketones, azo initiators, redox initiators, photoinitiators, lead tetraethyl, lead tetraacetate, hydrogen peroxide, sodium peroxide, zinc peroxide and potassium superoxide; said vinyl cyclic acetal compound being one which contains a plurality of cyclic radicals having the following structural formula:



in which



represents carbon atoms in the ring, "*a*" being an integer having a value of at least 2, in which all but 1 of the valences of said carbon atoms are satisfied by monovalent radicals of the class consisting of hydrogen, alkyl, aryl, alkaryl, aralkyl, chloroalkyl, fluoroalkyl, alkoxyalkyl, chloroalkoxyalkyl, fluoroalkoxyalkyl, cyanoalkoxyalkyl, cyanoalkyl, alkenyl, chloroaryl and fluoroaryl when the

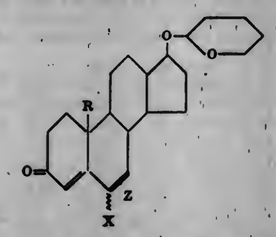
value of "a" is 2, and consisting additionally of fluoro, chloro, cyano, acylamido and phenylsulfonyl when the value of "a" is greater than 2, and the one remaining valence connects the cyclic radical to at least one other such cyclic radical through an interposed polyvalent radical; and in which R is a monovalent radical of the class consisting of hydrogen, alkyl, alkenyl, aryl, chloro, fluoro, bromo, cyano, acyloxy, chloroalkyl, fluoroalkyl, cyanoalkyl, alkoxy, aryloxy, and carbalkoxy.

3,190,879
INTERMEDIATES IN THE PREPARATION OF 3β-HYDROXY-20-OXO-5α-PREGNANE
Wataru Nagata, Nishinomiya-shi, Hyogo, Tadao Terasawa, Takatsuki-shi, Osaka, and Tsutomu Aoki, Amagasaki-shi, Hyogo, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed Mar. 13, 1964, Ser. No. 351,838
Claims priority, application Japan, Mar. 14, 1963, 38/14,297, 38/14,298, 38/14,299
8 Claims. (Cl. 260—239.55)

7. 3β-hydroxy - 18 - imino - 20,20 - ethylenedioxy-5α-pregnane.

3,190,880
17-TETRAHYDROPYRANYL ETHERS OF ANDROSTANES
Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,124
Claims priority, application Mexico, Feb. 28, 1963, 71,076
The portion of the term of the patent subsequent to Feb. 23, 1982, has been disclaimed
19 Claims. (Cl. 260—239.55)

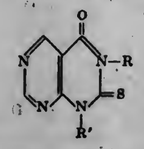
1. A compound represented by the general formula:



wherein R is selected from the group consisting of hydrogen and methyl, X is selected from the group consisting of methyl, fluoro and chloro and Z is selected from the group consisting of a saturated linkage and a double bond.

3,190,881
1,3-DISUBSTITUTED 4-OXO-2-THIO-1,2,3,4-TETRAHYDROPYRIMIDO[4,5-d]PYRIMIDINES
Viktor Papesch, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 17, 1963, Ser. No. 252,035
7 Claims. (Cl. 260—256.5)

1. A compound of the formula



wherein R is lower alkyl and R' is selected from the group consisting of lower alkyl, lower alkenyl, hydroxy lower alkyl, phenyl, and benzyl.

3,190,882
AMIDOMETHYLATION OF OLEFINS
William D. Schaeffer, Pomona, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Aug. 14, 1961, Ser. No. 131,109
18 Claims. (Cl. 260—268)

1. A method for preparing unsaturated amides which comprises contacting a monoolefin having the following formula:

$$HC(R_1)=C(R_2)R_3$$

wherein R_1, R_2 and R_3 are selected from the class consisting of hydrogen, alkyl, nitroalkyl and carboxyalkyl and the total carbon atoms of said monoolefin are between 2 and about 25 with an N-methylolamide at a reaction temperature between about 0° and about 200° C. in the presence of an acidic condensing catalyst selected from the class consisting of anhydrous hydrogen fluoride, trifluoroacetic acid, sulfuric acid having a strength between about 50 and 100 volume percent, alkyl and aryl sulfonic acids having 1 to about 8 carbon atoms, and mixtures thereof; and thereafter recovering said unsaturated amide product.

8. A method for the preparation of an amido ester which comprises contacting a monoolefin having the following formula:

$$HC(R_1)=C(R_2)R_3$$

wherein R_1, R_2 and R_3 are selected from the class consisting of hydrogen, alkyl, nitroalkyl and carboxyalkyl and the total carbon atoms of said monoolefin are between 2 and about 25 with an N-methololamide and an alkyl carboxylic acid at a reaction temperature between about 0° and about 200° C. in the presence of an acidic condensing catalyst selected from the class consisting of anhydrous hydrogen fluoride, trifluoroacetic acid, sulfuric acid having a strength between about 50 and 100 volume percent alkyl and aryl sulfonic acids, and mixtures thereof; and thereafter recovering said alkyl ester amide.

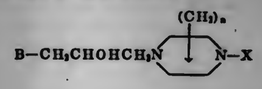
15. The method of preparing an amine which comprises contacting a monoolefin having the following formula:

$$HC(R_1)=C(R_2)R_3$$

wherein R_1, R_2 and R_3 are selected from the class consisting of hydrogen, alkyl, nitroalkyl and carboxyalkyl and the total carbon atoms of said monoolefin are between 2 and about 25 with an N-methololamide at a reaction temperature between about 0° and about 200° C. in the presence of an acidic condensing catalyst selected from the class consisting of anhydrous hydrogen fluoride, trifluoroacetic acid, sulfuric acid having a strength between about 50 and 100 volume percent, alkyl and aryl sulfonic acids having between about 1 and about 8 carbon atoms, and mixtures thereof; thereafter separating an amidomethylated olefin product from said catalyst and contacting said amidomethylated olefin with water at a temperature between about 100° and 250° C. to hydrolyze said product and form said amine.

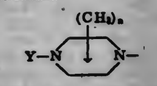
3,190,883
AMINOALKANOL DERIVATIVES OF PIPERAZINES
Charles F. Geschickter, Lorton, and John S. Pierce, Richmond, Va., Ebenezer E. Reid, Baltimore, Md., and Ying H. Chen, Richmond, Va., assignors to The Geschickter Fund for Medical Research, Inc., Washington, D.C., a corporation of New York
No Drawing. Filed Oct. 5, 1962, Ser. No. 228,743
11 Claims. (Cl. 260—268)

1. A compound of the structure



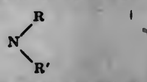
(I)

wherein B is a member of the group consisting of morpholino, pyrrolidino, piperidino, methylcyclohexylamino, piperazino of the structure



(II)

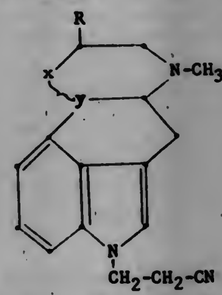
wherein Y is an alkyl radical of 1 to 6 carbons, and



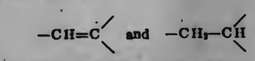
wherein R and R' each is an alkyl radical of 1 to 4 carbons; wherein X is a member of the group consisting of H and CHO; and *n* is a number from 0 to 4 both in structures (I) and (II); no carbon in the piperazine rings of structures (I) and (II) having more than one methyl group attached to it.

3,190,884
NEW ERGOLENE AND ERGOLINE DERIVATIVES
Albert Hofmann and Franz Troxler, Bottmingen, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Nov. 5, 1962, Ser. No. 235,559
Claims priority, application Switzerland, Nov. 10, 1961, 13,071; Sept. 21, 1962, 11,100
5 Claims. (Cl. 260—285.5)

1. A compound selected from the group consisting of compounds of the formula:



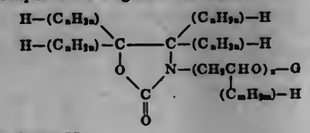
wherein R is a member selected from the group consisting of alkoxycarbonyl, dialkylcarbamoyl and hydroxyalkylcarbamoyl, whereof the alkyl portion in each radical contains from one to four carbon atoms inclusive, and $\widehat{x\ y}$ is one of the radicals



and their pharmaceutically acceptable, non-toxic acid addition salts.

3,190,885
ESTERS OF SUBSTITUTED N-OXAZOLIDINONES AND DERIVATIVES THEREOF
Richard A. Hickner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 10, 1963, Ser. No. 271,862
11 Claims. (Cl. 260—307)

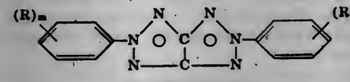
1. A compound having the formula:



wherein *m* is a number from 0 to 2, *n* is a number from 0 to 4, *x* is an integer from 1 to about 20, and G is the acyl group of a monocarboxylic acid selected from the class consisting of alkanoic acids, alkenoic acids having from 1 to 4 sites of ethylenic unsaturation, and epoxyalkanoic acids and containing from 6 to 18 carbon atoms.

3,190,886
2,5-DIARYL-1,2,3,4,5,6-HEXAAZAPENTALENES
Rudolph A. Carboni, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 10, 1963, Ser. No. 271,872
5 Claims. (Cl. 260—308)

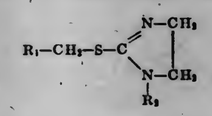
1. A compound of the formula



wherein each R and R' represents a member of the group consisting of nitro, sulfo, hydroxy, chloro, bromo, acetamido, amino and dialkylamino having alkyl groups of 1–6 carbons, *m* and *n* are cardinal numbers of 0 to 4, and the circles inscribed within the triazole rings represent resonance-stabilized structures.

3,190,887
POLYCARBOCYCLICMETHYLMERCAPTO-IMIDAZOLINES
William H. Hensley, Raleigh, N.C., Dewayne C. Torgeson, Dobbs Ferry, N.Y., and Joseph A. Lambrech, deceased, late of Charleston, W. Va., by Vallah G. Lambrech, executrix, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 31, 1961, Ser. No. 135,379
15 Claims. (Cl. 260—309.6)

1. A compound selected from the group consisting of 2 - (polycarbocyclicmethylmercapto)imidazoline of the formula:



and the biologically active acid salts thereof, wherein R_1 is a member selected from the group consisting of unsubstituted fused polycarbocyclic, mono-hydroxy substituted fused polycarbocyclic, dihydroxy substituted fused polycarbocyclic, methyl substituted fused polycarbocyclic, and halo-substituted fused polycarbocyclic radicals, with the proviso that each of said polycarbocyclic radicals has from three to four rings inclusive with each of said rings having from four to seven carbon atoms inclusive and at least one of said rings is the benzene ring, and R_2 is a member selected from the group consisting of hydrogen, alkyl of from one to twelve carbon atoms inclusive, β-mono-hydroxyalkyl of from two to twelve carbon atoms inclusive, and amino-substituted alkyl of from one to twelve carbon atoms inclusive in which the amino moiety has the formula:



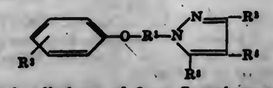
wherein R_3 and R_4 are members selected from the group consisting of hydrogen and alkyl of from one to four carbon atoms inclusive.

3,190,888
ARYLOXYALKYLPYRAZOLE

Milton Wolf, Chester, and Donald J. Flanigan, Delaware, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,918
8 Claims. (Cl. 260—310)

1. A compound selected from the group represented by the formula:



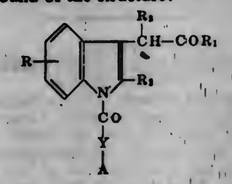
wherein R^1 is alkylene of 2 to 7 carbon atoms; R^2 is selected from the group consisting of hydrogen, halogen, nitro, amino, lower alkyl, lower alkoxy, lower alkoxyalkyl and trihaloalkyl; R^3 and R^5 are lower alkyl; and R^4 is selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, lower alkoxycarbonyl amino and nitro.

3,190,889
1-SUBSTITUTED-3-INDOLYL ALIPHATIC ACIDS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 6, 1963, Ser. No. 285,909
11 Claims. (Cl. 260—319)

1. A compound of the structure:



in which

A is selected from the group consisting of phenyl, naphthyl, and substituted phenyl and naphthyl in which the substituents are selected from the group consisting of halogen, lower alkyl, trifluoromethyl, cyano and lower alkylthio;

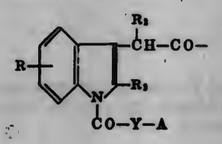
Y is selected from the group consisting of —O—, —S—, —NH— and —NR_4— wherein R_4 is selected from the group consisting of lower alkyl and phenyl;

R_2 is selected from the group consisting of hydrogen and lower alkyl;

R_3 is selected from the group consisting of hydrogen and lower alkyl;

R is selected from the group consisting of halogen, lower alkoxy, lower alkyl, phenyl, di(lower alkyl) amino, nitro, lower alkylthio, trifluoromethyl, lower alkanoylamino, bis(hydroxyethyl)amino, 4' - methyl-1'-piperazinyl, N-morpholino, hydroxy;

R_1 is selected from the group consisting of hydroxy, lower alkoxy, benzyloxy, di(lower alkyl)amino-lower alkoxy, phenylethoxy, NH_2, di(lower alkyl)amino, lower alkylamino, bis(hydroxyethyl)amino, anilino, N-lower alkyl anilino, benzylamino, haloanilino, lower alkoxy lower alkylamino, morpholino, lower alkoxyanilino, OX in which X is a cation selected from the group consisting of alkali metals, alkaline earth metals, aluminum, magnesium, morpholinium, tri(lower alkyl)ammonium, alkylammonium, anilinium, cholinium, lower alkylanilinium and piperazinium, and OY in which Y is the structure:

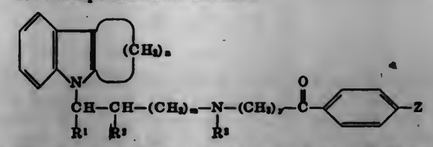


3,190,890
AROYLALKYLAMINOALKYL DERIVATIVES OF 2,3-POLYMETHYLENEINDOLES

Meier E. Freed, Philadelphia, Pa., Leonard M. Rice, Minneapolis, Minn., and Elizabeth Hertz, Bryn Mawr, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 10, 1963, Ser. No. 294,164
4 Claims. (Cl. 260—319)

1. A compound of the formula



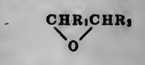
wherein n is an integer from 4 to 13, R^1 and R^2 each represent a substituent selected from the group consisting of hydrogen and methyl, m is selected from 0 and 1, R^3 is lower alkyl, y is selected from the numerals 2 and 3, and Z is a substituent selected from the class consisting of lower alkyl, lower alkoxy, trifluoromethyl and halogen; and the pharmaceutically acceptable acid addition salts thereof.

3,190,891
PREPARATION OF SULPHATED SULPHONIUM INNER SALTS

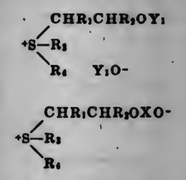
William Baird, John Woolley Batty, and Alexander Parkinson, Manchester, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,232
Claims priority, application Great Britain, Jan. 17, 1962, 1,754/62
9 Claims. (Cl. 260—327)

1. A process for the manufacture of a sulphated sulphonium inner salt which comprises reacting with a sulphating agent selected from the class consisting of oleum, chlorosulphonic acid and sulphur trioxide, the sulphonium salt obtained by reacting an organic sulphide of the formula R_2SR_4 with an alkylene oxide of the formula



and the anhydride of an acid selected from the class consisting of monobasic acids of the formula Y_1—OH and dibasic acids of the formula $X(OH)_2$, said sulphonium salt having a formula selected from the group consisting of



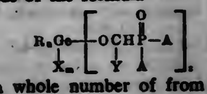
in which R_1 and R_2 are hydrogen, R_3 and R_4 are selected from the group consisting of alkyl, hydroxy-alkyl, carboxyl-alkyl, mercapto-alkyl, thio-ether alkyl, keto-alkyl, cyano-alkyl, sulphonic acid-alkyl and sulphuric acid-alkyl wherein said alkyl in each instance contains up to 22 carbon atoms, vinyl, methylvinyl, allyl, phenyl, naphthyl, benzyl, cyclohexyl, pyridyl and quinolyl; X is the divalent radical derived from a dibasic acid $X(OH)_2$ selected from the group consisting of carbonic acid, sulphurous acid, sulphuric acid; maleic acid and succinic acid and Y_1 is the monovalent radical of a monobasic acid Y_1OH selected from the group consisting of acetic acid and propionic acid, said reaction being carried out at a temperature between —20° C. and 100° C. for ½ to 12 hours.

3,190,892
ORGANIC GERMANIUM-PHOSPHORUS COMPOUNDS

George A. Richardson and Gail H. Birum, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

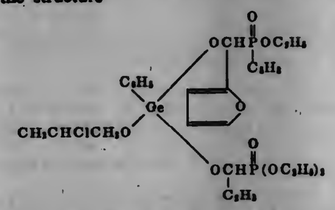
No Drawing. Filed July 20, 1960, Ser. No. 43,981
15 Claims. (Cl. 260—347.8)

1. Compounds of the formula



wherein n is a whole number of from 0 to 3, m is a whole number of from 0 to 3, x is a whole number from 1 to 4, and the sum total of $n+m+x$ is always equal to 4; R is selected from the group consisting of hydrogen, hydrocarbyl, halohydrocarbyl, hydrocarbyloxy, halohydrocarbyloxy, hydrocarbylthio, and halohydrocarbylthio radicals of from 1 to 20 carbon atoms, and two R radicals taken together stand for a member of the group consisting of a bivalent -hydrocarbylene- radical having from 4 to 6 carbons in the ring and a total of from 4 to 12 carbon atoms, and a bivalent -O-hydrocarbylene-O- radicals having from 2 to 4 carbon atoms in the ring and a total of from 2 to 12 carbon atoms; X is a member of the group consisting of bromine and chlorine; Y is selected from the group consisting of hydrogen, hydrocarbyl radicals of from 1 to 12 carbon atoms, furyl and thienyl radicals, and said radicals carrying a substituent selected from the group consisting of halogen, cyano-, -alkyl, O-alkyl, -S-alkyl, -COO-alkyl, where alkyl has from 1 to 5 carbon atoms, when n is 0 to 1, and when n is 2 to 3, Y is selected from the group consisting of hydrogen, hydrocarbyl radicals of from 1 to 17 carbon atoms, furyl and thienyl radicals, and said radicals carrying a substituent selected from the group consisting of halogen, cyano-, -alkyl, -O-alkyl, -S-alkyl, -COO-alkyl, where alkyl has from 1 to 5 carbon atoms; and each A is selected from the group consisting of hydrocarbyl, hydrocarbyloxy, halohydrocarbyl, and halohydrocarbyloxy radicals which contain from 1 to 20 carbon atoms each.

6. [α-(Ethoxyphenylphosphinyl)furfuryl][1-(diethoxyphosphinyl)propoxy](2 - chloropropoxy)phenylgermane having the structure

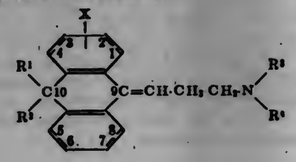


3,190,893
METHOD OF PRODUCING 9,10-DIHYDROANTHRACENES

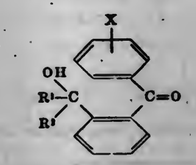
Torkil O. Holm, Copenhagen, Denmark, assignor to Kefalas A/S, Copenhagen-Valby, Denmark

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,775
Claims priority, application Great Britain, Feb. 17, 1961, 5,893/61
2 Claims. (Cl. 260—351)

1. A method of producing a 9,10-dihydroanthracene of the general structural formula:

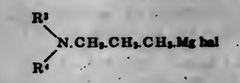


wherein R^1 and R^2 each represents a lower-alkyl group, R^3 and R^4 each represents a member selected from the class consisting of lower-alkyl and a further member of the class wherein R^3 and R^4 taken together with the nitrogen atom represent the radical of a heterocyclic amine selected from the group consisting of 5-membered and 6-membered heterocyclic amines, and wherein X represents a member of the group consisting of hydrogen and halogen, and acid addition salts thereof, characterized in that a compound of the formula:

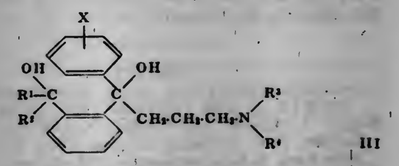


II

wherein R^1, R^2 and X are as defined above, is subjected to a Grignard reaction with a Grignard compound of the formula



wherein R^3 and R^4 are as defined above and hal represents a halogen atom, and the magnesium complex obtained hydrolyzed, whereupon the resulting compound of the formula:



III

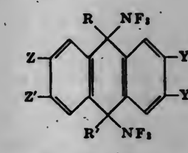
is dehydrated with concentrated sulfuric acid at a temperature of 0 to about 100 degrees centigrade, and the resulting compound of the Formula I isolated in the form of a compound selected from the group consisting of the free base of Formula I and an acid addition salt thereof.

3,190,894
BIS-(DIFLUOROAMINO)ANTHRACENES AND THEIR SYNTHESIS FROM N_2F_4 AND ANTHRACENES

Anestis L. Logothetis, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 29, 1962, Ser. No. 169,645
11 Claims. (Cl. 260—396)

1. 9,10 - bis(difluoroamino) - 9,10 - dihydroanthracenes of the formula



wherein: R and R' are selected from the group consisting of hydrogen, fluorine, chlorine and hydrocarbon of up to 12 carbons free of aliphatic unsaturation; and Y, Y', Z and Z' are selected from the group consisting of hydrogen, chlorine, lower alkyl and phenyl.

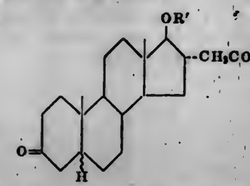
3,190,895

SUBSTITUTED ANDROSTAN-16α-YLACETIC ACIDS

Paul Kurath, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,206
5 Claims. (Cl. 260—397.1)

1. A steroid of the formula



wherein R' is selected from the group consisting of hydrogen and acetyl.

3,190,896

SELECTIVE KETALIZATION OF POLYKETO-5α-ANDROSTANES AND 3-DIMETHYL KETALS PRODUCED THEREBY

Walter R. Benn, Deerfield, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,219
4 Claims. (Cl. 260—397.4)

1. A process for the selective ketalization of the 3-keto group of a 5α-androstan-3-one possessing an additional keto function in at least one of the 6- and 17-positions and lacking substitution by large groups at the 2 and/or 4 positions, which comprises contacting that 5α-androstan-3-one with methanol in the presence of an acid catalyst, thus affording the 3-dimethyl ketal.

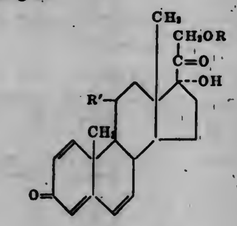
3,190,897

Δ1,4,6-PREGNATRIENES AND INTERMEDIATES USEFUL IN THE PREPARATION THEREOF

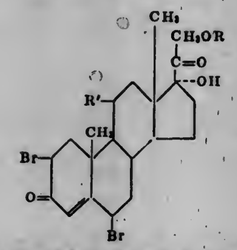
Eugene J. Agnello and Gerald D. Laubach, Jackson Heights, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 5, 1957, Ser. No. 669,970
8 Claims. (Cl. 260—397.45)

3. A compound having a formula selected from the group consisting of



and



wherein R is selected from the group consisting of hydrogen and acyl hydrocarbon groups containing up to eight carbon atoms, and R' is selected from the group consisting of β-hydroxyl and keto.

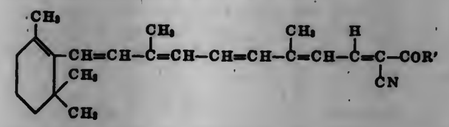
3,190,898

METHOD OF PRODUCING COMPOUNDS OF THE VITAMIN A SERIES AND INTERMEDIATES FOR USE THEREIN

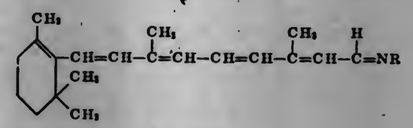
Hendrik Evert van Geelen and Pieter Henri van Lecuwen, Weesp, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 5, 1961, Ser. No. 107,917
Claims priority, application Netherlands, May 6, 1960, 251,315
2 Claims. (Cl. 260—404.5)

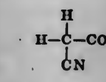
1. A method of preparing a nitrile derivative of the vitamin A series of the structural formula:



consisting essentially of reacting together, at a temperature between about −20° C. and 60° C., an imine of the formula:



with a compound of the formula:



in which formulae R is a member selected from the group consisting of alkyl and hydrogen, R' is a member selected from the group consisting of hydroxyl, NH_2 and OR'' wherein R'' is a member selected from the group consisting of alkyl, vinyl, benzyl, phenyl and cyclohexyl and then separating out said nitrile derivative from the reaction mixture.

3,190,899

REACTION OF HALF ESTERS OF AN ALPHA, BETA - ETHYLENICALLY UNSATURATED - ALPHA,BETA - DICARBOXYLIC ACID WITH A VICINAL EPOXY COMPOUND AND PRODUCTS THEREOF

Henry W. Walton and Charles S. Nevin, both of Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed June 8, 1961, Ser. No. 126,394
22 Claims. (Cl. 260—404.8)

1. The process of preparing a copolymerizable monomer, which comprises heating substantially equal molar quantities of maleic anhydride and a saturated alcohol having the structure R_2OH, wherein R_2 is an alkyl group of from 1 to 18 carbon atoms, at a temperature of from about 80° C. to 150° C. to form a maleic acid half-ester, immediately isomerizing said maleic acid half-ester at a temperature of from about 80° C. to 150° C. in the presence of an isomerization catalyst, to convert said maleic acid half-ester to a fumaric acid half-ester, and then immediately reacting said fumaric acid half-ester with oxirane segment of epoxidized soybean oil at a temperature of from about 80° C. to 200° C. in the presence of an oxirane ring opening catalyst, whereby no polymerization of an ethylenically unsaturated group takes place under the reaction conditions.

3,190,900

CONTINUOUS PROCESS FOR SOAP WASHING

Pierre Godet, L'Isle-Adam, and René Gachon, Saint-Germain-en-Laye, France, assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Mar. 12, 1962, Ser. No. 178,829
Claims priority, application France, Mar. 23, 1961, 856,582
12 Claims. (Cl. 260—419)

1. A process for extracting impurities and glycerol from crude soap which comprises introducing countercurrently a washing lye and a crude soap containing said impurities and glycerol into a columnar washing zone, said crude soap forming the upwards flowing phase, pulsing the washing lye-crude soap mixture in the washing zone to impart a reciprocating motion to said mixture while simultaneously reducing and expanding cross-sectional areas of the washing lye-crude soap mixture at intervals along the length of the washing zone by means of a plurality of perforated plates arranged in tiers, said soap of said mixture being thereby reduced in particle size and collecting washed soap and washing lye containing substantially all of said impurities and glycerol in separately spaced settling zones disposed at the top and the bottom respectively of the washing zone.

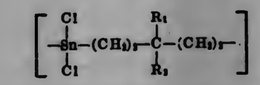
3,190,901

LINEAR POLYMERS OF ALKYLENE TIN CHLORIDES

Rudolf Polster, Frankenthal, Pfalz, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

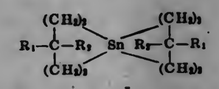
No Drawing. Filed May 29, 1962, Ser. No. 198,450
Claims priority, application Germany, June 8, 1961, B 62,819
6 Claims. (Cl. 260—429.7)

1. Linear polymers of alkylene tin chlorides which consist essentially of two to sixty recurring units of the grouping



in which R_1 and R_2 denote members selected from the group consisting of hydrogen, methyl and ethyl.

4. A process for the manufacture of linear polymers of alkylene tin chlorides which comprises: heating at temperatures of between 20° and 250° C. cyclic alkylene in compounds of the general formula



in which R_1 and R_2 are members selected from the group consisting of hydrogen, methyl and ethyl, together with tin tetrachloride in a molar ratio ranging between 1:2 and 2:1.

3,190,902

PREPARATION OF AROMATIC IRON SUBGROUP METAL COORDINATION COMPOUNDS

Thomas H. Coffield, Farmington, and George J. Barcal, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 2, 1963, Ser. No. 292,431
16 Claims. (Cl. 260—439)

1. Process for the preparation of a bis(aromatic hydrocarbon) iron-subgroup metal coordination compound, said compound consisting of a cation and an anion, said cation consisting of an iron-subgroup metal ion and two aromatic hydrocarbon molecules bonded to said metal ion, said anion consisting of a Friedel-Crafts catalyst complexed with a negatively charged disproportionation product of an iron subgroup metal pentacarbonyl, said negatively charged disproportionation product having the formula $M(CO)_4^-$ wherein M is an iron-subgroup metal, said process comprising reacting:

(A) at least one aromatic hydrocarbon having an isolated benzene nucleus and having from 6 to about 13 carbon atoms;

(B) a Friedel-Crafts catalyst, and

(C) an iron-subgroup metal pentacarbonyl.

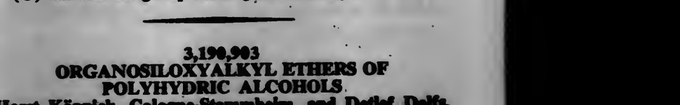
3,190,903

ORGANOSILOXYALKYL ETHERS OF POLYHYDRIC ALCOHOLS

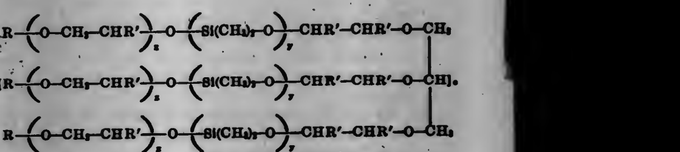
Horst Köpnick, Cologne-Stammheim, and Detlef Delfs, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 7, 1962, Ser. No. 177,961
Claims priority, application Germany, Mar. 24, 1961, F 33,501
9 Claims. (Cl. 260—448.8)

1. An organosiloxy alkoxy alkane selected from the group consisting of compounds of the formula:



and



wherein R represents a monovalent lower alkyl radical, R' represents a member selected from the group consisting of hydrogen and monovalent lower alkyl radicals, R'' represents a member selected from the group consisting of hydrogen and monovalent lower alkyl radicals, x is an integer greater than 3, y is an integer greater than 2, n is one of the integers 3 and 4, and z is an integer including zero.

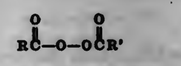
3,190,904

PROCESS FOR THE PURIFICATION OF ORGANIC PEROXIDES

James Wheater Spoors and Francis Edward Woodward, both of Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a British corporation

No Drawing. Filed Jan. 25, 1962, Ser. No. 168,814
Claims priority, application Great Britain, Feb. 3, 1961, 4,129/61
12 Claims. (Cl. 260—453)

1. A process for purifying an organic peroxide containing a neutral ester as impurity, which comprises washing said peroxide with an aqueous solution of ammonia sufficient to hydrolyze said neutral ester without affecting said peroxide, said peroxide being selected from the group consisting of lower alkyl peresters of saturated aliphatic monocarboxylic acids and benzoic acid, and peroxides having the formula:



where R and R' are selected from the group consisting of alkyl up to 9 carbon atoms and chlorophenyl.

3,190,905
ORGANIC ISOCYANATES
Heinrich Morschel and Claus Skopalik, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 7, 1962, Ser. No. 171,589
Claims priority, application Germany, Feb. 20, 1961, F 33,246
5 Claims. (Cl. 260—453)

1. A process for the production of aliphatic monoisocyanates which comprises reacting equivalent quantities of an N,N'-dialkyl urea and a carbonic acid ester at elevated temperatures and separating the reaction products immediately upon their formation.

3,190,906
ALKANE SULFONIC ACID ESTERS SUBSTITUTED IN β-POSITION BY ETHER GROUPS AND THEIR PRODUCTION
Werner Mueller, Harry Distler, and Albert Paim, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Sept. 7, 1961, Ser. No. 136,451
Claims priority, application Germany, Sept. 7, 1960, B 59,257
9 Claims. (Cl. 260—456)

1. A compound of the formula

$$R_1—O—CH_2R_3—CHR_4—SO_2O—R_5$$

containing at least 9 carbon atoms and in which:

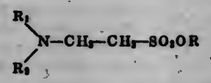
R_1 denotes a member selected from the group consisting of alkyl with 1 to 20 carbon atoms, alkenyl with 3 to 20 carbon atoms, cycloalkyl with 5 to 12 carbon atoms in the ring, hydroxyalkyl with 2 to 12 carbon atoms, alkoxyalkyl with 3 to 12 carbon atoms, and dialkylaminoalkyl with 4 to 23 carbon atoms;

R_2, R_3 and R_4 each denote a member selected from the group consisting of hydrogen and alkyl with 1 to 3 carbon atoms; and

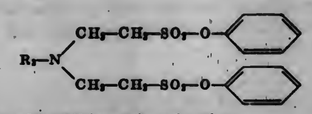
R_5 denotes a member selected from the group consisting of phenyl, naphthyl, 5,6,7,8-tetrahydronaphthyl, and phenyl and naphthyl substituted by from 1 to 3 members selected from the group consisting of alkyl with 1 to 3 carbon atoms, alkoxy with 1 to 3 carbon atoms, halogen and thiocyanate.

3,190,907
AMINOETHANESULFONIC ACID ARYL ESTERS
Harry Distler, Gerhard Leibner, Klaus Juergen Fust, and Ernst-Heinrich Pommer, Ludwigshafen (Rhine), and Herbert Stummeyer, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed May 14, 1962, Ser. No. 194,708
Claims priority, application Germany, May 20, 1961, B 62,571
3 Claims. (Cl. 260—456)

1. A compound selected from the class consisting of the formulae



and



and their acid addition salts wherein:

R represents a radical selected from the group consisting of phenyl, naphthyl, tetrahydronaphthyl, and phenyl containing at least one substituent selected from the group consisting of chloro, methyl, tertiary butyl, octyl, dodecyl and ethoxycarboxyl;

R_1 and R_2 each represents a radical selected from the group consisting of alkyl of 1 to 4 carbon atoms and 2-hydroxyethyl; and

R_3 represents a radical selected from the group consisting of methyl and cyclohexyl.

3,190,908
5-METHOXY-2-PENTENE 1-(O,O-DIETHYL PHOSPHORODITHIOATE) AND 1-IODO DERIVATIVES
William J. Pyne, Painesville, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed May 31, 1961, Ser. No. 128,612
2 Claims. (Cl. 260—461)

1. S-(5-methoxy-2-pentenyl) O,O-diethyl phosphorodithioate.

3,190,909
PREPARATION OF ALPHA,OMEGA-DICYANOOLEFINS
Yasosuke Inaba, Fujisawa, Kanagawa, and Goro Kimura and Shozo Kaichi, Kamakura, Kanagawa, Japan, assignors to Toyo Koatsu Industries, Inc., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Oct. 11, 1962, Ser. No. 229,996
Claims priority, application Japan, Nov. 6, 1961, 36/3,949
14 Claims. (Cl. 260—465.8)

1. Process of making alpha, omega-dicyanoolefins comprising reacting a trihaloalkane having the formula:

$$X(CH_2)_mCH(CH_2)_nX$$
$$\quad\quad\quad

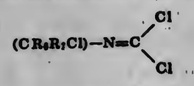
3,190,918

PROCESS FOR THE PRODUCTION OF CHLORO-SUBSTITUTED METHYL ISOCYANIDE DICHLORIDES

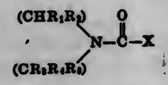
Hans Holtschmidt, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 13, 1962, Ser. No. 187,210
Claims priority, application Germany, May 10, 1961, F 33,897
5 Claims. (Cl. 260—566)

1. Process for the production of a chloro-substituted methylisocyanide dichloride having the formula



in which R_6 and R_7 represent a member selected from the group consisting of hydrogen and chlorine which comprises treating a carbamic acid halide having the formula



in which R_1, R_2, R_3, R_4 and R_5 represent a member selected from the group consisting of chlorine and hydrogen, and X represents a halide selected from the group consisting of bromine and chlorine with chlorine at temperatures within the range of from 150 to 250° C. and recovering said chloro-substituted methylisocyanide dichlorides thus formed.

3,190,919

PREPARATION OF QUATERNARY AMMONIUM COMPOUNDS

Ronald R. Swanson, Minneapolis, Minn., assignor to General Mills, Inc., a corportion of Delaware

No Drawing. Filed June 14, 1961, Ser. No. 116,973
4 Claims. (Cl. 260—567.6)

1. The process which comprises contacting a water immiscible organic solvent solution of a fatty quaternary ammonium compound having an anion of a volatile acid with an aqueous solution of a non-volatile acid, passing a gas inert to the reaction mixture through said aqueous solution, and recovering a quaternary ammonium compound having an anion of a non-volatile acid.

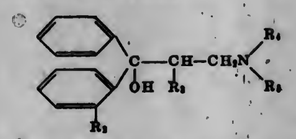
3,190,920

1-ORTHO-LOWER ALKYL - PHENYL - 1 - PHENYL-2 LOWER ALKYL - 3 - DILOWERALKYLAMINO -1-PROPANOLS

Robert Geoffrey William Spickett, Harpenden, and Horace Frederick Ridley, St. Albans, England, assignors, by mesne assignments, to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 7, 1962, Ser. No. 192,998
Claims priority, application Great Britain, May 19, 1961, 18,380/61
2 Claims. (Cl. 260—570)

1. A chemical compound of the class consisting of a free base and salts with pharmaceutically acceptable acids, the free base having the formula:



in which R_2, R_3, R_4 and R_5 are lower alkyl.

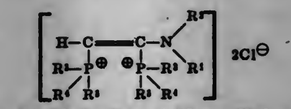
3,190,921

N,N-SUBSTITUTED-AMINOETHYLENE-PHOSPHONIUM COMPOUNDS

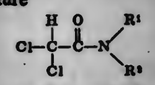
Angelo John Speziale, Creve Coeur, and Lowell R. Smith, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,326
14 Claims. (Cl. 260—577)

1. The method of preparing a compound of the structure



wherein the R^1, R^2, R^3, R^4 and R^5 are alkyl radicals of up to 12 carbon atoms, which comprises heating a mixture of an excess of a tertiary phosphine wherein the substituents are alkyl containing up to 12 carbon atoms, and an amide of the structure



wherein R^1 and R^2 are alkyl radicals of up to 12 carbon atoms.

3,190,922

LOW PRESSURE HYDROGENATION OF DISUBSTITUTED AMIDES OF CARBOXYLIC ACIDS TO TERTIARY AMINES

Ned M. Le Bard, Hopkins, and Leonard R. Vertnik, Minneapolis, Minn., and Ralph Fisher, Walnut Creek, and Kirtland E. McCaleb, Oakland, Calif., assignors to General Mills Inc., a corporation of Delaware

No Drawing. Filed Feb. 28, 1961, Ser. No. 92,144
10 Claims. (Cl. 260—583)

1. In the process of hydrogenating amides prepared from carboxylic acids to form tertiary amines wherein a reaction mixture comprising hydrogen and a N,N-disubstituted amide is contacted with a hydrogenation catalyst at a temperature of about 200° C. to 350° C. and hydrogenating pressures, the improvement comprising removing a portion of the gaseous component of the reaction mixture and adding hydrogen to the reaction mixture.

3,190,923

PROCESS FOR THE RECOVERY OF DIHYDROPEROXIDE CONTENT FROM AQUEOUS ALKALI EXTRACTION SOLUTION OF DIALKYLATED AROMATIC HYDROCARBON OXIDATION REACTION MIXTURES

Heinrich Sodomann, Bruno Hauschulz, and Meinloh Hanke, Gladbeck, Westphalia, Germany, assignors to The Distillers Company, Ltd., London, England, a British corporation

No Drawing. Filed July 11, 1960, Ser. No. 42,179
Claims priority, application Germany, July 13, 1959, P 23,142
5 Claims. (Cl. 260—610)

1. In the process for recovering the dihydroperoxide content from the organic reaction mixture resulting from the oxidation of dialkylated aromatic hydrocarbons wherein said reaction mixture, including the corresponding monohydroperoxide and other oxidation products in addition to the dihydroperoxide, is treated with aqueous alkali to extract said dihydroperoxide from such reaction mixture, and the resulting aqueous alkali phase is treated with an aromatic hydrocarbon as organic solvent to extract the monohydroperoxide and other oxidation products therefrom while leaving the dihydroperoxide therein, the improvement of treating the aqueous alkali phase containing the dihydroperoxide, and from which the monohydroperoxide and other oxidation products have been removed, with a water-insoluble organic liquid extraction component selected from the group consisting of aliphatic ketones, aliphatic ethers, aliphatic alcohols and chlorinated aliphatic hydrocarbons, at a temperature of from 70–100° C. and in a ratio of extraction component to alkali phase of 0.2–5:1, to extract said dihydroperoxide from said alkali phase.

3,190,924

PROCESS FOR THE PRODUCTION OF ORGANIC DIHYDROPEROXIDES

Heinrich Sodomann, Bruno Hauschulz, and Meinloh Hanke, all of Gladbeck, Westphalia, Germany, assignors to Phenolchemie G.m.b.H., Gladbeck, Westphalia, Germany, a German corporation

No Drawing. Filed May 5, 1961, Ser. No. 108,194
Claims priority, application Germany, May 6, 1960, P 24,963
8 Claims. (Cl. 260—610)

1. Process for the continuous recovery of the corresponding dihydroperoxide content in high purity from the organic reaction mixture resulting from the oxidation of dialkylated aromatic hydrocarbons which includes the corresponding monohydroperoxide and other oxidation products in addition to said dihydroperoxide, which comprises treating such reaction mixture with aqueous alkali in a first alkali extraction step to extract said dihydroperoxide, treating the resulting aqueous alkali phase containing said dihydroperoxide with an organic solvent substantially immiscible with water to extract attendant impurities including the corresponding monohydroperoxide and other oxidation products present in said aqueous alkali phase, recovering said aqueous alkali phase containing in high purity the main content of said dihydroperoxide, further treating the remaining organic solvent phase, containing extracted impurities including the corresponding monohydroperoxide and other oxidation products as well as significant quantities of the corresponding dihydroperoxide taken up from the aqueous alkali phase upon extraction with said organic solvent, by further extracting in a second, separate alkali extraction step with aqueous alkali to extract substantially all the remaining corresponding dihydroperoxide from the organic solvent phase prior to hydrogenation of said organic solvent phase, thereafter passing said organic solvent phase to a hydrogenation zone and hydrogenating said monohydroperoxide and other oxidation products and recycling the hydrogenated products obtained back to the oxidation.

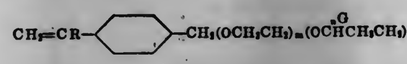
3,190,925

MONOMERIC ALKENYL BENZYL POLYGLYCOL ETHERS

Stephen C. Stowe, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 25, 1962, Ser. No. 205,090
2 Claims. (Cl. 260—611)

1. An alkenyl benzyl polyglycol ether of the general formula:



(I)

wherein R is selected from the group consisting of hydrogen and methyl; G is selected from the group consisting of hydrogen, alkyl radicals containing not more than 6 carbon atoms, alkoxy radicals containing from 1 to about 8 carbon atoms, alkylthio radicals containing from 1 to about 8 carbon atoms and halogens of atomic number 17 to 53; *m* has an average value from about 2 to about 40; and *n* has an average value of from 0 to about 20 with the limitation that the value of *n* is always less than that of *m* and the sum total of *m* plus *n* is from about 2 to about 40.

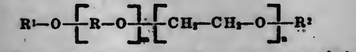
3,190,926

HALOGENATED ORGANIC COMPOUNDS

Eric Descamp Edwards, London, England, assignor to Castrol Limited, London, England, a British company

No Drawing. Filed Nov. 17, 1960, Ser. No. 69,805
Claims priority, application Great Britain, Nov. 19, 1959, 39,327/59
4 Claims. (Cl. 260—613)

1. A halogenated polyether containing from about 10% to about 58% by weight of a halogen selected from the group consisting of chlorine and bromine prepared by reacting a polyether of the formula



wherein R is selected from the group consisting of branched chain C_3 and C_4 alkylene radicals; R^1 and R^2 are selected from the group consisting of hydrogen, alkyl containing not more than 8 carbon atoms, phenyl, biphenyl and di-tertiary butyl phenyl; *m* is an integer of from 2 to 70 and *n* is not more than 50 at a temperature from about 50° C. to 100° C. with a halogen selected from the group consisting of chlorine and bromine until the product contains at least about 10% by weight of said halogen.

3,190,927

PROCESS FOR OXYALKYLATING SOLID POLYOLS

John T. Patton, Jr., Wyandotte, and Walter F. Schulz, Southgate, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Apr. 13, 1960, Ser. No. 21,874
6 Claims. (Cl. 260—615)

1. A process for oxyalkylating a normally solid polyol, which comprises, mixing and heating to from 85° C. to 170° C. in the presence of a basic oxyalkylation catalyst (1) a vicinal alkylene oxide, (2) a normally solid organic polyol having 3 to 8 hydroxyl radicals per molecule and (3) a substantially water-free adduct of a normally solid organic polyol having 3 to 8 hydroxyl radicals per molecule with from 1 to 4 mols of a vicinal alkylene oxide per mol of said polyol, said organic polyol having a melting point of at least 100° C. and being selected from the group consisting of pentaerythritol, dipentaerythritol, tripentaerythritol, trimethylolethane, inositol, monosaccharides and disaccharides, said alkylene oxide being selected from the group consisting of ethylene oxide, propylene oxide, 1,2-butylene oxide, 2,3-butylene oxide, isobutylene oxide, butadiene monoxide, styrene oxide, cyclohexene oxide, butadiene dioxide, methyl glycidyl ether, phenyl glycidyl ether and mixtures thereof, said oxyalkylation catalyst being selected from the group consisting of alkali metal hydroxides, alkali metals and alkali metal alcoholates, the amount of said adduct employed being sufficient so that it is the solvent and reaction medium for the process and the amount of said solid organic polyol that is employed being at least sufficient so that the polyol is oxyalkylated by the vicinal alkylene oxide under the conditions of the process.

3,190,928

PREPARATION OF TETRAALKYLCYCLOBUTANEDIOLS

Edward U. Elam and Robert H. Hasek, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 27, 1961, Ser. No. 141,037
11 Claims. (Cl. 260—617)

1. The process for preparing cyclic diols which comprises hydrogenating 2,2,4,4-tetraalkyl-1,3-cyclobutanediones wherein the alkyl radicals have 1 to 8 carbon atoms, said hydrogenation being carried out at a temperature of 20° to 200° C. and at an elevated pressure up to about 500 atmospheres in the presence of a hydrogena-

tion catalyst consisting essentially of elemental nickel in a solvent reaction medium consisting essentially of a substantially inert solvent medium selected from the group consisting of:

(A) saturated hydrocarbons having 6 to 10 carbon atoms;

(B) esters having the formula

$$R^1\text{—}\left(\begin{matrix}O\\ \|\\ COR^2\end{matrix}\right)_n$$

wherein R^1 is a saturated hydrocarbon radical having 1 to 4 carbon atoms, R^2 is a saturated hydrocarbon radical having 1 to 8 carbon atoms and n is an integer of 1 to 2; and

(C) an alcohol having the formula $R^3(OH)_n$ wherein R^3 is a saturated hydrocarbon having 3 to 12 carbon atoms and n is an integer of 1 to 2.

3,190,929

METHOD OF PRODUCTION OF ALKYNOLS

Raymond A. Lynch, Sacramento, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,281
6 Claims. (Cl. 260—632)

2. A process for the production of alkynols which comprises reacting by contacting at a temperature of from about 100° to about 200° C. under superatmospheric pressure a 1,2-alkylene oxide having from 2 to about 6 carbon atoms and selected from the group consisting of 1,2-alkylene oxides and bromo and chloro substituted 1,2-alkylene oxides, with an acetylenic hydrocarbon having the formula RC≡CH wherein R represents a member selected from the group consisting of hydrogen and hydrocarbon radicals having from 2 to 10 carbon atoms, in the presence of a cuprous compound catalyst selected from the group consisting of cuprous chloride, bromide, cyanide, sulfide, carbide, acetylide, methyl acetylide, isothiocyanate, acetate, propionate, and butyrate, and an amine promoter.

3,190,930

PREPARATION OF 1,1-DIFLUOROETHANE

Carl M. Brock, Christiana Hundred, and Robert F. Drees and John F. Smith, Brandywine Hundred, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 22, 1961, Ser. No. 111,622
3 Claims. (Cl. 260—653.6)

1. A process for preparing 1,1-difluoroethane which comprises reacting acetylene and liquid hydrogen fluoride at from one to eleven atmospheres pressure with a boron trifluoride catalyst concentration of from about 0.01 to 0.50 weight percent of hydrogen fluoride, passing said acetylene through the hydrogen fluoride at a rate of from 0.3 to about 1.6 pounds of acetylene per hour per gallon of hydrogen fluoride and passing said boron trifluoride into the hydrogen fluoride at a rate of at least 6 mole percent of the said acetylene, and maintaining reaction conditions such that the function $(T_B-T_R)\sqrt{F}$ is from 0 to about 14 wherein T_B is the boiling point of pure hydrogen fluoride at the reaction pressure in degrees centigrade, T_R is the reaction temperature in degrees centigrade, F is the acetylene feed rate in pounds per hour per gallon of liquid hydrogen fluoride and (T_B-T_R) is no greater than 20° C.

3,190,931

METHOD FOR OXYCHLORINATION OF HYDROCARBONS

Francois Lainé, Esmbonne, Claude Kaziz, La Courneuve, and Georges Wetroff, Le Thillay, France, assignors to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

No Drawing. Filed July 13, 1962, Ser. No. 209,796
Claims priority, application France, July 26, 1961, 869,852/61
6 Claims. (Cl. 260—659)

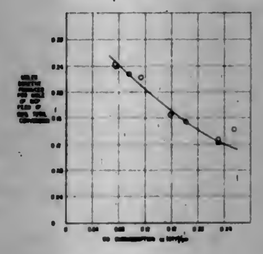
1. In the process for the oxychlorination of hydrocarbons selected from the group consisting of olefinic hydrocarbons and saturated hydrocarbons by reaction of the hydrocarbon, oxygen and hydrogen chloride at elevated temperature within the range of 250–550° C. and in the presence of a Deacon type catalyst, the steps of passing the hydrogen chloride, oxygen and hydrocarbon in admixture through a fluid bed of catalyst to achieve 40–80 percent conversion in a first phase and then directly passing the effluent from the first phase through a stationary catalytic bed at a reaction temperature higher than the reaction temperature in the first phase and wherein the conversion reaction is continued towards completion to produce the desired oxychlorinated hydrocarbon as a product.

3,190,932

DEHYDROGENATION PROCESS AND CATALYST

Marvin F. L. Johnson, Homewood, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

Filed Sept. 21, 1961, Ser. No. 139,761
4 Claims. (Cl. 260—668)



1. In a method for catalytic conversion of methylcyclopentane to benzene, the steps consisting essentially of passing methylcyclopentane and molecular hydrogen at a temperature of about 800 to 1000° F. and a pressure of about 150 to 400 p.s.i.g. in contact with a catalyst consisting essentially of a small catalytic amount of platinum group metal and activated alumina in which the platinum group metal exists as relatively coarse particles, and characterized by a CO chemisorption of about 0.07 to 0.12 cc (STP) per gram of catalyst.

3,190,933

CATALYTIC DEHYDROGENATION

Lucien J. Bagnetto, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 6, 1961, Ser. No. 157,554
9 Claims. (Cl. 260—669)

1. In the dehydrogenation of monoolefin and alkyl aromatic hydrocarbon reactants, the step which comprises contacting at least one of said reactants and steam with a catalyst consisting essentially of (a) 2–25 weight parts of alumina-silica gel containing 1–15 weight percent silica and the balance alumina, and (b) from 75–98 weight parts of an alkalized iron oxide-chromium oxide catalyst containing 1–60 weight percent potassium carbonate, 1–10 weight percent chromium oxide and 30–98 weight percent iron oxide.

3,190,934

FRACTIONATION OF HYDROCARBON MIXTURES

Leo Garwin, Oklahoma City, Okla., assignor to Kerr-McGee Oil Industries, Inc., a corporation of Delaware

Continuation of application Ser. No. 835,265, Aug. 21, 1959. This application Feb. 25, 1963, Ser. No. 278,795
8 Claims. (Cl. 260—674)

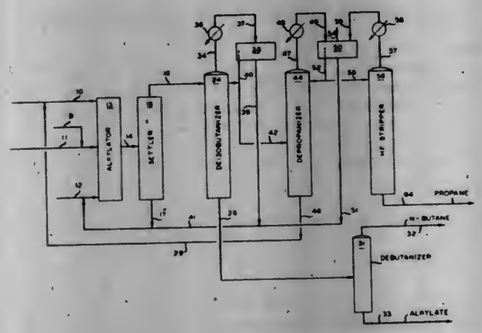
1. A process for separating a hydrocarbon mixture containing essentially of aromatic and aliphatic hydrocarbons having 6 through 9 carbon atoms into aromatic-rich and aromatic-lean fractions comprising the steps of intimately contacting the hydrocarbon mixture with an extractant consisting of bituminous material under elevated temperature and pressure conditions, the bituminous material extractant having a molecular weight of at least about 350 and an ability to dissolve no more than about one volume of the aliphatic hydrocarbon for each volume of the bituminous material extractant under the elevated temperature and pressure conditions, the extractant having a higher molecular weight than an aromatic hydrocarbon contained in the hydrocarbon mixture, the temperature being at least as high as 60° F. below the critical for the average aliphatic hydrocarbon component of the hydrocarbon mixture, the temperature and pressure being adjusted to provide a density of not more than about 0.4 g./cc. for the aliphatic hydrocarbon component of the hydrocarbon mixture to thereby effect phase separation between an aromatic-rich phase including the bituminous material extractant and an aromatic-lean phase, and separating the resulting phases to obtain an aromatic-rich fraction and an aromatic-lean fraction.

3,190,935

PURIFICATION PROCESS

Thomas Hutson, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 11, 1961, Ser. No. 158,233
3 Claims. (Cl. 260—676)



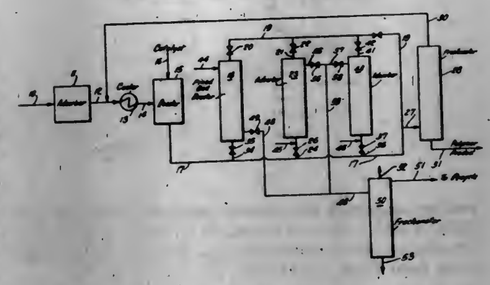
1. A method for removal of alkyl fluorides from propane and normal butane which comprises introducing said propane and normal butane into a reaction zone wherein isobutane is being alkylated with an olefin in the presence of HF catalyst, subjecting said introduced material to the conditions of alkylation and subsequently recovering the thus purified propane and normal butane free from alkyl fluoride content.

3,190,936

PROCESS FOR REGENERATING AN ADSORBENT AND A CATALYST SUPPORT IN A POLYMERIZATION OPERATION

Edward T. Child and William L. Lafferty, Jr., Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 16, 1961, Ser. No. 89,738
2 Claims. (Cl. 260—683.15)



1. In an operation wherein normally gaseous olefins are converted to polymers while in contact with a boron fluoride catalyst and in which there is employed a composition having adsorbent properties and effective as a support for said catalyst and for removing impurities from said polymers, said composition being selected from the class consisting of activated carbon, silica, alumina and mixtures thereof, which operation renders said composition ineffective by the occlusion of inactive halide complexes and polymers thereon, the method of regenerating said composition which comprises contacting said composition with a solvent mixture until substantially all of said occluded complexes and polymers are removed thereby regenerating said composition, said solvent consisting of pentane and acetone in the proportions of 1:4 to 4:1 respectively on a weight basis.

3,190,937

PRODUCTION OF HEXENES

Alan Arthur Yeo, James Keith Hambling, and Geoffrey Winton Aldersou, all of Sunbury-on-Thames, Middlesex, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Mar. 15, 1961, Ser. No. 95,800
Claims priority, application Great Britain, Mar. 23, 1960, 10,368/60; July 15, 1960, 24,723/60; Aug. 25, 1960, 29,375/60; Nov. 22, 1960, 40,049/60
The portion of the term of the patent subsequent to Apr. 2, 1980, has been disclaimed
1 Claim. (Cl. 260—683.15)

A process for the production of 2-methylpentene-2 comprising; contacting propylene with a catalyst consisting essentially of a lamellar complex of sodium and graphite and having the formula NaC_{64}, at a temperature of at least 160° C., and recovering 2-methylpentene-2 from the C_6 fraction of the product.

3,190,938

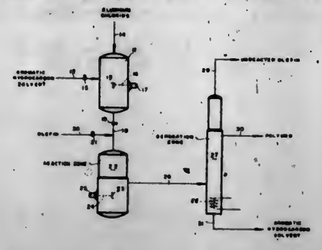
POLYMERIZATION OF OLEFINS

William R. Edwards, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Nov. 1, 1962, Ser. No. 234,622
9 Claims. (Cl. 260—683.15)

1. A method for polymerizing olefins which comprises contacting a mono-olefin having 3 to 10 carbon atoms in the molecule under polymerization conditions at a temperature within the range from about 32° F. to about 200° F. and a pressure from about 0 to about 500 p.s.i.g. for a time from about 0.5 to about 180 minutes with a solu-

tion of about 0.1 to about 30 percent by weight of aluminum chloride in a completely alkyl-substituted aromatic hydrocarbon wherein each of the alkyl groups has a straight chain and has 1 to 4 carbon atoms to form a



product containing substantially polymers which are multiples of said olefin and unreacted aromatic hydrocarbon, the volume ratio of mono-olefin to aromatic hydrocarbon being from about 0.1 to about 10.

3,190,939

PARAFFIN ISOMERIZATION PROCESS USING HYDROGEN MORDENITE CATALYST

Hans A. Benesi, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1963, Ser. No. 303,126
9 Claims. (Cl. 260—683.65)

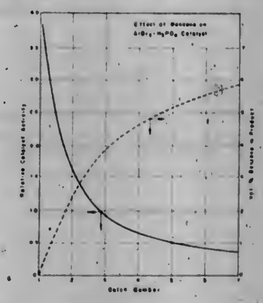
1. A process for isomerizing a normal paraffin having from 4 through 6 carbon atoms per molecule which comprises contacting said normal paraffin at a temperature in the range from about 550° to 625° F. with hydrogen mordenite in the presence of hydrogen.

3,190,940

HYDROCARBON CONVERSION

David G. Walker, Henry A. Holcomb, and Boyd N. Hill, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed June 8, 1962, Ser. No. 200,994
3 Claims. (Cl. 260—683.75)



1. A hydrocarbon isomerization process for isomerizing paraffinic hydrocarbons to the isomers thereof in the presence of aromatics comprising reacting a normal paraffinic hydrocarbon feed stock containing aromatic hydrocarbons in amounts from about 0.1 to about 6.5 volume percent and cycloparaffins with a catalyst under isomerization conditions, said catalyst consisting of phosphorus pentoxide and aluminum halide in a mol ratio, respectively, of 0.30 to 0.65, said catalyst in said process being resistant to the inhibitory effect of the aromatic to the isomerization process and the aromatics remaining substantially unaltered during said isomerization process.

3,190,941

OZONE-RESISTANT RUBBER

Frederick R. Balcar, Millington, William G. Maranecik, Basking Ridge, and Robert J. Hodges, Newark, N.J., assignors to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 17, 1961, Ser. No. 90,014
4 Claims. (Cl. 260—772)

1. A process for rendering the surface of an article made of natural rubber resistant to ozone comprising exposing the surface to be treated of said article to a dilute fluorine containing atmosphere containing at least 20% by volume fluorine and a nonreactive gaseous diluent, applying stress to said article to stretch said surface while said surface is exposed to said fluorine containing atmosphere and continuing the exposure of said surface to said fluorine containing atmosphere for a sufficient time to fluorinate said surface to a degree rendering said surface resistant to the chemical action of ozone but without affecting substantially the physical characteristics of said article.

4. A face mask comprising a hollow body defining a breathing chamber and a flexible hollow rim forming a face-contacting portion of said body, said mask body and rim being made of natural rubber, said mask having exposed surface areas fluorinated by exposing said surface areas, while stressed to stretch said surface areas, to an atmosphere containing at least 20% by volume of fluorine and a nonreactive diluent gas for a time sufficient to render said areas resistant to the chemical attack of ozone but without substantially altering the physical characteristics of said natural rubber.

3,190,942

CYANOALKYL ARYLENETHIAZOLESULFENAMIDE ACCELERATORS

Albert F. Hardman, Northampton Township, Summit County, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed June 17, 1955, Ser. No. 516,311
6 Claims. (Cl. 260—788)

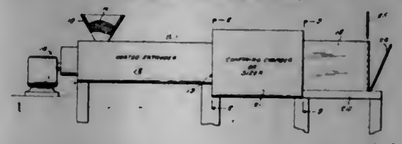
1. The method of vulcanizing rubber which comprises heating rubber and sulfur in the presence of a beta-cyanoethyl-alkyl-2-arylenethiazolesulfenamide.

3,190,943

METHOD OF PRODUCING CARTON LINERS AND PARTITIONS

Thomas R. Santelli, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Continuation of application Ser. No. 99,084, Mar. 29, 1961. This application Jan. 16, 1963, Ser. No. 252,548
3 Claims. (Cl. 264—41)



1. The method of producing slot-containing partitions suitable for interlocking with one another to provide article-accommodating cells in shipping cartons which consists of:

(1) extruding a plastic as an elongated mass having longitudinal slots rectangular in cross section with the dimensions of each slot being approximately the dimensions of a slot in a conventional partition and with the general contour of the extruded mass in a plane normal to the direction of extrusion being approximately that of the general peripheral contour of a conventional slotted partition, and

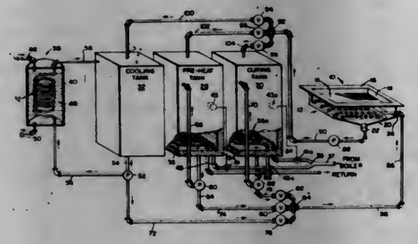
(2) severing the cooled mass only at parallel planes normal to the direction of extrusion with each plane spaced from adjacent parallel planes by a distance approximately equal to the width of the slot to produce slot-containing partitions suitable for interlocking with one another to provide article-accommodating cells in shipping cartons.

3,190,944

METHOD OF MOLD TEMPERATURE CONTROL

Donald A. Moore, New Castle, N.H., assignor, by mesne assignments, to Davidson Rubber Company, Incorporated, a corporation of Delaware

Filed May 31, 1963, Ser. No. 284,620
2 Claims. (Cl. 264—45)



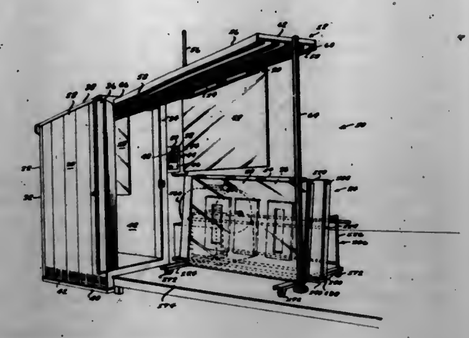
1. In a process of forming a molded flexible skin from a vinyl plastisol in a thin-walled shell mold, the inside mold face of which has a design of the surface of the article to be produced and the walls of said shell mold being so thin as to be unable to resist any substantial differential pressure without distortion, the improvement comprising placing said shell mold on a discharge pan with said mold face facing upwardly and with said mold being so mounted thereon as to permit the free overflow of any fluid trapped in said discharge pan, maintaining three reservoirs of a liquid heat exchange medium, the first of said reservoirs being maintained at a cooling temperature of less than 125° F., the second at a gelling temperature in the range of 225–300° F., and the third at a curing temperature in the range of 375–450° F., preheating said shell mold to said gelling temperature by withdrawing liquid heat exchange medium from said second reservoir and spraying the same against the underside of said shell mold while collecting the liquid so sprayed in said discharge pan and returning the same to said second reservoir, applying and gelling a layer of heat gelable and curable vinyl plastisol to said shell mold while maintaining said shell mold at said gelling temperature by means of the spray, then heating said shell mold and the plastisol therein to said curing temperature by ceasing flow of the liquid heat exchange medium from said second reservoir and withdrawing liquid heat exchange medium from said third reservoir and spraying the same against the underside of said shell mold while collecting the liquid so sprayed in said discharge pan and returning the same to said third reservoir, thereafter rapidly cooling said shell mold by ceasing flow of the liquid heat exchange medium from said third reservoir and withdrawing liquid heat exchange medium from said first reservoir and spraying the same against the underside of said shell mold while collecting the liquid so sprayed in said discharge pan and returning the same to said first reservoir, and after said shell mold has been cooled to a temperature of less than 125° F. removing said vinyl skin from said shell mold, the pressure on the mold face and underside of said shell mold being substantially atmospheric through all steps of the process.

3,190,945

METHOD AND MEANS FOR MOLDING CONTOURED ARTICLES FROM SHEET MATERIAL

Harvey J. Diamond, % Plasti-Vac, Inc., 2127 S. Tryon, Charlotte, N.C.

Filed Dec. 31, 1962, Ser. No. 248,814
3 Claims. (Cl. 264—92)



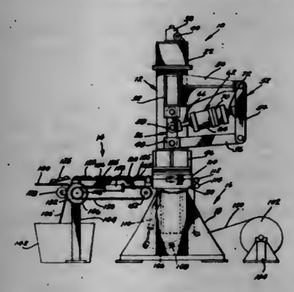
1. A method of vacuum molding a contoured article from a sheet of material that becomes plastic when heated, said method comprising suspending said sheet vertically, heating said suspended sheet to render it plastic, placing said plastic sheet while still vertically suspended over a substantially vertical perforated mold face, displacing said mold face to a generally horizontal position, while maintaining said plastic sheet thereon, drawing a vacuum below said perforated mold face to draw said plastic sheet to the contour of the mold face while allowing said sheet to cool to a rigid state, and removing the rigid sheet from the mold face as a contoured article.

3,190,946

FORMING METHOD

Raymond S. Keyes, Kalamazoo, Mich., assignor to Kirkhof Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan

Original application Dec. 18, 1961, Ser. No. 160,057. Divided and this application Mar. 13, 1964, Ser. No. 356,348
2 Claims. (Cl. 264—92)



1. The method of repeatedly forming plastic shell type articles from a thin, generally continuous flexible sheet of plastic comprising the steps of: placing successive portions of a generally continuous sheet of plastic adjacent a die forming means one portion at a time; pressing a blade into sealing contact with each sheet portion around the periphery of said die and thereby sealing said sheet portion to said surface; heating said sheet portion and applying a

pressure differential thereto to force it against said forming means and the side of said blade and thereby form a relatively rigid three dimensional configurated article in said portion; subsequently applying increased pressure to said blade to then substantially penetrate and crease said sheet portion around the periphery of said article without



severing said article from said sheet; advancing said sheet portion and article in a generally linear path, while cooling said sheet and article; conducting said cooled sheet portion in a non-linear path to break at least the front edge of said relatively rigid article loose from said flexible sheet due to the difference in flexibility of the article and sheet; and introducing a separating surface between said front edge and said sheet while continuing to conduct said sheet in said non-linear path to peel said article completely from said sheet.

3,190,947
PROCESS FOR REPRODUCING A PATTERNED SURFACE IN MICROSCOPIC DETAIL
Kenneth Norcross, Morecambe, England, assignor to Nairn-Williamson Limited, a British company
Filed Dec. 21, 1961, Ser. No. 161,029
Claims priority, application Great Britain, Dec. 30, 1960, 44,800/60
6 Claims. (Cl. 264—216)

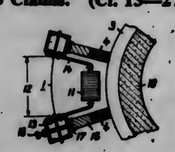
2. A process for reproducing a patterned surface in microscopic detail comprising:

(a) casting a liquid silicone resin upon the surface to be reproduced, curing said silicone resin on said surface, and then stripping said resin from said surface thereby forming a negative of said surface; and then

(b) casting an ungelled vinyl resin on said negative, curing said vinyl resin on said negative to form a film, and then stripping said film from said negative to obtain a positive reproduction in microscopic detail of said patterned surface.

ELECTRICAL

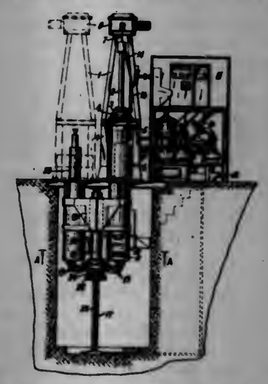
3,190,948
MELTING FURNACE
Walter Kugler, Remscheid, Germany, assignor to Allgemeine Elektricitäts-Gesellschaft and Deutsche Edelstahlwerke Aktiengesellschaft, Berlin-Grunewald, Germany and Krefeld, Germany, respectively
Filed May 2, 1963, Ser. No. 277,607
Claims priority, application Germany, May 2, 1962, A 40,111
5 Claims. (Cl. 13—27)



1. An induction furnace comprising a generally cylindrical vessel, an induction coil, and yokes; said vessel being provided with breaches located in the regions of said yokes, said breaches being configured to permit the withdrawal therethrough of said yokes, the latter being attached to said vessel independently of said induction coil.

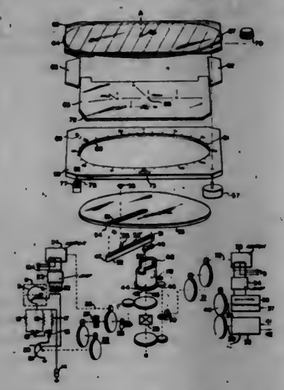
3,190,949
VACUUM ARC MELTING FURNACE WITH CRUCIBLE CHANGING APPARATUS
Helmut Gruber and Helmut Scheidig, Hanau am Main, Germany, assignors to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a firm of Germany
Filed Dec. 21, 1960, Ser. No. 77,388
Claims priority, application Germany, Dec. 24, 1959, H 38,250
6 Claims. (Cl. 13—31)

1. A vacuum arc melting furnace comprising at least two furnace chambers laterally spaced from each other, at least four crucibles, support means for supporting said crucibles and arranged below said chambers, said crucibles being arranged in radially uniform positions about and at equal distances from a vertical axis which in turn is spaced at equal distances from the axes of said chambers, means for intermittently rotating said support means in one direction about said vertical axis, control means for controlling rotation of said support means about said vertical axis for successively moving each of said crucibles from a position underneath and laterally of one of said furnace chambers to a filling position vertically underneath said one chamber, then to at least one position intermediate said chambers and laterally of said filling position, in which intermediate position the metal in the crucible thereat is cooled and adapted for removal, then to the next filling position vertically underneath the other of said two furnace chambers, and then to the next intermediate position, a cooling jacket for said crucibles arranged below said chambers, and means for raising each of said crucibles while in said filling position into engagement with and communication with the lower end of the respective furnace chamber for filling said crucible and for thereafter lowering said filled crucible from said respective chamber.



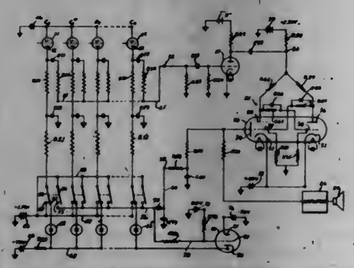
3,190,950
PICTORIAL POSITION DISPLAY
Edmond R. Ariessohn, Northvale, Henry A. Hannemeister, Dumont, and George W. Shepherd, Jr., Fairlawn, N.J., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 13, 1961, Ser. No. 95,139
13 Claims. (Cl. 35—10.2)

1. An instrument to display the position of a vehicle for use with radio receiving means supplying directional and range information relative to a reference station to which it is tuned comprising: a fixed support having an axis corresponding to the location of a reference station; a movable reticle indicative of said vehicle's position; reticle positioning means on said support and including a first element movable in angular position about said axis; a first servo means to drive said first element about said axis; a belt to which said reticle is attached, means for mounting said belt on said first element for movement along a radial line from said axis, and a second servo means to drive said belt along said radial line; connecting means for applying said directional information to said first servo drive means so that said first element is driven by said first servo drive means to an angular position about said



axis which corresponds to said vehicle direction relative to said reference station, connecting means for applying said range information to said second servo drive means so that the reticle moves a distance from said axis corresponding to said vehicle range relative to said reference station; a transparent map including a representation of said reference station and contiguous territory removably mounted to said support over and adjacent said reticle so that said reticle is plainly viewable beneath said map; and map indexing means for aligning said map representation of said reference station on said axis.

3,190,951
ELECTRICAL MUSICAL INSTRUMENT
Walter J. Anderson, Elgin, Ill., assignor to Chicago Musical Instrument Co., Lincolnwood, Ill., a corporation of Illinois
Filed Nov. 15, 1961, Ser. No. 153,255
11 Claims. (Cl. 84—1.23)



2. In an electrical musical instrument:

(a) a plurality of tone signal generators;

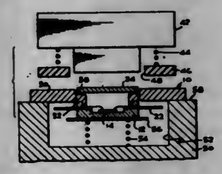
(b) each individual generator having an output path and a normally nonconducting electron-coupled type of readout element connecting the generator to said path;

(c) a common collector to the which the output paths from said generators are connected;

(d) an electroacoustic translating system including a frequency divider coupled to said common collector, said frequency divider having a normally nonconducting electron-coupled type of readout element incorporated therein; and

(e) a playing-key operated means for each individual generator and connected to said readout element thereof, said means selectively simultaneously rendering conductive the individual readout element thereof and the readout element of said translating system while the key is actuated and for a sustained period of time beyond key release, said means being operative to directly render the individual readout element instantly nonconducting in response to playing of corresponding playing-key operated means of any other generator during said sustained period.

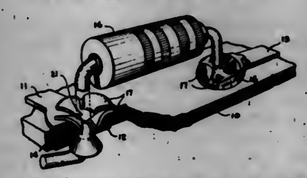
3,190,952
WELDED HERMETIC SEAL
Sheldon Bitko, Stamford, Conn. (66—36 Yellowstone Blvd., Forest Hills, N.Y.)
Filed Feb. 21, 1963, Ser. No. 260,254
5 Claims. (Cl. 174—52)



1. The method of welding a metal cover to a container having side walls and a bottom, and an opening at the top for the metal cover, and a metal rim having an outwardly extending integral flange which comprises electrically, welding the cover to the metal rim to form a sealed edge using the flange as an electrode for the welding current, and thereafter removing the flange from the metal rim.

4. As an article of manufacture a container comprising a body member and a closure member; securing means attaching the closure member to said body member; one of said members having a metal peripheral portion provided with a metal flange extending from the periphery of the member having a weakened portion for ready removal of the entire flange from said member; said weakened portion being positioned beyond the bounds of the members and the securing means.

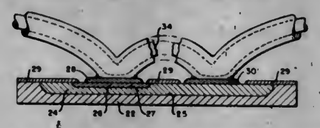
3,190,953
CHANNEL FLANGED CAPILLARY EYELET FOR PRINTED CIRCUIT BOARDS
Joseph D. Keller, Winter Park, Fla., assignor to Martin-Marietta Corporation, a corporation of Maryland
Filed June 15, 1961, Ser. No. 117,435
11 Claims. (Cl. 174—68.5)



1. A capillary eyelet adapted to be placed in a hole in a double-sided printed circuit board in order to assure good electrical interconnection between said sides, said eyelet comprising a hollow barrel portion, and at least

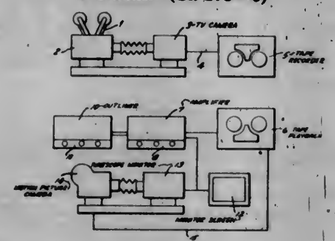
one end portion configured to form a plurality of petals whose edges form slots, said petals being curved to define spaces thereunder which serve as a repository for electrically conductive flowable material, said slots being in contact with said barrel portion and said spaces, said edges defining said slots being substantially parallel for at least a portion of their length, including the location adjacent said barrel portion, said slots serving as effective paths along which electrically conductive material can flow, whereby when the eyelet is placed in a hole of the circuit board and electrically conductive flowable material is caused to flow up through said hollow barrel portion, said material flows by capillarity through the slots between said petals and thence into the spaces below said petals, thereby to electrically unite the eyelet with the circuitry of the circuit board.

3,190,954
SEMICONDUCTOR DEVICE
Daniel I. Pomerantz, Lexington, Mass., assignor to Clevite Corporation, a corporation of Ohio
Filed Feb. 6, 1962, Ser. No. 171,451
3 Claims. (Cl. 174—94)



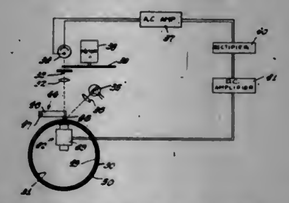
1. In a semiconductor device having at least one operative element, the combination comprising: a layer of metal evaporated on the element; and a lead wire thermo-compressively bonded to said layer; said lead wire consisting of a center core of a metal selected from the group consisting of molybdenum, tungsten, nickel, steel, and alloys thereof, adherently coated with a surface layer of a metal selected from the group consisting of gold, silver, platinum, aluminum and malleable alloys thereof.

3,190,955
METHOD AND APPARATUS FOR PRODUCING ANIMATED CARTOONS
Leon H. Maurer, New York, N.Y., assignor to Westwork Artists Productions Inc., New York, N.Y.
Filed Apr. 20, 1961, Ser. No. 104,323
6 Claims. (Cl. 178—6)



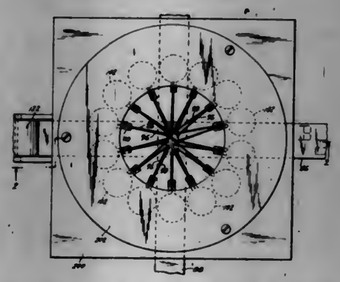
1. In a method of producing a motion picture film of the animated cartoon type, the steps of producing an optical image of a live action, said image having a plurality of portions differing in brightness; sequentially scanning said portions; producing a primary electrical signal sequentially modulated according to the brightness of the sequentially scanned image portions; generating an electrical outline signal selectively responsive to the modulation of a portion of said primary signal corresponding to a predetermined brightness property of said optical image and deleting the remainder of said primary signal, said remainder corresponding to a brightness property different from said predetermined property, said property being selected from the group consisting of a brightness difference between successively scanned portions of said image and a brightness value of a scanned portion; transforming said outline signal into a visible outline image; controlling the response of said outline signal to said modulation to modify said outline image; and producing a photographic record of said modified outline image.

3,190,956
FACSIMILE APPARATUS HAVING A MAGNETICALLY BIASED MARKING STYLUS
Angelo Vaccaro, Port Washington, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Company, Inc., Glen Cove, N.Y., a corporation of New York
Filed Sept. 9, 1959, Ser. No. 838,931
8 Claims. (Cl. 178—6.6)



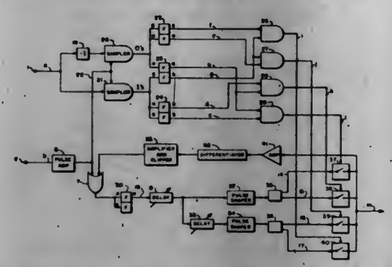
1. Apparatus for producing a facsimile copy of an original from variations in electrical signals derived from areas of different light reflective values in the original, comprising non-magnetizable means for supporting copy-producing material including a copy sheet; a stylus for producing marks on said copy sheet; means for relatively moving the stylus and the support to scan said copy-producing material; and electromagnetic means for continuously pressing the stylus against said copy-producing material on the support with either a positive marking pressure or a positive non-marking pressure depending on the variations in said signals.

3,190,957
ALTERNATING TWO LINE PRINTING DEVICE
Daniel E. Foley, Nutley, N.J., and William F. Hogan, Scarsdale, and Alfred Skrobisch, Huntington Station, N.Y., assignors to Data Presentations, Inc., Scarsdale, N.Y., a corporation of New York
Filed Aug. 21, 1962, Ser. No. 218,394
15 Claims. (Cl. 178—30)



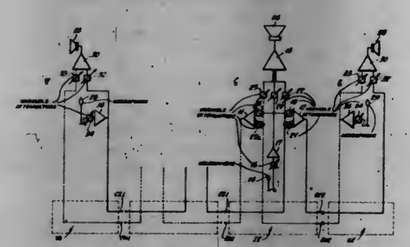
1. Apparatus for alternately printing alpha-numeric characters on upper and lower lines, without line feed, as on a ticker tape for stock quotation, said apparatus comprising means for character feed, an array of movable elemental printing segments used simultaneously in different combinations to make up alpha-numeric characters for the upper line and for the lower line, one or more of said segments serving in common for both the upper and lower lines.

3,190,958
FREQUENCY-SHIFT-KEYED SIGNAL GENERATOR WITH PHASE MISMATCH PREVENTION MEANS
Edward C. Bullwinkel, Little Silver, Ells D. Hanson, Eatontown, and Robert E. Webb, Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 5, 1962, Ser. No. 221,635
3 Claims. (Cl. 178—66)
(Granted under Title 35, U.S. Code (1952), sec. 266)



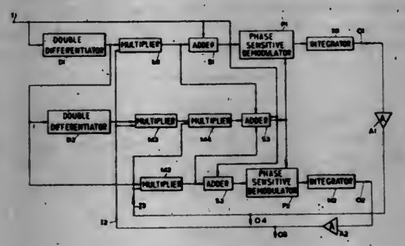
3. A generator of frequency shift keyed binary telegraph signals of the cosine type, comprising, means to gate onto an output line a full cycle of a cosinusoidal wave of frequency f in response to an input binary signal of one type and means to gate onto said output line a half cycle of a cosinusoidal signal of frequency $f/2$ in response to an input binary signal of an opposite type and means to control the phase or polarity of the cosinusoidal signal in any given baud in accordance with the number of opposite type signals which preceded it, said last-named means comprising means to determine whether the number of consecutive signals of said opposite type is odd or even, thereby providing a smoothly varying output signal with no phase mismatch therein.

3,190,959
COMMUNICATION NETWORK
Robert F. White, New York, N.Y., assignor to Tele-Sessions, Inc., New York, N.Y., a corporation of New York
Filed July 19, 1960, Ser. No. 43,836
8 Claims. (Cl. 179—1)



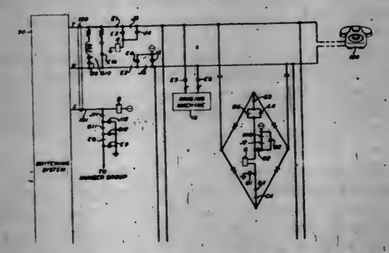
1. A network for providing substantially simultaneous multidirectional communication among a plurality of remotely separated stations including a signal transmitting and receiving leading station, a signal transmitting and receiving trailing station and a signal receiving and transmitting intermediate station, a first pair of incoming and outgoing channels connecting said intermediate station with said trailing station and a second pair of incoming and outgoing channels connecting said intermediate station with said leading station, a local signal generator disposed at said intermediate station; a first network at said intermediate station mixing the locally generated signal with the signal received from said first incoming channel and transmitting the combined signals along said second outgoing channel, a second network at said intermediate station mixing said signal received from said second incoming channel with said locally generated signal and transmitting the combined signals along said first outgoing channel, a third network located at said intermediate station mixing said locally generated signal with said signals from said first and second incoming channels, and an electroaudio transducer connected to the output of said third mixer network.

3,190,960
SPEECH BANDWIDTH COMPRESSION SYSTEMS
Walter Lawrence, Bournemouth, England, assignor to National Research Development Corporation, London, England
Filed Dec. 26, 1961, Ser. No. 162,045
Claims priority, application Great Britain, Dec. 30, 1960, 44,730/60
7 Claims. (Cl. 179—1)



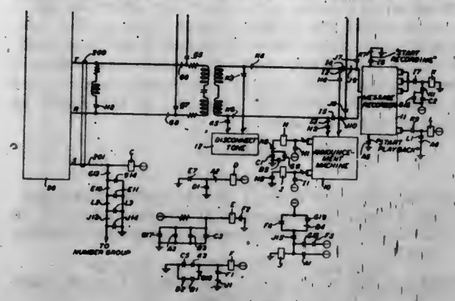
2. A formant tracker for tracking the frequencies of formants formed by formant-forming resonators in a vocal tract during the production of an input speech signal, including an adjustable electrical network means having a primary output, means for extracting from the said primary output formant-parameter signals derived from the said input speech signal, and means for feeding back the said formant-parameter signals to adjust the said electrical network means continuously so that a signal at the primary output is the speech signal operated upon by the electrical analogue of substantially the inverse of at least some of the said formant-forming resonators.

3,190,961
TELEPHONE ANSWERING AND RECORDING SYSTEM
James J. Fitzpatrick, Summit, N.J., and Alfred Zaroumi, Brooklyn, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 21, 1961, Ser. No. 161,016
15 Claims. (Cl. 179—6)



12. In a telephone system, a line having first and second terminal appearances, recording means associated with said second terminal appearance, means for extending a connection to said second terminal appearance

to record a message when said line is busy, means for establishing a connection of said line to said recording means when said line becomes idle, means for extending a connection to said first terminal appearance when said line is idle, and means for connecting said first terminal appearance to said recording means upon failure of the called party to answer in a predetermined time.

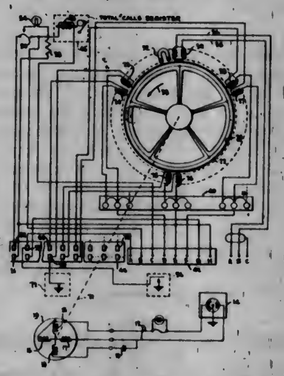


3,190,962

MAGNETIC CALL TOTALIZER

Ellis H. Bryant, Jr., Atlanta, Ga., assignor to Audichron Company, Atlanta, Ga., a corporation of Georgia

Filed June 20, 1962, Ser. No. 203,787
1 Claim. (Cl. 179—8)



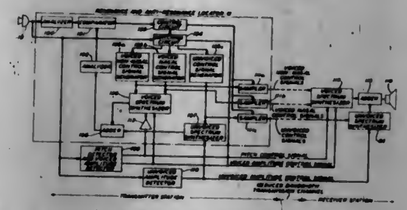
A cyclic device for periodically recording and reading out the status of a plurality of telephone lines over a single announcing cycle when selectively actuated, comprising in combination a continuously moving magnetic recorder having a single cyclically repeating movable recording track, a plurality of recording members positioned along said track, a plurality of telephone lines coupled respectively to ones of said recording members, a read out member along said track to read out information stored by all said recording members responsive to movement of said track, an erasing member for clearing recorded information from said track after passing by said read out member, momentarily operable means for initiating the announcing cycle including means charging a capacitor coupled to a plurality of said recording members and subsequently operable for storing at different locations on said track through the corresponding recording member a digital signal from said charged capacitor for each telephone line in use, means totalizing the recorded digital signals read by said read out member during said announcing cycle, and said means for initiating said announcement cycle of operation of recording and reading out from said magnetic recorder including means inactivating the totalizing means during the period of charging said capacitors.

3,190,963

TRANSMISSION AND SYNTHESIS OF SPEECH

Edward E. David, Jr., Berkeley Heights, and James L. Flanagan, Warren Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 6, 1962, Ser. No. 235,703
9 Claims. (Cl. 179—15.55)



1. A speech transmission system that comprises a transmitter station including

a source of an incoming speech wave characterized by a succession of different speech sounds including voiced nonnasal sounds, voiced nasal sounds, and unvoiced sounds,

means supplied with said speech wave for deriving from said succession of different sounds a corresponding succession of groups of reduced bandwidth control signals representative of selected resonances and antiresonances in the spectra of said different sounds of said speech wave, and

means supplied with said speech wave for obtaining a set of control signals representative of the frequencies and the amplitudes of the fundamental components of said voiced nonnasal and voiced nasal sounds of said speeech wave and the energy of said unvoiced sounds of said speech wave,

means for transmitting said corresponding succession of groups of control signals and said set of control signals to a receiver station, and

at said receiver station,

means for synthesizing from said corresponding succession of groups of control signals and said set of control signals a succession of spectra which is a replica of the spectra of said succession of different sounds of said speech wave.

3,190,964

AUTOMATIC TELEPHONE SYSTEMS

Roy Trueman and Colin Warsop, Beeston, England, assignors to Ericsson Telephones Limited, London, England, a British company

Filed Oct. 13, 1960, Ser. No. 62,393
Claims priority, application Great Britain, Oct. 16, 1959, 35,182/59
9 Claims. (Cl. 179—18)

1. An arrangement for detecting an individual subscriber's line current in an automatic telephone system comprising:

a subscriber's line circuit;

a magnetic core of material having a hysteresis loop of the shape known in the art as rectangular, the core having datum and alternative remanent magnetic states and being normally in the datum state during the open condition of said line circuit;

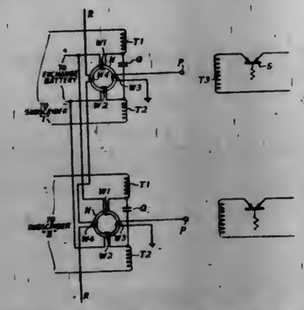
an input winding connected in the subscriber's line circuit and coupled to the magnetic core providing the sole means for setting the core to the alternative state;

an output winding coupled to the magnetic core;

a read winding coupled to the magnetic core;

and a source of read pulses connected to the read winding for resetting the core to the datum state said read pulses being of a polarity capable of producing a magnetization in said core opposite to the magnetization produced by said input winding;

the number of turns of the input winding being sufficient for the minimum value of the line current existing when the line circuit is completed to switch the core from the datum state to the alternative state and the amplitude of the read pulses being sufficient to return the core from the alternative state to the datum state against the effect of the maximum value of line current existing when the line circuit is completed, whereby for the duration of any interval in which the line circuit is completed, each read pulse causes an output pulse to appear in the output winding.

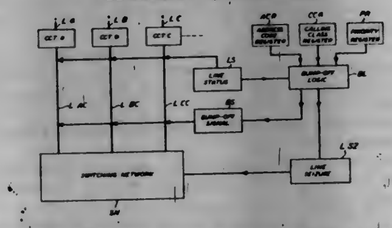


3,190,965

RIGHT-OF-WAY SWITCHING CIRCUITRY

Alfred Zaroussi, Brooklyn, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 28, 1961, Ser. No. 99,014
33 Claims. (Cl. 179—18)



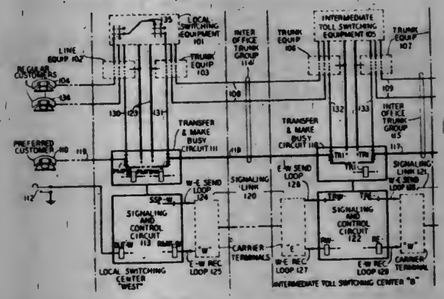
5. In a switching system wherein switching apparatus is controllable to effect a right-of-way connection to a line terminating in said apparatus; means operable to validate that a right-of-way connection to said line is to be effected; a first transmission gate individual to the line and controlled by the line to be nonconductive to indicate that the line is busy, and to be conductive to indicate that the line is idle; a first flip-flop controlled to be in a set condition whenever the line is busy in a right-of-way connection and to be in a reset condition whenever the line is not busy in a right-of-way connection; applying circuitry controlled by said operated validating means and by said flip-flop to apply a disconnect signal to the line, said applying means including second and third transmission gates in series, said second gate controlled by said flip-flop to be nonconductive when said flip-flop is set and to be conductive when said flip-flop is reset, said third gate controlled by said validating means to be conductive when said validating means is operated and to be nonconductive at other times; circuit means controlled by said first transmission gate to designate the line for connection when the line is idle comprising circuitry controlled only when said first transmission gate is conductive; and, enabling means controlled by said operated validating means to enable said first flip-flop to be set to signify whenever the line is busy in a right-of-way connection, said enabling means comprising a fourth transmission gate also controlled by said validating means to be conductive when said validating means is operated and to be nonconductive at other times.

3,190,966

PREFERRED CUSTOMER COMMUNICATION SYSTEM

Donald A. James, Union Hill, N.J., James B. Kennedy, Staten Island, N.Y., and Burton McKim, Morristown, and Hubert A. Sheppard, Orange, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 30, 1962, Ser. No. 241,243
17 Claims. (Cl. 179—18)



17. A system for commandeering trunks from regular customer stations for interconnecting a plurality of preferred customer stations for communication purposes comprising a first switching office having a first preferred customer station, a second switching office having a second preferred customer station, an intermediate switching office connected to said first and second offices over first and second selected ones of said trunks, control means at said intermediate office for commandeering said selected trunks from regular station connection for interconnecting said preferred stations, means controlled by said first preferred station for sending a first signal to said intermediate and said second office, means at said second office responsive to said first signal for sending a second signal to said intermediate office, and means at said intermediate office responsive to the concurrent reception of said first and second signals for actuating said control means to commandeer said selected trunks.

3,190,967

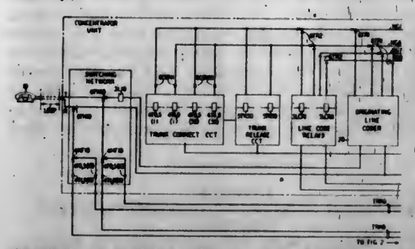
LINE CONCENTRATOR SYSTEM

William C. Sand, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,634
13 Claims. (Cl. 179—18)

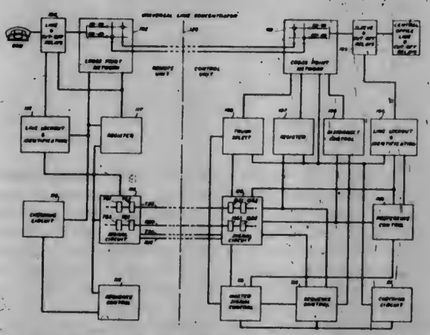
8. A telephone line concentrator system including a telephone central office, a plurality of remote substation lines, a plurality of trunks extending from said office, a plurality of number group conductors extending from said office, remote switching means for connecting said lines to said trunks in response to signals transmitted from said office over said number group conductors, coder means in said remote switching means responsive to a signal condition on one of said lines for applying signals

to selected number group conductors in accordance with a code uniquely indicative of the identification of said line, and means at said central office responsive to said



signals for energizing selected ones of said number group conductors to disconnect said coder means from said number group conductors.

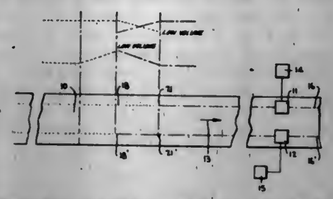
3,190,968
UNIVERSAL REMOTE TELEPHONE LINE CONCENTRATOR
Myron E. Krom, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 31, 1960, Ser. No. 65,975
9 Claims. (Cl. 179—27)



6. A remote line concentrator system including a plurality of telephone lines, a lesser plurality of trunks, a telephone central office, remote switching means for connecting said lines to said trunks, control switching means for connecting said trunks to said central office, means in said control switching means effective when a permanent condition appears on one of said lines for isolating said line at said remote means and denying service thereto, and manual switching means at said control switching means for subsequently restoring service to said line.

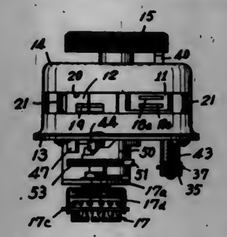
3,190,969
METHOD FOR STEREOPHONIC RE-RECORDING
Edward M. Mattis, 1037 SE. 12th Way, Fort Lauderdale, Fla.
Filed Mar. 28, 1960, Ser. No. 18,151
6 Claims. (Cl. 179—100.1)

1. A method of stereophonic re-recording comprising the steps of re-recording the greater part of a first musical selection on two tracks of the recording medium, starting the recording of a second musical selection on one of the tracks and before the first selection is finished on the other of said tracks, starting the recording of the second selection on said other track and further comprising the step of starting the re-recording of said second musical selection on said one track with the recording signal at a low volume and gradually increasing the signal volume



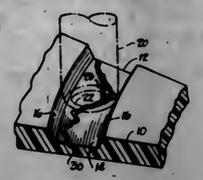
until full volume is achieved at the end of the first musical selection on said other track.

3,190,970
HEAD ASSEMBLY IN A MAGNETIC TAPE RECORDER
Katsuya Atsumi, Tokyo, Japan, assignor to Saburo Akai, Tokyo, Japan
Filed Nov. 16, 1960, Ser. No. 69,620
1 Claim. (Cl. 179—100.2)



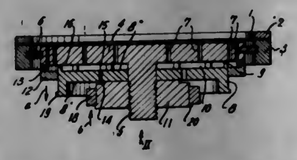
A magnetic head assembly for recording, reproducing and erasing in various modes used in magnetic recorders, the head assembly comprising in combination;
(a) a base plate,
(b) a record-reproduce head including at least two cores,
(c) means for supporting said record-reproduce head selectively vertically adjustable over a small distance above the base plate,
(d) an erase head including at least two cores,
(e) means supporting the erase head for selective vertical adjustment to more than two discrete positions above the base plate,
(f) a housing substantially enclosing the record-reproduce and erase heads,
(g) a rotary multi-pole electric switch for controlling the recording and reproducing circuits carried by the base plate,
(h) a rotary actuating shaft including an operating handle, the shaft extending upward from the base plate and the handle being outside the housing,
(i) a multi-tier cam on the lower end of the actuating shaft for accomplishing the selective vertical adjustment of the erase head to align selected cores of the erase and read-reproduce heads on the same track for the various recording modes,
(j) and means mechanically interconnecting the rotary actuating shaft and the rotary electric multi-pole switch for simultaneously actuating the desired electrical circuit as the erase head is vertically positioned,
(k) an actuating rod rigidly interconnected with the vertically adjustably supported record-reproduce head and (m) a cam on the operating handle for contacting the actuating rod to move said rod vertically and thereby cause the selective vertical movement of the record-reproduce head.

3,190,971
SOUND REPRODUCTION APPARATUS
Herman H. Lowell, North Royalton, Ohio (25 E. Wayne Ave., Silver Spring, Md.)
Filed Aug. 17, 1959, Ser. No. 834,013
6 Claims. (Cl. 179—100.41)



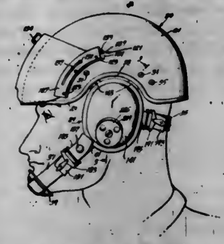
5. A transducer for producing a varying voltage in an electrical circuit which is a function of irregularities in a groove formed in a recording disk, said disk having uniformly spaced walls in a spiral pattern, said groove being formed in the area between said walls, said transducer comprising a voltage-producing element actuated by movement, a stylus being mechanically joined to said element and engaging said groove, a cartridge for containing said element and holding non-moving parts, and a second stylus connected to said cartridge and engaging said disk and said walls for supporting and guiding said transducer as said disk is rotated.

3,190,972
CONDENSER MICROPHONE
Karl Schoeps and Willy Küsters, Karlsruhe-Durlach, Germany, assignors to Schall-Technik, Karlsruhe-Durlach, Germany
Filed June 27, 1962, Ser. No. 205,667
Claims priority, application Germany, July 8, 1961, Sch 29,963
14 Claims. (Cl. 179—111)



1. A condenser microphone, comprising, in combination,
a housing structure;
a condenser electrode including an at least partly conductive membrane mounted in said housing structure and having a front face facing the front side thereof;
a counter electrode mounted in said housing structure at a predetermined spacing from the rear face of said membrane;
means for insulating said electrodes from each other;
means for confining a predetermined volume of air at the rear side of said membrane within said housing structure;
first air passage means for establishing a restricted connection between said volume of air and the outside air at the rear of said housing structure;
second air passage means for freely connecting said volume of air and said outside air with each other; and
mechanical adjustment means for varying the directional characteristic of the microphone and including movable control means which in a first position render said second air passage means inoperative and leave said first air passage means operative only to a predetermined degree so that the microphone obtains a directional characteristic depending upon said degree of operativeness of said first air passage means and which in a second position render said second air passage means operative so that irrespective of the operative condition of said first air passage means a bi-directional 8-shape characteristic of the microphone is established by the friction-free connection between said volume of air and said outside air.

3,190,973
RIGID SHELL HELMET AND RIGGING AND SOUND ATTENUATING MEANS THEREFOR
Jackson A. Allee, Carbondale, Pa., assignor to Leonard P. Frieder, Great Neck, Long Island, N.Y.
Filed May 13, 1960, Ser. No. 29,026
8 Claims. (Cl. 179—156)



6. A sound attenuating device comprising:
(a) an ear cup adapted to receive the ear of a wearer;
(b) cushion means on the rim of the cup adapted to engage the head of the wearer about his ear so as substantially to close off communication of the sound passage of the ear with the atmosphere;
(c) a body of sound absorbing material inside the ear cup and confined by the ear cup for absorbing extraneous sound transmitted into the cup;
(d) valve means mounted on the ear cup at one side of the outer end thereof, and manually operable from the outside thereof between open and closed positions;
(e) said body of sound absorbing material defining a passage along said one side of the ear cup and communicating with said valve means at one end and adapted to communicate with the sound passage of the wearer's ear at the other end;
(f) said body of sound absorbing material further defining a central pocket adapted to receive a telephone transducer and also adapted to communicate with the sound passage of the wearer's ear.

3,190,974
CLAMPING MEANS FOR AN ARTICLE-SUPPORTING BOOM
William A. Vasicek, Rego Park, N.Y., assignor to Roanwell Corporation, New York, N.Y., a corporation of New York
Filed Jan. 25, 1962, Ser. No. 168,710
4 Claims. (Cl. 179—156)

1. Clamping means for adjustably attaching an article-supporting boom to a supporting means wherein:
(a) said boom and a clamping assembly of said clamping means may be angularly adjusted as a unit with respect to said supporting means,
(b) said boom may be adjusted in a direction longitudinal thereof with respect to said clamping assembly while the latter is secured to said supporting means,
(c) said clamping assembly and said boom may be removably secured to said supporting means, and
(d) all the adjustments aforesaid and the securing of said clamping assembly to said supporting means are locked and controlled by a single manually operable means;

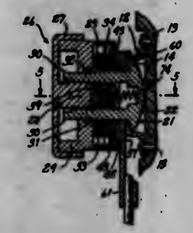
said clamping means comprising:

(1) a stud member having an end portion formed as a surface of revolution and having a threaded portion,

(2) a thumbscrew member having a threaded portion complementary to and arranged to be screwed to said threaded portion of said stud member, said thumbscrew member constituting said single manually operable means,

(3) means including said stud member and said thumbscrew member for graspingly engaging a portion of said boom so as to hold it rigid when said thumbscrew member is screwed tight with respect to said stud member, said members and means (1), (2) and (3) collectively constituting said clamping assembly,

(4) a substantially U-shaped bracket fixed to said supporting means in which said end portion of said stud member is removably engaged in the operative position of the apparatus, the threaded connection between said stud member and said thumbscrew

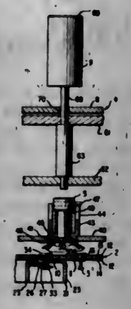


member serving also, when these members are screwed tight together, to lock said stud member to said bracket by squeezing portions of said bracket between said end portions of said stud member and a part which is held in place between said stud member and said thumbscrew member, and

(5) one of the members of said clamping assembly, which is separate from and has a portion surrounding the threaded interconnection between said stud member and said thumbscrew member, having another portion in position to engage with the outside of the bight portion of the U of said U-shaped bracket at the operative position of the clamping means when said stud member and said thumbscrew member are tightly screwed together with the head of said stud member inside said U-shaped bracket, so as positively to prevent movement of said clamping assembly including said stud member toward the open end of the U of said U-shaped bracket at said operative position.

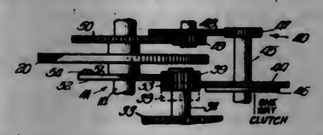
3,190,975
MULTIPLE KEY SWITCHBOARD
Paul B. King, Jr., Mountain Lakes, N.J., assignor to Aircraft Radio Corporation, Boonton, N.J., a corporation of New Jersey
Filed Nov. 3, 1960, Ser. No. 66,977
5 Claims. (Cl. 200—1)

1. A multiple key switchboard for high frequency potentials comprising a housing, a contact board supported within said housing carrying a plurality of rows of spaced contact elements arranged in alternately offset columns, said contact elements in said alternate columns being connected together on one side of said board, a series of channel-shaped shields disposed on the other side of said board in alignment with the alternate rows of contact elements other than those in said alternate columns, said shields being formed with apertures in the base of the channel accommodating the contact elements in said alternate rows, a conductor extending along each of said channels and connected to the terminals in the channels, first couplings extending through ends of the housing and respectively connected to the contact element in each of the alternate columns, second couplings extending through sides of the housing and connected respectively to said conductors, a plate on said housing overlying said one face of said board, a plurality of plungers extending through said apertures in said plate and slidably mounted for movement toward and from said board, said plungers being arranged in rows and columns disposed between



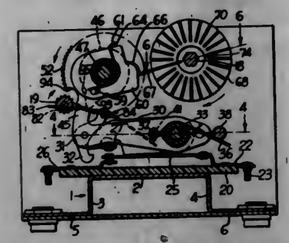
pairs of the rows and columns of contact elements, contact members extending radially from one end of each of said plungers overlying a contact in one of said alternate columns and a contact in one of said alternate rows to engage and connect them together when the plungers are moved toward said board for connecting a selected one of said first terminals to a selected one of said second terminals, and means on the plungers preventing rotation relative to said plate, said contact members being grounded to said plate and said housing when the plungers are moved away from said board by said spring means.

3,190,976
GEARED DRIVING MEANS FOR TIMERS AND THE LIKE
Robert B. Ellis, Franklin Park, and Benjamin L. Gelfand, Chicago, Ill., assignors to International Register Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 31, 1962, Ser. No. 170,064
12 Claims. (Cl. 200—38)



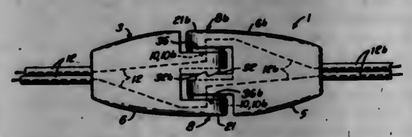
1. In combination, a motor, a member rotatable from a first to a second angular position, a first gear train interposed between said motor and said member for driving it at a relatively low speed, clutch means interposed in said first gear train whereby said member can be driven at a relatively high speed while maintaining the connection through said first gear train, a second gear train interposed between said motor and said member for driving it at said relatively high speed, and means responsive to rotation of said member to a predetermined position intermediate said first and second angular positions for shifting the drive to said member to said second gear train to complete the rotation of said member to said second angular position.

3,190,977
MOTOR DRIVEN ADJUSTABLE ROTARY-CAM ACTUATED MULTI-SWITCH SEQUENCE TIMER
John L. Harris, Whitefish Bay, Wis. (4753 N. Newhall St., Milwaukee, Wis.)
Filed Mar. 19, 1963, Ser. No. 266,313
11 Claims. (Cl. 200—38)



1. In a multiple time control, a plurality of separate control devices arranged side by side, a plurality of separate rotatable operators one for each of said control devices, said operators being arranged side by side adjacent their respective control devices and journaled on a common axis, each of said operators having a drive gear, a pinion shaft extending parallel with the axis of said operators, and adapted to engage said drive gears for rotating said operators, and a timing motor for driving said pinion shaft.

3,190,978
ELECTRICAL CONNECTING MEANS WITH IDENTICAL ROTARY CONNECTORS
Karl L. Huget, 310 N. Elm Grove Road, Brookfield, Wis.
Filed Jan. 15, 1962, Ser. No. 166,271
14 Claims. (Cl. 200—51)



1. An electrical connecting means for establishing an electrical junction, said means comprising

a first connecting part and a second connecting part adapted to be connected to said first connecting part, each of said parts having a body portion,

a connector portion mounted on said body portion, the connector portions on each of said first and second parts being mutually engageable with each other, and

means for establishing an electrical junction responsive to connecting said first and second parts by mutually engaging the respective connector portions on each part,

each of said connector portions including a first projection having one end connected to said body portion and the other end extending outward therefrom with a socket located in said other end,

a second projection parallel to and spaced apart from said first projection and having one end connected to said body portion and the other end extending outward therefrom the same distance as the first projection,

a shoulder disposed on said second projection and extending toward said first projection,

a pin on said second projection and extending away from said first projection,

a diagonal face on said shoulder terminating the outward extension of said shoulder from said body portion,

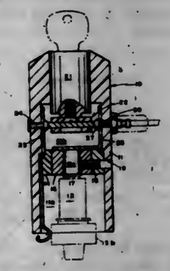
said shoulder being spaced from said first projection a distance slightly greater than the width of said second projection plus the length of said pin,

whereby the second projection and pin on each one of said parts is insertable between the first and second projections on the other one of said parts,

said face on each of said shoulders being located outwardly of said body portion a distance such that the pin on each of said parts is alignable with the socket on the other end of said parts upon the faces being brought into engagement when the second projection of each part is inserted between the first and second projection on the other part,

whereby said electrical connecting means is assembled from said first and second parts by aligning the pin on each part with the socket of the other part, moving the parts laterally to insert each respective pin in the socket of the other part and rotating the parts relative to each other to bring the respective shoulders into abutting relation.

3,190,979
PROTECTIVE SWITCH DEVICE FOR A SPARK PLUG
Frank L. Rose, 51 Redspring Road, and Timothy A. Brennan, 63 Andover St., both of Andover, Mass.
Filed Dec. 10, 1962, Ser. No. 243,389
4 Claims. (Cl. 200—52)



1. A protective device adapted to be used in a spark-plug circuit having a high voltage terminal normally connected to a high voltage lead and a base comprising:

(a) a sleeve divided into upper and lower compartments by a non electrical conducting partition having a central metal disc including a central threaded hole adapted to receive said high voltage terminal;

(b) first terminal means insulatingly mounted on said sleeve and extending into said upper compartment, said first terminal means being electrically connected to said metal disc and including means for receiving said high voltage lead;

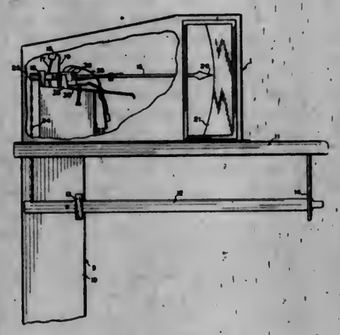
(c) electrical conducting means secured to said sleeve terminating in said upper compartment spaced from said first terminal means and extending through said partition into said lower compartment for contacting said base; and

(d) switch means mounted in said upper compartment for making and breaking an electrical conducting path between said first terminal means and said electrical conducting means.

3,190,980
ELECTRIC CONTROL FOR USE ON A SCALE INDICATOR
Joseph M. Spinks, 584 Manford Road SW., Atlanta, Ga.
Filed Aug. 5, 1960, Ser. No. 47,826
5 Claims. (Cl. 200—56)

1. The combination of a switch and scale in which the switch includes an outwardly extending switch op-

erating wand and the scale includes a beam and a pointer connected with the beam for movement therewith in proportional response to weight on said scale, said wand being movably connected with said pointer, whereby motion of said pointer operates said switch, and a ro-



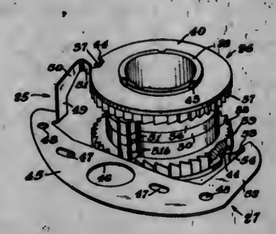
tatably adjustable switch carriage mounted on said scale and supporting said switch for rotatable adjustment therewith, the arrangement being such that the movement of said pointer required to operate said switch is varied by rotatable adjustment of said switch and switch carriage with respect to the scale and pointer.

3,190,981

DIRECTIONAL SIGNAL CANCELING MECHANISM RESPONSIVE TO RELATIVELY LARGE OR RELATIVELY SMALL TURNING MOVEMENTS OF THE VEHICLE'S STEERING APPARATUS

William L. Brown, Garden City, Mich., assignor to Boyne Products, Inc., Boyne City, Mich., a corporation of Michigan

Filed Apr. 20, 1961, Ser. No. 104,380
8 Claims. (Cl. 200—61.34)



5. Direction signaling apparatus comprising a switching member mounted for movement from a neutral position to an operating position and having return means movable therewith into the path of movable canceling cam means operable to restore said switching member to said neutral position; and cooperable indexing means comprising a first part having a connection with said cam means and a second part having a connection with said switching member and movable into engagement with said first part in response to movement of said switching member to said operating position, the engagement of said first and second parts conditioning said cam means for movement into engagement with said return means and restoration of said switching member to said neutral position.

3,190,982

ADJUSTABLE PLUNGER SWITCH

Charles A. Woodcock, Springfield, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Jan. 23, 1962, Ser. No. 168,195
2 Claims. (Cl. 200—61.81)



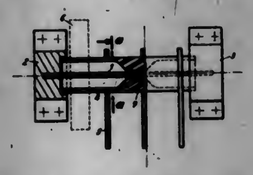
1. A plunger switch adapted for frictional retention in and axial adjustment through a cylindrical bore through a suitable support member, said switch comprising a casing which includes a tube having a free open end, a plunger guided for axial movement through said tube with one end of the plunger extending into said casing, spring means normally resiliently projecting said plunger axially toward and through the free end of said tube to a predetermined operational position, switch contacts carried by said plunger and casing for actuation responsive to axial movement of the plunger, said plunger being movable inwardly completely through said free end, whereby axial pressure on the plunger in excess of that required to thus move it inwardly completely through said free end may be exerted on said free end of the tube to adjust the axial position of said tube within the said bore, said tube having a medial first portion spaced axially from said free open end and normally of greater external diameter in one diametral plane than said through bore to provide a frictional but axially adjustable fit of the tube within the bore, and of smaller internal diameter than said bore in a diametral plane transverse to said one diametral plane for guiding engagement with said plunger, a second portion extending from said free open end to said first portion being of cylindrical configuration and proportioned for free axial reception and movement in said bore to function as a pilot for guiding said first portion into the bore during assembly of said plunger switch.

3,190,983

TORSION SPRING ACTUATED SNAP-ACTION CIRCUIT BREAKER WITH FREE RELEASE LATCH

Karel Kesl, Paris, France, assignor of one-half to Mr. Hoepli, New York, N.Y.

Filed Apr. 12, 1963, Ser. No. 272,652
16 Claims. (Cl. 200—70)



1. In a circuit breaker: a sheath having an axis of revolution and movable contact members mounted in fixed relationship with respect to said sheath for rotation about the said axis; means for rotatively supporting said sheath; at least one torsion blade extending along said axis and

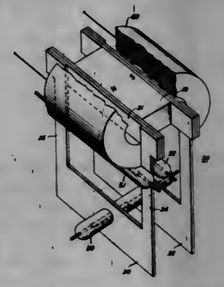
secured in fixed relationship with respect to said supporting means and to said sheath; and free release locking means coaxially mounted on said sheath.

3,190,984

SEALED CONTACT TRANSFER SWITCH

Walter B. Ellwood, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 21, 1963, Ser. No. 260,122
9 Claims. (Cl. 200—87)



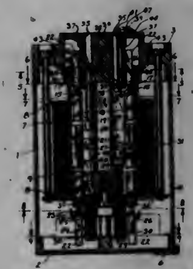
1. A relay comprising switching means closable in response to a first field, said switching means comprising at least one sealed contact reed switch; a permanent magnet for supplying said first field, a pair of magnetically permeable yokes interconnecting said switching means and said permanent magnet, each yoke adjacent a different pole of said permanent magnet and including two parallel flux paths, each of said flux paths having a flux saturation level below the flux level necessary to hold said switching means closed; shunting means comprising at least one flux conducting member interconnecting said two flux paths intermediate said permanent magnet and said switching means, and a coil wound on said pair of flux conducting yokes and embracing said permanent magnet therein for supplying a second flux through at least one of said yokes in a path serially including said two flux paths and said shunting means.

3,190,985

CONVERTIBLE REED CONTACT RELAY

James N. Pearse, Menomonee Falls, and Joseph C. Mayer, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed May 6, 1963, Ser. No. 278,075
6 Claims. (Cl. 200—87)



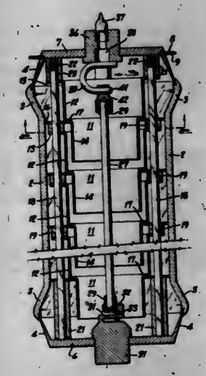
1. In a relay, the combination comprising: a plurality of switches with magnetically operable contacts; an operating coil in proximity to and adapted to operate all of the switches simultaneously; a plurality of magnetic bias means, one associated with each switch, each being operatively associated with and adapted to affect the switch contacts of its associated switch, each magnetic bias means being movable between inactive and biasing positions with respect to its switch, the magnetic bias means being operatively independent of one another so that each is operatively effective only with respect to its associated switch; and a plurality of independently operable operating means, there being one such means for each magnetic bias means to move the magnetic bias means between said positions.

3,190,986

HIGH POWER VACUUM FUSE

Jo Emmett Jennings, La Selva Beach, Calif., assignor, by mesne assignments, to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware

Continuation of application Ser. No. 116,813, June 13, 1961. This application Nov. 23, 1962, Ser. No. 240,212
13 Claims. (Cl. 200—120)



1. A fuse structure, comprising an envelope having a dielectric shell and metallic end plates hermetically attached to the open ends of the shell, a terminal stud on each end plate, a fuse link having its ends secured to the terminal studs and comprising a continuous conductor gauged to take a predetermined level of electric current between said terminal studs and adapted to melt rapidly to form a non-conductive discontinuity in said conductor when said predetermined current level is exceeded, a shield interposed between said fuse link and said dielectric shell and including a plurality of separate cylindrical units, each unit having a pair of flanges extending radially therefrom, and a plurality of dielectric spindles supported between said end plates and engaging each pair of flanges to fix the position of the shield in the envelope.

3,190,987

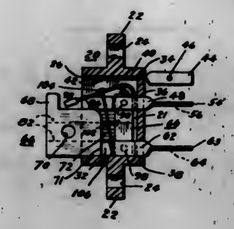
PROTECTORS FOR ELECTRIC CIRCUITS

Aloysius J. Fister, Overland, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Mar. 29, 1961, Ser. No. 99,086
9 Claims. (Cl. 200—121)

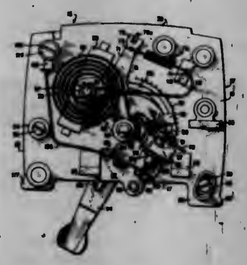
5. The combination of a fuse holder that has a recess therein, electrically-conductive terminals that are mounted on said fuse holder and that have portions thereof disposed within said recess, an electric fuse that comprises a fuse carrier which has a portion thereof disposed in said recess, said fuse carrier being selectively separable from said fuse holder, further terminals that are mounted on said portion of said fuse carrier and that are engageable with the first said terminals when the first said portion of said fuse carrier is telescoped into said recess

in said fuse holder, a finger-receiving portion on said fuse carrier that serves as a gripping portion, an opening in said finger-receiving portion of said fuse carrier that can receive a fuse-removing tool, and interacting guiding surfaces on said fuse holder and on said fuse carrier that will guide said fuse carrier as it is removed from



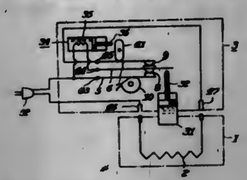
said fuse holder by the insertion of a tool in said opening in said finger-receiving portion of said fuse carrier, said interacting guiding surfaces including a recess and a rib that extends into and is guided by said recess.

3,190,988
ROOM THERMOSTATS
Marvin M. Graham, San Pedro, John W. Wright, Long Beach, and Ralph E. Drummond, Bell, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,915
20 Claims. (Cl. 200—122)



7. A control device comprising:
a base member of insulating material,
a switch mounted on the base member including,
first and second fixed contacts,
a movable contact biased into engagement with the first fixed contact and magnetically responsive to engage the second fixed contact,
a cam rotatably mounted on the base member,
a post rigidly secured to the base member,
a sleeve rotatably mounted on the post,
a cam follower mounted on the sleeve and biased into engagement with the cam,
an auxiliary armature member on the base member displaced from the switch,
a spiral bimetal element secured at one end to the sleeve and disposed in a plane parallel to the base,
and a magnet carried by the free end of the bimetal element for movement between the switch and the auxiliary armature in response to ambient temperature variations to actuate the movable contact of the switch between the first and second fixed contacts.

3,190,989
DETACHABLE AUTOMATIC TEMPERATURE CONTROL PLUG
Tatsuro Komatsu, Yoshiwara-shi, Japan, assignor to Tokyo Shibaura Denki Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company of Japan
Filed Feb. 14, 1962, Ser. No. 173,214
Claims priority, application Japan, Feb. 22, 1961, 36/5,718
3 Claims. (Cl. 200—136.3)



1. A plug-type automatic temperature control device for use in controlling rice cookers, said rice cookers including a kettle and a resistance heater for heating said kettle, said resistance heater having terminals for electrically connecting said control device to said resistance heater and for mounting said control device on said kettle, said control device comprising: a casing mountable in operation on said kettle; an electrical circuit mounted in said casing in positions electrically isolated therefrom for supplying electrical power to said resistance heater; a temperature-responsive device mounted on said casing in a position electrically isolated therefrom for sensing the temperature within said kettle, said temperature-sensing device being adapted to extend into and outwardly of said casing and said kettle when said casing is mounted on said kettle; other terminals connected in said electrical circuit and mounted in said casing in positions electrically isolated therefrom for electrically connecting said control device with said terminals of said resistance heater, said casing being electrically isolated from said resistance heater when said casing is mounted on said kettle, automatic reset-type contacts in said electrical circuit mounted in said casing in positions electrically isolated therefrom, means in said temperature-responsive device for operating said automatic reset contacts automatically to a closed and an open position repetitively in dependence upon the temperature within said kettle; means comprising a rotatably mounted cam cooperative with said automatic reset-type contacts automatically reducing the temperature at which said automatic reset-type contacts close subsequent to the initial opening thereof by said temperature-responsive device, a thermal time-delay device mounted in said casing in a position electrically isolated therefrom; manual reset-type contacts mounted in said casing in positions electrically isolated therefrom and operated by said thermal time-delay device and connected in said electrical circuit in series with said automatic reset-type contacts; and latching means mounted in said casing in positions electrically isolated therefrom for manually holding closed said manual reset-type contacts, said thermal time-delay device including mechanism for actuating said latching means to a position for releasing said manual reset-type contacts when a predetermined amount of heat is stored in said kettle.

3,190,990
EXPLOSIVE ACTUATED SWITCH
Elijah R. Perry, Portland, Oreg., assignor, by mesne assignments, to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 16, 1961, Ser. No. 145,374
5 Claims. (Cl. 200—142)

1. A high speed electrical ground switch, comprising: a stationary switch contact assembly including a pair of contact plates forming the jaws of a stationary contact with a V-shaped slot formed between said plates at one end of said plates and with a portion of said plates extending substantially parallel from said slot toward the other end of said plates, and a resilient stop member positioned adjacent the end of the parallel portions of said plates; resilient backup means for said contact plates;
a movable switch contact assembly including a contact blade attached to one end of a tubular rod whose other end is mounted for rotation on a support member between a first position where said contact blade is remote from said stationary contact plates and a second position where said blade engages said jaws of said contact;
an insulator stack including a plurality of insulating

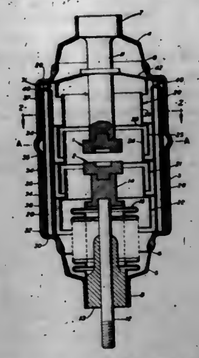


spacer members attached to said support member of said movable switch contact assembly and to said stationary switch contact assembly; and
means for moving said movable contact rod between said first position and said second position to change the condition of said electrical switch between an open-circuit connection and a short-circuit connection, including a cylinder containing a piston having a piston rod pivotally attached to said other end of said contact rod, and a cartridge of explosive propellent material positioned within said cylinder so that the gases of said propellent material cause a sufficient force to be exerted upon said piston when said propellent material explodes to move said contact rod from said first position to said second position and to hold said contact rod in said second position.

3,190,991
SHIELD STRUCTURE FOR VACUUM SWITCHES AND THE LIKE
Jo Emmett Jennings, San Jose, Calif., assignor, by mesne assignments, to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed May 1, 1961, Ser. No. 106,894
9 Claims. (Cl. 200—144)

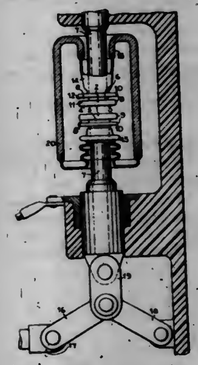
1. In a vacuum component that includes a vacuumized envelope symmetrical about a longitudinal axis and having a pair of opposite endwalls and sidewalls of given interior diameter connecting said endwalls and at least one conductor extending through said envelope between said opposite endwalls and subject to separation intermediate its ends to interrupt conduction therethrough and to thereby provide spaced conductor ends within the envelope; spaced surfaces formed by said envelope wall adjacent opposite ends thereof constituting interiorly annular support surfaces substantially perpendicular to the longitudinal axis of the envelope, shielding means for shielding said sidewalls against impingement of metallic particles emanating from said conductor upon separation thereof

including a cylindrical shielding member in coaxial relation to said conductor and disposed between said conductor and said sidewalls, and shield member support means including a plurality of circumferentially spaced elongated



dielectric support rods extending between said annular support surfaces and alongside said sidewalls substantially parallel to said conductor to secure said shielding member to said envelope.

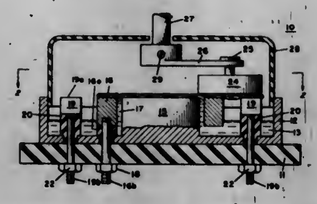
3,190,992
VACUUM SWITCH HAVING CHANNEL IN CONTACTS TO PREVENT MIGRATION OF ROOTS OF AN ARC
Basil Tuxford Digby, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed May 1, 1962, Ser. No. 192,035
Claims priority, application Great Britain, May 2, 1961, 15,881/61
2 Claims. (Cl. 200—144)



1. A direct current vacuum switch comprising:
(a) an evacuated envelope,
(b) two relatively movable electrodes extending respectively into opposite ends of the envelope,
(c) a cylindrical contact member at the inner end of each electrode so that electrical contact can be established at the opposed faces of the contact members,
(d) a circumferentially continuous channel provided in the peripheral side wall of at least one contact member, the channel having substantially parallel opposed walls and extending into the contact member substantially radially inwardly of the axis of the electrodes, so that upon disengagement of the con-

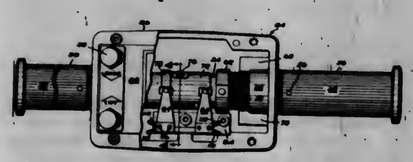
tact members to interrupt a current, the roots of an arc formed on the contact face of the one contact member are intercepted by and extinguished within the channel and are thereby prevented from migrating to vulnerable parts of the switch.

3,190,993
SWITCH WITH MERCURY WETTED CONTACTS
Shinichi Tonooka, Abington, George C. Mergner, Glenside, and Albert J. Williams, Jr., Philadelphia, Pa., assignors to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1962, Ser. No. 242,150
20 Claims. (Cl. 200—152)



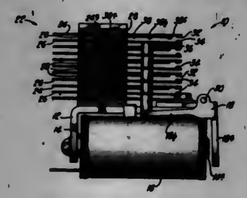
1. A tap switch with mercury wetted contacts comprising a plurality of contacts spaced one from the other, mercury transfer contact means for closing a circuit between a selected one of said contacts and at least one of the remaining contacts, means for supporting said plurality of contacts and said transfer contact means for relative movement one to the other through a path which brings said transfer contact means to a selected circuit-closing position between said selected one contact and others of said remaining contacts, a reservoir for mercury disposed adjacent said plurality of contacts and adjacent said transfer contact means, capillary means within said reservoir extending to said path of relative movement for transferring mercury from said reservoir to said transfer contact means and thence to said plurality of contacts by said relative movement between said transfer contact means and said plurality of contacts.

3,190,994
CAM-ACTUATED CONTROL SWITCH MOUNTING FOR MOTORIZED LIFT TRUCK
Bernard B. Becker, Belmont, and Francis W. Dorion, South Boston, Mass., assignors to Lewis-Shepard Company, Watertown, Mass., a corporation of Massachusetts
Filed Oct. 31, 1963, Ser. No. 320,275
4 Claims. (Cl. 200—157)



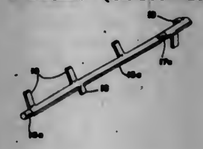
1. In a materials handling truck, a steering bar; a control switch casing mounted on the free end of said steering bar; an operating handle extending transversely through said casing and mounted for rotation in either direction about its longitudinal axis; spring means engaging said operating handle and said casing for biasing said handle toward a neutral position; a camming plate affixed to the circumference of said operating handle within said casing, said camming plate having two raised cam surfaces formed thereon, said cam surfaces longitudinally and circumferentially spaced apart relative to said operating handle; two banks of blade switches having stacked normally spaced apart contact elements, said blade switch banks mounted on the interior of said casing; a cam follower affixed to each said blade switch bank, each said cam follower biased against one of said cam surfaces whereby rotation of said operating handle in one direction progressively closes the contact elements in one of said switch banks and rotation of said operating handle in the other direction progressively closes the contact elements in the other of said switch banks.

3,190,995
DAMPED ELECTRICAL RELAY
George L. Brown, Evanston, Ill., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,191
2 Claims. (Cl. 200—166)



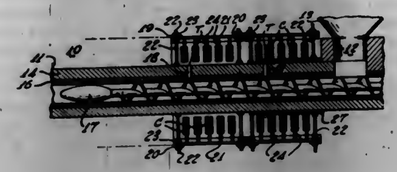
1. A contact spring assembly comprising a plurality of contact springs, dielectric means for supporting the springs in spaced and generally aligned positions, said dielectric means engaging said springs adjacent one end thereof, contact means carried on the other ends of the springs, projecting portions formed integral with at least some of the springs and extending transversely outwardly beyond the dielectric means, a plurality of elongated damping elements each having an end portion rigidly secured to one of the projecting portions and extending generally parallel to the springs, each of said damping elements having an offset end portion at its other end adapted to engage the other end of the spring to which the damping means is secured.

3,190,996
PRECISION FORMED METAL BARS HAVING HARDENED BEARING PORTIONS
William A. Bedford, Jr., Littleton, Colo., assignor, by mesne assignments, to Republic Industrial Corporation, New York, N.Y., a corporation of Delaware
Filed May 2, 1963, Ser. No. 277,611
5 Claims. (Cl. 200—166)



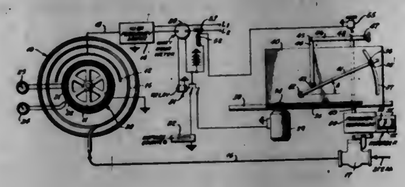
1. A switch actuating bar comprising a long, slim, main body portion, a plurality of fingers of rectangular transverse cross section that are integral with said body portion and project from points spaced along the length thereof in directions perpendicular to the longitudinal axis of the body portion and in different generally radial directions relative to said axis, a plurality of relatively short, cylindrical, bearing portions integral with said body portion and spaced apart along the length thereof, the remainder of said body portion being of substantially uniform rectangular cross section, and the metal of said bearing portions being in a work hardened condition providing a substantially harder surface thereon than the surface of the remainder of said article.

3,190,997
HEATING APPARATUS
Francis Neill Rothacker, Orange, N.J., assignor to Transcontinental Electronics Corporation, a corporation of New Jersey
Filed Feb. 16, 1961, Ser. No. 89,712
6 Claims. (Cl. 219—10.51)



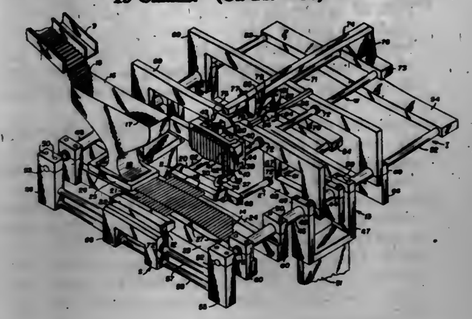
1. A heating device comprising a tubular member of magnetic material having a relatively low Steinmetz coefficient and high magnetic permeability, and coil means surrounding said member for producing therein a low frequency alternating magnetic field, a second tubular member of magnetic material having a relatively high Steinmetz coefficient arranged within and tightly engaging the first named tubular member, and the Steinmetz coefficients for the inner and outer members being respectively above and below .003 and sufficiently different that the ratio of the coefficients for said inner and outer members exceeds a 1.5 to 1 ratio, thereby providing enhanced hysteresis heating of said inner tubular member.

3,190,998
HEAT TREATING OF MATERIALS
Robert G. Dyke, Taunton, Mass., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,689
13 Claims. (Cl. 219—10.47)



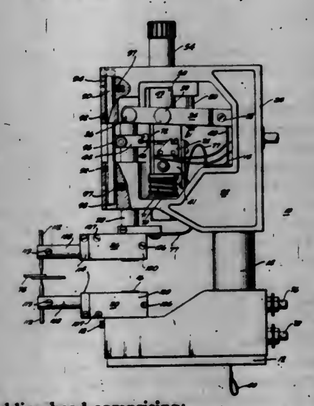
11. A method for heat treating a body of dielectric material comprising subjecting the body to a high frequency electric field to raise the internal temperature of the body, sensing the units of high frequency electric power supplied to raise the internal temperature of the body, measuring the temperature rise within the body resulting from the units of power supplied, applying heat to the exterior of the body to raise the surface temperature of the body, relating the units of power supplied to the temperature rise caused thereby to establish a control factor and controlling the application of external heat in accordance with said control factor during continued subjecting of the body to said high frequency electric field so that the surface temperature of the body increases equally with the interior temperature of the body.

3,190,999
WELDING SYSTEM FOR HONEYCOMB CORE
Fred H. Rohr, San Diego, and Elbert M. Lacey, Chula Vista, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California
Original application Apr. 17, 1961, Ser. No. 103,589, now Patent No. 3,077,533, dated Feb. 12, 1963. Divided and this application June 29, 1962, Ser. No. 207,163
13 Claims. (Cl. 219—80)



1. In a welding system of the character disclosed for forming honeycomb core from corrugated metallic ribbon, the combination of indexing pins and electrode pins internested therewith and disposed respectively in supported relation to aligned and abutted nodes of the corrugated ribbon, means including a body of potting material individual to said indexing and electrode pins respectively for holding the same rigidly in spaced parallel relation, said potting material for said electrode pins being electrically insulative, coacting welding wheels individual to said electrode pins and movable as a unit over said aligned and abutted nodes in electrical engagement therewith, and circuit means interconnecting said coacting wheels and electrode pins for passing welding current therebetween as the wheels move over the nodes.

3,191,000
PRECISION WELDING HEAD
Meredith M. Nyborg, Camarillo, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,460
8 Claims. (Cl. 219—86)



1. A welding head comprising:
a base member;
a first electrode assembly mounted on said base member;

a frame member mounted on said base member adjacent to said first electrode assembly and including a movable member;

a carrier member movably positioned in said frame member;

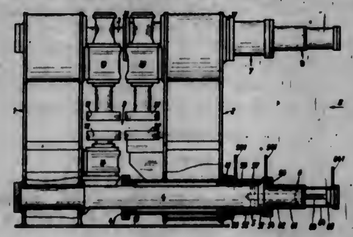
a second electrode assembly and a yoke assembly carried by said carrier member;

a control member adapted to provide a predetermined path of movement for said carrier member and including a pair of guide rods poistioned in said frame member adjacent to said carrier member and a pair of antifriction members mounted to opposite sides of said yoke assembly for engagement with different ones of said guide rods;

transmitting means disposed between said yoke assembly and said movable member for transmitting the movement of said movable member to said carrier member; and

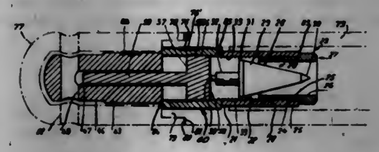
means coacting with said movable member to produce movement of said second electrode assembly toward a workpiece positioned in contact with said first electrode assembly, whereby said control member will prevent said second electrode assembly from transverse movements after it makes contact with said workpiece.

3,191,001
RESISTANCE WELDING MACHINE
Alfred Neukom, Dubendorf, and Rolf Schaal, Schlieren, Switzerland, assignors to H. A. Schlatter A.G., Zollikon, Zurich, Switzerland
Filed Nov. 6, 1962, Ser. No. 235,619
Claims priority, application Switzerland, Nov. 7, 1961, 12,968/61
5 Claims. (Cl. 219—101)



1. In a resistance welding machine, particularly in a machine in which two sections of a workpiece are butt-ended together, in combination, a stationary supporting member including first work holding means adapted to clamp one section of the workpiece; a second supporting member including second work holding means adapted to clamp the other section of the workpiece, said supporting members defining between themselves a welding station and said second supporting member being movable with respect to said stationary supporting member in a straight path between a first position in which the sections clamped by the respective work holding means are spaced apart and a second position in which the sections are butt-ended together at said welding station; guide means for said second supporting member, said guide means comprising a plurality of tie rods each having a first end portion fixed to said stationary supporting member and each slidably supporting said second supporting member, said tie rods being parallel with said path and being arranged symmetrically with respect to said welding station and each thereof having a free second end portion extending beyond said supporting member so that said second supporting member is located between said stationary supporting member and said free second end portions; and advancing means provided on said second end portions for advancing said second supporting member, said advancing means comprising a double-acting piston fixed to the second end portion of the respective tie rod, an advancing cylinder fixed to said second supporting member and reciprocably receiving the respective piston, each of said advancing cylinders defining a pair of internal chambers disposed at the opposite sides of the respective piston, a source of pressure fluid, control means for selectively admitting pressure fluid to said chambers so that said second supporting member is moved toward said stationary supporting member when one of said chambers receives pressure fluid and that the second supporting member is moved away from said stationary supporting member when the other chamber receives pressure fluid, and pressure generating means, one for each of said tie rods, for applying upsetting pressure to the butt end sections of the workpiece when said second supporting member assumes said second position, each of said pressure generating means comprising a high pressure cylinder rigid with the second end portion of the respective tie rod and defining an internal space communicating with the one chamber of the respective advancing cylinder, a plunger reciprocable in said internal space, and shifting means for moving said plunger to thereby increase the pressure within said one chamber when the plunger is moved in a direction to displace the fluid in said space.

3,191,002
ELECTRODE-HOLDING DEVICE FOR ELECTRIC-ARC WELDING
Michel Feldman, 3 Rue Lalande, Paris 14, France
Filed Nov. 19, 1962, Ser. No. 238,653
Claims priority, application France, Sept. 5, 1962, 908,690
8 Claims. (Cl. 219—142)



1. An arc welding electrode-holder comprising an elongated conductive body provided at one end thereof with a transverse bore for fitting an electrode therein, said body being further provided with a longitudinal passage opening into said bore, said body terminating at the end opposite said bore in two parallel arms of segmental cross-section forming therebetween a space constituting an extension of said passage, an electrode-clamping member comprising a rod slidably fitted in said passage and a plate which is transverse with respect to said rod and which is provided with a screw-thread on those edges which are parallel to said rod, an internally-threaded bush co-operating with the screw-threads of said plate, said internally-threaded bush surrounding said arms and, means for securing said internally-threaded bush against longitudinal motion so that as a result of the rotation of said bush said rod comes into contact under pressure with the electrode in a purely longitudinal movement by reason of the guiding of said plate between said arms.

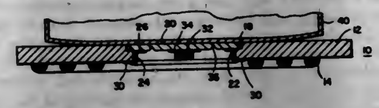
3,191,003
SURFACE HEATING UNIT
Charles H. Yohe, Glen Ellyn, Ill., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1961, Ser. No. 161,154
4 Claims. (Cl. 219—450)

4. A heating unit comprising:

a flat annular structure having a plane surface on which to place an object to be heated, the wall of said structure defining the annular opening having a continuous shoulder,

means for heating said annulus to desired temperature,

a disc of good heat transfer material occupying said annular opening, the periphery of said disc engaging with said shoulder for heat transfer relative thereto and said disc being coplanar with said annular structure so as to provide therewith a substantially continuous plane surface for the support of the object to be heated,



a temperature sensing device fixed to the underside of said disc in heat transfer relation therewith,

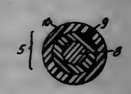
and means for securing said disc to said annular structure and shielding said sensing device from heat energy radiated from surrounding wall surfaces of said annular structure.

3,191,004
ELECTRICALLY HEATED IMMERSIBLE WARMING UNIT
James P. Hocker, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 12, 1962, Ser. No. 230,127
8 Claims. (Cl. 219—461)



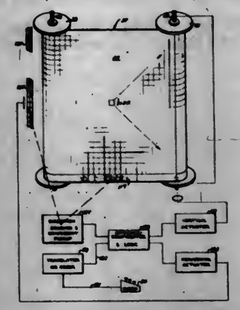
1. An immersible electric warming unit comprising a plate of low expansion ceramic material embodied in a shallow-walled shell whose interior bottom surface is adapted for the support of food serving containers, a heating element adhered to the exterior bottom surface of said shell, moisture impervious and electrically insulating means bonded to said heating element, heat insulating means bonded to said moisture impervious means, and impervious electrical terminal means, said terminal means being electrically connected to said heating element.

3,191,005
ELECTRIC CIRCUIT ARRANGEMENT
John L. Cox 2nd, 17 Westorchard Road, Chappaqua, N.Y.
Filed Oct. 1, 1962, Ser. No. 227,248
16 Claims. (Cl. 219—528)



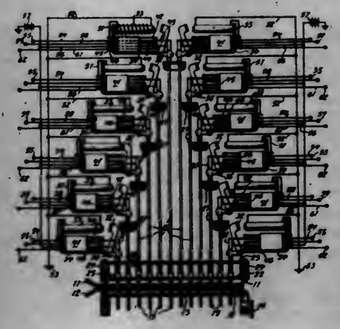
1. An insulated electric conductor, comprising, in combination, a metal wire; an inner imperforate and impervious tubular insulating sheath consisting of a substance selected from the group consisting of polytetrafluoroethylene and fluorinated ethylene-propylene resins entirely enclosing said metal wire; and an outer attaching layer of latently adhesive material having a softening point lower than the softening point of said substance and adapted to become actively adhesive at an elevated temperature below the softening point of said substance, said material being selected from the group consisting of fluorinated ethylene-propylene resins and nylon and surrounding said inner insulating sheath so as to be adapted to serve upon heating as adhesive attachment for said conductor to a support without affecting the insulating properties of said inner tubular insulating sheath.

3,191,006
INFORMATION STORAGE, RETRIEVAL, AND HANDLING APPARATUS
Emik A. Avakian, 92 Juana St., Tuckahoe 7, N.Y.
Filed Apr. 3, 1962, Ser. No. 184,821
11 Claims. (Cl. 235—61.7)



1. Apparatus for locating information stored in a coordinate index system comprising in combination means for registering an index indicative of a particular location of information in the system, an area storage medium having coordinate indexing, output means for outputting information located, means for establishing relative movement between said medium and said output means with respect to any location on said medium and relative to any direction from such location including motion parallel with and also angular to the coordinants of the system, means for sensing coincidence between the addressed coordinate location and the indexing indicia of the medium, means for arresting said movement in the coincident relation and means for initiating the outputting of the located information during arrested movement.

3,191,007
INFORMATION SENSING DEVICE WITH ELECTROMECHANICAL STORAGE
Harold P. Mixer, Boca Raton, Fla., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 28, 1961, Ser. No. 120,262
15 Claims. (Cl. 235—61.11)



1. A device for storing intelligence represented by the movement of a mechanical record sensing member com-

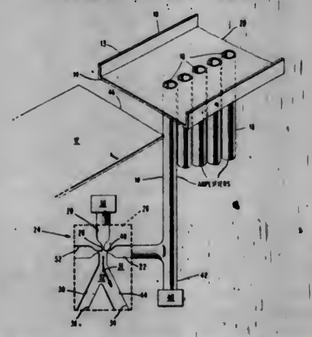
prising, a magnet means associated with said member including a coil and an armature, said armature being mechanically actuable from open to closed gap relationship to said magnet in response to the movement of said mechanical member, and circuit means including a pair of contacts responsive to the actuation of said armature for rendering said coil effective for maintaining said armature actuated.

3,191,008

TABULATING CARD POSITION SENSING DEVICE

Walter G. Wadey, Wynnewood, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 11, 1962, Ser. No. 186,706
4 Claims. (Cl. 235—61.11)



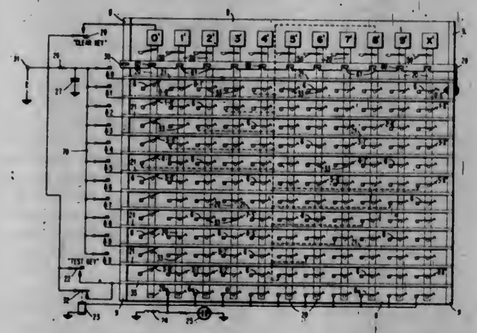
1. A record position sensing mechanism comprising a support adapted to support and guide said record while traveling thereon, said support including at least one aperture, said aperture being disposed in the path of travel of said record, a fluid amplifier having an input channel, first and second output channels, a source of power fluid connected to said input channel normally directing a power stream through said first output channel, means connected between said aperture and said fluid amplifier responsive to said record covering said aperture to switch said power stream from said first to said second output channel.

3,191,009

CHECK DIGIT VERIFIERS

Per Lennart Andersson, Berwyn, and Oliver G. Aberth, Swarthmore, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 17, 1961, Ser. No. 132,151
9 Claims. (Cl. 235—153)



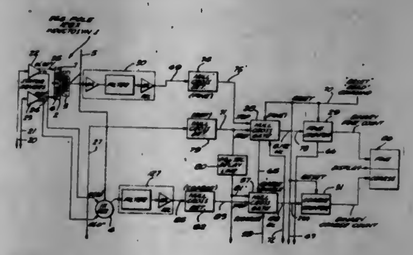
1. A message verifier for employment with a key set to verify the accuracy of a keyboard entry comprising, a plurality of bus bars, similar pluralities of switch contacts associated with each of the bus bars, separate mechanical linkages ganging together the corresponding switch contacts of each plurality of contacts to form separate switching sets adapted upon actuation of a linkage to close the contacts of a set onto the corresponding bus bars, a separate electrical actuator for each mechanical linkage, means connecting each contact of a set to a different actuator, a mechanical latching mechanism engaging said linkages and adapted to hold one of said switching sets closed onto the bus bars at a time, means for energizing said bus bars in accordance with the actuation of said keys on its keyboard, whereby a circuit will be completed through the energized bus bar, a closed contact of an actuated ganged switching set and thence to the appropriate actuator connected to said closed contact, and means carried by each of said likages for actuating said latch mechanism to release a locked linkage and to lock up a new linkage.

3,191,010

ANALOG-DIGITAL CONVERTER

Robert W. Tripp, Eastchester, and Robert Z. Geller, Wantagh, N.Y., assignors to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada

Filed Sept. 7, 1962, Ser. No. 222,151
13 Claims. (Cl. 235—155)



9. An analog-digital converter comprising:
(a) a first position measuring transformer having
  (1) a variable mechanical analog input and
  (2) relatively movable members,
  (3) one of said members having polyphase windings,
  (4) another of said members having a single phase winding for supplying a first phase sensitive relative position signal;
(b) a second position measuring transformer having
  (1) said mechanical analog input and
  (2) relatively movable members,
  (3) the first of said last mentioned members having polyphase windings,
  (4) the second of said last mentioned members having a single phase winding for supplying a second phase sensitive relative position signal; the change in phase of said first phase sensitive signal for a given change in said analog input being an integral multiple of the change in phase of the said second phase sensitive signal produced by the same change in said analog input;
(c) a clock pulse generator supplying pulses to
(d) a frequency divider having an output of
  (1) sub-harmonic frequency as an input to
(e) a polyphase generator having as outputs
  (1) polyphase signals for inputs to said first polyphase windings,

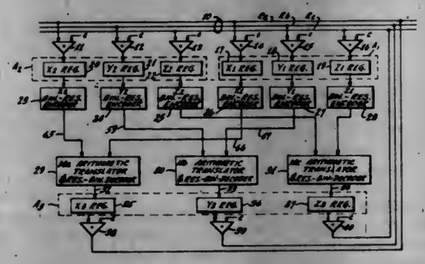
  (2) polyphase signals for inputs to said second polyphase windings and
  (3) a reference signal as an input to
(f) a first null crossing detector having an output of a
  (1) first control signal;
(g) a second null crossing detector having an input of
  (1) said first phase sensitive relative position signal and an output of
  (2) a second control signal;
(h) a third null crossing detector having an input of
  (1) said second phase sensitive relative position signal and an output of
  (2) a third control signal;
(i) a first gate having inputs of
  (1) said clock pulses,
  (2) said first control signal and
  (3) said second control signal, and having an output of
  (4) a first number of clock pulses representing a first digital number corresponding to the time difference between the first control signal and the second control signal,
(j) a switch having inputs of
  (1) an early train of clock pulses,
  (2) a later train of clock pulses,
  (3) a signal proportional to said first digital number, and having an output of
  (4) said early train of clock pulses when said first digital number is less than half of the range of said first digital number, or
  (5) said later train of clock pulses when said first digital number is greater than half of said range of said first digital number,
(k) a second gate having inputs of
  (1) said early train or said late train of said clock pulses,
  (2) said first control signal and
  (3) said third control signal, and having an output of
  (4) a second number of clock pulses representing a second digital number corresponding to the time difference between the first control signal and the third control signal,
  (5) a full range of said first digital number being equivalent to one count of said second digital number.

3,191,011

APPARATUS FOR DETERMINING THE ALGEBRAIC SIGN OF A RESIDUE CODED NUMBER

Richard A. Baugh, Collingswood, and Elmer C. Day, Haddonfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed July 19, 1961, Ser. No. 125,183
2 Claims. (Cl. 235—156)



2. In apparatus including multiconductor busses R_a, R_b and R_c for corresponding binary coded digits of residue coded numbers derived from the least positive residues of corresponding decimal numbers with respect to a plurality of bases or moduli M_a, M_b and M_c which are prime to each other and where one of the moduli is even, where the quantity of available different numbers is equal to M which is the product of the bases or moduli M_a, M_b and M_c, and where positive residue coded numbers correspond with positive decimal numbers in the range of 0 through

$$\frac{M}{2}-1$$

and where negative residue coded numbers correspond with positive decimal numbers in the range of $M/2$ through $M-1$, said residue coded numbers being characterized in that the numbers consist of groups of positive numbers and groups of negative numbers, means for determining the sign of any particular residue coded number R_a' R_b' R_c', comprising in combination,

M_a and M_b arithmetic translators and decoders each having inputs for a minuend digit and a subtrahend digit and having an output for a binary coded difference digit,

at least three encoders each having an input for a binary coded residue number digit and having an output consisting of a plurality of individual digit-indicating conductors,

means including said encoders for coupling a binary coded digit R_c' from said R_c bus to subtrahend inputs of both of said arithmetic translators and decoders,

means including said encoders for coupling a binary coded digit R_a' from said R_a bus to the minuend input of the M_a arithmetic translator and decoder, and for coupling a binary coded digit R_b' from said R_b bus to the minuend input of the M_b arithmetic translator and decoder,

whereby said two arithmetic translators and decoders provide respective output binary coded difference digits R_a'' and R_b'',

a sign translator matrix having two inputs for two respective digits and having an output, and

means including said encoders for coupling the outputs of said two arithmetic translators and decoders to the two inputs of said sign translator matrix,

whereby the output of said sign translator matrix indicates the algebraic sign of the residue coded number having digits R_a', R_b' and R_c'.

3,191,012

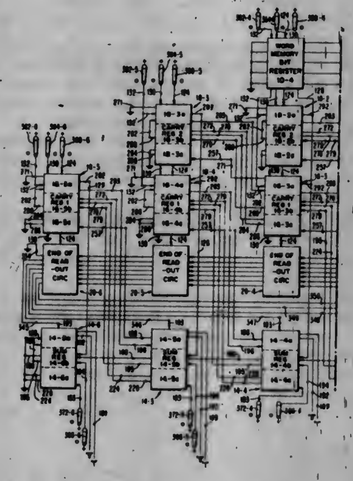
MEMORY READOUT AND SUMMING SYSTEM

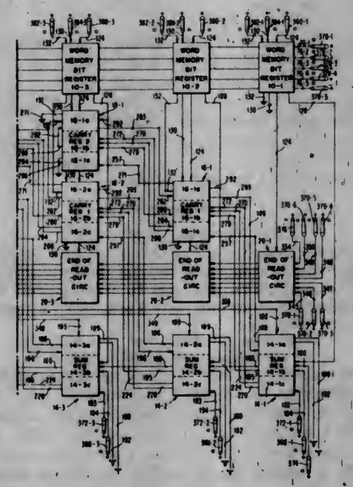
Harold Fleisher, Poughkeepsie, and Robert L. Roth, Briarcliff Manor, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 24, 1961, Ser. No. 133,679
9 Claims. (Cl. 235—164)

8. A memory readout and adding system comprising, in combination, a memory consisting of $n \times m$ storage means arranged in n word rows and m bit columns and settable selectively to opposite binary states, readout means associated with each said storage means and operable by a readout signal applied thereto to produce an output signal on a first output line when the corresponding said storage means is in one binary state and on a second output line when the corresponding said storage means is in the opposite binary state, means connecting said readout means of each said storage means after the first storage means in each said column to said first output line of the preceding storage means in the same column, an m order binary accumulator arranged in said m columns, each said order operable to store a first binary digit in a first storage element, to receive a second binary digit in a second storage element, to add said first and second binary digits storing the binary sum in a third

storage element and propagating a binary digit carry in accordance with said sum, means common connecting said second output lines of all said storage means in each said column to an input terminal of said second storage element of a corresponding order of said accumulator whereby each signal on said common connecting means enters a count in the corresponding order of said accumulator, binary carry registers corresponding to each order of said accumulator, each said carry register arranged in a said column corresponding to the next higher order



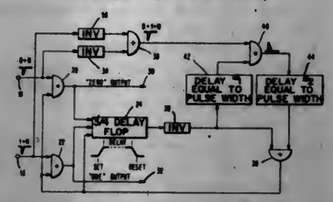


from the associated said accumulator, readout means associated with each said carry register and operable by a readout signal applied thereto to produce an output signal on a first outline line when the carry register is in one binary state and on a second output line when the carry register is in the opposite binary state, means connecting said readout means of each said carry register to said first output line of the *m*th said storage means in the corresponding said column and means connecting said second output line of each said carry register to the said common connecting means of the corresponding said column.

3,191,013
PHASE MODULATION READ OUT CIRCUIT

Trevor Drake Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,699
4 Claims. (Cl. 235—164)

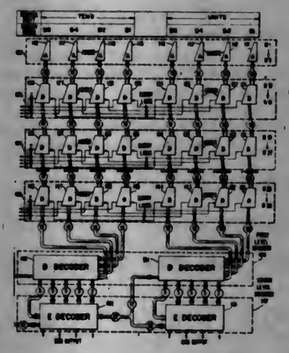


1. Means for eliminating non-significant pulse signals from a series of information pulse signals comprising a control circuit to produce an output signal of a first or second level, means for applying said information pulse signals to switch said control circuit to change the output signal therefrom from said first to said second level, an AND gate circuit, means for applying said non-significant and information pulse signals to said AND gate circuit, means for applying an output signal from said control circuit to inhibit the passage of signals through said AND gate circuit when said control circuit produces an output signal of said second level and to permit the passage of signals when said control circuit produces an output signal of said first level, means for applying said non-significant pulse signals to reswitch said control circuit to change the output signal therefrom from said second level to said first level, and the output signal level from said control circuit being automatically reswitched from said second level to said first level after a pre-determined time period in the absence of said non-significant pulses.

3,191,014
MIXED CODE CALCULATOR

Robert I. Roth, Briarcliff Manor, and Harold Fleisher, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 30, 1961, Ser. No. 148,346
9 Claims. (Cl. 235—175)



1. In a binary coded decimal adder for producing the sum of a plurality of numbers wherein each decimal digit of each number is represented by four binary orders respectively having values of "one," "two," "four" and "eight," said numbers being divided into groups the first group having eighteen numbers and each other group having nine numbers,

a binary digit input means for each binary order of each number,

carry input means associated with each binary order of each group of numbers,

adding means associated with each binary order of each group of numbers, said adding means responsive to the associated carry input means and to the associated binary digit input means for producing the sum thereof, said means having twenty provisional sum output means respectively associated with provisional sums of zero through nineteen,

means associated with each binary order in each group of numbers responsive to the provisional sum output means associated with provisional sums of ten through nineteen for activating the carry input means associated with the same group of numbers and with the corresponding binary order of the next higher decimal digit,

actual sum output means associated with each adding means, said actual sum output means having ten outputs respectively associated with sums of zero through nine, each actual sum output means being responsive to two provisional sum output means, one respectively in the group of provisional sum output means zero to nine and one respectively in the group of provisional sum output means ten through nineteen,

a first decoding means associated with each decimal digit for decoding the actual sum output from the adding means associated with the "one," "two," "four," and "eight" binary digital position of the last group of numbers in the respective decimal digit into a "one," "two," "four," "six" and "eight" code and carries into the next decimal order, said first decoding means including carry output means, five sets of output means respectively associated with values of "one," "two," "four," "six" and "eight," and means for selectively activating said output means in response to the associated actual sum output means,

sum output means associated with each decimal digit for manifesting in binary coded decimal form the respective decimal sum digits,

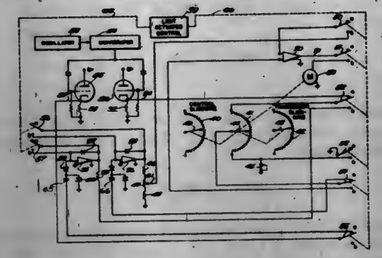
second decoding means associated with each decimal digit having second decoder carry output means, means to activate said second decoder output means and means to activate the sum output means associated with the respective decimal digit, said second decoding means being responsive to the output means of the first decoding means associated with the same decimal digit, and to carry output means of first and second decoding means associated with the next lower decimal order.

3,191,015
AVERAGING SYSTEM

Carl W. Hansen, Wayland, and Anthony Cedrone, Brighton, Mass., assignors, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed July 25, 1960, Ser. No. 44,992
4 Claims. (Cl. 235—183)

4. Apparatus for computing the average value of a physically expressed variable for a period of time comprising, means for determining said period of time providing a first timing signal at the beginning of said period and a second timing signal at the end of said period; an oscillator adapted to oscillate at any preselected one of a range of frequencies; a pulse generator coupled to said oscillator adapted to provide an output pulse of predetermined amplitude and length in response to each of said oscillations; integration means operative in response to said first timing signal coupled to said pulse generator and adapted to provide as an output a voltage proportional to the sum of said generator pulses; a slidewire potentiometer having a movable arm, the position of said arm on said slidewire being representative of the value of said physically expressed variable; means for applying said generator pulses across said slidewire; second integration means operative in response to said first timing signal for

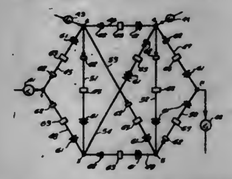


integrating that portion of said generator pulses appearing on said movable arm; means operative in response to said second timing signal for obtaining the ratio of the values of the outputs of said first and said second integration means.

3,191,016
ANALOG COMPUTER

William D. Holak, Crum Lynne, Clifford E. McCarty, Ridley Park, and Erkki K. Hyypolainen, Chester, Pa., assignors to Scott Paper Company, Chester, Pa., a corporation of Pennsylvania

Filed Jan. 13, 1959, Ser. No. 786,564
14 Claims. (Cl. 235—185)



1. In an analog computer, a network having a plurality of terminals including at least one input terminal, one output terminals, one of which flows routes includes said stituting network nodes in an internal network, said internal network having at least two flow routes each comprising at least one flow path connecting said input and output terminals, one of which flow routes includes said intermediate terminal dividing such flow route into two flow paths, at least one potential source element in at least one of the flow paths in the internal network and rectifiers in enough of the flow paths to eliminate circulating flow in the internal network, and at least one flow path including a constant flow generator between the output and input terminals external of the internal network, the improvement comprising at least one element in at least one of said routes of the internal network to limit flow through said route to a predetermined maximum which element consumes essentially no energy in the process until a predetermined current level is exceeded.

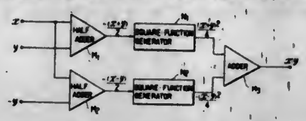
3,191,017
ANALOG MULTIPLIER

Takeo Misra and Junzo Iwata, Kitatama-gun, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Sept. 11, 1962, Ser. No. 222,878
6 Claims. (Cl. 235—194)

2. A multiplier comprising magnetic summing-amplifier means having a pair of flux-opposed control windings energizable by respective input signals and having respective input terminals for producing an output signal determined

by the subtractive combination of the input signals and proportional to the difference of the sums of input signals applied to each of said terminals; first input-impedance



means connected to one of said terminals of said summing-amplifier means for applying thereto a signal proportional to the function

$$\pm\frac{(x+y)^2}{2}$$

generated from a pair of signals respectively proportional to the variables $\pm x$ and $\pm y$, respectively, said first input-impedance means including a square-function generating network responsive to said signals respectively proportional to said variables x and y, said network comprising a multiplicity of diodes having corresponding output sides connected in parallel to the corresponding terminal of said summing-amplifier means, first, second and third resistor means connected in parallel to corresponding input sides of each diode, all of said second resistor means of each of said networks being concurrently energized by said signal proportional to said variable x, all of said third resistor means being of an ohmic resistance equal to that of the respective second resistor means while being concurrently energized by said signal proportional to said variable y, all of said first resistor means having substantially identical ohmic resistance, and biasing means for applying to successive ones of said first resistor means biasing potentials of stepped magnitudes at a substantially constant potential increment; second input-impedance means connected to one of said terminals of said summing-amplifier means for applying thereto a signal proportional to the function

$$\pm\frac{x^2}{2}$$

generated from said signal proportional to the variable $\pm$; and third input-impedance means connected to one of said terminals of said summing-amplifier means for applying thereto a signal proportional to the function

$$\pm\frac{y^2}{2}$$

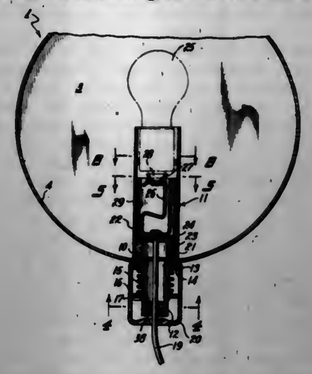
generated from said signal proportional to the variable y whereby said summing-amplifier means combines said functions according to the relationship

$$\frac{(x+y)^2}{2}-\frac{x^2}{2}-\frac{y^2}{2}$$

so that said output signal is proportional to the product xy of said variables.

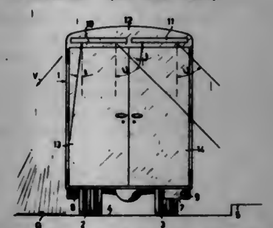
3,191,018
SAFETY LIGHT
Harold D. Alderson, 309 Pearl St., Rockford, Ind.
Filed Jan. 18, 1962, Ser. No. 167,025
4 Claims. (Cl. 240—8.2)

4. A safety light for a vehicle wherein vibrations transmitted to a bulb are minimized, comprising a housing, a flange extending about the front of said housing, said housing being open at the front end and a lens having a raised portion about its edge covering said opening, said lens being attached to said flange by clamps on said flange which bend over the edge of said lens and overlie a portion of the top of the lens and by spring clips rotatably attached to said clamps which snap over the raised portion of said lens; a bulb mounting assembly secured to said housing, said bulb mounting assembly including a stem secured to a cup shaped socket, said stem fitting through a hole in said housing, a collar secured to said stem



and a coil spring mounted under compression between said collar and said housing thereby resiliently clamping the cup shaped socket against the housing.

3,191,019
VEHICLE ILLUMINATING SYSTEM
Johannes Rijnders and Charles Henri Joseph Anderson, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,460
Claims priority, application Netherlands, Dec. 29, 1961, 273,092
6 Claims. (Cl. 240—8.3)

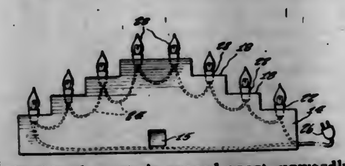


1. An illuminating system for the rear wall of a truck, bus or similar vehicle comprising at least one elongated light source, said light source having individual light units, means for mounting said light source adjacent to the top of said vehicle, individual screening means for said light units which direct the light rays emanating from said individual light units away from direct observation from the left side of the vehicle looking at said rear wall thereof, said screening means being at different angles relative to the longitudinal axis of said light source, each of said light units having corresponding individual optical concentrating means, said individual screening means being so arranged that each of said optical concentrating means associated with the adjacent light unit have only the light rays of said adjacent light unit impinge thereon.

3,191,020
DECORATIVE WINDOW LAMP ASSEMBLY
Smith B. Miller, Winchester, Ind.
(1603 S. Pittsburgh St., South Connellsville, Pa.)
Filed June 25, 1962, Ser. No. 205,039
1 Claim. (Cl. 240—10)

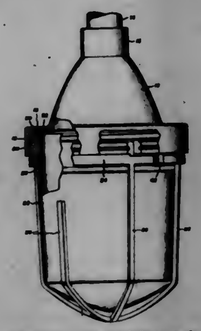
A candelabra assembly kit comprising, in combination, a hollow main body member having an interior chamber, said main body member having a plurality of symmetri-

cally arranged and vertically spaced apart platforms, a plurality of lamp sockets, one of each of said lamp sockets being mountable on each one of said platforms, electrical wiring electrically connecting said lamp sockets together, individual lamps mounted within each one of said lamp sockets, said main body member comprising a pair of substantially identical side elements, end walls integrally con-



necting said side elements in spaced apart, upwardly converging relationship, each of said platforms being successively narrower than an adjacent lower platform and one of said side elements including a square central opening for receiving a window latch element therethrough for holding said candelabra to said window latch element when said condelabra is standing upon a window unit, thereby preventing any movement of said candelabra.

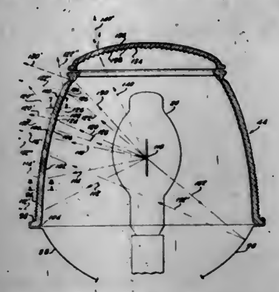
3,191,021
LIGHTING FIXTURE
Richard C. Berry, Camillus, and Marion C. Snow, Cazenovia, N.Y., assignors to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed May 21, 1962, Ser. No. 196,075
4 Claims. (Cl. 240—11.2)



3. A lighting fixture comprising a housing adapted to receive illumination means, said housing having a cylindrical opening formed with a plurality of continuous internal threads, a globe formed at its upper end with external threads complemental with the threads in said opening, a guard encircling said globe and formed at its upper end with external threads complemental to the threads in said opening and on said globe, and said globe and guard having interlocking means to prevent relative rotation between the globe and guard.

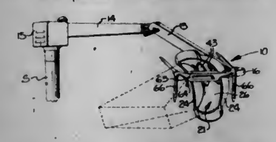
3,191,022
LUMINAIRE
Vearl S. Wisce, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 775,604, Nov. 21, 1958. This application Mar. 1, 1962, Ser. No. 177,936
8 Claims. (Cl. 240—25)

1. A post mounted luminaire comprising a mounting sleeve member having an internal flange adapted to be connected to a post, a light source base on said sleeve member, a light source on said base, a substantially pan-shaped reflector of shallow depth having an upper, outer, annular flange, a lower, inner, centrally located restricted portion and with at least a major portion of said reflector located below said light source, vertically adjustable means between said sleeve member and said lower restricted portion of said reflector and mounting said reflector on said sleeve member for vertical adjustment thereon and in a position to reflect light from said light source upwardly and laterally across a vertical center line passing through said light source, the reflected light passing below said light source, a substantially cylindrical



refractor having its lower end mounted on the flange of said reflector, said reflector constituting means for directing light from the light source to the lower portions of said refractor, said refractor including means at the lower portion thereof for directing direct light from said light source in a substantially parallel radially and upwardly extending beam, and means at the upper portion thereof for directing light upwardly, and a refractor cover over the top of said substantially cylindrical refractor and having light directing means for transmitting the greater amount of direct light incident thereon to near zenith direction.

3,191,023
LIGHTING DEVICE FOR DENTAL AND SURGICAL PROCEDURES
Daryl D. Sullivan, Corning, N.Y., and Arthur L. Jones and Eugene J. Neal, Jr., Charlotte, N.C.; said Sullivan assignor to Corning Glass Works, Corning, N.Y., a corporation of New York; said Jones and Neal, Jr., assignors to Pelton and Crane Company, Charlotte, N.C., a corporation of North Carolina
Filed May 17, 1963, Ser. No. 281,138
9 Claims. (Cl. 240—41.15)



1. A lighting device for illuminating the oral cavity of a person to facilitate dental and surgical procedures, said lighting device comprising:

(a) a light source having a horizontally-oriented filament for providing illumination when energized,

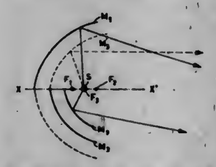
(b) shield means disposed forwardly of said light source in covering relation to said horizontally-oriented filament,

(c) vertically-oriented reflector means disposed behind said light source and extending above and below said light source, and

(d) said vertically-oriented reflector means being substantially in the shape of a portion of an elliptic paraboloid having a vertical height greater than the horizontal width and presenting a concave surface opposed to said horizontally-oriented filament

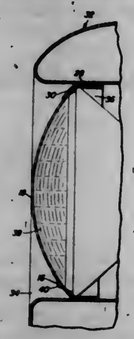
and having an optical axis intersecting said horizontally-oriented filament in perpendicular relation thereto to reflect light emanating from the energized filament of said light source in a horizontally-oriented pattern for illumination of the oral cavity of a person.

3,191,024
CAR HEAD LAMP
Jacques Bardin, Saint-Cloud, and Didier-Abel Fleury, Paris, France, assignors to Societe Anonyme Lampe Norma Societe "Auto-Lampe," Paris, France
Filed May 7, 1962, Ser. No. 192,685
Claims priority, application France, May 10, 1961, 861,374
2 Claims. (Cl. 240—41.35)



1. An auto headlamp comprising a reflector having two approximately half parabolic segments provided with foci spatially arranged along the reflector axis, a source of light between said foci and on said reflector axis, said reflector segments being offset with respect to each other, and another approximately half parabolic segment, said other half parabolic segment being mounted to rotate about said reflector axis and to move through the gap formed between said two reflector parabolic segments to block one of the latter from receiving the rays of light from said light source, the focus of said other half parabolic segment corresponding substantially with the part of the light source arranged in the lamp intersecting the reflector axis.

3,191,025
HEADLIGHT ADAPTER
Joseph K. Harker, 2784 East 3400 South, Salt Lake City, Utah
Filed May 7, 1963, Ser. No. 278,702
2 Claims. (Cl. 240—46.57)



1. In combination with an automotive vehicle having a circular headlight including a convex spherical lens and mounted in a generally cylindrical rim confined within a generally cylindrical recess in the vehicle, the space between the walls of said recess and the rim being generally cylindrical and thin in radial width, a headlight adapter comprising a convex spherical lens for passing monochromatic light, means securing said adapter lens over the outer convex surface of said headlight lens with the concave surface of said adapter lens disposed in surface-to-surface engagement with the convex surface of said headlight lens, said means including a plurality of resilient straps circumferentially spaced at predetermined points about the adapter lens, each of said straps having a first straight leg terminating at one end in a second angulated leg, said legs being attached to the outer convex surface of said adapter lens with said second lens extending generally radially of said adapter lens from the outer periphery thereof and said first legs embracing the outer periphery of said adapter lens and said headlight rim therebetween and frictionally received in said space between the confronting walls of said recess and the rim, said headlight lens including a plurality of aligning members at points spaced circumferentially about its outer periphery projecting outwardly from its convex surface, said adapter lens including a plurality of deformed portions spaced circumferentially about its outer periphery with each deformed portion defining a recess opening outwardly of the concave surface of said adapter lens and snugly and seatingly receiving the corresponding aligning member carried by said headlight lens.

3,191,026
PROJECTOR OF RADIATIONS
Samuel Leon Perret, 24 Rue Matile, Neuchatel, Switzerland
Filed Oct. 31, 1962, Ser. No. 234,469
1 Claim. (Cl. 240—103)

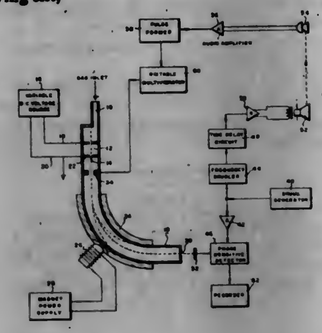


A projector of radiations, comprising a source of radiations of the pin-point type, a reflector of elongated shape having a longitudinal slot from which the radiation issue, said reflector comprising a surface whose sections are ellipses through planes perpendicular to said slot, the first focuses of all the elliptical sections being located on a first conic whose apex coincides with the center of said source, and the second focuses of said elliptical sections being located on a second conic of the same class as the first and located in the same plane, which is a symmetry plane of the surface passing through said slot and containing the center of said source, whereby said surface concentrates the radiations along said second conic.

3,191,027
MASS SPECTROMETER WITH MEANS TO IMPRESS A FLUCTUATING COMPONENT UPON THE ION STREAM AND MEANS TO DETECT THE SAME
Frank H. Field, Houston, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,196
1 Claim. (Cl. 250—41.9)

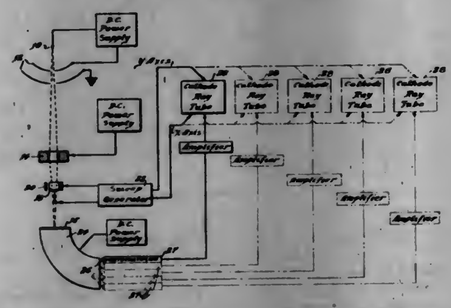
In a mass spectrometer analyzer having an inlet end and an outlet end, the combination comprising
a gas inlet at said inlet end of said analyzer,
an ionization chamber within said analyzer adjacent said gas inlet,
an accelerating electrode adjacent said ionization chamber but remote from said gas inlet,
means for impressing a first voltage upon said ionization chamber and said accelerating electrode, said first voltage being a variable D.C. voltage,

an electromagnet juxtaposed on said analyzer intermediate said accelerating electrode and said outlet end,
a magnet voltage circuit for applying a constant magnetic field to the analyzer,
a resolving slit in the outlet end of said analyzer,
a retarder electrode positioned within said analyzer intermediate said accelerating electrode and said resolving slit,



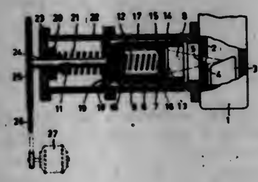
means for impressing a second voltage on said retarder electrode and for varying said second voltage periodically within limits so that said second voltage is at all times greater than said first voltage, whereby a fluctuating component is impressed upon the ion stream,
and means for collecting ions emitted through said resolving slit, said means being operative to detect the fluctuating component of the ion current.

3,191,028
SCANNING ELECTRON MICROSCOPE
Albert V. Crewe, Palos Park, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 22, 1963, Ser. No. 274,878
13 Claims. (Cl. 250—49.5)



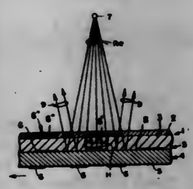
1. A scanning electron microscope comprising field emission electron source means for generating a narrow beam of monoenergetic electrons, means for mounting a specimen, means for focusing said electron beam into a spot approximately 10–100 A. in diameter on said specimen, means for scanning said focused electron spot over the surface of said specimen, means for separating electrons transmitted through said specimen into discrete energy levels thereof, means for detecting said separated electrons at a discrete energy level thereof, a cathode ray tube, means for synchronizing the X and Y axis sweeps of said cathode ray tube with the scan of said electron spot, and means for connecting the output of said detecting means to said cathode ray tube whereby the display intensity thereof is responsive to the output of said detecting means.

3,191,029
MICRORADIOGRAPHIC DEVICE WITH MEANS TO CONTINUOUSLY ROTATE A PHOTOGRAPHIC FILM AND SPECIMEN IN AN X-RAY BEAM
Gerhard Heinrich Friedrich de Vries, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 6, 1962, Ser. No. 200,387
Claims priority, application Netherlands, June 29, 1961, 266,528
2 Claims. (Cl. 250—52)



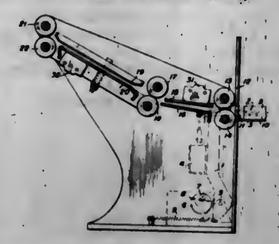
1. Apparatus for making X-ray photographs comprising an X-ray tube having a window of a material permeable to X-rays, means for holding a specimen on an associated film in the beam of X-rays passing through said window, and means for rotating said specimen and film holding means about an axis coincident with the central ray within the said beam and normal to the image surface of the film for continuously exposing the same area of said specimen and film to said beam while being rotated.

3,191,030
PROCESS OF MAKING AND USING THERMOGRAPHIC REPRODUCTION PAPER
George C. Huett, Hartwell L. Briggs, Cornelius B. Lawyer, and Joseph W. Warton, Chicago, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed Nov. 2, 1962, Ser. No. 235,015
7 Claims. (Cl. 250—65)



1. A process for graphically reproducing an original which comprises: placing an original having preferential radiation absorbing areas in contact with a layer of a visibly heat-sensitive composition supported on a cellulosic substrate, said composition containing a 2,3-dihydroxy naphthalene-6-sulfonic acid complex salt of a diazo compound, and an organic acid having a dissociation constant varying from that of citric acid to that of benzene sulfonic acid, and thereafter irradiating said original with heat producing radiations to effect a molecular rearrangement of said diazo complex to form an azoic dye whereby said original is visibly reproduced.

3,191,031
APPARATUS FOR UNLOADING FILM SHEET CASSETTES
Karel Marcel Sano, Borsbeek-Antwerp, and Frederik Juliaan Van Landeghem, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company
Filed Jan. 9, 1962, Ser. No. 165,192
Claims priority, application Great Britain, July 21, 1961, 26,584/61
7 Claims. (Cl. 250—68)



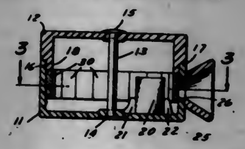
1. Apparatus for successively unloading film sheet cassettes comprising a light tight housing having an inlet opening for receiving the film sheets and an outlet opening for discharging the film sheets, film conveyer means mounted in said housing adjacent said inlet and outlet openings, at least one intermediate film conveyer means mounted in said housing between said film conveyer means at said inlet and outlet openings, film guide means mounted between said film conveyer means, means for removing said film sheets from the open cassettes and for delivering the sheets to said film conveyer means at said inlet opening first driving means for operating said film conveyer means at a predetermined first speed, second drive means for operating said film conveyer means at said inlet opening and said intermediate film conveyer means at a predetermined second speed higher than said first speed, and means responsive to the passing of said film sheets over said guide means for operating said conveyer means at said inlet opening and said intermediate conveyer means at said predetermined faster speed.

3,191,032
X-RAY FILM CASSETTE
Arthur W. Buck, 8709 Xograph Ave., St. Louis, Mo.
Filed Mar. 11, 1963, Ser. No. 264,247
3 Claims. (Cl. 250—68)



1. A cassette comprising:
a frame formed of a generally C-shaped channel which defines the perimeter of the cassette;
said channel having first and second inwardly extending leg portions which are spaced from one another by a web;
a laminated front panel having a central Bakelite sheet with moistureproof layers adhered to the forward and rear surfaces thereof;
a back member;
hinge means movably securing said back member to said frame first leg portion;
said front panel being mounted within said frame with its forward surface abutting against said second leg portion;
side and end bar members disposed with said frame channel and extending between said first leg portion and the rear surface of said front panel;
said side bar members having recesses therein beneath first leg portion;
at least a pair of leaf spring members rotatably attached to said back member;
said leaf spring members being rotatable to a position whereat the ends thereof project into said recesses and beneath said first leg portion to thus prevent said back member from being pivoted about said hinge means to an open position;
said leaf spring members also being rotatable to a position whereat the ends thereof are out of said recesses to thus permit said back member to be pivoted to an open position;
said side and end bar members having dull, light absorbing anodized surfaces on the portions thereof which are visible when said back member is pivoted to an open position.

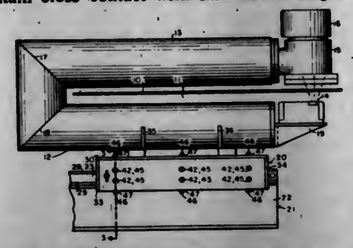
3,191,033
RADIATION FALLOUT METER
Harold Greer, 710 N. June St., Los Angeles, Calif., and Richard William Slocum, Jr., Portuguese Bend, Calif. (22 Southfield Drive, Rolling Hills, Calif.)
Filed May 11, 1962, Ser. No. 193,914
4 Claims. (Cl. 250—78)



1. A meter for detecting and measuring the intensity of ambient penetrating radiation comprising:
(A) a light tight housing having two cylindrical portions in interesting relationship and rotatable with respect to each other;
(B) a scintillating material capable of emitting visible light flashes under the influence of penetrating radiation, said scintillating material being disposed on one of said housing portions;
(C) an eye piece on said one of said housing portions arranged to permit viewing said scintillating material;
(D) a set of gradated light absorbing filters forming a dependent skirt on the other one of said housing portions, said skirt being disposed to rotate between said scintillating material and said eye piece;
(E) and a scale on said other housing portion and calibrated to indicate radiation intensity, whereby a viewer looking through said eye piece may rotate said housing portions with respect to each other until substantially no light reaches his eye to determine the radiation intensity.

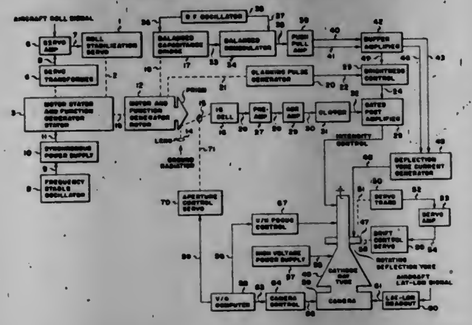
3,191,034
RETRACTABLE MOUNT FOR RADIATION THICKNESS GAUGE
Paul Cherkas, Levittown, N.J., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Original application July 12, 1954, Ser. No. 442,654, now Patent No. 2,992,620, dated July 18, 1961. Divided and this application Nov. 29, 1960, Ser. No. 72,338
5 Claims. (Cl. 250—83)

1. A radiation type thickness gauge comprising, in combination, a head structure adapted to carry a source of penetrative radiation and a radiation sensitive detector in spaced relationship with a material being gauged, a support bed, a flexible track secured to said support bed and adapted to slidably support said head structure for longitudinal movement thereon, means for adjusting the curvature of said track while secured to said support bed, said head structure being arranged to retain a grip upon and to maintain close contact with said track independently



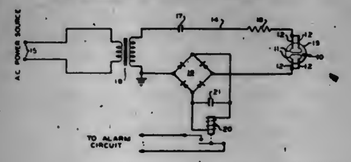
of the tilting of said support bed about an axis substantially parallel to said track.

3,191,035
INFRARED MAPPING SYSTEM
Elvin S. Brumfield, Temple City, Calif., and Michael F. Braun, Burlington, Iowa, assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 21, 1961, Ser. No. 161,202
8 Claims. (Cl. 250—83.3)



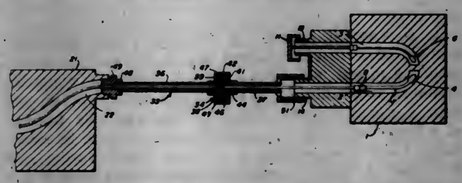
2. An airborne infrared mapping system capable of detecting the infrared radiation of objects of interest and providing a visual representation thereof comprising: a rotatable optical system, means for rotating said rotatable optical system comprising a synchronous motor having a rotor and stator, means for stabilizing said stator to inertial space comprising a roll stabilization servo geared to said stator, a servo amplifier electrically connected to said roll stabilization servo, a servo transformer in feedback association with said stator and electrically connected to said servo amplifier, said servo amplifier also receiving an input indicative of aircraft roll, an infrared cell in optical association with said rotatable optical system which produces electrical signal in accordance with the infrared radiation instantaneous field of view of said rotatable optical system, means located between said rotatable optical system and said infrared cell for varying the effective scan of said rotatable optical system responsive to aircraft velocity and aircraft height, a cathode ray tube having intensity control means, sweep control means, and a presentation face, means connecting said infrared cell to said intensity control means for varying the intensity of the electron beam of said cathode ray tube in accordance with the electrical output of said infrared cell, means for synchronizing the sweep of said cathode ray tube with said rotatable optical system comprising a dual rotary capacitor driven at a one ratio by rotor of said synchronous motor, two capacitors in fixed relationship with respect to the stator of said synchronous motor and in bridge configuration with said dual rotary capacitor, an RF oscillator electrically connected to said bridge configuration, demodulation means electrically connected to said bridge configuration, said sweep control means electrically connected to said demodulation means, a drift control servo geared to said sweep control means responsive to an aircraft drift signal to provide drift correction, and a camera in optical association with the presentation face of said cathode ray tube.

3,191,036
ULTRAVIOLET DETECTOR SYSTEM WITH MEANS TO KEEP ELECTRODES CONTAMINATION-FREE
John B. Johnson, Millburn Township, Essex County, and Albert Leen, West Caldwell, N.J., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Continuation of application Ser. No. 83,755, Jan. 19, 1961. This application May 10, 1963, Ser. No. 280,193
6 Claims. (Cl. 250—83.6)



1. An ultraviolet detector system comprising an ultraviolet detector tube having a sealed glass envelope, an ionizing gas and a pair of electrodes having intermediate portions in an adjacent relationship and diverging portions supported at their ends to provide a working region not embracing the supported end portions and wherein the emission of an electron from incident ultraviolet radiation is capable of triggering the tube into a glow discharge when a striking potential is applied across the electrodes, said tube being characterized in that an applied voltage of a predetermined value will extend the glow discharge throughout said working region to clean the electrodes of contaminants from said glass envelope tending to change the spectral response of the tube, and an operating circuit for said detector tube including a utilization device responsive to flow of discharge current in said tube when the tube is triggered by ultraviolet radiation and a source of voltage providing successive voltage pulses across said tube of which each pulse reaches at least said predetermined value to cause the glow discharge to extend throughout the working region.

3,191,037
APPARATUS FOR WIPE TESTING RADIOACTIVE SOURCES
Robert C. Noble, 536 S. Minahen, and Leland E. Broyles, 3529 Beckworth Drive, both of Napa, Calif.; and Charles R. Sandeen, 324 Sacramento St., Vallejo, Calif.
Filed Feb. 4, 1963, Ser. No. 256,177
3 Claims. (Cl. 250—106)



1. For use with a radiographic apparatus including a radioactive source beam projector head having a tubular passage, a projector control cable for engaging and moving said source through said passage and out of said head, a radioactive source shipping container having an internal tubular passage for receiving said source, and

a source tube adapted to be detachably coupled at one end to said head and at the other end to said container; test apparatus for leak testing said radioactive source, said apparatus comprising:

a pair of axially-aligned tubular sections,

the first member of said pair having a free end formed to be detachably coupled to said head in communication with its tubular passage in lieu of said source tube,

and its other end annularly enlarged for forming a ring of increased internal diameter,

the second member of said pair also having a free end formed to be detachably coupled to said shipping container in communication with its tubular passage in lieu of said source tube,

and its other end annularly enlarged for forming a second ring of increased diameter,

said first and second rings being telescopically and threadably interconnected for forming a chamber,

and a compressible doughnut-shaped wipe test member closely fitted with said chamber with its bore axially aligned with said tube bores, said doughnut-shaped member including a ring formed of a compressible plastic material, and a gauze wrapping continuously covering the bore surfaces of said ring,

whereby said radioactive source can be engaged by said control cable and moved through said doughnut member in frictional contact with its bore surfaces for wiping contamination from the source,

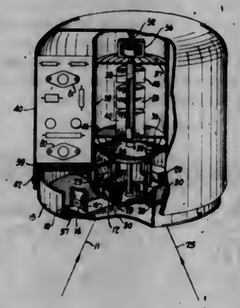
said threadable interconnection of said first and second rings permitting said doughnut member to be compressed for varying the diameter of its bore and consequently its frictional engagement with said sources.

3,191,038

HORIZON SENSOR FOR SATELLITE ATTITUDE CONTROL

Patrick E. Lannan, Parma Heights, Ohio, assignor, by mesne assignments, to International Resistance Company, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 28, 1960, Ser. No. 25,444
7 Claims. (Cl. 250—203)



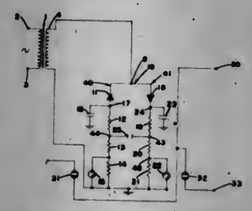
1. A scanning system for use in the control of the attitude of a space-travelling device comprising: a first scanning means including a radiant energy collector for scanning independently of the motion of said device and with a predetermined scanning amplitude the horizon of a body with respect to which a control is to be established to receive energy at different times during said scan from a relatively small portion of said body and a correspondingly small portion of space adjacent said body; a second scanning means including a radiant energy collector having a scanning direction which is fixed with relation to that of said first scanning means for scanning independently of the motion of said device and with a predetermined scanning amplitude substantially equal to that of said first scanning means a different portion of the horizon of said body to receive energy at different times during said scan of said second scanning means from a relatively small portion of said body and a correspondingly small portion of space adjacent said body; means for simultaneously operating said first scanning means and said second scanning means; means responsive to the time relationship between the simultaneous receipt by said first scanning means of energy from said body and from space and the simultaneous receipt by said second scanning means of energy from said body and from space for operating means to control the attitude of said device; and means responsive to the ratio of the periods which at least one of said scanning means is receiving energy from said body and from space in its scanning cycle for reducing the amplitude of scan of each of said scanning means to a small portion of said predetermined scanning amplitude which includes the positions of each at which energy is simultaneously received from said body and from space.

3,191,039

PHOTOMODULATING CIRCUIT USING TWO ALTERNATELY ENERGIZED LIGHT SOURCES

Richard T. Gucwa, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Oct. 2, 1961, Ser. No. 142,402
9 Claims. (Cl. 250—208)



1. A photomodulating circuit comprising, a source of alternating current, two unidirectional conducting lighting circuits including light elements connected in opposite polarity across said source of alternating current, a filtering means in each of said circuits including capacitive and resistive elements connected in each of said lighting circuits delaying voltage drop during the conductive period, a voltage limiting capacitor connected between each of said lighting circuits for temporarily limiting the maximum voltage differential between said limiting circuits and cutting off the illuminated light element prior to illuminating the unlighted element.

3,191,040

PHOTOCONDUCTIVE MATRIX SWITCHING PLUGBOARD

Arthur J. Critchlow, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 8, 1959, Ser. No. 818,691
4 Claims. (Cl. 250—209)

4. An optically manipulatable diode-logic system wherein diode-logic may be optically fabricated, said system comprising in combination:

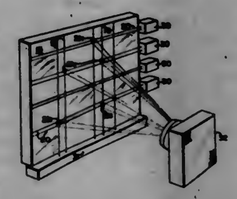
at least one diode device, each device including two terminal connectors;

at least one power supply conductor disposed adjacent said terminal connectors so as to cross at least one of said connectors and remain spaced therefrom to thereby form selected first junctions therewith;

at least one signal output conductor disposed adjacent said terminal connectors so as to cross at least one of said connectors and remain spaced therefrom to thereby form selected second junctions therewith;

a plurality of input conductors disposed adjacent said terminal connectors so as to cross at least one of said connectors and remain spaced therefrom to thereby form selected third junctions therewith;

photoconductive means disposed intermediate said con-



ductors and connectors at said junctions; and

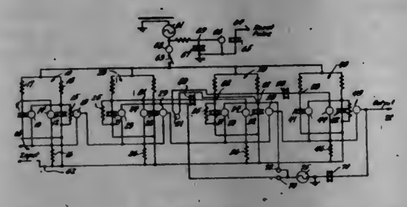
optical signal projection means adapted to project selected patterns of light signals upon said photoconductive means only at selected ones of said junctions and thereby arrange and rearrange the same elements of the diode-logic, thus effecting multiple use of logic elements conveniently.

3,191,041

PHOTOSENSITIVE COUNTER CIRCUIT OF THE BINARY SCALER TYPE

Raymond M. Wilmotte, Princeton, N.J.
(4301 Massachusetts Ave. NW., Washington, D.C.)

Filed Sept. 8, 1959, Ser. No. 838,451
19 Claims. (Cl. 250—209)



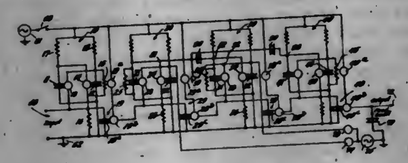
1. A binary scaler for cyclically counting a prescribed number of input signals less than the full count of which the scaler is capable and resetting to a prescribed starting condition, comprising: a plurality of stages; each stage including a bi-stable circuit cyclically operable between a first and a second stable state, and an input means for each said circuit; and a carry means in combination with each two successive stages interrelating said two stages; each said circuit comprising voltage responsive variable light means and photoresponsive means electrically and optically coupled to said light means; said light means and photoresponsive means of each said circuit cooperating in response to successive input signals applied to the respective input means to effect said cyclical operation, one cycle of operation for each pair of input signals applied to said respective input means; said first and second stable states being defined by different states of said light means; each said carry means including means optically coupled with said light means of the earlier of its respective two stages for coupling an input signal to the input means of the later of its respective two stages along with the application of an input signal to the input means of said earlier stage, only when said earlier stage is in said second stable state at the time of application of the last-mentioned input signal; and reset means including actuator means coupled to said stages and responsive to the condition of the scaler upon receiving such prescribed number of input signals for resetting the scaler to said prescribed starting condition, said reset means comprising a voltage responsive variable light means controlled by the condition of the scaler to become luminant when the scaler has received said prescribed number of input signals, and photoresponsive means optically coupled to the last-mentioned light means and electrically coupled to at least one stage of the scaler for biasing such stage into that stable state denoted by said prescribed starting condition.

3,191,042

PHOTOSENSITIVE COUNTER CIRCUIT OF THE BINARY SCALER TYPE

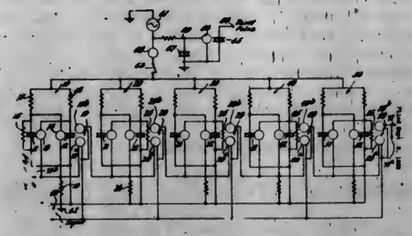
Raymond M. Wilmotte, Princeton, N.J.
(4301 Massachusetts Ave. NW., Washington, D.C.)

Filed Sept. 8, 1959, Ser. No. 838,453
23 Claims. (Cl. 250—209)



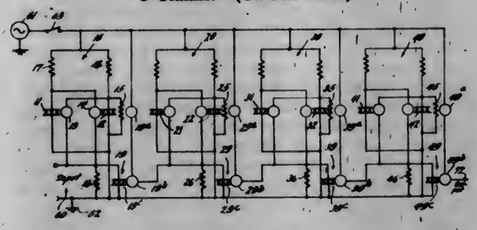
1. A binary scaler for cyclically counting a prescribed number of input signals less than the full count of which the scaler is capable and resetting to a prescribed starting condition, comprising: a plurality of stages; each stage including a bi-stable circuit cyclically operable between a first and a second stable state, and input means for each said circuit; and a carry means in combination with each two successive stages interrelating said two stages; each said circuit comprising voltage responsive variable light means and photoresponsive means electrically and optically coupled to said light means; said light means and photoresponsive means of each said circuit cooperating in response to successive input signals applied to said respective input means to effect said cyclical operation, one cycle of operation for each pair of input signals applied to said respective input means; said first and second stable states being defined by different states of said light means; each said carry means including means optically coupled with said light means of the earlier of its respective two stages for coupling an input signal to the input means of the later of its respective two stages along with the application of an input signal to the input means of said earlier stage, only when said earlier stage is in said second stable state at the time of application of the last-mentioned input signal; each said carry means optically coupled means being connected in electrical parallel and otherwise electrically isolated relationship with each other with respect to an energizing voltage source; and reset means including actuator means coupled to said stages responsive to the condition of the scaler upon receiving said prescribed number of input signals for resetting the scaler of said prescribed starting condition, said reset means comprising a voltage responsive variable light means controlled by the condition of the scaler to become luminant when the scaler has received said prescribed number of input signals, and photoresponsive means optically coupled to the last-mentioned light means and electrically coupled to at least one stage of the scaler for biasing such stage into that stable state denoted by said prescribed starting condition.

3,191,043
PHOTOSENSITIVE PULSE COUNTER CHAIN
Raymond M. Wilmotte, Princeton, N.J.
(4301 Massachusetts Ave. NW., Washington, D.C.)
Filed Sept. 8, 1959, Ser. No. 838,454
14 Claims. (Cl. 250—209)



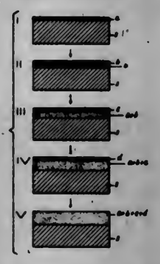
1. A pulse counter chain comprising a plurality of stages for registering the number of electrical signal pulses applied thereto; each stage including a bi-stable circuit cyclically operable between a first and a second stable state, and an input means for each said circuit; control means in combination with each two successive stages interrelating said two stages; and electrical signal pulse input means for the counter chain including means for simultaneously coupling each signal pulse applied thereto in parallel to each said control means; each said circuit comprising voltage responsive variable light means and photoresponsive means electrically and optically coupled to said light means; said light means and photoresponsive means of each said circuit cooperating in response to successive input signals applied to the respective input means to effect said cyclical operation, one cycle of operation for each pair of input signals applied to said respective input means; said first and second stable states being defined by different states of said light means; and each said control means including means optically coupled with said light means of one of its respective two stages for coupling a counter chain input signal pulse to the input means of both its respective two stages, only when said one stage is in said second stable state at the time of application of the last-mentioned input signal, and for otherwise blocking said counter chain input signal from the input means of both and respective two stages.

3,191,044
PHOTOSENSITIVE COUNTER OF THE BINARY SCALER TYPE
Raymond M. Wilmotte, Princeton, N.J.
(4301 Massachusetts Ave. NW., Washington, D.C.)
Filed Sept. 8, 1959, Ser. No. 838,452
3 Claims. (Cl. 250—209)



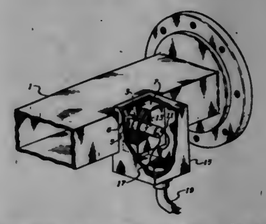
1. A binary scaler comprising a plurality of stages; each stage including a bi-stable circuit cyclically operable between a first and a second stable state, and an input means for each said circuit; means for coupling an energizing voltage source across each of said bi-stable circuits; and a carry means in combination with each two successive stages interrelating said two stages; each said circuit comprising two voltage responsive variable light sources and two photoresponsive elements, one of said elements being connected electrically across one of said sources and being optically coupled to the other of said sources, the other of said elements being connected electrically across said other of said sources and being optically coupled to said one of said sources; said input means comprising means for applying an input signal simultaneously across said one element and said one source in electrical series with respect thereto, and across said other element and said other source in electrical series with respect thereto; said light sources and photoresponsive elements of each said circuit cooperating in response to successive input signals applied to the respective input means to effect said cyclical operation, one cycle of operation for each pair of input signals applied to said respective input means; said first and second stable states being defined by different states of said light sources; and each said carry means including photoresponsive means optically coupled with said other of said light sources of the earlier or its respective two stages for coupling an input signal to the input means of the later of its respective two stages along with the application of an input signal to the input means of said earlier stage, only when said earlier stage is in said second stable state at the time of application of the last-mentioned input signal; each said carry means photoresponsive means being connected in electrical parallel and otherwise electrically isolated relationship with each other with respect to said energizing voltage coupling means.

3,191,045
PHOTOSENSITIVE ELEMENT HAVING PHOTOCONDUCTIVE LAYERS
Robert Colman, New York, N.Y., assignor, by mesne assignments, to Clairex Corporation, New York, N.Y., a corporation of New York
Original applications Dec. 11, 1961, Ser. No. 158,344, now Patent No. 3,142,586, dated July 28, 1964, and Dec. 11, 1961, Ser. No. 158,368. Divided and this application Sept. 11, 1962, Ser. No. 230,021
10 Claims. (Cl. 250—211)



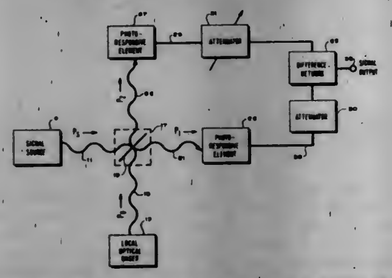
1. A photosensitive element comprising a host photoconductive material, said element having an electrical conductivity responsive to light and having a pre-determined peak spectral response wavelength and bandwidth different from the peak spectral response wavelength and bandwidth of the host photoconductive material, said element comprising a plurality of separately deposited, successively photo-sensitized layers of host photoconductive material, each of said layers being in the form of thin platelets having a uniform thickness of between about 1.5 and 4.5 microns and a surface area which is large in comparison to the thickness, the layers being substantially coterminous in surface area, and at least one surface of each of said layers being in immediate, intimate and substantially overall planar contact with a surface of another layer, the host photoconductive material in each layer being photo-sensitized by a halogen, the host photoconductive material in each layer being a combination of at least two substances, one of said substances being selected from the group consisting of cadmium, zinc, mercury and mixtures thereof, the other of said substances being selected from the group consisting of sulfur, tellurium, selenium and mixtures thereof.

3,191,046
ARC DETECTOR FOR WAVEGUIDE SYSTEM
Frank P. Savalli, Largo, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Apr. 27, 1961, Ser. No. 105,975
6 Claims. (Cl. 250—217)



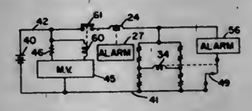
1. Apparatus for detecting arcs in a waveguide system, comprising a waveguide section having a conductive wall provided with an aperture, an optically transparent rod extending from the exterior of said waveguide section through said aperture and into the interior of said waveguide section, the portion of said rod within said waveguide section having a light collecting surface that has at least a portion thereof inclined with respect to the longitudinal axis of the waveguide section to collect light traveling within said waveguide and redirect it transversely through said aperture, the size of said aperture and the projection of said rod into said interior being such as to produce substantially inappreciable perturbation in the wave transmission characteristics of said waveguide section, and a photoelectric cell adjacent the end of said transparent rod outside said waveguide section and positioned to receive said transversely directed light.

3,191,047
OPTICAL MASER HETERODYNING USING PHOTORESPONSIVE DETECTORS
Bernard M. Oliver, Los Altos Hills, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Sept. 28, 1961, Ser. No. 141,522
6 Claims. (Cl. 250—220)



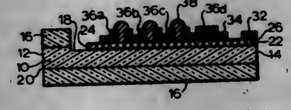
1. Apparatus for detecting signal from a source of coherent light, the apparatus comprising a local source of coherent light, the wavelength of the light from the local source being a predetermined relationship to the wavelength of the light from the signal source, a surface exhibiting partial reflection and partial transmission of said light, the surface being disposed to receive on the opposite sides thereof the light from said local source and from the signal source and being adapted to produce first and second waves from said received light, the first wave having a frequency equal to the difference between the frequency of light from said local and signal sources, the second wave having the frequency of the first wave, a first photoresponsive element disposed to receive the first wave and produce a first signal therefrom, a second photoresponsive element disposed to receive the second wave and produce a second signal therefrom and means connected to receive said first and second signals for producing an output signal as the combination of the first and second signals.

3,191,048
LIGHT SENSITIVE ALARM SYSTEM
Richard G. Cowen, Frederick, Md., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 22, 1961, Ser. No. 154,374
13 Claims. (Cl. 250—221)



1. In an alarm circuit having a four terminal Wheatstone bridge network, the improvement comprising a single source of light energy, a plurality of pairs of similar light sensitive means in which the members of each pair are physically adjacent each other and in which the pairs are physically spaced from each other a substantial distance, a direct current source connected across the two input terminals of said bridge, current responsive means connected across the two output terminals of said bridge, means for connecting a light sensitive member of one pair in one leg of the bridge and the other light sensitive member of said one pair in a leg of the bridge diagonally opposite said one leg, means for similarly connecting the individual light sensitive members of another pair in the other diagonally opposite legs of the bridge so that there are light-sensitive members in all four legs of the bridge, said pairs being physically positioned for receiving substantially equal light energy from said light source whereby the bridge remains balanced for variations of both the voltage and light source and is unbalanced by interruption of the light intensity at one pair.

3,191,049
LIGHT RESPONSIVE DECIMAL TO BINARY DATA CONVERTER SWITCH MEANS
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif.
Filed Mar. 19, 1962, Ser. No. 180,603
7 Claims. (Cl. 250—227)



1. Light responsive decimal to binary data converter switch means comprising:
(a) a system of parallel binary code related electrical conductors;
(b) an electrode;
(c) photoconductor material interconnecting said system of conductors and said electrode;

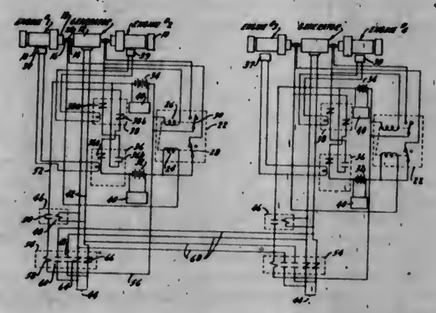
(d) a system of parallel first light conductor means, having a predetermined index of refraction, for supporting said photoconductor material and conducting light to said photoconductor material;

(e) second light conductor means intimately joined to said first light conductor means, having an index of refraction less than said predetermined index, for controlling the reflection of light through said first light conductor means and reflection of light to said photoconductor material;

(f) said paralleled light conductor means being angularly displaced with respect to said parallel electrical conductors so as to define between them a plurality of rows and columns of light and electrical conductor crossings; and

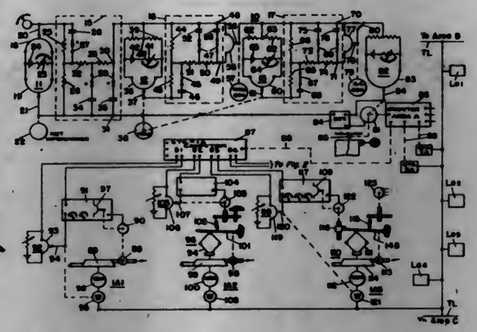
(g) means for operatively connecting said electrical conductors to said electrode through said photoconductor material coincident with predetermined ones of said light and electrical conductor crossings—whereby independent sets of binary code related interconnections will be made between said electrical conductors and said electrode upon the reflection of light to said material coincident with predetermined rows of said crossings.

3,191,050
ENGINE GENERATOR SET
Wesley E. Park, Milwaukee, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 25, 1961, Ser. No. 147,672
1 Claim. (Cl. 290—4)



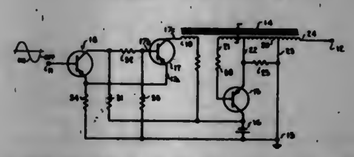
A means for supplying electric power including a pair of electric generators each having a generator shaft and a flywheel mass connected to each generator shaft for continuous rotation thereby, a pair of engines for each generator, each engine being positioned for driving connection with an end of a generator shaft, a magnetically operated clutch for connecting each engine to a generator shaft, means for controlling the operation of the clutches and engines such that each generator is driven by a single engine with the clutch between that engine and generator being operated, means for disengaging any operated clutch upon a malfunction of its associated engine and for operating the other clutch associated with that generator to connect the engine associated with said other clutch to the generator, the flywheel mass providing the inertia to start said other engine so that it then drives the generator, each of said generators being connected to a common load and normally carrying one half of the total load, a load sensitive relay connected to the output of each generator, with each relay arranged to switch the total load to one generator upon a malfunction of both engines driving the other generator.

3,191,051
LOAD FREQUENCY CONTROL SYSTEM
Edward S. Bristol, Philadelphia, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 18, 1961, Ser. No. 118,479
10 Claims. (Cl. 307—57)



8. An arrangement for controlling the electrical generation of an area having generation-changing means and having tie-line connection to at least one other generating area of a power-distribution system, said arrangement comprising responsive means coupled to said system for producing a first control signal representative of frequency, responsive means coupled to said system for producing a second control signal representative of deviations of tie-line power from a scheduled magnitude thereof, means connected to modify the effective magnitude of said first control signal as a function of the total active generation of the area, means connected to apply said signals as components of an area-requirement signal for response thereto by said generation-changing means to change the generation of the area to keep it on schedule, and presettable means connected to predetermine the phase and amplitude relations of said second signal with respect to concurrent changes of said modified first signal so to predetermine the extent to which the total active generation of the area is changed during existence of tie-line power changes.

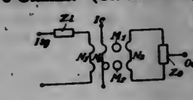
3,191,052
TRIGGER PULSE FORMER
Carl Neitzert, Chatham Township, N.J., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 1, 1960, Ser. No. 5,926
6 Claims. (Cl. 307—88)



2. Apparatus for providing uniform output signals comprising a saturable reactor core having a substantially rectangular hysteresis loop and rising magnetic characteristics extending beyond the loop saturation level, a saturation winding on said core having a number of turns which are sufficient to drive said core from a negative level of magnetic saturation to and beyond a positive level of magnetic saturation and normally maintaining said core magnetized beyond said positive level of magnetic saturation, a pair of transistors each having at least emitter and collector terminals, means comprising a

circuit which is common to said emitter terminals for biasing one of said transistors between conductive and non-conductive conditions, means for rendering the other of said transistors conductive whereby current flow in said common emitter circuit biases said one transistor to a non-conductive condition, means responsive to current flow through said collector terminal of said other transistor for energizing said saturation winding, means responsive to the receipt of input signals for rendering said one transistor conductive, means responsive to current emanating from said one transistor when in said conductive condition for rendering said other transistor non-conductive, thereby de-energizing said saturation winding, means responsive to the drop of core flux which occurs upon said de-energization of said saturation winding for resetting said core to a said negative level of magnetic saturation, and means comprising an output winding on said core for supplying output signals during said resetting of said core.

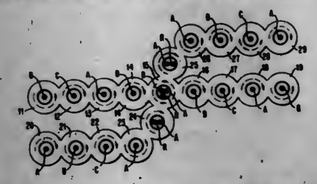
3,191,053
SIGN DETECTING SYSTEM
Shintaro Oshima, Tokyo-to, Hajime Enomoto, Ichikawa-shi, and Shiyoji Watanabe and Yasuo Koseki, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan
Filed Aug. 19, 1960, Ser. No. 50,689
6 Claims. (Cl. 307—88)



1. An electric sign detecting system comprising, an even number of non-linear elements each having hysteresis characteristics substantially symmetrical with respect to their original point, input means for applying an input signal to said non-linear elements, setting means for applying to said non-linear elements, prior to the application of the input signal, a setting signal to remove the effect of residual polarizations produced in the non-linear elements by preceding signals applied thereto, a reference standard signal simultaneously with the application of said input signal, exciting means connected for applying to said non-linear elements an alternating-current exciting signal, output means for taking out from said non-linear elements an output signal having a frequency equal to the second high harmonic component of the exciting signal and having one of two possible opposite phases in accordance with an algebraic sign of an algebraic difference between said input signal and said reference standard signal, said output means having tuning means for resonating with said second high harmonic component.

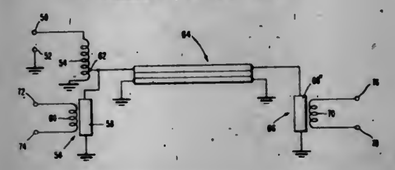
3,191,054
COPLANAR THIN MAGNETIC FILM SHIFT REGISTER
Walter Ghisler, Upplands Vasby, Sweden, and Simon Middelhoek, Kilchberg, Zurich, Switzerland, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 5, 1961, Ser. No. 143,103
Claims priority, application Switzerland, Dec. 29, 1960, 14,564/60
15 Claims. (Cl. 307—88)

1. A magnetic switching arrangement comprising a magnetic medium defining a plurality of groups of magnetizable zones each having a uniaxial anisotropic characteristic, each of said groups being arranged in contiguous fashion so as to support domain wall propagation, a domain wall being established between adjacent ones of said zones having different remanent flux states, said medium further defining a transfer zone and a number of intermediate zones having similar characteristics, said intermediate zones connecting said transfer zone in contiguous fashion to each of said groups, means for applying to predetermined zones in each of said groups a coercive force larger than the critical field strength necessary to alter the remanent flux state in said predetermined zone when a next preceding zone is in an altered state so as to effect domain wall propagation toward said transfer zone in particular ones of said groups and away from said transfer zone in others of said groups, said coercive means



including further means for concurrently applying a coercive force to said transfer zone and said intermediate zones contiguous with one of said particular groups and one of said other groups, and means for subsequently applying a normalizing coercive force to said transfer zone and said intermediate zones subsequent to the operation of said coercive means in applying a coercive force to a first zone in said one other group contiguous with said intermediate zone whereby a domain wall is propagated across said transfer zone and said intermediate zones.

3,191,055
SUPERCONDUCTIVE TRANSMISSION LINE
James C. Swihart, Hopewell Junction, and Donald R. Young, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 21, 1960, Ser. No. 16,431
11 Claims. (Cl. 307—88.5)

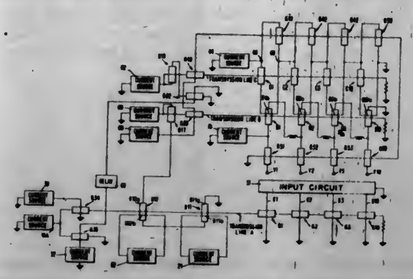


1. A superconducting transmission line for transmitting electromagnetic signals comprising; first, second, and third elements arranged in parallel spaced relationship; said transmission line operable at a superconductive temperature; means coupling said electromagnetic signals to said transmission line; each of said first and third elements being superconducting below a predetermined critical temperature; said second element having a dielectric constant greater than unity; and at least one of said elements having a thickness comparable to the penetration depth of magnetic fields in said first and third superconducting elements when said magnetic fields are produced by electromagnetic signals propagated along said line.

3,191,056
SUPERCONDUCTIVE TRANSMISSION LINE CIRCUITS
John L. Anderson, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,824
12 Claims. (Cl. 307—88.5)

7. A superconductive circuit comprising first and second superconductive transmission lines; means for applying a signal to said first transmission line; a plurality of

gate conductors connected in said first transmission line; means operable to introduce resistance selectively into particular ones of said gate conductors to cause said signal as it propagates in said first transmission line in said first direction to produce a reflection which propagates back in a second direction in said first transmission



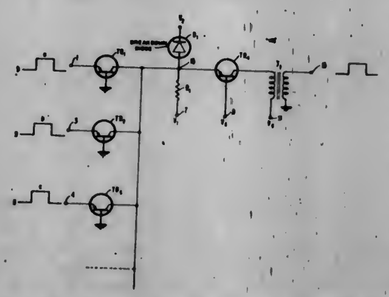
line; means adjacent said first transmission line responsive to said reflection produced in said line; and further means responsive to said last named means for applying a signal to said second transmission line indicative in time of the one of said gate conductors in said first transmission line which is driven resistive to produce said reflection in said first transmission line.

3,191,057

CURRENT ADDER TYPE LOGIC CIRCUIT

Shao C. Feng, Huntington, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 20, 1961, Ser. No. 125,521
20 Claims. (Cl. 307—88.5)



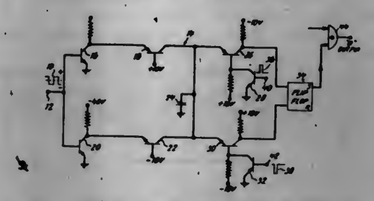
1. A logic circuit comprising: a semiconductor device having a reverse substantially constant potential breakdown characteristic between first and second terminals thereof, an impedance connected in series with said first terminal of said device with a junction formed therebetween, a potential applied across said series combination with polarity and magnitude such as to cause said device to operate in its reverse breakdown condition and pass a current of maximum magnitude I_D therethrough so as to generate a first potential at said junction, a group of N input means, where N is an integer of value 2 or greater, each connected to said junction and each individually selectively actuated to apply a current of magnitude I to said impedance in the same direction as that of current I_D, where $I_D=(N-1)I$, in order that said first potential is substantially produced at said junction for any number of actuated input means up to and including $(N-1)$, while a second potential is produced at said junction for a number of actuated first means, equal to N, and means connected to said junction for generating an output signal in response only to said second potential produced at said junction.

3,191,058

DETECTION CIRCUIT UTILIZING OPPOSITE CONDUCTIVITY TRANSISTORS TO DETECT CHARGE ON A CAPACITOR

Jack Stone, Ambler, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 19, 1961, Ser. No. 146,094
4 Claims. (Cl. 307—88.5)



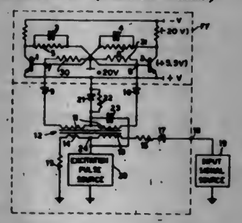
1. In combination with a source of input signals having first and second portions of a positive or negative level with respect to a point of reference potential, said positive and negative levels being of substantially the same voltage amplitudes with respect to said point of reference potential, means for detecting a difference in the time duration of said first and second portions of said signals comprising a capacitive circuit capable of assuming a positive or negative charge with respect to said point of reference potential, means for generating pulse signals each time said signals change from one level to the other, a transistor circuit for applying said input signals to said capactive circuit to charge said capacitive circuit during said first portion of said input signal and to discharge said capacitive circuit during said second portion of said input signal, the rate of said charge and said discharge being substantially the same, said capacitive circuit retaining a positive or negative charge when the time durations of said first and second portions of said input signal are different, said capacitive circuit retaining a zero charge when the time durations of said first and second portions of said input signals are substantially the same, a detector circuit and means for applying said pulse signals to said detector circuit to detect the state of charge of said capacitive circuit.

3,191,059

SELECTIVE PULSE FEEDING CIRCUIT UTILIZING A TRANSFORMER GATING CIRCUIT

Ottavio Guarracino, Milan, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy

Filed Apr. 6, 1962, Ser. No. 185,552
Claims priority, application Italy, Mar. 26, 1962, 6,226/62
2 Claims. (Cl. 307—88.5)



1. A circuit for selectively feeding a driving pulse to either one of the two input terminals of a circuit to be driven under the control of binary input signals supplied

by an input source, said feeding circuit comprising in combination:

(a) a transformer having a secondary winding whose terminals are connected to said input terminals, respectively, and having a primary winding including a minor section and a major section, said sections being wound to provide opposing magnetomotive forces when current is introduced at the terminal common to said sections to flow through said sections,

(b) a source of excitation pulses directly connected to said terminal common to said sections,

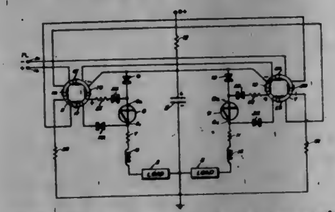
(c) and a diode connecting the other terminal of said major section to said input source.

3,191,060

PULSE GENERATING CIRCUITS

William J. Mahoney, Darien, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Apr. 23, 1962, Ser. No. 189,592
16 Claims. (Cl. 307—88.5)



1. A pulse generator comprising a regenerative semiconductor device having a normally nonconductive state and a stable conductive state which due to internal regeneration persists subsequent to removal of a trigger potential causing the device to be put into that conductive state,

circuit means connected to said semiconductive device operative to trigger that device into the conductive state for a predetermined time period,

a saturable magnetic core having a set and a reset state,

said circuit means including a reset winding operatively associated with said core to drive it into said reset state when said semiconductor device is in the conductive state,

means operatively associated with said core to selectively drive it into the set state,

a capacitor connected to said semiconductor device,

means connected to charging said capacitor, and

an output winding operatively associated with said core and connected to provide an output potential for triggering said semiconductor device into said conductive state whenever said core is being driven toward said reset state to thereby cause said capacitor to discharge through said semiconductor device and said reset winding to drive said core into the fully reset state.

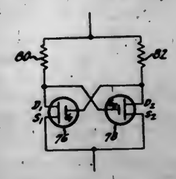
3,191,061

INSULATED GATE FIELD EFFECT DEVICES AND ELECTRICAL CIRCUITS EMPLOYING SUCH DEVICES

Paul K. Weimer, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 31, 1962, Ser. No. 198,923
26 Claims. (Cl. 307—88.5)

1. A solid state circuit arrangement comprising: first and second devices each having a body of semiconductive material, a source contacting said body, a drain contacting said body and being spaced from said source, and a gate spaced from said body by a region of insulating material having a higher resistivity than said semiconductive material, said gate extending over at least a portion of the space between the associated source and drain;



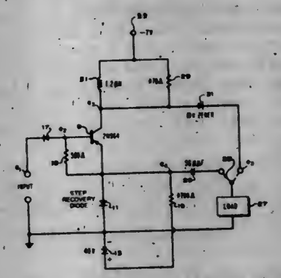
first means connected between, and maintaining at the same potential, the drain of the first device and the gate of the second device; and second means connected between, and maintaining at the same potential, the drain of the second device and the gate of the first device.

3,191,062

PULSE AMPLIFYING CIRCUIT USING A STEP-RECOVERY DIODE FOR PULSE SHAPING

Charles O. Forge, Cupertino, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed July 6, 1962, Ser. No. 207,884
4 Claims. (Cl. 307—88.5)



1. A circuit for amplifying an input signal, said circuit comprising:

an electronic valve having a plurality of electrodes forming input and output circuits;

a step-recovery junction diode having contiguous P-type and N-type conductivity regions forming a junction about which the gradient of impurity concentration in said regions increases rapidly with distance from the junction, said diode being capable of storing charge in the vicinity of said junction during forward conduction of current through the diode and showing an abrupt change in reverse conductivity in response to the sudden depletion of stored carriers during subsequent reverse conduction of current through the diode;

means serially connecting the diode and the output circuit of said electronic valve;

a bias supply connected to said diode for providing forward conduction current therethrough;

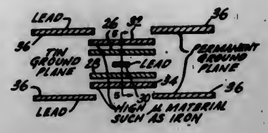
means connected to the input circuit of said electronic valve for applying said input signal thereto with sufficient amplitude and polarity to increase the conduction of current in said output circuit for producing reverse conduction current in the diode; and

means including said diode and said output circuit and responsive to the sudden depletion of stored carriers in said diode to produce an output pulse.

3,191,063
CRYOELECTRIC CIRCUITS

Richard W. Ahrons, Somerville, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Aug. 8, 1962, Ser. No. 215,557
1 Claim. (Cl. 307—88.5)



In combination:

a first superconductor current carrying element;

two superconductor control ground planes arranged adjacent to the first superconductor element, one on each side of said current carrying element;

permanent ground planes which are insulated from the control ground plane and slightly overlap and extend beyond the edges of the control ground planes, said control ground planes and permanent ground planes providing a shield for said first superconductor element;

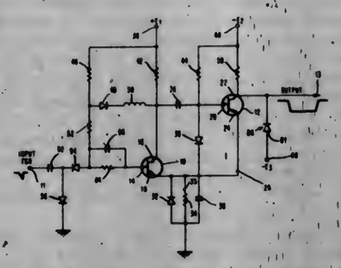
terminals coupled to said control ground planes to which current may be applied for driving the control ground planes, in unison, between superconducting and non-superconducting states;

and two additional planes each having a permeability substantially greater than 1, one located between one control ground plane and its permanent ground plane and the other located between the second superconductor control ground plane and its permanent ground plane, said two additional planes having a permeability substantially greater than 1 arranged so that they are shielded from the first superconductor current carrying element when the two superconductor control ground planes are in their superconducting state.

3,191,064
HIGH SPEED SWITCHING CIRCUIT

Charles C. Ih, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 22, 1962, Ser. No. 218,602
7 Claims. (Cl. 307—88.5)



2. A monostable multivibrator circuit comprising:

(a) first and second semiconductor devices each having base, emitter, and collector electrodes, said collector electrode of said first semiconductor device adapted to be connected to a first source of potential and said collector electrode of said second semiconductor device adapted to be connected to a second source of potential;

(b) capacitor means having first and second terminals, said first terminal connected to said collector electrode of said first semiconductor device, said second terminal connected to said base electrode of said second semiconductor device as well as to said second source of potential, a first charging path being formed from said first source of potential to said second source of potential via said capacitor means;

(c) connecting means joining said emitter electrode of said first semiconductor device to said emitter electrode of said second semiconductor device, current being conducted in the quiescent state from said first source of potential to said second source of potential by way of said collector and emitter electrodes of said first semiconductor device, said emitter and collector electrodes of said second semiconductor device and said connecting means;

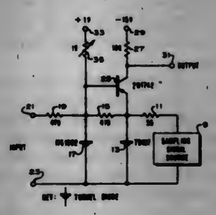
(d) input means connected to said base electrode of said first semiconductor device and adapted to receive an input signal, such input signal rendering said first and second semiconductor devices non-conductive and causing said capacitor means to become charged through said first charging path;

(e) unilateral conducting means connected to the second terminal of said capacitor means and to said connecting means thus providing a coupling path from said collector to said emitter of said first semiconductor device and further providing a second charging path for said capacitor means to control the turn-off of said first semiconductor device for a period of time independently of the turn-off of said second semiconductor device after said input signal has been received by said input means.

3,191,065
SAMPLING CIRCUIT

Giacomo Vargia, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Oct. 3, 1962, Ser. No. 228,120
7 Claims. (Cl. 307—88.5)

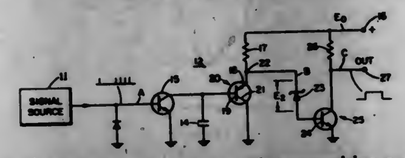


1. An input signal sampling circuit comprising first and second tunnel diodes, a bias supply connected to said tunnel diodes for biasing the same to operate in two states, a source of signal, means including said source and the first tunnel diode to produce a sampling signal, means connected to the second tunnel diode for applying said sampling signal thereto to change the operating state thereof, means connected to the second tunnel diode for applying an input signal to be sampled to the second tunnel diode, a transistor having electrodes forming an input circuit and an output circuit, means connecting the electrodes forming the input circuit of said transistor to said tunnel diodes, and means including the output circuit of said transistor for producing an output related to the difference in the times of operation of said tunnel diodes in corresponding operating states.

3,191,066
SIGNAL SENSING SWITCH WITH SLOW RELEASE

Harold F. Staudenmayer, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Oct. 9, 1962, Ser. No. 229,443
6 Claims. (Cl. 307—88.5)

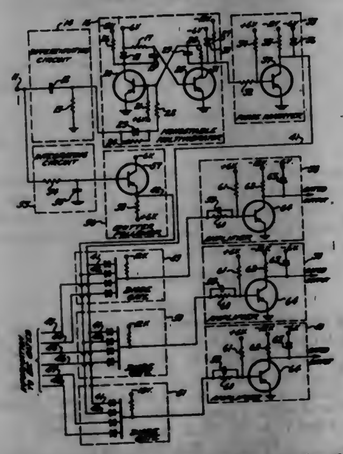


4. A fast attack-slow release relay comprising a storage condenser, means for normally charging said condenser and means responsive to a signal source for discharging said condenser, said charging means comprising an emitter-follower transistor having a load resistance connected to the emitter thereof, means including a source of bias voltage for biasing said transistor in the forward direction until said condenser is substantially charged, a Zener diode with a predetermined breakdown voltage connected to said emitter and responsive to emitter voltages above and below said breakdown voltage which, respectively turns on and turns off said diode, the time constant for charging said condenser through the input circuit of said transistor being a function of the common emitter input impedance of said transistor, of the current gain of said transistor, of the resistance of said common emitter resistance and of the ratio of said breakdown voltage to said bias voltage source.

3,191,067
LOGICAL GATING AND ROUTING CIRCUIT

Herbert Zimmerman, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 23, 1962, Ser. No. 232,631
1 Claim. (Cl. 307—88.5)

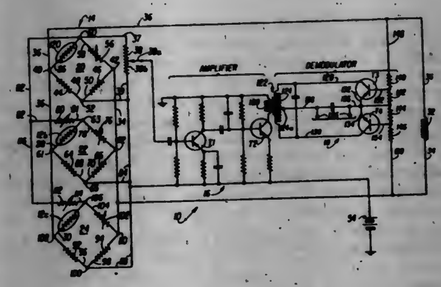


A signal routing circuit, comprising a plurality of coincidence circuits, each having a plurality of inputs and one output; a multi channel source of non-coincident information signals, with a separate channel comprising one or more coincident information signals coupled to each concidence circuit; a source of gating signals, a differentiating circuit, and a monostable multivibrator, said differentiating circuit deriving an output pulse from said gating signal which is used to trigger said monostable multivibrator to provide a delay pulse, said delay pulse being applied to said coincidence circuits for the duration of said delay pulse period preventing passage of information signals for the length of the delay period, an integrating circuit connected to an emitter follower, said integrating circuit connected to said gating signal and said emitter follower connected to each coincident circuit to enable each coincident circuit for the duration of said gating signal period, the length of the gating signal period being longer than the length of the delay pulse period, means for enabling or inhibiting each coincident circuit by the information channel coupled to a particular circuit, thus selecting a path for the information signals.

3,191,068
CONTROL CIRCUIT

Harold E. Robb, Jr., Elk Grove Village, Ill., assignor to The Powers Regulator Co., Skokie, Ill., a corporation of Illinois

Filed Nov. 29, 1962, Ser. No. 240,806
3 Claims. (Cl. 307—88.5)



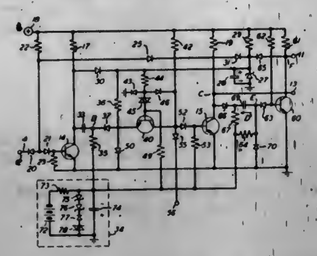
1. A circuit for controlling the operative state of a responsive means in accordance with variations in one or more sensed conditions that are monitored by said circuit and which are adjusted and/or compensated for by said responsive means; which control circuit comprises a plurality of parallelly connected bridge networks; each of said bridge networks including means for balancing the bridge network under a preselected condition and a sensing means that monitors said condition and responds to a variation from said preselected condition to effect unbalance of said bridge network; impedance means connected in circuit with said parallelly connected bridge networks so that the unbalance of one or more said bridge networks causes an alternating current output voltage to be developed across said impedance means; said output voltage having an amplitude and phase indicative of the unbalanced condition of one or more of said parallelly connected bridge networks; an amplifier circuit connected to said impedance means for amplifying said output voltage; and a full wave phase sensitive demodulator circuit having an input and an output; said input of said demodulator circuit being connected to said amplifier circuit and the output of said demodulator circuit being connectable to a responsive means; said demodulator circuit producing a direct current voltage across the output thereof having a magnitude and polarity corresponding to the amplitude and phase of the voltage supplied to the input of said demodulator circuit by said amplifier circuit whereby the operative state of a responsive means connected across the output of said demodulator circuit is directly controlled in accordance with the unbalanced condition of one or more of said parallelly connected bridge networks.

3,191,069

MONOSTABLE MULTIVIBRATOR UTILIZING COMMON-BASE TRANSISTOR TO PROVIDE ISOLATION BETWEEN TIMING NETWORK AND SWITCHING TRANSISTOR

Sidney F. Sampson, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 7, 1963, Ser. No. 249,900
5 Claims. (Cl. 307—88.5)



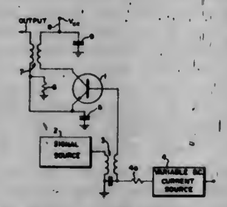
1. A multivibrator comprising, in combination, first and second switching transistors, each having a control electrode and a transconductive path, a source of an operating potential, first and second resistors for connecting the transconductive path of said first and second switching transistors respectively across said source, a capacitor having first and second terminals, circuit means for connecting the first terminal of said capacitor to the junction of said first resistor and the transconductive path of said first transistor, a source of a first reference potential, a resistive circuit path for connecting the second terminal of said capacitor to said source of said first reference potential, a third transistor having a control current path and a transconductive path, a source of a second reference potential, said control current path of said third transistor being connected between said second terminal and said source of said second reference potential, and means responsive to changes in the conductivity of the transconductive path of said third transistor for applying an actuating potential to the control electrode of said second switching transistor.

3,191,070

TRANSISTOR AGC DEVICE

Brian L. Jones, Mountain View, and Gary W. Parker, Sunnyvale, Calif., assignors to Fairchild Camera and Instrument Corp., Syosset, N.Y., a corporation of Delaware

Filed Jan. 21, 1963, Ser. No. 252,727
13 Claims. (Cl. 307—88.5)



1. An AGC device comprising:

a transistor having an emitter, a base, and a collector, said transistor having a characteristic frequency which drops appreciably in value when the D.-C. collector current is increased by a factor of less than ten without an appreciable change in the D.-C. collector voltage;

biasing means forward biasing said transistor for current conduction between collector and emitter, said biasing means holding said collector at a constant D.-C. voltage;

input means coupled to the base of said transistor for passing an A.-C. input signal to the device; and

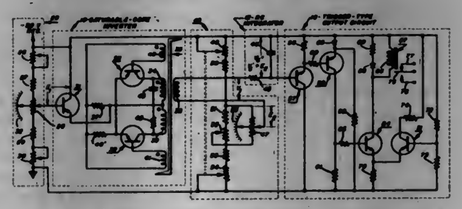
output means electrically isolated from said input means coupled to the collector of said transistor, whereby the A.-C. current gain from the input to the output is reduced as a result of the said drop in characteristic frequency.

3,191,071

VARIABLE FREQUENCY/WIDTH PULSE GENERATOR

George L. King, Morris Plains, and Charles A. Higgins, Boonton, N.J., assignors to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey

Filed Feb. 18, 1963, Ser. No. 259,224
11 Claims. (Cl. 307—88.5)



1. A variable frequency/width pulse generator comprising,

(a) a saturable core inverter to produce first signals of square wave form,

(b) an adjustable direct current voltage applied to said inverter to simultaneously vary the frequency and amplitude of said first signals,

(c) a voltage integrator,

(d) means to apply the inverter output to said integrator,

(e) a direct current biasing voltage for said integrator to produce output signals of a frequency corresponding with that of the first signals but of sawtooth wave form,

(f) a trigger circuit capable of changing its conducting state abruptly at a predetermined triggering voltage level, and

(g) means applying said integrator output signals to said trigger circuit, said direct current biasing voltage being selectively adjustable to vary the level of said output signals relative to the triggering voltage level of the trigger circuit.

3,191,072

HIGH FREQUENCY SAMPLER TRIGGER CIRCUITS INCLUDING SIGNAL FEEDBACK TO REGULATE SWITCHING TIMES OF TRIGGER CIRCUITS

Kay B. Magleby, San Jose, and Giacomo Vargia, Palo Alto, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

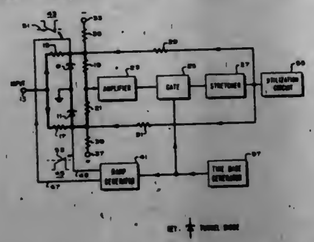
Filed Feb. 28, 1963, Ser. No. 261,778
4 Claims. (Cl. 307—88.5)

1. A sampling circuit comprising:

a pair of regenerative trigger means, each operative only in either one of two operating states in response to a signal applied thereto attaining a selected threshold value to produce an output signal indicative of the operating state of the trigger means;

a generator for producing a pair of sampling command pulses, each having a time-varying amplitude between the leading and trailing edges thereof;

means connected to said trigger means for applying thereto the combination of a signal to be sampled and said sampling command pulses from said generator for advancing the time at which one of said trigger means changes operating states in response to said combination of signals attaining said threshold value and for delaying the time at which the other trigger means changes operating states in response to said combination of signals attaining said threshold value;



circuit means connected to said pair of trigger means for producing a signal having an amplitude related to the difference in time of the changes in operating states of said trigger means; and

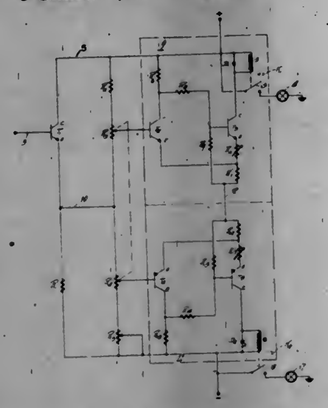
means connecting the output of said circuit means to said trigger means for applying the signal appearing at the output of said circuit means to said trigger means in phase opposition to the signal to be sampled applied thereto.

3,191,073

THRESHOLD INDICATOR

Lawrence K. Mooney, Alexandria, Va., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 14, 1963, Ser. No. 265,296
5 Claims. (Cl. 307—88.5)



1. Threshold detection apparatus for monitoring a direct current input signal of any amplitude between predetermined positive and negative potentials, said apparatus comprising:

(a) a first Schmitt trigger circuit including a pair of NPN transistors, one of the NPN transistors of said trigger circuit being normally energized and being deenergized when a predetermined positive potential is applied to the base of the other NPN transistor;

(b) a first indicator device;

(c) means for coupling the first indicator device to the collector circuit of the said one NPN transistor of the first Schmitt trigger circuit;

(d) a second Schmitt trigger circuit including a pair of PNP transistors, one of the PNP transistors of said second trigger circuit being normally energized and being deenergized when a predetermined negative potential is applied to the base of the other PNP transistor;

(e) a second indicator device;

(f) means for coupling the second indicator device to the collector circuit of the said one PNP transistor of the second Schmitt trigger circuit;

(g) a positive D.C. potential source;

(h) a negative D.C. potential source;

(i) a voltage divider network which is connected across said positive and negative potential sources and which includes a pair of series connected potentiometers;

(j) means connecting the variable arm of one of the potentiometers to the base of the said other NPN transistor;

(k) means connecting the variable arm of the other potentiometer to the base of the said other PNP transistor;

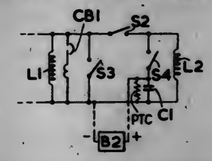
(l) and means coupling the input signal to be monitored to the junction of the series connected potentiometers.

3,191,074

ENERGY TRANSFER CIRCUITS PARTICULARLY FOR THE TRANSFER FROM AN INDUCTIVE STORE TO AN INDUCTIVE LOAD

Robert Carruthers, Abingdon, and David Lorimer Smart, Wantage, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 23, 1960, Ser. No. 17,064
Claims priority, application Great Britain, Mar. 25, 1959, 10,376/59; Mar. 26, 1959, 10,502/59
2 Claims. (Cl. 307—104)



1. An energy transfer circuit comprising a storage inductor, source means connectable across the storage inductor for charging the storage inductor, first switch means connected to short-circuit said storage inductor when said storage inductor has been charged, an inductive load, a capacitor, means for connecting selectively said inductive load and the capacitor in parallel to form a resonant circuit, said connecting means including second switch means for isolating the capacitor from the inductive load and third switch means for isolating said inductive load from said storage inductor when said storage inductor is being charged, and control means for operating said switch means so that when said storage inductor is charged said first switch means is opened and said third switch means is then closed thereby transferring energy to the inductive load.

3,191,075

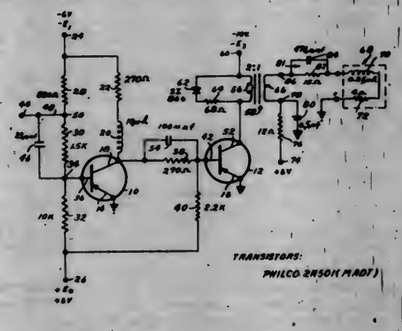
MULTISTAGE AMPLIFIER COUPLED TO AN INDUCTIVE LOAD

George R. Smythe, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 16, 1960, Ser. No. 69,688
8 Claims. (Cl. 307—104)

2. A multistage pulse power amplifier comprising first and second like conductivity type transistors each with

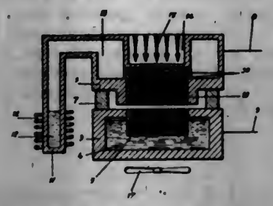
emitter, collector and base electrodes, means for receiving a predetermined reference voltage coupled to each of said emitter electrodes, means coupled to said base of the first transistor for receiving an input pulse to cause said first transistor to conduct current in the absence of said input pulse but not in the presence thereof, and interstage coupling means for causing said second transistor to start conducting as soon as said first transistor becomes non-conductive of said current and to remain conducting while said first transistor is so non-conductive, said interstage coupling means including, an inductor having one terminal thereof serially connected with the first transistor collector electrode and the other end of said inductor serially coupled through resistive means to said input means, so that said collector current passes through the inductor while the first transistor is conducting, means coupled to the base and emitter



electrodes of the second transistor, including a resistor connected between the base electrode of said second transistor and the junction of said inductor and first transistor collector electrode, for biasing said second transistor to cutoff and for supplying an additional current through said inductor via said resistor while the first transistor is conducting, said inductor current, being unable to change instantaneously when the first transistor is cutoff in response to an input pulse passing totally through said resistor to turn on said second transistor to cause the second transistor to exhibit a substantially increased bandwidth response at a sacrifice of current gain at turn-on, while thereafter during the continued existence of the input pulse the current through said inductor decreases substantially to effect in the second transistor a decreased bandwidth and a substantially increased current gain, and load means coupled to the collector of said second transistor.

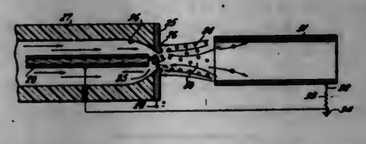
3,191,076
ENERGY CONVERTER
Harry Huber and Jacques Benaimon, Paris, France, assignors to Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed May 5, 1961, Ser. No. 108,062
Claims priority, application France, May 17, 1960, 827,393
21 Claims. (Cl. 310—4)

1. An energy converter provided with vacuum-tight enclosure means, comprising emitter electrode means for emitting electrons into said enclosure means upon application of heat to said emitter electrode means, collector electrode means adapted to collect said electrons and including capillary means having, at least at the collecting surface thereof, a material capable to react with an ionizable metal selected from the group consisting of cesium, rubidium and potassium to form at the operating temperature of said collector electrode means a material having a working potential lower than the working potential of said metal, means for effectively impregnating said capillary means with said ionizable metal, and output means operatively connected respectively to said emitter



and collector electrode means to enable abstraction of electrical energy appearing thereacross upon application of heat to said emitter electrode means.

3,191,077
POWER CONVERSION DEVICE
Alvin M. Marks, Whitestone, and Ernesto Barreto, Jamaica, N.Y., assignors to Marks Polarized Corporation, Whitestone, N.Y., a corporation of New York
Filed Apr. 27, 1962, Ser. No. 190,762
4 Claims. (Cl. 310—5)



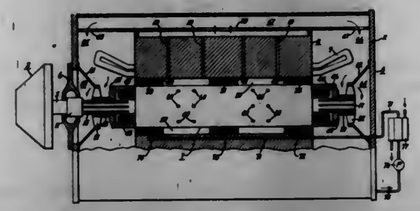
1. A power conversion device comprising a conduit for conducting gas at a suitable velocity, a source of gas connected to said conduit, a capillary tube communicating with the interior of the conduit, a dispensing end on the capillary tube, a source of liquid connected to the capillary tube, a charging ring spaced from the dispensing end of the capillary tube, an outwardly extending central nozzle in the charging ring to receive the liquid coming from the conduit, a source of potential for applying a concentrated electric field between the charging ring and said capillary tube ends in the presence of the gas stream to simultaneously form and charge an aerosol, a charge collector spaced from the charging ring to receive and discharge the aerosol and an electrical load connected to the collector to receive the power converted from the gas.

3,191,078
ELECTROMAGNETIC OSCILLATING TO ROTARY DRIVE
Peter Wargo, Maywood, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Nov. 29, 1962, Ser. No. 240,861
7 Claims. (Cl. 310—37)



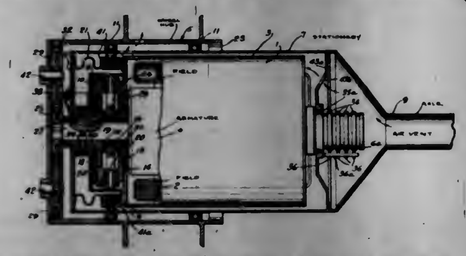
4. A driving mechanism for an odometer or the like comprising an electromagnet having a core defining a line of greatest magnetic attraction, an armature mounted for movement into and out of alignment with said line, spring means constraining said armature to a position out of alignment with said line, a cantilever spring stop defining said position, and means operably responsive to said armature for driving said odometer.

3,191,079
HEAVY DYNAMOELECTRIC MACHINE HAVING NYLON BEARINGS
Louis G. Gitzendanner, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 31, 1960, Ser. No. 65,974
3 Claims. (Cl. 310—55)



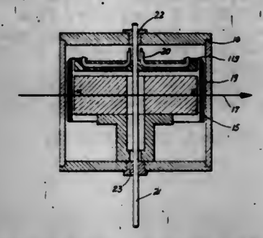
1. A turbine-driven generator having in combination a stator, a rotor inductively associated with said stator, said rotor having suitable windings enveloped with suitable ground insulation, means for passing cooling medium within said ground insulation and discharging the cooling medium radially outwardly between the stator and rotor, journal means at least partially enveloping said rotor windings, bearing means operatively engaging said journal means, said bearing means being substantially enveloped by said stator, said journal and bearing means being fabricated of non-magnetic material.

3,191,080
CONTINUOUS TORQUE TWO GEAR RATIO ELECTRIC MOTOR
Theodoric B. Edwards, 5311 Neptune Drive, Alexandria, Va.; Helen M. Edwards, executrix of said Theodoric B. Edwards, deceased
Filed June 8, 1962, Ser. No. 201,218
1 Claim. (Cl. 310—118)
(Granted under Title 35, U.S. Code (1952), sec. 266)



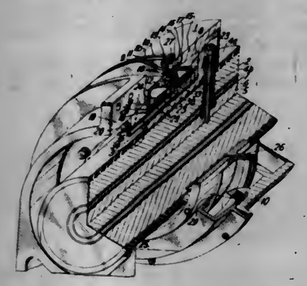
In an electric motor and drive means, the combination comprising: a frame means; an armature and shaft means rotatably mounted on said frame means; a field means rotatably mounted on said shaft means; brake means connected to said frame means and applicable to said field means; differential gear means including first bevel gear means rigidly connected to said field means, second bevel gear means rigidly connected to said shaft, bevel pinion means connecting said first and second bevel gear means, spider means rotatably mounted on said shaft and a flanged spider cage means mounted for rotation about said shaft, pinion shaft means mounted on said spider means and connected to said spider cage means, said bevel pinion means rotatably mounted on said pinion shaft means; and detent means for securing said flanged spider cage to said frame means upon application of said braking means to said field means.

3,191,081
PERMANENT MAGNET MINIATURE MOTOR
Fritz Faulhaber, Johann-Sebastian-Bach-Weg 9, Schoenaich, Wuerttemberg, Germany
Filed Apr. 13, 1961, Ser. No. 105,851
Claims priority, application Germany, Apr. 14, 1960, F 25,603
7 Claims. (Cl. 310—154)



1. A miniature motor comprising a stationary annular outer iron yoke, a stationary magnet coaxially located within said yoke and forming an annular field gap together therewith, a rotor comprising a hollow cylindrical armature coaxially located in said gap, said armature having a winding of sequential cylindrically and helically wound wire turns around, and restricted to, the periphery of the armature, each winding turn extending in skewed relation to the rotor axis from one axial side of the armature to the other along a portion of the periphery substantially equal to the peripheral spacing between each two sequential north-south field poles of said magnet, said winding having peripherally distributed taps, and a commutator having mutually insulated sequential segments individually electrically connected to said taps.

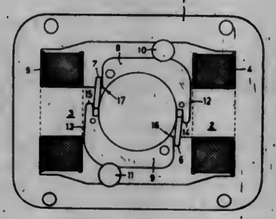
3,191,082
DYNAMOELECTRIC MACHINE ELECTRIC CURRENT TRANSFERRING ARRANGEMENTS
Istvan Csillag, Sale, England, assignor to Associated Electrical Industries Limited, London, England, a company of Great Britain
Filed Aug. 10, 1962, Ser. No. 216,109
Claims priority, application Great Britain, Aug. 16, 1961, 29,583/61
13 Claims. (Cl. 310—219)



1. An arrangement for providing an electric current path between a rotatable conductive member and a stationary conductive member comprising a rotatable part defining an annular chamber coaxial with the axis of rotation and having a radially inner wall formed with an annular entrance to said chamber, an annular stationary part which extends through said entrance into said chamber, the dimensions of the stationary part measured axially within the chamber and where it passes through the entrance being smaller than the corresponding dimensions of the chamber and of the entrance to an extent permitting substantial axial play between said parts, and a

quantity of conductive liquid in said chamber sufficient to immerse a portion of the stationary part when the conductive liquid is compelled to form an annulus in said chamber by rotation of the rotatable part.

3,191,083
SELF-STARTING SINGLE-PHASE MOTOR WITHOUT A COMMUTATOR
Barend Martinus Meijer, Dordrecht, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 12, 1962, Ser. No. 165,887
Claims priority, application Netherlands, Jan. 16, 1961, 260,126
2 Claims. (Cl. 310—172)



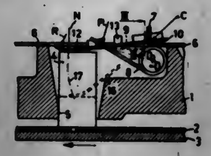
1. A self-starting single phase motor comprising a one piece motor core having inwardly projecting opposed pole pieces, a pair of spaced pole segments extending between said pole pieces, a coil on each said pole piece, each said pole piece having a shaded portion extending beyond the associated coil, each said shaded extension having means receiving a pole segment, the remaining pole pieces and associated pole segments forming an air gap over the unshaded portions thereof, said air gaps of the stator circuit being traversed exclusively by the unshaded field of said motor.

3,191,084
CURRENT COLLECTOR ASSEMBLY FOR SMALL D.C. MOTORS
Hiroshi Ooka, Kazuo Onishi, and Shuzo Oshima, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Nov. 20, 1962, Ser. No. 238,910
Claims priority, application Japan, Nov. 22, 1961, 36/41,768, 36/41,769
6 Claims. (Cl. 310—219)



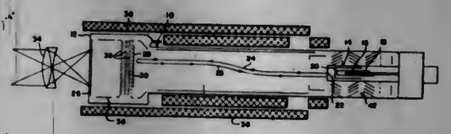
1. A commutator device for a micromotor comprising a commutator on the rotor shaft of the micromotor including commutator segments made of a silver-palladium alloy consisting essentially of 80% to 60% silver and 20% to 40% palladium, and metallic brush holders fixedly arranged about the commutator and each carrying a brush made of a platinum-iridium alloy consisting essentially of 95% to 70% platinum and 5% to 30% iridium in a manner so that the brush is held in sliding contact with the commutator.

3,191,085
BRUSH HOLDER FOR ELECTRIC COMMUTATOR MACHINE
Wieger van Dijk, Everhardus Catharinus Ettema, and Minne Krikke, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 265,242
Claims priority, application Netherlands, Mar. 26, 1962, 276,426
5 Claims. (Cl. 310—246)



1. In a low power electric motor the combination comprising a bearing carrier of insulating material having apertures for receiving brushes, a brush in each said aperture engaging one wall thereof, a second aperture in said bearing carrier connected with said brush aperture, a helical spring in said second aperture, a pressure piece hingedly connected at one end with said bearing carrier and overlying said helical spring, one leg of said helical spring engaging said pressure piece for urging the other end of said pressure piece against said brush, said other end of said pressure piece being curved away from said brush and engaging said brush at a point of tangency between the center line of said brush and said wall of said bearing carrier.

3,191,086
SECONDARY EMISSION MULTIPLIER INTENSIFIER IMAGE ORTHICON
Radames K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 23, 1960, Ser. No. 71,368
1 Claim. (Cl. 313—65)
(Granted under Title 35, U.S. Code (1952), sec. 266)



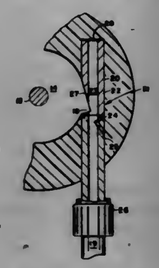
An image orthicon tube comprising, in an evacuated envelope, an electron gun for providing a scanning beam, a target electrode spaced from said gun, and swept by said beam, a photocathode positioned at the end of said tube opposite said gun, for projecting a photoelectron image on said target electrode, an electron multiplier disposed between said photocathode and said target electrode, said multiplier including a plurality of closely spaced vanes disposed one above the other and having parallel surfaces inclined with respect to the axis of said tube to intercept primary electrons emitted from said photocathode; each of said vanes consisting of a support member of electrically-insulating material, a coating of electrically-conductive material on those opposed sides of said support member exposed to said photocathode and said target electrode, and a coating having the property of high secondary emission on said coatings of electrically-conductive material; whereby said coatings of secondary emissive material are rigidly supported in the plane transverse to said tube axis by virtue of the relatively large mass of said support member and the cohesive bond developed between the respective coatings in each vane, and voltage source means including connecting lead-in conductor means coupled to said two coatings of electrically-conductive material in such manner as to avoid shadowing of said secondary emissive coatings by said lead-in conductor means, said lead-in conductor means rendering the electrically-conductive coating on the side of said vane exposed to said target positive with respect to the electrically-conductive coating on the side of said vane exposed to said photocathode.

3,191,087
DISK TYPE FLUORESCENT LAMP
Rinzo Sugiyama, 115 Oyamadai, 1-chome, Shinagawaku, and Kenichi Kido, 1075 Magomecho Higashi, 2-chome, Otaku, both of Tokyo, Japan
Filed Nov. 29, 1960, Ser. No. 72,416
4 Claims. (Cl. 313—109)



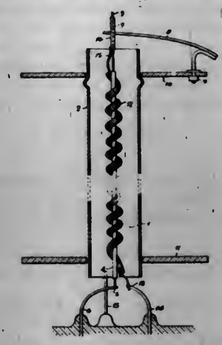
1. A fluorescent lamp comprising a disc shape lamp portion, said portion having a central opening and bounding walls, and means for securing said lamp comprising a base detached from said lamp portion and including securing means for securing the base independent of the lamp portion, said base including a projecting portion extending through said central opening, and means supporting said lamp portion and engageable with said projecting portion to secure the lamp portion and the base together for unitary mounting by said securing means.

3,191,088
FLUID FLOW INDICATOR FOR ARC PLASMA DEVICE
Robert A. Hawkins, Topsfield, and Gerald A. Jensen, Lowell, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Aug. 2, 1961, Ser. No. 128,817
5 Claims. (Cl. 313—231)



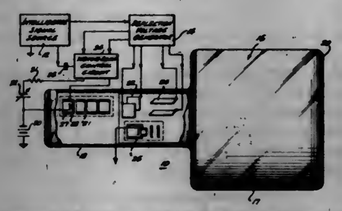
1. In an arc plasma means having electrodes across which an arc is struck, and means for supplying a working fluid to said electrodes, a fluid flow indicator comprising an audible means disposed in said arc plasma means in fluid communication with said working fluid supply means and activated by the working fluid for emitting an audible sound when an adequate supply of fluid is being supplied to the arc plasma means.

3,191,089
THERMIONIC VALVE CATHODE
Frederic William Rodbard Farrow, Enfield, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 29, 1960, Ser. No. 52,476
Claims priority, application Great Britain, Sept. 3, 1959, 30,155/59
2 Claims. (Cl. 313—270)



1. An indirectly heated cathode structure comprising a cathode sleeve having an external electron emissive surface, a linear tensioned support wire extending axially within said sleeve, an insulating coating for said support wire, a doubly helical heater winding formed of a helically coiled wire helically wrapped around and in mechanical contact with said support wire coating, an electrical connection between one end of said heater wire and one end of said support wire, external electrical connections for heater current to the other end of said support wire and the other end of said heater wire, and an external electrical connection to said cathode sleeve.

3,191,090
ELECTRON BEAM UNIFORM INTENSITY CONTROL CIRCUIT
George G. Vitt, Jr., Los Angeles, and Irving Benjamin Merles, Costa Mesa, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed July 17, 1962, Ser. No. 210,404
4 Claims. (Cl. 315—22)



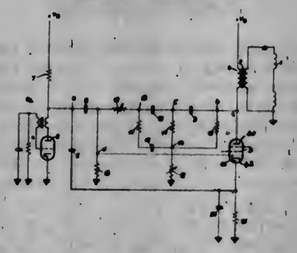
1. A system for controlling the instantaneous intensity of the writing beam current of a direct viewing storage tube having beam intensity control means and beam deflection members comprising:
means coupled with said deflection members for providing beam deflection control signals;
first circuit means coupled with said last named means and including an amplifying means and a deflectable beam electron discharge means connected in cascade for providing an output signal having a magnitude representative of the square of the magnitude of said deflection control signals;
second circuit means coupled with said discharge means for providing a signal representative of the square

root of the sum of the squares of said deflection control signals;

and control signal means connected to said second circuit means for applying a control voltage to the beam intensity control means, said control signal means including an oscillator means for developing under predetermined conditions a control signal of constant amplitude having a repetition frequency proportional to the magnitude of the square root signal and a biasing means for maintaining said intensity control means inoperative until said control signal has reached said predetermined magnitude.

whereby the current of the writing beam is controlled as a function of the velocity of the writing beam.

3,191,091
VERTICAL DEFLECTION TELEVISION CIRCUIT
Alfred Pollak, Hannover, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed July 17, 1961, Ser. No. 124,477
Claims priority, application Germany, July 20, 1960, T 18,718
10 Claims. (Cl. 315—27)



1. A circuit arrangement for producing a current having a saw tooth shaped curve for the deflection of an electron beam of a CRT wherein the radius of curvature of the screen is greater than its distance from the center of deflection, comprising an output circuit having deflecting coils presenting an ohmic load with an inductive component for the saw tooth current, tube means connected to said output circuit and having an anode and a control grid for generating a saw tooth control voltage; capacitive voltage divider means including two capacitors connected to the tube anode for predistorting the saw tooth control voltage with frequency dependent negative feedback which is fed to the control grid; a variable linearity regulator having a tapping point and connected to a tapping point of the capacitive voltage divider between the two capacitors and a substantially fixed voltage for correcting the tangential distortion; and at least one circuit element means connected with said regulator to bring about an additional predistortion of the control voltage so that when the linearity regulator is short-circuited the additional predistortion is minimal.

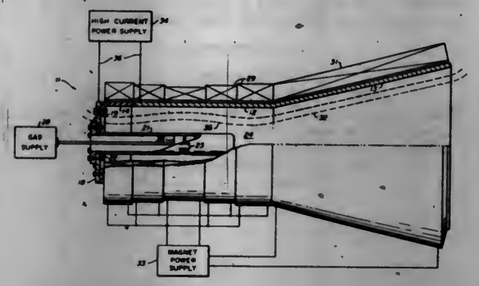
3,191,092
PLASMA PROPULSION DEVICE HAVING SPECIAL MAGNETIC FIELD
William R. Baker, Orinda, and Klaus Halbach and Robert W. Layman, Berkeley, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 20, 1962, Ser. No. 225,169
6 Claims. (Cl. 315—111)

1. In a magnetohydrodynamic device for producing a directed plasma beam, the combination comprising:

(a) a cylindrical housing disposed symmetrically around an axis and defining a plasma chamber, a first end of said housing being closed and a second end thereof being open to form a plasma outlet,

(b) means providing a substantially linear longitudinal magnetic field through said plasma chamber and being characterized in that said magnetic field is caused to pass through said housing only at said first end and pass axially through said chamber and flare outwardly from said axis at said plasma outlet,

(c) a tubular electrode disposed along the axis of said housing, said electrode being electrically isolated

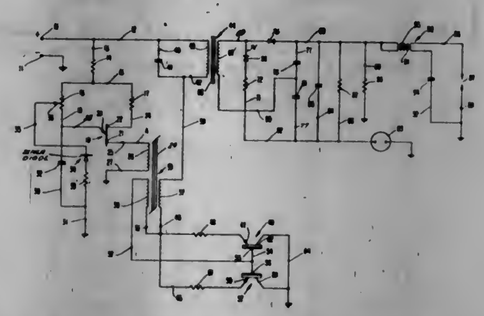


therefrom, said electrode having at least one gas emission opening at a median position in said chamber,

(d) an electrical power supply coupled between said center electrode and said housing, and

(e) means supplying gas to said electrode for pulsed emission through said opening.

3,191,093
IGNITION SYSTEM EMPLOYING SATURABLE CORE RESET BY RELAXATION OSCILLATOR
James C. Morrison and Louis H. Segall, Sidney, N.Y., assignors to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,441
30 Claims. (Cl. 315—209)



27. In an ignition system, an igniter gap, a storage condenser, control means for causing said condenser to discharge across said gap when the charge thereon attains a predetermined discharge value, means for charging said condenser step-by-step in increments to said discharge value, said last-named means including a source of direct current electrical energy, a charging circuit, and means for intermittently interrupting the flow of current from said source through the charging circuit, said last-named means including means for varying the frequency of such interruptions inversely to variations in the voltage supplied by said source, whereby the discharge repetition rate of said condenser may be maintained relatively constant throughout a wide range of source voltages.

3,191,094
STATIC ELECTRICITY DISCHARGER
Schuyler Kleinhans, Santa Monica, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed July 27, 1962, Ser. No. 212,846
6 Claims. (Cl. 317—2)



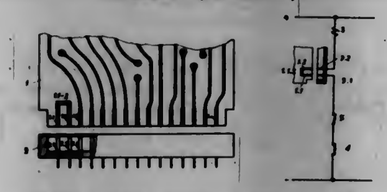
1. In combination:

a body having, with a meteorological medium, relative movement, there being established on at least one face thereof a charge of static electricity by virtue of the immersion and relative movement of the body with respect to the meteorological medium; and

radioactive means disposed in adjacency with a trailing region of said face and emitting radioactive particles ionizing the air adjacent said region and continuously discharging said charge through the ionized air substantially instantaneously upon the generation of the charge;

accumulation of static electricity on said face hence failing to occur.

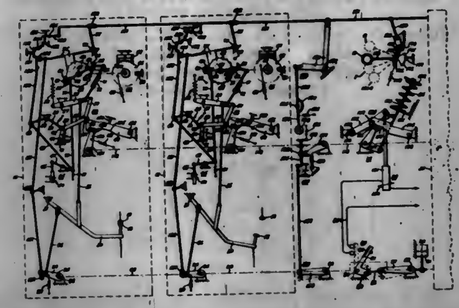
3,191,095
PRINTED CIRCUIT
Frederic Hefti, Hochweid, Ebikon, near Lucerne, Switzerland
Filed Jan. 24, 1961, Ser. No. 84,649
Claims priority, application Switzerland, Feb. 1, 1960, 1,149/60
4 Claims. (Cl. 317—9)



1. A printed circuit provided with a safety arrangement for operating a safety device such as for cutting off the power to the circuit when the circuit is not properly connected, comprising at least one conductor plate with a comb-like edge having connection points and a matching contact strip for each conductor plate, characterized in that two selected contacts of each contact strip lie in the current circuit of a safety switch and interrupt this current circuit, a full current and voltage responsive relay in said current circuit for switching on or off an electrically operated element, the connection points co-operating with the selected contacts of each conductor plate possessing a direct connection, so that on correct fitting together of the contact strip and the conductor plate the interruption of the current circuit of the safety switch is bridged over by the corresponding connection points of the conductor plate to energize said relay.

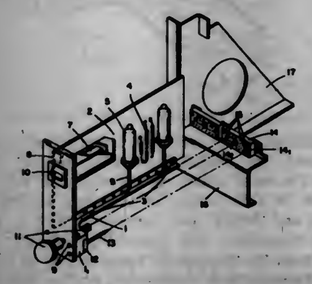
3,191,096
AUTOMATIC RECLOSING CIRCUIT BREAKER
Edward J. Frank, Springfield, Pa., assignor to General Electric Company, a corporation of New York
Filed Aug. 12, 1955, Ser. No. 527,894
37 Claims. (Cl. 317—32)

1. In an automatic reclosing circuit breaker comprising a plurality of pole units each comprising separable contacts biased toward open position, each pole-unit further comprising a trip-free linkage for transmitting closing thrust to its contacts and a trip latch movable to a tripped position to render said linkage incapable of transmitting said closing thrust, common motive means operable to apply closing thrust to any one of said linkages, reclosing control means for producing operation of said motive means in response to opening of any one of said pole units, normally-inoperative lock-out means in-



dividual to each of said pole units and effective when operative to hold the latch of its corresponding pole unit in a tripped position and to render said reclosing control means unresponsive to opening of said corresponding pole unit, and integrating means individual to each of said pole units for rendering operative the lock-out means of its particular pole unit in response to a predetermined series of quickly successive operations of said particular pole unit.

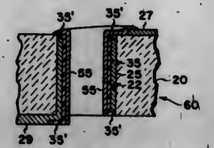
3,191,097
INTERCHANGEABLE CHASSIS SLIDES FOR CARRYING ELECTRONIC EQUIPMENT
Louis Dano, La Plaine Saint-Denis, and Roger Vigné, Gif-sur-Yvette, France, assignors to Commissariat a l'Energie Atomique, Paris, France, an organization of France
Filed Aug. 5, 1959, Ser. No. 831,755
Claims priority, application France, Aug. 19, 1958, 772,723
6 Claims. (Cl. 317—101)



1. A rack for housing electric equipment which comprises, in combination, a frame having a front wall, a plurality of slides to be mounted in said frame, each of said slides including a girder to be secured to said frame in a position where said girder extends in a direction transverse to said wall, electric equipment supporting means carried by said girder, and at least one multi-contact connector including two elements, a female one and a male one, adapted slidably to engage each other along respective co-operating guiding surfaces thereof, one of said elements being carried by said frame front wall, and its guiding surface extending in said transverse direction, the other of said elements being carried by said girder at the front part

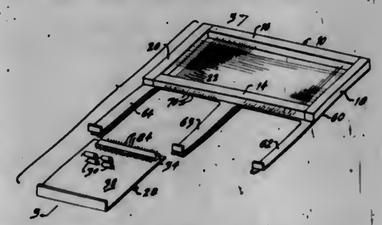
thereof and extending rearwardly from said front part, said last mentioned element being of a length which is a fraction of the length of said girder, said elements being the only means for guiding the corresponding slide with respect to said frame.

3,191,098
STRUCTURALLY INTEGRATED CAPACITOR ASSEMBLY
William D. Fuller, Palo Alto, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 26, 1960, Ser. No. 31,947
4 Claims. (Cl. 317—101)



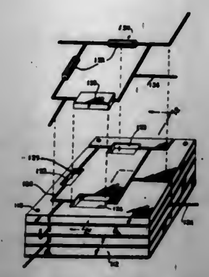
2. A capacitor comprising an insulative substrate having an aperture therein, a conductive film coated on the inner surface of said aperture, said conductive film consisting essentially of a metal capable of being anodized, a dielectric film on the inner surface of said conductive film, said dielectric film consisting essentially of an oxide of the material of which said conductive layer essentially consists, and a conductive material in contact with the inner surface of said dielectric film.

3,191,099
RANDOM ACCESS MEMORY
Gerard Rezek, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 12, 1961, Ser. No. 109,739
3 Claims. (Cl. 317—101)



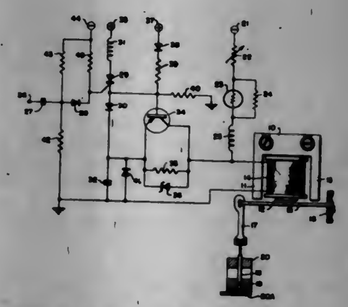
1. A random access memory construction comprising a frame made of insulating material, unitary electrical connector elements extending through one side of said frame, each of said connector elements having a wire-connection end inside the frame and having a quick-disconnect connector end outside the frame, terminal elements extending through an opposite side of said frame and each having a wire-connection end on the inside of the frame and a wire-connection end on the outside of the frame, columns of memory elements arranged in said frame, column conductors each linking one column of memory elements and each connected from the inside wire-connection end of a connector element to the inside wire-connection end of a terminal element, a printed circuit board having an insulating member along one edge thereof, and unitary electrical connector elements extending through said member, each of said connector elements having a printed-circuit-connection end and having a quick-disconnect connector end adapted to engage the quick-disconnect connector end of one of said connector elements on said frame.

3,191,100
LAMINATED ELECTRIC CIRCUIT MOUNTING BOARDS
Eugene Sorvillo, 1957 81st St., Brooklyn, N.Y.
Filed Mar. 7, 1963, Ser. No. 263,465
4 Claims. (Cl. 317—101)



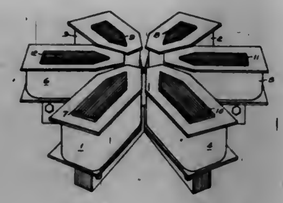
1. An electrical circuit board comprising a flat panel, said panel having an array of grooves therein for receiving electric wires and a plurality of recesses for receiving electrical components, certain of said grooves communicating with said recesses for connection of certain of said wires to said components, said grooves and recesses having bottom webs to support the wires and components in the grooves, said panel being formed of flexible material, each of said grooves and recesses having a constricted opening defined by opposing lips to retain the wires and circuit components in the grooves and recesses respectively, said lips being sufficiently flexible to permit the wires and circuit components to be pushed past the lips into the grooves and recesses.

3,191,101
ELECTROMAGNET DRIVING CIRCUIT
Alfons Reszka, Chicago, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed June 6, 1962, Ser. No. 200,431
14 Claims. (Cl. 317—151)



1. An electrical system including
(a) an energy storage means for storing electrical energy,
(b) first and second resonant circuits each including said energy storage means as a common element thereof,
(c) means for supplying electrical energy to said first resonant circuit, said electrical energy being stored in said storage means, and,
(d) means for preventing said first resonant circuit from oscillating and for causing said stored energy to be released in said second resonant circuit.

3,191,102
METHOD AND APPARATUS FOR ERASING RECORDINGS ON MAGNETIC TAPE AND FILM
Silvaan René Lambeir, Bonheiden-Malines, and Modest Charline Vereycken, Schelle, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
Filed Dec. 14, 1960, Ser. No. 75,787
8 Claims. (Cl. 317—157.5)



1. A bulk eraser for erasing magnetic tape and film comprising electromagnetic coils provided around iron core portions, said coils being electrically connected to act upon each other by a high mutual inductance when supplied by an alternating current source, to produce unordered asymmetric erasing fields.

3,191,103
ELECTRICAL LEAD ASSEMBLY WITH TRANSFORMER
Louis H. Segall, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,454
7 Claims. (Cl. 317—157.6)



1. A radio-shielded electrical lead assembly comprising a metallic tube, a tubular end fitting telescoped with and secured to one end of said tube, a tubular insulator in said fitting, a connector contact supported in said insulator, an insulating tube having one end telescoped with the end of said insulator within said metallic tube, a prewound transformer having primary and secondary windings inserted into said insulating tube, means connecting one end of said primary winding and one end of said secondary winding to said contact, a second end fitting telescoped with and secured to the other end of said metallic tube in engagement with the other end of said insulating tube, a metallic conduit secured to said second fitting, an electrical conductor connected to the other end of the secondary winding and extending through said second fitting and conduit, and means connecting the other end of said primary winding to said metallic tube.

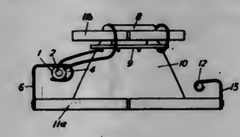
3,191,104
DEFLECTION SYSTEM FOR TELEVISION RECEIVERS
Gerrit Mak, Flinders Park, South Australia, Australia, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1961, Ser. No. 153,811
Claims priority, application Australia, Nov. 1, 1961, 66,677/60
2 Claims. (Cl. 317—200)



1. In a deflection coil system for television display tubes, a screening hood of insulating molding material, said screening hood comprising a generally truncated conical portion for housing deflection coils and an annular marginal portion, said annular marginal portion having a dispersion of permanent magnetizable powder of high coercive force whereby discrete areas of said annular portion may be permanently magnetized for image correction

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3,191,105
SCANNING COIL ASSEMBLIES
Raymond G. R. Robinson, Cambridge, England, assignor to Pye Limited, Cambridge, England
Filed Mar. 6, 1962, Ser. No. 177,791
Claims priority, application Great Britain, Mar. 7, 1961, 8,268/61
8 Claims. (Cl. 317—200)

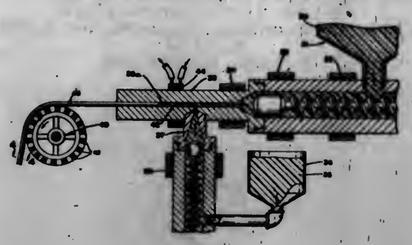


1. In a scanning coil assembly for a cathode ray tube, line scan coils for electromagnetically deflecting an electron beam in said tube; a magnetic yoke on said tube in the magnetic fields of said coils; and a linearity correction sub-assembly mounted for adjustable positioning in relation to said yoke, said sub-assembly comprising a coil wound on a magnetic core and electrically connected to said line scan coils, a permanent magnet, and means for maintaining said coil and said magnet in a preset positional relationship relative to each other.

3,191,106
RUBBER-LIKE PERMANENT MAGNET ARTICLE AND MANUFACTURE OF SAME
Max Baermann, Cologne (Rhine), Germany (Bensberg Wulfshof, Bezirk Cologne, Germany)
Filed Oct. 6, 1960, Ser. No. 60,951
Claims priority, application Germany, Dec. 24, 1959, B 56,033
17 Claims. (Cl. 317—201)

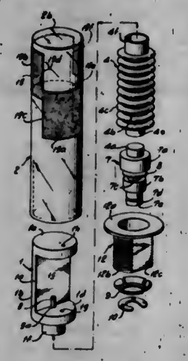
1. A holding magnet for exerting a holding action against a magnetically attractable member, said holding magnet comprising a body of a flexible resilient plastic

material having a holding face, said body having dispersed therein particles of permanent magnet material which are magnetized to provide spaced apart opposite polarity permanent magnet poles at said holding face of



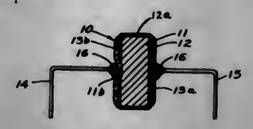
the body, said magnetic poles developing a magnetic field extending from said holding face and adapted to hold said magnet against said magnetically attractable member, said body having coloring material integral therewith.

3,191,107
TEMPERATURE COMPENSATING TRIMMER CAPACITOR
Seymour Mermelstein, Brooklyn, Nelson Berman, New Hyde Park, and Herz Hirschberg, New York, N.Y., assignors to JFD Electronics Corporation, Brooklyn, N.Y., an organization of New York
Filed Apr. 18, 1962, Ser. No. 188,459
8 Claims. (Cl. 317—248)



8. Adjustable temperature compensating capacitor comprising longitudinally extending dielectric member having inner and outer surfaces, metalized conductive pattern on the outer surface of said dielectric member having a pair of longitudinally adjacent, connected, laterally displaced sectors, a longitudinally extending, conducting slug member, means mounting said slug member against the inner surface of said dielectric member so as to be laterally adjustable between extreme positions of maximum lateral registration with the respective sectors, and means coupled to said mounting means moving said slug member longitudinally in direction and amount according to direction and magnitude of temperature change, said slug being generally longitudinally centered on said metalized pattern at selected temperature and then terminating short of the remote ends of said sectors; whereby the capacity of said capacitor as a function of temperature can be varied between negative and positive coefficients depending upon the lateral position of said slug member.

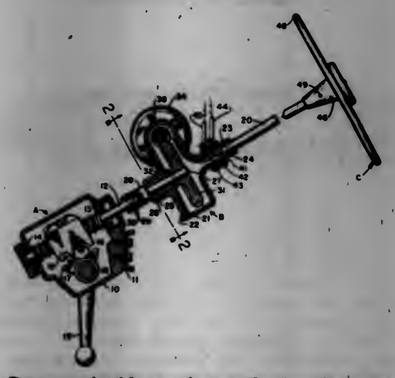
3,191,108
ELECTRICAL CAPACITOR AND METHOD OF MAKING THE SAME
Otis F. Boykin, Chicago, Ill., assignor to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed Oct. 3, 1962, Ser. No. 228,004
8 Claims. (Cl. 317—258)



1. The method of making an electrical capacitor comprising: the steps of
firing a body of tantalum having parallel ends in an oxidizing atmosphere for from 5 to 30 minutes at 700–900° C. to oxidize the outer layer of the body;
impregnating the outer portion of the oxide layer with a liquid lead resinate;
refiring the body at 700–900° C. for from 5 to 10 minutes to recompose the resinate; and form a dielectric layer on the body of tantalum comprising an inner layer of the oxide of tantalum and an outer layer of lead tantalate, and
attaching an electrode to the portion of the dielectric layer covering one of the ends to produce the electrical capacitor.

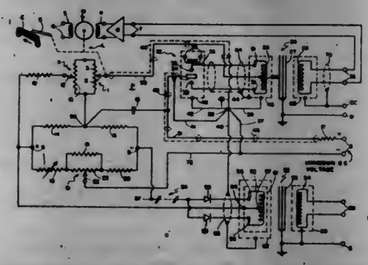
7. An electrical capacitor comprising a body of tantalum, a dielectric film bonded to the body of tantalum comprising an oxide of tantalum and lead tantalate, the lead tantalate being bonded to the oxide of tantalum, and an electrode secured to the dielectric film.

3,191,109
STEERING MECHANISM WITH MANUAL AND ELECTRIC DRIVE FOR MOTOR VEHICLES
Neal Hepner, 4246 Sandy Lane, Birmingham, Mich.
Filed Mar. 7, 1962, Ser. No. 178,175
8 Claims. (Cl. 318—2)



1. Power assistable steering mechanism for motor vehicles including a source of electrical energy, manually controllable electrical circuit opening and closing means, and the manually rotatable combination comprising: a steering hand member, a steering gear input element, and power operable steering drive means coupling said hand member with said input element, said drive means including a driven element coupled with one of said hand member or said input element, a driving element disposed for coaction with said driven element and reaction against the other of said hand member or said input element, and electric motor means energizable in response to the operation of said circuit opening and closing means and adapted for imparting motion to said driving element so as to effect rotational displacement of said input element relative to said steering hand member in either of two opposite directions, wherein said motor means is mounted on said manually rotatable combination and rotates with said combination, and wherein said electrical circuit opening and closing means is so constructed and arranged as to be manually controllable irrespective of the magnitude of the manual torque applied to said hand member.

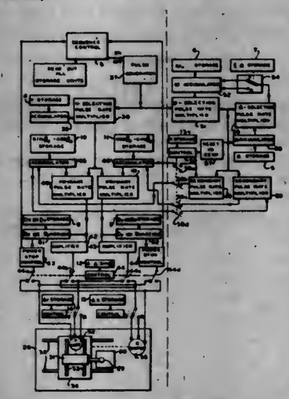
3,191,110
VOLTAGE-MEASURING POTENTIOMETRIC SYSTEM
William C. Evans, Rochester, N.Y., assignor to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed Sept. 10, 1962, Ser. No. 222,318
11 Claims. (Cl. 318—28)



1. In a potentiometric circuit, a potentiometer and a voltage divider, the slidewire of said potentiometer being shunted across said voltage divider;
a first resistance connecting the slider of said potentiometer to one terminal of a first source of voltage;
a second resistance connected to the other terminal of said first source and in series with said voltage divider and said slidewire;
a third resistance interconnecting the said one terminal of said first source and said second resistance;
whereby the total resistance of a portion of the current path between said terminals, via said first resistance, is shunted by said third resistance;
the resistance of said third resistance being substantially lesser than the said total resistance of the said portion of the said current path;
and means for applying the voltage of a second source of voltage to said voltage divider.

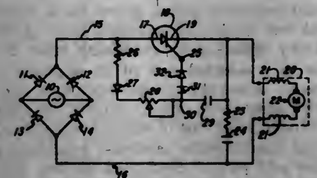
3,191,111
PULSE RATE RESPONSIVE MOTOR CONTROL FOR A MACHINE TOOL
William J. Greene, Bound Brook, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 13, 1962, Ser. No. 209,644
6 Claims. (Cl. 318—162)

1. Apparatus for controlling two relatively movable members to produce relative movement thereof along a path having a variable radius portion, comprising:
(a) two pulse responsive motors, each operatively connected to the members for producing relative movement thereof in the direction of one of two coordinate axes;
(b) a source of electrical pulses;
(c) two pulse rate multipliers;
(d) each of said pulse rate multipliers
(1) including an input and an output, and
(2) being effective to produce at the output a train of pulses having an average pulse rate equal to the input average pulse rate times a multiplicand;
(e) first accumulator means for determining a multiplicand for one primary multiplier;
(f) second accumulator means for determining a multiplicand for the other primary multiplier;
(g) each accumulator means including:
(1) means for setting an initial multiplicand, and
(2) pulse rate responsive means for varying the multiplicand;
(h) means connecting the inputs of both multipliers to the source;



(i) means connecting the outputs of the two multipliers to the respective motors;
(j) pulse rate sine-cosine generator means for producing two trains of output pulses having average rates respectively varying as the sine and cosine of an angle;
(k) means for supplying the two trains of output pulses of the sine-cosine generator means to the respective pulse rate responsive means for varying the multiplicands of the first and second accumulator means; and
(l) means for varying continuously the angle whose sine and cosine are generated by said generator means.

3,191,112
MOTOR CONTROL SYSTEM UTILIZING SEMICONDUCTOR CONTROLLED RECTIFIERS
Ernest O. Cain, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 26, 1961, Ser. No. 162,156
7 Claims. (Cl. 318—246)



1. A control circuit comprising:
(a) a source of unidirectional pulsating voltage having positive and negative output terminals,
(b) a load having first and second terminals and exhibiting varying voltage drop thereacross, said second

terminal being connected to said negative output terminal,

(c) a semiconductor controlled rectifier having an anode, a cathode and a gate, said anode being connected to said positive output terminal, said cathode being connected to the first terminal of said load,

(d) a first capacitor and a first resistor connected in series across the first and second terminals of said load,

(e) a variable resistor and a second capacitor connected in series between said anode and said cathode,

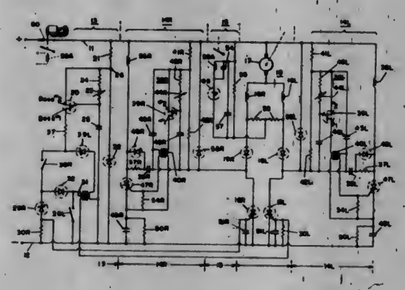
(f) and a unidirectional conductive threshold trigger device connected between said gate and the juncture of said variable resistor and said second capacitor.

3,191,113

SYSTEMS FOR SUPPLYING DIRECT-CURRENT PULSES TO A LOAD PARTICULARLY A SERIES-MOTOR

Arnold J. Gargani, Norristown, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 18, 1962, Ser. No. 188,457
15 Claims. (Cl. 318—252)



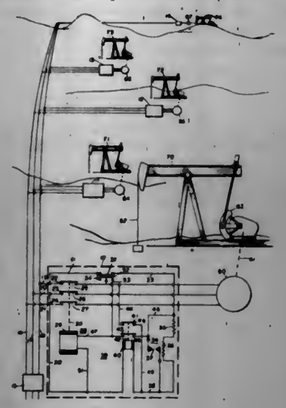
12. A system for supplying direct-current pulses from a direct-current source to a reversible series motor having an armature and two field windings, said system comprising a first pair of controlled-rectifiers respectively in series with said source and one of said field windings, a first pair of capacitance means in charging circuits respectively in parallel to said armature and one of said field windings, a pair of pulse-duration circuits each comprising a control-pulse generator in parallel with said armature and corresponding one of said field windings, and a second controlled-rectifier which is in series with said source, a second capacitance means and an inductance means; a pair of direction-selector switches, and a pulse-repetition generator activated by closure of either of said switches and providing gating pulses for a corresponding one of said first controlled-rectifiers, each of said gating pulses thereby initiating an energizing pulse for driving said motor in a selected one of its opposite directions of movement, activating a corresponding one of said control-pulse generators, and energizing the charging circuit of a corresponding one of said first capacitance means, the activated control-pulse generator producing a control pulse gating said second controlled-rectifier whereby the reverse voltage of the charged one of the first capacitance means effects reversion of said one of the first controlled-rectifiers to non-conductive state to terminate an energizing pulse of the motor, and whereby the charging of said second capacitance means through said inductance means subsequently effects reversion of said second controlled-rectifier to its non-conductive state.

3,191,114

TIME DELAY MOTOR STARTING SYSTEM

Charles W. Reed, Taft, Calif., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Sept. 26, 1962, Ser. No. 226,278
2 Claims. (Cl. 318—472)



1. A motor control system coupled to power supply means for starting an electric motor comprising:

a first relay control means for applying starting and running power to said motor,

a time delay circuit having a normally open first switch means which is closed after a predetermined time delay following application of current to said time delay means,

said time delay circuit having input and output ends coupled to said first switch means,

the current sating of said time delay circuit being less than that of said first relay control means,

an energizing circuit coupled to said power supply means and to said input end of said time delay circuit,

a shunting circuit including a second switch means,

said shunting circuit having a first end coupled to said energizing circuit at a point between said power supply means and said time delay circuit and a second end coupled to said first control means,

a second relay control means of current rating within the current limits of said delay circuit for closing said second switch means independently of said first relay control means,

said second relay control means being coupled to said output end of said time delay circuit and responsive to current passing from said energizing circuit by way of said first switch means when closed for closing said second switch means to complete said shunting circuit to said first relay control means to shunt said time delay circuit and to apply energizing current to said first relay control means.

3,191,115

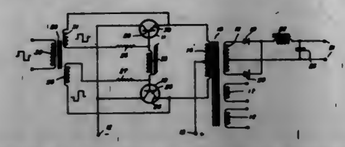
DIRECT-CURRENT TO ALTERNATING-CURRENT INVERTER

Allan G. Lloyd, Hanover, N.J., assignor, by mesne assignments, to General Mills, Inc., Minneapolis, Minn., a corporation of Delaware

Filed Nov. 22, 1960, Ser. No. 70,982
12 Claims. (Cl. 321—45)

1. A direct-current to alternating-current inverter comprising an input circuit for energization with unidirectional power and an output transformer having an energizing winding and providing an alternating-current output circuit, a pair of conductance control devices having

conductance terminals providing unidirectional coupling of said winding to said input circuit with a polarity of coupling by one of said devices opposite to that of the other and each having forward-conductance control terminals, energizing sources exhibiting relatively poor regulation characteristics and directly electrically connected to the conductance control terminals of said devices for energization thereof in opposed phase relationships to render said devices alternately conductive, and saturable-



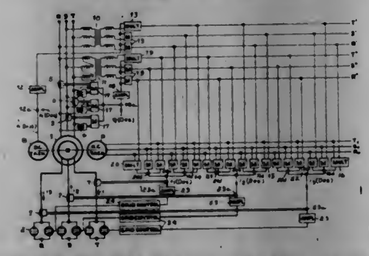
core reactive means effectively coupled electrically in shunt relation to said sources to be energized thereby alternately to opposite polarities of magnetic saturation by individual ones of said energizing sources for increasing periodically and alternately the saturation-effect loading of said sources and thereby terminate each period of conductivity of said devices by reduction of the forward conductance energization of said conductance control terminals by said sources.

3,191,116

PHASE MODIFIER FOR REACTIVE POWER PROTECTION

Manfred Depenbrock, Mannheim-Almendorf, Germany, assignor to Brown, Boveri & Cie, Aktiengesellschaft, Mannheim, Germany, a joint-stock company

Filed June 19, 1961, Ser. No. 118,145
Claims priority, application Germany, June 24, 1960, B 58,324
5 Claims. (Cl. 322—10)



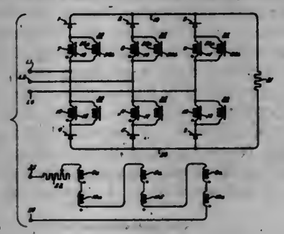
1. In a phase shifter for covering idle power, and particularly under load surge conditions, the combination comprising an asynchronous machine (1) having a 3-phase stator winding connected to a 3-phase power network (R–S–T) and a 3-phase slip ring rotor; a 3-phase controllable grid converter system (2) arranged in the phase connections between the slip rings of said rotor and the corresponding phases of said network; a first tachometer generator (8) driven by said asynchronous machine and producing a direct voltage proportional to the actual speed of the rotor of said asynchronous machine; a second tachometer generator (9) also driven by said asynchronous machine and producing a 3-phase alternating voltage whose frequency is proportional to the actual speed of the rotor of said asynchronous machine, said 3-phase alternating voltage being applied to establish a first auxiliary 3-phase alternating voltage network (R_x–S_x–T_x); a first group of three multipliers (13) whose respective output voltages are applied to establish a second auxiliary 3-phase alternating voltage network (R'–S'–T') having the same frequency as said power network, each of said multipliers (13) having two input voltages which are multiplied, the first of each of said input voltages being derived from the respective phases of said power network and the second of each of said input voltages being proportional to the difference between the direct voltage produced by said first tachometer generator (8) and a voltage corresponding to a theoretical speed for the rotor of said asynchronous machine; a second group of three multipliers (19) whose respective output voltages are applied to establish a third auxiliary 3-phase alternating voltage network (R"–S"–T") having the same frequency as said power network, each of said multipliers (19) having two input voltages which are multiplied, the first of each of said input voltages being derived from the respective phases of said power network and the second of each of said input voltages being proportional to the difference between the actual and theoretical values of wattless power on the stator side of said asynchronous motor; a first group of 3 x 3 multipliers (14, 15, 16) each having two input voltages, the first of each of said input voltages being the corresponding phase voltages of said second auxiliary network (R'–S'–T') and the second of each of said input voltages being the corresponding phase voltages of said first auxiliary network (R_x–S_x–T_x), circuit means connecting the output voltages of each 3 x 3 multiplier of said first group in series to obtain a first group of summation voltages (14*d*, 15*d*, 16*d*); a second group of 3 x 3 multipliers (20, 21, 22) each having two input voltages, the first of each of said input voltages being the corresponding phase voltages of said third auxiliary network (R"–S"–T") and the second of each of said input voltages being the corresponding phase voltages of said first auxiliary network (R_x–S_x–T_x), circuit means connecting the output voltages of each 3 x 3 multiplier of said second group in series to obtain a second group of summation voltages (20*d*, 21*d*, 22*d*); circuit means connecting together in series corresponding summation voltages of said first and second groups to establish three regulating voltages (25*a*, 25*b*, 25*c*); means comparing each of said regulating voltages respectively with a voltage proportional to the current flow in the respective phase of said rotor of said asynchronous machine to obtain a difference voltage; and grid control devices (24) for said converters controlled respectively by said difference voltages.

3,191,117

STABILIZED POLYPHASE BRIDGE AMPLISTAT

Fred W. Kelley, Jr., Media, Pa., assignor to General Electric Company, a corporation of New York

Filed Oct. 27, 1960, Ser. No. 65,428
5 Claims. (Cl. 323—89)



1. In combination,

(a) a plurality of self saturating magnetic amplifiers connected in polyphase bridge configuration with one of said amplifiers in each arm of the bridge,

(b) each of said amplifiers having a rectangular exciting characteristic and comprising a core member having a rectangular hysteresis loop characteristic and having mounted thereon in inductive relationship a gate winding and a control winding,

(c) a plurality of inductors each comprising a magnetic core member having a sloping generally linear B–H characteristic and a winding mounted thereon con-

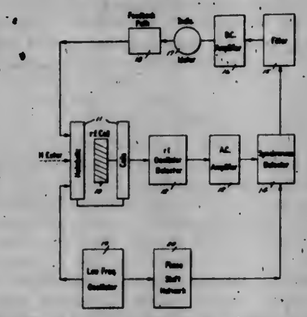
nected in a circuit in parallel with a corresponding one of said gate windings,

(d) and each of said inductors having a sloping generally linear volt seconds v. current exciting characteristic in which the exciting current is smoothly modulated with respect to volt seconds throughout the volt seconds range of said rectangular exciting characteristic thereby to produce a composite exciting characteristic that is skewed with respect to said rectangular exciting characteristic.

3,191,118
MAGNETOMETER

Paul Jung, Brussels, and Jean Leon Van Cakenberghe, Beersel, Belgium, assignors to Union Carbide Corporation, a corporation of New York

Filed Feb. 6, 1958, Ser. No. 713,626
3 Claims. (Cl. 324—.5)



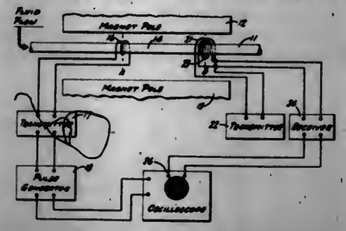
1. Apparatus for measuring an external magnetic field comprising a paramagnetic material having a single magnetic resonance absorption line the width of which expressed in magnetic field intensity units, is 0.1 to 10 times the absolute maximum value of the external field to be measured, said resonance line exhibiting peak resonance absorption values symmetrically disposed on opposite sides of a minimum absorption value, resonance absorption structure comprising first generator means for imposing on said material a first alternating magnetic field at a first frequency larger than said line width expressed in frequency units, and second means for imposing on said material a second alternating magnetic field at a frequency lower than said first frequency, and oriented substantially perpendicular to said first alternating field, means for adjusting said second alternating field to symmetrically sweep said resonance line through said minimum absorption value, said second alternating field being adapted to define with said external field, a resultant sweep field on said material asymmetrically biased with respect to said minimum absorption value by an amount dependent on the magnitude of said field to be measured, and means responsive to said resonance absorption structure for detecting corresponding asymmetric variations in the resonance absorption of said material as a measure of said external field.

3,191,119
APPARATUS FOR MEASURING FLOW USING MAGNETIC RESONANCE

Jerome R. Singer, 17 El Camino Road, Berkeley, Calif.

Filed June 5, 1962, Ser. No. 200,115
3 Claims. (Cl. 324—.5)

1. Fluid flow apparatus comprising means establishing a substantially uniform magnetic field through a conduit carrying fluid, at least one transmitter, at least one coupling coil connected to said transmitter and adapted for disposition within said magnetic field adjacent said fluid-carrying conduit for coupling energy into flowing fluid at the magnetic resonance frequency thereof in said magnetic field, at least one receiver having coupling means adapted for disposition adjacent said conduit in said magnetic field downstream from said transmitter a fixed distance for producing a signal upon the passage of fluid resonantly excited by said transmittter energy, and recording apparatus con-

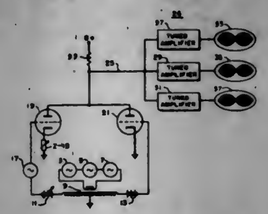


nected to said transmitter and receiver and triggered by the transmitter output to establish a time base extending to the signal received by said receiver whereby the velocity of flow of fluid through said conduit is equal to the fixed distance between transmitter and receiver divided by said time base.

3,191,120
BRIDGE-TYPE CATHODE INTERFACE IMPEDANCE TEST SET

Jun Tamiya, Tokyo, Japan, assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 14, 1961, Ser. No. 89,327
5 Claims. (Cl. 324—26)

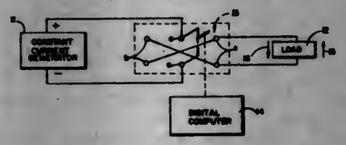


1. A cathode interface bridge comprising a cathode interface impedanceless reference tube and a tube under test, the anodes of said tubes being connected to a source of power via a common impedance, an adjustable complex impedance connected in the cathode circuit of said reference tube, means to supply a plurality of sinusoidal signals of different frequencies simultaneously and in opposite phase to the grids of said tubes, and means connected to said common impedance to simultaneously detect and indicate bridge balance at each of said different frequencies.

3,191,121
BISTABLE CURRENT REVERSING SWITCH FOR FREQUENCY DETERMINATION

Alan H. Nelson, Long Beach, Calif., assignor to North American Aviation, Inc.

Filed Oct. 17, 1960, Ser. No. 63,185
2 Claims. (Cl. 324—79)

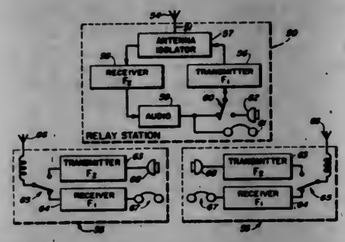


1. Frequency determining means comprising separate input means connected to be responsive to first and second pulse trains respectively indicative of an incremental rate, a bistable multivibrator, one of the stages of said multivibrator being responsively connected to one of said input means to be switched by said first pulse train, the other stage of said multivibrator being responsively connected to the other of said input means to be switched by said second pulse train, a load, a constant current generating means, a first transistor and diode connected in series between one side of said generator and one side of said load to form a first electrical path, a second transistor and diode connected in series between said one side of said generator and the other side of said load to form a second electrical path, a third transistor and diode conected in series between said one side of said load and the other side of said generator to form a third electrical path, and a fourth transistor and diode connected in series between said other side of said load and said other side of said generator to form a fourth electrical path, said first and fourth transistors coupled to said multivibrator to be conductive when said one stage of said multivibrator is switched by said first pulse train, said second and third transistors coupled to said multivibrator to be conductive when said other stage of said multivibrator is switched by said second pulse train.

3,191,122
COMMUNICATION SYSTEM FOR SHIELDED AREAS

Clyde V. Hussey, Tulsa, Okla., assignor to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware

Filed Dec. 1, 1961, Ser. No. 156,351
16 Claims. (Cl. 325—54)

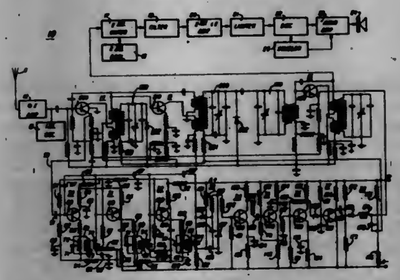


14. A system for providing two-way communication between a plurality of areas at least some of which are electrically shielded from one another to prevent the direct transmission and reception of radio waves therebetween; said system comprising a fixed relay station at a first of said areas; a plurality of remote units respectively located in other areas; said relay station comprising a transmitter for developing a first frequency signal, a receiver tuned to receive signals in a second frequency channel separated from said first frequency, and a modulator for modulating the output of said receiver upon said first frequency signal; each of said remote units including a transmitter for radiating a second signal within said second frequency channel, a receiver tuned to receive said first frequency signal, and means for modulating the second signal with other signals, whereby two-way communication may be attained between said remote units by transmission of signals from one unit to the receiver at the relay station where said other signals are detected and modulated upon the first signal for reception at another remote unit; means including a manually operated switch at the relay station for interrupting the modulation of said first signal by the output of the receiver at the relay station and for modulating the first signal with additional signals to permit two-way communication between the relay station and each remote unit; conductor means connected at one end to the relay station and extending at least partially into the electrically shielded areas; and a plurality of combined receiving and emitting antennas electrically connected to said conductor means and respectively disposed within said electrically shielded areas so that each antenna picks up the transmission from the remote unit operating within its area and also transmits to that remote unit the signal developed by the transmitter at the relay station.

3,191,123
RADIO RECEIVER IMPULSE NOISE BLANKING CIRCUIT

Orville M. Enea, Norridge, and Harry J. Hummel, West Chicago, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Sept. 19, 1961, Ser. No. 139,176
10 Claims. (Cl. 325—478)



1. An impulse noise blanking circuit for use in a radio receiver having a first portion for translating a desired signal which may be accompanied by impulse noise disturbances, a second portion for repeating the desired signal, and circuit means for applying a signal from the first portion to the second portion with the signal so applied being delayed, and wherein the second portion is adapted to be interrupted by the application of blanking pulses thereto, said impulse noise blanking circuit including in combination, amplifying means connected to the first receiver portion, pulse detection means connected to said amplifying means for deriving noise pulses therefrom, pulse forming means connected to said pulse detection means for producing blanking pulses of predetermined amplitude and time duration, said pulse forming means including pulse amplifying means, filter means for reducing spurious components within the pass band range of the receiver, pulse lengthening means, gate means for passing pulses only above a predetermined level of amplitude, switch means adapted to be operated by a blanking pulse connected to the circuit means preceding the receiver second portion, and coupling means for applying said blanking pulses to said switch means and to the second receiver portion, whereby said switch means acts to dissipate the energy stored in the circuit means and the receiver second portion is disabled for the duration of the blanking pulse applied thereto.

3,191,124
AMPLITUDE NOISE CONTROL GATE

Noel E. Brown, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Oct. 30, 1961, Ser. No. 148,393
12 Claims. (Cl. 325—478)

1. In a receiver, the combination comprising:

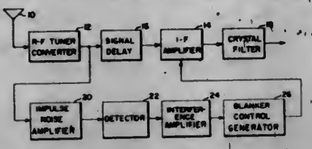
a source of signals, said signals fortuitously containing impulse noise;

said receiver including first and second channels;

said first channel comprising a delay network for delaying said signals for a fixed period; an amplifier for said delayed signals; and blanking means responsive

to a blanking signal for blanking said amplifier for a predetermined period; a reactance bridge having input and output terminals, said amplifier for said delayed signals comprising a variable impedance device having an input circuit connected across the output terminal of said reactance bridge, said reactance bridge including first and second reactance elements, the impedance of each of said reactance elements being variable with applied voltage, and means for applying signal to said bridge;

said second channel including a detector for separating said impulse noise from said signal; and means responsive to said impulse noise for generating said



blanking signal, said blanking signal being applied to said blanking means for blanking said amplifier;

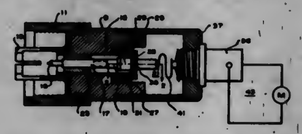
means for pre-biasing the first of said rectance elements to unbalance said bridge thereby developing a signal at said output terminals of said bridge, said blanking signal being applied to the second of said reactance elements for rebalancing said bridge when noise is detected in said second channel thereby blanking the signal to the input circuit of said variable impedance device, the fixed period of said delay network being substantially equal to the time required for detecting said impulse noise, and said predetermined period of time being at least as long as the expected duration of said impulse noise.

3,191,125

TRANSMISSION LINE APPARATUS HAVING A NON-LINEAR DETECTOR ELEMENT, AND A DIRECT-COUPLED LINE-TERMINATING RESISTOR IN CLOSE ELECTRICAL PROXIMITY

James K. Huston, Los Altos, and Russell B. Riley, Palo Alto, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Feb. 28, 1962, Ser. No. 176,227
6 Claims. (Cl. 329—162)



3. High frequency signal apparatus comprising first and second sections separated by an insulator, an output terminal, a non-linear circuit element connecting the output terminal and said first section, the apparatus being adapted to receive a high frequency signal between the first and second sections, and resistance means on said insulator connecting said first and second sections.

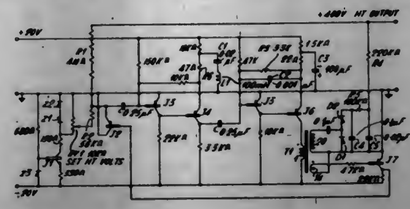
3,191,126

D.C. AMPLIFIERS

Eliot Patrick Fowler, Dorchester, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Feb. 16, 1962, Ser. No. 173,797
4 Claims. (Cl. 330—9)

1. A direct current amplifier comprising an alternating current amplifier having an input connected to a direct current signal source and an output providing an output waveform, an electronic switch connected to said alternating current amplifier input and said direct current signal source to modulate the direct current signal into a modulated waveform to said amplifier input, a drive connection connected to said electronic switch for actuating the same by a modulating waveform to provide said modulated waveform, the frequency of said modulating waveform being equal to that of said output waveform, means connecting said alternating current amplifier output to said drive connection for applying a portion of said output waveform to said electronic switch through said drive connection, said connecting means including means for coordinating the phase relationship of said applied portion of the output waveform to a predetermined polarity of the direct current input signal to generate said modulated waveform received by said amplifier input, and a non-phase-sensitive rectifier connected to the output of said amplifier to rectify the remaining portion of said output waveform to produce a direct current output.

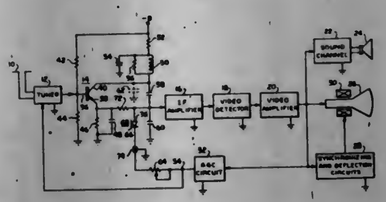


3,191,127

AGC WITH COMPENSATION FOR CHANGE IN COLLECTOR CAPACITANCE

Gerald E. Theriault, Hopewell, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 2, 1962, Ser. No. 184,210
4 Claims. (Cl. 330—24)



1. In a signal amplifier system having a source of signals to be amplified and a source of gain control current, a transistor amplifier circuit, comprising, in combination:

a transistor having a base, an emitter, and a collector;

signal input circuit means for applying signals from said source of signals between the base and emitter of said transistor;

signal output circuit means for said transistor connected between the collector and emitter of said transistor, and including the collector capacitance of said transistor;

circuit means for applying said gain control current to the emitter of said transistor, including a semiconductor diode connected to be transversed by said gain control current in the forward direction; and

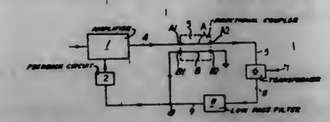
means coupling said diode to said signal output circuit means to compensate for the decreasing collector capacitance of said transistor caused by an increase in gain control current, said compensation being effected by an increase in the capacitance of said diode with increasing gain control current.

3,191,128

MEANS FOR CONTROLLING VHF LOOP GAIN OF A FEEDBACK AMPLIFIER

Keith Lamont, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Jan. 14, 1963, Ser. No. 251,337
Claims priority, application Great Britain, Feb. 15, 1962, 5,894/62
3 Claims. (Cl. 330—103)



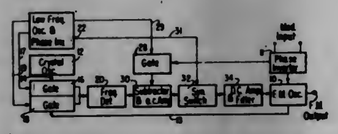
1. In a feedback arrangement, the combination of a transformer, an amplier connected to said transformer to supply a load therethrough, means for supplying a feedback signal from said transformer to said amplifier, a frequency sensitive directional coupler between said amplifier and said transformer, said directional coupler superimposing upon the feedback derived by said transformer a proportionally larger percentage of the overall feedback signal as the frequency of the signal increases.

3,191,129

STABILIZED SIGNAL GENERATOR

Stanley Feldman, Evanston, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 19, 1962, Ser. No. 231,742
6 Claims. (Cl. 332—19)



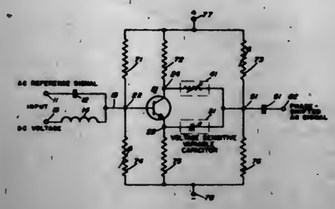
1. A frequency stabilized signal generating system for producing frequency modulated oscillations including in combination, first oscillator means for generating a wave signal, including, means for supplying a modulating signal thereto, second oscillator means for generating a stable reference frequency, frequency detection means, gating means for respectively coupling signals representative of the output of said first and second oscillator means to said frequency detection means, means for activating said gating means on a time shared basis so that said frequency detection means provides an output signal alternately indicative of the frequency of said first and second oscillator means, signal combining means coupled to the output of said frequency detection means, degenerative feedback circuit means for coupling a portion of said modulating signal to said signal combining means, means for synchronously activating said degenerative feedback circuit means with said gating means to thereby produce cancellation of modulation components appearing in the output of said frequency detection means during intervals that the output of said first oscillator means is detected, means coupled to said signal combining means to provide a control signal indicative of the center frequency shift of said first oscillator means with respect to the frequency of said second oscillator means, and means coupling said control signal to said first oscillator means to correct the center frequency thereof in response to said control signal.

3,191,130

PHASE SHIFTER USING TWO VOLTAGE SENSITIVE ELEMENTS

Harry C. Rudd, Jr., St. Petersburg, Fla., and Walter J. Mondzac, College Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 31, 1963, Ser. No. 284,765
5 Claims. (Cl. 332—29)



1. A voltage sensitive variable phase shifter comprising:

(a) an electron discharge device having at least three terminals

(b) a first condition responsive element connected to one of said terminals

(c) a second condition responsive element connected to a second of said terminals, said first condition responsive element exhibiting different impedance characteristics from said second condition responsive element, whereby one signal applied to a third of said terminals is phase shifted in accordance with another signal applied to said third terminal.

3,191,131

COIL ASSEMBLY

Stanley A. Adams, South Haven, and Donald Hubert, Kalamazoo, Mich., assignors to Adams Electronics, Inc., Bangor, Mich., a corporation of Michigan

Filed Sept. 12, 1961, Ser. No. 137,663
6 Claims. (Cl. 333—76)



1. In a coil assembly, an elongated tubular coil form for receiving a winding thereon, a base integral with said coil form and being of one-piece construction therewith, capacitor means mounted below said base, contact elements connected with the winding and capacitor means, a movable core inserted into the end of the coil form and in threaded engagement therewith, wherein said coil form and base being constructed of plastic material, said coil form being hollow and provided with a plurality of inwardly extending ribs of triangular cross-sectional configuration on the inner surface thereof, said core being externally threaded whereby the threads on the core will cut through the apex of the triangular ribs thus retaining the cores in rotatable adjustable position.

3,191,132
ELECTRIC CABLE UTILIZING LOSSY MATERIAL TO ABSORB HIGH FREQUENCY WAVES
Ferdy Mayer, 4 Ave. de Beauvert, Grenoble, France
Filed Jan. 10, 1963, Ser. No. 250,674
15 Claims. (Cl. 333—79)



1. A flexible cable capable of transmitting a range of low frequencies without substantial attenuation and of providing substantial absorption over a selected wide range of frequencies in the megacycle range, said flexible cable comprising at least one conducting element and at least one flexible insulating medium thereon, said insulating medium comprised of an intimate admixture of materials selected to have a frequency dependent electromagnetic wave attenuation due to absorption losses over said selected range of frequencies substantially as great as the attenuation caused by reactive effects of said mixture of materials, said absorption losses being produced by microscopic magnetic and/or dielectric resonance or relaxation within the mixture of materials.

3,191,133
INTERFERENCE SUPPRESSOR FOR INTERNAL COMBUSTION ENGINES
Léon Texsier, 21 Rue du Pont Neuf, Paris, France
Filed Sept. 5, 1961, Ser. No. 135,973
Claims priority, application France, Apr. 25, 1961, 859,239
3 Claims. (Cl. 333—79)



1. An interference suppressor device for internal combustion engines, for direct insertion between the sparkplug, which has a determined residual capacity C_{bs}, and the plug lead, which has a determined capacity C_4, said suppressor device being constituted by a low pass T-filter network, said network on the one hand comprising, in series, two assemblies resistor R_1 and inductance L_1 and resistor R_2 and inductance L_2 respectively formed by a resistance R_1 or R_2 in series with an inductance L_1 or L_2 and on the other hand, in shunt, a capacity of value C_3 near to the value of the residual capacity of the plug C_{bs}, the values of the different aforementioned parameters being interconnected by the following relationships:

$$\sqrt{2} < R_1\sqrt{\frac{C_{bs}}{L_1}} < 2$$

$$\sqrt{2} < R_1\sqrt{\frac{C_3}{L_1}} < 2$$

$$\sqrt{2} < R_2\sqrt{\frac{C_3}{L_2}} < 2$$

$$\sqrt{2} < R_2\sqrt{\frac{C_4}{L_2}} < 2$$

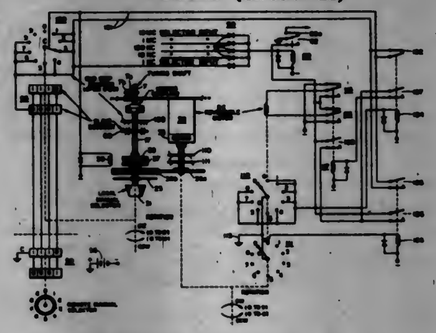
and also preferably

$$\sqrt{2} < R_1\sqrt{\frac{C_{bs}\times C_3}{C_{bs}+C_3}}$$

$$\sqrt{2} < R_2\sqrt{\frac{C_3\times C_4}{C_3+C_4}}$$

the values of the resistances being expressed in ohms, those of the capacities in farads and those of the inductances in henrys.

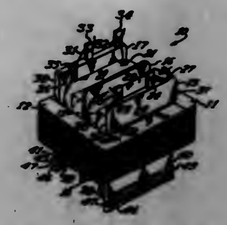
3,191,134
REMOTE CONTROL FOR DIGITALLY TUNED RADIO
Joseph Stillwater, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Nov. 16, 1961, Ser. No. 152,833
7 Claims. (Cl. 334—21)



3. The combination comprising:
(a) a unitary resonant circuit with a plurality of groups of reactance elements, the elements of the groups being selectably switched into the resonant circuit for changing the resonant frequency of said circuit in decimally-related increments,
(b) a plurality of tuning shafts, each shaft being operatively associated respectively with the switch selecting means of one of said groups of reactance elements,
(c) a motor coupled through a direct drive linkage to all of said tuning shafts,
(d) a power relay for said motor,
(e) clutch mechanism for selectively engaging said linkage to and disengaging said linkage from said shafts,
(f) a position servo system for each shaft, each servo system including a remote encoding station and a local decoding station with circuit means for producing a unique voltage when the shaft arrives at the rotational position dictated by the associated remote encoding station,
(g) means responsive to said unique voltage of each servo system for operating the associated clutch mechanism, and
(h) means responsive to a unique combination of said voltages for operating said power relay.

3,191,135
SELF-MOUNTING ELECTRICAL APPARATUS
Donald R. Hazelquist, St. Louis Park, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 272,966
10 Claims. (Cl. 336—65)

1. A self-mounting electrical apparatus, including: an electrically insulating winding form including a pair of flanges joined by winding portion means; each of said flanges having a first side adjacent said winding portion means, a second side remote from said first side, and a peripheral edge joining said two sides; grooved resilient mounting means attached to the second sides of each of



said flanges and projecting beyond said peripheral edges; and electrical winding means placed upon said winding form which restrains said flanges in a substantially rigid manner; said grooved mounting means resiliently yielding with respect to said flanges to permit said apparatus to be mounted by means of said grooved mounting means.

3,191,136
D.C. TRANSFORMER FOR SUPERCONDUCTIVE CIRCUITRY
Richard A. Connell, Mount Kisco, and Daniel J. Quinn III, Chappaqua, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 21, 1962, Ser. No. 239,247
5 Claims. (Cl. 336—84)

1. A D.C. transformer for use in superconductive circuitry comprising a first U-shaped, ferromagnetic, half-yoke having arm portions, said half-yoke encased in an electrically insulated block, openings in said block above the encased arm portions of said first half-yoke for accommodating arm portions of a second U-shaped half-yoke whereby the two half-yokes make contact and a closed magnetic path is produced, a superconductive shield disposed on said block and around said openings, electrically conductive elements deposited as thin film circuitry on said shield, portions of said thin film being deposited as loops about said openings so as to be magnetically coupled to said closed magnetic path.

3,191,137
MULTITURN HELICAL POTENTIOMETER
Michael E. Sekerich, 405 E. 94th St., Brooklyn, N.Y.
Filed Sept. 18, 1962, Ser. No. 224,460
12 Claims. (Cl. 338—143)



3. An adjustable resistor, including a helix of spaced wire turns; a cylindrical core on which said helix is wound; said wire turns embedded in electrical insulation with exposed curved conductor facing surfaces, a contact wire lying on a substantial arc along said helix's curved surfaces in electrical contact therewith spanning said helix, electrical conductor arms holding said contact wire against said substantial arc of said helix and means adapted to cause said contact wire to track along the turns of said helix.

3,191,138
GRID RESISTOR STRUCTURE
David C. Wycoff, Brookfield, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis.
Filed May 8, 1963, Ser. No. 278,871
9 Claims. (Cl. 338—287)



1. A stacked resistor structure comprising:
a plurality of ribbon resistive elements of smooth helical twist, each having a common axis of revolution and center,
said resistive elements arranged in intermeshing but non-contiguous relationship with the common axes and centers of the plurality of elements parallel; and
means for connecting said resistive elements to a source of electric potential whereby the elements may be interconnected in series, parallel, or series-parallel relationship.

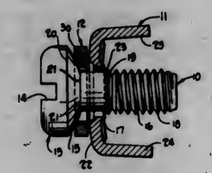
3,191,139
TAP CONNECTOR AND SETSCREW THEREFOR
Alois Schiffmann, 15 Streitfeldstrasse, Munich 8, Germany
Filed Feb. 19, 1962, Ser. No. 174,180
Claims priority, application Germany, Apr. 17, 1961, Sch 29,562; Dec. 18, 1961, Sch 37,030
10 Claims. (Cl. 339—97)



1. A tap connector for electrically connecting a branch line to an insulated main through line, said connector comprising a one-piece body having a rear portion and two arms with free ends, said rear portion connecting the arms to form a bow for receiving said insulated line between the arms and in contact with at least one of the arms, said rear portion comprising means for connecting said branch line to said body, said connector further comprising a clamp for removably engaging with said free ends of the arms, one of said arms having at least

one threaded hole and a setscrew in the threaded hole for pressing said insulated line into contact with the other of said arms, said setscrew comprising a bolt having a head, a threaded shank, and an end face opposite said head, said setscrew further having cutting grooves shaped for cutting and removing line insulation, said grooves being of narrow width relative to the diameter of said shank, deep, open to said shank periphery and end face, the other arm of said connector comprising means opposite said threaded hole for contacting said line, said clamp closing the bow and limiting any yielding of said arms away from each other upon tightening of the setscrew.

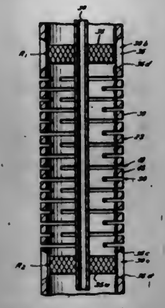
3,191,140
ELECTRICAL CONDUCTOR TERMINAL CLAMP
Chester P. Coldren, Canton, Ohio, assignor to Eaton Manufacturing Company, a corporation of Ohio
Filed June 5, 1963, Ser. No. 285,673
9 Claims. (Cl. 339—246)



1. An electrical conductor terminal clamp comprising in combination:
(a) a saddle having a centrally disposed elongated slot and having a terminal-bridging portion and depending flange portions;
(b) a bolt for fastening said clamp to said terminal, the free end of said bolt extending through said slot and having,
(1) a head,
(2) a convex bearing surface on the underside of said head, and
(3) a shank having a neck portion thereof depending from said convex bearing surface and so shaped as to move freely in said elongated slot of said saddle;
(c) a substantially rigid washer disposed between said convex bearing surface and said saddle, and having an aperture oversized relative to said shank for canting movement relative to said shank and sliding movement relative to the saddle, portions of the surfaces of said washer adjacent the aperture forming contact portions with the convex bearing surface and the saddle, respectively, and being shaped for substantial line contact with said convex bearing surface and substantial area contact with said saddle in various angular dispositions relative to the axis of said bolt.

3,191,141
LOGGING TOOL HOUSING WITH ACOUSTIC DELAY
Nick A. Schuster, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed May 16, 1961, Ser. No. 110,468
22 Claims. (Cl. 340—17)

1. Apparatus for use in well bores comprising: an elongated, rigid tubular member; at least two acoustic transducers in a fixed, spaced relationship relative to one another along a section of said tubular member; the wall of said tubular member having a configuration between said acoustic transducers arranged to alter the time of arrival of detectable acoustic energy pulses traveling therethrough longitudinally of said tubular member, such configuration including interruptions in the longitudinal



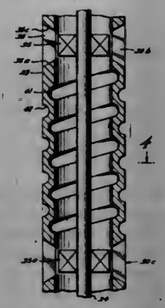
continuity of the wall of said tubular member to provide only tortuous alternative paths for passage of acoustic energy, which paths are longer than the longitudinal spacing between said transducers.

3,191,142
LOW ACOUSTIC VELOCITY SUPPORT MEMBER FOR LOGGING TOOLS
Maurice P. Lebourg, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed May 16, 1961, Ser. No. 110,469
5 Claims. (Cl. 340—17)



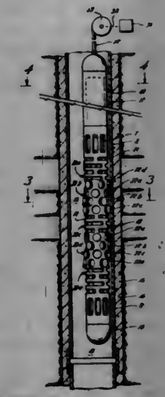
5. Apparatus for acoustically surveying a well bore comprising: an elongated rigid steel support member having a generally cylindrical configuration and adapted to be passed through a well bore; and at least two acoustic transducers coupled to said support member in spaced-apart relation, the portion of said steel support member between said transducers being formed of a plurality of segments rigidly and acoustically connected to one another to provide a unitary construction, each of said segments having an axial length short relative to the spacing between said transducers and connected to each adjacent segment at a plurality of angularly spaced points to provide an acoustic path between said transducers which changes in direction from segment to segment and is substantially longer than the longitudinal spacing between said transducers.

3,191,143
ACOUSTIC DELAY MEMBER FOR WELL LOGGING TOOLS
George H. Pardue, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed May 16, 1961, Ser. No. 110,470
6 Claims. (Cl. 340—17)



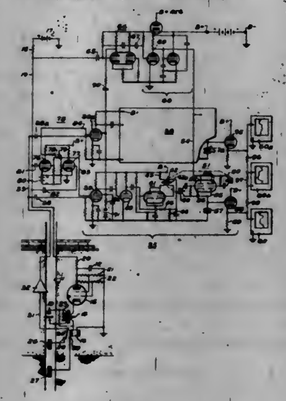
6. Apparatus for use in acoustically surveying a well bore comprising: an elongated steel member adapted to be passed through a well bore; at least two acoustic transducers mounted in a fixed, spaced-apart relationship relative to said member, the portion of said member between said transducers being of a solid-walled, tubular configuration, having inner and outer wall surfaces each provided with undulations along its length to provide only tortuous acoustic paths lengthwise of said portion of said member which are longer than the straight-line distance between said transducers.

3,191,144
STAND OFF APPARATUS FOR LOGGING TOOL
George H. Pardue, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Aug. 8, 1961, Ser. No. 130,060
8 Claims. (Cl. 340—17)



8. A well tool for use in a cased well bore comprising: an elongated, cylindrically shaped housing, said housing being adapted to be coupled at its upper end to a cable for movement through the well bore, magnet means in said upper end of said housing for magnetically attracting the upper end of said housing towards a casing, and stand off means disposed along the length of and about the periphery of said housing with extremities disposed a uniform distance outwardly from said housing, said magnet means being magnetically coupled to the casing with a force sufficient in conjunction with said stand off means to maintain said housing including said magnet means uniformly spaced from said casing by said uniform distance.

3,191,145
BORE HOLE TRANSMISSION IN WELL LOGGING SYSTEMS
Gerald C. Summers, Dallas, Tex., assignor, by mesne assignments, to Socony Mobil Oil Company, Inc., a corporation of New York
Filed May 15, 1952, Ser. No. 287,853
15 Claims. (Cl. 340—18)

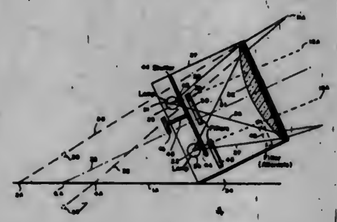


13. An acoustic logging system comprising:
a logging tool adapted for suspension in a borehole by a cable from the earth's surface, said cable including electrical conductors,
a transmitter in said tool,
means for periodically energizing said transmitter for producing a succession of acoustic pulses,
a near detector and a far detector in said tool supported in a spaced-apart relation one to the other and both spaced to one side of said transmitter, each being responsive in succession to reception from adjacent borehole formations of said acoustic pulses for producing electrical signals, and
circuit-controlling means disposed between said electrical conductors and said detectors for applying to said conductors upon energization of said transmitter the resultant signals from said far detector while said near detector is disconnected from said conductors to prevent the application to said conductors of the resultant signals from said near detector and upon the next energization of said transmitter for applying to said conductors the resultant signals from said near detector while said far detector is disconnected from said conductors to prevent the application thereto of the resultant signals from said far detector until after the next energization of said transmitter.

3,191,146
VISUAL LANDING AID FOR AIRPLANES
Reginald F. Mitchell, 1329 Park Drive, Apt. 2, Mountain View, Calif.
Filed Mar. 26, 1962, Ser. No. 182,236
5 Claims. (Cl. 340—26)

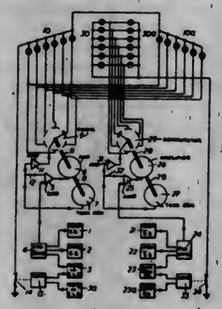
1. An airplane visual landing aid device consisting of an essentially light tight case containing a lens at one end and two lamp units at the other, said lamp units consisting of line filament type lamps arranged horizontally and parallel to said lens and also parallel to the optical axis of said device, one said lamp unit being set below

said axis and one lamp unit above said axis, with both being set inside the normal focal point of said lens so that two virtual images appearing as lines of light will be formed a substantial distance back of said device, with said optical axis set at an angle to the runway equivalent to the desired glide slope approach angle, with special color filters set between said lamp units and said lens in such a way that a pilot approaching for a landing at too



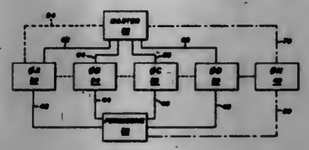
high an altitude will see said virtual images as two clear white lines of light one above the other, when at correct glide slope angle will see the top image colored red and the bottom image still clear, when at too low an altitude will see both images colored red, and when at positions intermediate between said high, correct and low positions will see a pink image of one of said lamp units, said device being set at one side of said runway.

3,191,147
VARIABLE STIMULUS PERIPHERAL VISION INDICATOR
Alastair Michael Adair Majendie, Cookham Dean, England, assignor to Smiths America Corporation, Washington, D.C.
Filed Sept. 4, 1958, Ser. No. 758,970
Claims priority, application Great Britain, Sept. 17, 1957, 29,280/57; Oct. 25, 1957, 33,451/57
22 Claims. (Cl. 340—27)



1. A visual indicating device for conveying to an observer stationed in a movable craft information as to a demanded maneuver of the craft, the device comprising an electric signal source for supplying an electric signal that is dependent in magnitude and sense upon a maneuver demand, indicator means which is controllable to provide a continuously changing optical stimulus, and control means responsive to said signal for controlling the indicator means to provide said optical stimulus changing continuously at a rate dependent upon the magnitude and sense of said signal.

3,191,148
MODULAR, PLURAL SINGLE-PHASE TIMERS TRAFFIC SIGNAL CONTROLLER
Arthur E. Hilliker, Pulaski, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Jan. 2, 1962, Ser. No. 163,611
7 Claims. (Cl. 340—37)

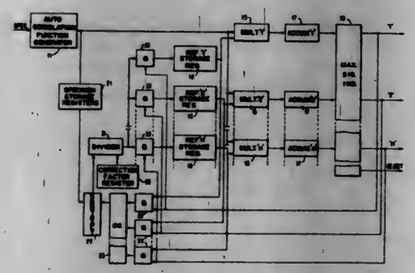


1. A modular traffic signal controller for an intersection having two or more conflicting movements for according a right-of-way signal display to said movements, said controller comprising a phase timer individual to each of said movements, traffic signal means and detector means associated with each movement, said signal means being connected to signalling means in said phase timer, said detector means being connected to detecting means in said phase timer, each phase timer in said controller being connected with a master unit, means in said master unit for placing a hot feed on said phase timers in a predetermined order, said hot feed being connected to starting means in each of said timers and being normally connected by transfer means in said starting means to the other of said timers in said predetermined order, said detecting means operating upon actuation of the detector means associated with said timer to energize said transfer means in said starting means to prepare said starting means for operation, permissive means in said phase timer interconnected with permissive means in each of said other phase timers and operating upon energization to energize said starting means, the energization of said starting means energizing signalling means to change the signal display for the movement associated with said timers from stop to proceed and timing means energized upon energization of said starting means to provide the proceed signal with a minimum time interval of energization, said timing means becoming inoperable upon completion of said minimum timing interval in the absence of any actuation of the permissive means of any of said other timers, said timing means operating upon actuation of the detector means associated with one of said other timers to change the signal display from proceed to clearance and to time the clearance signal display interval, and upon completion of said clearance interval to change the signal display from clearance to stop and de-energize said signalling and timing means.

3,191,149
SPECIMEN IDENTIFICATION APPARATUS WITH MEANS FOR ALTERING STORED SPECIMEN REFERENCE FUNCTIONS
Maxwell C. Andrews, Katonah, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 15, 1962, Ser. No. 166,180
12 Claims. (Cl. 340—146.3)

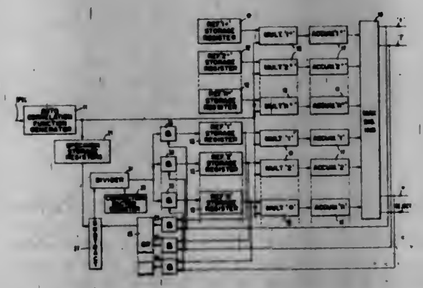
11. A specimen identification apparatus comprising, in combination:
input means including a surface light scanning device, and a light-sensitive device having an output $f(x, y)$ indicative of the specimen;
means for generating an autocorrelation function $D_R(x', y')$ of the specimen indication $f(x, y)$;
means for storing autocorrelation functions $D_R(x', y')$ of reference patterns R;

means for developing the normalized sums of the point-by-point products of the autocorrelation function of the specimen and the autocorrelation functions of the reference patterns;
means for providing an indication of the reference pattern which corresponds to the largest of the sums, which is indicative of the identity of the specimen;



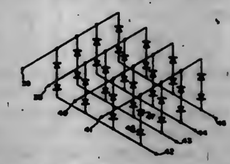
means responsive to the developed sums for providing an indication of the system discrimination, and
means responsive to the indication of the system discrimination and to the difference between the autocorrelation function of the specimen and the autocorrelation function of the indicated reference pattern, for altering the stored autocorrelation function of the indicated reference pattern when the specimen is different than this reference pattern.

3,191,150
SPECIMEN IDENTIFICATION SYSTEM WITH ADAPTIVE AND NON-ADAPTIVE STORAGE COMPARATORS
Maxwell C. Andrews, Katonah, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 30, 1962, Ser. No. 234,588
31 Claims. (Cl. 340—146.3)



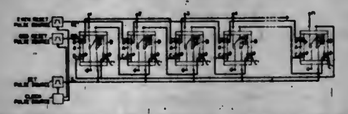
1. An apparatus for identifying a specimen based on its similarity to a member of a set of references comprising, in combination:
means for comparing the specimen with a non-adaptively stored set of references and with an adaptively stored set of references;
means for generating an indication of the identity of the reference that is most similar to the specimen;
and means for altering the indicated adaptively stored reference such that it is more closely related to the specimen when the specimen is different than this adaptively stored reference.

3,191,151
PROGRAMMABLE CIRCUIT
John E. Price, San Francisco, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, Long Island, N.Y., a corporation of Delaware
Filed Nov. 26, 1962, Ser. No. 240,010
14 Claims. (Cl. 340—166)



14. A programmable circuit matrix having a plurality of input and output terminals, each input terminal connected to each output terminal through a different pair of back-to-back semiconductor diodes, each of said diodes having two adjacent regions of the opposite conductivity type with a PN junction therebetween, said PN junction being capable of being permanently destroyed, leaving essentially a short circuit across its previous unidirectional current path in response to a current pulse of preselected magnitude in the reverse direction across said junction, one of the regions of one diode of each pair being connected to the region of the other diode of said pair of the same conductivity type.

3,191,152
MAGNETIC FERREED COUNTING CIRCUIT
Alexander Feiner, Holmdel Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 27, 1962, Ser. No. 247,678
10 Claims. (Cl. 340—168)

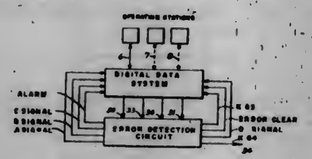


1. A ferreed circuit including a plurality of ferreed stages, each stage including steering contacts and output contacts having a contact operating time substantially greater than the contact release time, a set conductor, means for coupling said set conductor to each of said stages, reset conductors, means for coupling said reset conductors to said stages, means for connecting the steering contacts of a particular stage intermediate said set conductor and said means for coupling said set conductor to said succeeding stage, and means for energizing said conductors in sequence to propagate a signal stored in one of said ferreed stages including means for energizing said reset conductor to release said output contacts of said particular stage in a time period following the setting of a succeeding stage which is less than the contact operating time of said output contacts of said succeeding stage.

3,191,153
ERROR DETECTION CIRCUIT
Raymond W. Bratschi, Curtis W. Fritze, Valerius E. Herzfeld, and Paul H. Smith, all of St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 29, 1959, Ser. No. 823,599
20 Claims. (Cl. 340—172.5)

17. In a digital data system of the type having a start of operation signal and an end of operation signal, and having digital data operations of predetermined time durations, an automatic error detection circuit comprising: a first input, timing means connected to said first input

and preset to operate for a period longer than the longest correct digital data system operation, a start signal from the digital data system placed on the first input activating said timing means and causing it to begin operation at a predetermined time relationship with the start of a first digital data system operation, a second input connected to said timing means, an end of operation signal from the digital data system placed on the second input for indicating the end of said digital data system operation, said signal causing the timing means to stop operation and return to its initial setting at a predetermined time relationship with the end of said operation, a first output connected to said timing means for receiving a signal therefrom, said signal originating when the timing means has been operating for a duration longer than the longest correct digital data system operation, a second output connected through a first switching means to said timing means, said first switching means receiving a signal from said first output when activated, said signal causing the first switching means to effectively disconnect said first output from said timing means, the signal from said first output also being returned to the digital data system causing said first operation and corresponding timing sequence to be repeated, said second output receiving a signal from said timing means when it has been operating for a duration longer than the longest correct digital data



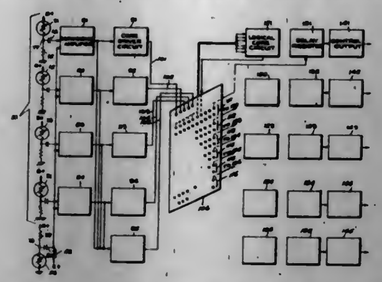
operation, a third output connected through a second switching means to said timing means, a third input connected to said second switching means, a signal from a predetermined portion of a computer placed on said third input line, said computer being part of the digital data system and said signal causing the second switching means to effectively disconnect the first and second outputs from the timing means, said third output receiving a signal from said timing means when the third input has been activated and the timing means has been operating for a duration longer than the longest correct digital data system operation, a fourth output connected through a third switching means to said timing means, said third switching means receiving a signal from said second output when it is activated, and from said third output when it is activated, said second output signal causing said third switching means to effectively disconnect said second and third outputs, said third output signal causing said third switching means to effectively disconnect said first, second and third outputs, both second and third output signals being returned to the digital data system causing an operation different from said first operation and corresponding timing sequence to be performed, said fourth output receiving a signal from said timing means when it has been operating for a duration longer than the longest correct operation duration.

3,191,154
PRINTING MACHINES

Max E. Saltach, Chesterland, and Charles F. Weber, Euclid, Ohio, assignors to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Dec. 7, 1959, Ser. No. 857,930
13 Claims. (Cl. 340—172.5)

1. A control system for controlling operation of a printing machine in response to code markings on a master print member, said system comprising: photosensitive scanning means for generating a plurality of individual actuating signals each indicative of the presence of a code marking at a given one of a corresponding plurality of code positions on said master print member; means for generating an auxiliary actuating signal indicative of the presence of a code marking at any of said code positions, all of said actuating signals being approximately equal in amplitude; a plurality of logical control devices, each

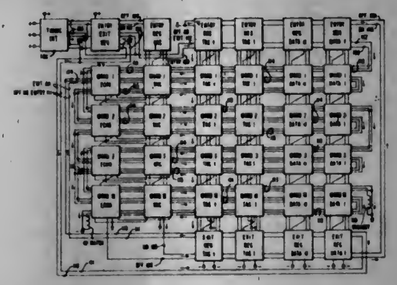


operable in response to two of said actuating signals applied thereto in additive relation; means for modifying the effective logical function of each of said control devices independently of the others, said modifying means including means for applying said actuating signals to said logical control devices; and a plurality of control output devices, electrically coupled to and actuated by said logical control devices.

3,191,155
LOGICAL CIRCUITS AND MEMORY

Robert R. Seeber, Jr., Poughkeepsie, and Arthur J. Scriver, Jr., Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 22, 1960, Ser. No. 51,102
2 Claims. (Cl. 340—172.5)



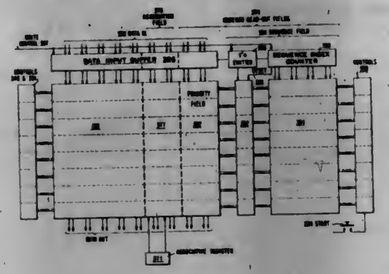
1. In an associative memory of the kind in which groups of data bits stored in random ones of a sequence of registers are identified by a tag portion of each group, and in which the tag of a group which is to be retrieved from memory is compared with the tags of one or more of the groups stored therein, a control device for selecting the one of said registers from which data is to be retrieved, comprising: a vacancy control means for each of said registers, each including a vacancy designating means and an occupancy designating means alternatively operable in dependence on whether the corresponding register is vacant or occupied, respectively; a tag comparing means for each of said registers, each responsive to the occupancy designating means of the corresponding register, each including a match responsive means and a mismatch responsive means alternatively operable in dependence on whether the tag of the desired group and the tag of the group stored in the corresponding register are identical

or not, respectively; a read-out means for each of said registers, each operable in response to the corresponding one of said match responsive means to retrieve data from the corresponding register; a connection means for each register subsequent to the first one in said sequence, each concurrently responsive to the mismatch responsive means and the vacancy designating means of the register antecedent thereto in said sequence to operate the one of said vacancy control means corresponding to said subsequent register; and initiating means to start a retrieval operation by operating the vacancy control means of the first register in said sequence.

3,191,156
RANDOM MEMORY WITH ORDERED READ OUT

Robert I. Roth, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 2, 1962, Ser. No. 176,958
16 Claims. (Cl. 340—172.5)



1. A memory system having automatic ordered read out of words comprising:

(a) a plurality of binary storage flip-flop arranged in rows for the storage of individual words and having corresponding word flip-flops arranged in columns,

(b) an individual ordering control circuit for each row,

(1) each of said ordering control circuits comprising a flip-flop condition detection circuit for each flip-flop of said word,

(i) said condition detection circuits being connected in cascade from the highest to the lowest order digit positions,

(ii) each of said condition detection circuits having an input connection and two output connections for respectively indicating first and second conditions,

(iii) one of said conditions being the "zero" condition and the other being the "one" condition,

(iv) the first of said condition output connections being connected to provide the input signal to any lower order condition detection circuit of the associated order control circuit,

(c) an "all second condition" detection circuit for each column connected to respond to outputs from all of the active condition detection circuits for that column for indicating when all of said active detection circuits are in said second condition,

(d) a coincidence circuit for each condition detection circuit connected to receive the second condition output signal therefrom,

(1) all of said coincidence circuits being connected to receive the "all second condition" detection signal from the "all second condition" detection circuit of the associated column,

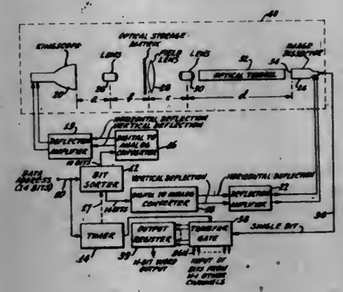
(2) each coincidence circuit being operable to provide an output only in response to the concurrent presence of both of said signals

(3) and the output of each said coincidence circuit being connected to supply a signal as an alternative to the first condition output of the associated condition detection circuit.

3,191,157
OPTICAL MEMORY

Donald J. Parker, Merchantville, N.J., Thomas I. Ress, Woodland Hills, Calif., and Harry J. Woll, Haddon Heights, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 21, 1960, Ser. No. 3,921
12 Claims. (Cl. 340—173)

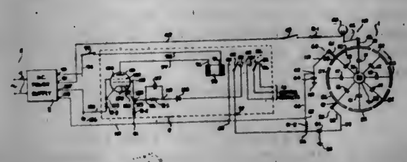


11. In combination, a stationary optical storage medium divided into a plurality of sub-areas, each said sub-area defining a plurality of storage locations; means for illuminating any one of said sub-areas, regardless of its location on the storage medium, while the remaining sub-areas remain unilluminated; an electronic scanning device for selecting from said illuminated sub-area one of the storage locations therein; and means for optically projecting an image of said illuminated sub-area whatever its location on said storage medium onto a common location of said electronic scanning device.

3,191,158
CAPACITOR MEMORY DEVICE

Charles A. Sherman, Tacoma, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed Oct. 23, 1963, Ser. No. 318,349
6 Claims. (Cl. 340—173)



1. A memory apparatus comprising in combination:

write means,

read means,

capacitor means mounted on positioning means for bringing said capacitor means into contact with said read means and said write means in succession,

said write means adapted to place an electrical charge upon said capacitor means when said capacitor means is in contact with said write means,

said capacitor means adapted to discharge said electrical charge through said read means when said read means is in contact with said capacitor means,

control means including relay means,

said control means responsive to said discharge of said capacitor means through said read means to energize said relay means,

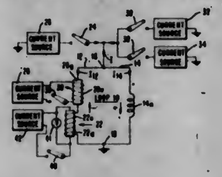
said relay means responsive to said energization of said relay means to impress a second electrical charge on said capacitor means.

3,191,159

SUPERCONDUCTOR CIRCUIT

Donald R. Young, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 22, 1959, Ser. No. 861,392
14 Claims. (Cl. 340—173.1)



1. A superconductor circuit comprising; a loop of superconductor material formed of first and second superconductive current paths extending between first and second terminals for the loop; current supply means connected to said loop effective to apply a first current to one of said terminals for said loop; means for introducing resistance into said first current path of said loop to cause said first current from said supply means to be directed into said second path and then allowing said first path to again become entirely superconductive; said current supply means terminating said first current when said loop is entirely superconductive to cause to be stored in said loop a persistent current representative of said first current; said current supply means being thereafter effective to apply a second current to one of said terminals for said loop; said second current dividing between said paths with the portion thereof in said first path being in the opposite direction to the persistent current in that path and the portion thereof in said second path being in the same direction as the persistent current in that path; a plurality of output cryotrons each including a superconductor gate conductor and a superconductor control conductor arranged in magnetic field applying relationship to the gate conductor; each of said control conductors being connected in one of the paths of said loop and carrying both the persistent current stored in said loop and the portion of the second current flowing in the path in which it is connected; and an output circuit in which the gates of said output cryotrons are connected in parallel for providing distinct current outputs indicative of the relationship between said first applied current and said second applied current.

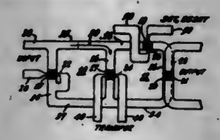
3,191,160

CRYOELECTRIC CIRCUITS

Gerard A. Alphonse, New York, N.Y., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 30, 1962, Ser. No. 183,876
5 Claims. (Cl. 340—173.1)

1. A superconductor circuit element comprising an element formed of a superconductor material and having two apertures therein, a first continuous path for persistent circulating current in the superconductor element around solely one of the apertures and a second continuous path for persistent circulating current in the element surrounding both apertures; means coupled to said element for inducing a persistent circulating current in said first path; means coupled to a portion of said element located between said apertures for causing said persistent circulating current to switch from said first path to said second path;



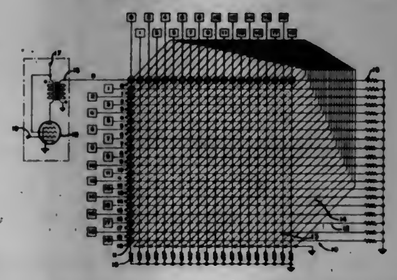
and a second superconductor circuit element substantially identical to the one described above, the first current path of which is coupled to the second current path of the first element.

3,191,161

MEANS FOR DRIVING MAGNETIC STORAGE ELEMENTS

Robert W. Clark, Centerville, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Oct. 29, 1958, Ser. No. 770,421
4 Claims. (Cl. 340—174)



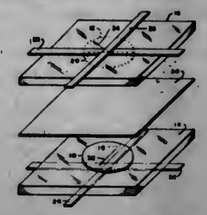
4. A switching matrix for producing output signals in accordance with predetermined combinations of input signals comprising, in combination, a plurality of individual magnetic elements having nearly rectangular hysteresis properties, and being arranged in rows and columns; a plurality of sets of drive lines arranged so that each element is associated with a different combination of drive lines including one line from each set; a low-impedance, substantially constant-voltage driving source capable of a high pulse repetition rate associated with each drive line of each set and comprising a signal-translating device and a transformer, the primary of the transformer being serially connected between an output from the signal-translating device and a base reference potential, and the secondary of the transformer being serially connected to its associated drive line, said driving sources being operative to supply short-duration impulses to selected drive lines, said impulses having a peak current substantially in excess of one-half the current required to change the state of one of the magnetic elements; and a plurality of readout conductors, each readout conductor coupling selected magnetic elements of the matrix and capable of transmitting a signal to a utilizing device when one of the magnetic elements coupled to said conductor changes from one state to another, the state of a selected magnetic element being changed by simultaneous application by the driving sources of impulses on selected drive lines, the back E.M.F. produced by the change in state reducing the current applied to the other elements on the selected drive lines sufficiently to prevent their switching also, and said impulses being of such duration that they are terminated before the current-reducing effect of the back E.M.F. has been dissipated.

3,191,162

MAGNETIC THIN FILM MEMORY CELL

William W. Davis, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 13, 1961, Ser. No. 89,057
11 Claims. (Cl. 340—174)



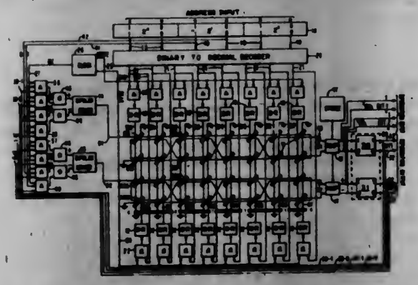
5. A data storage element for use in digital computing equipment comprising: at least two thin ferromagnetic films of the type exhibiting two stable states and a preferred axis of remanent magnetization, said films being disposed adjacent one another with their respective axes substantially transverse to one another so that the field produced by a first of said films tends to rotate the magnetization of the second of said films out of alignment with its preferred axis; means for applying an external field to said films in a direction substantially aligned with the preferred axis of said second film; and means including conductive means disposed between said films for preventing said external field from rotating the magnetization of said first film.

3,191,163

MAGNETIC MEMORY NOISE REDUCTION SYSTEM

David J. Crawford, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 8, 1961, Ser. No. 115,741
10 Claims. (Cl. 340—174)



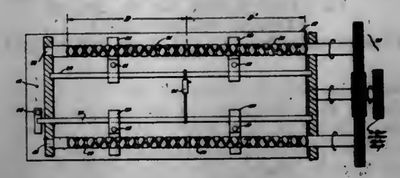
1. In a memory system which includes a plurality of bistable magnetic elements functionally arrayed in a matrix of rows and columns, means including row and column coils for affecting the states of said elements to store information in and read information from said matrix, a plurality of sense windings each coupling all of the elements of at least one row of elements, and means responsive to the respective polarity of information signals induced in said sense windings during reading for detecting information values, the improvement in means for reducing noise signals in said sense windings comprising for each row, means for dividing the sense winding for that row into a plurality of segments each coupling only a portion of the elements in that row and serially connecting adjacent segments in series opposition, whereby to provide for cancellation of noise signals induced in adjacent segments, and means for providing polarity inversion for elements coupled to alternate ones of said segments with respect to information stored in elements coupled to the remaining segments of said sense winding.

3,191,164

MOVING HEAD MEMORY DEVICE

John P. Lekas, Hollywood, Calif., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Feb. 13, 1958, Ser. No. 715,047
20 Claims. (Cl. 340—174.1)



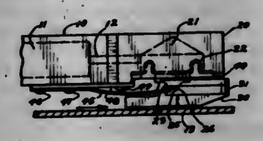
10. In a rotating magnetic drum memory device capable of continuously transducing a single channel of information, the combination comprising: a first head carriage having a first transducer head mounted thereon and reciprocally movable across the surface of the drum in a first operational direction and a first rewind direction; a second head carriage having a transducer head mounted thereon and reciprocally movable across the surface of the drum in a second operational direction and a second rewind direction; driving means synchronously coupling said first and second head carriages in a predetermined phase relation for driving said first and second head carriages across the surface of the drum to sequentially transduce a single channel of information, said driving means driving said first and second head carriages at a slower speed in said first and said second operational directions, than in said first and second rewind directions, respectively, said driving means including apparatus for always driving at least one or the other of said head carriages in its operational direction and for driving both of said head carriages in their operational directions during a predetermined overlap period whereby said single channel of information may be continuously transduced; and commutation means for switching between said first and second heads during the predetermined overlap period.

3,191,165

TRANSDUCER POSITIONING APPARATUS

Beat G. Keel, St. Paul, Minn., assignor, by mesne assignments, to Data Products Corporation, Culver City, Calif., a corporation of Delaware

Filed Mar. 16, 1962, Ser. No. 180,150
7 Claims. (Cl. 340—174.1)

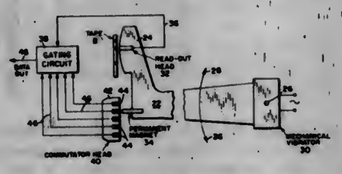


1. In a system for interchanging information with a moving storage medium, transducer positioning apparatus comprising; a hollow housing adapted for connection to a source of compressible fluid and including an aperture; an extendable member in said aperture, said member including a bearing surface shaped substantially as the conical apex of a cone and extending from the remaining surface of said member; a transducer mounting member including a bearing surface adapted to rotatably cooperate with the conical apex on said extendable member; and

means operatively associated with said housing and said transducer mounting member, said means tending to bias said transducer mounting member toward said extendable member and to maintain said transducer mounting member in predetermined relationship with one axis of said housing.

3,191,166
TRANSDUCER APPARATUS WITH A CYCLIC OSCILLATORY MOVEMENT RELATIVE TO A STORAGE MEDIUM

Fritz A. Guerth, 50 Lori Road, Camarillo, Calif.
Filed June 26, 1962, Ser. No. 205,469
6 Claims. (Cl. 340—174.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

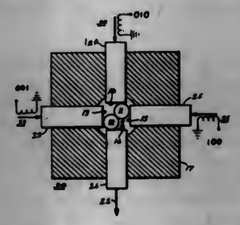


1. Magnetic read-out apparatus comprising a movable elongated storage medium on which has been recorded a plurality of channels of information, said channels being oriented lengthwise of said medium in spaced-apart relation, a pick-up head disposed contiguous to said medium, said pick-up head having a single energizable element the width of which is approximately equal to the width of one of the said channels of information recorded on said medium, a commutator head having a plurality of spaced-apart conductive elements carried thereby, the number of said conductive elements being equal to the number of channels of information recorded on said medium, said commutator head being laterally spaced from said movable storage medium so that the respective chanels of information recorded on said medium are transversely aligned with the spaced-apart conductive elements carried by said commutator head, a single permanent magnet disposed contiguous to said commutator head, the width of said permanent magnet being approximately equal to the width of a single conductive element carried by said commutator head, an oscillatable arm supporting and positioning both said pick-up head and said permanent magnet, and means for oscillating said arm at a constant frequency in a direction normal to the direction of movement of said storage medium, so that at any instant of time the single energizable element of said pick up head is magnetically associated with a particular channel of information on said storage medium and said permanent magnet is associated with that particular one of said plurality of conductive elements carried by said commutator head which is representative of the same particular channel of information, the oscillation of said arm thus in effect producing a cycle scanning at a constant frequency by the single energizable element of said pick-up head of all of the channels of information recorded on said medium and a corresponding scanning by said permanent magnet of all of the conductive elements of said commutator head which are respectively representative of such channels.

3,191,167
BINARY TO DECIMAL CONVERTER

Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif.
Filed Oct. 19, 1961, Ser. No. 148,013
3 Claims. (Cl. 340—347)

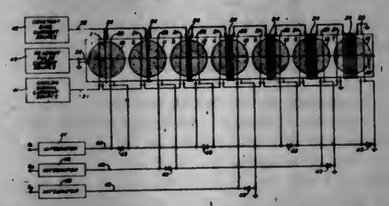
1. In a mechanism for imparting a plurality of binary code related input functions to a single output member
(a) a coupling means presenting four bearing surfaces;
(b) a first input member having but one bearing surface for contacting said coupling means;
(c) a second input member having but one bearing surface for contacting said coupling means;
(d) a third input member having but one bearing surface for contacting said coupling means;
(e) an output member having a bearing surface for contacting said coupling means;
(f) means for supporting said coupling means and said members so that said coupling means is in contact with each of said members and each member is in a zero reference position;
(g) means for changing the position of said output member to seven different positions equal, respectively, to seven different magnitudes of displacement and



corresponding, respectively, to seven different combinations of displacements imparted to said first, second and third input members, with respect to said zero reference position;
(h) said position of the output member being equal to the first of said seven different magnitudes of displacement following a displacement of only the first input member;
(i) said position of the output member being equal to the third of said seven different magnitudes of displacement following displacements of only the first and second input members; and
(j) said position of the output member being equal to the seventh of said seven different magnitudes of displacement following displacements of the first, second and third input members.

3,191,168
THIN FILM ANALOG-TO-DIGITAL ENCODER

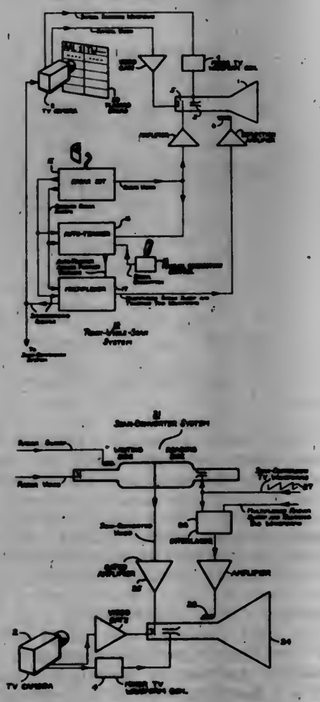
William A. Barrett, Jr., Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 21, 1961, Ser. No. 153,921
15 Claims. (Cl. 340—347)



13. In a thin film analog-to-digital encoder, a plurality of thin film elements, means for supplying a plurality of magnetic biasing fields of differing magnitudes and like polarities in one-to-one correspondence with said plurality of thin film elements, means for supplying a plurality of equal analog magnetic fields in one-to-one correspondence with said plurality of thin film elements, means for inductively coupling the net flux difference between one of said plurality of biasing fields and one of said analog magnetic fields to the easy axis of magnetization of each of said thin film elements, and means for simultaneously supplying an equal readout flux pulse to each of said thin elements along its hard axis of magnetization.

3,191,169
SYMBOL PRESENTATION MEANS FOR RADAR DISPLAYS

Abraham Shulman, Queens Village, N.Y. (46 Farber Drive, Babylon, N.Y.), and Marvin H. Bernstein, Old Bethpage, N.Y.; said Bernstein assignor to said Shulman
Filed Nov. 29, 1960, Ser. No. 72,342
2 Claims. (Cl. 343—5)



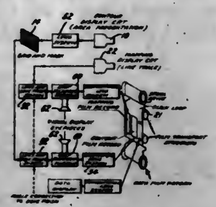
2. A radar display system comprising, in combination, a PPI display of radar targets, scan-conversion means providing a scan-converted facsimile presentation of said PPI display, means for generating symbols relating to said radar targets, and means for presenting said symbols adjacent to said related radar targets on said PPI display and simultaneously in like maner on said scan-converted facsimile, the said symbol-generation and symbol-presentation means operating synchronously with, but otherwise independently of, the said scan-conversion means.

3,191,170
CONTOUR MAPPING SYSTEM

Howard E. Lustig, Flushing, and Arthur L. Rossoff, Huntington Station, N.Y., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Jan. 7, 1963, Ser. No. 249,944
36 Claims. (Cl. 343—5)

1. The method of forming a contour line display which comprises forming a series of successive profile display images, viewing said images through (a) masking means effective to render visible only portions of said images corresponding to selected height levels and (b) through an anamorphic means effective to collapse said profile display images into substantially straight line traces, and successively recording next to one another the portions of successive images viewed via said masking means and said anamorphic means.

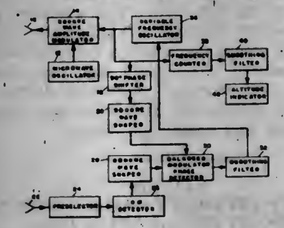
22. In a method of forming a contour line display, the



steps which comprise forming a series of successive profile display images and viewing said images through masking means effective to render visible only portions of said images corresponding to selected height levels, thereby to derive height-related image portions capable of being subsequently recorded.

3,191,171
RADAR HEIGHT SENSOR AND LOW ALTITUDE ALTIMETER

Richard D. Zuefeldt, Del Mar, and David D. Zak, San Diego, Calif., assignors to The Ryan Aeronautical Co., San Diego, Calif.
Filed Sept. 10, 1962, Ser. No. 222,608
5 Claims. (Cl. 343—7)



1. A low altitude radar altimeter having a transmitter transmitting signals that are amplitude modulated by a variable frequency oscillator at a wave length such that the true altitude of the transmitter from a reflecting surface equals an integral number of quater-wave lengths, in accordance with the formula

$$a=\frac{nV}{4f}$$

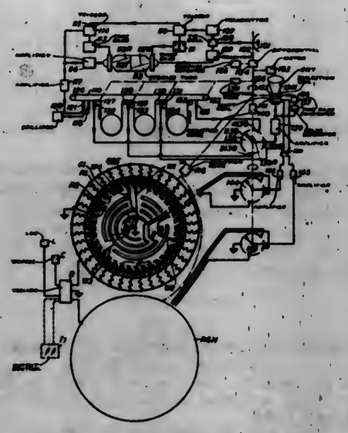
where a is height, V is the velocity of electromagnetic waves, f is frequency, and n is an integer greater than zero; a receiver receiving reflected signals, said receiver having means for sensing the phase difference between the modulation envelopes of the transmitted and received signals, means for applying the phase difference to change the frequency of said variable frequency oscillator as necessary to conform to said formula, and means for applying the output of said variable frequency oscillator to indicate true altitude.

3,191,172
SHIP OR THE LIKE MOVEMENT HISTORY RADAR SYSTEMS

James Watt, Essex, England, assignor to The Marconi Company Limited, a British company
Filed July 5, 1962, Ser. No. 207,593
Claims priority, application Great Britain, July 10, 1961, 24,875/61
4 Claims. (Cl. 343—11)

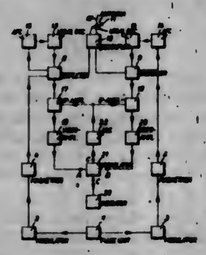
3. A radar system comprising means for deriving sets of echo signal information taken in different azimuth

scannings of space spaced apart by predetermined intervals of time; means including a moving recording element for storing said sets of information; means for deriving signals substantially representative of movements of said radar system with time; recorded signal pick-up devices spaced along said record element; and means for utilizing the recorded signals picked up by said pick-up devices



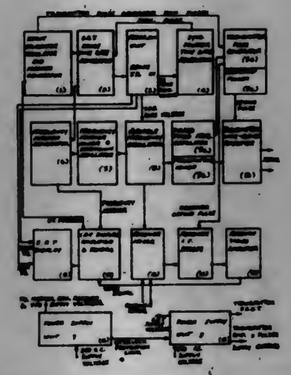
and said movement-representative signals to provide a P.P.I. display of the true motion type comprising a plurality of component displays with differently positioned origins, the said component displays being cyclically and repetitively produced at relatively high repetition speed in a time order such that each component display is produced a number of times and each is followed, in production, by the next later component display.

3,191,173
FREQUENCY DIVERSITY RADAR WITH "AND" CIRCUIT SIGNAL SELECTION
Frank Farner, Zurich, Switzerland, assignor to Albiswerk Zürich A.G., Zurich, Switzerland
Filed Aug. 21, 1962, Ser. No. 218,315
Claims priority, application Switzerland, Sept. 6, 1961, 10,351/61
3 Claims. (Cl. 343—17.1)



1. In a frequency diversity radar in which a pair of video frequency signals, each corresponding to a respective one of a pair of reflected impulse modulated high frequency waves having widely spaced respective frequencies, are fed to the inputs of a correlator which derives, at its output, the signal having the smaller amplitude; the improvement comprising a pair of independent amplifier valves; means for applying each of the two video frequencies to the input of a respective valve, the two video frequencies being so applied substantially simultaneously; and an "and" circuit connected to the outputs of said valves and to an output terminal, said "and" circuit deriving the signal having the lesser amplitude and supplying it to said output terminal.

3,191,174
IONOSPHERIC INVESTIGATION APPARATUS
Lloyd Henry Heisler, 11 Nockolds Ave., Punchbowl, New South Wales, Australia, and Leslie Darcy Wilson, 11 Ross St., Epping, New South Wales, Australia
Filed Nov. 1, 1962, Ser. No. 234,690
Claims priority, application Australia, Nov. 6, 1961, 10,995/61
2 Claims. (Cl. 343—17.2)



1. A multifrequency pulse-echo apparatus for ionospheric investigation comprising a receiving channel including a receiving antenna for ionospheric signals, a first mixer having a pair of input circuits, one input circuit of said first mixer being coupled to said receiving antenna, and a superheterodyne receiver connected to the output of said first mixer, said receiver having an untuned radio frequency input stage; a transmitter including a pulsed oscillator for generating radio frequency pulses at a constant frequency, a second mixer having a pair of input circuits, one input circuit of said second mixer being connected to said pulsed oscillator, an untuned radio frequency amplifier connected to the output of said second mixer, and a transmitting antenna for radiating exploratory pulses connected to the output of said untuned amplifier; a common oscillator connected to the other input circuit of said first mixer and said second mixer, said common oscillator being of variable frequency and including electronic means for automatically sweeping the frequency of said common oscillator within a desired range; means to generate a sweep base voltage electronically and coupled to said common oscillator for providing sweep control voltages of said common oscillator; means for providing a sweep voltage wave form of the correct shape and coupled to said sweep base voltage generator for varying said generator according to a desired law of variation; a cathode ray oscilloscope, means to control the horizontal deflection of the cathode ray beam of said oscilloscope with a time base voltage and coupled to said oscilloscope, this voltage being the same as the above said sweep voltage waveform, means to indicate the generation of a time base voltage at the instant of each pulse transmission coupled between said sweep control voltage generator and said transmitter, means to control the vertical deflection of the said cathode ray beam coupled between said cathode ray oscilloscope and the output of said time base voltage generating means, and means to control the intensity of said beam coupled between said cathode ray oscilloscope and the output of

said superheterodyne receiver, whereby a pattern of ionosphere height as a function of transmitted frequency is exhibited on said oscilloscope.

3,191,175
AIRCRAFT LANDING SYSTEM
Frederick H. Battle, Jr., Seaford, and Abraham Tatz, Levittown, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed May 6, 1960, Ser. No. 27,406
28 Claims. (Cl. 343—106)



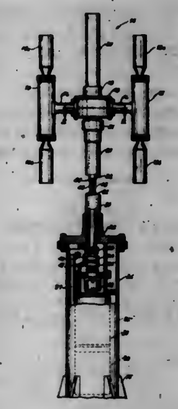
28. An aircraft landing system, including means for transmitting a directive beam, means for moving said beam throughout an angular sweep with respect to a reference line of direction, said angular sweep being substantially greater in extent than the effective angular width of the beam in the direction of its motion, whereby an aircraft in the space swept by the beam will receive said beam only within a relatively small part of the complete sweep of the beam, means for modulating said beam by a continuous succession of repetitive pulses, and means for varying the repetition interval between said pulses with the motion of said beam to represent the angle of the beam with respect to said reference line as a substantially linear direct function of said angle, said interval varying from a minimum value when said angle is zero to a maximum value when said angle is at its maximum, and thus representing the value of said angle more frequently when said angle is small and less frequently when said angle is large, whereby the rate at which an aircraft in said space receives information as to its angular position is greatest on said reference line and less in regions away from said reference line.

3,191,176
METHOD OF NAVIGATION
William H. Guier, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 18, 1962, Ser. No. 224,580
4 Claims. (Cl. 343—112)



2. A system of navigation for determining the geographic coordinates of an unknown location, comprising a satellite traveling in a known orbit,
a continuous wave pulse transmitter aboard said satellite,
means at a known location for transmitting the orbital parameters of said satellite,
means at an unknown location for receiving both the transmissions from said satellite and the orbital parameters of said satellite,
means for counting the number of pulses received during predetermined time intervals, thereby determining the changes in slant range during said time intervals, and
computing means for determining the geographic coordinates of said unknown location from said changes in slant range, the time of reception of said pulses, and said orbital parameters.

3,191,177
DIRECTION FINDING ANTENNA
Benjamin Parzen, Woodside, N.Y., assignor to Lear Siegler, Inc., a corporation of Delaware
Filed May 24, 1961, Ser. No. 112,259
6 Claims. (Cl. 343—766)

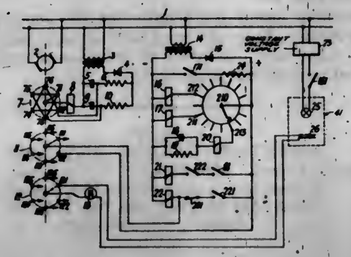


1. A rotating antenna assembly comprising a shaft, means connected to one end of said shaft for rotating the same during operation of the antenna, an antenna mounting base connected to the other end of said shaft for rotation therewith, a cross-piece member connected to said mounting base, an active antenna element connected to one end of said cross-piece member substantially parallel to said shaft, a passive antenna reflector element connected to the other end of said cross-piece member substantially parallel to said active element, and a top tube element connected to said mounting base substantially parallel to said antenna elements for use as an additional passive antenna reflector element.

3,191,178
DEVICE FOR MULTIPLE RECORDING OF COLORIMETRIC VALUES
Arnošt Anscherlik, 5 Revolucni, Prague, Czechoslovakia
Filed Oct. 2, 1962, Ser. No. 227,792
Claims priority, application Czechoslovakia, Oct. 10, 1961, 6,922/61
5 Claims. (Cl. 346—33)

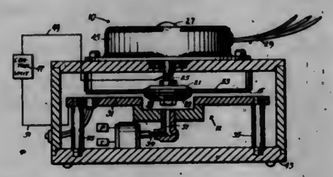
1. In an arrangement for indicating multiple measured values, in combination:
(a) recorder drive means and indicating means;
(b) pulse generating means operatively connected to said drive means for generating a sequence of pulses when said drive means operates;

(c) a plurality of measuring units, each unit including measuring means, a program source responsive to said pulses for operating said measuring means, and signal generating means for generating an electrical signal in response to a measurement made by said measuring means;
(d) first switch means operatively connected to said



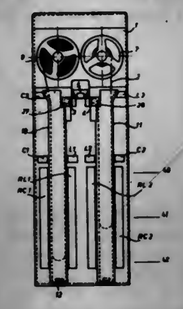
drive means fore sequentially connecting said program sources to said pulse generator means when said drive means operates; and
(e) second switch means operatively connected to said drive means for sequentially connecting said signal generating means to said indicating means for sequential indication of said signals of said signal generating means by said indicating means.

3,191,179
DATA PROCESSING
Ivan Pelech and Roger Kenneth Lee, Jr., Watertown, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Apr. 12, 1961, Ser. No. 102,506
3 Claims. (Cl. 346—74)



2. A magnetic recorder in which a gap between a magnetic recording medium and each one of a plurality of radially disposed magnetic transducers may be varied comprising a flexible magnetic recording disc having an electrically conductive surface, means for mounting the flexible magnetic recording disc in a gaseous atmosphere, the pressure of such atmosphere being substantially less than atmospheric pressure, a plurality of magnetic transducers, a stabilizing plate having an electrically conductive reference surface substantially coextensive with the electrically conductive surface of the flexible magnetic recording disc, each one of the plurality of magnetic transducers being mounted flush with the reference surface of the stabilizing plate, means for rotating the flexible magnetic recording disc adjacent to and spaced from each one of the plurality of magnetic transducers, and means for applying a first electric potential to the reference surface and a second electric potential to the electrically conductive surface of the flexible magnetic recording disc, to control the spacing between each one of the plurality of magnetic transducers and the flexible magnetic recording disc.

3,191,180
CONTROL SYSTEM FOR TAPE UNIT
Jean-Pierre Martin Emile De Graef, Brussels, Belgium, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France
Filed June 16, 1961, Ser. No. 117,586
Claims priority, application France, June 22, 1960, 830,751
6 Claims. (Cl. 346—74)



6. In a magnetic tape feeding machine having two variable speed reversible electric reel motors for driving tape supply and take-up reels, a first and a second voltage source, a system for servo-regulation of said reel motors with two first light-responsive devices located to survey the positions of two bights of tape in two air depression columns during recording and reproducing operations and two tape drive capstans, further control means including
first relay-operated switching means which when energized in one position connects said reel motors with said first voltage source whereby said reel motors slowly drive said reels in a direction to wind tape on both of said tape reels and which when engaged in another position connects said reel motors with said first voltage source whereby said reel motors drive said reels in a direction to unwind tape from both of said tape reels;
second relay-operated switching means which when energized connects said reel motors to said second voltage source through said servo-regulation system, said servo-regulation system being controlled by said first light-responsive devices;
a head unit mounted to be moved between a first and a second position;
an electro-magnetic actuator mechanically coupled to said head unit for normally maintaining said head unit in said first position out of the tape path;
an electro-magnetic actuator relay means for controlling the operation of said electro-magnetic actuator, said electro-magnetic actuator being excited by said electro-magnetic actuator relay means concurrently with the operation of said second relay-operated switching means for causing said electro-magnetic actuator to maintain said head unit in its second position for transducing;
control relay means adapted to be manually operated and whereby one operation will render said second relay-operated switching means inoperative and render operative said first relay-operated switching and energize said electro-magnetic actuator relay means, and another operation will render said second relay operated switching means operative and render inoperative said first relay-operated switching means and de-energize said electro-magnetic actuator relay means thereby causing said head unit to be returned to the second position for transducing;
a second light-responsive device located substantially along the tape path between said tape reels and said tape drive capstans for sensing the presence of a bight of tape; and
a third relay-operated switching means controlled by said second light-responsive device to de-energize said first relay-operated switching means when the bight of tape goes beyond said second light-responsive device.

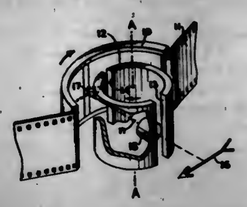
3,191,181
HOUR INDICATING DEVICE FOR A RECORDING INSTRUMENT
Ernesto Aliaga Moyano, New York, N.Y., assignor to Thermo Electric Co., Saddle Brook, N.J., a corporation of New Jersey
Filed Aug. 10, 1961, Ser. No. 130,562
4 Claims. (Cl. 346—93)



1. A time indicating device for use on a recording instrument employing a chart, said device comprising a rotatable lead screw, a rod parallel to the lead screw and spaced therefrom, a carriage slidably and rotatably mounted on the rod, a lip extending from the carriage and adapted for engagement with the lead screw thread for drive movement of the carriage along the rod upon rotation of the lead screw, means continuously rotating the lead screw, means including a pin carried by the lead screw and engaging the carriage at one end of travel thereof along the rod, periodically disengaging the lip on the carriage from the lead screw and resilient means connected to the carriage and biasing it to the opposite end of travel along the rod, returning the carriage to a predetermined position along the screw, and time recording means carried by the carriage and normally spaced from the chart.

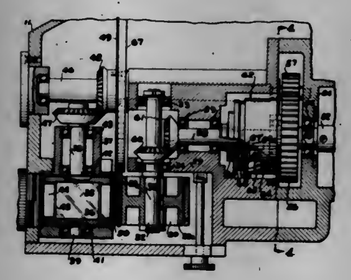
3,191,182
APPARATUS FOR MAKING WIDE ANGLE PICTURES
Frank A. Caldwell, Pacific Palisades, Calif., and Richard S. Brummer, Houston, Tex., assignors, by direct and mesne assignments, to Cyclodrama Inc., a corporation of California
Original application Sept. 6, 1956, Ser. No. 608,351, now Patent No. 3,078,758, dated Feb. 26, 1963. Divided and this application Feb. 8, 1963, Ser. No. 257,231
10 Claims. (Cl. 352—69)

1. A motion picture camera for making wide angle motion pictures of a scene on a motion picture film, including, in combination: a curved gate adapted to receive and curve film passing therethrough into a cylindrically shaped film surface; drive means for continuously moving said film through said gate at a constant speed; a camera lens; light directing means receiving light passing through said lens and mounted with respect to said gate for rotation about an axis coinciding with the axis of said cylindrically shaped film surface, said light directing means including means for projecting a slit of light containing a portion of an image of said scene onto said film surface, said slit being parallel to the axis of said cylindrically shaped surface; and means for rotating said light directing means at a constant rate to cause said slit of light to move from one end of said film surface to the other in a direction normal to its long dimension, the rear nodal point of said lens being spaced between the axis about



which said light directing means is rotating and said film surface, said light directing means being rotated at a rate such that the linear speed of said nodal point is equal to and in the same direction as the linear speed of said film surface, whereby said film surface is successively exposed to said image in incremental portions corresponding to said portion of said image contained in said slit of light to provide an exposed picture frame, a successive picture frame on said moving film being similarly exposed upon each complete rotation of said light directing means.

3,191,183
HIGH-SPEED PRECISION DATA CAMERA
Frederick P. Warrick, Clarkston, Mich., assignor to McDonnell Aircraft Corporation, St. Louis, Mo., a corporation of Maryland
Filed May 18, 1959, Ser. No. 813,731
10 Claims. (Cl. 352—119)

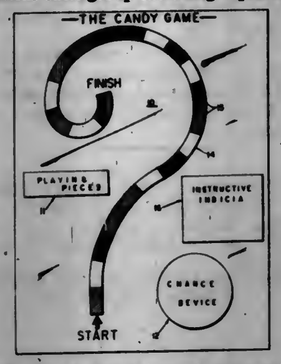


1. In a camera for photographing the movement of an object moving past a predetermined point at a high speed, the combination comprising means forming an aperture which defines an exposure area, means for feeding a strip of film past said aperture, lens means for forming an image, means for directing successive images toward said exposure area and moving said images in the direction of movement of said film across said exposure area, drive means for continuously operating said latter means at a substantially constant speed, clutch means operable to establish a driving connection between said drive means and said strip feeding means at a time when said drive means and said image directing and moving

means are operating and said strip feeding means is at rest, the inertia of said drive means and said image directing and moving means being substantially greater than the inertia of said strip feeding means so that the speed of operation of said drive means and said image directing and moving means is substantially unaffected when said driving connection is established.

3,191,184
CANDY GAME
Gerald Durstewitz, 208 Garden Road, Pompton Lakes, N.J.
Filed Sept. 12, 1961, Ser. No. 137,564
7 Claims. (Cl. 273—134)

7. In a game for a plurality of players of the type having a path of travel divided into spaces for game pieces assigned to the players to be moved therealong, a chance device comprising a supply of edible articles to be turnwise distributed to the players, said edible articles having indicia for cooperation with the game board to designate the number of spaces the players are permitted to move their game pieces along the path, said supply of edible articles comprising a plurality of groups of articles with each group having indicia different from the other groups and with each group including a plurality of articles having the identical indicia, and structural means for concealing said indicia constructed and arranged to be manipulated by the players to reveal said indicia.



DESIGNS

JUNE 22, 1965

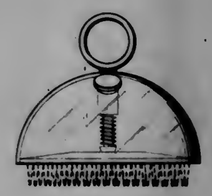
201,426
HAT
Lola Samblom, 2322 E. Chevy Chase Drive, Glendale, Calif.
Filed Nov. 16, 1964, Ser. No. 82,621
Term of patent 14 years
(Cl. D3—13)



201,427
TOILET TRAINING CHAIR
Norman E. Roe, Sierra Madre, Calif., assignor to Majestic Seat Company, Inc., Newnan, Ga., a corporation of Georgia
Filed Mar. 19, 1963, Ser. No. 74,079
Term of patent 14 years
(Cl. D4—5)



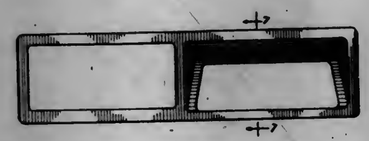
201,428
COMBINATION CONTAINER AND DISPENSING BRUSH
Louis T. Kellis, 5 Adelaide Place, Apt. 20, San Francisco, Calif.
Filed June 14, 1963, Ser. No. 75,347
Term of patent 14 years
(Cl. D9—2)



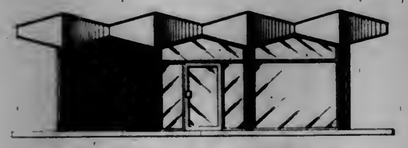
201,429
COMBINATION HAIR BRUSH AND VIBRATOR, OR SIMILAR ARTICLE
Donald S. Hartwell, Providence, R.I. (52 Haverhill St., Brockton, Mass.)
Filed Apr. 30, 1964, Ser. No. 79,744
Term of patent 14 years
(Cl. D9—2)



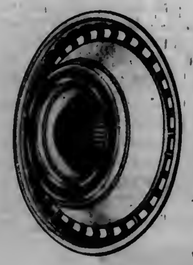
201,430
COMBINED LABEL HOLDER AND PULL
Roy A. Stone, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 82,571
Term of patent 14 years
(Cl. D10—8)



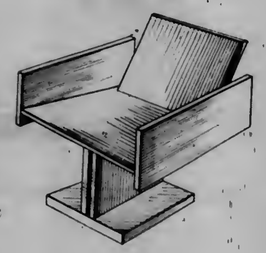
201,431
BUILDING
Louis E. Rico, El Paso County, Colo., assignor to Harold L. Michaelis, Colorado Springs, Colo.
Filed July 1, 1963, Ser. No. 75,613
Term of patent 14 years
(Cl. D13—1)



201,432
WHEEL COVER
Irvin W. Rybicki, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 81,903
Term of patent 7 years
(Cl. D14—30)



201,433
CHAIR
Warren Platner, 100 Mansfield Road, North Haven, Conn.
Filed Feb. 20, 1963, Ser. No. 73,654
Term of patent 7 years
(Cl. D15—1)



201,434
BAR STOOL
Merle C. Melchior, Los Angeles, Calif., assignor of one-half to Sidney Galper, Los Angeles, Calif.
Filed Sept. 29, 1964, Ser. No. 81,908
Term of patent 14 years
(Cl. D15—8)



201,435
GIRDLE
Paul E. Ambrose, 505 American Ave., Dover, Del.
Filed June 5, 1963, Ser. No. 75,232
Term of patent 14 years
(Cl. D20—2)



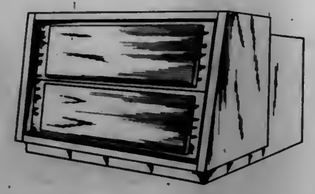
201,436
GIRDLE
Carl R. Glines, Dover, Del., assignor to Sarong, Inc., Dover, Del., a corporation of Delaware
Filed Oct. 10, 1963, Ser. No. 76,931
Term of patent 14 years
(Cl. D20—2)



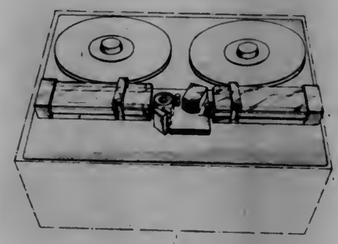
201,437
ELECTRIC KNIFE HANDLE
Richard B. Hall, Cincinnati, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Aug. 28, 1964, Ser. No. 81,498
Term of patent 14 years
(Cl. D22—3)



201,438
CABINET FOR ELECTRONIC INSTRUMENTS
Monte L. Levin, Roslyn Heights, N.Y., assignor to Vacuum-Electronics Corp., Plainview, N.Y.
Filed Apr. 16, 1964, Ser. No. 79,525
Term of patent 14 years
(Cl. D26—5)



201,439
MAGNETIC TAPE UNIT OR SIMILAR ARTICLE
Guy S. Fugit, Levittown, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Apr. 16, 1964, Ser. No. 79,529
Term of patent 14 years
(Cl. D26—5)



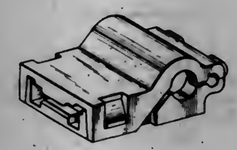
201,440
BATTERY CAP
Leon Q. Harrison, 30758 Fairfax, Southfield, Mich.
Filed July 11, 1963, Ser. No. 75,782
Term of patent 14 years
(Cl. D26—6)



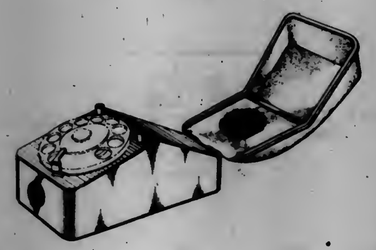
201,441
CABLE BRACE
Robert A. Potrach, Miami Beach, Fla., assignor to Lumidor Products Corporation, Hialeah, Fla., a corporation of Maryland
Filed Sept. 5, 1963, Ser. No. 76,491
Term of patent 14 years
(Cl. D26—10)



201,442
INSULATING COVERING FOR AN ELECTRIC TERMINAL CONNECTOR
Willard LeRoy Basler, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 27, 1964, Ser. No. 78,804
Term of patent 14 years
(Cl. D26—10)



201,443
HANDS FREE TELEPHONE SUBSET
Gino Natali, Milan, Italy, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 72,541
Term of patent 14 years
(Cl. D26—14)



201,444
FLORAL VASE OR THE LIKE
Edwin K. Kaelke, Macomb, Ill., assignor to The Haeger Potteries, Inc., Dundee, Ill., a corporation of Illinois
Filed Apr. 21, 1964, Ser. No. 79,639
Term of patent 14 years
(Cl. D29—28)



201,445
FLORAL VASE OR THE LIKE
Edwin K. Kaelke, Macomb, Ill., assignor to The Haeger Potteries, Inc., Dundee, Ill., a corporation of Illinois
Filed Apr. 21, 1964, Ser. No. 79,640
Term of patent 14 years
(Cl. D29—28)



201,446
FISH LURE
Paul E. Karisch, 6315 Tulsa St., Houston 18, Tex.
Filed Nov. 12, 1963, Ser. No. 77,355
Term of patent 14 years
(Cl. D31—4)



201,447
FISH LURE
Paul E. Karisch, 6315 Tulsa St., Houston 18, Tex.
Filed Nov. 12, 1963, Ser. No. 77,356
Term of patent 14 years
(Cl. D31—4)

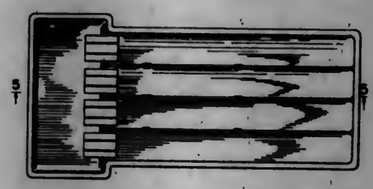


201,448
GOLF CLUB HEAD
James M. Long, South Hadley, Mass., assignor to A. G. Spalding & Bros. Inc., Chicopee, Mass., a corporation of Massachusetts
Filed Mar. 19, 1964, Ser. No. 79,080
Term of patent 7 years
(Cl. D34—5)

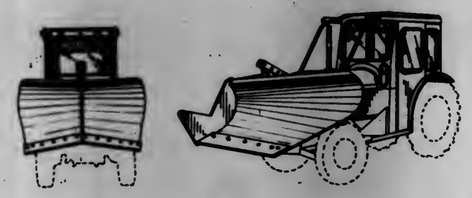


201,449
GAME BOARD
Roland R. Remmel, Little Rock, Ark., assignor to Boise Cascade Corporation, Boise, Idaho, a corporation of Delaware
Filed Jan. 22, 1965, Ser. No. 83,527
Term of patent 14 years
(Cl. D34—5)

201,450
TURTLE RACEWAY
George J. Gould, 791 Meacham Ave., Elmont, N.Y.
Filed Nov. 25, 1964, Ser. No. 82,791
Term of patent 3½ years
(Cl. D34—15)



201,451
SNOW PLOW
Edward S. Graham, 509 Oakwood Ave., East Aurora, N.Y.
Filed Dec. 6, 1963, Ser. No. 77,688
Term of patent 14 years
(Cl. D35—2)



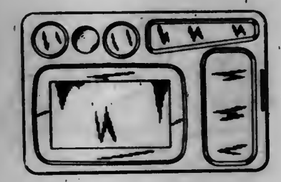
201,452
CLOCK
Robert C. Shipley, Kalamazoo, Mich., assignor to R. C. Shipley Mfg. Co., Portage, Mich., a corporation of Michigan
Filed Jan. 2, 1964, Ser. No. 77,995
Term of patent 14 years
(Cl. D42—7)



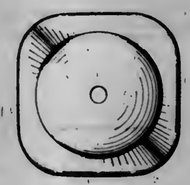
201,453
CLOCK
Robert C. Shipley, Kalamazoo, Mich., assignor to R. C. Shipley Mfg. Co., Portage, Mich., a corporation of Michigan
Filed Jan. 2, 1964, Ser. No. 77,999
Term of patent 14 years
(Cl. D42—7)



201,454
TRAY
Karl Hugo Lindstrom, Sollentuna, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Sept. 23, 1964, Ser. No. 81,855
Term of patent 14 years
(Cl. D44—10)



201,455
COVERED DISH
Karl Hugo Lindstrom, Sollentuna, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Sept. 23, 1964, Ser. No. 81,848
Claims priority, application Sweden July 15, 1964
Term of patent 14 years
(Cl. D44—15)



201,456
PERCOLATOR
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 11, 1965, Ser. No. 83,370
Term of patent 14 years
(Cl. D44—26)



201,457
COMBINED SPOON HOLDER, ASH TRAY, AND CIGARETTE HOLDER OR SIMILAR ARTICLE
Lawrence Leonard, 106 Holyoke St., Lynn, Mass.
Filed Dec. 4, 1964, Ser. No. 82,906
Term of patent 14 years
(Cl. D44—29)



201,458
CHAIN FOR A BRACELET OR THE LIKE
Emil Rodriguez, New York, N.Y., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Apr. 21, 1964, Ser. No. 79,628
Term of patent 7 years
(Cl. D45—4)



201,459
LACE
John H. Hartman, Bergenfield, N.J., assignor to Texagon Mills, Inc., Ridgefield, N.J., a corporation of New Jersey
Filed Mar. 4, 1965, Ser. No. 84,076
Term of patent 14 years
(Cl. D47—6)



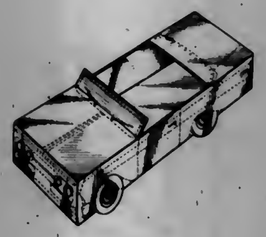
201,460
NURSERY LAMP
Larry D. Reser, R.R. 2, Reesville Township, Shawnee County, Kans.
Filed July 13, 1964, Ser. No. 80,837
Term of patent 14 years
(Cl. D48—26)



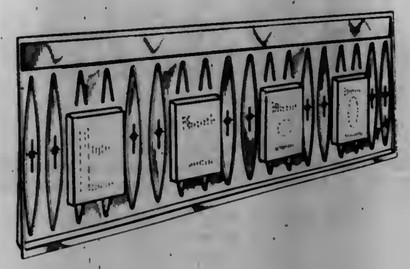
201,461
CIGARETTE LIGHTER OR SIMILAR ARTICLE
Robert Hocq, 28 Avenue Marceau, Paris 8e, France
Filed Dec. 10, 1963, Ser. No. 77,736
Claims priority, application France July 5, 1963
Term of patent 14 years
(Cl. D48—27)



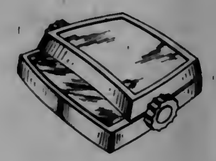
201,462
CHILDREN'S TISSUE DISPENSING CONTAINER
Stewart Klein, 4 Pearl Road, Old Bridge, N.J.
Filed Nov. 19, 1963, Ser. No. 77,489
Term of patent 14 years
(Cl. D52—2)



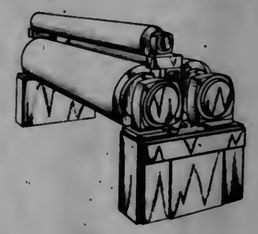
201,463
DISPLAY PANEL FOR CIGARETTE VENDING MACHINES OR THE LIKE
Walter L. Koch, Caldwell, N.J., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Filed Feb. 14, 1964, Ser. No. 78,631
Term of patent 14 years
(Cl. D52—3)



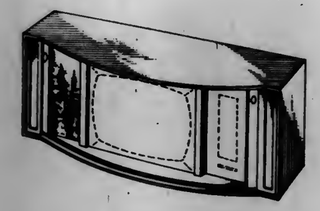
201,464
WEIGHING SCALE
Harold Lawrence King, 210 Commonwealth Ave., Mount Vernon, N.Y.
Filed Nov. 15, 1963, Ser. No. 77,443
Term of patent 7 years
(Cl. D52—10)



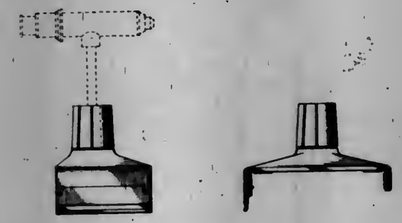
201,465
SIZE PRESS OR SIMILAR ARTICLE
Lawrence Augustus Moore, Beloit, Wis., Joseph E. Peter, Cincinnati, Ohio, and Huston M. Broyles, Rockford, Ill., assignors to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin
Filed Dec. 22, 1961, Ser. No. 68,033
Term of patent 14 years
(Cl. D55—1)



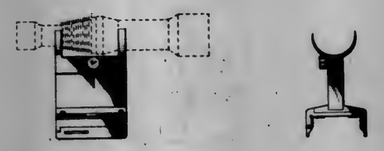
201,466
TELEVISION RECEIVER
Harold F. Rieth, Santa Monica, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 16, 1963, Ser. No. 76,235
Term of patent 14 years
(Cl. D56—4)



201,467
OPTICAL ACCESSORY MOUNTING PLATE
Ronald S. Schwartz, Los Angeles, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Oct. 15, 1963, Ser. No. 76,979
Term of patent 14 years
(Cl. D57—1)



201,468
OPTICAL ACCESSORY MOUNTING PLATE
Ronald S. Schwartz, Los Angeles, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Oct. 15, 1963, Ser. No. 76,986
Term of patent 14 years
(Cl. D57—1)



201,469
JUG
Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 22, 1964, Ser. No. 80,977
Term of patent 14 years
(Cl. D58—5)



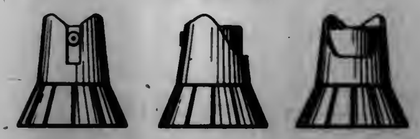
201,470
BOTTLE
Andrew J. Plattner, 17214 Wyoming, Detroit, Mich.
Filed Nov. 25, 1964, Ser. No. 82,783
Term of patent 14 years
(Cl. D58—6)



201,471
COMBINED CAP AND VALVE ACTUATOR
Frank J. Benedetto, Morton Grove, Ill., assignor to Creative Ideas, Inc., a corporation of Illinois
Filed Mar. 5, 1964, Ser. No. 78,885
Term of patent 14 years
(Cl. D58—26)



201,472
DISPENSING CAP
Douglas Long, New York, N.Y., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Aug. 18, 1964, Ser. No. 81,350
Term of patent 14 years
(Cl. D58—26)



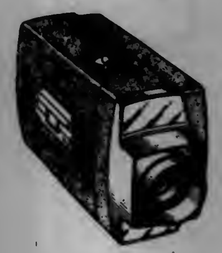
201,473
DISPENSING CAP
Douglas Long, New York, N.Y., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Aug. 18, 1964, Ser. No. 81,351
Term of patent 14 years
(Cl. D58—26)



201,474
MOTION PICTURE CAMERA
Grant D. Ross, Jr., Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 2, 1964, Ser. No. 82,876
Term of patent 14 years
(Cl. D61—1)



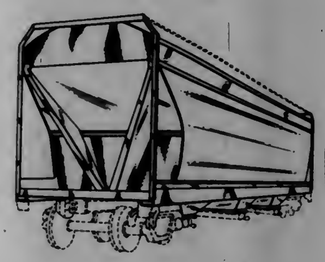
201,475
MOTION PICTURE CAMERA
Grant D. Ross, Jr., Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 2, 1964, Ser. No. 82,877
Term of patent 14 years
(Cl. D61—1)



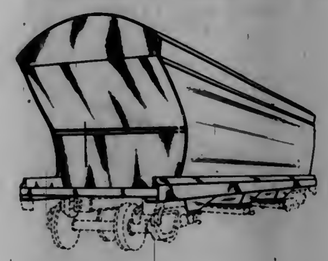
201,476
HYDRAULIC PRESS
Albert R. Pratt, West Newton, and Rocco Oppedisano, Arlington, Mass., assignors to Apro Engineering, Inc., West Newton, Mass., a corporation of Massachusetts
Filed May 27, 1963, Ser. No. 75,867
Term of patent 14 years
(Cl. D63—1)



201,477
RAILWAY CAR
Rolf Mowatt-Larssen and Asa Franklin Charles, Bridgeton, and Richard A. Lee, Florissant, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 30, 1964, Ser. No. 81,946
Term of patent 14 years
(Cl. D66—1)



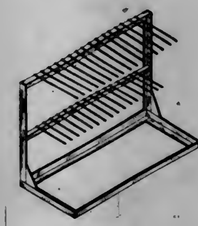
201,478
RAILWAY CAR
Rolf Mowatt-Larssen and Asa Franklin Charles, Bridgeton, and Richard A. Lee, Florissant, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 30, 1964, Ser. No. 81,949
Term of patent 14 years
(Cl. D66—1)



201,479
WRITING INSTRUMENT HOLDER
Hiram Jackson Green, 7 Herman Terrace, Daytona Beach, Fla.
Filed May 19, 1964, Ser. No. 80,053
Term of patent 14 years
(Cl. D74—21)



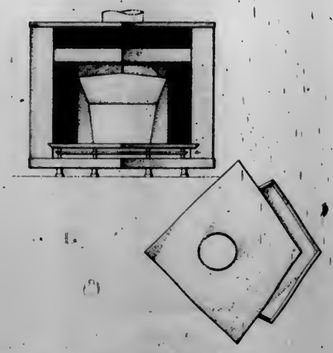
201,480
SPRING RACK
Arthur Faber, 17668 Adrian, Southfield, Mich.
Filed Oct. 3, 1962, Ser. No. 71,984
Term of patent 14 years
(Cl. D80—9)



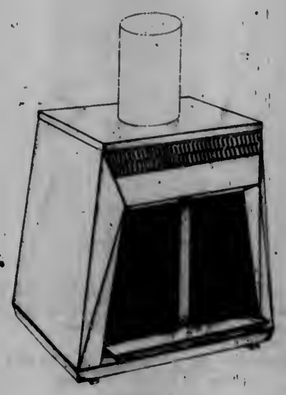
201,481
DISPLAY CABINET FOR ROAD MAPS OR THE LIKE
Harvey J. Smith, Greensboro, N.C., assignor to Modern Metal Products Company, Greensboro, N.C., a corporation of North Carolina
Filed May 20, 1963, Ser. No. 74,961
Term of patent 14 years
(Cl. D80—11)



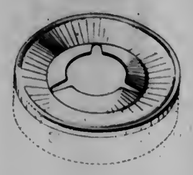
201,482
FIREPLACE
Paul H. Lever, 2512 Carson, Redwood City, Calif.
Filed Oct. 21, 1963, Ser. No. 77,070
Term of patent 14 years
(Cl. D81—7)



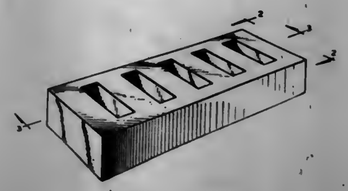
201,483
FIREPLACE
Paul H. Lever, 2512 Carson, Redwood City, Calif.
Filed Oct. 21, 1963, Ser. No. 77,071
Term of patent 14 years
(Cl. D81—7)



201,484
ASH TRAY
Richard McFadyen, Essex Fells, N.J., assignor to Ketcham and McDougall, Inc., Roseland, N.J., a corporation of New Jersey
Filed Sept. 5, 1963, Ser. No. 76,489
Term of patent 14 years
(Cl. D85—2)



201,485
HAIR CLIPPER BLADE HOLDER
Anthony Ralli, 1601 N. Wilbur St., South Bend, Ind.
Continuation of design application Ser. No. 70,589, June 18, 1962. This application Feb. 5, 1964, Ser. No. 78,532
Term of patent 14 years
(Cl. D86—10)

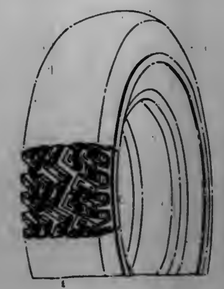


201,486
CASE FOR GROOMING IMPLEMENTS
Edward M. Stolarz, New York, N.Y., assignor to The Britton Corporation, Newington, Conn., a corporation of Connecticut
Filed Jan. 3, 1964, Ser. No. 78,066
Term of patent 14 years
(Cl. D87—5)

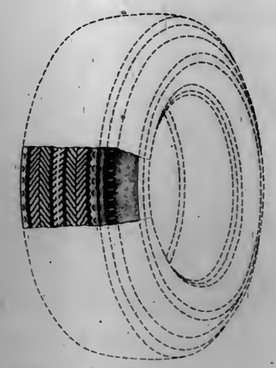
201,487
MUSICAL INSTRUMENT CASE
Marcel O. De Vos, 19922 E. Williams Court, Grosse Pointe Woods, Mich.
Filed Nov. 18, 1964, Ser. No. 82,682
Term of patent 14 years
(Cl. D87—5)



201,488
TIRE
Raymond S. Lull, Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 82,577
Term of patent 14 years
(Cl. D90—20)



201,489
TIRE
Arthur E. Benson, Geneva, Switzerland, assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 2, 1964, Ser. No. 82,867
Term of patent 14 years
(Cl. D90—20)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 22ND DAY OF JUNE, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Amorosi, Alfred, and J. J. Morabito, to Atomic Power Development Associates, Inc. Heat exchanger. Re. 25,808 6–22–65, Cl. 165—11.

Atomic Power Development Associates, Inc.: *See*—
Amorosi, Alfred, and Morabito. Re. 25,808.

Fowlkes, Robert E.: *See*—
Oglesby, Nicholas P., Turpin, and Fowlkes. Re. 25,806.

Garnett, Edward H.: *See*—
Postlewait, James H., Garnett, and Root. Re. 25,810.

Gould, Charles D., to Richdel, Inc. Electric programmers. Re. 25,805. 6–22–65, Cl. 307—141.

Johnson, Wayne R., to Minnesota Mining and Mfg. Co. Phasing system for multiple track recording. Re. 25,809, 6–22–65, Cl. 340—174.1.

Lynch, John W., to Randolph Mfg. Co. Sled attachment for supporting multiple purpose plows. Re. 25,803, 6–22–65, Cl. 172—393.

Minnesota Mining and Mfg. Co.: *See*—
Johnson, Wayne R. Re. 25,809.

Misuraca, Louis J. Electrical erasing machine. Re. 25,804, 6–22–65, Cl. 279—35.

Morabito, John J.: *See*—
Amorosi, Alfred, and Morabito. Re. 25,808.

Oglesby, Nicholas P., H. L. Turpin, Jr., and R. E. Fowlkes. Trench digging machines. Re. 25,806, 6–22–65, Cl. 37—81.

Postlewait, James H., E. H. Garnett, and J. R. Root Reel type lawn mower. Re. 25,810, 6–22–65, Cl. 56—26.

Raehs, Wilhelm J., and H. Rauchmann. Aerosol valve. Re. 25,807 6–22–65, Cl. 239—579.

Randolph Mfg. Co.: *See*—
Lynch, John W. Re. 25,803.

Rauchmann, Hans: *See*—
Raehs, Wilhelm J., and Rauchmann. Re. 25,807.

Richdel, Inc.: *See*—
Gould, Charles D. Re. 25,805.

Root, James R.: *See*—
Postlewait, James H., Garnett, and Root. Re. 25,810.

Turpin, Henderson L., Jr.: *See*—
Oglesby, Nicholas P., Turpin, and Fowlkes. Re. 25,806.

LIST OF PLANT PATENTEES

Anderson, Frederic W., to Kim Bros., d.b.a. Reedley Nursery. Plum tree. 2,539, 6–22–65, Cl. 38.

Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,541, 6–22–65, Cl. 26.

Conard-Pyle Co., The: *See*—
De Ruiter, Gerrit. 2,540.

De Ruiter, Gerrit, to The Conard-Pyle Co. Rose plant. 2,540, 6–22–65, Cl. 28.

Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,541.

Kim Bros.: *See*—
Anderson, Frederic W. 2,539.

Reedley Nursery: *See*—
Anderson, Frederic W. 2,539.

LIST OF DESIGN PATENTEES

ACF Industries, Inc.: *See*—
Mowatt-Larssen, Rolf, Charles, and Lee. 201,477.
Mowatt-Larssen, Rolf, Charles, and Lee. 201,478.

AMP Inc.: *See*—
Busler, Willard L. 201,442.

Ambrose, Paul E. Girdle. 201,435, 6–22–65, Cl. D20—2.

Apro Engineering, Inc.: *See*—
Pratt, Albert R., and Oppedisano. 201,476.

Automatic Canteen Co. of America: *See*—
Koch, Walter L. 201,463.

Bell & Howell Co.: *See*—
Ross, Grant D., Jr. 201,474.
Ross, Grant D., Jr. 201,475.

Beloit Iron Works: *See*—
Moore, Lawrence A., Peter, and Broyles. 201,465.

Benedetto, Frank J., to Creative Ideas, Inc. Combined cap and valve actuator. 201,471, 6–22–65, Cl. D58—26.

Benson, Arthur E., to United States Rubber Co. Tire. 201,489, 6–22–65, Cl. D90—20.

Boise Cascade Corp.: *See*—
Remmel, Roland R. 201,449.

Britton Corp., The: *See*—
Stolarz, Edward M. 201,486.

Broyles, Huston M.: *See*—
Moore Lawrence A., Peter, and Broyles. 201,465.

Busler, Willard L., to AMP Inc. Insulating covering for an electric terminal connector. 201,442, 6–22–65, Cl. D26—10.

Charles, Asa F.: *See*—
Mowatt-Larssen, Rolf, Charles, and Lee. 201,477.
Mowatt-Larssen, Rolf, Charles, and Lee. 201,478.

Creative Ideas, Inc.: *See*—
Benedetto, Frank J. 201,471.

De Vos, Marcel O. Musical instrument case. 201,487, 6–22–65, Cl. D87—5.

Dominion Electric Corp.: *See*—
Hall, Richard B. 201,437.

Electrolux, Aktiebolaget: *See*—
Lindstrom, Karl H. 201,454.
Lindstrom, Karl H. 201,455.

Faber, Arthur. Spring back. 201,480, 6–22–65, Cl. D80—9.

Fugit, Guy S., to Potter Instrument Co., Inc. Magnetic tape unit or similar article. 201,439, 6–22–65, Cl. D26—5.

Galper, Sidney: *See*—
Melchior, Merle C. 201,434.

General Motors Corp.: *See*—
Rybicki, Irvin W. 201,432.

Glines, Carl R., to Sarong, Inc. Girdle. 201,436, 6–22–65, Cl. D20—2.

Goodrich, B. F., Co., The: *See*—
Lull Raymond S. 201,488.

Gould, George J. Turtle raceway. 201,450, 6–22–65, Cl. D34—15.

Graham, Edward S. Snow plow. 201,451, 6–22–65, Cl. D35—2.

Green, Hiram J. Writing instrument holder. 201,479, 6–22–65, Cl. D74—21.

Haeger Potteries, Inc., The: *See*—
Kaelke, Edwin K. 201,444.
Kaelke, Edwin K. 201,445.

Hall, Richard B., to Dominion Electric Corp. Electric knife handle. 201,437, 6–22–65, Cl. D22—3.

Harrison, Leon Q. Battery cap. 201,440, 6–22–65, Cl. D26—6.

Hartman, John H., to Texagon Mills, Inc. Lace. 201,459, 6–22–65, Cl. D47—6.

Hartwell, Donald S. Combination hair brush and vibrator, or similar article. 201,429, 6–22–65, Cl. D9—2.

Hocq, Robert. Cigarette-lighter or similar article. 201,461, 6–22–65, Cl. D48—27.

International Standard Electric Corp.: *See*—
Natali, Gino. 201,443.

Jacoby-Bender, Inc.: *See*—
Rodriguez, Emil. 201,458.

Kaelke, Edwin K., to The Haeger Potteries, Inc. Floral vase or the like. 201,444, 6–22–65, Cl. D29—28.

Kaelke, Edwin K., to The Haeger Potteries, Inc. Floral vase or the like. 201,445, 6–22–65, Cl. D29—28.

Karisch, Paul E. Fish lure. 201,446, 6–22–65, Cl. D31—4.

Karisch, Paul E. Fish lure. 201,447, 6–22–65, Cl. D31—4.

Kellis, Louis T. Combination container and dispensing brush. 201,428, 6–22–65, Cl. D9—2.

Ketcham and McDougall, Inc.: *See*—
McFadyen, Richard. 201,484.

King, Harold L. Weighing scale. 201,464, 6–22–65, Cl. D52—10.

Klein, Stewart. Children's tissue dispensing container. 201,462, 6–22–65, Cl. D52—2.

Koch, Walter L., to Automatic Canteen Co. of America. Display panel for cigarette vending machines or the like. 201,463, 6–22–65, Cl. D52—3.

Lee, Richard A.: *See*—
Mowatt-Larssen, Rolf, Charles, and Lee. 201,477.
Mowatt-Larssen, Rolf, Charles, and Lee. 201,478.

Leonard, Lawrence. Combined spoon holder, ash tray and cigarette holder, or similar article. 201,457, 6–22–65, Cl. D44—29.

Lever, Paul H. Fireplace. 201,482, 6–22–65, Cl. D81—7.

Lever, Paul H. Fireplace. 201,483, 6–22–65, Cl. D81—7.
Levin, Monte L., to Vacuum-Electronics Corp. Cabinet for electronic instruments. 201,433, 6–22–65, Cl. D26—5.
Lindstrom, Karl H., to Electrolux, Aktiebolaget. Tray. 201,454, 6–22–65, Cl. D44—10.
Lindstrom, Karl H., to Electrolux, Aktiebolaget. Covered dish. 201,455, 6–22–65, Cl. D44—15.
Long, Douglas, to Valve Corp. of America. Dispensing cap. 201,472, 6–22–65, Cl. D58—26.
Long, Douglas, to Valve Corp. of America. Dispensing cap. 201,473, 6–22–65, Cl. D58—26.
Long, James M., to A. G. Spalding & Bros., Inc. Golf club head. 201,448, 6–22–65, Cl. D34—5.
Lorensen, Arnold I., deceased (by G. M. Lorensen, executrix), to Owens-Illinois Glass Co. Jug. 201,469, 6–22–65, Cl. D58—5.
Lorensen, Gertrude M.: *See*—
Lorensen, Arnold I. 201,469.
Lull, Raymond S., to The B. F. Goodrich Co. Tire. 201,488, 6–22–65, Cl. D60—20.
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Potruch, Robert A. 201,441.
Madl, Alfred W., to John Oster Mfg. Co. Percolator. 201,456, 6–22–65, Cl. D44—26.
Majestic Seat Co.: *See*—
Roe, Norman E. 201,427.
McFadyen, Richard, to Ketcham and McDougall, Inc. Ash tray. 201,484, 6–22–65, Cl. D85—2.
Melchior, Merle C., ½ to S. Galper. Bar stool. 201,434, 6–22–65, Cl. D16—8.
Michaelis, Harold T.: *See*—
Rico, Louis E. 201,431.
Modern Metal Products Co.: *See*—
Smith, Harvey J. 201,481.
Moore, Lawrence A., J. E. Peter, and H. M. Broyles, to Beloit Iron Works. Size press, or similar article. 201,465, 6–22–65, Cl. D55—1.
Mowatt-Larssen, Rolf, A. F. Charles, and R. A. Lee, to ACF Industries, Inc. Railway car. 201,477, 6–22–65, Cl. D66—1.
Mowatt-Larssen, Rolf, A. F. Charles, and R. A. Lee, to ACF Industries, Inc. Railway car. 201,478, 6–22–65, Cl. D66—1.
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National Lock Co.: *See*—
Stone, Roy A. 201,430.
Northrop Corp.: *See*—
Schwartz, Ronald S. 201,467.
Schwartz, Ronald S. 201,468.
Oppedisano, Rocco: *See*—
Pratt, Albert R., and Oppedisano. 201,476.
Oster, John, Mfg. Co.: *See*—
Madl, Alfred W. 201,456.
Owens-Illinois Glass Co.: *See*—
Lorensen, Arnold I. 201,469.
Packard-Bell Electronics Corp.: *See*—
Rieth, Harold F. 201,466.
Peter, Joseph E.: *See*—
Moore, Lawrence A., Peter, and Broyles. 201,465.
Platner, Warren. Chair. 201,433, 6–22–65, Cl. D15—1.
Plattner, Andrew J. Bottle. 201,470, 6–22–65, Cl. D58—6.
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Potter Instrument Co., Inc.: *See*—
Fugit, Guy S. 201,439.
Pratt, Albert R., and R. Oppedisano, to Apro Engineering, Inc. Hydraulic press. 201,476, 6–22–65, Cl. D63—1.
Remmel, Roland R., to Boise Cascade Corp. Game board. 201,449, 6–22–65, Cl. D34—5.
Reser, Larry D. Nursery lamp. 201,460, 6–22–65, Cl. D48—20.
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Rieth, Harold F., to Packard-Bell Electronics Corp. Television receiver. 201,466, 6–22–65, Cl. D56—4.
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Benner, Stanley G., to Johns-Manville Corp. Rotor for the forming of glass filaments. 3,190,736, 6–22–65, Cl. 65—15.

Benoit, Paul H., to United States of America, Army. Disconnectable cartridge belt link. 3,190,179, 6–22–65, Cl. 89—35.

Bensimon, Jacques: *See*—
Huber, Harry, and Bensimon. 3,191,076.

Berens, Heinrich, to Reimers-Getriele KG. Infinitely variable cone pulley transmission. 3,190,135, 6–22–65, Cl. 74—230.17.

Berghaus, Bernhard, and H. Bucek. Method of hardening work in an electric glow discharge. 3,190,772, 6–22–65, Cl. 148—16.

Bergonzo, Pierre. Flat cam for the positive mechanical control of a movable member of an automatic lathe. 3,190,142, 6–22–65, Cl. 74—568.

Berkowitz, Norbert, and E. J. Jensen, to Canadian Patents and Development Ltd. Pipeline transportation of solids. 3,190,701, 6–22–65, Cl. 302—66.

Berman, Nelson: *See*—
Mermelstein, Seymour, Berman, and Hirschberg. 3,191,107.

Bernard, Roger A., to Le Joint Francais. Fluid-tight safety device for filling, storing and emptying flexible containers. 3,190,332, 6–22–65, Cl. 150—8.

Bernemann, Paul: *See*—
Maass, Günther, and Bernemann. 3,190,851.

Bernier, Edgar R.: *See*—
Hayner, Paul F., Bernier, and Mayo. 3,190,575.

Bernstein, Marvin H.: *See*—
Shulman, Abraham, and Bernstein. 3,191,169.

Berry, Richard C., and M. C. Snow, to Crouse-Hinds Co. Lighting fixture. 3,191,021, 6–22–65, Cl. 240—11.2.

Berryer, Pierre. Turbine engine. 3,190,072, 6–22–65, Cl. 60—40.

Bertin, Jean H., and P. Guienne, to Societe Bertin & Cie. Vehicles associated to a guiding track. 3,190,235, 6–22–65, Cl. 104—134.

Beseler, Charles, Co.: *See*—
Field, Philip M. 3,190,174.

Bevilacqua, Frank, to Combustion Engineering Inc. Pressure tube reactor. 3,190,807, 6–22–65, Cl. 176—59.

Bials, Regine, D. Papée, and R. Gauguin. Method of preparing a chromium oxide and alpha-alumina catalyst composition and the product thereof. 3,190,840, 6–22–65, Cl. 252—465.

Biehn, Harold B. Crusher. 3,190,573, 6–22–65, Cl. 241—236.

Bieschke, Hillard J., to Knox Mfg. Co. Portable movie screen device. 3,190,567, 6–22–65, Cl. 248—171.

Bigley, Clifford C., and A. E. Dahlquist, to Minneapolis-Moline, Inc. Spring applied brake control linkage. 3,190,401, 6–22–65, Cl. 188—167.

Billington, William P., and D. F. Howson, to National Research Development Corp. Hydraulic machines of the piston-operated type. 3,190,224, 6–22–65, Cl. 103—37.

Binder, Hermann, and E. Fridrich, to Rieker & Co. Ski boot. 3,190,015, 6–22–65, Cl. 36—2.5.

Bindler, Jakob, E. Model, and R. Zinkernagel, to Geigy Chemical Corp. Biocidal agents. 3,190,797, 6–22–65, Cl. 167—33.

Birch, William G.: *See*—
Sillars, Frederick S., and Birch. 3,190,526.

Birdsall, Dale H. Air injector for water well pressure systems. 3,190,223, 6–22–65, Cl. 103—6.

Birn Beteiligungs-und Verwaltungsgesellschaft A.G.: *See*—
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Birum, Gail H.: *See*—
Richardson, George A., and Birum. 3,190,892.

Bitko, Sheldon. Welded hermetic seal. 3,190,952, 6–22–65, Cl. 174—52.

Bizioli, Franco: *See*—
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Blankschein, Leonard C., Jr., to Cities Service Oil Co. Can aligning apparatus. 3,190,433, 6–22–65, Cl. 198—33.

Blasingame, Benjamin P. Gravimeter. 3,190,121, 6–22–65, Cl. 73—382.

Blazek, William S., to Precision Metalsmiths, Inc. Copper-base casting aloy. 3,190,751, 6–22–65, Cl. 75—153.

Bligard, Erling J., and R. H. Racca, to Cal-Val Research & Development Corp. Core assembly for an engine mount. 3,190,591, 6–2–65, Cl. 248—5.

Bliss, E. W. Co.: *See*—
Crane, Edward V. 3,189,988.

Bliss, Willis H. Arrangement for aligning sights. 3,190,002, 6–22–65, Cl. 33—46.

Bloxham, Robert, to Coast Mfg. and Supply Co. Selective oxidation depollution process and apparatus. 3,190,823, 6–22–65, Cl. 204—157.

Blythe, Joseph A., Jr. Sailing indicator for starting line, course and wind direction. 3,190,257, 6–22–65, Cl. 116—133.

Bobinski, Jack: *See*—
Fein, Marvin M., and Bobinski. 3,190,915.

Boehringer Ingelheim G.m.b.H.: *See*—
Zeile, Karl, Hauptmann, and Stahle. 3,190,802.

Boffe, Maurice: *See*—
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Boghetich, Luigi, and R. H. Reinhard, to Monsanto Co. Copolymers of ethylene and methyl substituted α,ω-diolefins. 3,190,862, 6–22–65, Cl. 260—88.2.

Bollinger, George N., to Sta-Rite Ginnie Lou, Inc. Hair curler with detachable brush means. 3,190,296, 6–22–65, Cl. 132—41.

Bondi, Justine R. Fishing device. 3,190,029, 6–22–65, Cl. 43—42.74.

Booker, Lee H.: *See*—
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Bopp, Cecil W., to The Greater Iowa Corp. Automatic releasable grapple tongs for barrels and the like. 3,190,685, 6–22–65, Cl. 294—90.

Borgeson, Arland L., to National Conveyor & Supply Co. Car vibrating mechanism. 3,190,474, 6–22–65, Cl. 214—83.3.

Borisof, Bernard, to Friden, Inc. Photographic composing device. 3,190,201, 6–22–65, Cl. 95—4.5.

Bosshard, Ernst: *See*—
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Ringwood, Arthur F., and Boutin. 3,190,842.

Bowen, G. L., & Co.: *See*—
Bowen, Glen L., and Lemon. 3,190,399.

Bowen, Glen L., and R. W. Lemon, to G. L. Bowen & Co. Lever actuated, spot type disc brake with automatic adjusting means. 3,190,399, 6–22–65, Cl. 188—73.

Bowser, Inc.: *See*—
Romanowski, Albert F. 3,190,116.

Boyce, Donald A., B. S. Segro, and P. W. Morse, to The Weatherhead Co. Quick disconnect couplings. 3,190,311, 6–22–65, Cl. 137—583.

Boykin, Otis F., to CTS Corp. Electrical capacitor and method of making the same. 3,191,108, 6–22–65, Cl. 317—258.

Boyne Products, Inc.: *See*—
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Bradley, John J. Cutting device. 3,190,163, 6–22–65, Cl. 83—342.

Bradley, Richard S., to The Bendix Corp. Variable speed reducer mechanism. 3,190,145, 6–22–65, Cl. 74—640.

Bradner, John A., to The Lees-Bradner Co. Selective gearing arrangement for hobbing gears and milling threads. 3,190,180, 6–2–65, Cl. 90—4.

Bradway, Malcolm S. Article scouring conveyor. 3,190,329, 6–22–65, Cl. 146—49.

Brandels, Hans, H. Petersen, and R. Fikentscher, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Process for producing a slow-acting nitrogenous fertilizer mixture containing crotylidenediurea. 3,190,741, 6–2–65, Cl. 71—28.

Brandels, Hans, H. Petersen, and R. Fikentscher, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Process for producing a slow-acting and quick-acting nitrogenous fertilizer mixture containing crotylidenediurea. 3,190,742, 6–2–65, Cl. 71—28.

Bratschi, Raymond W., C. W. Fritze, V. E. Herzfeld, and P. H. Smith, to Sperry Rand Corp. Error detection circuit. 3,191,153, 6–2–65, Cl. 340—172.5.

Braun, Michael F.: *See*—
Brumfield, Elvin S., and Braun. 3,191,085.

Braun, Robert: *See*—
Höfelmann, Hans, Braun, Kabrs, Winkler, and Zimmermann. 3,190,843.

Brennan, Timothy A.: *See*—
Rose, Frank L., and Brennan. 3,190,979.

Brichard, Edgard, E. Plumat, P. Eloy, A. Jacobs, and M. Boffe, to Glaverbel. Preheating process and apparatus for vitrifiable composition. 3,190,625, 6–22–65, Cl. 263—11.

Bresa, Cyril J., J. D. Chrisp, and H. H. Fassnacht, to E. I. du Pont de Nemours and Co. Fluidizing agents for water-bearing explosive compositions. 3,190,777, 6–22–65, Cl. 149—57.

Briggs, Hartwell L.: *See*—
Huett, George C., Briggs, Lawyer, and Warton. 3,191,030.

Bright, Hugh H.: *See*—
Crossland, Edward J., Bright, and Barton. 3,190,549.

Bright, Jerald L., to Amsted Industries, Inc. Mold and support therefor. 3,189,960, 6–22–65, Cl. 22—209.

Bristol, Edward S., to Leeds and Northrup Co. Load frequency control system. 3,191,051, 6–22–65, Cl. 307—57.

British Columbia Research Council: *See*—
Trussell, Paul C., Lambe, and Vitins. 3,190,111.

British Iron and Steel Research Assn., The: *See*—
Wilson, Ian. 3,190,098.

British Petroleum Co. Ltd., The: *See*—
Rowland, John, and Knight. 3,190,830.
Yeo, Alan A., Hambling, and Alderson. 3,190,937.

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Broderick, John P.: *See*—
Schilling, Donald C., Lohnes, and Broderick. 3,190,560.

Bronson, Walter W. Temperature measuring and recording apparatus. 3,190,120, 6–22–65, Cl. 73—343.5.

Brooks, Edward M.: *See*—
Claus, Wilbur S., and Brooks. 3,190,753.

Brooks, Robert F.: *See*—
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Brooks, Sheldon C., to Tri-State Display, Inc. Display stand. 3,190,454, 6–22–65, Cl. 211—71.

Brookshire, William A.: *See*—
Oldweiler, Morey E., Moore, and Brookshire. 3,190,867.

Brown, Albert W., to J. C. Carter Co. Aircraft under-wing fueling nozzle and valve and sealing means therefor. 3,190,322, 6–22–65, Cl. 141—387.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
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Brown, Cicero C. Drill-down packer. 3,190,359, 6–22–65, Cl. 166—122.

Brown, George L., to C. P. Clare & Co. Damped electrical relay. 3,190,995, 6–22–65, Cl. 200—166.

Brown, Noel E., to Avco Corp. Amplitude noise control gate. 3,191,124, 6–22–65, Cl. 325—475.

Brown, William L., to Boyne Products, Inc. Directional signal cancelling mechanism responsive to relatively large or relatively small turning movements of the vehicle's steering apparatus. 3,190,951, 6–22–65, Cl. 200—61.34.

Broyles, Leland E.: *See*—
Noble, Robert C., Broyles, and Sadeen. 3,191,037.

Brueder, Antoine, to Andre Citroen Societe Anonyme. Air conditioning system for an automotive vehicle. 3,190,206, 6–22–65, Cl. 98—2.

Brumfield, Elvin S., and M. F. Braun, to Lockheed Aircraft Corp. Infrared mapping system. 3,191,035, 6–22–65, Cl. 250—83.3.

Brummer, Richard S.: *See*—
Caldwell, Frank A., and Brummer. 3,191,182.

Bruner Corp.: *See*—
Rudelick, John. 3,190,726.

Bruner, Henry K.: *See*—
Staggers, John O., Bruner, and Edlund. 3,190,750.

Brunswick Corp.: *See*—
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Brush Beryllium Co., The: *See*—
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Bryant, Andrew J. Device for holding a rotary cutting tool. 3,190,046, 6–22–65, Cl. 51—225.

Bryant, Ellis H., Jr., to Andichron Co. Magnetic call totalizer. 3,190,962, 6–22–65, Cl. 179—8.

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Brynko, Carl, and J. A. Scarpelli, to The National Cash Register Co. Making individual capsules by dual deposition (from liquid). 3,190,837, 6–22–65, Cl. 252—316.

Bucek, Hans: *See*—
Berghaus, Bernhard, and Bucek. 3,190,772.

Buchmann, Kenneth H.: *See*—
Foote, Daniel J., Stahl, and Buchmann. 3,190,089.

Buck, Arthur W. X-ray film cassette. 3,191,032, 6–22–65, Cl. 250—68.

Buck, Henricus M., L. J. Oosterhoff, and J. H. Lupinski, to Shell Oil Co. Catalyst systems comprising aluminum trihalide nitromethane and a third component. 3,190,838, 6–22–65, Cl. 252—429.

Budsich, Tadeusz. Hydraulic apparatus. 3,190,232, 6–22–65, Cl. 103—162.

Buell, Donald S.: *See*—
Compton, Jack, Reed, and Buell. 3,190,724.

Bule, Emerson D. Underwater vehicle. 3,190,256, 6–22–65, Cl. 115—22.2.

Bullwinkel, Edward C., E. D. Hanson, and R. E. Webb, to United States of America, Army. Frequency-shift-keyed signal generator with phase mismatch prevention means. 3,190,958, 6–22–65, Cl. 178—66.

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Cofield, Thomas H., and Burcal. 3,190,902.

Burckhardt, Manfred H., to Daimler-Benz Aktiengesellschaft. Centrifugal clutch with vibration damper. 3,190,422, 6–22–65, Cl. 192—105.

Burgess, William R., and C. D. Riley, to Continental Water Conditioning Corp. Resin transfer plant. 3,190,820, 6–22–65, Cl. 141—1.

Burke, Oliver W., Jr. Vinylic filler pigments. 3,190,850, 6–22–65, Cl. 260—38.

Burney, Charles D. Trawling otters. 3,190,025, 6–22–65, Cl. 43—9.

Burnham, John. Process for electrolytically etching valve metal surfaces. 3,190,822, 6–22–65, Cl. 204—141.

Burns, Robert S.: *See*—
Foley, Matthew J., and Burns. 3,190,525.

Burrows, Arthur T. C., to Geo. W. King, Ltd. Electrically operated hoists. 3,190,617, 6–22–65, Cl. 254—186.

Busch, Heins, and S. Dornier, to Dornier-Werke G.m.b.H. Landing system for aircraft. 3,190,585, 6–22–65, Cl. 244—75.

Bushnell, Eldon W., to Amsted Industries Inc. Slack adjuster. 3,190,403. 6–22–65, Cl. 188—196.

Butler, William F., and R. A. Stewart, to Gerber Products Co. Disposable plastic nipple. 3,190,288, 6–22–65, Cl. 128—252.

Buzawa, Michael J., to Bausch & Lomb Inc. Photographic objective for use in enlarging or reducing devices. 3,190,176, 6–22–65, Cl. 88—57.

CTS Corp.: *See*—
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Cabot Corp.: *See*—
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Cahill, Bernard S., and D. J. Schepflin, to National Rejectors, Inc. Money-handling devices. 3,190,426, 6–22–65, Cl. 194—4.

Cain, Ernest O., to Texas Instruments Inc. Motor control system utilizing semiconductor controlled rectifiers. 3,191,112, 6–22–65, Cl. 318—246.

Cain, James F., M. H. Grabosky, and W. D. Gurdack, to Bayuk Cigars Inc. Display container. 3,190,438, 6–22–65, Cl. 206—45.

Caisley, William S. Extrusion of fluted rod-like articles. 3,190,101, 6–22–65, Cl. 72—257.

Caldwell, Frank A., and R. S. Brummer, to Cyclodrama Inc. Apparatus for making wide angle pictures. 3,191,182, 6–22–65, Cl. 352—69.

Calthorpe, Maurice. Collapsible roof constructions. 3,190,689, 6–22–65, Cl. 296—137.

Cal-Val Research & Development Corp.: *See*—
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Cambridge Filter Corp.: *See*—
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Camloc Fastener Corp.: *See*—
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Campbell, John R., and R. E. Hatton, to Monsanto Co. Compositions comprising a vinylidene halide resin plasticised with an alkyl xylyl sulfone. 3,190,849, 6–22–65, Cl. 260—30.8.

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Sillars, Frederick S., and Birch. 3,190,526.

Canadian Patents and Development Ltd.: *See*—
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Canevassi, Grasiana: *See*—
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Caperan, Jean, and P. Alyre, to Neyrpic, Etablissements. Soil drilling apparatus having means to change the direction of the drill. 3,190,374, 6–22–65, Cl. 175—74.

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Warner, Alden Y., Craven, and Stacherl. 3,189,963.

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Cardina, James A., to The Goodyear Tire & Rubber Co. Method of bonding a rubbery composition to a reinforcing element. 3,190,764, 6–22–65, Cl. 117—62.2.

Carey, Philip, Mfg. Co., The: *See*—
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Carlson, Axel S. Ground vase. 3,190,039, 6–22–65, Cl. 47—41.1.

Carlson, Barber C., and R. C. Hartlein, to The Dow Corning Corp. Use of silanes as concrete additives. 3,190,762, 6–22–65, Cl. 106—90.

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Carpenter, Keith H., to General Motors Corp. Windshield cleaning system. 3,190,184, 6–22–65, Cl. 91—219.

Carruthers, Robert, and D. L. Smart, to United Kingdom Atomic Energy Authority. Energy transfer circuits particularly for the transfer from an inductive store to an inductive load. 3,191,074, 6–22–65, Cl. 307—104.

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Carter, J. C., Co.: *See*—
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Carter, Loyd H. Emergency trailer wheel. 3,190,674, 6–22–65, Cl. 280—150.

Casas-Campillo, Carlos, to Syntex Corp. Process for the preparation of 11α-hydroxy-Δ⁴-3-keto steroids from 11-unsubstituted Δ⁴-3-hydroxy and 3-acyloxy steroids using psilocybe caerulescens var. mazatatecorum. 3,190,809, 6–22–65, Cl. 195—51.

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Schoeneberg, Werner A. P., and Parkey. 3,190,718.

Central Engineering Co., Inc.: *See*—
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Charlop, Herbert, to Metco Inc. Flame spray construction. 3,190,359, 6–22–65, Cl. 239—84.

Chase, Kenneth, to George Frost Co. Cushioned protector. 3,189,919, 6–22–65, Cl. 2—16.

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Chicago Musical Instrument Co.: *See*—
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Chicago Stock Yards Turdo Refrigeration Co.: *See*—
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Child, Edward T., and W. L. Lafferty, Jr., to Texaco Inc. Process for regenerating an adsorbent and a catalyst support in a polymerisation operation. 3,190,936, 6–22–65, Cl. 260—683.15.

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Childers, Spencer L., and L. D. Gore, to The Vendo Co. Machine for selectively vending platters or the like. 3,190,489, 6–22–65, Cl. 221—13.

Childs, David L.: *See*—
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Raccuglia, Giovanni, Childs, and Shanley. 3,190,546.

Chion, Christ, to Allan Marine, Inc. Outrigger pole holder. 3,190,594, 6–22–65, Cl. 248—42.

Choice, Frank C., R. D. E. Eldred, and G. C. J. Wakefield, to United Shoe Machinery Corp. Machine for vulcanising soles onto shoe bottoms. 3,189,943, 6–22–65, Cl. 18—17.

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Christensen, Eugene A. Boring head. 3,190,376, 6–22–65, Cl. 175—102.

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Chute, Richard. 3,190,350.
Sarto, Jorma O. 3,190,622.
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Ciaio, Joseph A., to Modern Shoe Making Machine Corp. Apparatus for preforming shoe upper parts by injection molding principles. 3,189,946, 6–22–65, Cl. 18—30.

Ciba Corp.: *See*—
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Clark, Robert W., to The National Cash Register Co. Means for driving magnetic storage elements. 3,191,161, 6–22–65, Cl. 340—174.

Claseen, Hans-Heinrich, and J. Acker, to Rokal G.m.b.H. Mixing valves. 3,190,312, 6–22–65, Cl. 137—625.4.

Claus, Wilbur S., and E. M. Brooks, to Carnation Co. Process for modifying milk fat. 3,190,753, 6–22–65, Cl. 99—54.

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Cofield, Thomas H., and G. J. Burcal, to Ethyl Corp. Preparation of aromatic iron subgroup metal coordination compounds. 3,190,902, 6–22–65, Cl. 260—430.

Cohan, Alvin M., to American Production Machine Co. Work advancing and rotating apparatus. 3,190,463, 6–22–65, Cl. 214—1.

Cohen, Sheldon, and G. A. Laurem, to Rexall Drug and Chemical Co. Process for preparing inhalation therapy. 3,190,799, 6–22–65, Cl. 167—54.

Coldren, Chester P., to Eaton Mfg. Co. Electrical conductor terminal clamp. 3,191,140, 6–22–65, Cl. 339—246.

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Collier, Thomas J. Child's safety seat for barber chair. 3,190,692, 6–22–65, Cl. 297—251.

Collins, Joseph C., and W. S. Gilmore, to North American Philips Co., Inc. Adjustable crimping tool. 3,190,319, 6–22–65, Cl. 140—105.

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Colman, Robert, to Clairex Corp. Photosensitive element having photoconductive layers. 3,191,045, 6–22–65, Cl. 250—211.

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Columbia Ribbon and Carbon Mfg. Co., Inc.: *See*—
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Combustion Engineering Inc.: *See*—
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Comet, Ralph L. Dispenser for masking tabs. 3,190,785, 6–22–65, Cl. 166—584.

Commissariat a l'Energie Atomique: *See*—
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Compton, Jack, W. H. Reed, and D. S. Buell, to Institute of Textile Technology. Test for a microorganism damaged cotton. 3,190,724, 6–22–65, Cl. 23—230.

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Conrad, Joseph D., Sr., and O. N. Bryant, to Westinghouse Electric Corp. Elastic fluid flow control apparatus. 3,190,612, 6–22–65, Cl. 253—39.

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Continental Water Conditioning Corp.: *See*—
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McKnight, William H., Jr. 3,190,481.
Sullivan, Daryl D., Jones, and Neal. 3,191,023.
Wilson, Richmond W. 3,190,739.

Court, Ward L. Clamp. 3,190,636, 6–22–65, Cl. 269—248.

Cowen, Richard G., to United States of America, Atomic Energy Commission. Light sensitive alarm system. 3,191,043, 6–22–65, Cl. 250—221.

Cowen, Richard G., to United States of America, Atomic Energy Commission. Light sensitive alarm system. 3,191,048, 6–22–65, Cl. 250—221.

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Cox, John L., 2d. Electric circuit arrangement. 3,191,005, 6–22–65, Cl. 219—528.

Craig, Francis A., and E. F. Cloutier, to Textile Machine Works. Adhesive applicator for carton sealing machines. 3,190,259, 6–22–65, Cl. 118—2.

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Crewe, Albert V., to United States of America, Atomic Energy Commission. Scanning electron microscope. 3,191,028, 6–22–65, Cl. 250—49.5.
Critchlow, Arthur J., to International Business Machines Corp. Photoconductive matrix switching plugboard. 3,191,040, 6–22–65, Cl. 250—209.
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Cross, Alexander D., to Syntex Corp. 17-tetrahydropyranyl ethers of androstanes. 3,190,880, 6–22–65, Cl. 260—239.55.
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Daly, John J. Plastic bottle pourer. 3,190,511, 6–22–65, Cl. 222—478.
D'Andrea, Angelo R., J. J. Walsh, and W. F. Becker, Jr. Receptacle having means for providing a pour opening in a wall thereof. 3,190,485, 6–22–65, Cl. 220—48.
Daneman, Ben, to Central Engineering Co., Inc. Street cleaning apparatus. 3,189,932, 6–22–65, Cl. 15—340.
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Daniel, Elbert H., C. C. Akers, N. W. Mitchell, and S. E. Forsyth, to Phillips Petroleum Co. Catalytic process for cracking oils containing metallic contaminants. 3,190,828, 6–22–65, Cl. 208—78.
Daniel, George I. Combination scaffold and ladder. 3,190,390, 6–22–65, Cl. 182—1.
Daniel, George I. Combination scaffold and ladder. 3,190,396, 6–22–65, Cl. 182—1.
Dano, Louis, and R. Viguie, to Commissariat a l'Energie Atomique. Interchangeable chassis slides for carrying electronic equipment. 3,191,097, 6–22–65, Cl. 317—101.
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Davey, Paul H., Sr., and P. H. Davey, Jr. Apparatus for simultaneously drilling and casing a well hole. 3,190,378, 6–22–65, Cl. 175—257.
David, Edward E., Jr., and J. L. Flanagan, to Bell Telephone Laboratories, Inc. Transmission and synthesis of speech. 3,190,963, 6–22–65, Cl. 179—15.55.
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De Nicola, Joseph P., and W. P. Hansen, Jr., to Instron Corp. Extensometer. 3,190,007, 6–22–65, Cl. 33—147.
Depenbrock, Manfred, to Aktiengesellschaft Brown, Boveri & Cie. Phase modifier for reactive power protection. 3,191,116, 6–22–65, Cl. 322—10.
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De Vries, Douwe, to Shell Oil Co. Hose reel and hose support system. 3,190,307, 6–22–65, Cl. 137—355.17.
De Vries, Gerhard H. F., to North American Philips Co., Inc. Microradiographic device with means to continuously rotate a photographic film and specimen in an X-ray beam. 3,191,029, 6–22–65, Cl. 250—52.
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Diamond, Harvey J. Method and means for molding contoured articles from sheet material. 3,190,945, 6–22–65, Cl. 264—92.
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Huyser, Earl S. 3,190,825.
Lynch, Raymond A. 3,190,929.
Parker, Edmund F. 3,190,439.
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Dow, Douglas. Electric drive mechanism and method of operating same. 3,190,387, 6–22–65, Cl. 180—65.
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Doyle, James H., to Harper-Wyman Co. Apparatus for bending tubing. 3,190,103, 6–22–65, Cl. 72—388.
Doyle, Marshall E., to Shell Oil Co. Polyolefins stabilized with a combination of dialkyl thiodipropionates and polyphenols. 3,190,852, 6–22–65, Cl. 260—45.85.
Doyle, Richard H., to Fastener Corp. Fastener driving apparatus. 3,190,187, 6–22–65, Cl. 91—403.

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Dugle, Thomas E., and R. W. Wagner, to Warrick Equipment Corp. Article feeding device for a packaging machine. 3,190,431, 6–22–65, Cl. 198—22.
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Ebert, Heinrich. Infinitely variable transmission. 3,190,075, 6–22–65, Cl. 60—53.
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Edwards, Theodoric B., deceased: H. M. Edwards, executrix. Continuous torque two gear ratio electric motor. 3,191,080, 6–22–65 Cl. 310—118.
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Ehrlich, Sydney M., deceased; H. Ehrlich, and S. H. Kaufman, executors, to The Selney Co., Inc. Anthelmintic composition and method of using same. 3,190,798, 6–22–65, Cl. 167—53.
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Eisfeldt, Erich, to Siemens & Halske Aktiengesellschaft. Feeding and sorting device for punched cards and the like. 3,190,641, 6–22–65, Cl. 271—41.
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Elliott, Hubert L. Ditch draining device. 3,190,225, 6–22–65, Cl. 103—87.
Ellis, Robert B., and B. L. Gelfand, to International Register Co. Geared driving means for timers and the like. 3,190,976, 6–22–65, Cl. 200—38.
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Ender, Hans H., to Union Carbide Corp. Coated ammonium perchlorate and propellant compositions. 3,190,776, 6–22–65, Cl. 149—8.
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English, Ralph M. Automobile parking system. 3,190,467, 6–22–65, Cl. 214—16.1.
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Epstein, Isidore, to G. W. Davis Corp. Flexible trimmer for a lawnmower. 3,190,063. 6–22–65, Cl. 56—255.
Erdman, John G., to Gulf Research Development Co. Process for removing metals from a mineral oil with an alkyl sulfonic acid. 3,190,829, 6–22–65, Cl. 208—252.
Erdmann, Otto: *See*—
Kochalski, Horst, Rudszinat, David, Erdmann, Rode, and Suck. 3,190,459.
Ericsson Telephones Ltd.: *See*—
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Eriksen, Paul A. Multiple office form bursting apparatus, 3,190,516, 6–22–65, Cl. 225—101.
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Edwards, William R. 3,190,938.
Field, Frank H. 3,191 027.
Lipton, Sydney, Belaga, and Kelley. 3,190,846.
Oldweiler, Morey E., Moore, and Brookshire. 3,190,867.
Walker, David G., Holcomb, and Hill. 3,190,940.
Wei, Peter E., and Rehner. 3,190,859.
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Tomany, James P., and Estey. 3,190,767.
Ethyl Corp.: *See*—
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Ettema, Everhardus C.: *See*—
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Euga, Arthur B. Tubular-article cleaning device. 3,189,935, 6–22–65, Cl. 15—511.
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Schilling, Donald C., Lohnes, and Broderick. 3,190,560.
Evans, Edwin R., deceased; The Detroit Bank and Trust Co., executor. Spreading type disc brake. 3,190,398, 6–25–65, Cl. 188—72.
Evans, Richard R.: *See*—
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Evans, William C., to Taylor Instrument Co. Voltage-measuring potentiometric system. 3,191,110, 6–22–65, Cl. 318—28.
Evers, Herbert E., and H. J. Sunnarborg. Demonstration device for lift-type shock absorbers. 3,190,614, 6–22–65, Cl. 254—93.
Ewers, Engelbert. Method for expediting the transportation of containers on railborne and road vehicles. 3,190,477, 6–22–65 Cl. 214—152.
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Lill, Melvin H. 3,190,395.
Fabricius, John H., to Sprague Electric Co. Process for capacitor. 3,189,974, 6–22–65, Cl. 29—25.42.
Fabris, Sergio. Sled with tiltable runners controlled by a tilting rider support. 3,190,671, 6–22–65, Cl. 280—21.
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Price, John E. 3,191,151.
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Arbitman, Dorothy, and Falerni. 3,190,505.
Falk, Edward J., to Wagner Electric Corp. Cooling system. 3,190,272, 6–22–65, Cl. 123—41.09.
Faller, William J., and J. Floros, to Eries Mfg. Co. Magnetic conveyor and can washer combination. 3,190,208, 6–22–65, Cl. 134—125.
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Little, Jess C. 3,190,065.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
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Köpnick, Horst, and Delfs. 3,190,903.
Morschel, Heinrich, and Skopalik. 3,190,905.
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Schleede, Dietrich, Schülde, and Rochlitz. 3,190,763.
Weygand, Friedrich, and Ropsch. 3,190,869.
Farley, David L, to Halliburton Co. Well tester with retrievable valve assembly. 3,190,360, 6–22–65, Cl. 166—226.
Farner, Frank, to Alliawerk Zurich, A.G. Frequency diversity radar with "AND" circuit signal selection. 3,191,173, 6–22–65, Cl. 343—17.1.
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Farr, Richard S., and Labadie. 3,190,058.
Farr, Richard S., and P. A. Labadie, to Farr Co. Cylindrical dust-separating device. 3,190,058, 6–22–65, Cl. 55—325.
Farrow, Frederic W. R., to Associated Electrical Industries Ltd. Thermionic valve cathode. 3,191,089, 6–22–65, Cl. 313—270.
Farson, Frank S.: *See*—
Fauser, Ernest E., and Farson. 3,190,857.
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Bresa, Cyril J., Chrisp, and Fassnacht. 3,190,777.
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Faulhaber, Fritz. Permanent magnet miniature motor. 3,191,081, 6–22–65, Cl. 310—154.
Fauser, Ernest E., and F. S. Farson, to The Goodyear Tire & Rubber Co. Destruction of unreacted isocyanato groups in polyurethane elastomers by exposure to steam. 3,190,857, 6–22–65, Cl. 260—77.5.
Faville, Frederick A. Calibrating and testing methods. 3,190,109, 6–22–65, Cl. 73—1.
Fein, Marvin M., and J. Bobinski, to Thiokol Chemical Corp. Reaction products of cyanamides and boranes and their preparation. 3,190,915, 6–22–65, Cl. 260—551.
Feiner, Alexander, to Bell Telephone Laboratories, Inc. Magnetic ferreed counting circuit. 3,191,152, 6–22–65, Cl. 340—168.
Feldman, Michel. Electrode-holding device for electric-arc welding. 3,191,002, 6–22–65, Cl. 219—142.
Feldman, Stanley, to Motorola, Inc. Stabilized signal generator. 3,191,129, 6–22–65, Cl. 332—19.
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Ploetz, Theodor, and Wimmer. 3,190,790.
Feng, Shao C., to Sperry Rand Corp. Current adder type logic circuit. 3,191,057, 6–22–65, Cl. 307—88.5.
Fernandes, Manuel C., and C. C. Goetz. Map controlled device for feeding corrections to guidance system. 3,190,000, 6–22–65, Cl. 33—1.
Ferranti, Albino. Guide system for the moving portion of a one-column press. 3,190,213, 6–22–65, Cl. 100—214.
Ferris, Ray L., to Pullman Inc. Stanchion. 3,190,595, 6–22–65, Cl. 248—119.
Fertig, Joseph: *See*—
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Skoultchi, Martin M., Goldberg, and Fertig. 3,190,875.
Skoultchi, Martin M., Goldberg, and Fertig. 3,190,876.
Fertig, Joseph, A. I. Goldberg, and M. Skoultchi, to National Starch and Chemical Corp. Azo polymeric compositions capable of being integrally colored and which are resistant to ultra-violet light. 3,190,860, 6–22–65, Cl. 260—80.5.
Fertig, Joseph, A. I. Goldberg, and M. Skoultchi, to National Starch and Chemical Corp. Azobensene containing polymeric compositions capable of being integrally colored and which are resistant to ultra-violet light. 3,190,861, 6–22–65, Cl. 260—86.1.
Fetterly, Lloyd C., K. F. Koetitz, and G. W. Conklin, to Shell Oil Co. Vapor phase oxidation of propylene and butylene in the presence of an arsenic phosphomolybdate catalyst. 3,190,913, 6–22–65, Cl. 260—533.
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Field, Frank H., to Esso Research and Engineering Co. Mass spectrometer with means to impress a fluctuating component upon the ion stream and means to detect the same. 3,191,027, 6–22–65, Cl. 250—41.9.
Field, Philip M., to Charles Beseler Co. Slide-actuate switch for photographic projector. 3,190,174, 6–22–65, Cl. 88—26.
Fielden, Georgia F. Interior decorator's cabinet with slidable racks. 3,190,712, 6–22–65, Cl. 312—311.
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Brandels, Hans, Petersen, and Fikentscher. 3,190,742.
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Fillweber, Marcellus L, to Dominion Electric Corp. Coupling construction. 3,190,885, 6–22–65, Cl. 64—8.
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Wear'n, Jack S. 3,190,300.
Finnemann, Mike A., to Antler Corp. Classroom easel. 3,190,603, 6–22–65, Cl. 248—450.
Fischer, Felix, and V. Körösi, to Olympia Werke A.G. Program control device in accounting machines. 3,190,550, 6–22–65, Cl. 235—60.47.
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Ölander, Bertil W., and Jonsson. 3,190,673.
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Fister, Aloysius, to McGraw-Edison Co. Protectors for electric circuits. 3,190,987, 6–22–65, Cl. 200—121.
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Magill, Jacques R., and Hamilton. 3,190,786.
Fites, Cyril B., to Wagner Electric Corp. Air ratio changer and system. 3,190,700, 6–22–65, Cl. 303—48.
Fitspatrick, James J., and A. Zarouni, to Bell Telephone Laboratories, Inc. Telephone answering and recording system. 3,190,961, 6–22–65, Cl. 179—6.
Fjermestad, Arnold R., to National Cooperatives, Inc. Liquid additive dispenser for cleansing systems. 3,190,503, 6–22–65, Cl. 222—205.
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Roth, Robert I., and Fleisher. 3,191,014.
Fleisher, Harold, and R. I. Roth, to International Business Machines Corp. Memory readout and summing system. 3,191,012, 6–22–65, Cl. 235—164.
Fleming, Richard A., to E. I. du Pont de Nemours and Co. Alloy article having a porous outer surface and process of making same. 3,190,749, 6–22–65, Cl. 75—122.
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Flichy, Jacques, to Ateliers Metallurgiques de Saint-Urbain. Speed variator and reducer apparatus. 3,190,148, 6–22–65, Cl. 74—796.
Flick, Francis S., to Flick-Reedy Corp. Sealing structure for piston and cylinder device. 3,190,702, 6–22–65, Cl. 308—3.5.
Flick-Reedy Corp.: *See*—
Flick, Francis S. 3,190,702.
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Nute, Jay H. 3,190,535.
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Foley, Daniel E., W. F. Hogan, and A. Skrobisch, to Data Presentations, Inc. Alternating two line printing device. 3,190,957, 6–22–65, Cl. 178—30.
Foley, Frederic E. B. Self-inflating bag catheter. 3,190,291, 6–22–65, Cl. 128—349.
Foley, Matthew J., and R. S. Burns, to Armco Steel Corp. Apparatus for aligning coil ends for joining. 3,190,525, 6–22–65, Cl. 228—5.
Fonken, Gunther S., to The Upjohn Co. Process for inhibiting the growth of micrococcus agilis with 11β-hydroxy-11-(2-pyridylmethyl)-pregnane-3,20-dione. 3,190,796, 6–22–65, Cl. 167—30.
Foote, Daniel J., A. D. Stahl, and K. H. Buchmann, to Master Lock Co. Key-controlled, combination changing, permutation lock. 3,190,089, 6–22–65, Cl. 70—156.
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Forge, Charles O., to Hewlett-Packard Co. Pulse amplifying circuit using a step-recovery diode for pulse shaping. 3,191,062, 6–22–65, Cl. 307—88.5.
Forsman, Arnold H. Water skiing facility. 3,190,646, 6–22–65, Cl. 272—82.
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Foufounis, Jean. Reversing control system for a rotary shaft. 3,190,133, 6–22–65, Cl. 74—204.
Fountain, Forrest R. Load indicator. 3,190,383, 6–22–65, Cl. 177—137.
Fowler, Elliot P., to United Kingdom Atomic Energy Authority. D.C. amplifiers. 3,191,126, 6–22–65, Cl. 330—9.
Fox, Robert M., and E. H. Klove, Jr., to General Motors Corp. Closure latch. 3,190,682, 6–22–65, Cl. 292—216.
Foxx, Robert J., to Nordberg Mfg. Co. Fluid piston and cylinder assembly for use in railway tie cutters and the like. 3,190,324, 6–22–65, Cl. 144—2.
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Francis, William C., to Gulf Oil Corp. Thermoplastic 5-allyl-isocyanurate polymer. 3,190,841, 6–22–65, Cl. 260—2.
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Haidley, William E., Schaefer, and Lakes. 3,189,964.
Freed, Meier E., L. M. Rice, and E. Hertz, to American Home Products Corp. Aroylalkylaminoalkyl derivatives of 2,3-polymethyleneindoles. 3,190,890, 6–22–65, Cl. 260—319.
Freedman, David, and J. W. Ross. Cell disintegrating apparatus. 3,190,568, 6–22–65, Cl. 241—171.
Freeman, Paul E., to Loktrim Corp. Knock-down furniture and method of assembly. 3,190,710, 6–22–65, Cl. 312—263.
French, Elby E., to O.K. Tire and Rubber Co. Tire stitcher. 3,190,782, 6–22–65, Cl. 156—410.
Fricke, Hermann, to Iennaer Glaswerk Schott & Gen. Comparison and derivation electrode for potentiometric measurements. 3,190,826, 6–22–65, Cl. 204—195.
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Ailco, Jackson A. 3,190,973.
Fries, Vollmer W. Controllable shape hull structure. 3,190,587, 6–22–65, Cl. 244—106.
Fritsch, Werner H., to Dr. Schmitz & Apelt, Industrieofenbau G.m.b.H. Heating apparatus for burning gases or liquid fuels, especially fuel oil. 3,190,340, 6–22–65, Cl. 158—4.
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Hayakawa, Yoshihide, and Nakajima. 3,190,752.
Fujimoto, Sakane, to Kabushiki Kaisha Ricoh. Safety device for securing against inadvertent opening of the rear cover of photographic camera and against inadvertent shutter releasing. 3,190,202, 6–22–65, Cl. 95—11.
Fuller, Harlan I., and M. R. Thomson, to The Bendix Corp. Fuel injector. 3,190,561, 6–22–65, Cl. 239—90.
Fuller, William D., to Lockheed Aircraft Corp. Structurally integrated capacitor assembly. 3,191,098, 6–22–65, Cl. 317—101.
Furst, Arthur, to Atlas Chemical Industries, Inc. Method of producing depressant effect. 3,190,800, 6–22–65, Cl. 167—65.
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Galonska, Walter O., to Talon, Inc. Slide fastener stringer. 3,189,964, 6–22–65, Cl. 24—205.13.
Gans, Robert H., to Continental Can Co., Inc. Method of applying dividers to bottles. 3,190,048, 6–22–65, Cl. 53—26.
Gardea, Alfred W., and J. F. Gluth, to International Register Co. Electric clock. 3,190,066, 6–22–65, Cl. 58—26.
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Williams, Raymond F., and Martin. 3,190,068.
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Garibaldi, John M., to United States of America, Navy. Rocket stage coupling. 3,190,221, 6–22–65, Cl. 102—49.
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Gartner, Stanley J., to Sylvania Electric Products Inc. Transfer mechanism for assembling apparatus and methods. 3,190,462, 6–22–65, Cl. 214—1.
Garwin, Leo, to Kerr-McGee Oil Industries, Inc. Fractionation of hydrocarbon mixtures. 3,190,934, 6–22–64, Cl. 260—674.
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Goetz, Daniel A. 3,190,209.
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Gebel, Radames K. H., to United States of America, Air Force. Secondary emission multiplier intensifier image orthicon. 3,191,086, 6–22–65, Cl. 313—65.
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Keller, Alois. 3,190,216.
Gee, Kenneth H., to Texaco Inc. Lubricant compositions comprising chlorinated quinones. 3,190,834, 6–22–65, Cl. 252—33.4.
Gegauf, Fritz, Jr., to Fritz Gegauf Aktiengesellschaft. Tensioning device for the upper thread in a sewing machine. 3,190,249, 6–22–65, Cl. 112—254.
Gehring, Arthur J., Jr., M. Jacoby, and T. D. Reader, to Sperry Rand Corp. Pure fluid computer. 3,190,554, 6–22–65, Cl. 235—201.
Gehringer, Mervin L. Attachment for sewing eyes. 3,190,248, 6–22–65, Cl. 112—105.
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Frank, Edward J. 3,191,096.
Gitzendanner, Louis G. 3,191,079.
Hicks, William R., and Kronson. 3,189,995.
Kelley, Fred W., Jr. 3,191,117.
Kimball, Alvion L. 3,190,041.
Meyer, Jerry A. 3,190,659.
Neugebauer, Frans J., and Lustenader. 3,190,817.
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Pickril, William. 3,189,976.
Ringwood, Arthur F., and Boutin. 3,190,842.
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Lustig, Howard E., and Rossoff. 3,191,170.
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Peden, Merle F., Jr. 3,190,755.
Swanson, Ronald R. 3,190,919.
General Motors Corp.: *See*—
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Fox, Robert M., and Klove. 3,190,682.
Heidorn, John H. 3,190,419.
Schultze, Harold E. 3,190,400.
General Steel Products, Inc.: *See*—
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General Time Corp.: *See*—
Neitzert, Carl. 3,191,052.
Paterson, John S. 3,189,987.
Genin, Robert I., and M. D. Zak, to Child Guidance Toys, Inc. Method of assembling magnetised rubber-like strips in plastic configurations. 3,189,981, 6–22–65, Cl. 29—155.5.
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Kreisman, Wallace S. 3,190,124.
Gerber Products Co.: *See*—
Butler, William F., and Stewart. 3,190,288.
Geschickter, Charles F., J. S. Pierce, E. E. Reid, and Y. H. Chen, to The Geschickter Fund for Medical Research, Inc. Aminoalkanol derivatives of piperazines. 3,190,883, 6–22–65, Cl. 260—268.
Geschickter Fund for Medical Research, Inc., The: *See*—
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Gilbert, Daniel. Combination hanger hook and display plastic bags. 3,190,605, 6–22–65, Cl. 248—359.
Gilbertson, John E. Lawnmower device. 3,190,061, 6–22–65, Cl. 56—25.4.
Gilmore, Walter S.: *See*—
Collins, Joseph C., and Gilmore. 3,190,319.
Gilro Machine & Stamping Co.: *See*—
Roble, Charles F., and Stenson. 3,190,483.
Giordano, Julius. Electrically actuated sounding doll with illuminating means. 3,190,037, 6–22–65, Cl. 46—227.
Gire, Etienne Y. J. M., and A. L. Meunier, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Fluid distribution device especially applicable to control by jet of V.T.O.L. aircraft. 3,190,584, 6–22–65, Cl. 244—52.
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Wahl, Edward C., Schuls, and Andresen. 3,190,661.
Gitzendanner, Louis G., to General Electric Co. Heavy dynamoelectric machine having nylon bearings. 3,191,079, 6–22–65, Cl. 310—55.

Giuffrida, Philip, D. L. Graves, and E. C. Thomson, to Electronics Corp. of America. Checking system for condition responsive apparatus. 3,190,341, 6–22–65, Cl. 158—28.

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Goard, Howard W.: *See*—
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Goettl, Adam D. Blower construction. 3,190,543, 6–22–65, Cl. 230—117.

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Milone, Charles R., and Pace. 3,190,844.
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Gordon, Alex F., to United Merchants and Manufacturers, Inc. Process of imparting wash and wear properties to cellulosic textiles and finishing solutions for use in such process. 3,190,715, 6–22–65, Cl. 8—116.

Gordon, Alex F., to United Merchants and Manufacturers, Inc. Process of finishing cellulosic fabrics with aldehyde-containing solutions and said solutions. 3,190,716, 6–22–65, Cl. 8—116.4.

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Goren, Mayer B., to Kerr-McGee Oil Industries, Inc. Process for the selective recovery of vanadium oxide from alkaline liquors. 3,190,720, 6–22–65, Cl. 23—23.

Gorlin, Alex M. Speed reduction drive mechanism. 3,190,149, 6–22–65, Cl. 74—805.

Goto, Jyunichi. Coffee granulating apparatus. 3,190,572, 6–22–65, Cl. 241—235.

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Triska, Alfred A. 3,190,746.

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Hsieh, Henry L., and R. C. Wheat, to Phillips Petroleum Co. Plasticized curing of polymers olefin-type containing terminal epoxy and hydroxy groups. 3,190,848, 6–22–65, Cl. 260—80.4.

Huber, Harry, and J. Bensimon, to Compagnie Generale De Telegraphie. Energy converter. 3,191,076, 6–22–65, Cl. 310—4.

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Huett, George C., H. L. Briggs, C. B. Lawyer, and J. W. Warton, to Eugene Dietzgen Co. Process of making and using thermographic reproduction paper. 3,191,030, 6–22–65, Cl. 250—65.

Huffman, Warren C. Silo unloader. 3,190,469, 6–22–65, Cl. 214—17.

Huget, Karl L. Electrical connecting means with identical rotary connectors. 3,190,978, 6–22–65, Cl. 200—51.

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Hughes, Alvin W. Deaerating machine for sausage batter or the like. 3,189,940, 6–22–65, Cl. 17—39.

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Hunton, James K., and R. B. Riley, to Hewlett-Packard Co. Transmission line apparatus having a non-linear detector element and a direct-coupled line-terminating resistor in close electrical proximity. 3,191,125, 6–22–65, Cl. 329—102.

Hurkamp, Charles H. Foldable building structure. 3,189,949, 6–22–65, Cl. 20—2.

Hurtner, Thomas A., to Adirondack Steel Casting Co. Railway truck. 3,190 237, 6–22–65, Cl. 105—182.

Husak, William. Ski construction. 3,190,668, 6–22–65, Cl. 280—12.

Hussey, Clyde V., to Seismograph Service Corp. Communication system for shielded areas. 3,191,122, 6–22–65, Cl. 325—54.

Hussmann, Peter, to Birs Beteiligungs-und Verwaltungsgesellschaft A.G. Method and apparatus for the spray drying of heat sensitive liquiform materials. 3,190,343, 6–22–65, Cl. 159—4.

Hutson, Thomas, Jr., to Phillips Petroleum Co. Purification process. 3,190,935, 6–22–65, Cl. 260—676.

Huyser, Earl S., to The Dow Chemical Co. Bromination of aromatic compounds. 3,190,825, 6–22–65, Cl. 204—163.

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Jacobson, Howard W., to E. I. du Pont de Nemours and Co. Process for producing metal oxides in predetermined physical forms. 3,190,723, 6–22–65, Cl. 23—140.

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Johansen, Einar K., and T. W. Bannon, to U.S. Industries, Inc. Elevating and tilting mechanism for feeding devices. 3,190,464, 6–22–65, Cl. 214—1.1.

Johansson, Nils T. G. Mechanism for aligning timber for sawing. 3,190,323, 6–22–65, Cl. 143—92.

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Johnson, Bertil L. Connecting structure for timbers. 3,189,950, 6–22–65, Cl. 20—4.

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Johnson, Ford L., to Sun Oil Co. Methods and apparatus for drilling bore holes. 3,190,372, 6–22–65, Cl. 175—2.

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Johnson, John B., and A. Leen, to McGraw-Edison Co. Ultraviolet detector system with means to keep electrodes contamination free. 3,191,036, 6–22–65, Cl. 250—83.6.

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Johnson, Marvin F. L., to Sinclair Research, Inc. Dehydrogenation process and catalyst. 3,190,932, 6–22–65, Cl. 260—668.

Johnson, Morgan A. Inflatable golf practice target. 3,190,657, 6–22–65, Cl. 273—181.

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Jones, Delbert R., and J. DuPont, to Alcan Co., Inc. Shot receptacle. 3,190,220, 6–22–65, Cl. 102—42.

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Junge, Edward C. Scooter type vehicle. 3,190,676, 6–22–65, Cl. 280—276.

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Kamborian, Jacob S. Heel clamp. 3,189,925, 6–22–65, Cl. 12—14.4.

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Kaminky, Oscar H. Supported structure and mechanism therefor. 3,190,596, 6–22–65, Cl. 248—169.

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Kampf, Richard S., to Honeywell Inc. Electromagnetic friction clutch. 3,190,420, 6–22–65, Cl. 192—84.

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Kapany, Narinder S., to American Optical Co. Method of making a fiber optical bundle. 3,190,735, 6–22–65, Cl. 65—4.

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Kardaun, Georg, and T. J. van der Gugten, to Stamicarbon N.V. Apparatus for treating coal briquettes and the like. 3,190,814, 6–22–65, Cl. 202—129.

Kardon, Bernard. Wetting doll with electrical sounding alarm. 3,190,038, 6–22–65, Cl. 46—232.

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Kelmers, Andrew D., and W. Koenen, to Union Carbide Corp. Process for direct and selective recovery of vanadium values from aqueous solutions thereof. 3,190,719, 6–22–65, Cl. 23—22.

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Kitabayashi, Seiichi. Flame regulation valve for gas lighter. 3,190,088, 6–22–65, Cl. 67—7.1.
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Komatsu, Tasuro, to Tokyo Shibaura Denki Kabushiki Kaisha. Detachable automatic temperature control plug. 3,190,989, 6–22–65, Cl. 200—136.3.
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Köpnick, Horst, and D. Delfs, to Farbenfabriken Bayer Aktiengesellschaft. Organosilioxyalkyl ethers of polyhydric alcohols. 3,190,903, 6–22–65, Cl. 260—448.8.
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Koppehele, Hugo P., to Avisun Corp. Wiping device for continuous traveling films. 3,189,929, 6–22–65, Cl. 15—308.
Kore, Alexander V.: *See*—
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Kozacka, Arthur G., to Acme Industrial Co. Controls for turret lathes and the like. 3,190,151, 6–22–65, Cl. 77—32.5.
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Kugler, Walter. Melting furnace. 3,190,948, 6–22–65, Cl. 13—27.
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Kumpf, August W., to C. H. Wheeler Mfg. Co. Vessel having twin rudders with controlled toe-out. 3,190,251, 6–22–65, Cl. 114—163.
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Taub, David, Wendler, and Kuo. 3,190,824.
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Kvello-Aune, Alf G., and P. F. Tröften, to Atlas Copco Aktieboiag. Drive and feed device for a string of rotary drill string element. 3,190,370, 6–22–65, Cl. 173—37.
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Limberger, Walter, and R. Wendt, to Lumoprint Zindler KG. Apparatus for the reproduction of copies by distillation transfer. 3,190,200, 6–22–65, Cl. 95—1.7.
Linden, Knut E. Mobile crane with pivotable boom mounted for alternate use as a tower. 3,190,457, 6–22–65, Cl. 212—70.
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Maass, Günther, and P. Bernemann, to Chemische Werke Huls Aktiengesellschaft. Process for production of homogeneous rubber-silicic acid mixtures. 3,190,851, 6–22–65, Cl. 260—41.5.

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MacChesney, Chester M.: 85% to Ellamac Inc., and 15% to C. S. Henderson. Motion transmitting mechanism of the gear-pinion type. 3,190,138, 6–22–65, Cl. 74—425.

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MacDonald, Hugh D., and F. E. Sharrier. Combination low-water cut-out and gauge glass. 3,190,268, 6–22–65, Cl. 122—504.

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Mahoney, William J., to American Machine & Foundry Co. Pulse generating circuits. 3,191,060, 6–22–65, Cl. 307—88.5.

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Majendie, Alastair M. A., to Smiths America Corp. Variable stimulus peripheral vision indicator. 3,191,147, 6–22–65, Cl. 340—27.

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Malec, Jerry P., to Malco Engineering Co. Fluid applicator for animals. 3,190,266, 6–22–65, Cl. 119—157.

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Maurer, Leon H., to Westworld Artists Productions Inc. Method and apparatus for producing animated cartoons. 3,190,955, 6–22–65, Cl. 178—6.

Maxwell, James W. Jack structure for an earth boring machine. 3,190,371, 6–22–65, Cl. 173—141.

Mayer, Perdy. Electric cable utilizing lossy material to absorb high frequency waves. 3,191,132, 6–22–65, Cl. 333—79.

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Mayfield, George C. Method of keying together an annular piston ring and a back-up element. 3,189,986, 6–22–65, Cl. 29—404.

Mayfield, George C. Multi-piece piston ring assemblies. 3,190,662, 6–22–65, Cl. 277—140.

Maynes, Blas A. Pick-up camper lifts. 3,190,480, 6–22–65, Cl. 214—515.

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McGrath, Robert E., to Royal McBee Corp. Ribbon handling mechanism. 3,190,430, 6–22–65, Cl. 197—151.

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McKenzie, Eugene L., to Minnesota Mining and Mfg. Co. Reflex-reflecting sheeting. 3,190,178, 6–22–65, Cl. 88—82.

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McKnight, William H., Jr., to Corning Glass Works. Container and closure therefor. 3,190,481, 6–22–65, Cl. 215—39.

McLaughlin, Elizabeth R., and E. Groschke. Greeting card assembly. 3,190,541, 6–22–65, Cl. 229—92.8.

McLean, William E., and G. A. Swarts, to Electra Mfg. Co. Filament for vacuum deposition apparatus and method of making it. 3,190,771, 6–22–65, Cl. 117—227.

McNaney, Joseph T. Light responsive decimal to binary data converter switch means. 3,191,049, 6–22–65, Cl. 250—227.

McNaney, Joseph T. Binary to decimal converter. 3,191,167, 6–22–65, Cl. 340—347.

McNulty, Frank E., and R. M. Nee, to Nee McNulty, Inc. Method of applying protective wrappings to pipe. 3,190,780, 6–22–65, Cl. 156—162.

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Meijer, Barend M., to North American Philip Co., Inc. Self-starting single-phase motor without a commutator. 3,191,083, 6–22–65, Cl. 310—172.

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Mennborg, Hans J. T., to Svenska Aeroplan Aktiebolaget. Ejection seat having rocket motor for second stage propulsion. 3,190,589, 6–22–65, Cl. 244—122.

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Merz, Kenneth A., to The Torrington Mfg. Co. Method of making integral fan and slinger ring. 3,189,982, 6–22–65, Cl. 29—156.8.

Messenger, Joseph U., to Socony Mobil Oil Co., Inc. Full oil phase drilling fluids. 3,190,832, 6–22–65, Cl. 252—8.5.

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Meyer, Harry A., and H. J. Langlois, to American Radiator & Standard Sanitary Corp. Fluid drive for reversible rotation. 3,190,076, 6–22–65, Cl. 60—54.

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Migneault, Romuald and F. W. Window screen mounting. 3,190,348, 6–22–65, Cl. 160—389.

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Milanos, Jerry L. and A. Coin operated latch device. 3,190,425, 6–22–65, Cl. 194—1.

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Miller, Henry A., Jr., to Air Reduction Co. Inc. Breathing system. 3,190,287, 6–22–65, Cl. 128—144.

Miller, Joseph P., to Chicago Stock Yards Turdo Refrigeration Co. Ice maker having water thawing means. 3,190,083, 6–22–65, Cl. 62—349.

Miller, Kenneth L., to E. I. du Pont de Nemours and Co. Chloroprene polymerisation process. 3,190,865, 6–22–65, Cl. 260—92.3.

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Miller, Smith B. Decorative window lamp assembly. 3,191,020, 6–22–65, Cl. 240—10.

Milone, Charles R., and H. A. Pace, to The Goodyear Tire & Rubber Co. Process for producing improved polyurethane foams using an aroyl azide blowing agent. 3,190,844, 6–22–65, Cl. 260—2.5.

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Mitchell, Joseph M., and D. C. Chalmers, to Polymer Corp. Ltd. Agglomeration and concentration of synthetic latex. 3,190,847, 6–22–65, Cl. 260—29.7.

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Mitchell, Reginald F. Visual landing aid for airplanes. 3,191,146, 6–22–65, Cl. 340—26.

Miura, Takeo, and J. Iwata, to Kabushiki Kaisha Hitachi Seisakusko. Analog multiplier. 3,191,017, 6–22–65, Cl. 235—194.

Mixer, Harold P., to Sperry Rand Corp. Information sensing device with electromechanical storage. 3,191,007, 6–22–65, Cl. 235—61.11.

Miyahara, Kingo. Compact instantaneous water heater. 3,190,283, 6–22–65, Cl. 126—359.

Miselle, Ned W., to General Steel Products, Inc. Reclining chair fixture. 3,190,690, 6–22–65, Cl. 297—89.

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Molander, Charles W. Method of producing a baceteriological insecticide. 3,190,811, 6–22–65, Cl. 195—96.

Molly, Hans. Hydraulic device. 3,190,186, 6–22–65, Cl. 91—382.

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Mondot, Jacques: *See*—
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Richardson, George A., and Birum. 3,190,892.
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Moody, Allen M., to United States of America, Army. Air-supported building structure. 3,190,299, 6–22–65, Cl. 135—1.

Moon, Philip R., W. S. Stockwell, and R. G. Tilbury, to S. Smith & Sons (England) Ltd. Flexible drive shaft assembly. 3,190,084, 6–22–65, Cl. 64—3.

Mooney, Lawrence K., to United States of America, Navy. Threshold indicator. 3,191,073, 6–22–65, Cl. 307—88.5.

Moore, Cecil E. Tube joining device. 3,189,991, 6–22–65, Cl. 29—437.

Moore, Donald A., to Davidson Rubber Co., Inc. Method of mold temperature control. 3,190,944, 6–22–65, Cl. 264—45.

Moore, Lawrence A., to Beloit Corp. Gloss calender. 3,190,212, 6–22–65, Cl. 100—38.

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Morgan, Harry A., Jr., 5% to L. Hocker, 5% to A. S. Lapin, and 77% to Morgan Associates. Milk food product and method for making same. 3,190,760, 6–22–65, Cl. 99—201.

Morris, George H. Triple section rotary rod weeder. 3,190,363, 6–22–65, Cl. 172—44.

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Morrison, James C., and L. H. Segall, to The Bendix Corp. Ignition system employing saturable core reset by relaxation oscillator. 3,191,093, 6–22–65, Cl. 315—209.

Morschel, Heinrich, and C. Skopalik, to Farbenfabriken Bayer Aktiengesellschaft. Organic isocyanates. 3,190,905, 6–22–65, Cl. 260—453.

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Mount, George W. Hand portable cutting devices. 3,189,997, 6–22–65, Cl. 30—228.

Mount, Wadsworth W. Cup and saucer. 3,190,484, 6–22–65, Cl. 220—23.83.

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Muth, Herbert, to Telefunken Patentverwertungs G.m.b.H. Construction of a battery electrode for an endo-radiosonde. 3,190,285, 6–22–65, Cl. 128—2.1.

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Nagata, Wataru, T. Terasawa, and T. Aoki, to Shionogi & Co., Ltd. Intermediates in the preparation of 3β-hydroxy-20-oxo-5α-pregnane. 3,190,879, 6–22–65, Cl. 260—239.55.

Nagel, Roger M., and M. Gabliks, to Petro-Tex Chemical Corp. Olefin polymerization process. 3,190,866, 6–22–65, Cl. 260—93.7.

Nagy, Jules. Model two rail electric railroad and turnout switch therefor. 3,190,557, 6–22–65, Cl. 238—10.

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Namy, Gerald, and J. D. Fillon, to Institut de Recherches de la Siderurgie Francaise, and Compagnie des Ateliers & Forges de la Loire. System for recovering waste gases from a metal refining zone. 3,190,747, 6–22–65, Cl. 75—60.

Nash, Leonard A., to Teletype Corp. Tape feeding mechanism for telegraph ticker. 3,190,519, 6–22–65, Cl. 226—164.

Nash, Leslie R., and R. G. Day, to Seabar Equipment Ltd. Grain dumper. 3,190,472, 6–22–65, Cl. 214—47.

Nathanson, Herbert. Multiple-pleat forming and fastening apparatus to prevent stretching and tearing. 3,190,512, 6–22–65, Cl. 223—30.

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Fertig, Joseph, Goldberg, and Skoultchi. 3,190,861.
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Skoultchi, Martin M., Goldberg, and Fertig. 3,190,875.
Skoultchi, Martin M., Goldberg, and Fertig. 3,190,876.

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Neal, Robert L. Machine for planting plant rhizomes or stolons. 3,190,246, 6–22–65, Cl. 111—1.

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Nee, Robert M.: *See*—
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Nelson, Alan H., to North American Aviation, Inc. Bistable current reversing switch for frequency determination. 3,191,121, 6–22–65, Cl. 324—79.

Nelson, John W., to Sinclair Research Inc. Rust inhibiting composition. 3,190,734, 6–22–65, Cl. 44—71.

Nelson, Maclay P., and E. Ritsheimer. Reversible bits for bulldozer and similar blades. 3,190,018, 6–22–65, Cl. 37—143.

Nester, Ralph M. Centrifugal device for agitating, spraying and evaporating liquids. 3,190,344, 6–22–65, Cl. 159—6.

Neu, Edward A., Jr., to Thiokol Chemical Corp. Reaction motor construction. 3,190,070, 6–22–65, Cl. 60—35.6.

Neugebauer, Franz J., and E. L. Lustenader, to General Electric Co. Compression distillation apparatus. 3,190,817, 6–22–65, Cl. 202—236.

Neukom, Alfred, and R. Schaal, to H. A. Schlatter, A.G. Resistance welding machine. 3,191,001, 6–22–65, Cl. 219—101.

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Nyborg, Meredith M., to Hughes Aircraft Co. Precision welding head. 3,191,000, 6–22–65, Cl. 219—86.

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Oddie, William M. Blast cleaning machines. 3,190,042, 6–22–65, Cl. 51—15.

Oesterlein, Fritz, and H. Riat, to Ciba Corp. Water-soluble disazo dyestuffs. 3,190,872, 6–22–65, Cl. 260—153.

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Olander, Bertil W., and S. G. Jonsson, to H. Fischer, KG. Push cart for self-serving stores 3,190,673, 6–22–65, Cl. 280—33.99.

Oldweiler, Morey E., M. A. Moore, and W. A. Brookshire, to Esso Research and Engineering Co. Processing of solid polymer. 3,190,867, 6–22–65, Cl. 260—937.

Oleson, James E. Cable threading apparatus. 3,190,616, 6–22–65, Cl. 254—134.3.

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Ooka, Hiroshi, K. Onishi, and S. Oshima, to Hitachi, Ltd. Current collector assembly for small D.C. motors. 3,191,084, 6–22–65, Cl. 310—219.

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Ortman, Charles H., ⅓ to I. J. Warner. Toggle operated pliers. 3,190,155, 6–22–65, Cl. 81—379.

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Ott, Vivian L., and J. B. Beaman, Jr. Hand trucks. 3,190,479, 6–22–65, Cl. 214—373.

Otto, Carl. Coke oven bracing means. 3,190,818, 6–22–65, Cl. 202—268.

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Palm, Albert: *See*—
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Pangman, William J. Compound prosthesis. 3,189,921, 6–22–65, Cl. 3—36.

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Biais, Regine, Papée, and Gauguin. 3,190,840.

Papesch, Viktor, to G. D. Searle & Co. 1,3-disubstituted 4-oxo-2-thio - 1,2,3,4 - tetrahydropyrimido[4,5-d]pyrimidines. 3,190,881, 6–22–65, Cl. 260—256.5.

Pardue, George H.: *See*—
Moser, Edward L., and Pardue. 3,190,388.

Pardue, George H., to Schlumberger Well Surveying Corp. Acoustic delay member for well logging tools. 3,191,143, 6–22–65, Cl. 340—17.

Pardue, George H., to Schlumberger Well Surveying Corp. Stand off apparatus for logging tool. 3,191,144, 6–22–65, Cl. 340—17.

Park, Wesley E., to Nordberg Mfg. Co. Engine generator set. 3,191,050, 6–22–65, Cl. 290—4.

Parke, Davis & Co.: *See*—
Nicolaides, Ernest D. 3,190,910.

Parker, Donald J., T. I. Ress, and H. J. Woll, to Radio Corp. of America. Optical memory. 3,191,157, 6–22–65, Cl. 340—173.

Parker, Edmund F., to The Dow Chemical Co. Combined shipping carton and display stand. 3,190,439, 6–22–65, Cl. 206—45.

Parker, Gary W.: *See*—
Jones, Brian L., and Parker. 3,191,070.

Parker-Hannifin Corp.: *See*—
Adams, Harry H., and Lawrence. 3,190,214.

Parkey, William D.: *See*—
Schoeneberg Werner A. P., and Parkey. 3,190,718.

Parkinson, Alexander: *See*—
Baird, William, Batty, and Parkinson. 3,190,891.

Parsons, C. A., & Co., Ltd.: *See*—
Hryniszak, Waldemar. 3,190,249.

Parsons, Frank, to Nyelet Ltd. Fastening devices. 3,189,965, 6–22–65, Cl. 24—221.

Parsen, Benjamin, to Lear Siegler, Inc. Direction finding antenna. 3,191,177, 6–22–65, Cl. 343—766.

Pasche, Heins. Window and door structural element. 3,190,411, 6–22–65, Cl. 189—75.

Paterson, John S., to General Time Corp. Method of making magnetic clutches and brakes. 3,189,987, 6–22–65, Cl. 29—416.

Patience, Donald, to The Kendall Co. Surgical sponge. 3,190,289, 6–22–65, Cl. 128—296.

Patriquin, George P., to Independent Lock Co. Cylinder lock housing. 3,190,092, 6–22–65, Cl. 70—370.

Patton, John T., Jr., and W. F. Schuls, to Wyandotte Chemicals Corp. Process for oxyalkylating solid polyols. 3,190,927, 6–22–65, Cl. 260—615.

Paulson, Bernard S., and B. H., to Pixall Corp. Rotor for mechanical bean picker. 3,190,062, 6–22–65, Cl. 56—130.

Paulson, Bruce H.: *See*—
Paulson, Bernard S. and B. H. 3,190,062.

Peabody, Ralph C., to The G. H. Tennant Co. Power sweeper improvements. 3,189,931, 6–22–65, Cl. 15—340.

Pearse, James N., and J. C. Mayer, to Allen-Bradley Co. Convertible reed contact relay. 3,190,985, 6–22–65, Cl. 200—87.

Pearson, Charles E., ⅛ to L. H. Booker, and ⅛ to M. W. Salvage. Dirt discharging means for auger-drill rig. 3,190,375, 6–22–65, Cl. 175—88.

Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques: *See*—
Laine, Francois, Kasis, and Wetroff. 3,190,931.

Peden, Merle F., Jr., to General Mills, Inc. Process for preparing a snack product with a rippled surface. 3,190,755, 6–22–65, Cl. 99—81.

Pedersen Electronics: *See*—
Pedersen, Svend R. 3,190,427.

Pedersen, Svend R. to Pedersen Electronics. Ambulatory typewriter apparatus having only one driving means. 3,190,427, 6–22–65, Cl. 197—2.

Pelech, Ivan, and R. K. Lee, Jr., to Laboratory for Electronics, Inc. Data processing. 3,191,179, 6–22–65, Cl. 346—74.

Pelton and Crane Co.: *See*—
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Pendleton, Robert A., to Honeywell Inc. Apparatus for vacuum cleaning a record tape. 3,190,928, 6–22–65, Cl. 15—306.

Penney, Theodore B., A. R. Tavarossi, and R. R. Knittel, to Union Carbide Corp. Fluid mixing container assembly. 3,190,619, 6–22–65, Cl. 259—54.

Pennington, Edward N.: *See*—
Mitacek, John, Maris, and Pennington. 3,190,868.

Pennsalt Chemicals Corp.: *See*—
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Perlman, Moses. Zipper and stop stapling machine. 3,190,521, 6–22–65, Cl. 227—3.

Perret, Samuel L. Projector of radiations. 3,191,026, 6–22–65, Cl. 240—103.

Perry, Elijah R., to Allis-Chalmers Mfg. Co. Explosive actuated switch. 3,190,990, 6–22–65, Cl. 200—142.

Petersen, Anita E.: *See*—
Troeppl, William M., and Petersen. 3,190,379.

Petersen, Gerald A.: *See*—
Troeppl, William M., and Petersen. 3,190,379.

Petersen, Harro: *See*—
Brandels, Hans, Petersen, and Fikentscher. 3,190,741.
Brandels, Hans, Petersen, and Fikentscher. 3,190,742.

Petersen, Kenneth M., to Rexall Drug and Chemical Co. Metering valve for fluids under pressure. 3,190,508, 6–22–65, Cl. 222—394.

Peterson Electropic Die Co., Inc.: *See*—
Peterson, Everett A. and H. W. 3,190,678.

Peterson, Everett A. and H. W. to Peterson Electronic Die Co., Inc. Casings for books. 3,190,678, 6–22–65, Cl. 281—29.

Peterson, Frederick R. Internal combustion engine. 3,190,270, 6–22–65, Cl. 123—18.

Peterson, Harold W.: *See*—
Peterson, Everett A. and H. W. 3,190,678.

Petrie, Adelore F., to General Electric Co. Loudspeaker construction. 3,190,389, 6–22–65, Cl. 181—32.

Petro-Tex Chemical Corp.: *See*—
Nagel, Roger M., and Gabliks. 3,190,866.

Pettavel, Jacques, to Societe Genevoise d'Instruments de Physique. Deformation-compensating machine having a suspension comprising three balls. 3,190,173, 6–22–65, Cl. 88—14.

Petterson, Adolf H., to Profile Systems, International. Joining means. 3,190,408, 6–22–65, Cl. 189—36.

Petterson, Adolf H., to Profile System, International. Joining means. 3,290,409, 6–22–65, Cl. 189—36.

Pettkoske, Frank A. Mold assembly for making chemical spheres. 3,189,947, 6–22–65, Cl. 18—36.

Pfizer, Chas., & Co., Inc.: *See*—
Agnello, Eugene J., and Laubach. 3,190,897.

Phenolchemie G.m.b.H.: *See*—
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Phillips Petroleum Co.: *See*—
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Clement, Cecil R. 3,190,355.
Daniel, Elbert H., Akers, Mitchell, and Forsyth. 3,190,828.
Goins, Robert R. 3,190,627.
Haleb, Harry L., and Wheat. 3,190,848.
Hutson, Thomas, Jr. 3,190,935.
Mitacek, John, Maris, and Pennington. 3,190,868.
Stoller, Frederick L., and Goard. 3,190,450.
Wilson, Joseph F. 3,190,774.

Picanol, Jaime. Control device for the lift box motion on looms. 3,190,317, 6–22–65, Cl. 139—179.

Picanol, Jaime. Mechanism for locking and unlocking the shuttle on rising box looms. 3,190,318, 6–22–65, Cl. 139—187.

Pickrll, William, to General Electric Co. Adjustable cutting toolholder. 3,189,976, 6–22–65, Cl. 29—96.

Pierce, John S.: *See*—
Geschickter, Charles F., Pierce, Reid, and Chen. 3,190,883.

Piet, Meyer, to Futurecraft Corp. Apparatus and method for producing thin film materials. 3,189,954, 6–22–65, Cl. 22—67.

Pinder, Raymond G., to Eastman Kodak Co. Protective colloidal silica lacquer for developed photographic prints. 3,190,197, 6–22–65, Cl. 95—1.

Pira, Olof, to String Design AB. Shelf structure. 3,190,243, 6–22–65, Cl. 108—152.

Pirincin, Joseph. Heating apparatus. 3,190,280, 6–22–65, Cl. 126—116.

Pisano, Frank T., to United States of America, Army. Aircraft canopy actuator. 3,190,588, 6–2–65, Cl. 244—121.

Pittsburgh Plate Glass Co.: *See*—
Taylor, Louis B. 3,190,789.

Pixall Corp.: *See*—
Paulson, Bernard S. and B. H. 3,190,062.

Ploetz, Theodor, and K. Wimmer, to Feldmuhle Aktiengesellschaft. Method and apparatus for preparing continuous webs of fibrous material. 3,190,790, 6–22–65, Cl. 162—212.

Plumat, Emile: *See*—
Brichard, Edgard, Plumat, Eloy, Jacobs, and Boffe. 3,190,625.

Pollak, Alfred, to Telefunken Patentverwertungs-G.m.b.H. Vertical deflection television circuit. 3,191,091, 6–22–65, Cl. 315—27.

Polster, Rudolf, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Linear polymers of alkylene tin chlorides. 3,190,901, 6–22–65, Cl. 260—429.7.

Polymer Corp. Ltd.: *See*—
Mitchell, Joseph M., and Chalmers. 3,190,847.

Polsin, Henry H., to Allis-Chalmers Mfg. Co. Gyratory crusher. 3,190,569, 6–22–65, Cl. 241—211.

Pomerants, Daniel I., to Clevite Corp. Semiconductor device. 3,190,954, 6–22–65, Cl. 174—94.

Pommer, Ernst-Heinrich: *See*—
Distler, Harry, Leibner, Fust, Pommer, and Stummeyer. 3,190,907.

Porepp, Hans, to Opti-Holding A.G. Method of finishing slide fasteners. 3,190,779, 6–22–65, Cl. 156—66.

Porter, Neil W. W., to Whiffen & Sons Ltd. Oxidation of hydrazoamides to azoamides. 3,190,873, 6-22-65, Cl. 260—192.

Porter, Wellington W. Harvester unloader. 3,190,471, 6-22-65, Cl. 214—44.

Postlewaite, William R., to J. H. Kemp, Jr. Load handling apparatus. 3,190,461, 6-22-65, Cl. 214—1.

Potter, James M., to Banker's Life & Casualty Co. Pulp molding machine with molds forming an endless chain. 3,190,791, 6-22-65, Cl. 162—219.

Povlacs, Lawrence, to The Akwell Corp. Packaging machine. 3,190,055, 6-22-65, Cl. 53—282.

Power Jets (Research & Development) Ltd.: *See*—
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Powers Regulator Co., The: *See*—
Robb, Harold E., Jr. 3,191,068.

Precision Metalsmiths, Inc.: *See*—
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Prescott, Norman F., and A. V. Hose, to Atwood & Morill Co. Check valve with positive closing means. 3,190,611, 6-22-65, Cl. 251—266.

Price, John E., to Fairchild Camera and Instrument Corp. Programmable circuit. 3,191,151, 6-22-65, Cl. 340—166.

Profile Systems International: *See*—
Petterson, Adolf H. 3,190,408.
Petterson, Adolf H. 3,190,409.

Propper Mfg. Co., Inc.: *See*—
Kelson, Arthur W. 3,190,444.

Pryor, Harry H.: *See*—
Holstein, Alvin W., Pryor, Stayton. 3,190,488.

Puddington, Paul I.: *See*—
Taylor, Challen E., Puddington, and Harkleroad. 3,190,315.

Pullman Inc.: *See*—
Ferris, Ray L. 3,190,595.

Pull-Packaging, Inc.: *See*—
Tamarin, Bernard J. 3,190,437.

Pulpamac, Inc.: *See*—
Kirchhoefer, Martin J. 3,190,509.

Puls, Heins, to Rutgerswerke-Aktiengesellschaft. Device for the continuous production of hard pitch. 3,190,812, 6-22-65, Cl. 196—107.

Pursycki, Alfred Z., to Teletype Corp. Tape supply reel. 3,190,574, 6-22-65, Cl. 242—55.

Pye Ltd.: *See*—
Robinson, Raymond G. R. 3,191,105.

Pyle, Edwin H., and C. L. Swallow, to Albermarle Paper Mfg. Co. Tape sealed stitched end bag. 3,190,539, 6-22-65, Cl. 229—62.

Pyles, Harley G., to Galis Mfg. Co. Rotary percussion rock drilling apparatus. 3,190,369, 6-22-65, Cl. 173—23.

Pyne, William J., to Diamond Alkali Co. 5-methoxy-2-pentene, 1-(O,O-diethyl phosphorodithioate) and 1-iodo derivatives. 3,190,908, 6-22-65, Cl. 260—461.

Pytryga, Frank G., to Sulfrian Cryogenics Inc. Cryogenic applicator with probe means. 3,190,081, 6-22-65, Cl. 62—293.

Quinn, Daniel J. III: *See*—
Connell, Richard A., and Quinn. 3,191,136.

Racca, Romolo H.: *See*—
Bligard, Erling J., and Racca. 3,190,591.

Raccuglia, Giovanni, D. L. Childs, and J. J. Shanley, ½ to G. Raccuglia, ¼ to D. L. Childs, and ¼ to J. J. Shanley. Method and apparatus for separating liquid mixtures. 3,190,546, 6-22-65, Cl. 233—20.

Raccuglia, Giovanni: *See*—
Shanley, James J. 3,190,547.

Radio Corp. of America: *See*—
Baugh, Richard A., and Day. 3,191,011.
Knauf, Harry V., Jr. 3,189,980.
Parker, Donald J., Ress, and Woll. 3,191,157.
Resek, Gerard. 3,191,099.
Stetson, Harold W. 3,189,978.
Theriault, Gerald E. 3,191,127.
Weimer, Paul K. 3,191,061.

Radio Frequency Laboratories, Inc.: *See*—
King, George L., and Higgins. 3,191,071.

Rainer, Norman B., to Coastal Interchemical Co. Process for the production of N-substituted amides from cyanohydrin derivatives. 3,190,916, 6-22-65, Cl. 260—559.

Ramaika, Lawrence T., and C. J. West, to Avisum Corp. Positive tracking belt heat sealer. 3,190,056, 6-22-65, Cl. 53—388.

Ramig, Robert J., Jr., to Teletype Corp. Auxiliary case shift mechanism for teletypewriter receivers to prevent garble. 3,190,428, 6-22-65, Cl. 197—71.

Ram-Rah, Inc.: *See*—
Hartshorn, Harold, and Sousa. 3,190,455.

Randles, Arthur E., Jr. Egg carton steup machine. 3,190,193, 6-22-65, Cl. 93—37.

Rapprich, David D., and F. J. Holewinski, to The Brush Beryllium Co. Apparatus for forming powdered metal into sintered hollow bodies. 3,189,942, 6-22-65, Cl. 18—16.

Rasmussen, Robert F., to Honeywell Inc. Servomotor with monitor. 3,190,185, 6-22-65, Cl. 91—363.

Rassieur, Theodore E., to Central Mine Equipment Co. Earth boring equipment for core recovery. 3,190,377, 6-22-65, Cl. 175—257.

Rausing, Anders R. Double-walled end-sealed container. 3,190,441, 6-22-65, Cl. 206—46.

Raybestos-Manhattan, Inc.: *See*—
Adams, James, Jr. 3,190,137.

Reader, Trevor D.: *See*—
Gehring, Arthur J., Jr., Jacoby, and Reader. 3,190,554.

Reader, Trevor D., to Sperry Rand Corp. Phase modulation read out circuit. 3,191,013, 6-22-65, Cl. 235—164.

Realty & Industrial Corp.: *See*—
Gubelmann, William S. 3,190,394.
Gubelmann, William S. 3,190,402.

Rech, William J., to Shenango China, Inc. Dishware construction. 3,190,486, 6-22-65, Cl. 20—70.

Reed, Charles W., to Socony Mobil Oil Co., Inc. Time delay motor starting system. 3,191,114, 6-22-65, Cl. 318—472.

Reed, Frederick P., to United States of America, Army. Multimagazine, two-stage feeding device for firearms. 3,190,023, 6-22-65, Cl. 42—18.

Reed, George A., to The Oxford Corp. Viewing device having optical arrangement producing virtual image at infinity. 3,190,171, 6-22-65, Cl. 88—1.

Reed, Norman M., to Development Consultants, Inc. Snow vehicle. 3,190,670, 6-22-65, Cl. 280—18.

Reed, Winston H.: *See*—
Compton, Jack, Reed, and Buell. 3,190,724.

Rehner, John, Jr.: *See*—
Wei, Peter E., and Rehner. 3,190,859.

Reid, Ebenezer E.: *See*—
Geschickter, Charles F., Pierce, Reid, and Chen. 3,190,883.

Reifenhauser, Friedrich, to K. G. Reinfenhauser. Apparatus for continuous extrusion of composite bodies of plastic material. 3,189,941, 6-22-65, Cl. 18—13.

Reilly, Donald C., and W. R. Stuetzer, to Goodman Mfg. Co. Clamping device. 3,190,602, 6-22-65, Cl. 248—230.

Reimers-Getriele KG.: *See*—
Berens, Heinrich. 3,190,135.
Steuer, Herbert. 3,190,136.

Reinartz, Robert, to Maschinenfabrik Augsburg-Nurnberg, A.G. Sheet-feeding device for printing presses. 3,190,645, 6-22-65, Cl. 271—51.

Reiner, Ernst. Bearing arrangement for removable type wheel assembly. 3,190,217, 6-22-65, Cl. 101—110.

Reinfenhauser, K. G.: *See*—
Reifenhauser, Friedrich. 3,189,941.

Reinhard, Raymond H.: *See*—
Boghetich, Luigi, and Reinhard. 3,190,862.

Reiter, David. High speed dental drill. 3,189,999, 6-22-65, Cl. 32—27.

Remington Arms Co., Inc.: *See*—
Walzak, Peter. 3,190,669.

Remy, E. P., & Cie: *See*—
Dardaine, Edgar J. M. 3,190,434.

Republic Industrial Corp.: *See*—
Bedford, William A., Jr. 3,190,996.

Ress, Thomas I.: *See*—
Parker, Donald J., Ress, and Woll. 3,191,157.

Reszka, Alfons, to Teletype Corp. Electromagnet driving circuit. 3,101,101, 6-22-65, Cl. 317—151.

Reuter, William J.: *See*—
Runnels, George W., Emig, and Reuter. 3,190,161.

Rex Chainbelt Inc.: *See*—
Johnston, William F., and Geinopolos. 3,190,448.

Rexall Drug and Chemical Co.: *See*—
Cohen, Sheldon, and Laursen. 3,190,799.
Petersen, Kenneth M. 3,190,508.
Williams, Robert E. 3,190,914.

Resek, Gerard, to Radio Corp. of America. Random access memory. 3,191,099, 6-22-65, Cl. 317—101.

Rhodes, Alan, to The Lubrizol Corp. Oxidation-resistant lubricating composition. 3,190,833, 6-22-65, Cl. 252—32.7.

Rhodes, William H., to Aircraft Armanents, Inc. Teaching aid. 3,190,014, 6-22-65, Cl. 35—48.

Riat, Henri: *See*—
Oesterlein, Fritz, and Riat. 3,190,872.

Rice, Arthur G., to B.X. Plastics (Australia) Pty. Ltd. Tape dispensing container having a sealable dispensing opening. 3,190,517, 6-22-65, Cl. 225—44.

Rice, Leonard M.: *See*—
Freed, Meier E., Rice, and Herts. 3,190,890.

Richardson, George A., and G. H. Birum, to Monsanto Co. Organic germanium-phosphorus compounds. 3,190,892, 6-22-65, Cl. 260—347.8.

Richmond, Gerald W., to Stephens-Adamson Mfg. Co. Method and apparatus for simultaneously forming spherically contoured bearing seats and loading slots in bearing housings. 3,189,979, 6-22-65, Cl. 29—148.4.

Richmond, Nelson R., to Kaman Aircraft Corp. Electromechanical torque sensing device and method. 3,190,113, 6-22-65, Cl. 73—136.

Ridley, Horace F.: *See*—
Spickett, Robert G. W., and Ridley. 3,190,920.

Rieker & Co.: *See*—
Binder, Hermann, and Fridrich. 3,190,015.

Riggs, Olen L., Jr., to Continental Oil Co. Corrosion inhibitor. 3,190,733, 6-22-65, Cl. 44—70.

Righton, David W., to S. Smith & Sons (England) Ltd. Automatic control systems. 3,190,586, 6-22-65, Cl. 244—77.

Rijnders, Johannes, and C. H. J. Anderson, to North American Philips Co., Inc. Vehicle illuminating system. 3,191,019, 6-22-65, Cl. 240—8.3.

Riley, Charles D.: *See*—
Burgess, William R., and Riley. 3,190,920.

Riley, Russell B.: *See*—
Hunton, James K., and Riley. 3,191,125.

Ringwood, Arthur F., and C. T. Boutin, to General Electric Co. Preparation of open cell polyurethane foam having an inert liquid entrapped therein. 3,190,842, 6-22-65, Cl. 260—2.5.

Ripper Robots Ltd.: *See*—
Ripper, Walter E., and Garner. 3,190,590.

Ripper, Walter E., and K. C. Garner, to Ripper Robots Ltd. Aerial spraying of soil or crops thereon. 3,190,590, 6-22-65, Cl. 244—136.

Ritter, Friedbert, to Knapsack-Griesheim Aktiengesellschaft. Apparatus for distributing solids. 3,190,470, 6-22-65, Cl. 214—18.88.

Ritter, Kaspar: *See*—
Allgaier, Erwin, and Ritter. 3,190,862.

Ritzheimer, Earl: *See*—
Nelson, Maclay P., and Ritzheimer. 3,190,018.

Roanwell Corp.: *See*—
Vasicek, William A. 3,190,974.

Robb, Harold E., Jr., to The Powers Regulator Co. Control circuit. 3,191,068, 6-22-65, Cl. 307—88.5.

Robbins, George E., to Nicholson Mfg. Co. Log barker with vane-actuated barking arms. 3,190,327, 6-22-65, Cl. 144—208.

Robbins, Ralph C. Clevis with spring-operated pin. 3,190,677, 6-22-65, Cl. 280—515.

Robertshaw Controls Co.: *See*—
Graham, Marvin M., Wright, and Drummond. 3,190,988.

Robie, Charles F., and E. O. Stenson, to Gilro Machine & Stamping Co. Waste container. 3,190,483, 6-22-65, Cl. 220—18.

Robinson, John F., to North American Aviation, Inc. Process and apparatus for filling and for removing contaminants from the flotation chamber of a flotation instrument. 3,190,321, 6-22-65, Cl. 141—1.

Robinson, Raymond G. R., to Pye Ltd. Scanning coil assemblies. 3,191,105, 6-22-65, Cl. 317—200.

Robinson, Robert E., to National Distillers and Chemical Corp. Process for preparing esters. 3,190,912, 6-22-65, Cl. 260—497.

Rochlitz, Frits: *See*—
Schleede, Dietrich, Schülde, and Rochlitz. 3,190,763.

Rockaway Metal Products, Corp.: *See*—
Eisenberg, Edward, and Sicho. 3,190,707.

Rockwell, Harvey W., to Allis-Chalmers Mfg. Co. Scraper control system with means to lock fluid in one end of the bowl raising motor. 3,190,017, 6-22-65, Cl. 37—129.

Rode, Ludwig: *See*—
Kochalski, Horst, Rudszinat, David, Erdmann, Rode, and Suck. 3,190,459.

Rodgers, Charles F., and R. M. Deeter. Serving tray for vehicles. 3,190,241, 6-22-65, Cl. 108—45.

Rohm & Haas Co.: *See*—
Dyke, Robert G. 3,190,998.

Rohr Corp.: *See*—
Rohr, Fred H., and Lacey. 3,190,999.

Rohr, Fred H., and E. M. Lacey, to Rohr Corp. Welding system for honeycomb core. 3,190,999, 6-25-65, Cl. 219—80.

Rokal G.m.b.H.: *See*—
Classen, Hans-Heinrich, and Acker. 3,190,312.

Romanowski, Albert F., to Bowser, Inc. Fluid flow-measuring apparatus. 3,190,116, 6-22-65, Cl. 73—194.

Ronette Pieso Electrische Industrie N.V.: *See*—
Vunderink, Ate. 3,190,727.
Vunderink, Ate. 3,190,728.

Rongey, Clarence H.: *See*—
Zaverstnik, Marshall G., and Rongey. 3,189,955.

Ronne, Ronald M., to Dependable Shell Core Machines, Inc. Multiple mold core forming apparatus. 3,189,952, 6-22-65, Cl. 22—10.

Roos, Wilfried F.: *See*—
Wustenhagen, Ernst, and Roos. 3,190,635.

Röpsch, Adolf: *See*—
Weygand, Friedrich, and Röpsch. 3,190,869.

Rosaen Filter Co., The: *See*—
Rosaen, Nils O. 3,190,445.

Rosaen, Nils O., to The Rosaen Filter Co. Fluid system fittings. 3,190,445, 6-22-65, Cl. 210—117.

Rosán Engineering Corp.: *See*—
Rosán, José. 3,190,169.

Rosán, José, to Rosán Engineering Corp. Insert having internal drive grooves. 3,190,169, 6-22-65, Cl. 85—45.

Rose, Frank L., and T. A. Brennan. Protective switch device for a spark plug. 3,190,979, 6-22-65, Cl. 200—52.

Rosenfeld, Morton M. Concrete door. 3,189,951, 6-22-65, Cl. 20—35.

Ross, John T. Target hit-indicating game. 3,190,654, 6-22-65, Cl. 273—102.1.

Ross, John W.: *See*—
Freedman, David, and Ross. 3,190,568.

Rossoff, Arthur L.: *See*—
Lustig, Howard E., and Rossoff. 3,191,170.

Roszak, John W. Tip-up with lighting attachment for fishing device. 3,190,026, 6-22-65, Cl. 43—17.

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Rothacker, Francis N., to Transcontinental Electronics Corp. Heating apparatus. 3,190,997, 6-22-65, Cl. 219—10.51.

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Sorensen, Earl F. Guideline-marker drawing instrument. 3,190,001, 6–22–65, Cl. 33—41.
Sorteberg, Johannes. Automatic balanced weighbeam system. 3,190,553, 6–22–65, Cl. 235—200.
Sorvillo, Eugene. Laminated electric circuit mounting boards. 3,191,100, 6–22–65, Cl. 317—101.
Souligney, Mitchel J., to Holley Carburetor Co. Method of welding thermoplastic materials. 3,190,051, 6–22–65, Cl. 53—39.
Sousa, Manuel: *See*—
Hartshorn, Harold, and Sousa. 3,190,455.
Spangler, Caleb H. Rod supported fishing fly holder. 3,190,-027, 6–22–65, Cl. 43—25.2.
Spates, Henry M., to H & H Engineering Co. Tube bending mandrel. 3,190,106, 6–22–65, Cl. 72—466.
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Eberhardt, Ernst, and Specht. 3,190,381.
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Gwathmey, Edward S. 3,190,127.
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Andersson, Per L., and Aberth. 3,191,009.
Bratschi, Raymond W., Fritze, Herzfeld, and Smith. 3,191,153.
Davis, William W. 3,191,162.
Feng, Shao C. 3,191,057.
Gebring, Arthur J., Jr., Jacoby, and Reader. 3,190,564.
Ih, Charles C. 3,191,064.
Mixer, Harold P. 3,191,007.
Reader, Trevor D. 3,191,018.
Savalli, Frank P. 3,191,046.
Smythe, George R. 3,191,075.
Stone, Jack. 3,191,058.
Wadey, Walter G. 3,191,008.
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Spesiale, Angelo J., and L. R. Smith, to Monsanto Co. N,N-substituted-aminoethylene-phosphonium compounds. 3,190,-921, 6–22–65, Cl. 260—577.
Spickett, Robert G. W., and H. F. Ridley, to Smith Kline & French Laboratories. 1-ortho-lower alkyl-phenyl-1-phenyl 2 lower alkyl - 3 - dilowеralkylamino-1-propanols. 3,190,920, 6–22–65 Cl. 260—570.
Spilman, James M., to United States of America, Army. Bandoleer for cartridge, 40 MM. 3,190,514, 6–22–65, Cl. 224—20.
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Archer, Virgil L., and Spilsbury. 3,190,240.
Spinks, Joseph M. Electric control for use on a scale indicator 3,190,980, 6–22–65, Cl. 200—58.
Spira-Klein, Marie-Louise: *See*—
Schluchter, Jean. 3,190,278.
Spisak, Andrew A.: *See*—
Diener, Robert E., and Spisak. 3,190,153.
Spokane Steel Foundry Co.: *See*—
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Spoors, James W., and F. E. Woodward, to Imperial Chemical Industries Ltd. Process for the purification of organic peroxides. 3,190,904, 6–22–65, Cl. 260—453.
Sponge, Eric H., and A. H. McFarlane, to Pacific Scientific Co. Safety harness. 3,190,579, 6–22–65, Cl. 242—107.4.
Sprague Electric Co.: *See*—
Fabricius, John H. 3,189,974.
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Jorgensen, George N., and King. 3,190,604.
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Staat, Robert A., and A. A. 3,190,309.
Staat, Robert A., and A. A., to Bal-Cam, Inc. Single level faucet. 3,190,306, 6–22–65, Cl. 137—328.
Staat, Robert A., and A. A., to Bal Cam, Inc. Single lever faucet and valving plate therefor. 3,190,309, 6–22–65, Cl. 137—454.6.
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Staggers, John O., H. K. Bruner, and D. L. Edlund. Method of making aluminum alloys. 3,190,750, 6–22–65, Cl. 75—135.
Stahl, Alex D.: *See*—
Foote, Daniel J., Stahl, and Buchmann. 3,190,089.
Stahl, Martin: *See*—
Hauschild, Ulrich, and Stahl. 3,190,839.
Stahle, Helmut: *See*—
Zelle, Karl, Hauptmann, and Stahle. 3,190,802.
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Koumans, Petrus W., and Stal. 3,190,043.
Staley, A. E., Mfg. Co.: *See*—
Walton, Henry W., and Nevin. 3,190,899.

Stalker, Kenneth W., to Goodman Mfg. Co. Longwall mining system. 3,190,696, 6–22–65, Cl. 299—11.

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Standley, Charles L.: *See*—
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Starke, Otto M., to O. Dorries, A.G. Apparatus for cleaning papermaking machine felts. 3,190,793, 6–22–65, Cl. 162—278.

Staub, Roger B., and P. H. Hofer, to Union Carbide Corp. Sealing disc for container closure. 3,190,482, 6–22–65, Cl. 215—40.

Staudenmayer, Harold F., to General Dynamics Corp. Signal sensing switch with slow release. 3,191,066, 6–22–65, Cl. 307—88.5.

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Stayton, Robert D.: *See*—
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Steinbock G.m.b.H.: *See*—
Loef, Jakob M. J. 3,190,473.

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Stenson, Ray O.: *See*—
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Stetson, Harold W., to Radio Corp. of America. Method of making multilayer circuits. 3,189,978, 6–22–65, Cl. 29—155.5.

Steuer, Herbert, to Reimers-Getriebe KG. Automatic belt or chain tightening mechanism for an infinitely variable cone pulley transmission. 3,190,136, 6–22–65, Cl. 74—230.17.

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Woodcock, Charles A. 3,190,982.

Stikeleather, Robert M., to Aerofin Corp. Machines for removing fins from finned tubes. 3,190,181, 6–22–65, Cl. 90—15.

Stillwater, Joseph, to General Dynamics Corp. Remote control for digitally tuned radio. 3,191,134, 6–22–65, Cl. 334—21.

Stilwell, Neil C. Static seal construction. 3,190,663, 6–22–65, Cl. 277—227.

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Stokes, Robert W., to Bausch & Lomb Inc. Flexible viewing probe for endoscopic use. 3,190,286, 6–22–65, Cl. 128—6.

Stoller, Frederick L., and H. W. Goard, to Phillips Petroleum Co. Filter for a crystal purification column. 3,190,450, 6–22–65, Cl. 210—179.

Stone, Jack, to Sperry Rand Corp. Detection circuit utilising opposite conductivity transistors to detect charge on a capacitor. 3,191,058, 6–22–65, Cl. 307—88.5.

Stone, John R. Shaftless reeling machine. 3,190,576, 6–22–65, Cl. 242—66.

Stone, Virgil D., to Gulf Oil Corp. Process of drilling a well and installing casing. 3,190,354, 6–22–65, Cl. 166—21.

Stoppe, Willy G., ½ to N. Vos. Variable lift wing. 3,190,583, 6–22–65, Cl. 244—48.

Storfer, Robert. Heat transfer fin. 3,190,353, 6–22–65, Cl. 165—182.

Stothert & Pitt, Ltd.: *See*—
Green, Rowland P., and Cowley. 3,190,621.

Stowe, Stephen C., to The Dow Chemical Co. Monomeric alkenyl benzyl polyglycol ethers. 3,190,925, 6–22–65, Cl. 260—611.

Straub, Edwin, and E. Bosshard, to Sulzer Freres, S.A. Fuel element changing and transporting apparatus for nuclear reactors. 3,190,805, 6–22–65, Cl. 176—30.

Strauss, William, to Pennsalt Chemicals Corp. Injection molding apparatus. 3,189,945, 6–22–65, Cl. 18—30.

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Stroobants, Marvin J.: *See*—
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Strybel, Richard V., to Imperial-Eastman Corp. Tube bender. 3,190,105, 6–22–65, Cl. 72—459.

Stryk, Rudolf, and G. Muller, to Kalle Aktiengesellschaft. Process for making sterilised sausage packages. 3,190,759, 6–22–65, Cl. 99—187.

Stuebe, Louis M.: *See*—
Beachler, Edward D., Steube, and McKie. 3,190,792.

Stuetzer, Wayne R.: *See*—
Reilly, Donald C., and Steutzer. 3,190,602.

Stummeyer, Herbert: *See*—
Distler, Harry, Leibner, Fust, Pommer, and Stummeyer. 3,190,907.

Sturm, Lewis D. Elevator control mechanism. 3,190,396, 6–22–65, Cl. 187—28.

Styne, Alexander F., and L. James. Ceiling construction. 3,190,208, 6–22–65, Cl. 98—40.

Suck, Hans: *See*—
Kochalski, Horst Rudesinat, David, Erdmann, Rode, and Suck. 3,190,459.

Sudres, Pierre C., to Francaise du Ferodo, Societe Anonyme. Brake shoe including a wear-indicating means. 3,190,897, 6–22–65, Cl. 188—1.

Sugiyama, Rinso, and K. Kido. Disk type fluorescent lamp. 3,191,067, 6–22–65, Cl. 313—109.

Sulfrian Cryogenics Inc.: *See*—
Pytryga, Frank G. 3,190,081.

Sullivan, Daryl D., A. L. Jones, and E. J. Neal, Jr.; said Sullivan assor. to Corning Glass Works; said Jones and Neal assors. to Pelton and Crane Co. Lighting device for dental and surgical procedures. 3,191,023, 6–22–65, Cl. 240—41.15.

Sullivan, Eldon D.: *See*—
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Sullivan, Leonard R. Quick detachable fastening means. 3,190,163, 6–22–65, Cl. 85—7.

Sulzer Freres, S.A.: *See*—
Straub, Edwin, and Bosshard. 3,190,805.

Summers, Gerald C., to Socony Mobil Oil Co., Inc. Bore hole transmission in well logging systems. 3,191,145, 6–22–65, Cl. 340—18.

Sun Oil Co.: *See*—
Belak, Steven G. 3,190,263.
Honeycutt, Earl M. 3,190,831.
Johnson, Ford L. 3,190,372.
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Svenska Aeroplan Aktiebolaget: *See*—
Mennborg, Hans J. T. 3,190,589.

Swallow, Charles L.: *See*—
Pyle, Edwin H., and Swallow. 3,190,539.

Swanson, Albert S., and M. O. Kroll, to G. H. Tennant Co. Sulky attachment. 3,190,672, 6–22–65, Cl. 280—32.7.

Swanson, Eugene S., R. D. Livingston, W. A. Means, and J. G. Floden, to Barber-Colman Co. Programmed motion control system. 3,190,139, 6–22–65, Cl. 74—472.

Swanson, Ronald R., to General Mills, Inc. Preparation of quaternary ammonium compounds. 3,190,919, 6–22–65, Cl. 260—567.6.

Swarts, Gaylord A.: *See*—
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Sweet, Harry M., to Victaulic Co. of America. Centering of bolts for coupling housings. 3,189,969, 6–22–65, Cl. 24—279.

Swensen, Harry D. Drawer stop. 3,190,714, 6–22–65, Cl. 312—348.

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Swihart, James C., and D. R. Young, to International Business Machines Corp. Superconductive transmission line. 3,191,055, 6–22–65, Cl. 307—88.5.

Swinny, James H. Motorized steerable nestable service cart. 3,190,386, 6–22–65, Cl. 180—19.

Sylvania Electric Products Inc.: *See*—
Gartner, Stanley J. 3,190,462.

Symons, Loren G., to Nordberg Mfg. Co. Drive for gyratory crushers and the like. 3,190,570, 6–22–65, Cl. 241—215.

Syntex Corp.: *See*—
Casas-Campillo, Carlos. 3,190,809.
Cross, Alexander D. 3,190,880.

Szeluga, Ludwick W.: *See*—
Madison, Theodore N., and Szeluga. 3,190,429.

Satricsko, Janos. Key operated chuck. 3,190,665, 6–22–65, Cl. 279—1.

Taccone Corp.: *See*—
Taccone, Russell W. 3,190,424.

Taccone, Russell W., to Taccone Corp. Conveyor with fall out plate for foundry flasks. 3,190,424, 6–22–65, Cl. 193—35.

Tado, Hiroshi, to Yanmar Diesel Engine Co., Ltd. Combustion chambers for rotary engines. 3,190,269, 6–22–65, Cl. 123—8.

Taillie, Gordon P., to Xerox Corp. Sheet guiding apparatus. 3,190,643, 6–22–65, Cl. 271—45.

Takeda Chemical Industries, Ltd.: *See*—
Ishibashi, Joichi, and Ito. 3,190,877.
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Runnels, George W., Emig, and Reuter. 3,190,161.

Tamarin, Bernard J., to Pull-Packaging, Inc. Dispensing cigar package. 3,190,437, 6–22–65, Cl. 206—41.2.

Tamarin, Bernard J. Container. 3,190,534, 6–22–65, Cl. 229—17.

Tamiya, Jun, to United States of America, Army. Bridge-type cathode interface impedance test set. 3,191,120, 6–22–65, Cl. 324—28.

Tang, Chun-Yi. Wide-rimmed, seatless unicycle. 3,190,675, 6–22–65, Cl. 280—221.

Tarasevich, Michael: *See*—
Kritz, Jack, and Tarasevich. 3,190,129.

Tardoskegyi, Louis V., to Electrovert Mfg. Co. Ltd. Means for applying oil film to solder wave. 3,190,527, 6–22–65, Cl. 226—37.

Tarnok, Johann. Edge applying device. 3,190,783, 6–22–65, Cl. 156—459.

Tatz, Abraham: *See*—
Battle, Frederick H., Jr., and Tatz. 3,191,175.

Taub, David, N. L. Wendler, and C.-H. Kuo, to Merck & Co., Inc. Process for preparing benzophenones. 3,190,824, 6–22–65, Cl. 204—158.

Taussig, Charles A.: *See*—
Schwabe, William E., Sleeper, Bacon, and Taussig. 3,190,626.

Tavarossi, Alfred R.: *See*—
Penney, Theodore B., Tavarossi, and Knittel. 3,190,619.

Taylor, Challen E., P. I. Puddington, and W. I. Harkleroad, to The Goodyear Tire & Rubber Co. Hose. 3,190,315, 6–22–65, Cl. 138—127.

Taylor Instrument Companies: *See*—
Evans, William C. 3,191,110.

Taylor, Louis B., to Pittsburgh Plate Glass Co. Calcium silicate-filled paper. 3,190,789, 6–22–65, Cl. 162—181.

Taylor, Robert B.: *See*—
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Taylor, Robert C., and E. J. Meehan, to The Atlantic Refining Co. Water-soluble liquid detergent compositions. 3,190,836, 6–22–65, Cl. 252—153.

Technicon Instruments Corp.: *See*—
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Telefunken Patentverwertungs- G.m.b.H.: *See*—
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Tele-Scale, Inc.: *See*—
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Tele-Sessions, Inc.: *See*—
White, Robert F. 3,190,959.

Teletype Corp.: *See*—
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Puryckl, Alfred Z. 3,190,574.
Ramig, Robert J., Jr. 3,190,428.
Reszka, Alfons. 3,191,101.

Tengelitsch, William J. Toy chain saw with simulated sawdust dispenser. 3,190,031, 6–22–65, Cl. 46—39.

Tennant, G. H., Co., The: *See*—
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Swanson, Albert S., and Kroll. 3,190,672.

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Testa, Ernest J. 3,190,666.

Tessier, Richard E., to Marva Devices, Inc. Starting unit for internal combustion units. 3,190,277, 6–22–65, Cl. 123—187.5.

Testa, Erneet J., to Tesan Tool Mfg. Co. Holder and jaw inserts comprising the top jaw for a chuck. 3,190,666, 6–22–65, Cl. 279—123.

Texaco Inc.: *See*—
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Gee, Kenneth H. 3,190,834.

Texas Instruments Inc.: *See*—
Cain, Ernest O. 3,191,112.

Texsier, Leon. Interference suppressor for internal combustion engines. 3,191,133, 6–22–65, Cl. 333—79.

Textile Machine Works: *See*—
Craig, Francis A., and Cloutier. 3,190,259.

Tharp, Fred L. Manually-operated trailer-moving device. 3,190,615, 6–22–65, Cl. 254—131.

Theobald, Paul F., to The Philip Carey Mfg. Co. Self-sealing asphalt shingles. 3,190,040, 6–22–65, Cl. 50—83.

Theriault, Gerald E., to Radio Corp. of America. AGC with compensation for change in collector capacitance. 3,191,127, 6–22–65, Cl. 330—24.

Thermo Electric Co.: *See*—
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Green, Joseph, and Groten. 3,190,863.
Neu, Edward A., Jr. 3,190,070.

Thoma, Oswald, to Dowty Hydraulic Units Ltd., and Unipat A.G. Hydraulic apparatus. 3,190,231, 6–22–65, Cl. 103—162.

Thomas, Albert E. W. Golf club including detachable ball striking faces of various lofts. 3,190,651, 6–22–65, Cl. 273—79.

Thompson, Howard G., to Massey-Ferguson Inc. Parking stand for two-way plows. 3,190,365, 6–22–65, Cl. 172—219.

Thompson, Howard G., to Massey-Ferguson Inc. Parking stand for two-way plows. 3,190,395, 6–22–65, Cl. 172—219.

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Thomson, John B., and R. C. Magee; said Magee assor. to said Thomson. Bearing structure. 3,190,703, 6–22–65, Cl. 306—4.

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Ticoian, Michael. Portable culinary stove. 3,190,211, 6–22–65, Cl. 99—421.

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Tobey, Hubert E., to Kwik Lok Corp. Closure mechanism. 3,190,053, 6–22–65, Cl. 52—67.

Todt, Hans G., to Schering, A.G. Electrodeposition of bright nickel. 3,190,820, 6–22–65, Cl. 204—49.

Todt, Hans G., to Schering, A.G. Nickel plating brightener. 3,190,821, 6–22–65, Cl. 204—49.

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Toledo Scale Corp.: *See*—
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Tomany, James P., and W. E. Estey; said W. E. Estey, assor. to American Machine & Foundry Co. Bowling pin and process of making same. 3,190,767, 6–22–65, Cl. 117—72.

Tone, Richard N.: *See*—
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Inaba, Yanosuke, Kimura, and Saichi. 3,190,909.

Trainer Associates Inc.: *See*—
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Transcontinental Electronics Corp.: *See*—
Rothacker, Francis N. 3,190,997.

Trasco Inc.: *See*—
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Trimnal, Lewis N. Collapsible box with legs. 3,190,708, 6–22–65, Cl. 312—213.

Tripp, Robert W., and R. Z. Geller, to Inductosyn Corp. Analog-digital converter. 3,191,010, 6–22–65, Cl. 235—155.

Triska, Alfred A., to Great Lakes Carbon Corp. Method of improving blast furnace performance using raw petroleum coke. 3,190,745, 6–22–65, Cl. 75—41.

Triska, Alfred A., to Great Lakes Carbon Corp. Process for use of raw petroleum coke in blast furnaces. 3,190,746, 6–22–65, Cl. 75—42.

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Troeppi, William M., and G. A. Petersen, ¼ to G. A. Petersen, and ¼ to A. E. Petersen. Auger tooth with side edge blade. 3,190,379, 6–22–65, Cl. 175—385.

Tröften, Per F.: *See*—
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Carney, John L., Jr., and Trompeter. 3,190,238.

Troxler, Frans: *See*—
Hofmann, Albert, and Troxler. 3,190,884.

Trueman, Roy, and C. Warsop, to Ericsson Telephones Ltd. Automatic telephone systems. 3,190,964, 6–22–65, Cl. 179—18.

Trussell, Paul C., T. A. Lambe, and J. Vitins, to British Columbia Research Council. Apparatus for detecting internal damage in wood. 3,190,111, 6–22–65, Cl. 73—67.5.

Turner, George W.: *See*—
Arnold, Julian R., and Turner. 3,190,054.

Turowski, Erwin. Method and apparatus for conveying liquids. 3,190,229, 6–22–65, Cl. 103—148.

Tuthill, Henry G., Jr. Surface cleaning apparatus. 3,189,930, 6–22–65, Cl. 15—320.

Twedt, Paul L., and C. H. Cook, to Henningsen Foods, Inc. Egg breaking head. 3,190,328, 6–22–65, Cl. 146—2.

Tysaman Machine Co., Inc.: *See*—
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Ulam, John B., to Composite Metal Products, Inc. Furnaces for heating and assembling metallic composite units. 3,190,524, 6–22–65, Cl. 228—4.

Underdown, Parks C., Sr., to Hickory Springs Mfg. Co., Inc. Swivel rocker spring unit. 3,190,693, 6–22–65, Cl. 297—263.

Underwood, Joseph C., Sr., and A. E. Wasserman, to United States of America, Agriculture. Preparing a fluffed product from maple sugar syrup. 3,190,757, 6–22–65, Cl. 99—139.

Union Carbide Corp.: *See*—
Cox, Eugene F., and Hostettler. 3,190,858.
Ender, Hans H. 3,190,775.
Ender, Hans H. 3,190,776.
Hensley, William H., and Carte. 3,190,795.
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Johnson, Herbert E., and Crosby. 3,190,917.
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Kelmers, Andrew D., and Koenen. 3,190,719.
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Union Oil Co. of California: *See*—
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Unipat A.G.: *See*—
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Yeo, Alan A., J. K. Hambling, and G. W. Alderson, to The British Petroleum Co. Ltd. Production of hexenes. 3,190,937, 6-22-65, Cl. 260—683.15.

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Young, Donald R.: *See*—
Swihart, James C., and Young. 3,191,055.

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Yuonu, Peter N.: *See*—
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Zagar, Inc.: *See*—
Zagar, Frank G. 3,190,009.

Zaidener, Kitty. Anti-theft device for road vehicles. 3,190,090, 6-22-65, Cl. 70—203.

Zak, David D.: *See*—
Zuefeldt, Richard D., and Zak. 3,191,171.

Zak, Murray D.: *See*—
Genin, Robert I., and Zak. 3,189,981.

Zanow, Andrey L.: *See*—
Rumsey, Rollin D., and Zanow. 3,190,630.
Rumsey, Rollin D., and Zanow. 3,190,634.

Zarouni, Alfred: *See*—
Fitzpatrick, James J., and Zarouni. 3,190,961.

Zavertnik, Marshall G., and C. H. Rongey, to Killark Electric Mfg. Co. Method of making cast boxes. 3,189,955, 6-22-65, Cl. 22—133.

Zeigler, John M.: *See*—
Winkle, Edward F., and Zeigler. 3,190,306.

Zifer, Garret F., to Laboratory For Electronics, Inc. Control system. 3,190,281, 6-22-65, Cl. 118—8.

Zimmerman, Gerald H., to Beloit Eastern Corp. Weighing system. 3,190,382, 6-22-65, Cl. 177—132.

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Höfelmann, Hans, Braun, Kahrs, Winkler, and Zimmermann. 3,190,843.

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Zaidener, Kitty, to J. Zaidener. Anti-theft device for road vehicles. 3,190,090, 6-22-65, Cl. 70—203.

Zagar, Frank G., to Zagar, Inc. Micrometer operating mechanism. 3,190,009, 6-22-65, Cl. 33—166.

Zarouni, Alfred, to Bell Telephone Laboratories, Inc. Right-of-way switching circuitry. 3,190,965, 6-22-65, Cl. 179—18.

Zuselo, Edward A. Abrasive tool. 3,190,045, 6-22-65, Cl. 51—209.

Zanow, Andrey L., to National Castings Co. Heavy duty buffing device. 3,190,458, 6-22-65, Cl. 213—43.

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Zuefeldt, Richard D., and D. D. Zak, to The Ryan Aeronautical Co. Radar height sensor and low altitude altimeter. 3,191,171, 6-22-65, Cl. 343—7.

CLASSIFICATION OF PATENTS

ISSUED JUNE 22, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2— 3	3,189,917	29—416	3,189,987	60— 40	3,190,072	75— 60	3,190,747	103— 37	3,190,224	137—246.12:	3,190,304
9	3,189,918	420.5	3,189,988	52	3,190,073	108	3,190,748	87	3,190,225	255	3,190,305
16	3,189,919		3,189,989	53	3,190,074	122	3,190,749	103	3,190,226	328	3,190,306
211	3,189,920	423	3,189,990		3,190,075	135	3,190,750	117	3,190,227	355.17:	3,190,307
3— 36	3,189,921	437	3,189,991	54	3,190,076	153	3,190,751	130	3,190,228	359	3,190,308
8—116	3,190,715	477.7	3,189,992	54.5	3,190,077	76—110	3,190,150	148	3,190,229	454.6	3,190,309
116.4	3,190,716	527	3,189,993	61— 53.72:	3,190,078	77— 32.5	3,190,151	152	3,190,230	583	3,190,310
	3,190,717	558	3,189,994	62—155	3,190,079	58	3,190,152	162	3,190,231		3,190,311
130.1	3,190,718	30— 6.4	3,189,995	259	3,190,080	63	3,190,153		3,190,232	625.22:	3,190,313
9— 8	3,189,922	28	3,189,996	293	3,190,081	81—315	3,190,154	169	3,190,233	625.4	3,190,312
10— 89	3,189,923	228	3,189,997	342	3,190,082	379	3,190,155	104— 12	3,190,234	630.15:	3,190,314
12— 8.8	3,189,924	272	3,189,998	349	3,190,083	82— 2	3,190,156	134	3,190,235	138—127	3,190,315
14.4	3,189,925	32— 27	3,189,999	64— 3	3,190,084	5	3,190,157	105—155	3,190,236	139—127	3,190,316
13— 27	3,190,948	33— 1	3,190,000	8	3,190,085	101	3,190,158	182	3,190,237	179	3,190,317
31	3,190,949	41	3,190,001	65— 4	3,190,735	83— 56	3,190,159	377	3,190,238	187	3,190,318
14— 1	3,189,926	46	3,190,002	15	3,190,736	128	3,190,160	378	3,190,239	140—105	3,190,319
15— 3.16:	3,189,927	50	3,190,003	21	3,190,737	256	3,190,161	106— 90	3,190,762	141— 1	3,190,320
306	3,189,928	127	3,190,004	31	3,190,738	285	3,190,162	186	3,190,763		3,190,321
308	3,189,929	134	3,190,005	85	3,190,739	342	3,190,163	107— 1	3,190,240	387	3,190,322
320	3,189,930	143	3,190,006	66—193	3,190,086	411	3,190,164	108— 45	3,190,241	143— 92	3,190,323
340	3,189,931	147	3,190,007	67— 7.1	3,190,087	467	3,190,165	60	3,190,242	144— 2	3,190,324
	3,189,932	161	3,190,008		3,190,088	534	3,190,166	152	3,190,243	30	3,190,325
344	3,189,933	166	3,190,009	70—156	3,190,089	84— 1.23:	3,190,951	110— 18	3,190,244	162	3,190,326
406	3,189,934	211	3,190,010	203	3,190,090	85— 5	3,190,167	28	3,190,245	208	3,190,327
511	3,189,935	34— 77	3,190,011	224	3,190,091	7	3,190,168	111— 1	3,190,246	146— 2	3,190,328
16— 82	3,189,936	151	3,190,012	370	3,190,092	45	3,190,169	112— 2	3,190,247	49	3,190,329
114	3,189,937	35— 10.2	3,190,950	383	3,190,093	49	3,190,170	105	3,190,248	203	3,190,330
126	3,189,938	35	3,190,013	71— 2.6	3,190,740	88— 1	3,190,171	254	3,190,249	242	3,190,331
17— 35	3,189,939	48	3,190,014	28	3,190,741	14	3,190,172	113— 1	3,190,250	148— 16	3,190,772
39	3,189,940	36— 2.5	3,190,015		3,190,742		3,190,173	114—163	3,190,251	175	3,190,773
18— 2.7	3,189,944		3,190,016	72— 71	3,190,094	26	3,190,174	208	3,190,252	149— 7	3,190,774
13	3,189,941	37— 81	RE.25,806	88	3,190,095	57	3,190,175	218	3,190,253	8	3,190,775
16	3,189,942	129	3,190,017	110	3,190,096		3,190,176	115— .5	3,190,254		3,190,776
17	3,189,943	143	3,190,018	210	3,190,097	61	3,190,177	1	3,190,255	57	3,190,777
30	3,189,945	40— 77	3,190,019	223	3,190,098	82	3,190,178	22.2	3,190,256	150— 8	3,190,332
	3,189,946	83	3,190,020	238	3,190,099	89— 35	3,190,179	116—133	3,190,257	151— 35	3,190,333
36	3,189,947	86	3,190,021	248	3,190,100	90— 4	3,190,180	117— 62.2	3,190,764	37	3,190,334
38	3,189,948	113	3,190,022	257	3,190,101	15	3,190,181	63	3,190,765	152—216	3,190,335
20— 2	3,189,949	42— 18	3,190,023	265	3,190,102	91— 2	3,190,182		3,190,766	227	3,190,336
4	3,189,950	43— 9	3,190,024	388	3,190,103	80	3,190,183	72	3,190,767	233	3,190,337
35	3,189,951		3,190,025	391	3,190,104	219	3,190,184	93.2	3,190,768	370	3,190,338
22— 10	3,189,952	17	3,190,026	459	3,190,105	363	3,190,185	105.2	3,190,769	374	3,190,339
57.2	3,189,953	25.2	3,190,027	466	3,190,106	382	3,190,186	218	3,190,770	156— 62	3,190,778
67	3,189,954	41.2	3,190,028	468	3,190,107	403	3,190,187	227	3,190,771	66	3,190,779
133	3,189,955	42.74:	3,190,029	73— 1	3,190,108	414	3,190,188	118— 2	3,190,258	162	3,190,780
200.1	3,189,956	61	3,190,030		3,190,109	423	3,190,189		3,190,259	244	3,190,781
	3,189,957	44— 70	3,190,733	12	3,190,110	92— 68	3,190,190	3	3,190,260	410	3,190,782
202	3,189,958	71	3,190,734	67.5	3,190,111	243	3,190,191	8	3,190,261	489	3,190,783
204	3,189,959	46— 39	3,190,031	71.5	3,190,112	93— 1.1	3,190,192	48	3,190,262	513	3,190,784
209	3,189,960	53	3,190,032	136	3,190,113	37	3,190,193	101	3,190,263	584	3,190,785
23— 22	3,190,719	74	3,190,033	180	3,190,114	58.2	3,190,194	637	3,190,264	158— 4	3,190,340
23	3,190,720	111	3,190,034		3,190,115	81	3,190,195	119—103	3,190,265	28	3,190,341
121	3,190,721	149	3,190,035	194	3,190,116	94— 46	3,190,196	157	3,190,266	76	3,190,342
	3,190,722	175	3,190,036	223	3,190,117	95— 1	3,190,197	120— 54	3,190,267	159— 4	3,190,343
140	3,190,723	227	3,190,037	290	3,190,118	1.7	3,190,198	122—504	3,190,268	6	3,190,344
230	3,190,724	232	3,190,038	302	3,190,119		3,190,199	123— 8	3,190,269	160—132	3,190,345
259.1	3,190,725	47— 41.1	3,190,039	343.5	3,190,120		3,190,200	18	3,190,270	172	3,190,346
267	3,190,726	50— 83	3,190,040	382	3,190,121	4.5	3,190,201	29	3,190,271	189	3,190,347
273	3,190,727	185	3,190,041	398	3,190,122	11	3,190,202	41.09:	3,190,272	369	3,190,348
	3,190,728	51— 15	3,190,042		3,190,123	64	3,190,203	41.35:	3,190,273	161— 5	3,190,786
283	3,190,729	37	3,190,043	400	3,190,124	73	3,190,204	119	3,190,274	161	3,190,787
288	3,190,730	124	3,190,044	432	3,190,125	89	3,190,205	124	3,190,275	164	3,190,788
292	3,190,731	209	3,190,045	438	3,190,126	96—107	3,190,752	179	3,190,276	162—181	3,190,789
301	3,190,732	225	3,190,046	515	3,190,127	98— 2	3,190,206	187.5	3,190,277	212	3,190,790
24— 20	3,189,961	283	3,190,047	516	3,190,128	36	3,190,207	125— 30	3,190,278	219	3,190,791
126	3,189,962	53— 26	3,190,048	517	3,190,129	40	3,190,208	126— 63	3,190,279	264	3,190,792
196	3,189,963	29	3,190,049	74— 3.54:	3,190,130	106	3,190,209	116	3,190,280	278	3,190,793
205.13:	3,189,964	30	3,190,050	5.41:	3,190,131	99— 54	3,190,753	120	3,190,281	165— 7	3,190,349
221	3,189,965	39	3,190,051	10.85:	3,190,132	80	3,190,754	131	3,190,282	9	3,190,350
230	3,189,966	62	3,190,052	204	3,190,133	81	3,190,755	359	3,190,283		3,190,351
265	3,189,967	67	3,190,053	230.17:	3,190,135	90	3,190,756	362	3,190,284	11	RE.25,808
274	3,189,968	131	3,190,054		3,190,136	139	3,190,757	128— 2.1	3,190,285	134	3,190,352
279	3,189,969	282	3,190,055	230.4	3,190,134	172	3,190,758	6	3,190,286	182	3,190,353
284	3,189,970	388	3,190,056	233	3,190,137	187	3,190,759	144	3,190,287	166— 21	3,190,354
25— 29	3,189,971	55—313	3,190,057	425	3,190,138	201	3,190,760	252	3,190,288	22	3,190,355
28— 72	3,189,972	325	3,190,058	472	3,190,139	204	3,190,761	296	3,190,289	31	3,190,356
29— 25.3	3,189,973	491	3,190,059	501	3,190,140	238	3,190,210	348	3,190,290	44	3,190,357
25.42:	3,189,974	56— 24	3,190,060	568	3,190,142	421	3,190,211	349	3,190,291	66.5	3,190,358
96	3,189,975	25.4	3,190,061	584	3,190,141	100— 38	3,190,212	479	3,190,292	122	3,190,359
	3,189,976	26	RE.25,810	586	3,190,143	214	3,190,213	129— 24	3,190,293	226	3,190,360
103	3,189,977	130	3,190,062	597	3,190,144		3,190,214	131—208	3,190,294	167— 17	3,190,794
148.4	3,189,979	255	3,190,063	640	3,190,145	257	3,190,215		3,190,295	30	3,190,795
155.5	3,189,978	294	3,190,064	665	3,190,146	289	3,190,216	132— 41	3,190,296		3,190,796
	3,189,980	57—145	3,190,065	751	3,190,147	101—110	3,190,217	134—123	3,190,297	33	3,190,797
155.59:	3,189,981	58— 26	3,190,066	796	3,190,148	247	3,190,218	125	3,190,298	53	3,190,798
156.8	3,189,982	59— 79	3,190,067	805	3,190,149	102— 20	3,190,219	135— 1	3,190,299	54	3,190,799
203	3,189,983	60— 13	3,190,068	75— 5	3,190,743	42	3,190,220	5	3,190,300	65	3,190,800
205	3,189,984	35.6	3,190,069	26	3,190,744	49	3,190,221	137— 92	3,190,301		3,190,801
208	3,189,985		3,190,070	41	3,190,745	73	3,190,222	246.12:	3,190,302	85	3,190,802
404	3,189,986	39.82:	3,190,071	42	3,190,746	103— 6	3,190,223		3,190,303	88	3,190,803

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
June 22, 1965 Volume 815 Number 4

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Adherence of U.S.S.R. to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective July 1, 1965, of the Union of Soviet Socialist Republics to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
May 17, 1965. *Commissioner of Patents.*

DEPARTMENT OF COMMERCE

Patent Office

[37 CFR Parts 2, 4]

RULES OF PRACTICE AND FORMS FOR TRADEMARK CASES

Miscellaneous Amendments

Notice is hereby given that the United States Patent Office proposes to amend several of its rules, to add a new § 2.20, and to provide additional forms relating to trademarks. The amendments are proposed pursuant to the authority contained in Title 35, U.S.C. section 6.

In a variety of occasions the rules of trademark practice presently require a document supported by an oath or affidavit. The rules presently refer to verifications in many instances when requiring an oath in support of a document.

Public Law 88-292 of March 26, 1964, authorized the Commissioner of Patents to prescribe instances when documents to be filed in the Patent Office and which are required by any law, rule, or other regulation to be under oath might be accepted if, in lieu of the required document under oath, the party filing the document were to provide a written declaration in proper form setting forth the required information. Such a declaration may not be used unless it includes a warning statement that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001).

The new § 2.20 would set forth the form of the declaration and announce its acceptability in connection with the filing of documents when prescribed in individual rules. In general, the amendments of the rules are intended to prescribe the acceptability of the declaration in lieu of the oath in cases of all documents except the acknowledgment of an assignment and except in the case of the oaths or verifications presently

CONDITION OF TRADEMARK APPLICATIONS AS OF APRIL 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] 16,093
Date of oldest new application ..... Sept. 21, 1964
Date of oldest amended application ..... August 17, 1964

J. H. MERCHANT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-21-64	8-17-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	10-6-64	10-1-64
Renewals (All Classes)	4-12-65	4-26-65
Sec. 12 (c) Publications (All Classes)	4-14-65	-------

Applications filed during the month of April 1965—2,447

Registrations Issued ..... 375—No. 791,234 to No. 791,608
Renewals Issued 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

required in testimony and contested actions described in §§ 2.123 through 2.145.

An alternative form (§ 4.1a) is provided to the present form (§ 4.1) for a *Trademark application by an individual; Principal Register.*, as illustrative of the required form of a written declaration.

Two important points must be remembered in connection with these changes: (1) The use of the declaration is an alternative to the use of the oath. Either in proper form is acceptable. (2) The declaration may only be used in those instances where the Commissioner of Patents has provided that it will be an acceptable alternative.

All persons who desire to submit written data, views, arguments, or suggestions for consideration in connection with the proposed amendments are invited to forward the same to the Commissioner of Patents, Washington, D.C., 20231, within 45 days of publication of these proposed changes in the FEDERAL REGISTER. An oral hearing is not scheduled.

The changes proposed follow:

Section 2.15 is amended by deletion from the first paragraph of the parenthetical phrase "(such as the application itself and verifications required of applicants, registrants or others)."

A new § 2.20 is added, reading as follows:

DECLARATIONS

§ 2.20 *Declarations in lieu of oaths.*

The applicant or member of the firm or an officer of the corporation or association making application for registration or filing a document in the Patent Office relating to a trademark may, in lieu of the oath, affidavit, verification or sworn statement required from him, in those instances prescribed in the individual rules, file a declaration that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true, if, and only if, the declarant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001), and may jeopardize the validity of the application or document or any registration resulting therefrom.

Section 2.32 is amended by inserting the phrase "or include a declaration" after the phrase "sworn to" in the title of the section; by inserting in paragraph (a) thereof the phrase "or include a declaration in accordance with § 2.20" after the parenthetical phrase "(sworn to)"; and by substituting in paragraph (b) thereof the phrase "statement which is verified or which includes a declaration in accordance with § 2.20," for the phrase "verified statement."

Section 2.33(b) is amended by inserting the phrase "or declaration in accordance with § 2.20," after the two occurrences of the phrase "the verification."

Section 2.41 is amended by inserting the phrase "or declarations in accordance with § 2.20," after the two occurrences of the word "affidavits"; and by substituting in paragraph (b) thereof the phrase "statements which are verified or which include declarations in accordance with § 2.20" for the phrase "verified statements."

Section 2.42(b) is amended by inserting the phrase "or declaration in accordance with § 2.20" after the word "verification."

Section 2.66 is amended by substituting the phrase "showing which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified showing."

Section 2.71 is amended in paragraphs (a) and (b) by inserting the phrase "or declaration in accordance with § 2.20" after the two occurrences of the word "affidavit"; and in paragraph (c) by inserting the phrase "or declaration" after the first occurrence of the word "verification," and by inserting the phrase "or declaration in accordance with § 2.20" after the second occurrence of the word "verification."

Section 2.72 is amended by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit."

Section 2.97 is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.101 is amended to read as follows:

§ 2.101 *Time for filing opposition.*

Any person who believes that he would be damaged by the registration of a mark upon the Principal Register may, upon payment of the required fee, oppose the same by filing an opposition, which is verified or which includes a declaration in accordance with § 2.20, in the Patent Office within 30 days after the publication (§ 2.81) of the mark sought to be registered.

Section 2.103 is amended to read as follows:

§ 2.103 *Opposition filed by attorney or agent.*

An opposition which is unverified or not accompanied by a declaration in accordance with § 2.20 may be filed by a duly authorized attorney or agent. Such opposition and the required fee must be filed in the Patent Office within 30 days after publication (§ 2.81) of the mark sought to be registered but the opposition will be null and void unless confirmed by the opposer either by verification or declaration in proper form filed in the Patent Office within 30 days after such filing, or within such further time as may be fixed by the Commissioner upon request made before the expiration of the 30 days.

Section 2.106(b) is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.112 is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.114(b) is amended by inserting the phrase "or include a declaration in accordance with § 2.20" after the word "verified."

Section 2.122(b) is amended by inserting the phrase "or declarations" after the two occurrences of the word "affidavits."

Section 2.145(a) is amended by substituting the phrase "an affidavit or declaration" for the phrase "and affidavit."

Section 2.146(b) is amended by inserting the phrase "or declarations in accordance with § 2.20" after the word "affidavits."

Section 2.151 is amended by inserting the phrase "or declaration" after the word "affidavit."

Section 2.153 is amended by inserting the phrase "or declaration in accordance with § 2.20" after the two occurrences of the word "affidavit."

Section 2.155 is amended by inserting the phrase "or declaration" after the word "affidavit."

Section 2.156 is amended by inserting the phrase "or declaration" after the word "affidavit."

The title preceding §§ 2.161–2.166 is amended by inserting the phrase "OR DECLARATION" after the word "AFFIDAVIT."

Section 2.161 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit."

Section 2.162 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the word "affidavit" in paragraphs (a) and (b).

Section 2.163 is amended by inserting the phrase "or declaration" after the three occurrences of the word "affidavit."

Section 2.164 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the word "affidavit."

Section 2.165 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; and by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (a), and after the two occurrences of the word "affidavit" in paragraph (b).

Section 2.166 is amended by inserting the phrase "or declaration" after the two occurrences of the word "affidavit."

The title preceding §§ 2.167 and 2.168 is amended by inserting the phrase "OR DECLARATION" after the word "AFFIDAVIT."

Section 2.167 is amended by inserting the phrase "or declaration" after the word "affidavit" in the title thereof; by inserting the phrase "or declaration in accordance with § 2.20" after the word "affidavit" in the first paragraph thereof; and by inserting the phrase "or declaration" after the word "affidavit" in the last sentence thereof.

Section 2.168 is amended by inserting the phrase "or declarations" after the word "affidavits" in the title thereof; by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (a) thereof; and by inserting the phrase "or declaration" after the two occurrences of the word "affidavit" in paragraph (b) thereof.

Section 2.173(a) is amended by substituting the phrase "by the registrant and verified or include a declaration in accordance with § 2.20" for the phrase "and verified by the registrant."

Section 2.175(b) is amended by substituting the phrase "by the applicant and verified or include a declaration in accordance with § 2.20" after the phrase "and verified by the applicant."

Section 2.183 is amended by substituting the phrase "statement which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified statement" in paragraph (a) thereof; by inserting the phrase "declaration or" before the word "verified" in paragraph (b) thereof; by inserting the phrase "declaration or" before the word "verified" in paragraph (c) thereof; and by substituting the phrase "showing which is verified or which includes a declaration in accordance with § 2.20" for the phrase "verified showing" in paragraph (d)(3) thereof.

The note in Part 4—Forms for Trademark Cases, immediately preceding § 4.1 is amended by the addition of the following paragraph:

In using these forms, the applicant or member of the firm or officer of the corporation or association making application or filing the form may, in lieu of making the oath, affirmation, or verification required, set forth in the body of the statement required his written declaration that all statements made on information and belief are believed to be true, if, and only if, the declarant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001), and may jeopardize the validity of the application or document or any registration resulting therefrom.

For illustrative purposes, § 4.1 would be modified in the use of such a declaration as an alternative to the form as used with the oath or verification as follows:

§ 4.1a *Trademark application by an individual; Principal Register.*

Mark _____
(Identify the mark)
Class No. _____
(If known)

The mark is used by applying it to _____ (5) and five specimens showing the mark as actually used are presented herewith.

The undersigned applicant _____ declares: That he believes himself to be the owner of the trademark sought to be registered; that to the best of his knowledge and belief no other person, firm, corporation, or association has the right to use said mark in commerce, either in the identical form or in such near resemblance thereto as may be likely, when applied to the goods of such other person, to cause confusion, or to cause mistake, or to deceive; that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or document or any registration resulting therefrom.

_____
(Signature of applicant)
Date _____

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6; P.L. 88–292, 35 U.S.C. 25, 78 Stat. 171)

EDWARD J. BRENNER,
Commissioner.

Approved: May 7, 1965.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

[F.R. Doc. 65–5156; Filed, May 14, 1965; 8:46 a.m.]

Published in 30 F.R. 6687–6688, May 15, 1965

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 113,831 (ATLAS), Swan & Finch Company, Lubricating oils and greases; Reg. No. 134,036 (ATLAS AND DESIGN), Multiple Electric Products Company, Inc., Certain named electrical apparatus, machines, and supplies; Reg. No. 201,747 (ATLAS), same, Radio loud speakers and loudspeaker units; Reg. No. 223,187, same, Atlas Battery Works, Inc., Electric batteries; Reg. No. 261,033, same, Atlas Supply Company, Rubber tires and tubes; Reg. No. 268,702 (ATLAS AND DESIGN), same, Rubber tires; Reg. No. 290,819 (ATLAS), same, Anti-skid chains; Reg. No. 291,034, same, Golf balls; Reg. No. 291,757, same, Caps for automobile gasoline tanks, automobile windshield wipers, automobile windshield wiper blades and non-glare rear vision mirrors for automobiles; Reg. No. 291,995, same, Automobile fan belts and automobile radiator hose; Reg. No. 292,092, same, Oil filters for use as an accessory to a combustion engine; Reg. No. 292,119, same, Spark plugs; Reg. No. 292,207, same, Brake-linings; Reg. No. 294,192, same, Razor blades; Reg. No. 295,005, same, Island display show cases, automobile tire display racks, and storage battery display racks; Reg. No. 295,109, same, Chemically treated automobile polishing cloths, nickel polish, chromium polish, etc.; Reg. No. 295,541, same, Automobile goggles; Reg. No. 296,699, same, Automobile antifreeze compound, automobile radiator cleaning compound, and automobile radiator sealing compound; Reg. No. 296,995, same, Storage batteries, storage battery chargers, electric fuses, flashlights, etc.; Reg. No. 299,974 (ATLAS AND DESIGN), same, Spark plugs; Reg. No. 301,497 (ATLAS), same, Vacuum tubes for use in radio apparatus; Reg. No. 304,220, same, Cameras and sensitised films for photographic use; Reg. No. 310,700, same, Cleansing tissue; Reg. No. 317,119, same, Vulcanisers; Reg. No. 320,017 (JUNIOR ATLAS), same, Rubber tires and tubes; Reg. No. 322,207 (ATLAS), same, Cleaning compound for glass; Reg. No. 321,071 (JUNIOR ATLAS), same, Storage batteries; Reg. No. 321,072, same, Tire vulcanizing kit (consisting of a roll of gum, round patches, oval patches, and a buffer), plastic tire patches, etc.; Reg. No. 322,120, same, Battery testers, electric light bulb testers, voltmeters and ammeters; Reg. No. 322,242, same, Automobile hot air and water heaters; Reg. No. 324,418, same, Kit consisting of a leather case containing a fibre clothes brush and lamb's wool shoe polishing pad; Reg. No. 329,272 (ATLAS LUG GRIP), same, Rubber tires; Reg. No. 346,200 (ATLAS), same, Hydraulic brake fluid for use in automobiles; Reg. No. 347,084 (ATLAS TIRE ETC. AND DESIGN), same, Rubber tires; Reg. No. 347,530, same; Reg. No. 374,682 (ATLAS DIAL/TEST AND DESIGN), same, Storage battery testing apparatus; Reg. No. 382,200 (ATLAS), same, Cleaner for white sidewall automobile tires; Reg. No. 385,206, same, Electric fans; Reg. No. 386,154, same, Portable, hand operated fire extinguishers; Reg. No. 386,493 (ATLAS SAFETY-FAST), same, Storage battery chargers; Reg. No. 400,101 (ATLAS), same, Water bags; Reg. No. 427,151, same, Chemically treated paper towels; Reg. No. 434,207, same, Flexible fuel and oil lines for use on automobiles, being in the nature of hose of small diameter and composed of a plastic core and a cover of plastic impregnated cotton braid; Reg. No. 436,004 (ATLAS AND DESIGN), same, Airplane tires; Reg. No. 437,355 (ATLAS), same, Radio receivers; Reg. No. 501,404 (ATLAS), same, Car coolers for automobiles; Reg. No. 506,657, same, Motor analysers consisting of multiple test circuits for testing the ignition, carburetion and timing of internal combustion engines; Reg. No. 508,200 (ATLAS AND DESIGN), same, Vulcanising patch units for repairing rubber tubes consisting of a partially cured rubber patch and a metallic pan or tube containing a fuel element to furnish heat to vulcanise the patch to the tube; Reg. No. 509,443 (ATLAS GRIP-SAFE CUSHIONAIRE (in script) AND DESIGN), same, Rubber tires; Reg. No. 511,516 (ATLAS BRAKE LINING ETC. AND DESIGN), Atlas Asbestos Company, Automobile and industrial brake linings; Reg. No. 511,917 (ATLAS), Atlas Supply Company, Fender well gasoline tank caps, underhood radiator caps, and radiator pressure caps for use on automobiles; Reg. No. 512,128 (A AND DESIGN), same, Oil filters for automobile motors; Reg. No. 514,564 (ATLAS), same, Shock absorbers for automobiles; Reg. No. 521,610, same, Ignition parts for internal combustion engines consisting of distributor contact sets, distributor caps, distributor rotors and ignition coils; Reg. No. 525,667 (ATLAS AND DESIGN), same, Rubber tires; Reg. No. 527,550 (ATLAS), same, Rubber sponges; Reg. No. 537,264, same, Exhaust deflectors, an automobile accessory consisting of a deflector for attachment to the exhaust pipe of an automobile; Reg. No. 541,082, same, Locking gas tank caps; Reg. No. 545,069, same, Pedal pads made of live rubber and live rubber and steel for attachment to the accelerator and clutch and brake pedals of automobiles; Reg. No. 556,264, same, Cellulose sponges; Reg. No. 567,360 (ATLAS MILE-PAK in script), same, Rubber tires; Reg. No. 572,627 (ATLAS), same, Oil filter drain guns of the syphon type designed to clean the residue from the oil filter when the filter cartridge is removed; Reg. No. 573,540 (ATLAS EZE-ON), same, Radiator hose for use on automobiles; Reg. No. 582,365 (ATLAS

WEATHERGARD AND DESIGN), same, Rubber tires; Reg. No. 539,455 (ATLAS PERMA-FUL PROTECTION AND DESIGN), same, Storage batteries; Reg. No. 591,168 (ATLAS), same, Combination of container and automatic dispensing pump for dispensing brake fluid; Reg. No. 594,292 (ATLAS TORQUER), same, Spark plug service sets consisting of wrench and sockets for installing and removing spark plugs for internal combustion engines; Reg. No. 595,677 (ATLAS), same, Solvent for washing automobile windshields; Reg. No. 597,468 (ATLAS TRAFFIC MASTER), same, Rubber tires; Reg. No. 598,999 (ATLAS), same, Automobile windshield washer fluid; Reg. No. 599,695, same, Plastic electrical and household tape; Reg. No. 604,225 (ATLAS POWERDRIVE BELT), same, Fan belts; Reg. No. 606,506 (ATLAS), same, Hose clamps for use on automobile radiator hose; Reg. No. 615,355, same, Tire-tread gauges for determining the anti-skid depth of treads for automobile tires; Reg. No. 615,375, same, Car wash mitt; Reg. No. 616,462, same, Wire mesh bug screen with attachments for mounting on the front of automobile radiators to prevent bugs from clogging the radiator core and causing overheating; Reg. No. 623,423, same, Bug fighter unit consisting of a combination of a container and dispensing spray pump and brush for dispensing and applying glass cleaning fluid for removing traffic film from automobile windshields; Reg. No. 625,140, same, Rubber cleaning solvent for use in repairing tubeless tires; Reg. No. 627,759, same, Tubeless rubber tire bead expander consisting of an inflatable tube sealed at each end, a valve for inflating the tube and means for fastening the device around the periphery of a tubeless automotive tire for the purpose of expanding the beads against the rim to facilitate inflation of the tire; Reg. No. 631,311, same, Oil filler caps for use on internal combustion engines for automobiles; Reg. No. 631,933, same, Leather cleaner for automobile upholstery; Reg. No. 639,019, same, Headlight aimers; Reg. No. 641,999, same, Solvent for removing tar from automobile bodies and upholstery; Reg. No. 642,612, same, Wheel balancers; Reg. No. 647,486 (ATLAS DUAL SERVICE), same, Rubber tires; Reg. No. 649,914 (ATLAS), same, Pressure tester for cooling systems and pressure caps; Reg. No. 652,466, same, Air filter refill for use in connection with internal combustion engines; Reg. No. 652,562, same, Auto-wax; Reg. No. 653,999, same, Penetrating oil, door lubricant, lock lubricant, and rubber lubricant; Reg. No. 654,991, same, Pre-wax cleaner sold and distributed through automobile service stations; Reg. No. 671,225, same, Hand cleaner sold and distributed through automobile service stations; Reg. No. 673,814, same, Fuel filters and crankcase vent filters; Reg. No. 679,167, same, Battery hold-downs; Reg. No. 705,120, same, Chemical solution for use in removing ice from automobile windshields and windows and sold and distributed through automobile service stations; Reg. No. 706,660, same, Grease seals used on automobile car spindles to seal the grease on the wheel bearing housing; Reg. No. 713,884, same, Auto lamps of the controlled beam type; Reg. No. 739,890, same, Mufflers, tail pipes, and tire changer; Reg. No. 740,480, same, Snap-in valve, metal clamp-in valve, metal valve extension, etc.; Reg. No. 750,053, same, Hydraulic brake parts consisting of master cylinders, master cylinder repair kits, wheel cylinders, and wheel cylinder repair kits; Reg. No. 751,908 (ATLAS LOAD BALANCER), same, Shock absorbers; Reg. No. 760,623 (ATLAS BULLETIN), same, House organ published monthly, devoted to the promotion of tires, batteries and automobile accessories and the servicing thereof, and distributed to oil company service stations throughout the United States; Reg. No. 761,239 (ATLAS), same, Hydraulic brake hose; Reg. No. 761,552, same, Safety seat belts for automobiles; Reg. No. 771,205, same, Positive crankcase ventilation valves; Reg. No. 773,106, same, Fender covers for use on automobiles; Reg. No. 773,256, same, Degreaser for cleaning grease from automobile engines, farm equipment, power lawn mowers, marine engines, and other mechanical parts, packaged as an aerosol spray, filed Feb. 12, 1965, D.C., S.D. Miss. (Jackson), Doc. 3689 (J) (M), *Atlas Supply Company* v. *Mrs. Marie K. Zuccaro, Sr. et al.* Same, filed Mar. 8, 1965, D.C. Minn. (St. Paul), Doc. 3-65-74, *Atlas Supply Company* v. *Atlas Auto Stores Central Organization, Inc. et al.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 166,544. Telesystems Corporation, Glenside, Pa., assignee of Telesystem Services Corporation, Glenside, Pa. Filed Mar. 27, 1963.

TSC

Class 100—Miscellaneous

For Services Rendered With Respect to Closed Circuit and Community Television Systems of Others—Namely, Engineering.

First use June 1960.

Class 101—Advertising and Business

For Management, Supervision, Sales Promotion, and Training of Technical Personnel.

First use January 1960.

Class 103—Construction and Repair

For Construction, Operation, and Maintenance.

First use July 1960.

SN 175,314. Nutra-Flo Chemical Company, Sioux City, Iowa. Filed Aug. 19, 1963.

NUTRA-FLO

Class 6—Chemicals and Chemical Compositions

For Insecticide, Fungicide, Herbicide, and Plant Growth Regulant Chemical Sprays.

Class 10—Fertilizers

For Liquid Agricultural Fertilizers.

Class 23—Cutlery, Machinery, and Tools, and Parts

For Pumping Equipment and Machinery for Application of Said Sprays.

First use Mar. 18, 1963.

SN 191,359. California Car Wash Systems, Inc., Sun Valley, Calif. Filed Apr. 17, 1964.

California

Class 2—Receptacles

For Mitt Tanks.

Class 23—Cutlery, Machinery, and Tools, and Parts

For Vacuum Cleaners, Rinse Units, Sudsers, Wheel Washers, Top and Side Brush Combinations, Pressure Wash, Conveyor System, for Car Wash Systems.

Class 26—Measuring and Scientific Appliances

For Car Counters.

Class 31—Filters and Refrigerators

For Water Softener Units.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Blowers and Drying Systems.

First use Sept. 8, 1954.

SN 192,825. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed May 6, 1964.

HOOKER
CHEMICALS
PLASTICS

Class 1—Raw or Partly Prepared Materials

For Synthetic Resins, Molding Compounds and Plastics in Particulate, Liquid and Sheet Form.

First use in or before November 1956; November 1906 as to "Hooker."

Class 4—Abrasives and Polishing Materials

For Chemical Brightening Agents, Chemical and Chemical-Based Polishing Materials and Particulate Abrasives.

First use in or before October 1956.

Class 5—Adhesives

For Adhesives.
First use in or before December 1956.

Class 6—Chemicals and Chemical Compositions

For Industrial Chemicals, Plastics and Chemical Compositions.
First use in or before October 1956.

Class 10—Fertilizers

For Fertilizers.
First use in or before September 1959.

Class 15—Oils and Greases

For Lubricating Oils and Greases.
First use in or before October 1956.

Class 39—Clothing

For Fire Retardant Clothing.
First use in or before November 1963.

Class 46—Foods and Ingredients of Foods

For Chemical Food Additives and Food Grade Acid Used as a Food Additive.
First use in or before October 1956.

Class 52—Detergents and Soaps

For Household and/or Industrial Cleaning Compositions and Inorganic Detergent Salts for Cleaning Purposes.
First use in or before October 1956.

SN 192,869. Canadian National Railway Company, Montreal, Quebec, Canada. Filed May 5, 1964.

CN

Class 102—Insurance and Financial

For Issuing and Redeeming of Money Orders.

Class 105—Transportation and Storage

For Transportation of Persons and Goods by Railway, Ship, Aircraft, Motors Vehicles, Buses, and Automobiles.

First use Dec. 15, 1960; in commerce Dec. 15, 1960.

SN 209,830. Forté-Fairbairn Inc., Needham Heights, Mass. Filed Jan. 13, 1965.



Class 1—Raw or Partly Prepared Materials

For Cashmere Fibers.
First use Dec. 31, 1964.

Class 43—Thread and Yarn

For Cashmere Yarns.
First use Jan. 7, 1965.

SN 211,330. Crescent Niagara Corporation, Buffalo, N.Y. Filed Feb. 4, 1965.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hoist Hooks, Eye Nuts, Rod Ends and Yoke Ends.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Die Forgings, Wrenches, Tongs, Spanners, Wrench Sockets, Hammers, Clamps, Dogs, Drifts, Pliers, Vises, Drills, Drill Sockets, Hand Snips, Reamer Holders, Hacksaw Frames, Cotterpin Tools, Awls, Screw Drivers, Knurling Tools, Crank Handles, Cut-Off Tools, Chisels, Drop Hammers, Punches, and Sales Display Boards for Such Goods.

First use on or about Sept. 1, 1870, on hoist hooks and die Forgings.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 176,742. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Aug. 26, 1963.

DRALON

Owner of German Reg. No. 674,720, dated Apr. 21, 1951 and U.S. Reg. Nos. 300,733 and 644,810.
For Synthetic Fibers and Continuous Filaments for Various Uses in the Industrial Arts.

SN 185,766. Economy Tooling Products, Inc., Malden, Mass. Filed Jan. 31, 1964.

HY-THANE

For Poly-Urethane Sheet Material.
First use March 1962.

SN 194,284. Power Petroleum Products, Dallas, Tex. Filed May 25, 1964.



For Liquid Charcoal Fire Lighting Compound.
First use Feb. 24, 1964.

SN 195,541. Monsanto Company, St. Louis, Mo. Filed June 12, 1964.

MONSANTO

Owner of Reg. Nos. 529,065, 779,975, and others.
For Synthetic Fibers and Filaments.
First use Mar. 24, 1964.

SN 195,542. Monsanto Company, St. Louis, Mo. Filed June 12, 1964.

Monsanto

Owner of Reg. Nos. 779,113, 779,975, and others.
For Synthetic Fibers and Filaments.
First use May 6, 1964.

SN 200,619. Berger & Plate Company of San Francisco, d.b.a. Berger & Plate Company, San Francisco, Calif. Filed Aug. 26, 1964.

MANOR

For Lawn Seeds.
First use July 31, 1964.

SN 200,620. Berger & Plate Company of San Francisco, d.b.a. Berger & Plate Company, San Francisco, Calif. Filed Aug. 26, 1964.

MARINA GREEN

No claim is made to the word "Green" apart from the mark as shown.
For Lawn Seeds.
First use July 31, 1964.

SN 200,621. Berger & Plate Company of San Francisco, d.b.a. Berger & Plate Company, San Francisco, Calif. Filed Aug. 26, 1964.

ROLLING GREEN

No claim is made to the word "Green" apart from the mark as shown.
For Lawn Seeds.
First use July 31, 1964.

SN 201,181. Cabot Corporation, Boston, Mass. Filed Sept. 3, 1964.

ORGAN-O-SIL

Owner of Reg. No. 721,169.
For Treated Fumed Silicon Dioxide for Use as a Free-Flowing or Anti-Caking Agent.
First use May 26, 1964.

SN 202,354. Blue Diamond Coal Company, Inc., Knoxville, Tenn. Filed Sept. 22, 1964.



The lining shown on the drawing reproduces the lining shown on the specimens and does not represent color.
For Coal.
First use June 1, 1964.

SN 205,070. Ed. F. Mangelsdorf & Bro., Inc., St. Louis, Mo. Filed Oct. 29, 1964.

A-59

Owner of Reg. No. 706,825.
For Alfalfa Seed.
First use Jan. 9, 1959.

SN 205,104. Shell Oil Company, New York, N.Y. Filed Oct. 29, 1964.

PALICYN

For Elastomeric Polymer for Adhesive Compounds.
First use Sept. 2, 1964.

SN 205,957. National Carbonising Company Limited, Westminster, London, England. Filed Nov. 10, 1964.

REXCO

Owner of British Reg. No. 651,378, dated May 24, 1934.
For Solid Artificial Fuel in the Form of Lumps or Briquettes.

SN 208,483. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 18, 1964.

DYNASHEET

Owner of Reg. Nos. 722,440 and 726,860.
For Synthetic Resins in the Form of Film, Sheets and Other Shapes for Generalised Use in the Industrial Arts.
First use Oct. 21, 1964.

SN 208,600. Mundet Cork Corporation, North Bergin, N.J. Filed Dec. 21, 1964.

KORBLATE

For Cork and Cork Composition Material in Sheet or Block Form.
First use Nov. 24, 1964.

SN 208,818. Ciba Limited, Basle, Switzerland. Filed Dec. 24, 1964.

DICAP

Owner of Swiss Reg. No. 202,964, dated Mar. 9, 1964.
For Synthetic Resins Sold in Solid, Liquid or Powdered Form for Industrial Purposes.

SN 209,295. Old Hickory Charcoal Incorporated, Mountain View, Mo. Filed Jan. 4, 1965.

FESTIVAL

For Wood Charcoal Briquettes.
First use Dec. 4, 1964.

Class 2—Receptacles

SN 167,473. Keyes Fibre Company, Waterville, Maine. Filed Apr. 24, 1963.

SHO-PAK

For Packaging Trays of Molded Pulp.
First use July 1949.

SN 182,094. Lyn-Kin, Inc., Brooklyn, N.Y. Filed Nov. 29, 1963.

TWI-LITE

For Empty Compact and Cosmetic Containers.
First use July 5, 1963.

SN 197,236. United Biscuit Company of America, Melrose Park, Ill. Filed July 6, 1964.

CRISP LOCK TOP

Applicant disclaims the words "Lock Top" except as a part of the mark as shown.
For Cartons.
First use May 2, 1964.

SN 197,720. International Paper Company, New York, N.Y. Filed July 13, 1964.

INTERNATIONAL PAPER

The word "Paper" is disclaimed apart from the mark.
Owner of Reg. No. 771,900.
For Folding Cartons, Shipping Containers, Milk Containers and Cartons, Multiwall Bags and Grocery and Shopping Bags and Sacks, All Made of Paper or Paperboard.
First use Jan. 31, 1898.

SN 202,624. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Sept. 24, 1964.

ALL-IN-ONE

For Plastic Household Containers and Covers Therefor.
First use Sept. 11, 1964.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 192,833. King Leathers, Inc., Indiana, Pa. Filed May 6, 1964.

KING COURIER

For Wallets.
First use Oct. 17, 1963.

Class 5—Adhesives

SN 190,402. Master-Krete, Inc., Kansas City, Mo. Filed Apr. 6, 1964.

VELVETITE

For Adhesive Composition for Use in Setting Tile, Wood Blocks, Insulation Blocks, and the Like.
First use Feb. 28, 1964.

SN 201,112. Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. Filed Sept. 2, 1964.

EF

Owner of Reg. Nos. 307,230 and 712,526.
For Pliable Gum-Like Compound Used as an Adhesive.
First use May 28, 1964.

SN 205,905. Wilco Company, Los Angeles, Calif. Filed Nov. 9, 1964.

SUREFIRE

Owner of Reg. Nos. 423,891 and 661,828.
For Gasket Cement.
First use Oct. 1, 1964.

Class 6—Chemicals and Chemical Compositions

SN 168,750. Midwest Consultants, Inc., St. Louis, Mo. Filed May 13, 1963.

A-OK

For Insecticide for Killing Roaches, Waterbugs, Ants, Silverfish, Flies, Spiders, Mosquitoes, Wasps, and Carpet Beetles.
First use Mar. 28, 1962.

SN 171,643. General Aniline & Film Corporation, New York, N.Y. Filed June 24, 1963.

V-PYROL

For Chemical N-Vinyl-2-Pyrrolidone.
First use Apr. 3, 1963.

SN 176,887. Chemetron Corporation, Chicago, Ill. Filed Sept. 13, 1963.

CHEMETRON

For Catalysts.
First use Aug. 28, 1958.

SN 181,135. Domestos Limited, Newcastle-Upon-Tyne, England. Filed Nov. 14, 1963.

DOMESTOS

Owner of British Reg. Nos. 781,874 and 781,875, both dated Sept. 1, 1958.
For Disinfectants and Bleaching Preparations.

SN 190,385. International Latex Corporation, Dover, Del. Filed Apr. 6, 1964.

SHUR-BAK

For Rubber-Like Composition in Liquid Form for Use as a Rug or Carpet Backing.
First use Jan. 10, 1964.

SN 191,082. Borg-Warner Corporation, Chicago, Ill. Filed Apr. 14, 1964.

PURAFIL

For Permanganate Impregnated Pellets for Use as an Air Deodorant.
First use on or prior to Jan. 30, 1964.

SN 192,660. Armour and Company, Chicago, Ill. Filed May 5, 1964.

ARMOSTIM

For Nitrogen Derivatives and Compositions Thereof for Use as Stimulants in Promoting Fluid Flow in Oil Wells and Associated Oil Production Operations.
First use Apr. 1, 1964.

SN 193,089. Armour and Company, Chicago, Ill. Filed May 11, 1964.

ARMOCAP

For Microencapsulated Nitrogen Containing Chemicals and Chemical Compositions Furnishing Controlled Release of the Chemical in Fluid Media.
First use Feb. 18, 1964.

SN 193,189. McNeil Laboratories, Incorporated, d.b.a. Tavolek Laboratories, Fort Washington, Pa. Filed May 11, 1964.

RATICATE

For Rodenticides.
First use Feb. 4, 1964.

SN 194,131. Carlisle Chemical Works, Inc., Reading, Ohio. Filed May 25, 1964.

CARCIDE

For Biocidal Chemical Compositions.
First use May 1, 1964.

SN 194,132. Carlisle Chemical Works, Inc., Reading, Ohio. Filed May 25, 1964.

CAR-BAN

For Chemical Compositions With Rodent Repellent Properties.
First use May 1, 1964.

SN 194,460. The Borden Company, New York, N.Y. Filed May 28, 1964.

QUIK-KLOR

For Chlorine Bearing Bactericide for Sanitizing and Disinfecting Food Processing Equipment.
First use Mar. 1, 1954.

SN 194,483. General Aniline & Film Corporation, New York, N.Y. Filed May 28, 1964.

CLA-CON

For Chemical Stabiliser for Drilling Muds.
First use Dec. 6, 1963.

SN 194,791. Fine Organics, Inc., Lodi, N.J. Filed June 3, 1964.

HYSLIP

For Chemical Compound for Imparting High Slip and Antiblocking to Plastics in the Manufacture Thereof.
First use Apr. 14, 1964.

SN 194,850. Alcolac Chemical Corporation, Baltimore, Md. Filed June 4, 1964.

ALACSAN

For Quaternary Ammonium Compounds.
First use May 15, 1964.

SN 195,249. Rayonier Incorporated, New York, N.Y. Filed June 9, 1964.

RAYMIX

Owner of Reg. No. 764,122.
For Chemical Additives for Use in Portland Cement Compositions—Namely, Admixtures for Concrete and Mortar.
First use Mar. 5, 1964.

SN 195,982. Diamond Alkali Company, Cleveland, Ohio. Filed June 18, 1964.

EPITAN

For Synthetic Tanning Agent for Leather.
First use 1945.

SN 196,847. Chicago Litho Products Company, Inc., d.b.a. Direct Masters, Chicago, Ill. Filed July 1, 1964.

Lithocraft

For Liquid Developers, Liquid Fixers, Liquid Roll-Up, Liquid Plate Preservers, Liquid Plate Etch, and Liquid Fountain Solution, All Lithographic Chemicals.
First use on or about Nov. 1, 1960.

SN 196,900. Pet Pantry Products, Inc., d.b.a. Pharmacal Research Laboratories, Greenwich, Conn. Filed July 1, 1964.

QUATRICIDE

For Quaternary Ammonium Salt Ingredient Incorporated in a Deodorant for General Industrial Use.
First use Jan. 2, 1964.

SN 200,001. Kelco Company, San Diego, Calif. Filed Aug. 17, 1964.

KELSET

Owner of Reg. No. 538,260.
For Algin Product for Use as a Stabiliser in Industrial Chemicals and in Pharmaceuticals.
First use July 28, 1964.

SN 201,776. James R. Alburger, d.b.a. Shannon Luminous Materials Co., Hollywood, Calif. Filed Sept. 14, 1964.

TRACER-TECH

For Fluorescent Dye Concentrates Used in Penetrant Inspection Oils, Marking Inks, Ballpoint Pen Inks, Solder Fluxes, Potting Compounds and Bonding Cements, Coating Compounds, Cements and Adhesives, Magnetic Powders and Pastes, and in Chemical Testing Systems.
First use Oct. 10, 1961.

SN 204,270. McCloskey Varnish Co., Philadelphia, Pa. Filed Oct. 19, 1964.

Keytrol

For Rust Inhibitor.
First use Oct. 1, 1964.

SN 204,321. Unimed, Inc., Morristown, N.J. Filed Oct. 19, 1964.

AM-I-?

For Diagnostic Reagent and Kit for Testing a Woman's Urine To Determine Whether or not the Woman Is Pregnant.
First use Sept. 29, 1964.

SN 205,889. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Nov. 9, 1964.

U.S. BORAX

Owner of Reg. Nos. 773,447 and 776,542.
For Laundry Additive Comprising Borax Plus a Bacteriostatic and a Whitening Agent.
First use Aug. 15, 1961.

SN 206,065. National Pigment Company, Inc., Philadelphia, Pa. Filed Nov. 12, 1964.

CERTEX

For Composition for Addition To Molten Iron and Steel for Maintenance of Heat and Fluidity.
First use June 9, 1964.

SN 206,294. Rohm & Haas Company, Philadelphia, Pa. Filed Nov. 16, 1964.

PRIMID

Owner of Reg. Nos. 814,766, 735,136, and others.
For Amides for Use in the Industrial Arts.
First use on or about Nov. 3, 1964.

SN 206,364. Sinclair-Koppers Company, New York, N.Y., assignee of Koppers Company, Inc., Pittsburgh, Pa. Filed Nov. 17, 1964.

DYLITE

Owner of Reg. Nos. 631,124, 714,598, and 714,889.
For Particulate Expandable Polystyrene, Including Beads and Pellets.
First use Mar. 18, 1955.

SN 206,421. Corillium Corporation, Alexandria, Va. Filed Nov. 18, 1964.

CORILLIUM

For Electroplating Solution.
First use Aug. 27, 1964.

SN 206,872. N.V. Algemeene Norit Maatschappij, Amsterdam, Netherlands. Filed Nov. 24, 1964.

NORITEX

Owner of Dutch Reg. No. 75,929, dated Jan. 16, 1941.
For Activated Carbon in Granular or Powdered Form, Especially for Improving the Taste and Smell of Solids, Liquids, and Gaseous Substances.

SN 206,926. Eastman Kodak Company, Rochester, N.Y. Filed Nov. 25, 1964.

EKTAPRINT

For Photographic Processing Chemicals.
First use Nov. 4, 1964.

SN 207,868. Colab Laboratories, Inc., Chicago Heights, Ill. Filed Dec. 10, 1964.

ESTRINDEX

For Ovulatory Test Indicator in the Nature of a Chemically Treated Sheet Material Prepared To Give Visual Indication of a Characteristic of a Body Fluid Such as Cervical Mucus by Reaction of a Chemical Component of Said Body Fluid in Contact With Said Sheet Material and a Chemical Component on or in Said Sheet Material.
First use Oct. 9, 1964.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 203,053. Pan American Metal Products Co., Inc., Miami, Fla. Filed Sept. 30, 1964.

PARKITSAFE

Owner of Reg. Nos. 519,650 and 521,175.
For Ash Trays.
First use Dec. 18, 1964.

Class 9—Explosives, Firearms, Equipments,

SN 196,245. Charter Arms Corp., Southport, Conn. Filed June 23, 1964.

UNDERCOVER

For Pistols.
First use Apr. 7, 1964.

SN 200,333. Colt's Inc., Hartford, Conn., by change of name from Colt's Patent Fire Arms Manufacturing Company, Incorporated, Hartford, Conn. Filed Aug. 21, 1964.

PYTHON

For Hand Guns and Pistols.
First use June 2, 1955.

SN 204,809. Monsanto Company, St. Louis, Mo. Filed Oct. 26, 1964.

M·PULZ

For Blasting Agents.
First use Sept. 2, 1964.

SN 204,810. Monsanto Company, St. Louis, Mo. Filed Oct. 26, 1964.

M·POWR

For Blasting Agents.
First use Sept. 2, 1964.

SN 204,811. Monsanto Company, St. Louis, Mo. Filed Oct. 26, 1964.

M·PAK

For Blasting Agents.
First use Sept. 2, 1964.

SN 204,812. Monsanto Company, St. Louis, Mo. Filed Oct. 26, 1964.

M·PEL

For Blasting Agents.
First use Sept. 2, 1964.

Class 12—Construction Materials

SN 193,495. Peachtree Doors, Inc., Atlanta, Ga. Filed May 14, 1964.

SATELLITE

For Bath Enclosures Having Sliding Glass Doors.
First use Apr. 22, 1964.

SN 202,118. William Wallace Corporation, d.b.a. Norwesco Division of William Wallace Co., Belmont, Calif. Filed Sept. 17, 1964.

NORWESCO

For Fabricated Metal Products—Namely, Downspouts, Gutters, Roof Ventilators, Shower Stalls, and Window Wells.
First use Feb. 13, 1930.

SN 207,514. Miraplas Tile Company, Columbus, Ohio. Filed Dec. 4, 1964.

MOONSTONE

For Ceramic Tile.
First use Oct. 9, 1964.

SN 207,711. General Portland Cement Company, Chicago, Ill. Filed Dec. 8, 1964.

TRINITY

Owner of Reg. Nos. 345,228, 741,795, and others.
For Masonry Cement and High Early Strength Portland Cement.
First use on or before Apr. 20, 1937.

SN 207,835. Overhead Door Corporation, Hartford City, Ind. Filed Dec. 9, 1964.

SUPER-DOOR

For Upward-Acting Doors and Door Sections, Hardware Fixtures, Parts, Mechanisms and Equipment for Embodiment in Such Doors or Use in Connection Therewith, Including Electrical and Other Automatic Devices (Known as Door Operators) for Operating Such Doors.
First use July 17, 1962.

SN 208,485. National Gypsum Company, Buffalo, N.Y. Filed Dec. 18, 1964.

WOODSTRAN

For Wood Fiber Grid Panels.
First use Nov. 21, 1964.

SN 208,486. National Gypsum Company, Buffalo, N.Y. Filed Dec. 18, 1964.

ASBESTIBEL

For Acoustical Ceiling Panels.
First use July 10, 1961.

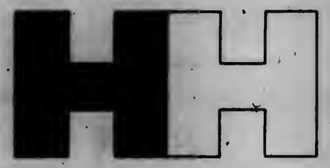
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 199,434. Aluminum Specialty Company, Manitowoc, Wis. Filed Aug. 7, 1964.

Chilton CLAD

Owner of Reg. No. 673,072.
For Aluminum or Stainless Steel Cooking Utensils—Namely, Combination Pan Sets, Covered Sauce Pans, Covered Sauce Pots, Drip Coffee Makers, Fry Pans, and Percolators.
First use July 15, 1963.

SN 202,869. Handy & Harman, New York, N.Y. Filed Sept. 22, 1964.



Owner of Reg. Nos. 728,125 and 728,175.
For Metal Tubing.
First use in or about June 1963.

SN 205,550. Clem A. Underwood, Aptos, Calif. Filed Nov. 4, 1964.

E·Z FOLD CARI-RAK

For Supporting Brackets for Multiple Clothes Hangers.
First use Sept. 24, 1964.

SN 208,580. Illinois Tool Works Inc., Chicago, Ill. Filed Dec. 21, 1964.

BUILD-X

For Cold-Headed Fasteners, Sheet Metal Fasteners, and Plastic Fasteners.
First use Dec. 17, 1964.

SN 208,581. Illinois Tool Works Inc., Chicago, Ill. Filed Dec. 21, 1964.

BUILDEX

For Cold-Headed Fasteners, Sheet Metal Fasteners, and Plastic Fasteners.
First use Dec. 17, 1964.

SN 209,795. Miracle Spout, Inc., d.b.a. Miracle Spout Company, Duluth, Minn. Filed Jan. 12, 1965.

MIRACLE SPOUT

No claim is made to the term "Spout" apart from the mark as shown.
For Threaded Plastic Spouts, Adapted To Be Threaded Into Cardboard Milk Cartons To Pour Milk Therefrom.
First use Nov. 27, 1964.

SN 209,955. Sears, Roebuck and Co., Chicago, Ill. Filed Jan. 14, 1965.

MARBELLA

For Vanity Tops Sold as Parts of Bathroom Vanities or Lavatories.
First use on or about Nov. 11, 1963.

SN 209,979. Ajax Hardware Corporation, City of Industry, Calif. Filed Jan. 15, 1965.

QUEEN ANNE

For Cabinet and Drawer Knobs and Pulls and Hinges.
First use Dec. 1, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 192,942. Production Tool Alloy Company Limited, Sharpenhoe, England. Filed May 7, 1964.

PERPRO

Owner of British Reg. Nos. 624,841, dated Aug. 18, 1943, and 861,889, dated Mar. 20, 1964.
For Unwrought and Partly Wrought Common Metal and Hard Metal Powders.

SN 208,399. Simpson-Lawrence Limited and The Security Patent Anchor Company Limited (joint owners), Glasgow, Scotland. Filed Dec. 17, 1964.

C.Q.R.

For Anchors.
First use Jan. 26, 1951; in commerce March 1958.

SN 210,841. Unitcast Corporation, Toledo, Ohio. Filed Jan. 19, 1965.

UNITCAST

Owner of Reg. Nos. 685,412 and 685,755.
For Miscellaneous Electric Steel Castings.
First use Mar. 12, 1928.

SN 212,846. American Type Founders Co., Inc., Elizabeth, N.J. Filed Feb. 26, 1965.

CENTURY NOVA

For Type Face.
First use Aug. 11, 1964.

Class 15—Oils and Greases

SN 206,186. Sinclair Refining Company, New York, N.Y. Filed Nov. 13, 1964.

DINO D-ICER

Applicant disclaims the word "D-Icer" separate and apart from the mark as shown.
Owner of Reg. Nos. 342,874, 725,820, and others.
For Ice Inhibiting Fuel Additive.
First use Sept. 10, 1964.

SN 210,396. A & L Laboratories, Inc., Minneapolis, Minn. Filed Jan. 22, 1965.

INFERNO

For Chemical Additive for Fuel Oil and Range Oil.
First use June 16, 1950.

Class 16—Protective and Decorative Coatings

SN 176,725. The Farboil Company, Baltimore, Md. Filed Sept. 11, 1963.

FARBO-TILE

Owner of Reg. Nos. 141,243, 707,709, and others.
For Architectural, Marine, and Industrial Coatings Such as for Use on Interior and Exterior Walls, Equipment, Decks, and Machinery.
First use May 22, 1959.

SN 205,745. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Nov. 6, 1964.

TERRACLEAR

Owner of Reg. No. 682,759.
For Floor Sealer for Terrazzo, Oxychloride, Cement and All Stone-Type Floors.
First use July 5, 1961.

SN 205,746. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Nov. 6, 1964.

T-CEE

Owner of Reg. No. 682,759.
For Floor Sealer for Cement, Magnesite, and All Stone-Type Floors.
First use May 19, 1961.

SN 206,702. Danacolors, Inc., San Francisco, Calif. Filed Nov. 23, 1964.



For Artists' Oil Colors.
First use Sept. 1, 1964.

Class 17—Tobacco Products

SN 202,813. Lane Limited, New York, N.Y. Filed Sept. 28, 1964.

HOUSE OF LORDS

Owner of Reg. Nos. 187,715 and 603,516.
For Smoking Tobacco.
First use Sept. 1, 1943.

SN 206,574. W. H. Snyder & Sons, Incorporated, Windsor, Pa. Filed Nov. 19, 1964.

JAVELINS

For Cigars.
First use Feb. 5, 1962.

SN 208,787. United States Tobacco Company, New York, N.Y. Filed Dec. 23, 1964.



Owner of Reg. No. 520,890.
For Snuff.
First use Feb. 12, 1951.

SN 209,160. Harold Halberg, Svendborg, Denmark. Filed Dec. 31, 1964.

PLUMCAKE

For Smoking Tobacco, Specifically Pipe Tobacco Mixtures.
First use Jan. 1, 1956; in commerce July 1, 1962.

Class 18—Medicines and Pharmaceutical Preparations

SN 169,107. Borun Bros., Los Angeles, Calif. Filed May 17, 1963.

THRIFTY

Owner of Reg. No. 292,272.
For Vitamin and Mineral Preparations.
First use Jan. 17, 1963.

SN 170,346. Societe d'Etude des Catalyseurs, Paris, France. Filed June 4, 1963.

DIATHESYL

Owner of French Reg. No. 475,274, dated Oct. 22, 1958 (Seine); Natl. Inst. No. 114,384.
For Pharmaceutical and Veterinarian Products.

SN 170,347. Societe d'Etude des Catalyseurs, Paris, France. Filed June 4, 1963.

MIKROPLEX

Priority claimed under Sec. 44(d) on French Reg. No. 511,667, dated Feb. 28, 1963 (Seine); Natl. Inst. No. 200,464.
For Pharmaceutical and Veterinarian Products.

SN 170,349. Societe d'Etude des Catalyseurs, Paris, France. Filed June 4, 1963.

OLIGOSOL

Owner of French Reg. No. 466,177, dated July 9, 1957 (Seine); Natl. Inst. No. 98,219.
For Pharmaceutical and Veterinarian Products.

SN 170,350. Societe d'Etude des Catalyseurs, Paris, France. Filed June 4, 1963.

GAMMASOL

Owner of French Reg. No. 484,395, dated Dec. 1, 1959 (Seine); Natl. Inst. No. 135,200.
For Pharmaceutical and Veterinarian Products.

SN 172,008. Chas. Pfizer & Co., Inc., New York, N.Y. Filed June 27, 1963.

PFIZER-VAX MEASLES K

The word "Measles" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 501,762 and 626,088.
For Vaccine Preparation.
First use June 24, 1963.

SN 172,308. Gordon's Drug Store, Inc., Plattsburg, N.Y. Filed July 2, 1963.

JAQUES'

Little Wonder

For Preparation for the Aid of Digestion.
First use 1902.

SN 182,139. Riker Laboratories, Inc., Northridge, Calif. Filed Nov. 26, 1963.



The drawing is lined for shading only and not to represent color.
For Antacid.
First use Nov. 20, 1963.

SN 184,549. Western Research Laboratories, Inc., Denver, Colo., assignee of Western Research Laboratories, Denver, Colo. Filed Jan. 13, 1964.

CHOLIPAN

For Bile Enzyme Therapy Preparation.
First use November 1950.

SN 189,357. Pi-Lon Laboratories, Incorporated, Detroit, Mich. Filed Mar. 23, 1964.

Pi-Lon

For Pharmaceutical and Medicinal Preparations.
First use Sept. 19, 1961.

SN 194,626. Eli Lilly and Company, Indianapolis, Ind. Filed June 1, 1964.

DELAY

For Antiestrus Feed Additive for Dogs.
First use May 27, 1964.

SN 195,385. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed June 11, 1964.

LASIX

Owner of German Reg. No. 716,041, dated July 3, 1957.
For Saluretic for Human and Veterinary Use.

SN 196,604. Barnes-Hind Pasna Products, Sunnyvale, Calif. Filed June 29, 1964.

TUBERCIDE GRANULES

Applicant disclaims any interest in the word "Granules."
For Medicinal Preparation for Use in Pulmonary and Anti-tuberculosis Therapy.
First use May 12, 1964.

SN 197,399. Kirkman Laboratories, Inc., Seattle, Wash. Filed July 8, 1964.



The mark consists of a fanciful representation of the letter "K."
For Medicinal Preparations—Namely, Tetracycline, Vitamin Tablets, Multiple Vitamin and Mineral Capsules, Antacid Tablets, Aspirin, Anti-Cold Tablets, APC (Acetylsalicylic, Phenacetin and Caffeine) Tablets, Powdered Extract of Belladonna, Cascara Compound and Cascara Extract, Ephedrine Sulfate, Ergotamine Tartrate, Phenobarbital, Quinine Sulfate, Saccharin, Sodium Bicarbonate, Sulfathiasole, Wheat Germ Oil, and Brewer's Yeast Tablets.
First use May 19, 1964.

SN 197,499. Laray Cosmetics, Inc., Elizabeth, N.J. Filed July 9, 1964.

LARAY

Owner of Reg. Nos. 736,530 and 767,530.
For Vitamins, Sodium Bicarbonate, Aspirin, Salves, Ointments, Medicated Creams and Lotions, Boric Acid, Petroleum Jelly, and Saccharin Tablets.
First use 1932.

SN 199,126. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Aug. 3, 1964.

ALAVON

For Analgesic Preparation.
First use July 3, 1964.

SN 208,930. Bristol-Myers Company, New York, N.Y. Filed Oct. 14, 1964.

BRISTABID

Owner of Reg. No. 688,621.
For Antibiotics and Preparations Containing Antibiotics.
First use Aug. 11, 1964.

SN 204,937. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Oct. 27, 1964.

JELATONE

For Antacid Product.
First use Oct. 16, 1964.

SN 205,984. Etablissements Roques, Saint-Ouen (Seine), France. Filed Nov. 10, 1964.

ROCMALINE

Owner of French Reg. No. 486,874, dated Mar. 17, 1960 (Paris); Natl. Inst. No. 141,187.
For Pharmaceutical Preparation for the Treatment of Liver Ailments.

SN 206,948. Laboratoires Om Societe Anonyme, Geneva, Switzerland. Filed Nov. 25, 1964.

DICYNENE

Priority claimed under Sec. 44(d) on Swiss Reg. No. 204,841, dated June 19, 1964.
Owner of U.S. Reg. No. 717,118.
For Pharmaceutical and Veterinary Products.

SN 207,416. Nopco Chemical Company, Newark, N.J. Filed Dec. 3, 1964.

MICRO-E

Owner of Reg. No. 742,240 and 775,254.
For Vitamin E Preparation for Use in Fortifying Animal and Poultry Feeds.
First use Mar. 26, 1964.

SN 207,561. Brunswick Corporation, Chicago, Ill. Filed Dec. 7, 1964.

DEXICOLA

For Orally Administered Diagnostic Fluid To Be Used in the Diagnosis of Diabetes.
First use Oct. 5, 1964.

SN 207,858. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Dec. 10, 1964.

SORBITRATE

For Composition for Vasodilator Use.
First use Nov. 2, 1964.

SN 209,544. G. D. Searle & Co., Skokie, Ill. Filed Jan. 7, 1965.

DEPEPSEN

For Pharmaceutical Preparations for the Treatment of Gastro-Intestinal Conditions.
First use Dec. 17, 1964.

SN 210,895. Nordea Laboratories, Inc., Lincoln, Nebr. Filed Jan. 28, 1965.

NEO-DARBAZINE

Owner of Reg. No. 732,103.
For Anticholinergic and Tranquilizer-Antiemetic Preparation for Treatment of Gastrointestinal Disorders, Used in Veterinary Medicine.
First use Oct. 1, 1964.

SN 211,018. Affiliated Laboratories Corporation, White Hall, Ill. Filed Feb. 1, 1965.

A·B·D·H

Owner of Reg. No. 738,302.
For Canine Distemper Heptatitis Vaccine.
First use Aug. 17, 1961.

SN 211,015. American Home Products Corporation, New York, N.Y. Filed Feb. 1, 1965.

ENVALATE

For Enzyme Vitamin Preparation.
First use Oct. 7, 1964.

SN 211,394. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Feb. 4, 1965.

LOCALYN

For Steroid Hormone Preparation for Topical Use.
First use Dec. 8, 1964.

SN 211,429. E. Fougera & Co., Inc., Hicksville, N.Y. Filed Feb. 5, 1965.

NATI-KAY

For Potassium Gluconate Preparation for Treatment of Potassium Deficiency.
First use Jan. 22, 1965.

SN 211,466. Purepac Corporation, Elizabeth, N.J. Filed Feb. 5, 1965.

NAILICURE

For Liquid Medicine To Be Applied to Teen-Agers' and Adults' Fingers To Inhibit Thumb Sucking and Nail Biting.
First use Jan. 7, 1965.

Class 19—Vehicles

SN 153,591. Repco Limited, Melbourne, Victoria, Australia. Filed Sept. 20, 1962.

Repco

Owner of Australian Reg. Nos. 107,927, 107,930, and 107,932, dated Oct. 25, 1951; and U.S. Reg. Nos. 725,858 and 729,729.
For (based on use in commerce): Automotive Spare Parts—Namely, Brake Parts and Assemblies; and (based on Australian registration) Automotive Spare Parts—Namely, Parts of Automotive Chassis Composed of Rubber—Namely, Buffers, Bushings, and Grommets.
First use 1924; in commerce July 1958.

SN 133,593. Repco Limited, Melbourne, Victoria, Australia. Filed Sept. 20, 1962.

REPCO

Owner of Australian Reg. Nos. 107,919, 107,922, and 107,924, dated Oct. 25, 1951; and U.S. Reg. Nos. 719,921 and 729,728.

For (based on use in commerce): Automotive Spare Parts—Namely, Brake Parts and Assemblies; and (based on Australian registration) Automotive Spare Parts—Namely, Parts of Automotive Chassis Composed of Rubber—Namely, Buffers, Bushings, and Grommets.

First use 1924; in commerce July 1958.

SN 202,119. William Wallace Corporation, d.b.a. Norwesco Division of William Wallace Co., Belmont, Calif. Filed Sept. 17, 1964.

NORWESCO

For Wheelbarrows.
First use Feb. 13, 1930.

SN 206,243. Doughboy Industries, Inc., New Richmond, Wis. Filed Nov. 16, 1964.

Doughboy **VISTA**

For Automobile Floor Mats.
First use July 15, 1963.

SN 206,280. George C. Mynchenberg, d.b.a. Royal Sailboats Company, Columbus, Ohio. Filed Nov. 16, 1964.

BUCKEYE

For Sailboats and Parts Thereof.
First use Oct. 25, 1964.

SN 207,282. The Edson Corporation, New Bedford, Mass. Filed Dec. 2, 1964.

DESTROYER

For Steering Wheels for Power Boats and Sail Boats.
First use Nov. 4, 1964.

SN 207,395. Isuzu Motors Limited, Shinagawa-ku, Tokyo, Japan. Filed Dec. 3, 1964.

Bellel

For Automobiles and Station Wagons.
First use 1962; in commerce May 1963.

SN 207,396. Isuzu Motors Limited, Shinagawa-ku, Tokyo, Japan. Filed Dec. 3, 1964.

ISUZU Bellel

The term "Isuzu" means "50 bells" and is the name of a legendary sacred river in Japan. The term "Bellel" is derived from a translation of the name of the company, Isuzu. The "el" part of the name is derived from the Roman numeral "L," meaning "50."

For Automobiles and Station Wagons.
First use 1962; in commerce May 1963.

SN 207,397. Isuzu Motors Limited, Shinagawa-ku, Tokyo, Japan. Filed Dec. 3, 1964.

ISUZU ELFIN

The term "Isuzu" means "50 bells" and is the name of a legendary sacred river in Japan.

For Vehicles—Namely, Trucks and Vans.
First use 1960; in commerce October 1962.

SN 207,398. Isuzu Motors Limited, Shinagawa-ku, Tokyo, Japan. Filed Dec. 3, 1964.

ISUZU

The term "Isuzu" means "50 bells" and is the name of a legendary sacred river in Japan.

For Vehicles—Namely, Automobiles, Trucks, and Buses.
First use 1937; in commerce April 1959.

SN 207,399. Isuzu Motors Limited, Shinagawa-ku, Tokyo, Japan. Filed Dec. 3, 1964.

ELFIN

For Vehicles—Namely, Trucks and Vans.
First use 1960; in commerce October 1962.

SN 207,400. Isuzu Motors Limited, Shinagawa-ku, Tokyo, Japan. Filed Dec. 3, 1964.

ELF

For Vehicles—Namely, Trucks and Buses.
First use April 1960; in commerce April 1960.

SN 207,401. Isuzu Motors Limited, Shinagawa-ku, Tokyo, Japan. Filed Dec. 3, 1964.

ISUZU ELF

For Vehicles—Namely, Trucks and Buses.
First use April 1960; in commerce April 1960.

SN 207,566. Chain Bike Corporation, Rockaway Beach, N.Y. Filed Dec. 7, 1964.

POLOBIKE

For Bicycles and Parts Thereof.
First use Sept. 11, 1963.

SN 207,690. Outdoor Recreation, Inc., Butte, Mont. Filed Dec. 4, 1964.

OUTDOORSMAN

For Camper Coaches, a Mobile Home on Wheels.
First use July 25, 1964.

SN 207,887. Allie B. Holmes, d.b.a. Kwik Chek Cap Company, Corpus Christi, Tex. Filed Dec. 10, 1964.

OPTI-CAP

For Automobile Radiator Caps.
First use Nov. 14, 1964.

SN 208,741. Paul E. Hawkinson Company, Minneapolis, Minn. Filed Dec. 23, 1964.

TEETER TOTER

For Dolly for Transporting Cylindrical Objects.
First use Nov. 4, 1964.

SN 208,922. Hafer's Incorporated, d.b.a. Hafer-Ibex Corporation, Salt Lake City, Utah. Filed Dec. 28, 1964.

IBEX

For Automotive Trucks.
First use on or about Apr. 14, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 178,573. The Garrett Corporation, Los Angeles, Calif., assignee of TKM Electric Corp., Rochester, N.Y. Filed Oct. 8, 1963.

TKM

For Electric Generators.
First use Apr. 30, 1952.

SN 199,202. Indiana General Corporation, Valparaiso, Ind. Filed Aug. 4, 1964.

VERS-A-LIFT

For Permanent and Electro-Magnetic Magnets—Namely, Lifting Magnets and Holding Magnets.
First use July 10, 1963.

SN 202,769. Consumers Cooperative Association, Kansas City, Mo. Filed Sept. 28, 1964.

BLUE CIRCLE

For Batteries for Motor Vehicles.
First use Aug. 13, 1964.

SN 202,770. Consumers Cooperative Association, Kansas City, Mo. Filed Sept. 28, 1964.

DOUBLE CIRCLE

For Batteries for Motor Vehicles.
First use Aug. 13, 1964.

SN 204,040. Auto & Marine Gard, Inc., Andover, Mass. Filed Oct. 15, 1964.

GARD-TRON

For Automobile and Motorboat Theft-Proof and Safety Ignition Switch System and Electrically Actuated Controls.
First use Sept. 13, 1963.

SN 204,262. JFD Electronics Corporation, Brooklyn, N.Y. Filed Oct. 19, 1964.

MODUTRIM

For Capacitors.
First use Jan. 27, 1964.

SN 206,831. Co-Operative Industries, Inc., Chester, N.J. Filed Nov. 24, 1964.

duraflex

Owner of Reg. No. 516,504.
For Flexible Waveguides Used for the Transmission of Ultra High Frequency Energy.
First use Sept. 19, 1950.

Class 22—Games, Toys, and Sporting Goods

SN 176,014. The Oak Rubber Company, Ravenna, Ohio. Filed Aug. 29, 1963.

PUNCH-O-BALL

For Inflatable Ball.
First use Oct. 15, 1957.

SN 189,224. Twinco Products Company, Inc., San Fernando, Calif. Filed Mar. 20, 1964.

"WipeAway"

For Vinyl Coloring Cloth and Sports Score Cards.
First use Oct. 24, 1963.

SN 190,326. Ben Sayers Limited, North Berwick, Scotland. Filed Apr. 6, 1964.

BenSayers

"Ben Sayers" is the name of the original founder of applicant's business, now deceased. Priority claimed under Sec. 44(d) on British Reg. No. 860,808, dated Feb. 26, 1964. Owner of U.S. Reg. No. 760,290.

For Golf Clubs, Golf Tees, and Golf Balls.

SN 196,028. Nash Manufacturing Inc., d.b.a. Nash Manufacturing Co., Fort Worth, Tex. Filed May 8, 1964.

SIDEWALK SURFBOARD

No claim is made to the word "Sidewalk" other than as used in a composite form as is sought to be registered.

For Skateboards, or Scooters, i.e., Small Boards With Wheels on One Side so That It May Be Used as a Dolly or as a Scooter.

First use Mar. 7, 1964.

Subj. to Intf. with SN 193,909.

SN 194,571. Boise Cascade Corporation, Boise, Idaho. Filed June 1, 1964.

ALPINEER

For Tents.

First use Apr. 21, 1964.

SN 197,928. Wilson Sporting Goods Co., River Grove, Ill. Filed July 15, 1964.

PRO

For Golf Clubs.

First use Aug. 11, 1959.

SN 200,452. Rae Levine, New York, N.Y. Filed Aug. 24, 1964.

GOLF-4-CASH

For Equipment Comprising Cards for Playing a Promotional-Type Game of Chance.

First use July 27, 1964.

SN 200,982. J. W. Spear & Sons Limited, Enfield, Middlesex, England. Filed Aug. 31, 1964.

KNITTING NANCY

No claim of exclusive right is made to "Knitting" for the goods recited.

For Toy Knitting Appliances.

First use 1928; in commerce 1948.

SN 201,113. Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. Filed Sept. 2, 1964.

EE

Owner of Reg. Nos. 307,280 and 712,526.

For Toys and Games—Namely, Target Games, Coloring Sets Using Colored Pencils, Water Colors and Crayons, Magnetic Games, Cut-Out Dolls, and Construction Games.

First use Mar. 2, 1964, on target games.

SN 203,662. King Korn Stamp Company, Chicago, Ill. Filed Oct. 9, 1964.

LUCKY MAP

For Printed Contest Cards for Promotional Use by Others To Encourage, Facilitate, and Stimulate the Sale of Their Goods.

First use Oct. 5, 1964.

SN 204,269. Mattel, Inc., Hawthorne, Calif. Filed Oct. 19, 1964.

SKOOTER

For Doll.

First use Sept. 21, 1964.

SN 204,843. Romper Room, Inc., Baltimore, Md. Filed Oct. 26, 1964.



For Line of Educational Toys and Boxed Games for Children.

First use 1956.

Subj. to Intf. with SN 197,505.

SN 207,021. De Luxe Reading Corporation, Elisabeth, N.J. Filed Nov. 27, 1964.

HOP, SKIP 'N JUMP

For Doll Outfits.

First use Oct. 21, 1964.

SN 207,022. De Luxe Reading Corporation, Elisabeth, N.J. Filed Nov. 27, 1964.

SPLASH 'N DRY

For Doll Outfits.

First use Oct. 21, 1964.

SN 207,096. Wilson Sporting Goods Co., River Grove, Ill. Filed Nov. 27, 1964.

PATHFINDER

Owner of Reg. No. 197,820.

For Golf Balls.

First use Sept. 10, 1924.

SN 207,366. Columbia Industries, Inc., San Antonio, Tex. Filed Dec. 3, 1964.

BLACK KNIGHT

For Bowling Balls.

First use Nov. 20, 1964.

SN 207,403. Lowville-American, Inc., Lowville, N.Y. Filed Dec. 3, 1964.

War Club

For Baseball Bats.

First use Sept. 16, 1964.

SN 207,493. Hecht Home Services, Inc., Brentwood, Md. Filed Dec. 4, 1964.

PLAY TIMER

For Pool Tables.

First use July 24, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 158,579. Karl Steinhof, d.b.a. Karl Steinhof, Berlin, Germany. Filed Dec. 5, 1962.

Knittax

Priority claimed under Sec. 44(d) on German application filed Nov. 10, 1962; Reg. No. 787,788, dated Apr. 28, 1964. Owner of U.S. Reg. Nos. 595,891 and 638,001.

For Hand-Operated Knitting Machines and Accessory Parts.

SN 192,643. Vaco Products Company, Chicago, Ill. Filed May 4, 1964.

DIAL-A-DRIVER

For Display Assembly Containing a Variety of Hand Tools—Namely, Screw Drivers, Nut Drivers, Tapping Tools, Pliers, Wrenches, Crimping Tools, and Chisels.

First use Mar. 30, 1964.

SN 192,662. B & W Incorporated, Torrance, Calif. Filed May 5, 1964.

DUAL-VANE TURBO-GEN

The designation "Dual-Vane" is disclaimed apart from the mark as shown.

For Centralizing Devices for Oil Wells.

First use Sept. 13, 1962.

SN 198,023. Bucyrus Blades, Inc., Bucyrus, Ohio. Filed July 17, 1964.

DoubleDuty

For Cutting Blades for Road and Other Construction Machines.

First use on or about June 19, 1964.

SN 209,969. Treadwell Corporation, New York, N.Y. Filed Jan. 14, 1965.

TREADWELL

Owner of Reg. Nos. 574,808 and 574,809.

For Steel Mill Equipment—Namely, Rolling Mills, Cooling Beds, Hot Beds, Rubbing Beds, Furnace Pushers and Ejectors, Coilers, Transfer Tables, Tilting Tables, Hot Metal Cars, Mixer Type, Slag and Cinder Cars, Ingot Mold Cars, Ingot Buggies, Billet Cars, Transfer Cars, and Handling Equipment Including Conveyors; Castings; Equipment for the Non-Ferrous Industry—Namely, Casting Wheels, Ladles, Ladle Tilting Mechanisms, Anode Push-Up Mechanisms, Anode Wirebar, Ingot, Ingot Bar, Cake and Billet Removal Systems, Wirebar Turning and Dumping Mechanisms, Conveyors, Straight Line Casting Machines, Shape Inspection and Handling Systems, Stackers, Holding Furnaces, Reverbatory and Refining Furnaces, Converters, Mold Presses, Mold Dressing Equipment, and Mold Cooling Systems; and Oxygen Generators.

First use May 27, 1964; Feb. 1, 1921, as to the mark "Treadwell."

SN 209,972. Vaughn W. Winter, d.b.a. Winters' Transmission Rebuilders, York, Pa. Filed Jan. 14, 1965.

WORLD'S BEST

For Rebuilt Automotive Transmissions.

First use Nov. 1, 1964.

SN 209,975. Active Gear Company, Chicago, Ill. Filed Dec. 28, 1964.

AROUND THE WORLD

For Automotive Gears.

First use Jan. 3, 1965.

SN 209,980. Aluminum Housewares Company, Inc., St. Louis, Mo. Filed Jan. 15, 1965.

KNUCKLE-PRUFE

For Rolling Pins.

First use Dec. 28, 1964.

SN 210,374. The Solar Engineering & Equipment Company, Beaver, Pa. Filed Jan. 21, 1965.

SOLAR

For Silk Screen Decorating Machines and Parts Thereof.
First use 1934.

SN 211,074. Prince Jidosha Kogyo Kabushiki Kaisha, d.b.a. Prince Motors, Ltd., Suginami-ku, Tokyo-to, Japan. Filed Feb. 1, 1965.

PRINCE

For Looms, Textile Machinery, Spinning Machinery, Knitting Machinery, and Parts for These Goods.
First use Aug. 26, 1963; in commerce Apr. 1, 1964.

Class 26—Measuring and Scientific Appliances

SN 198,512. Vare Industries, Inc., Roselle, N.J. Filed May 14, 1964.

SEACUE

For Video Telemetry Equipment Consisting of TV Film Recorders, TV Cameras and Receivers, Including Components Thereof.
First use May 1, 1964.

SN 203,248. API Instruments Company, Chesterland, Ohio, assignee of Assembly Products Inc., Chesterland, Ohio. Filed Oct. 5, 1964.

TEMPRINT

For Electrical Temperature-Indicating Recorders—Namely, Those Which Print Out a Recording of Temperature.
First use Mar. 1, 1961.

SN 205,838. Robert G. Nichols, d.b.a. Art Reeves Motion Picture Equipment and Supply Company, Los Angeles, Calif. Filed Nov. 9, 1964.

SENSITESTER

For Machine for Producing Light Test Strips and Sensitometric Strips for Photographic Arts.
First use Feb. 24, 1941.

SN 207,571. Commodity Marketers Corp., Fresno, Calif. Filed Dec. 7, 1964.

DUN-RITE

For Pop-Up Cooking Thermometers.
First use Aug. 20, 1963.

SN 207,763. J. E. Watkins Co., Maywood, Ill. Filed Dec. 8, 1964.

LIQUITECTOR

For Switch Used for Detecting the Level of Liquid in a Vessel.
First use Sept. 21, 1964.

Class 31—Filters and Refrigerators

SN 206,797. Wix Corporation, Gastonia, N.C. Filed Nov. 23, 1964.

WIX

Owner of Reg. Nos. 381,758 and 578,479.
For Filter Cartridges and Filters.
First use Sept. 23, 1964; Aug. 1, 1989, in a different form.

SN 206,798. Wix Corporation, Gastonia, N.C. Filed Nov. 23, 1964.

WIX

Owner of Reg. Nos. 381,758 and 578,479.
For Filter Cartridges and Filters.
First use Sept. 24, 1964.

SN 206,847. Farr Company, El Segundo, Calif. Filed Nov. 24, 1964.

HP-2

For Industrial Air Filters.
First use Apr. 24, 1956.

SN 206,933. Farr Company, El Segundo, Calif. Filed Nov. 25, 1964.

HI-KLEEN

For Industrial Air Filters.
First use Mar. 5, 1958.

SN 206,934. Farr Company, El Segundo, Calif. Filed Nov. 25, 1964.

J-12

For Industrial Air Filters.
First use Oct. 17, 1962.

SN 206,936. Farr Company, El Segundo, Calif. Filed Nov. 25, 1964.

ROTOPAMIC

For Industrial Air Cleaner Apparatus.
First use Jan. 10, 1958.

SN 207,377. Farr Company, El Segundo, Calif. Filed Dec. 3, 1964.

PAMIC

For Industrial Air Filters.
First use Jan. 10, 1958.

Class 32—Furniture and Upholstery

SN 194,883. Heywood Wakefield Company, Gardner, Mass. Filed June 4, 1964.

CLIFF HOUSE

For Furniture—Namely, Headboards, Tables, Cabinets, Dressers, Chests, Chairs, Sofas, Hutches, and Mirrors.
First use in or about October 1963.

SN 202,967. Terra, Los Angeles, Calif. Filed Sept. 29, 1964.

TERRA

For Outdoor and Indoor Furniture—Namely, Tables, Chairs, Benches, Stools, Bar Stools, Multiple Seating Units, Chaises, Desks, and Chests.
First use Sept. 1, 1964.

SN 204,907. International Manufacturing Company, Roxbury, Mass. Filed Oct. 27, 1964.

DUBBLE-GATE-R

For Infants' Portable High Chair for Attachment to an Adult Chair or to an Automobile Seat.
First use Aug. 12, 1964.

SN 205,362. The Seng Company, Chicago, Ill. Filed Nov. 2, 1964.



For Metal Parts Fixtures and Attachments Particularly Suitable for Use in Furniture Constructions—Namely, Folding Bed Structures for Convertible Furniture; Hinge, Track and Roller, and Link Mechanisms, and Combinations Thereof for Converting Sitting Pieces Into Sleeping Units; Bed Frames and Bed Frame Accessories; Rocking, Tilting and Swivel Fixtures for Home and Office Chairs and Stools; Fixtures for Desks and Cabinets To Move From a Storage to a Working Position, Typewriters, Home Appliances, and Other Apparatus; Metal Slides for Tables; Folding and Telescoping Legs for Tables and Other Folding Furniture; Casters for Furniture and Home Appliances.
First use Feb. 25, 1963.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 189,330. Lear Siegler, Inc., Santa Monica, Calif. Filed Mar. 23, 1964.

DEL MAR

For Wall Furnace.
First use July 1961.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 206,550. International Basic Economy Corporation, New York, N.Y. Filed Nov. 19, 1964.

CREBUCK

For Valve Packing.
First use Oct. 16, 1962.

SN 206,833. Co-Operative Industries, Inc., Chester, N.J. Filed Nov. 24, 1964.

duraflex

Owner of Reg. No. 516,504.
For Corrugated Wall Plastic Tubing With and Without a Braided Sheath, for Conveying Gases, Liquids or Solids.
First use Feb. 26, 1963.

Class 36—Musical Instruments and Supplies

SN 202,009. Buegeleisen & Jacobson, Inc., New York, N.Y. Filed Sept. 16, 1964.

KENT

Owner of Reg. Nos. 702,010 and 723,716.
For Musical Instruments and Parts Thereof—Namely, Guitars; Ukeleles; Pick-Up Units in the Nature of Electronic Devices Which Pick Up Vibrations or Sounds of Musical Strings for Guitars, Mandolins and Other String Instruments; Microphones Designed for Picking Up Sounds of Voice and Music; Amplifiers in the Nature of Electronic Equipment Which Amplify the Sounds or Vibrations Picked Up by Microphones or Pick-Up Units; and Electrical Cords Used To Lead From Microphones or Pick-Up Units to Said Amplifiers.
First use Sept. 1, 1959.

Class 37—Paper and Stationery

SN 201,625. W. A. Sheaffer Pen Company, Fort Madison, Iowa. Filed Sept. 10, 1964.

SMOOTHIE

Owner of Reg. No. 565,873.
For Markers and Ink Cartridges, and Replacement Tips Therefor and Parts Thereof.
First use on or about July 20, 1949.

SN 203,395. International Paper Company, New York, N.Y. Filed Oct. 6, 1964.

INTERNATIONAL WOVE

The word "Wove" is hereby disclaimed apart from the mark as a whole.
For Printing and Writing Papers.
First use Apr. 24, 1964.

SN 204,286. Bruce Carton Company, Memphis, Tenn. Filed Oct. 19, 1964.

Rotowire

Owner of Reg. No. 689,282.
For Wrapping Papers, Including Specialty Wrapping Papers.
First use Feb. 10, 1964.

SN 204,815. Natser Corporation, d.b.a. Acco Products, Ogdensburg, N.Y. Filed Oct. 26, 1964.

ACCOFLEX

Owner of Reg. No. 629,112 and others.
For Index Tabs and Suspension Folders for Files.
First use Sept. 30, 1964.

Class 38 — Prints and Publications

SN 158,892. Transparent Products Company, Inc., New York, N.Y. Filed Dec. 10, 1962.



For Advertising Posters, Printed Adhesive Materials, Specifically Labels and Stickers, Printed Name Plates Including Both Smooth-Surfaced and Embossed.
First use September 1935.

SN 173,711. Societe d'Editions Modernes Parisienne, Societe Anonyme, Paris, France. Filed July 24, 1963.

LA COIFFURE DE PARIS

The mark is translated as "the hair style of Paris."
Owner of French Reg. No. 487,798, dated Apr. 28, 1960 (Seine); Natl. Inst. No. 143,587.
For Magazine.

SN 174,715. Sportsman's Handbook, Inc., Cambridge, Mass. Filed Aug. 8, 1963.



For Periodic Publication—Namely, a Handbook Containing Various Information Pertinent to Sporting and Play Areas of the World.
First use on or about Aug. 22, 1958.

SN 176,117. Jack E. Schenker, Chicago, Ill. Filed Aug. 30, 1963.

AIR-BORNE

For Magazine.
First use Aug. 23, 1963.

SN 181,192. H. A. Trautman & Co., Inc., Syosset, N.Y. Filed Nov. 14, 1963.



For Printed Pamphlets.
First use Nov. 2, 1962.

SN 190,967. Popular Library Inc., New York, N.Y. Filed Apr. 13, 1964.

A WESTERN HERITAGE LIBRARY BOOK

Without waiving its common law rights herein, no claim is made by applicant to the words "A," "Library," and "Book" apart from the mark as shown.
For Books.
First use Dec. 17, 1963.

SN 191,537. Farm Business Council, Inc., Urbana, Ill. Filed Apr. 20, 1964.



The words "A Full Bank Service" are disclaimed apart from the mark as shown.
For Farm Publications Prepared for Distribution by Others.
First use Nov. 19, 1963.

SN 194,517. The Religious Publishing Company, Jenkintown, Pa. Filed May 28, 1964.



The words "The Magazine of Religious Arts and Crafts Today" are disclaimed apart from the mark shown.
For Magazine.
First use Apr. 1, 1964.

SN 195,107. International Play Group Inc., New York, N.Y. Filed June 8, 1964.

THE SCRIBBLER

For Newsletter.
First use Jan. 7, 1964.

SN 201,661. The Christian Science Publishing Society, Boston, Mass. Filed Sept. 11, 1964.

Ο ΚΗΡΥΞ ΤΗΣ ΧΡΙΣΤΙΑΝΙΚΗΣ ΕΠΙΣΤΗΜΗΣ

THE CHRISTIAN SCIENCE PUBLISHING SOCIETY

Translation of the mark is "The Herald of Christian Science." Owner of Reg. Nos. 415,009, 679,634, and 687,264.
For Magazine Published Every Three Months in English and Greek.
First use July 1, 1964.

SN 201,662. The Christian Science Publishing Society, Boston, Mass. Filed Sept. 11, 1964.

L'Araldo della Scienza Cristiana

THE CHRISTIAN SCIENCE PUBLISHING SOCIETY

The translation of the mark is "The Herald of Christian Science." Owner of Reg. Nos. 415,009, 679,634, and 687,264.
For Magazine Published Every Three Months in English and Italian.
First use July 1, 1963.

SN 202,216. Douglass Rideout Annand, Woodland Hills, Calif. Filed Sept. 21, 1964.

THE WHEELCHAIR TRAVELER

For Directory Which Is a Compilation of Information on Travel for Those Persons Confined to a Wheelchair.
First use July 2, 1964.

SN 203,168. Farmers Market Service, Inc., Indianola, Iowa. Filed Oct. 2, 1964.



The drawing is lined for the color red. Applicant disclaims the use of the words "Farm Market News Letter" as a part of the mark.
For Newsletter.
First use Oct. 21, 1963.

SN 203,169. Golden Press, Inc., Poughkeepsie, N.Y. Filed Oct. 2, 1964.



No claim is made to the word "Book" apart from the mark as shown.
For Children's Books.
First use Feb. 15, 1964.

SN 203,513. Merit Productions Inc., New York, N.Y. Filed Oct. 7, 1964.



For Motion Picture Film Scenes.
First use Mar. 18, 1963.

SN 204,059. Educational Heritage Inc., Yonkers, N.Y. Filed Oct. 15, 1964.

THE NEGRO HERITAGE LIBRARY

The words "The" and "Library" are disclaimed apart from the mark as shown.
For Series of Books Published From Time to Time.
First use February 1963.

SN 204,356. Conal Pharmaceuticals, Inc., Chicago, Ill. Filed Oct. 20, 1964.

UROLOGY WORLD

For Magazine Published From Time to Time.
First use Apr. 15, 1964.

SN 204,839. George Fox, d.b.a. Reynard Press, Chicago, Ill. Filed Oct. 26, 1964.

TIGER

For Magazine.
First use 1956.

SN 204,960. Stuart S. Brown Associates, Englewood, N.J. Filed Oct. 28, 1964.

The RangeFinder

For Investment Advisory Reports Issued Monthly.
First use Aug. 10, 1964.

SN 208,400. Kennedy Sinclaire, Inc., Montclair, N.J. Filed Dec. 17, 1964.

THE ESTATE ANALYST

For Booklets Prepared Periodically for Distribution by Others.
First use October 1963.

Class 39 — Clothing

SN 160,942. Hickok Manufacturing Co., Inc., Rochester, N.Y. Filed Jan. 18, 1963.



Owner of Reg. No. 713,425.
For Men's Apparel Belts.
First use July 10, 1962.

SN 160,943. Hickok Manufacturing Co., Inc., Rochester, N.Y. Filed Jan. 18, 1963.



Owner of Reg. No. 687,995.
For Men's Apparel Belts.
First use July 10, 1962.

SN 175,095. Barbara J. Barnet, Laramie, Wyo. Filed Aug. 15, 1963.

SUNSHINE PARKAS by BARBARA

"Parkas" is disclaimed apart from the mark as shown.
For Ski Parkas and Jackets.
First use on or about Sept. 10, 1953.

SN 181,711. United States Rubber Company, New York, N.Y. Filed Nov. 21, 1963.

TRIUMPH

For Canvas and Rubber Shoes.
First use 1937 or earlier.

SN 181,740. Andrew Arkin, Inc., New York, N.Y. Filed Nov. 22, 1963.

Mademoiselle Arlette

"Mademoiselle Arlette" is a fanciful name.
For Dresses.
First use July 15, 1963.

SN 188,755. Hanes Corporation, Winston-Salem, N.C., by assignment, merger and change of name from Hanes Hosiery, Incorporated, New York, N.Y. Filed Mar. 16, 1964.

Fair Lady

For Hosiery.
First use Feb. 26, 1964.

SN 192,840. Mutual Buying Syndicate Incorporated, New York, N.Y. Filed May 6, 1964.

JESTER PANTS

The word "Pants" is disclaimed apart from the mark shown.
For Girls' Cotton Knit Panties.
First use Apr. 13, 1964.

SN 192,841. Mutual Buying Syndicate Incorporated, New York, N.Y. Filed May 6, 1964.

20 WEST

For Women's Coats, Suits, and Dresses.
First use Apr. 8, 1964.

SN 192,861. White Consolidated Industries, Inc., Lakewood, Ohio., by change of name from White Sewing Machine Corporation, Lakewood, Ohio. Filed May 6, 1964.



Owner of Reg. No. 784,477.
For Industrial or Safety Hats, Caps and Helmets.
First use on or about Oct. 1, 1961.

SN 198,531. Brown Shoe Company, Inc., St. Louis, Mo. Filed July 27, 1964.

HIDDEN FIT

The word "Fit" is disclaimed apart from the mark as shown.
For Shoes.
First use July 1, 1964.

SN 198,664. David L. Pransky & Sons, Philadelphia, Pa. Filed July 28, 1964.

PRO-FASHION

Owner of Reg. No. 770,878.
For Gloves, Shirts, Jackets, Bermuda Shorts, Slacks, Hosiery and Shoes.
First use June 11, 1963.

SN 200,286. Rossini Footwear, Inc., New York, N.Y. Filed Aug. 20, 1964.

La Mandola

For Ballet Slippers and Toe Shoes.
First use August 1963.

SN 201,434. Hoffman and Jacobs, Los Angeles, Calif. Filed Sept. 8, 1964.

Bouffant

For Fur Pieces—Namely, Coats, Stoles, Neck Pieces, and Jackets.
First use June 26, 1964.

SN 202,267. Tyer Rubber Corporation, Andover, Mass., assignee of Hodgman Rubber Company, Framingham, Mass. Filed Sept. 21, 1964.

PLAST-A-PLY

For Stockingfoot Waders, Shirts, Pants, Parkas, Jackets and Raincoats.
First use 1950.

SN 202,745. Blue Bell, Inc., Greensboro, N.C. Filed Sept. 28, 1964.

MR. WRANGLER

Owner of Reg. Nos. 517,844 and 778,794.
For Men's Shirts, Jeans, Shorts, Slacks, and Jackets.
First use Sept. 24, 1964.

SN 202,747. Blue Bell, Inc., Greensboro, N.C. Filed Sept. 28, 1964.

WRANGLOCK

Owner of Reg. Nos. 517,844 and 778,794.
For Fabric Made Up Into Finished Apparel—Namely, Trousers for Men and Boys.
First use Sept. 24, 1964.

SN 202,748. Blue Bell, Inc., Greensboro, N.C. Filed Sept. 28, 1964.

MR. WRANGLER JR.

No claim is made to the word "Jr." apart from the mark as shown. Owner of Reg. Nos. 517,844 and 778,794.
For Boys' Slacks, Shorts and Matched Sets.
First use Sept. 24, 1964.

SN 203,210. Southern Handkerchief Mfg. Co., Greenville, S.C. Filed Oct. 2, 1964.

Colorpuf

For Pocket Handkerchiefs Used Primarily in the Upper Pocket of a Suit or Jacket.
First use Dec. 2, 1963.

SN 203,963. Glencourt Shirt Co., Inc., Macon, Ga. Filed Oct. 14, 1964.

GLENCOURT

For Men's Shirts.
First use February 1956.

SN 204,402. Plymouth Wholesale Corporation, New York, N.Y. Filed Oct. 20, 1964.

LADY LINDA

Owner of Reg. No. 728,883.
For Girdles, Panties, Panty Girdles and Brassieres.
First use Aug. 20, 1964.

SN 204,912. J. Graham Michael, d.b.a. Brown Wholesale Co., Philadelphia, Pa. Filed Oct. 27, 1964.

ORDER OF THE GARTER

Applicant disclaims the word "Garter" apart from the mark as shown.
For Garters.
First use Oct. 12, 1964.

SN 205,703. Lee County Mfg., Inc., Huntington, N.Y. Filed Nov. 6, 1964.

LC

For Ladies' Panties, Slips, Pajamas, Gowns, Dormitory Pants, and Controlled (Stretch) Underwear, and Children's Panties and Pajamas.
First use Sept. 1, 1964.

SN 208,087. Leathermode Sportswear, Inc., Bridgeport, Conn. Filed Dec. 14, 1964.

LEATHERMODE

Owner of Reg. No. 678,151.
For Men's, Women's, and Children's Jackets, Coats, Suits, Vests, and Hats, Made Entirely of Leather or Partly of Leather and Partly of Fabric.
First use on or about June 30, 1948.

SN 208,088. Leathermode Sportswear, Inc., Bridgeport, Conn. Filed Dec. 14, 1964.

Leathermode

Owner of Reg. No. 678,151.
For Men's, Women's, and Children's Jackets, Coats, Suits, Vests, and Hats, Made Entirely of Leather or Partly of Leather and Partly of Fabric.
First use May 1960.

SN 209,479. Bogart Sportswear Mfg. Co., Inc., Fort Worth, Tex. Filed Jan. 7, 1965.

EVER SHAPE

For Children's, Junior Misses', Misses', and Ladies' Outerwear—Namely, Blouses, Skirts, Dresses, Shirts, Bath Robes, Stretch Pants and Slacks.
First use Aug. 1, 1962.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 183,736. The Buxbaum Company, Canton, Ohio. Filed Dec. 30, 1963.

JONNY INSIDE

Owner of Reg. No. 706,326.
For Floor Mats Comprising Carpeting Bonded to a Rubber Base.
First use Nov. 23, 1963.

SN 190,073. Fabric Research Laboratories, Inc., Dedham, Mass. Filed Apr. 1, 1964.

FYREL

For Industrial Fabrics Made of Fine Multi-Filament Metal Yarns for Use as Structural Elements of Aerospace Re-Entry Drag and Lift-Drag Vehicles.
First use Mar. 23, 1964.

SN 192,061. Deering Milliken, Inc., New York, N.Y. Filed Apr. 27, 1964.

DIMENSION THREE

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Substitutes Therefor.
First use Nov. 27, 1963.

SN 194,424. The Schwarzenbach Huber Co., Inc., New York, N.Y. Filed May 27, 1964.

STEHLI

Owner of Reg. No. 106,067.
For Silk Piece Goods, and Synthetic Piece Goods of Acetate, Rayon, Polyester and Polyamide Fibers as Well as Mixtures Thereof.
First use February 1889 on silk piece goods.

SN 196,528. Samuel Kaplan & Sons, Inc., New York, N.Y. Filed June 26, 1964.

FIBER-FLEX

For Cotton Fabric Laminated to Synthetic Cloth.
First use Mar. 1, 1964.

SN 196,876. Marcus Brothers Textile Corporation, New York, N.Y. Filed July 1, 1964.

MARBRO

Owner of Reg. No. 502,562.
For Cotton, Rayon, Silk, Wool, and Nylon Piece Goods, and Blended Combinations Thereof.
First use Jan. 2, 1913.

SN 197,851. Shulman Sunshine, Inc., Paterson, N.J. Filed July 14, 1964.

SHANTON

For Processed Rayon Yarn Made Into Fabrics.
First use Mar. 10, 1964.

SN 199,774. Union Carbide Corporation, New York, N.Y. Filed Aug. 12, 1964.

ZENDEL

Owner of Reg. No. 751,479.
For Plastic Netting.
First use on or about June 10, 1964.

SN 200,738. Klopman Mills, Inc., Rockleigh Borough, N.J. Filed Aug. 27, 1964.

PIMLICO

Owner of Reg. No. 390,132.
For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use July 8, 1964.

SN 201,589. Huyck Corporation, Rensselaer, N.Y. Filed Sept. 10, 1964.

DRI-FAB

Owner of Reg. No. 756,146.
For Fabric for Use in Papermaking Machinery.
First use Feb. 13, 1963.

SN 204,100. Rubber Fabrics Corporation, New York, N.Y. Filed Oct. 15, 1964.

BRAFILL

For Fabrics Used in Making Brassiere Cups.
First use Sept. 30, 1964.

SN 206,891. Wales Manufacturing Company, Boston, Mass. Filed Nov. 17, 1964.

PRECIPI-TWILL

For Fabric for Use in Making Raincoats, Topcoats, Jackets and the Like.
First use Nov. 9, 1964.

SN 209,750. Abaco Fabrics Corp., New York, N.Y. Filed Jan. 12, 1965.

RAMLON

For Fabrics Composed of Silk, Wool, Cotton, Synthetics or Any Combination Thereof.
First use Oct. 30, 1964.

SN 209,751. Alamac Knitting Mills, Inc., New York, N.Y. Filed Jan. 12, 1965.

THALKNIT

Owner of Reg. No. 765,189.
For Knitted Fabrics of Cotton, Wool and Synthetic Fibres and Mixtures Thereof.
First use December 1964.

SN 209,903. American Wiper and Waste Mills, d.b.a. Nuvon Company, Kansas City, Mo. Filed Jan. 14, 1965.

NUVON

For Non-Woven Fabric Made From Nylon, Rayon, Cotton and Plastic for Use as a Fabric Stiffener, Interlining, Interfacing, Artists' Paper, Artists' Wipers, Rice Paper Substitute and Filter Cloth.
First use 1954.

SN 210,319. Louis G. Klein, d.b.a. Arrow Mercantile Agencies, New York, N.Y. Filed Jan. 21, 1965.

ALPINELLA

For Cotton Flannel Piece Goods.
First use July 27, 1964.

Class 43—Thread and Yarn

SN 200,931. Harrap Bros. (Sirdar Wools) Limited, Wakefield, England. Filed Aug. 31, 1964.

GAIETY

Owner of British Reg. No. 790,979, dated May 15, 1959.
For Hand Knitting Yarns.

SN 209,475. The American Thread Company, New York, N.Y. Filed Jan. 7, 1965.

SPUNSPAN

For Thread and Yarn.
First use June 1964.

Class 44—Dental, Medical, and Surgical Appliances

SN 171,757. Ceramco Equipment Corp., Woodside, N.Y. Filed June 25, 1963.

BRITECOTE

For Gold Compound, Consisting of Gold, Palladium and Fluxes, for Producing Gold Plating Used in the Making of Dental Restorations, and Liquid Thinner Used in Connection Therewith.
First use Mar. 22, 1963.

SN 194,349. Baxter Laboratories, Inc., Morton Grove, Ill. Filed May 27, 1964.

CELL-PROOF

For Closure in a Tube Connecting Integrally Joined Multiple Blood Storage Units.
First use May 19, 1964.

SN 199,849. Parke, Davis & Company, Detroit, Mich. Filed Aug. 13, 1964.

SANABAN

Owner of Reg. Nos. 387,083 and 776,694.
For Kits Containing Personal Convenience Items—Namely, Sanitary Napkins, Tissues, Sanitary Belts, Disposable Wash Cloths, and Underpads.
First use on or before July 1, 1964.

SN 205,230. Anne Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Nov. 2, 1964.



Owner of Japanese Reg. No. 626,518, dated Oct. 14, 1963.
For Sanitary Napkins, Sanitary Belts, and Sanitary Panties.
First use Nov. 11, 1961; in commerce Sept. 24, 1964.

SN 205,231. Anne Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Nov. 2, 1964.

ANNAY

For Sanitary Napkins, Sanitary Belts, and Sanitary Panties.
First use June 1, 1963; in commerce Sept. 24, 1964.

SN 205,232. Anne Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Nov. 2, 1964.

PANNETTE

For Sanitary Napkins, Sanitary Belts, and Sanitary Panties.
First use June 1, 1963; in commerce Sept. 24, 1964.

SN 205,392. Chemi-Temp Corporation, Lodi, N.J. Filed Nov. 3, 1964.

MEDI HEAT

Owner of Reg. No. 743,851.
For Chemical Refrigerant Package for Use as a Heat Pack.
First use Sept. 15, 1964.

SN 206,072. Oxygen Therapy Institute, Englewood, N.J. Filed Nov. 12, 1964.

OTI OXYGEN THERAPY INSTITUTE

"Oxygen Therapy Institute" is disclaimed apart from the mark as shown.
For Oxygen Inhalators.
First use Mar. 3, 1961.

SN 208,638. Sorenson Research Corp., Salt Lake City, Utah. Filed Dec. 21, 1964.

INFUSORETTE

Owner of Reg. Nos. 769,232 and 778,565.
For Intravenous Catheters and Intravenous Catheter Placement Units for Administration of Anesthetics, Intravenous Feeding and Medicants.
First use Oct. 13, 1964.

SN 209,494. Classified Development Corporation, Los Angeles, Calif. Filed Jan. 7, 1965.

STARFILE

For Manicure Implements, Viz, Nail and Cuticle Dressing Implements.
First use on or about Dec. 18, 1964.

SN 209,495. Classified Development Corporation, Los Angeles, Calif. Filed Jan. 7, 1965.

STARMATE

For Manicure Nail Clippers and Trimmers.
First use on or about Dec. 18, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 201,932. Jack Finn, Inc., Boston, Mass. Filed Sept. 15, 1964.

MICKEY FINN

For Soft Drinks.
First use Sept. 14, 1964.

SN 206,300. Krasdale Foods, Inc., New York, N.Y. Filed Oct. 5, 1964.

KRASDALE

Owner of Reg. Nos. 395,811 and 695,787.
For Carbonated Soft Drinks.
First use Oct. 15, 1963.

Class 46—Foods and Ingredients of Foods

SN 104,257. Gourmet Bakers, Inc., Linden, N.J. Filed Sept. 12, 1960.

Gourmet

For Popped Popcorn, Corn Chips, and Cheese Twirls.
First use Oct. 30, 1956.

SN 119,435. Geo. A. Hormel & Company, Austin, Minn., assignee of Stark, Wetsel & Co. Inc., Indianapolis, Ind. Filed May 5, 1961.

LITTLE SIZZLERS

For Pork Sausage.
First use October 1948.
Subj. to Intf. with SN 180,454.

SN 135,021. Walter Lants Productions, Inc., Hollywood, Calif. Filed Jan. 2, 1962.



The drawing is lined for red; however, the mark is not limited as to color. Owner of Reg. No. 568,834.
For Animal Foods—Namely, Bird Food.
First use October 1961.

SN 147,765. Societe des Magasins Prisunic, Paris, France. Filed June 26, 1962.

FORZA

The Italian word "Forza" translated means "power." Owner of French Reg. No. 469,807, dated Jan. 24, 1958 (Paris); Natl. Inst. No. 101,776.
For Sugar, Coffee, Tea, Salad and Cooking Oil, Vinegar, Mustard, Alimentary Paste, Dry Vegetables, Biscuits, and Preserved Fruits.

SN 175,391. Coffee Rich Inc., Buffalo, N.Y. Filed Aug. 20, 1963.

COFFEE RICH

For Edible Oleaginous Emulsion for Use as Additive to Coffee Beverage To Enrich Its Flavor and Modify Its Color.
First use in about January 1961.

SN 185,065. National Dairy Products Corporation, Chicago, Ill. Filed Jan. 21, 1964.

CHEEZ WHIZ

The word "Chees" is disclaimed apart from the mark "Chees Whiz." Owner of Reg. Nos. 554,869 and 564,548.
For Processed Cheese Spread.
First use Oct. 24, 1952.

SN 186,727. Jumbo Pizzas, Inc., Baltimore, Md. Filed Feb. 14, 1964.

ANOTHER FINE GOTTLIEB'S FOOD PRODUCT

CHEF ALFREDO'S

The words "Chef Alfredo's" are fanciful. Applicant disclaims the words "Another Fine Gottliebs Food Product" apart from the mark shown.
For Ready-To-Eat and Semi-Prepared Food Products—Namely, Pizza Pies in the Nature of Combination Packages Containing Crust, Sauce and Cheese, Some With and Some Without Meat, for Making Pizzas.
First use Sept. 1, 1962.

SN 190,769. Violet Packing Company, Williamstown, N.J. Filed Apr. 9, 1964.

VIOLET

For Canned Meatless Pizza Sauce, Canned Tomato Sauce and Canned Vegetables.
First use 1882.

SN 192,479. Heinemann Candy Co., Milwaukee, Wis. Filed May 1, 1964.

CANDY WAGON

No claim of exclusive right is made to "Candy," said word being the name of the goods.
For Candy.
First use July 1962.

SN 193,121. Continental Baking Company, Rye, N.Y. Filed May 11, 1964.

ASTROBAR

For Cake.
First use Mar. 21, 1963.

SN 193,430. B. B. Foods Corporation, Akron, Ohio. Filed May 13, 1964.



For Frozen Onion Rings.
First use Apr. 15, 1964.

SN 194,178. Gulf Fisheries Co., Ltd., Kuwait, Kuwait. Filed May 25, 1964.



No claim of exclusive right is made to the wording "Fresh Frozen Shrimp" as the goods herein. The drawing is lined for blue but no claim is made to color.
For Frozen Shrimp.
First use Mar. 22, 1963; in commerce Mar. 22, 1963.

SN 194,674. Standard Brands Incorporated, d.b.a. Clinton Corn Processing Company, New York, N.Y. Filed June 1, 1964.

CLINBRU

Owner of Reg. Nos. 701,943, 749,880, and 761,680.
For Corn Syrup.
First use May 23, 1962.

SN 195,163. The Southland Corporation, d.b.a. Circle T Meat Co., Dallas, Tex. Filed June 8, 1964.

WAFF-L-LINKS

For Frozen Waffles Containing Sausages.
First use at least as early as July 1, 1963.

SN 195,164. The Southland Corporation, d.b.a. Circle T Meat Co., Dallas, Tex. Filed June 8, 1964.

WAFF-L-DOGS

For Frozen Waffles Containing Frankfurters.
First use at least as early as July 1, 1963.

SN 196,439. FMC Corporation, Philadelphia, Pa. Filed June 25, 1964.

AVICEL

For Foods—Namely, Cookies, Bread, Rolls, Cakes, Pies, Ice Cream, Pudding Powders, Peanut Butter, Cheese Dip, Spices, Salad Dressing, Candy, Powdered Milk; and Canned Fruit Juice Beverages.
First use June 18, 1964.

SN 196,698. National Biscuit Company, New York, N.Y. Filed June 29, 1964.

KRONE

"Krone" is a Danish word which in English means "crown." Owner of Reg. No. 83,889.
For Frosen Danish Pastry.
First use on or before Jan. 28, 1964.

SN 197,207. Tower of Pizza, Ramsey, N.J. Filed July 6, 1964.

ZEE BO

For Article of Food Consisting of Deep-Fried or Baked Dough in the Shape of a Clam Shell Enclosing a Filling of Cheese, Frosen.
First use March 1959.

SN 197,454. Alberto Soares Ribiero, Limitada, Lisbon, Portugal. Filed July 9, 1964.

GIZELA

Owner of Portuguese Reg. No. 36,400, dated July 28, 1928.
For Canned Fish, Meat, and Fruit.

SN 198,582. Edward M. Otani, d.b.a. Oriental Trading Company, Reedley, Calif. Filed July 27, 1964.

SJ

For Rice.
First use Jan. 10, 1964.

SN 198,735. H. J. Heinz Company, Pittsburgh, Pa. Filed July 29, 1964.



Owner of Reg. Nos. 221,041 and 611,835.
For Canned and Bottled Goods—Namely, Vegetables, Fruits, Fruit Juices, Sauces for Vegetables and Meats, Soups, Vegetables and Beef With Cereal, Vegetables and Bacon With Cereal, a Combination of Macaroni, Tomatoes, Beef and Bacon With Cereal, Chicken-Farina-Vegetable Porridge, Beef Stew, Chicken Stew, Beef Goulash, Chop Suey Containing Meat, Horseradish and Chicken-Noodle Dinner.
First use Apr. 1, 1952.

SN 199,214. Fred Meyer, Inc., Portland, Oreg. Filed Aug. 4, 1964.

SLENDOL

For Bread, Milk, Salad Dressing and Cottage Cheese.
First use at least as early as Jan. 1, 1933.
Subj. to Intf. with SN 202,789.

SN 200,347. Imperia Foods Inc., New York, N.Y. Filed Aug. 21, 1964.

EMPIRIA

For Grated Cheese.
First use July 30, 1964.

SN 201,831. Farmers' Chemical Company, Kalamazoo, Mich. Filed Sept. 14, 1964.

"PLANTATION BRAND"

The exclusive right to the use of the term "Brand," apart from the mark as claimed, is disclaimed.
For Oil of Peppermint for Use as a Food Ingredient.
First use Mar. 28, 1962.

SN 202,789. G. P. Gundlach & Co., Cincinnati, Ohio. Filed Sept. 28, 1964.



The drawing is lined for blue and green, but no claim is made to color, nor to the triangles themselves.
For Bread.
First use July 27, 1964.
Subj. to Intf. with SN 199,214.

SN 203,002. Good Humor Corporation, Englewood Cliffs, N.J. Filed Sept. 30, 1964.

X5-JETSTAR

For Frosen Confections on a Stick.
First use Sept. 14, 1964.

SN 206,258. Cade-Grayson Co., Los Angeles, Calif. Filed Oct. 5, 1964.

FRUITBERRY FARMS

The word "Fruitberry" is disclaimed apart from the mark as shown, without waiver of applicants' common law rights.
For Fruit Flavored Concentrates for Making Jams, Jellies, Dessert Toppings, and Pancake Syrups.
First use Sept. 25, 1964.

SN 206,953. The Merchants Company, Hattiesburg, Miss. Filed Nov. 10, 1964.

HICKORY GROVE

For Bacon and Weiners.
First use Dec. 5, 1962.

SN 206,348. Chalet Susanne Foods, Inc., Lake Wales, Fla. Filed Nov. 17, 1964.

CHALET

Owner of Reg. No. 661,440.
For Canned Soup.
First use Oct. 21, 1964; Nov. 4, 1956, on "Chalet Susanne."

SN 206,816. Carnation Company, Los Angeles, Calif. Filed Nov. 24, 1964.

VELVETIZED

For Evaporated Milk.
First use Sept. 8, 1964.

SN 207,808. Hygrade Food Products Corporation, Detroit, Mich. Filed Dec. 9, 1964.

BROADWAY

For Meat Products—Namely, Frankfurters.
First use on or about Sept. 26, 1964.

SN 207,830. Olney & Floyd, Inc., Westernville, N.Y. Filed Dec. 9, 1964.

CLOTH OF GOLD

For Canned Asparagus, Green and Wax Snap Beans, Beets, Cream Style Corn, Whole Kernel Corn, Baked Beans, Succotash, Pumpkin, Onions, Peas, and Whole White Potatoes.
First use 1885.

SN 208,120. Santa Barbara Coastal Lemon Co., Santa Barbara, Calif. Filed Dec. 14, 1964.

MIRAMAR

Owner of Reg. Nos. 641,508 and 727,562.
For Fresh Citrus Fruits; Fresh Avocados.
First use Apr. 10, 1956, on fresh citrus fruits.

SN 212,807. Glaser, Crandell Co., Chicago, Ill. Filed Feb. 18, 1965.

GOOFY GHERKIN

Applicant waives exclusive right to the word "Gherkin" apart from the mark as a whole.
For Pickles.
First use Jan. 28, 1965.

SN 212,621. James A. Yakligian, d.b.a. Sundance Fruit Company, Sanger, Calif. Filed Feb. 23, 1965.

SUNDANCE

For Fresh Tree Fruits, Specifically Peaches and Plums.
First use June 1959.

SN 212,939. American Belle Candy Company, Inc., Zion, Ill. Filed Mar. 1, 1965.



For Candy.
First use June 1962.

Class 47—Wines

SN 191,055. Export-Union Deutscher Weinguter Rhein-Mosel-Pfalz GmbH, Mains, Germany. Filed Apr. 13, 1964.

Wedding Veil
IM BRAUTSCHLEIER

The English translation of the German words "Im Brautschleier" is "in the wedding veil."
For Wine.
First use Dec. 27, 1957; in commerce Dec. 27, 1957.

SN 191,085. Showerings Limited, Shepton Mallet, Somerset, England. Filed Apr. 14, 1964.



Owner of British Reg. No. 801,443, dated Feb. 9, 1960.
For Cider and Perry.

SN 194,923. Société Civile Immobilière Ripeau-Jean Faure, d.b.a. Societe Civile Immobiliere Chateau Ripeau, Saint-Emilion (Gironde), France. Filed June 5, 1964.

Château Ripeau

For Wines.
First use June 1955; in commerce June 1955.

Class 49—Distilled Alcoholic Liquors

SN 185,922. N.V. Likeurstokerij Wijnand Fockink, d.b.a. N.V. Likeurstokerij Wynand Fockink, Amsterdam, Netherlands. Filed Feb. 3, 1964.

WF

WYNAND FOCKINK

The name "Wynand Fockink" does not identify a particular living individual. Owner of U.S. Reg. Nos. 309,082, 309,083, and 312,397.
For Liqueurs, Holland Distilled Genever Gin, Dry London Gin, Vodka and Kirschwasser.
First use Oct. 12, 1960; in commerce Sept. 29, 1961.

SN 202,796. The Alfred Hart Company, d.b.a. Old Cask Products, Los Angeles, Calif. Filed Sept. 28, 1964.

Kentucky Governor

Applicant asserts exclusive rights in the word "Kentucky" only in combination with the word "Governor" as shown.
For Whiskey.
First use 1940.

Class 50—Merchandise Not Otherwise Classified

SN 195,870. Lionel Perera Manfra & Brookes, Inc., New York, N.Y. Filed June 17, 1964.

TRIP-PACK

For Packages of Coins and Currency of Various Foreign Countries Which Are Sold to Individuals Such as Travelers and Organizations Such as Banks and Travel Agencies.
First use on or about Jan. 1, 1960.

SN 195,872. Lionel Perera Manfra & Brookes, Inc., New York, N.Y. Filed June 17, 1964.

TIP PACK

For Packages of Coins and Currency of Various Foreign Countries Which Are Sold to Individuals Such as Travelers and Organizations Such as Banks and Travel Agencies.
First use on or about Jan. 1, 1960.

SN 209,468. Vibra-Sign Company, Incorporated, Elgin, Ill. Filed Jan. 6, 1965.

VIBRA-SIGN

For Visual Sign Display Kit Which Includes a Support Panel, Characters of Indicia Adapted To Be Selectively Mounted on Said Panel and Reflecting Discs Loosely Mounted on Pegs Fixed on Said Panel To Permit Free Movement of Said Discs.
First use Mar. 25, 1964.

SN 212,037. Nesbit Industries, Inc., Chicago, Ill. Filed Feb. 15, 1965.

SILKY SATIN

The word "Satin" is disclaimed apart from the mark as shown.
For Christmas Ornaments and Decorations.
First use March 1963.

SN 212,053. Rock of Ages Corporation, Barre, Vt. Filed Feb. 15, 1965.

UNICRAFT

For Mausoleums in Granite.
First use Jan. 15, 1965.

SN 213,235. The Neighbor-Link, Inc., Indianapolis, Ind. Filed Mar. 8, 1965.

THE NEIGHBOR-LINK

For Welcome Packets Containing Merchants' Gift Certificates, New Address Cards, Stationery, Annotated Maps, and Other Materials Acquainting a Newcomer With a New Area Into Which He Has Moved.
First use Feb. 18, 1965.

SN 213,530. Chore-Time Equipment, Inc., Milford, Ind. Filed Mar. 8, 1965.

CHORE-MATIC

Owner of Reg. No. 690,343.
For Poultry Feeders, Poultry Waterers and Hog Feeders.
First use Nov. 15, 1960.

Class 51—Cosmetics and Toilet Preparations

SN 149,754. Max Factor & Co., d.b.a. Max Factor, Hollywood, Calif. Filed July 25, 1962.

PURE MAGIC

For Medicated Compact Powder.
First use June 29, 1962.

SN 164,859. L. T. York Company, Kansas City, Mo., by change of name from Lucky Tiger Manufacturing Company, Kansas City, Mo. Filed Mar. 18, 1963.

MEDI-KOTE

Owner of Reg. Nos. 356,346, 733,680, and 731,065.
For Sunburn Creme.
First use Feb. 27, 1963.

SN 178,965. Parfumerie Fragonard G. Fuchs & Cie, Paris, France. Filed Oct. 14, 1963.

ZIZANIE DE FRAGONARD

Priority claimed under Sec. 44(d) on French Reg. No. 516,145, dated Oct. 1, 1963 (Seine); Natl. Inst. No. 212,362. The French word "Zizanie" translated means "discord or quarrel." Owner of U.S. Reg. Nos. 432,408, 693,602, and 743,560.
For Perfumes, Toilet Water, Bath Oil, Bath Essence, and Talcum Powder.

SN 189,444. Clairol Incorporated, New York, N.Y. Filed Mar. 24, 1964.

CLAIRCARE

Owner of Reg. Nos. 802,399, 886,929, and others.
For Instant Hair Conditioner.
First use Jan. 15, 1964.

SN 202,905. Beecham Products Inc., Clifton, N.J. Filed Sept. 29, 1964.

A Little Dab'll Do Ya! BRYLCREEM

Applicant disclaims exclusive rights to the wording "For Smart Hair Grooming," apart from the mark as shown. The drawing is lined for red and silver. Owner of Reg. Nos. 398,474, 655,842, and others.
For Hair Dressing and Hair Tonic.
First use Mar. 3, 1964.

SN 205,214. Yardley of London, Inc., Totowa, N.J. Filed Oct. 30, 1964.

SEA JADE

For Cologne.
First use Oct. 21, 1964.

SN 205,325. The Nestle Lemur Company, New York, N.Y. Filed Nov. 2, 1964.

NATURAL NET

For Hair Spray.
First use Sept. 1, 1964.

SN 205,377. E. Wright Co., Decatur, Ill. Filed Nov. 2, 1964.

MANI-NEAT

For Liquid Preparation for Fingernails To Facilitate the Application of Polish.
First use July 27, 1964.

SN 205,516. La Maur, Inc., Minneapolis, Minn. Filed Nov. 4, 1964.

REPLETE

For Hair Conditioner.
First use Oct. 2, 1964.

SN 205,565. Avon Products, Inc., New York, N.Y. Filed Nov. 5, 1964.

FASHION FINISH

For Face Powder.
First use Jan. 21, 1959.

Class 52—Detergents and Soaps

SN 162,217. Wright Chemical Corporation, Chicago, Ill. Filed Feb. 6, 1963.

FLUIDENE

For Crystal Inhibitor Incorporated in a Boiler System Scale Remover Solution.
First use Jan. 9, 1963.

TM 815 O.G.—6

SN 169,965. G. H. Packwood Manufacturing Co., St. Louis, Mo. Filed May 29, 1963.

PAXIT

Owner of Reg. Nos. 253,176, 659,921, and others.
For Skin Cleaner, and Particularly a Skin Cleaner That Can Be Used Without Water.
First use at least as early as May 1950.

SN 184,081. La Maur, Inc., d.b.a. House of Style, Minneapolis, Minn. Filed Jan. 6, 1964.

COLOR-GUARD

Owner of Reg. No. 748,178.
For Shampoo and Creme Rinse.
First use Sept. 19, 1955.

SN 186,658. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Mar. 13, 1964.

SYMBOL OF QUALITY B·K PROTECTION

Applicant hereby disclaims "Symbol of Quality Protection" except for its use in connection with the mark as shown. Owner of Reg. Nos. 108,332, 364,573 and others.
For Cleaning and Sanitizing Compositions Primarily for Farm, Dairy, Industrial, Commercial, and Institutional Use.
First use June 28, 1963.

SN 192,887. Ball Brothers Company Incorporated, Muncie, Ind. Filed May 7, 1964.

MICRO-KLEEN

For Preparation for Cleaning Photoengraving Plates Prior to Applying Enamel.
First use on or about Mar. 31, 1964.

SN 193,807. National Chemical Laboratories of Pa., Inc., Philadelphia, Pa. Filed May 19, 1964.

BACTI-CREAM

For Antiseptic Hand Cleaner.
First use Apr. 16, 1964.

SN. 194,406. Micro-Mist Systems, Inc., Chicago, Ill. Filed May 27, 1964.

MICRO-MIST

For Chemical Cleaning Compounds Used in the Cleaning of Tanks Employed for the Storing and Transportation of Chemicals Such as Paints, Lacquers, Resins, and the Like.
First use at least as early as January 1964.

SN 197,192. Standard Motor Products, Inc., Long Island City, N.Y. Filed July 6, 1964.

JIFFY DIP

Applicant disclaims the word "Dip" apart from the mark as shown.
For Carburetor Cleaner.
First use June 15, 1963.

SN 203,801. Krasdale Foods, Inc., New York, N.Y. Filed Oct. 5, 1964.

KRASDALE

Owner of Reg. Nos. 395,811 and 695,787.
For Liquid Household Detergent, Window Cleaner and Furniture Cleaner.
First use Oct. 15, 1963.

SN 205,352. Rust Master Chemical Corporation, Worcester, Mass. Filed Nov. 2, 1964.

PARTS MASTER

Owner of Reg. Nos. 672,388, 708,519, and others.
For Chemical Composition for Cleaning Automotive Engine Parts.
First use Sept. 27, 1954.

SN 205,598. National Cleanser Products Co., Inc., New York, N.Y. Filed Nov. 5, 1964.

NACOLITE

For Cleaning Compound Used in Mechanical Dishwashing Operations.
First use Mar. 5, 1936.

SN 205,613. Paul Rahr Enterprises, Inc., St. Germain, Wis. Filed Nov. 5, 1964.

MRS. MAGIC

For Liquid Cleaner for Removing Iron and Rust Stains.
First use July 12, 1964.

SN 205,906. Wilco Company, Los Angeles, Calif. Filed Nov. 9, 1964.

SUREFIRE

Owner of Reg. Nos. 423,891 and 661,828.
For Engine Degreaser.
First use July 16, 1964.

SN 207,894. Martin-Brower Corporation, d.b.a. Perlman Paper Company, Chicago, Ill. Filed Dec. 10, 1964.

PERL-BRITE

For Cleaning and Polishing Compounds for Commercial and Industrial Establishments.
First use Sept. 9, 1961.

SN 208,369. Medicinal Distributors, Inc., Forest Hills, N.Y. Filed Dec. 17, 1964.

SAVIGNON

For Toilet Soaps.
First use Dec. 11, 1964.

SN 212,850. Avon Products, Inc., New York, N.Y. Filed Feb. 26, 1965.

TOT 'N' TYKE

For Baby Castile Soap and Shampoo.
First use June 18, 1958.

SERVICE MARKS

Class 100 — Miscellaneous

SN 134,892. La Salle Casualty Company, d.b.a. Town and Travel Club, Chicago, Ill. Filed Dec. 20, 1961.



The words "Club" and "Member" are disclaimed apart from the mark as shown.
For Rendering Service to Its Members by Furnishing to Each Such Member Emergency Road Service and Towing for Automobiles, Bail Bond Certificates, Travel Credit Card, Automobile Theft Protection, Automobile Accident Insurance, Discount Purchasing Privileges, Travel and Vacation Planning Services, Providing Legal Counsel in the Event of Arrest and Use of a Public Service Bureau.
First use Oct. 4, 1961.

SN 159,630. United Food Management Services, Inc., Cleveland, Ohio. Filed Dec. 21, 1962.



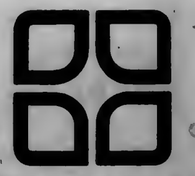
For Restaurant and Cafeteria Services.
First use July 1955.

SN 189,951. Sleepy Hollow Motor Hotel, Inc., Elkhart, Ind. Filed Mar. 30, 1964.

SLEEPY HOLLOW

For Motor Hotel Services.
First use September 1955.

SN 197,261. Candeub, Fleissig and Associates, Newark, N.J. Filed July 7, 1964.



For Consultant Services in the Field of Community Planning and Urban Renewal.
First use Dec. 12, 1963.

SN 200,053. Western International Hotels Company, Seattle, Wash. Filed Aug. 17, 1964.



WESTERN INTERNATIONAL HOTELS

For Hotel and Restaurant Services.
First use Jan. 3, 1964.

SN 204,706. Pixie's Drive In, Inc., Wilton, Conn. Filed Oct. 23, 1964.

PIXIE'S

For Drive In Restaurant Services.
First use on or about May 21, 1964.

Class 101 — Advertising and Business

SN 143,667. Photocircuits Corporation, Glen Cove, N.Y. Filed May 2, 1962.

MCS

For Printed Circuit Drawing Preparation.
First use at least as early as January 1960.

SN 174,483. Allentown Paint Manufacturing Company, Allentown, Pa. Filed Aug. 6, 1963.

PAINT Mobile

For Mixing and Matching Paint to Customers Requirements at Place of Use.
First use November 1961.

SN 179,003. Margaret T. Williams, d.b.a. Edwin K. Williams, Santa Barbara, Calif. Filed Oct. 14, 1963.



For Business Management and Bookkeeping Services.
First use December 1962.

SN 188,546. Frank J. Kenney, d.b.a. The Traditional Travelers, Boston, Mass. Filed Mar. 12, 1964.



For Promoting Ladies' Wearing Apparel of Others by Staging Trade Exhibitions.
First use January 1964.

SN 190,872. Harold T. Carns, d.b.a. Carns Associates, Cincinnati, Ohio. Filed Apr. 13, 1964.

TEMP BELLE

For Provision of Temporary and Part Time Office and Clerical Personnel for Business and Industrial Concerns.
First use Nov. 24, 1963.

SN 193,469. Henry Field Seed and Nursery Company, Shenandoah, Iowa. Filed May 14, 1964.

HENRY FIELD'S FOUR SEASONS GARDEN CLUB

The name "Henry Field" identifies the founder of applicant, now deceased. Owner of Reg. Nos. 604,596 and 754,816.
For Mail Order Retail Service Specializing in Supplying Nursery Stock, House Plants, Seeds, Bulbs, and Tubers.
First use Apr. 15, 1964.

SN 195,065. Commercial Computer Centers of America, Inc., New York, N.Y. Filed June 8, 1964.



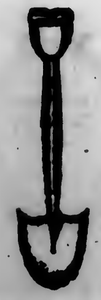
For Payroll Data Processing Through the Use of Electronic Computers.
First use on or about the middle of February 1964.

SN 197,844. Potter-McCune Company, McKeesport, Pa. Filed July 14, 1964.

DANDY DOLLAR

For Retail Grocery Store Services.
First use Jan. 31, 1964.

SN 200,091. The Fensholt Advertising Agency, Incorporated, Chicago, Ill. Filed Aug. 18, 1964.



For Advertising Agency Services.
First use in early 1958.

SN 207,187. Appeal Printing Company, Inc., New York, N.Y. Filed Dec. 1, 1964.

APPEAL

For Printing Services—Namely, Corporate, Financial and Legal Printing Services.
First use 1889.

Class 102 — Insurance and Financial

SN 201,321. Commercial Credit Company, Wilmington, Del. Filed Aug. 24, 1964.



For Furnishing Credit Services—Namely, Providing Business Loans, Commercial Credit Insurance, Motor Vehicle Leasing, Equipment Financing and Leasing, Factoring, Rediscounting, Retail Financing, Wholesale Financing and Export Sales Credit.
First use Sept. 30, 1960.

SN 203,988. Meinhard-Commercial Corporation, New York, N.Y. Filed Oct. 14, 1964.



For Financing and Factoring Services.
First use July 28, 1964.

Class 103 — Construction and Repair

SN 163,863. Otis Elevator Company, New York, N.Y. Filed Mar. 4, 1963.

BAKER

Owner of Reg. Nos. 199,580, 516,052, and 530,650.
For Service, Repair, and Rental of Material Handling Trucks.
First use at least as early as Dec. 8, 1961.

SN 179,680. Youngstown Airways, Inc., Vienna, Ohio. Filed Oct. 23, 1963.

EXECUTIVE CARE

The word "Care" is disclaimed apart from the mark as shown.
For Maintenance of Airplanes.
First use Feb. 1, 1963.

SN 180,450. Room Service U.S.A., Inc., Birmingham, Ala. Filed Nov. 4, 1963.

ROOM SERVICE

For Complete Interior Decoration Services Rendered to Motels, Hotels and Apartments, Including the Selection of All Furnishings.
First use Oct. 8, 1963.

SN 185,549. American Metal Bearing Company, Los Angeles, Calif. Filed Jan. 29, 1964.



For Reconditioning Bearings for Others.
First use July 15, 1958.

SN 188,507. Anderson, Clayton & Co., Houston, Tex. Filed Mar. 12, 1964.

LONG REACH

Owner of Reg. Nos. 624,944, 635,395, and 635,643.
For Custom Machinery Design, Fabrication, Rebuilding, and Repair.
First use in or before 1930.

SN 202,231. Cities Service Oil Company, Tulsa, Okla. Filed Sept. 21, 1964.



For Services Rendered to Motor Vehicles Including Lubrication, Washing, Polishing, Tire Rotation and Repair, Battery Filling, Spark Plug Cleaning and Adjustment, Battery Charging, Muffler and Tail Pipe Inspection and Replacement, Windshield Wiper Replacement, Wheel Alignment and Brake Adjustment.
First use in or about January 1917.

Class 104 — Communication

SN 191,178. Inter-County Telephone & Telegraph Company, Fort Myers, Fla. Filed Apr. 15, 1964.



For Providing and Maintaining of a Telephone System.
First use on or about Jan. 1, 1964.

Class 105 — Transportation and Storage

SN 183,671. Econo-Car International, Inc., Elizabeth, N.J. Filed Dec. 27, 1963.

ECONO-TRUCK

Owner of Reg. No. 151,306.
For Leasing of Trucks.
First use on or about Aug. 1, 1963.

SN 192,877. Arcoa, Inc., Portland, Oreg. Filed May 7, 1964.

U-HAUL

Owner of Reg. No. 746,034.
For Rental of Automobile Freight Trailers.
First use Oct. 15, 1945.

SN 196,113. Kenmore Moving and Storage Co., Inc., Kenmore, N.Y. Filed June 8, 1964.



Applicant disclaims the word "Movers" and the expression "Moving and Storage" apart from the mark as shown.
For Storage and Truck Transportation of the Goods of Others.
First use Dec. 1, 1963.

SN 200,013. McLean Trucking Company, Winston-Salem, N.C. Filed Aug. 17, 1964.

HOT LINE SERVICE

Applicant disclaims the word "Service" separate and apart from the mark.
For Transportation of Freight by Truck.
First use July 4, 1964.

SN 200,528. Allright Auto Parks, Inc., Houston, Tex. Filed Aug. 25, 1964.



No claim is made to the words "Auto Park" apart from the mark. Owner of Reg. No. 644,557.
For Operation of Vehicle Parking Lots.
First use Feb. 1, 1964.

SN 201,068. Vanguard Shipping Company, Baltimore, Md. Filed Sept. 1, 1964.



For Transportation Routing Services of the Goods of Others.
First use Apr. 1, 1964.

SN 201,069. Vanguard Shipping Company, Baltimore, Md. Filed Sept. 1, 1964.

VANGUARD

For Transportation Routing Services of the Goods of Others.
First use Apr. 1, 1964.

SN 204,702. Pet-Chem Tank Lines Inc., Hammonton, N.J. Filed Oct. 23, 1964.

PET-CHEM

For Transportation of Chemical and Petroleum Products by Tank Trucks.
First use May 13, 1960.

Class 106 — Material Treatment

SN 199,763. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 12, 1964.



Owner of Reg. No. 722,393.
For Photographic Film Developing and Printing Service.
First use Feb. 10, 1964.

SN 199,764. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 12, 1964.

SAFEWAY

Owner of Reg. No. 721,716.
For Photographic Film Developing and Printing Service.
First use Feb. 10, 1964.

Class 107 — Education and Entertainment

SN 191,692. Illinois Institute of Technology, Chicago, Ill. Filed Apr. 21, 1964.

IIT

For Educational Services—Namely, Resident Instruction in the Physical Sciences, Social Sciences and Humanities, Business Management, Design, Architecture, and City Planning All Leading to Undergraduate and/or Graduate Degrees.
First use February 1963.

SN 194,304. John Lloyd Kindall, Atlanta, Ga. Filed May 26, 1964.

THE CHECKERS

For Entertainment Services Supplied by a Dance Band and Vocalists.
First use Apr. 30, 1964.

SN 199,449. Dale Carnegie & Associates, Inc., Garden City, N.Y. Filed Aug. 7, 1964.

Dorothy Carnegie

The mark is the facsimile signature of "Dorothy Carnegie" and identifies a living individual whose consent is of record.
For Educational Services—Namely, Conducting Courses in Personal Development for Women With Regard to Posture, Poise, Personal Grooming, Make-Up, Fashion, Memory, and Personality, and Improvement in Social, Conversational and Intellectual Abilities.
First use Oct. 18, 1957.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 208,357. The Gamma Beta Phi Society, Spartanburg, S.C. Filed Dec. 17, 1964.



The mark consists of a membership badge for The Gamma Beta Phi Society.
For Indicating Membership in the Applicant Organization.
First use Mar. 22, 1964.

SN 208,358. The Gamma Beta Phi Society, Spartanburg, S.C. Filed Dec. 17, 1964.



The mark consists of the coat-of-arms of the Gamma Beta Phi Society.
For Indicating Membership in the Applicant Organization.
First use Mar. 22, 1964.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

791,234. INTERPACE AND DESIGN. International Pipe and Ceramics Corporation. MULTIPLE CLASS (Classes 1, 6, 12, 16, and 30). SN 183,842. Pub. 4–6–65. Filed 12–31–63.

791,235. COC AND DESIGN. Continental Ore Corporation. MULTIPLE CLASS (Classes 1 and 14). SN 200,630. Pub. 4–6–65. Filed 8–26–64.

791,236. SANBLOX. Stainless Foundry & Engineering, Inc. SN 202,515. Pub. 4–6–65. Filed 9–23–64.

791,237. CSR. Biehm Plastics, Inc. SN 202,543. Pub. 4–6–65. Filed 9–24–64.

Class 2 — Receptades

791,238. E-Z PAK. Gulf States Paper Corporation. SN 110,433. Pub. 4–6–65. Filed 12–19–60.

791,239. "REMEMBER, YOU'RE NEVER MORE THAN A FEW FEET AWAY FROM A PRODUCT OF ITW." Illinois Tool Works Inc. SN 176,193. Pub. 4–13–65. Filed 9–3–63.

791,240. PROTECTOP. Creators Corporation. SN 191,367. Pub. 4–6–65. Filed 4–17–64.

791,241. LOAD GRIP AND DESIGN. Owens-Illinois Glass Company. SN 198,433. Pub. 4–6–65. Filed 7–23–64.

791,242. BOXKAP. American Saint Gobain Corporation. SN 198,696. Pub. 4–6–65. Filed 7–29–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

791,243. SUNGLOW. Theodor Manufacturing Corporation. SN 129,250. Pub. 4–6–65. Filed 10–4–61.

791,244. LEADER IN THE FIELD. Buddy Schoellkopf Products Inc. MULTIPLE CLASS (Classes 3, 9, 22, and 39). SN 173,625. Pub. 4–6–65. Filed 7–24–63.

Class 4 — Abrasives and Polishing Materials

791,245. CHEMPROX. Chemprox Corporation. SN 188,423. Pub. 4–6–65. Filed 3–11–64.

791,246. NON-SCUFF. Simonis Company. SN 189,814. Pub. 4–6–65. Filed 3–27–64.

Class 6 — Chemicals and Chemical Compositions

791,234. (See Class 1 for this trademark.)

791,247. OXYTROL. A. E. Staley Manufacturing Company. SN 98,161. Pub. 5–2–61. Filed 5–31–60.

791,248. THROMBOTIME. Chas. Pfizer & Co., Inc. SN 195,703. Pub. 4–6–65. Filed 6–15–64.

791,249. DIGESTAK! Zymak Biochemical Corp. SN 199,158. Pub. 4–6–65. Filed 8–3–64.

791,250. SUNBRITE. Sun Chemical Corporation. SN 201,156. Pub. 4–6–65. Filed 9–2–64.

791,251. MATCH. The R. T. French Company. SN 201,196. Pub. 4–6–65. Filed 9–3–64.

791,252. JAYSOLVE. Humble Oil & Refining Company. SN 201,204. Pub. 4–6–65. Filed 9–3–64.

791,253. AERY. Faultless Starch Company. SN 201,405. Pub. 4–6–65. Filed 9–8–64.

791,254. APROPOS. Faultless Starch Company. SN 201,406. Pub. 4–6–65. Filed 9–8–64.

791,255. MYLASE. Baxter Laboratories, Inc. SN 201,499. Pub. 4–6–65. Filed 8–28–64.

791,256. THERMAZOIC. Blackman-Uhler Chemical Company. SN 201,566. Pub. 4–6–65. Filed 9–10–64.

791,257. FOLI-GREEN. A. E. Staley Manufacturing Company. SN 201,628. Pub. 4–6–65. Filed 9–10–64.

791,258. PHENIGRID. Ames Company, Inc. SN 201,641. Pub. 4–6–65. Filed 9–11–64.

791,259. ICELAND. Phoenix Oil Company. SN 201,734. Pub. 4–6–65. Filed 9–11–64.

791,260. STATI-FLO. The Plastic Coating Corporation. SN 201,864. Pub. 4–6–65. Filed 9–14–64.

791,261. ISONATE. The Upjohn Company. SN 201,897. Pub. 4–6–65. Filed 9–14–64.

791,262. DECHLORANE+PLUS. Hooker Chemical Corporation. SN 202,151. Pub. 4–6–65. Filed 9–18–64.

791,263. SANDOLAN. Sandoz, Inc. SN 202,180. Pub. 4–6–65. Filed 9–18–64.

791,264. DHP. Le Fevre Chemical Company. SN 202,186. Pub. 4–6–65. Filed 9–16–64.

791,265. DRILLER'S CHOICE. Diamond Crystal Salt Company. SN 206,610. Pub. 4–6–65. Filed 11–20–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

791,244. (See Class 3 for this trademark.)

791,266. DETONEX. Societe Suisse des Explosifs. SN 197,515. Pub. 4–6–65. Filed 7–9–64.

Class 12 — Construction Materials

791,234. (See Class 1 for this trademark.)

791,267. HAGAN SUPER-R. Hagan Manufacturing Company. SN 173,354. Pub. 4–6–65. Filed 7–19–63.

791,268. DS. Dowsmith Inc. MULTIPLE CLASS (Classes 12 and 13). SN 183,257. Pub. 4–6–65. Filed 12–19–63.

791,269. CERAMIC CLASSICS. American Olean Tile Company, Inc. SN 185,347. Pub. 4–6–65. Filed 1–27–64.

791,270. LIKIT. Likit Windows, Inc. SN 186,908. Pub. 4–6–65. Filed 2–3–64.

791,271. ARISTOPANE INSULATING GLASS. The Pacific Coast Company. SN 186,755. Pub. 4–6–65. Filed 2–14–64.

791,272. TWINSUL. Peachtree Doors, Inc. SN 191,877. Pub. 4–6–65. Filed 4–23–64.

791,273. EAGLE TILE. Miami Tile and Terrazzo, Inc. SN 193,804. Pub. 4–6–65. Filed 5–19–64.

791,274. RUSTIC CRAFTS. The Rustic Crafts Co., Inc. MULTIPLE CLASS (Classes 12 and 21). SN 194,012. Pub. 4–6–65. Filed 5–21–64.

SN 204,702. Pet-Chem Tank Lines Inc., Hammonton, N.J. Filed Oct. 26, 1964.

PET-CHEM

For Transportation of Chemical and Petroleum Products by Tank Trucks.
First use May 15, 1960.

Class 106 — Material Treatment

SN 199,763. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 12, 1964.



Owner of Reg. No. 721,716.
For Photographic Film Developing and Printing Service.
First use Feb. 10, 1964.

SN 199,764. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 12, 1964.

SAFEWAY

Owner of Reg. No. 721,716.
For Photographic Film Developing and Printing Service.
First use Feb. 10, 1964.

Class 107 — Education and Entertainment

SN 191,692. Illinois Institute of Technology, Chicago, Ill. Filed Apr. 21, 1964.

IIT

For Educational Services—Namely, Resident Instruction in the Physical Sciences, Social Sciences and Humanities, Business Management, Design, Architecture, and City Planning All Leading to Undergraduate and/or Graduate Degrees.
First use February 1962.

SN 194,804. John Lloyd Kindall, Atlanta, Ga. Filed May 26, 1964.

THE CHECKERS

For Entertainment Services Supplied by a Dance Band and Vocalists.
First use Apr. 30, 1964.

SN 199,649. Dale Carnegie & Associates, Inc., Garden City, N.Y. Filed Aug. 7, 1964.

Dorothy Carnegie

The mark is the facsimile signature of "Dorothy Carnegie" and identifies a living individual whose consent is of record.
For Educational Services—Namely, Conducting Courses in Personal Development for Women With Regard to Posture, Poise, Personal Grooming, Make-Up, Fashion, Memory, and Personality, and Improvement in Social, Conversational and Intellectual Abilities.
First use Oct. 15, 1957.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 206,857. The Gamma Beta Phi Society, Spartanburg, S.C. Filed Dec. 17, 1964.



The mark consists of a membership badge for The Gamma Beta Phi Society.
For Indicating Membership in the Applicant Organization.
First use Mar. 22, 1964.

SN 206,858. The Gamma Beta Phi Society, Spartanburg, S.C. Filed Dec. 17, 1964.



The mark consists of the coat-of-arms of the Gamma Beta Phi Society.
For Indicating Membership in the Applicant Organization.
First use Mar. 22, 1964.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

791,234. INTERFACE AND DESIGN. International Pipe and Ceramics Corporation. MULTIPLE CLASS (Classes 1, 6, 12, 16, and 20). SN 183,842. Pub. 4-6-65. Filed 12-31-63.

791,236. COC AND DESIGN. Continental Ore Corporation. MULTIPLE CLASS (Classes 1 and 14). SN 200,660. Pub. 4-6-65. Filed 8-26-64.

791,236. SANBLOX. Stainless Foundry & Engineering, Inc. SN 202,515. Pub. 4-6-65. Filed 9-22-64.

791,237. CSR. Bichm Plastics, Inc. SN 202,543. Pub. 4-6-65. Filed 9-24-64.

Class 2 — Receptacles

791,238. E-Z PAK. Gulf States Paper Corporation. SN 110,463. Pub. 4-6-65. Filed 12-19-60.

791,239. "REMEMBER, YOU'RE NEVER MORE THAN A FEW FEET AWAY FROM A PRODUCT OF ITW." Illinois Tool Works Inc. SN 176,198. Pub. 4-13-65. Filed 9-2-63.

791,240. PROTECTOP. Creators Corporation. SN 191,867. Pub. 4-6-65. Filed 4-17-64.

791,241. LOAD GRIP AND DESIGN. Owens-Illinois Glass Company. SN 196,432. Pub. 4-6-65. Filed 7-22-64.

791,242. BOXKAP. American Saint Gobain Corporation. SN 196,696. Pub. 4-6-65. Filed 7-29-64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

791,243. SUNGLOW. Theodor Manufacturing Corporation. SN 139,250. Pub. 4-6-65. Filed 10-4-61.

791,244. LEADER IN THE FIELD. Buddy Schoellkopf Products Inc. MULTIPLE CLASS (Classes 3, 9, 22, and 39). SN 173,635. Pub. 4-6-65. Filed 7-24-63.

Class 4 — Abrasives and Polishing Materials

791,245. CERAMPROX. Champrox Corporation. SN 188,482. Pub. 4-6-65. Filed 3-11-64.

791,246. NON-SCUFF. Simonis Company. SN 189,814. Pub. 4-6-65. Filed 3-27-64.

Class 6 — Chemicals and Chemical Compositions

791,294. (See Class 1 for this trademark.)

791,247. OXYTROL. A. E. Staley Manufacturing Company. SN 98,161. Pub. 5-2-61. Filed 5-31-60.

791,248. THROMBOTIME. Chas. Pfizer & Co., Inc. SN 195,702. Pub. 4-6-65. Filed 6-15-64.

791,249. DIGESTAK! Symak Biochemical Corp. SN 190,155. Pub. 4-6-65. Filed 3-3-64.

791,250. SUNBRITE. Sun Chemical Corporation. SN 201,156. Pub. 4-6-65. Filed 9-2-64.

791,251. MATCH. The R. T. French Company. SN 201,196. Pub. 4-6-65. Filed 9-3-64.

791,252. JAYSOLVE. Humble Oil & Refining Company. SN 201,204. Pub. 4-6-65. Filed 9-3-64.

791,253. AERY. Faultless Starch Company. SN 201,405. Pub. 4-6-65. Filed 9-8-64.

791,254. APROPOS. Faultless Starch Company. SN 201,406. Pub. 4-6-65. Filed 9-8-64.

791,255. MYLASE. Baxter Laboratories, Inc. SN 201,469. Pub. 4-6-65. Filed 8-28-64.

791,256. THERMAZOIC. Blackman-Uhler Chemical Company. SN 201,566. Pub. 4-6-65. Filed 9-10-64.

791,257. FOLI-GREEN. A. E. Staley Manufacturing Company. SN 201,628. Pub. 4-6-65. Filed 9-10-64.

791,258. PHENIGRID. Ames Company, Inc. SN 201,641. Pub. 4-6-65. Filed 9-11-64.

791,259. ICELAND. Phoenix Oil Company. SN 201,734. Pub. 4-6-65. Filed 9-11-64.

791,260. STATI-FLO. The Plastic Coating Corporation. SN 201,864. Pub. 4-6-65. Filed 9-14-64.

791,261. ISONATE. The Upjohn Company. SN 201,897. Pub. 4-6-65. Filed 9-14-64.

791,262. DECHLORANE+PLUS. Hooker Chemical Corporation. SN 202,151. Pub. 4-6-65. Filed 9-18-64.

791,263. SANDOLAN. Sandoz, Inc. SN 202,180. Pub. 4-6-65. Filed 9-18-64.

791,264. DHP. Le Fevre Chemical Company. SN 202,198. Pub. 4-6-65. Filed 9-16-64.

791,265. DRILLER'S CHOICE. Diamond Crystal Salt Company. SN 206,610. Pub. 4-6-65. Filed 11-20-64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

791,244. (See Class 3 for this trademark.)

791,266. DETONEX. Societe Suisse des Explosifs. SN 197,515. Pub. 4-6-65. Filed 7-9-64.

Class 12 — Construction Materials

791,294. (See Class 1 for this trademark.)

791,267. HAGAN SUPER-R. Hagan Manufacturing Company. SN 173,354. Pub. 4-6-65. Filed 7-19-63.

791,268. DS. Downsmith Inc. MULTIPLE CLASS (Classes 12 and 19). SN 188,267. Pub. 4-6-65. Filed 12-19-63.

791,269. CERAMIC CLASSICS. American Olean Tile Company, Inc. SN 196,247. Pub. 4-6-65. Filed 1-27-64.

791,270. LIKIT. Likit Windows, Inc. SN 188,906. Pub. 4-6-65. Filed 3-9-64.

791,271. ARISTOPANE INSULATING GLASS. The Pacific Coast Company. SN 198,705. Pub. 4-6-65. Filed 5-14-64.

791,272. TWINSUL. Peachtree-Doors, Inc. SN 191,877. Pub. 4-6-65. Filed 4-23-64.

791,273. EAGLE TILE. Miami Tile and Terrazzo, Inc. SN 198,304. Pub. 4-6-65. Filed 5-19-64.

791,274. RUSTIC CRAFTS. The Rustic Crafts Co., Inc. MULTIPLE CLASS (Classes 12 and 24). SN 194,912. Pub. 4-6-65. Filed 5-21-64.

791,276. REL-MAC. Reliance Universal Inc. SN 200,469. Pub. 4-6-65. Filed 8-24-64.

791,276. ROB-KNE. The Robinson Clay Product Company. SN 202,172. Pub. 4-6-65. Filed 9-18-64.

791,277. RED CARPET. General Aluminum Corporation. SN 202,472. Pub. 4-6-65. Filed 9-22-64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

791,268. (See Class 12 for this trademark.)

791,276. CRAWFORD SWAGELOK. Crawford Fitting Company. SN 141,642. Pub. 5-12-62. Filed 2-22-62.

791,279. TRANSFOUT. The Huffman Manufacturing Company. SN 178,196. Pub. 4-6-65. Filed 10-9-63.

791,280. RECHE. P. L. Robertson Mfg. Co. Limited. SN 179,961. Pub. 4-6-65. Filed 10-28-63.

791,281. CIRC-O-LAP. American Chain & Cable Company, Inc. SN 199,227. Pub. 4-6-65. Filed 2-25-64.

791,282. TORSION-PAK. American Chain & Cable Company, Inc. SN 199,229. Pub. 4-6-65. Filed 2-25-64.

791,283. YARDLEY. Colonese Corporation of America. SN 199,695. Pub. 4-6-65. Filed 3-31-64.

791,284. DYNADOME. Engelberg, Inc. SN 199,796. Pub. 4-6-65. Filed 4-10-64.

791,285. STARDUST. Moore Dispensers, Inc. SN 199,899. Pub. 4-6-65. Filed 5-4-64.

791,286. APEX AND DESIGN. White Consolidated Industries, Inc., by change of name from White Sewing Machine Corporation. SN 199,900. Pub. 4-6-65. Filed 5-6-64.

791,287. CIRC-O-RING. American Chain & Cable Company, Inc. SN 199,451. Pub. 4-6-65. Filed 7-24-64.

791,288. CONTINENTAL HYDRAULICS. Continental Machines, Inc. MULTIPLE CLASS (Classes 13 and 26). SN 199,557. Pub. 4-6-65. Filed 7-27-64.

791,289. MERRILL AND DESIGN. Merrill Manufacturing Corporation. SN 202,220. Pub. 4-6-65. Filed 9-22-64.

Class 14—Metals and Metal Castings and Forgings

791,265. (See Class 1 for this trademark.)

791,280. DOPASCO PREMIER AND DESIGN. Dominion Foundries and Steel, Limited. SN 196,086. Pub. 4-6-65. Filed 6-8-64.

791,291. VALIMET. Valley Metallurgical Processing Company. SN 205,742. Pub. 4-6-65. Filed 11-6-64.

791,292. NMSA. The International Nickel Company, Inc. SN 207,204. Pub. 4-6-65. Filed 12-3-64.

Class 15—Oils and Greases

791,262. CREATIVE CANDLES AND DESIGN. Creative Candles. SN 178,026. Pub. 4-6-65. Filed 7-29-63.

791,294. D-L AND DESIGN. Dynamic Lubricant Company. SN 200,200. Pub. 4-6-65. Filed 11-6-64.

791,295. ICE-A-START. Northwestern Refining Co. SN 205,714. Pub. 4-6-65. Filed 12-3-64.

Class 16—Protective and Decorative Coatings

791,264. (See Class 1 for this trademark.)

791,296. CORROLESS. Corna, Cramer & Co. SN 195,978. Pub. 4-6-65. Filed 2-3-64.

791,297. DRI-FAB. Amway Corporation. SN 195,915. Pub. 2-16-65. Filed 6-16-64.

Class 17—Tobacco Products

791,262. ATROTAR. Upravlenie Balgarski Tjutjuni-Balgartabak. SN 191,940. Pub. 4-6-65. Filed 10-29-63.

791,269. HAT DESIGN. Bayuk Cigars Incorporated. SN 199,804. Pub. 4-6-65. Filed 7-21-64.

791,269. MIRAMAR. Universal Cigar Corporation. SN 200,799. Pub. 4-6-65. Filed 8-27-64.

Class 18—Medicines and Pharmaceutical Preparations

791,261. GREEK LETTER PHI. Charles H. Pfizer & Co. SN 196,139. Pub. 11-24-64. Filed 6-22-64.

791,262. PERSANT. Boehringer Ingelheim, G.m.b.H., assignee of Geigy Chemical Corporation. SN 196,245. Pub. 4-6-65. Filed 7-22-64.

791,263. PRESANTIC. Boehringer Ingelheim, G.m.b.H., assignee of Geigy Chemical Corporation. SN 196,246. Pub. 4-6-65. Filed 7-22-64.

791,264. RESANTIN. Boehringer Ingelheim, G.m.b.H., assignee of Geigy Chemical Corporation. SN 199,661. Pub. 4-6-65. Filed 8-3-64.

791,265. V-65. Stauffer Chemical Company. SN 200,672. Pub. 4-6-65. Filed 8-26-64.

791,266. SYNADRID. Syntex Laboratories, Inc. SN 202,227. Pub. 4-6-65. Filed 10-13-64.

Class 19—Vehicles

791,267. MARK IV. The Goodyear Tire & Rubber Company. SN 196,705. Pub. 4-6-65. Filed 5-14-64.

791,268. SERENISSIMA. Maria Rosa Vitelli née Valente. SN 191,052. Pub. 4-6-65. Filed 4-20-64.

791,269. VEE-T-VAN. Coaltainer Corporation. SN 196,926. Pub. 4-6-65. Filed 6-15-64.

791,310. MOR/RYDE. Moore's Products, Inc. SN 198,574. Pub. 4-6-65. Filed 7-27-64.

791,311. VW. Volkswagenwerk Aktiengesellschaft. SN 198,780. Pub. 4-6-65. Filed 7-30-64.

791,312. WEEKENDER. Tidewater Boats, Inc. SN 201,895. Pub. 4-6-65. Filed 9-14-64.

Class 21—Electrical Apparatus, Machines, and Supplies

791,274. (See Class 12 for this trademark.)

791,313. G WITHIN A CIRCLE. Yao Denki Kabushiki Kaisha. MULTIPLE CLASS (Classes 21 and 26). SN 175,790. Pub. 4-6-65. Filed 8-26-63.

791,314. ROTO-FAZE. Joseph J. Panek, Jr., d.b.a., Roto-Faze Ignitions. SN 177,438. Pub. 4-6-65. Filed 9-25-63.

791,315. BANTAPE. Reinforced Molding Corporation. SN 177,689. Pub. 4-6-65. Filed 9-26-63.

791,316. VIX. Hipco Inc. SN 178,926. Pub. 4-6-65. Filed 10-14-63.

791,317. PRESSURMATIC. Crosby Valve & Gage Company. SN 187,011. Pub. 4-6-65. Filed 2-19-64.

791,318. MICROWAVE ASSOCIATES. Microwave Associates, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 187,304. Pub. 4-6-65. Filed 2-24-64.

791,319. PLYO-DUCT. Methods Electronics, Inc. SN 191,435. Pub. 7-14-64. Filed 4-13-64.

791,320. COMBO STRIP. Ferrodynamics Corporation, assignee of Metex Electronics Corporation. SN 193,565. Pub. 4-6-65. Filed 5-15-64.

791,321. METALEX. Ferrodynamics Corporation, assignee of Metex Electronics Corporation. SN 193,566. Pub. 4-6-65. Filed 5-15-64.

791,322. METALASTIC. Ferrodynamics Corporation, assignee of Metex Electronics Corporation. SN 193,567. Pub. 4-6-65. Filed 5-15-64.

791,323. UNICEL. The Stevens Paper Mills, Inc. SN 193,823. Pub. 4-6-65. Filed 5-29-64.

791,324. AGAC. Keltec Industries, Inc., by change of name from Aero Geo Astro Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 195,194. Pub. 4-6-65. Filed 6-9-64.

791,325. AGAC AND DESIGN. Keltec Industries, Inc., by change of name from Aero Geo Astro Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 195,195. Pub. 3-30-65. Filed 6-9-64.

791,326. VITALITE. Federal Sign and Signal Corporation. SN 195,266. Pub. 4-6-65. Filed 6-11-64.

791,327. SERVICEPAK-PANEL AND DESIGN. Square D Company. SN 196,441. Pub. 4-6-65. Filed 7-23-64.

791,328. HBX AND ARROW DESIGN. Applied Power Industries, Inc. SN 196,452. Pub. 4-6-65. Filed 7-24-64.

791,329. K-MART. S. S. Kresge Company. SN 196,746. Pub. 4-6-65. Filed 7-29-64.

791,330. 6K AND DESIGN. S. S. Kresge Company. SN 196,747. Pub. 4-6-65. Filed 7-29-64.

791,331. PLO. Eltra Corporation. SN 199,041. Pub. 4-6-65. Filed 8-3-64.

Class 22—Games, Toys, and Sporting Goods

791,244. (See Class 3 for this trademark.)

791,332. SIT-N-RIDE. Buddy L Corporation. SN 151,719. Pub. 4-6-65. Filed 8-23-62.

791,333. RABBIT HEAD (DESIGN). HMH Publishing Co. Inc. (Delaware corporation), by merger and change of name from HMH Publishing Co. (Illinois corporation). SN 193,053. Pub. 4-6-65. Filed 5-21-64.

791,334. SMOOCH BALL. Bilden Company. SN 196,011. Pub. 4-6-65. Filed 6-10-64.

791,335. TIMBERLINE. The Hettrick Manufacturing Company. SN 196,061. Pub. 4-6-65. Filed 6-29-64.

791,336. TRAVELAIRE. The Hettrick Manufacturing Company. SN 196,067. Pub. 4-6-65. Filed 6-29-64.

791,337. HOLIDAY FAIR. Hadaya & Co. SN 198,047. Pub. 4-6-65. Filed 7-17-64.

791,338. POWER POINT. Dunlop Tire and Rubber Corporation. SN 199,182. Pub. 4-6-65. Filed 8-4-64.

791,339. SEA-ALL. Sea-Air, Inc. SN 202,885. Pub. 4-6-65. Filed 8-17-64.

791,340. MISTY. Ideal Toy Corporation. SN 200,189. Pub. 4-6-65. Filed 8-19-64.

791,341. MOTORIFIC. Ideal Toy Corporation. SN 200,190. Pub. 4-6-65. Filed 8-19-64.

791,342. SPINDICATOR. Lewis H. Ungleby. SN 200,201. Pub. 4-6-65. Filed 8-20-64.

791,343. CADILLAC. Viscount Products, Inc. SN 200,513. Pub. 4-6-65. Filed 8-24-64.

791,344. GEORGENE. Georgene Novelties, Inc. SN 200,563. Pub. 4-6-65. Filed 8-25-64.

791,345. GEORGE. Georgene Novelties, Inc. SN 200,564. Pub. 4-6-65. Filed 8-25-64.

791,346. GAYLA. Gayla Industries. SN 200,657. Pub. 4-6-65. Filed 8-26-64.

791,347. METROTONIC. M. & R. Specialty Co. SN 200,669. Pub. 4-6-65. Filed 8-26-64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

791,263. (See Class 13 for this trademark.)

791,348. LL AND DESIGN. Lectro-Lift Inc. SN 172,918. Pub. 4-6-65. Filed 7-12-63.

791,349. DISCO AND DESIGN. Block & Vespol. SN 177,754. Pub. 4-6-65. Filed 9-24-63.

791,350. HELE-SHAW HYDRAULICS AND DESIGN. Aircraft Armaments, Inc. SN 198,697. Pub. 4-6-65. Filed 7-13-64.

791,351. HELE-SHAW AND DESIGN. Aircraft Armaments, Inc. SN 198,698. Pub. 4-6-65. Filed 7-13-64.

791,352. REHM. Swiss American Precision Imports, Inc. MULTIPLE CLASS (Classes 23 and 26). SN 198,720. Pub. 4-6-65. Filed 7-20-64.

791,353. MOE AIR. Blake Manufacturing Company. SN 199,900. Pub. 1-19-65. Filed 8-17-64.

791,354. ROTICUL SUPERMATIC. Simplicity Manufacturing Company. SN 202,267. Pub. 4-6-65. Filed 9-22-64.

791,355. DUCON. The Ducon Company, Inc. SN 202,670. Pub. 4-6-65. Filed 9-25-64.

791,356. ARCEROIDAL. Barber-Greene Company. SN 202,727. Pub. 4-6-65. Filed 9-28-64.

791,357. WIMCO. Parker-Hannifin Corporation. SN 204,270. Pub. 4-6-65. Filed 10-19-64.

791,358. SOFSTOP. Parker-Hannifin Corporation. SN 204,701. Pub. 4-6-65. Filed 10-22-64.

Class 24—Laundry Appliances and Machines

791,250. SPEED-O-VETOR. The Speed Check Co., Inc. SN 207,202. Pub. 4-6-65. Filed 12-1-64.

Class 26—Measuring and Scientific Appliances

791,313. (See Class 21 for this trademark.)

791,324. (See Class 21 for this trademark.)

791,325. (See Class 21 for this trademark.)

791,352. (See Class 23 for this trademark.)

791,360. EDTA PLATELET-PACK. Baxter Laboratories, Inc. SN 196,092. Pub. 4-6-65. Filed 7-9-64.

791,361. SCHAEVITZ. Schaevitz Engineering. SN 198,878. Pub. 4-6-65. Filed 7-4-64.

791,362. CHARTEX. Seal, Inc. SN 199,128. Pub. 4-6-65. Filed 10-30-63.

791,363. MT S. Seal, Inc. SN 199,129. Pub. 4-6-65. Filed 10-30-63.

791,364. SPEED CHECK AND DESIGN. Toledo Scale Corporation. SN 197,072. Pub. 4-6-65. Filed 8-6-64.

791,365. COLORTRAIN. General Aniline & Film Corporation. SN 199,045. Pub. 4-6-65. Filed 8-28-64.

791,366. THIOKOL. Thiokol Chemical Corporation. SN 196,218. Pub. 4-6-65. Filed 6-22-64.

791,367. HONEYWELL. Honeywell Inc. SN 196,262. Pub. 4-6-65. Filed 7-2-64.

791,368. NORTH ATLANTIC. North Atlantic Industries, Inc. SN 196,660. Pub. 4-6-65. Filed 7-8-64.

791,369. MINERC AND DRAWING WITHIN CIRCLE DESIGN. Photo Research Corporation. SN 197,209. Pub. 4-6-65. Filed 7-6-64.

791,370. STACKPACK. Ionics, Incorporated. SN 199,262. Pub. 4-6-65. Filed 8-3-64.

791,371. BRIDGEMETER. Bridge Cryogenics, Inc. SN 200,227. Pub. 4-6-65. Filed 8-21-64.

791,372. LASERLATOR. Electro-Optical Instruments, Inc. SN 200,228. Pub. 4-6-65. Filed 8-21-64.

791,373. LI-TRONIC. Federal Pacific Electric Company. SN 200,806. Pub. 4-6-65. Filed 9-23-64.

791,374. COINCO. Coin Acceptors, Inc. SN 201,105. Pub. 4-6-65. Filed 9-2-64.

791,375. REMEX. Rheem Electronics Corporation. SN 201,804. Pub. 4-6-65. Filed 9-4-64.

791,376. MISCELLANEOUS DESIGN. Eastman Kodak Company. SN 201,268. Pub. 3-9-65. Filed 9-8-64.

791,377. PULSTAR. American Machine & Foundry Company. SN 201,642. Pub. 4-6-65. Filed 9-11-64.

791,378. TRIKSTAR. Biras & Sawyer Cine Equipment Co., Inc. SN 201,650. Pub. 4-6-65. Filed 9-11-64.

791,379. COMCOR. Comcor, Inc. SN 201,664. Pub. 4-6-65. Filed 9-11-64.

791,380. DESIGN OF OPTICAL-ELECTRONIC SYMBOL. Bell & Howell Company. SN 202,004. Pub. 4-6-65. Filed 9-16-64.

791,381. DIAZO-JET. Rotolite Corporation. SN 202,962. Pub. 4-6-65. Filed 9-29-64.

Class 27 — Horological Instruments

791,382. NACAR. Fabrique de Montres Zila S.A. (Uhrenfabrik Zila AG.) (Zila Watch Co. Ltd.). SN 182,167. Pub. 4-6-65. Filed 12-2-63.

791,383. BLANCPAIN. Manufacture d'Horlogerie Rayville S.A., Montres Blancpain (Rayville Watch Manufacturing Co., Limited, Blancpain Watches). SN 202,492. Pub. 4-6-65. Filed 9-22-64.

791,384. FAVORITE. Sunbeam Corporation. SN 207,425. Pub. 4-6-65. Filed 12-3-64.

Class 28 — Jewelry and Precious-Metal Ware

791,385. LANCELOTT PLATE. J. Zimmerman & Company Limited. SN 203,949. Pub. 4-6-65. Filed 9-30-64.

791,386. COLLECTABLES. Ronald H. Taub, d.b.a. Collectables. SN 207,445. Pub. 4-6-65. Filed 12-3-64.

Class 29 — Brooms, Brushes, and Dusters

791,387. WHITE BRUSH HANDLE WITH BLUE BAND & GOLD TIP (DESIGN). Star Brush Manufacturing Co., Inc. SN 201,977. Pub. 4-6-65. Filed 9-15-64.

791,388. WHITE BRUSH HANDLE WITH RED BAND & GOLD TIP (DESIGN). Star Brush Manufacturing Co., Inc. SN 201,978. Pub. 4-6-65. Filed 9-15-64.

Class 30 — Crockery, Earthenware, and Porcelain

791,389. (See Class 1 for this trademark.)

791,390. SUBURBIA BY A.C.I. AND DESIGN. American Commercial Incorporated. SN 196,000. Pub. 4-6-65. Filed 6-19-64.

791,391. TERRA STONE. American Commercial Incorporated. SN 196,001. Pub. 4-6-65. Filed 6-19-64.

Class 32 — Furniture and Upholstery

791,392. ROYAL FASHION AND DESIGN. United Pillow Company. SN 196,180. Pub. 4-6-65. Filed 12-16-63.

791,393. BEACH-BUTLER. Joseph X. Safina. SN 187,616. Pub. 4-6-65. Filed 2-27-64.

791,394. GUARD-WELL. Guard-Well Corporation. SN 189,579. Pub. 4-6-65. Filed 3-25-64.

791,395. P-I DURALEGS AND DESIGN. Plastic Industries, Inc. SN 190,823. Pub. 4-6-65. Filed 4-10-64.

791,396. SPACE COMMANDER AND DESIGN. Mason Rubber Co., Inc. SN 190,689. Pub. 4-6-65. Filed 3-11-64.

Class 33 — Glassware

791,397. FRANK SCHOONMAKER. Frank Schoonmaker. MULTIPLE CLASS (Classes 33 and 47). SN 198,591. Pub. 4-6-65. Filed 7-27-64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

791,398. FLAMBEX. Houilleres du Bassin de Lorraine. SN 179,134. Pub. 4-6-65. Filed 10-16-63.

791,399. PLIADUCT. Dayco Corporation. MULTIPLE CLASS (Classes 34 and 35). SN 179,975. Pub. 6-9-64. Filed 10-28-63.

791,399. SAFTI FLAME. Kreaky Mfg. Co., Inc. SN 180,016. Pub. 4-6-65. Filed 10-29-63.

791,400. JETRONIC. Barber-Colman Company. SN 180,996. Pub. 4-6-65. Filed 11-13-63.

791,401. ELECTROLIT. Cox Manufacturing Company. SN 181,284. Pub. 4-6-65. Filed 11-18-63.

791,402. INFRA-TEMP. ALD, Inc. SN 186,673. Pub. 4-6-65. Filed 2-14-64.

791,403. McDONALDAIRE. A. Y. McDonald Mfg. Co. SN 187,027. Pub. 4-6-65. Filed 2-19-64.

791,404. ENVIRONTROL. Harris Refrigeration Sales & Service Inc. SN 188,105. Pub. 4-6-65. Filed 3-6-64.

791,405. WHESCO. Waste Heat Engineering Corp. SN 188,594. Pub. 4-6-65. Filed 3-12-64.

791,406. MISCELLANEOUS (DESIGN). L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude. SN 189,179. Pub. 4-6-65. Filed 3-20-64.

791,407. COREWELD. Harnischfeger Corporation. SN 189,690. Pub. 4-6-65. Filed 3-26-64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

791,408. (See Class 24 for this trademark.)

791,409. PACER. Gulf Oil Corporation. SN 171,015. Pub. 4-14-64. Filed 6-14-63.

791,409. FALCON. Falcon Rubber Company. SN 185,375. Pub. 4-6-65. Filed 1-27-64.

791,410. TIGER TREAD. Lutz Tire Inc. SN 196,965. Pub. 4-6-65. Filed 7-31-64.

791,411. NVH. Dayco Corporation. SN 201,106. Pub. 4-6-65. Filed 9-2-64.

791,412. DAYFRENE. Dayco Corporation. SN 201,285. Pub. 4-6-65. Filed 9-3-64.

791,413. AUTOFLEX. Dayco Corporation. SN 201,893. Pub. 4-6-65. Filed 9-8-64.

791,414. MAXIMOIL. Dayco Corporation. SN 201,957. Pub. 4-6-65. Filed 9-8-64.

Class 36 — Musical Instruments and Supplies

791,413. (See Class 21 for this trademark.)

791,415. PHASE 4 STEREO AND DESIGN. London Records, Inc. SN 125,517. Pub. 4-2-63. Filed 8-7-61.

791,416. SOUND 4 MONOPHONIC. London Records, Inc. SN 125,516. Pub. 5-21-63. Filed 8-7-61.

791,417. STEREO 4. The Nortronics Company, Inc. SN 125,604. Pub. 4-2-63. Filed 1-11-62.

791,418. ULTRAPHONE ETC. AND DESIGN. Ultraphone Records, Inc. SN 187,632. Pub. 4-6-65. Filed 2-27-64.

791,419. PHOENIX. Phoenix Records, Incorporated. SN 190,490. Pub. 4-6-65. Filed 3-7-64.

791,420. COR-DEX. James H. Giltnow, d.b.a. Hunter Design Products. SN 190,900. Pub. 4-6-65. Filed 3-14-64.

Class 37 — Paper and Stationery

791,421. ISLAND BRAND. Oxford Filing Supply Co., Inc. SN 174,226. Pub. 5-26-64. Filed 8-1-63.

791,422. ISLANDER. The Ray-Block Stationery Co., Inc. SN 184,749. Pub. 3-16-64. Filed 1-16-64.

791,423. DATA/PRINT. Elliott Business Machines, Inc. SN 187,656. Pub. 4-6-65. Filed 2-28-64.

791,424. TEXOLITH! East Texas Pulp and Paper Company. SN 189,000. Pub. 4-6-65. Filed 3-19-64.

791,425. MOUNT PALOMAR AND DESIGN. San Diego Products Co. SN 193,218. Pub. 4-6-65. Filed 5-11-64.

791,426. ALPENA MANIFOLD. Fletcher Paper Company. SN 194,792. Pub. 4-6-65. Filed 6-3-64.

791,427. SATURN. Weyerhaeuser Company. SN 195,184. Pub. 4-6-65. Filed 6-8-64.

791,428. ELSBCA. Weyerhaeuser Company. SN 195,186. Pub. 4-6-65. Filed 6-8-64.

791,429. CROBANK. Weyerhaeuser Company. SN 195,187. Pub. 4-6-65. Filed 6-8-64.

791,430. REDI-RITE. Park Sherman, Inc. SN 196,983. Pub. 4-6-65. Filed 7-2-64.

791,431. PACKERCHEM. Green Bay Packaging Inc. SN 197,119. Pub. 4-6-65. Filed 7-6-64.

791,432. TRENDTONE. International Paper Company. SN 203,294. Pub. 4-6-65. Filed 10-6-64.

Class 38 — Prints and Publications

791,433. MOTOR AGE. Chilton Company. SN 196,049. Pub. 4-6-65. Filed 7-2-64.

791,434. BORDERLINE ETC. AND DESIGN. Sherbourne Press, Inc. SN 200,036. Pub. 4-6-65. Filed 8-17-64.

791,435. PALAESTEUM. National Swimmer Palaestrum, Inc. SN 200,589. Pub. 4-6-65. Filed 8-25-64.

791,436. MISCELLANEOUS (DESIGN). Allied Stores Corporation. SN 200,691. Pub. 4-6-65. Filed 8-27-64.

791,437. AFLOAT AND ALOFT AND DESIGN. Tramp Trips, Inc. SN 201,027. Pub. 4-6-65. Filed 9-10-64.

Class 39 — Clothing

791,244. (See Class 8 for this trademark.)

791,438. MATCHMAKERS. Shelby Seamless Hosiery Mills, Inc. SN 196,150. Pub. 3-23-64. Filed 1-10-62.

791,439. SMOOTH STEPS. Ideal Shoe Company. SN 151,236. Pub. 4-6-65. Filed 8-16-62.

791,440. MR ANDRES AND DESIGN. Hampton Shirt Co., Inc. SN 196,282. Pub. 4-6-65. Filed 6-6-63.

791,441. SMALL TALK. Small Talk, Inc., assignee of Rapid-American Corporation. SN 170,426. Pub. 4-6-65. Filed 6-5-63.

791,442. STYLO MATCHMAKERS AND DESIGN. Stylo Shoes Limited. SN 173,531. Pub. 3-23-64. Filed 7-23-63.

791,443. FAIRGROUNDER. Melville Shoe Corporation. SN 181,257. Pub. 4-6-65. Filed 11-15-63.

791,444. FAMOUS FALCON. Georgia Shoe Manufacturing Company, Inc. SN 182,793. Pub. 4-6-65. Filed 12-11-63.

791,445. GENTLE. Exquisite Form Industries, Inc. SN 188,739. Pub. 4-6-65. Filed 2-18-64.

791,446. HI-PALS. Hi-Pals Footwear, Inc., by change of name from Perling Industries, Inc. SN 189,060. Pub. 4-6-65. Filed 2-19-64.

791,447. POLYOX. Farah Manufacturing Company, Inc. SN 192,021. Pub. 4-6-65. Filed 4-27-64.

791,448. FIFTY GAB. Farah Manufacturing Company, Inc. SN 192,022. Pub. 4-6-65. Filed 4-27-64.

791,449. BARIGARD. Chicopee Mills, Inc. SN 193,332. Pub. 4-6-65. Filed 5-13-64.

791,450. KALIL. Shibley and Finer, Inc. SN 194,068. Pub. 4-6-65. Filed 6-1-64.

791,451. LADY BOSTONIANS. Commonwealth Shoe & Leather Co., Inc. SN 194,057. Pub. 4-6-65. Filed 6-5-64.

791,452. MAILKNITS AND DESIGN. Walter Ogrodnicki and Olga T. Ogrodnicki. MULTIPLE CLASS (Classes 39 and 42). SN 196,057. Pub. 4-6-65. Filed 6-19-64.

791,453. THE BLACKCOCK ETC. AND DESIGN. Gibson & Lamgair Limited. SN 197,096. Pub. 4-6-65. Filed 7-13-64.

791,454. LIGHT-ON-LIGHT. Exquisite Form Industries, Inc. SN 198,725. Pub. 4-6-65. Filed 7-29-64.

791,455. J.S.I. Jerks Socks, Inc. SN 198,849. Pub. 4-6-65. Filed 7-30-64.

791,456. ZIG SOCKS AND DESIGN. Valait Hosiery, Inc. SN 199,143. Pub. 4-6-65. Filed 8-3-64.

791,457. XERCISER. Stone Manufacturing Company. SN 199,234. Pub. 4-6-65. Filed 8-4-64.

791,458. UP RISER. Royce Hosiery Mills, Inc. SN 199,314. Pub. 4-6-65. Filed 8-5-64.

791,459. COLLEGE POINTERS. S. Augstein & Co., Inc. SN 199,650. Pub. 4-6-65. Filed 8-11-64.

791,460. "THE INDEPENDENTS." Beautiful Bryans, Inc. SN 199,716. Pub. 4-6-65. Filed 8-12-64.

791,461. CIRCLE PARK AND DESIGN. Southern Athletic Company, Inc. SN 199,917. Pub. 4-6-65. Filed 8-14-64.

791,462. SPANCORE. Baker-Cammack Hosiery Mills, Inc. SN 200,143. Pub. 4-6-65. Filed 8-19-64.

791,463. HANESTRETCH. Hanes Corporation, assignee of P. H. Hanes Knitting Company. SN 200,180. Pub. 4-6-65. Filed 8-19-64.

791,464. HANESPAN. Hanes Corporation, assignee of P. H. Hanes Knitting Company. SN 200,182. Pub. 4-6-65. Filed 8-19-64.

791,465. HANESPUN. Hanes Corporation, assignee of P. H. Hanes Knitting Company. SN 200,183. Pub. 4-6-65. Filed 8-19-64.

791,466. TROMPE L'OEIL. Joseph Stein Coat Co., Inc. SN 200,600. Pub. 4-6-65. Filed 8-25-64.

791,467. AQUA ORIGINALS. United States Rubber Company. SN 200,683. Pub. 4-6-65. Filed 8-26-64.

791,468. TEMPTATION. Maro Industries, Inc. SN 200,940. Pub. 4-6-65. Filed 8-28-64.

791,469. AMERICAN HUNTER. American Hardware Supply Company. SN 201,245. Pub. 4-6-65. Filed 9-3-64.

791,470. CONFECTION. Maidenform, Inc. SN 202,071. Pub. 4-6-65. Filed 10-9-64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

791,452. (See Class 39 for this trademark.)

791,471. WYNDMOOR. Wyndmoor Knitting Mills, Inc. SN 196,194. Pub. 4-6-65. Filed 12-17-63.

791,472. MILLINIKID. Deering Milliken, Inc. SN 196,575. Pub. 4-6-65. Filed 1-24-64.

791,473. MILLIPRIDE. Deering Milliken, Inc. SN 196,576. Pub. 4-6-65. Filed 1-24-64.

791,474. CLEARSET. United Merchants and Manufacturers, Inc. SN 196,617. Pub. 4-6-65. Filed 2-10-64.

791,475. ALPAKIME. Staron Inc. SN 196,554. Pub. 4-6-65. Filed 4-7-64.

791,476. VISONIA. Staron, Inc. SN 196,197. Pub. 4-6-65. Filed 3-3-64.

791,477. REHUMEX AND DESIGN. Firma Wilhelm Kirchhof. SN 196,194. Pub. 4-6-65. Filed 3-22-64.

791,478. PRIZE WINNER. Woodward, Baldwin & Co., Inc. SN 196,226. Pub. 4-6-65. Filed 3-23-64.

791,479. ELASTEX. United Elastic Corporation. SN 197,890. Pub. 4-6-65. Filed 7-9-64.

791,480. WHIPFLEX. Cone Mills Inc. SN 203,576. Pub. 4-6-65. Filed 10-2-64.

791,481. ALLURA. J. P. Stevens & Co., Inc. SN 203,617. Pub. 4-6-65. Filed 10-6-64.

Class 44—Dental, Medical, and Surgical Appliances

791,482. S WITHIN A CIRCLE. Zimmer Manufacturing Company. SN 199,861. Pub. 4-6-65. Filed 2-27-64.

791,483. UNISORB. Parke, Davis & Company. SN 199,902. Pub. 4-6-65. Filed 4-13-64.

791,484. TRAVEL-MEDIC AND DESIGN. John A. Welty. SN 197,221. Pub. 4-6-65. Filed 7-6-64.

791,485. REGU-VAC. Becton, Dickinson and Company. SN 200,467. Pub. 4-6-65. Filed 10-7-64.

791,486. REVELATION. The S. S. White Dental Manufacturing Company. SN 205,907. Pub. 4-6-65. Filed 10-13-64.

791,487. SUPRACATH. Deseret Pharmaceutical Co., Inc. SN 204,242. Pub. 4-6-65. Filed 10-19-64.

791,488. "CUR." Precon Pump & Engineering Company, d.b.a. Precon Medical Products. SN 204,822. Pub. 4-6-65. Filed 10-22-64.

791,489. LADY FAIR. Fedtro, Inc. SN 200,240. Pub. 4-6-65. Filed 11-16-64.

791,490. NIGHT-GARD. Samuel Cromberg, Inc. SN 200,698. Pub. 4-6-65. Filed 1-8-65.

Class 45—Soft Drinks and Carbonated Waters

791,491. MOUNT PALOMAR AND DESIGN. San Diego Products Co. SN 196,220. Pub. 4-6-65. Filed 3-11-64.

791,492. HAMMER. Hammer Food Products Corporation, d.b.a. Hammer Beverages. SN 196,224. Pub. 4-6-65. Filed 3-24-64.

Class 46—Foods and Ingredients of Foods

791,493. ST BREAKFAST PRIDE AND DESIGN. Harris-Teeter Super Markets, Inc. SN 140,206. Pub. 4-6-65. Filed 7-10-62.

791,494. PIERCE CHIK. Pierce Pre-Cooked Foods, Inc. SN 194,945. Pub. 4-6-65. Filed 12-6-63.

791,495. BROOKSHIRE'S. Brookshire Ice Cream Company. SN 197,707. Pub. 4-6-65. Filed 12-30-63.

791,496. CASABLANCA. Vincent F. Sena, d.b.a. V. F. Sena. SN 196,097. Pub. 4-6-65. Filed 12-7-63.

791,497. LODI QUEEN. Gerlinger Fruit Co., d.b.a. John Gerlinger. SN 196,173. Pub. 4-6-65. Filed 12-9-63.

791,498. GOODMAN'S. A. Goodman & Sons, Inc. SN 196,459. Pub. 4-6-65. Filed 2-11-64.

791,499. STEAK-A-BOBS. Abner Michaud, d.b.a. A. Michaud Co. SN 191,709. Pub. 12-15-64. Filed 6-21-64.

791,500. CLUB SANDWICH. Pearson Candy Company, d.b.a. Sperry Candy Co. SN 192,426. Pub. 4-6-65. Filed 4-30-64.

791,501. MOUNT PALOMAR AND DESIGN. San Diego Products Co. SN 196,221. Pub. 4-6-65. Filed 3-11-64.

791,502. RINGOS. National Biscuit Company. SN 194,005. Pub. 1-19-65. Filed 5-23-64.

791,503. INSTAGEN. Pacific Union Association of Seventh Day Adventists, d.b.a. Loma Linda Foods. SN 196,293. Pub. 4-6-65. Filed 6-23-64.

791,504. MAYOR. National Biscuit Company. SN 196,000. Pub. 4-6-65. Filed 6-26-64.

791,505. TOUCHDOWN. Ripon Foods, Inc. SN 196,714. Pub. 4-6-65. Filed 6-29-64.

791,506. TRAFFIC JAM. Charles W. Crotts, d.b.a. C. W. Crotts Co. SN 197,094. Pub. 4-6-65. Filed 7-6-64.

791,507. VAL MARIA. Gabriel M. Giannini, d.b.a. Valmeria Ranches. SN 197,115. Pub. 4-6-65. Filed 7-6-64.

791,508. TOP FRESH. Topco Associates, Inc. SN 197,622. Pub. 4-6-65. Filed 7-10-64.

791,509. BI AND DESIGN. John Morrell & Co. SN 197,746. Pub. 4-6-65. Filed 7-13-64.

791,510. MEAL MATES. National Biscuit Company. SN 197,751. Pub. 4-6-65. Filed 7-13-64.

791,511. NECTAR OF BACCHUS. L. N. Renault & Sons, Inc. SN 197,904. Pub. 4-6-65. Filed 7-15-64.

791,512. NECTAR OF THE GODS. L. N. Renault & Sons, Inc. SN 197,905. Pub. 4-6-65. Filed 7-15-64.

791,513. TAKE-ALONGS. Lawry's Foods, Inc. SN 197,964. Pub. 4-6-65. Filed 7-16-64.

791,514. POP-TARTS. Kellogg Company. SN 196,189. Pub. 4-6-65. Filed 7-20-64.

791,515. SPACE-SHOTS. Joe Lowe Corporation. SN 196,486. Pub. 4-6-65. Filed 7-20-64.

791,516. JITNEY JUNGLE AND DESIGN. Jitney-Jungle, Inc. SN 196,750. Pub. 4-6-65. Filed 7-29-64.

791,517. TUFLOW. The Tupman Thurlow Co., Inc. SN 201,561. Pub. 4-6-65. Filed 9-15-64.

791,518. SPICEAGE. Spiceage Corporation. SN 202,049. Pub. 4-6-65. Filed 9-16-64.

791,519. PURETA. Pureta Sausage Company, Inc. SN 202,160. Pub. 4-6-65. Filed 9-18-64.

791,520. GOLDEN PRIDE. Case-Swayne Co., Inc. SN 204,750. Pub. 4-6-65. Filed 10-30-64.

791,521. CRAZY QUILT. Strater Candy Company, Inc. SN 205,052. Pub. 4-6-65. Filed 11-5-64.

791,522. BIOGARDE. Internationale Biogluft Gesellschaft J. Schweiger & Co. SN 205,621. Pub. 4-6-65. Filed 11-9-64.

791,523. WAGON TRAIL. Jewett & Sherman Company. d.b.a. McGlynn Food Products. SN 205,022. Pub. 4-6-65. Filed 11-9-64.

791,524. BRIDGEMAN. Land O'Lakes Creameries, Inc., d.b.a. Bridgeman Creameries. SN 206,205. Pub. 4-6-65. Filed 11-17-64.

Class 47—Wines

791,525. (See Class 33 for this trademark.)

791,526. A FRANK SCHOONMAKER SELECTION. Frank Schoonmaker, d.b.a. Frank Schoonmaker Distributors. SN 196,526. Pub. 4-6-65. Filed 7-27-64.

Class 49—Distilled Alcoholic Liquors

791,526. COPPER GOOSE. Barrett Hamilton, Incl, d.b.a. Barrett Hamilton Distillery. SN 196,526. Pub. 4-20-65. Filed 10-5-61.

791,527. COPPER GOOSE AND DESIGN. Barrett Hamilton, Inc., d.b.a. Bayfett Hamilton Distillery. SN 181,060. Pub. 7-2-62. Filed 10-31-61.

791,528. CROWN PRINCE. The Alfred Hart Company, d.b.a. Quality Beverage Products. SN 178,841. Pub. 3-10-64. Filed 7-26-62.

791,529. STEPPED GATE DESIGN. H. H. Pott Mfgr. Kunstanstalten. SN 191,570. Pub. 4-6-65. Filed 4-22-64.

791,530. VINFOR. Foreign-Vintages, Inc. SN 197,550. Pub. 4-6-65. Filed 7-10-64.

791,531. LOCHSIDE. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited. SN 190,032. Pub. 4-6-65. Filed 3-3-64.

791,532. ROYAL AWARD. Seven Distilling Company. SN 200,541. Pub. 4-6-65. Filed 8-28-64.

Class 50—Merchandise Not Otherwise Classified

791,533. BABY-MEDIC AND DESIGN. John A. Welty. SN 197,219. Pub. 4-6-65. Filed 7-6-64.

791,534. SHELF ELEGANT. Carlan Products, Inc. SN 199,904. Pub. 4-6-65. Filed 4-17-64.

791,535. SHELF PRIDE. Wilma E. Landon, d.b.a. Sunline Home Products, Co. SN 200,204. Pub. 4-6-65. Filed 8-17-64.

791,536. TWIN-TRAK. Gibson Associates Incorporated. SN 200,247. Pub. 4-6-65. Filed 12-16-64.

791,537. FABRICON. Fabricon Company. SN 200,777. Pub. 4-6-65. Filed 1-12-65.

Class 51—Cosmetics and Toilet Preparations

791,538. AIRBORN. Turner Hall Corporation (New York corporation), assignee of The Elliot Industries Company (Connecticut corporation). SN 196,500. Pub. 4-6-65. Filed 1-22-62.

791,539. FLORAL DESIGN. Johann Maria Farina, Inc. (New York corporation), assignee of Johann Maria Farina Gegenueber Dem Julichs-Platz (German corporation). SN 197,238. Pub. 4-6-65. Filed 2-6-62.

791,540. IMPERIAL BATH ROUNDS. Schratz Products, Inc. SN 148,913. Pub. 4-6-65. Filed 7-12-62.

791,541. MT. EVEREST SKREEN AND DESIGN. Pacific Laboratories Ltd. SN 188,814. Pub. 4-6-65. Filed 9-17-62.

791,542. MEND 'N CURL. Sybil Ives, Incorporated, by change of name from Sybil Ives Ltd. SN 190,246. Pub. 6-29-64. Filed 10-31-62.

791,543. STRUCTURE S. Sybil Ives Incorporated. SN 200,566. Pub. 4-6-65. Filed 8-24-64.

791,544. SILENT SNOW. Clairol Incorporated. SN 200,221. Pub. 4-6-65. Filed 8-26-64.

791,545. WINSOME WHEAT. Clairol Incorporated. SN 200,222. Pub. 4-6-65. Filed 8-26-64.

791,546. HAPPY HONEY. Clairol Incorporated. SN 200,225. Pub. 4-6-65. Filed 8-26-64.

791,547. ADAM AND EVIL KISSING COLORS. Cosmetically Yours, Inc. SN 200,623. Pub. 4-6-65. Filed 8-28-64.

791,548. MAKING HEADWAY. Olan Products, Inc. SN 200,906. Pub. 4-6-65. Filed 8-31-64.

Class 52—Detergents and Soaps

791,549. SUPER 4X10 DESIGN. Sep-Ko Chemicals, Inc., assignee of Monarch Chemical, Inc. SN 197,760. Pub. 4-6-65. Filed 2-3-64.

791,550. CHEMPROX. Chemprox Corporation. SN 198,458. Pub. 4-6-65. Filed 3-11-64.

791,551. MOUNT PALOMAR AND DESIGN. San Diego Products Co. SN 196,222. Pub. 4-6-65. Filed 3-11-64.

791,552. REMOVE. Amway Corporation. SN 196,006. Pub. 4-6-65. Filed 6-19-64.

791,553. BOY IN A BATH TUB (DESIGN). Colgate-Palmolive Company. SN 201,006. Pub. 4-6-65. Filed 9-1-64.

791,554. PRE-OP. Colgate-Palmolive Company. SN 201,009. Pub. 4-6-65. Filed 9-1-64.

791,555. SWINGING SISTERS. Colgate-Palmolive Company. SN 201,009. Pub. 4-6-65. Filed 9-1-64.

791,556. SWINGING RINGERS. Colgate-Palmolive Company. SN 201,011. Pub. 4-6-65. Filed 9-1-64.

791,557. LEO THE LION. Colgate-Palmolive Company. SN 201,013. Pub. 4-6-65. Filed 9-1-64.

791,558. SPAULK. Wyandotte Chemicals Corporation. SN 202,053. Pub. 4-6-65. Filed 9-16-64.

791,559. BUFFLENT. Wyandotte Chemicals Corporation. SN 202,054. Pub. 4-6-65. Filed 9-16-64.

791,560. SOAPRIDE. Armour and Company. SN 202,146. Pub. 4-6-65. Filed 10-2-64.

Service Marks

Class 103—Construction and Repair

791,561. IR 6 STAR FACTORY STANDARD TOOL REPAIR SERVICE AND DESIGN. Ingersoll-Rand Company. SN 197,492. Pub. 4-6-65. Filed 7-6-64.

791,562. CL AND DESIGN. Cunningham-Limp Company. SN 197,545. Pub. 4-6-65. Filed 7-10-64.

Class 105—Transportation and Storage

791,563. M AND DESIGN. Matson Navigation Company. SN 197,734. Pub. 4-6-65. Filed 7-13-64.

Class 107—Education and Entertainment

791,564. HOWDY. The Pennsylvania Forestry Association. SN 128,028. Pub. 4-6-65. Filed 6-29-61.

791,565. HOWDY AND REPRESENTATION OF A RACCOON. The Pennsylvania Forestry Association. SN 128,027. Pub. 4-6-65. Filed 6-14-61.

791,566. GANG-NAIL. Automated Building Components, Inc. SN 150,992. Pub. 4-6-65. Filed 8-15-62.

791,567. THE WINDJAMMERS. The Windjammers. SN 196,410. Pub. 4-6-65. Filed 6-24-64.

Collective Membership Mark

Class 200

791,568. REAGENT ETC. AND DESIGN. National Association of Real Estate Executives, Inc. SN 200,022. Pub. 4-6-65. Filed 10-12-64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2—Receptacles

791,569. T. V. Container Company, Los Angeles, Calif., assignee of Calvidoo Electronics, Inc., Compton, Calif. SN 165,695. Filed P.R. 11-26-63; Am. S.R. 10-27-64.

TUBE-TOTER

For Containers for Cathode Ray Tubes.
First use Oct. 1, 1963.

791,570. Weric Corp., Rochester, N.Y. SN 169,820. Filed P.R. 6-29-64; Am. S.R. 11-10-64.

CAN CADDY

For Cup Attachable to Cans for Catching Drips.
First use May 12, 1963.

Class 6—Chemicals and Chemical Compositions

791,571. Rotary Drilling Services, Inc., Tulsa, Okla. SN 182,976. Filed P.R. 1-24-64; Am. S.R. 9-10-64.

NO STIK

For Surface Tension Reducing Additives for Oil Well Drilling Fluids.
First use Jan. 16, 1962.

Class 7—Cordage

791,572. St. Regis Paper Company, New York, N.Y. SN 178,789. Filed P.R. 7-25-63; Am. S.R. 4-23-65.

POLY-TIES

For Reinforced Plastic Ribbons Used in the Closure of Packages.
First use May 31, 1963.

Class 12—Construction Materials

791,573. Simpson Timber Company, Seattle, Wash. SN 169,980. Filed P.R. 5-20-64; Am. S.R. 4-26-65.

MANDARIN OAK

For Doors.
First use Feb. 20, 1964.

791,574. Schlage Lock Company, San Francisco, Calif. SN 181,886. Filed P.R. 6-22-64; Am. S.R. 4-21-65.

VALET-DOOR

For Room Door Having a Goods-Containing Compartment.
First use Mar. 17, 1964.

791,575. Simpson Timber Company, Seattle, Wash. SN 169,983. Filed P.R. 5-7-64; Am. S.R. 4-26-65.

SABLE

For Prefinished Paneling.
First use Mar. 2, 1964.

Class 16—Protective and Decorative Coatings

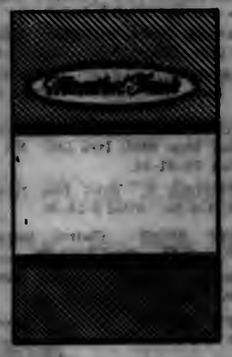
791,576. Davis Paint Company, Kansas City, Mo., assignee of The John P. Cochran Company, Cleveland, Ohio. SN 178,879. Filed P.R. 10-14-63; Am. S.R. 4-14-65.

SUPR-TUFF

For Porch and Floor Enamel Suitable for Various and Sundry Other Uses in the General Interior and Exterior Maintenance of Households, Industrial and Business Establishments and Public Institutions, and for Furniture and Appliances, Ironwork, Cement Surfaces, Boats, Trucks, Wagons, Tractors, Farm Implements and Machinery.
First use Feb. 16, 1962.

Class 17—Tobacco Products

791,577. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. SN 206,961. Filed 12-23-64.



The drawing is lined for green and gold.
For Cigarettes.
First use in or about May 1956.

791,578. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. SN 206,962. Filed 12-23-64.



The drawing is lined for red and gold.
For Cigarettes.
First use in or about August 1957; in or about February 1954 in a different form.

Class 19—Vehicles

791,579. Maria Rosa Vitelli née Valente, Rome, Italy. SN 180,787. Filed P.R. 3-27-64; Am. S.R. 1-21-65.

VENEZIA

Venezia is the name of the Italian city known in English as Venice. Priority claimed under Sec. 44(d) on Italian application filed Sept. 27, 1963; Reg. No. 628/64; dated June 27, 1964.
For Passenger Motor Vehicles, Trucks, Airplanes and Boats, and Parts Thereof.

Class 22—Games, Toys, and Sporting Goods

791,580. Hasenfeld Bros., Inc., Central Falls, R.I. SN 171,877. Filed P.R. 6-26-63; Am. S.R. 4-21-65.

TALKING TELEPHONE

For Toy Telephone.
First use on or about Mar. 8, 1963.

Class 32—Furniture and Upholstery

791,581. Brenneman-Hartshorn Inc., Cincinnati, Ohio. SN 197,064. Filed P.R. 7-6-64; Am. S.R. 4-23-65.

BROCADE

For Plastic Window Shades.
First use Apr. 20, 1964.

Class 38—Prints and Publications

791,582. Kenneth N. Taylor, Wheaton, Ill. SN 182,180. Filed P.R. 11-26-63; Am. S.R. 4-23-65.

THE CHRISTIAN READER

For Magazine Containing Original Articles, and Digests and Reprints of Articles.
First use September 1963.

Class 39—Clothing

791,583. Byer-Rolnick Corporation, Garland, Tex., by change of name from Byer-Rolnick Hat Corporation, Garland, Tex. SN 163,696. Filed P.R. 5-13-63; Am. S.R. 2-26-65.

PELUCHE

For Men's Hats.
First use on or about Feb. 5, 1963.

791,584. Moran Shoe Company, Carlyle, Ill. SN 178,862. Filed P.R. 10-4-63; Am. S.R. 5-3-65.

POSTURE AID

For Infants' and Children's Shoes.
First use Sept. 20, 1963.

791,585. Moran Shoe Company, Carlyle, Ill. SN 178,862. Filed P.R. 10-4-63; Am. S.R. 5-3-65.

Dr. Keeley's
POSTURE AID

For Infants' and Children's Shoes.
First use Sept. 20, 1963.

791,586. Camp and McManus, Inc., Reading, Pa. SN 181,178. Filed P.R. 11-14-63; Am. S.R. 4-21-65.

SUPPORT PLUS

For Men's Hosiery.
First use June 12, 1961.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

791,597. Mount Vernon Mills, Inc., Baltimore, Md. SN 189,660. Filed P.R. 3-24-64; Am. S.R. 4-5-65.

COT-N-STRETCH

For Fabrics Made Wholly of Cotton or Blended Fabrics Containing at least 50% cotton.
First use Mar. 16, 1964.

Class 43—Thread and Yarn

791,598. Reynolds Yarns, Inc., Plainview, N.Y. SN 194,990. Filed P.R. 6-4-64; Am. S.R. 4-14-65.

REYNOLDS DANSKYARN

For Yarn and Balls of Yarn.
First use Sept. 1, 1962.

Class 44—Dental, Medical, and Surgical Appliances

791,599. J. H. Emerson Company, Cambridge, Mass. SN 189,661. Filed P.R. 3-16-64; Am. S.R. 4-19-65.

BIRTHEEZ

For Apparatus for Providing Negative Pressure Over the Abdomen of Pregnant Women Used in Obstetrics.
First use Jan. 16, 1961.

Class 46—Foods and Ingredients of Foods

791,600. Roamer Foods, Inc., Clive, Iowa. SN 213,046. Filed 3-4-65.

Roamers

For Frozen Noodles.
First use at least by Dec. 31, 1964.

Class 47—Wines

791,601. Monsieur Henri Wines, Ltd., Brooklyn, N.Y. SN 189,664. Filed P.R. 3-23-64; Am. S.R. 3-29-65.

STYRIA

For Wines.
First use Feb. 7, 1964.

Class 49—Distilled Alcoholic Liquors

791,602. McKesson & Robbins, Incorporated, New York, N.Y. SN 206,074. Filed 10-20-64.



For Liqueur.
First use at least as early as 1934.

Class 50—Merchandise Not Otherwise Classified

791,603. R. D. Werner Co., Inc., Greenville, Pa. SN 178,806. Filed P.R. 7-13-64; Am. S.R. 4-29-65.

SPIN-PROOF

For Ladders, Extension Ladders, Stepladders and Platform Ladders.
First use July 10, 1963.

Class 51—Cosmetics and Toilet Preparations

791,604. Carter Products, Inc., New York, N.Y. SN 189,696. Filed P.R. 3-27-64; Am. S.R. 4-22-65.

CARTER'S

For Shaving Cream.
First use Mar. 31, 1963.

791,605. Carter Products, Inc., New York, N.Y. SN 189,697. Filed P.R. 3-27-64; Am. S.R. 4-22-65.

CARTER'S

For Deodorants.
First use Mar. 31, 1963.

791,606. Clairol Incorporated, New York, N.Y. SN 185,566. Filed P.R. 3-20-64; Am. S.R. 4-22-65.

HINT OF HONEY

For Hair Tinting, Dyeing and Coloring Preparation.
First use Oct. 22, 1963.

791,607. Clairol Incorporated, New York, N.Y. SN 185,566. Filed P.R. 3-20-64; Am. S.R. 4-22-65.

HINT O' HONEY

For Hair Tinting, Dyeing and Coloring Preparation.
First use Oct. 9, 1963.

791,608. Estee Lauder, Incorporated, New York, N.Y. SN 191,405. Filed P.R. 4-17-64; Am. S.R. 4-26-65.

SPANISH MELON

For Lipsticks.
First use Feb. 1, 1964.

791,609. Estee Lauder, Incorporated, New York, N.Y. SN 191,411. Filed P.R. 4-17-64; Am. S.R. 4-26-65.

DESERT CORAL

For Lipsticks.
First use Feb. 1, 1964.

791,610. Estee Lauder, Incorporated, New York, N.Y. SN 191,412. Filed P.R. 4-17-64; Am. S.R. 4-26-65.

FRENCH PEACH

For Lipsticks.
First use May 1, 1963.

791,611. Estee Lauder, Incorporated, New York, N.Y. SN 191,413. Filed P.R. 4-17-64; Am. S.R. 4-21-65.

FRENCH APRICOT

For Lipsticks.
First use Feb. 1, 1964.

791,612. Estee Lauder, Incorporated, New York, N.Y. SN 191,418. Filed P.R. 4-17-64; Am. S.R. 4-26-65.

SWISS STRAWBERRY

For Lipsticks.
First use Feb. 1, 1964.

791,613. Lydia O'Leary, Inc., New York, N.Y. SN 191,696. Filed P.R. 4-21-64; Am. S.R. 4-27-65.

SPOT-FREE

For Skin Cream—Namely, a Moisturizing Bleach Cream.
First use Mar. 11, 1963.

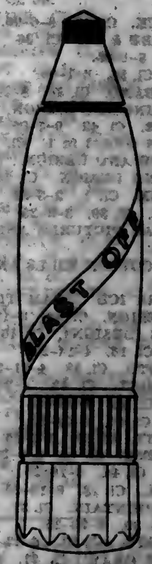
791,614. Samuel Bonat & Bro., Inc., West Paterson, N.J. SN 194,662. Filed P.R. 6-1-64; Am. S.R. 4-13-65.

BODY-COLOR

For Waving Lotion and Neutralizer for Cold Permanent Waving.
First use Apr. 5, 1964.

Class 52—Detergents and Soaps

791,615. Texize Chemicals, Inc., Greenville, S.C. SN 189,644. Filed P.R. 3-27-64; Am. S.R. 4-19-65.



The mark consists of a plastic bottle, together with the words "Blast Off," used as the container for applicant's bath soap.
For Bath Soap in Liquid Form.
First use Apr. 3, 1962.

791,616. L. H. Kellogg Chemical Company, Minneapolis, Minn. SN 189,513. Filed P.R. 3-26-64; Am. S.R. 4-26-65.

DEEN

For Detergent for Cleaning Embalming Instruments.
First use June 10, 1960.

791,617. Carter Products, Inc., New York, N.Y. SN 189,698. Filed P.R. 3-27-64; Am. S.R. 4-22-65.

MILD TO MIGHTY

For Hand Soap.
First use Dec. 20, 1962.

Service Marks

Class 100—Miscellaneous

791,618. Canning Machinery and Supplies Association, Washington, D.C. SN 178,606. Filed P.R. 6-21-65; Am. S.R. 8-5-64.

NATIONAL EXPOSITION FOR FOOD PROCESSORS

For Promoting the Sale of Food Processing Equipment and Supplies by Means of an Annual Industrial Exhibition.
First use May 20, 1963.

TRADEMARK REGISTRATIONS RENEWED

26,804. SHAMROCK. Cl. 42. 8-6-85.
44,725. WM. KNABE & CO. Cl. 36. 7-12-05.
44,960. H. Cl. 9. 8-1-05.
45,057. KNABE. Cl. 36. 8-1-05.
45,837. MARINE BAND. Cl. 26. 8-29-05.
45,855. CHICKERING AND DESIGN. Cl. 36. 8-29-05.
46,167. SUPERIOR. Cl. 42. 9-5-05.
47,061. THREE IN ONE/3 in 1. Cl. 15. 10-17-05.
191,006. KEYSTONE AND DESIGN. Cl. 23. 11-13-24.
194,458. HOT S AND DESIGN. Cl. 22. 1-27-25.
194,690. CARBOTEX. Cl. 1. 2-3-25.
195,234. MERRILL. Cl. 39. 2-3-25.
196,128. UNIVERSAL PICTURES AND DESIGN. Cl. 38. 2-10-25.
196,240. AMAZON COTTON MILLS AND DESIGN. Cl. 42. 2-17-25.
196,479. HENDLERS ICE CREAM THE VELVET KIND AND DESIGN. Cl. 46. 2-17-25.
197,268. BUTTONS (DESIGN). Cl. 40. 4-14-25.
197,280. SUBOX. Cl. 16. 4-14-25.
197,569. TELEPHOTO. Cl. 38. 4-21-25.
197,612. OLD COLONY. Cl. 42. 4-21-25.
197,822. YUCCA. Cl. 46. 4-28-25.
197,852. RADOX. Cl. 51. 4-28-25.
199,156. JIFFYKNIT. Cl. 39. 6-2-25.
199,190. GOLD CREST. Cl. 46. 6-2-25.
199,705. JUNIOR. Cl. 44. 6-16-25.
199,788. CAMTHOL. Cl. 18. 6-16-25.
199,849. ROCKY MOUNTAIN. Cl. 37. 6-16-25.
199,910. JAMI. Cl. 39. 6-23-25.
199,998. TELEPHOTO. Cl. 21. 6-23-25.
200,419. DOROTHY GRAY. Cl. 51. 6-30-25.
200,700. PURITE. Cl. 6. 7-7-25.
200,815. NEW BRITAIN AUTOMATIC. Cl. 26. 7-14-25.
200,855. MIDGET. Cl. 44. 7-14-25.
201,998. BA. Cl. 42. 8-11-25.
202,732. FLEXIES AND DESIGN. Cl. 39. 9-1-25.
202,733. FLEXIES. Cl. 39. 9-1-25.
202,735. F. B. LINDSTROM. Cl. 26. 9-1-25.
202,912. ENDSLOW AND DESIGN. Cl. 44. 9-8-25.
203,180. MASTER BUILDERS. Cl. 12. 9-15-25.
203,604. HUGUES AINE. Cl. 18. 9-29-25.
203,704. SCHIEBLER. Cl. 26. 9-29-25.
204,088. UNIVERSAL SHOE MFG. CO., AND DESIGN. Cl. 39. 10-6-25.
204,205. ROET, BURNS AND DESIGN. Cl. 17. 10-13-25.
411,040. ACADEMY AND DESIGN. Cl. 20. 1-6-46.
411,504. TI WITHIN A CIRCLE. Cl. 51. 1-22-46.
412,121. CALLING ALL BOYS. Cl. 39. 2-26-46.
413,063. ZOTOS. Cl. 44. 4-16-46.
413,566. LOAD DISPATCHER AND DESIGN. Cl. 19. 5-1-46.
413,900. SUN FLAME. Cl. 51. 5-1-46.
413,944. BARNEY'S AND DESIGN. Cl. 39. 5-22-46.
414,451. 365. Cl. 40. 6-12-46.
414,454. SONOMOR. Cl. 40. 6-12-46.
414,455. SONOMOR. Cl. 37. 6-12-46.
414,720. T.N.T. Cl. 51. 6-26-46.
414,787. CUTI-FLEX. Cl. 51. 6-26-46.
414,901. LARKWING. Cl. 42. 7-10-46.
415,093. CIMCOOL. Cl. 6. 7-10-46.
415,189. PHILCO. Cl. 21. 7-31-46.
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677,870. DRAGON ON FLAG DESIGN AND JAPANESE CHARACTERS. Cl. 11.
677,871. FLOGEN. Cl. 11.
677,881. SILVER SEAL STUDS ETC. AND DESIGN. Cl. 12.
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677,927. FLUORO TRI COLOR. Cl. 16.
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677,962. LITTLE. Cl. 21.
677,964. CIR-PAK CB AND DESIGN. Cl. 21.
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678,199. BALACUIR. Cl. 50.
678,200. QUICK STEMS. Cl. 50.
678,203. AQUARAMA. Cl. 50.
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678,241. PEANUT WIP. Cl. 46.
678,243. KWIKOOK. Cl. 46.
678,244. TASTI-CUP. Cl. 46.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

268,877. ERCO. Cl. 23. Engineering and Research Corporation, 7-4-30. New Cert. Sec. 7(c) to The H. P. Townsend Mfg. Co., Elmwood, Conn.

674,902. CHEKMATE. Cl. 26. Coreco Research Corporation. 8-8-59. New Cert. Sec. 7(c) to Foto-Tronics, Inc., Grosse Pointe Park, Mich.

678,035. SUNNEN. Cl. 26. Sunnen Product Company. 8-8-59. New Cert. Sec. 7(c) to Sunnen Products Company, St. Louis, Mo.

686,267. A GENERAL TEXTILE PRODUCT AND DESIGN. Cl. 24. Morris Fefferman, d.b.a. General Textile Company. 10-6-59. New Cert. Sec. 7(c) to Fefferman Manufacturing Co., Newark, N.J.

713,532. SANI-GARD. Cl. 42. Southern Bedding Accessories, Inc. 4-4-61. New Cert. Sec. 7(c) to Eclipse Sleep Products, Inc., New York, N.Y.

744,849. CIR-CHEK. Cl. 21. Electro Controls, Inc. 1-29-63. New Cert. Sec. 7(c) to Harvey Hubbell, Incorporated, Bridgeport, Conn.

759,906. JAGUAR. Cl. 51. Robert Alan Franklin, d.b.a. Rebaire Alain. 11-5-63. New Cert. Sec. 7(c) to Yardley of London, Inc., Totowa, N.J.

763,976. BOOBY-TRAP. Cl. 22. Guild Toys, Inc. 1-19-65. New Cert. Sec. 7(c) to Parker Brothers, Inc., Salem, Mass.

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Chickering & Sons.
Kinsbe Wm. & Co. Mfg. Co. of Baltimore City.
Aero Geo Astro Corp.: See—
Keltec Industries, Inc.
Aircraft Armaments, Inc., Cockeysville, Md. 791,259–1, pub. 4–6–65. Cl. 22.
Airkem, Inc., New York, N.Y. 678,092–3, canc. Cl. 24.
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American Commercial, Inc., Los Angeles, Calif. 791,389–90, pub. 4–6–65. Cl. 29.
American Hardware Supply Co., East Butler, Pa. 791,469, pub. 4–6–65. Cl. 20.
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American Life Insurance Co., Birmingham, Ala. 678,226, canc. Cl. 102.
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Amo Co., Inc., Elkhart, Ind. 791,264, pub. 4–6–65. Cl. 8.
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Balatum N.V., Huizen, Netherlands. 678,189, canc. Cl. 50.
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Cone Mills Inc., New York, N.Y. 791,480, pub. 4–6–65. Cl. 48.
Continental Distilling Corp., d.b.a. Inver House Distillers, Ltd., Philadelphia, Pa. 791,381, pub. 4–6–65. Cl. 46.
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Diamond Crystal Salt Co., St. Clair, Mich. 791,265, pub. 4–6–65. Cl. 6.
Dominion Foundries and Steel, Ltd., Hamilton, Ontario, Canada. 791,290, pub. 4–6–65. Cl. 14.
Dowsmith Inc., Little Rock, Ark. 791,268, pub. 4–6–65. Multiple Class (Classes 12 and 13).
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East Texas Pulp and Paper Co., Silsbee, Tex. 791,424, pub. 4–6–65. Cl. 37.
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Faultless Starch Co., Kansas City, Mo. 791,258–4, pub. 4–6–65. Cl. 6.
Federal Pacific Electric Co., Newark, N.J. 791,375, pub. 4–6–65. Cl. 20.
Federal Sign and Signal Corp., Blue Island, Ill. 791,326, pub. 4–6–65. Cl. 21.
Fedtro, Inc., Rockville Centre, N.Y. 791,439, pub. 4–6–65. Cl. 44.
Ferrodynamics Corp., from Metex Electronics Corp., Clark, N.J. 791,222, pub. 4–6–65. Cl. 21.
Fibreboard Paper Products Corp., San Francisco, Calif. 677,846, canc. Cl. 2.
Firm of M. Hohner, New York, to M. Hohner, Inc., Hicksville, N.Y. 45,837, ren. 6–22–65. Cl. 26.
Firma Wilhelm Kirchhoff, Munster, Westphalia, Germany. 791,477, pub. 4–6–65. Cl. 42.
Fletcher Paper Co., Alpena, Mich. 791,426, pub. 4–6–65. Cl. 37.
Flintkote Co., The, New York, N.Y. 677,894, canc. Cl. 12.
Flocke & Co.: *See*—
Flocke, Karl.
Flocke, Karl, d.b.a. Flocke & Co., Solingen, Germany. 678,023, canc. Cl. 23.
Foreign Vintages, Inc., New York, N.Y. 791,530, pub. 4–6–65. Cl. 49.
Fort Howard Paper Co., Green Bay, Wis. 190,849, ren. 6–22–65. Cl. 37.
Foster, Charles H., to Chesebrough-Pond's, Inc., New York, N.Y. 414,720, ren. 6–22–65. Cl. 51.
French, R. T., Co., The, Rochester, N.Y. 791,251, pub. 4–6–65. Cl. 6.
Frepak Products, Providence, R.I. 678,196, canc. Cl. 44.
Frost, Charles H., & Co., Quebec, Canada. 791,201–4, pub. 11–24–64. Cl. 1b.
G.B.M. Products, Inc., Detroit, Mich. 677,924, canc. Cl. 21.
Gayla Industries, Houston, Tex. 791,346, pub. 4–6–65. Cl. 22.
Geigy Chemical Corp.: *See*—
Boehringer Ingelheim, G.m.b.H.
General Aluminum Corp., Carrollton, Tex. 791,277, pub. 4–6–65. Cl. 12.
General Aniline & Film Corp., New York, N.Y. 791,365, pub. 4–6–65. Cl. 26.
General Cigar Co., Inc., New York, N.Y. 204,365, ren. 6–22–65. Cl. 17.
General Electric Co., Schenectady, N.Y. 678,060, canc. Cl. 24.
General Mills, Inc.: *See*—
Hawley & Hoops.
General Sintering Corp., Melrose Park, Ill. 677,966, canc. Cl. 21.
Georgene Novelties, Inc., New York, N.Y. 791,344–5, pub. 4–6–65. Cl. 22.
Georgia Shoe Mfg. Co., Inc., Flowery Branch, Ga. 791,444, pub. 4–6–65. Cl. 39.
Giannini, Gabriel M., d.b.a. Valmaria Ranches, Indio, Calif. 791,507, pub. 4–6–65. Cl. 46.
Gibson Associates Inc., Cranford, N.J. 791,396, pub. 4–6–65. Cl. 26.
Gibson & Lamgair Ltd., Selkirk, Scotland. 791,468, pub. 4–6–65. Cl. 39.
Giltzow, James E., d.b.a. Hunter Design Products, Roseland, N.J. 791,430, pub. 4–6–65. Cl. 36.
Glidden Co., The, Cleveland, Ohio. 677,929, canc. Cl. 16.
Goodman, A., & Sons, Inc., Long Island City, N.Y. 791,498, pub. 4–6–65. Cl. 42.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 791,207, pub. 4–6–65. Cl. 19.
Gossard, H. W., Co., The, Chicago, Ill. 678,150, canc. Cl. 39.
Grafigna Fruit Co., d.b.a. John Grafigna, Lodi, Calif. 791,497, pub. 4–6–65. Cl. 46.
Grafigna, John: *See*—
Grafigna Fruit Co.
Gray, Dorothy, to Lehn & Fink Products Corp., New York, N.Y. 200,419, ren. 6–22–65. Cl. 51.
Green Bay Packaging Inc., Green Bay, Wis. 791,431, pub. 4–6–65. Cl. 37.
Greenberg, Samuel, Inc., Philadelphia, Pa. 791,490, pub. 4–6–65. Cl. 44.
Guard-Well Corp., Quincy, Mass. 791,393, pub. 4–6–65. Cl. 32.
Gulf Oil Corp., Pittsburgh, Pa. 791,406, pub. 4–14–64. Cl. 23.
Gulf States Paper Corp., Tuscaloosa, Ala. 791,235, pub. 4–6–65. Cl. 5.
Gustafson Mfg. Co., Inc., Corpus Christi, Tex. 678,015, canc. Cl. 23.
HMH Publishing Co. Inc., from HMH Publishing Co., Inc., Chicago, Ill. 791,223, pub. 4–6–65. Cl. 22.
Hagan Mfg. Co., Delphos, Ohio. 791,267, pub. 4–6–65. Cl. 13.
Hamilton, Barrett, Distillery: *See*—
Hamilton, Barrett, Inc.
Hamilton, Barrett, Inc., d.b.a. Barrett Hamilton Distillery, Little Rock, Ark. 791,526–7, pub. 6–22–65. Cl. 49.
Hammel, Riglander & Co., to Hammel, Riglander & Co. Inc., New York, N.Y. 208,785, ren. 6–22–65. Cl. 23.
Hammel, Riglander & Co. Inc.: *See*—
Hammel, Riglander & Co.
Hammel, Riglander & Co., Inc., New York, N.Y. 416,419, ren. 6–22–65. Cl. 23.
Hammer Beverages: *See*—
Hammer Food Products Corp.
Hammer Food Products Corp., d.b.a. Hammer Beverages, Brooklyn, N.Y. 791,492, pub. 4–6–65. Cl. 46.

Hampton Shirt Co., Inc., New York, N.Y. 791,449, pub. 4–6–65. Cl. 39.
Hanes Corp., from P. H. Hanes Knitting Co., Winston-Salem, N.C. 791,462–8, pub. 4–6–65. Cl. 39.
Hanes, P. H., Knitting Co.: *See*—
Hanes Corp.
Harnischfeger Corp., Milwaukee, Wis. 791,497, pub. 4–6–65. Cl. 34.
Harris Refrigeration Sales & Service Inc., Cambridge, Mass. 791,494, pub. 4–6–65. Cl. 34.
Harris-Teeter Super Markets, Inc., Charlotte, N.C. 791,493, pub. 4–6–65. Cl. 42.
Hart, Alfred, Co., The, d.b.a. Quality Distilled Products, Los Angeles, Calif. 791,363, pub. 3–10–64. Cl. 49.
Hassenfeld Bros., Inc., Central Falls, R.I. 791,509. Cl. 22.
Hawley & Hoops, New York, N.Y., to General Mills, Inc., Minneapolis, Minn. 197,553, ren. 6–22–65. Cl. 46.
Hedaya & Co., New York, N.Y. 791,357, pub. 4–6–65. Cl. 22.
Headley Creamery Co., The, Baltimore, Md., to The Borden Co., New York, N.Y. 194,479, ren. 6–22–65. Cl. 46.
Henry Hotze & Sons Co., Pocahontas, Ark. 194,458, ren. 6–22–65. Cl. 23.
Herman, Louis, & Co., to Movie Star, Inc., New York, N.Y. 414,190, ren. 6–22–65. Cl. 39.
Hettrick Mfg. Co., The, Statesville, N.C. 791,335–6, pub. 4–6–65. Cl. 32.
Hillyard Chemical Co., to Hillyard Enterprises, Inc., St. Joseph, Mo. 416,944, ren. 6–22–65. Cl. 16.
Hillyard Enterprises, Inc.: *See*—
Hillyard Chemical Co.
Hi-Pals Footwear, Inc., from Perling Industries, Inc., Darien, Ga. 791,446, pub. 4–6–65. Cl. 39.
Hohner, M., Inc.: *See*—
Firm of M. Hohner.
Honeywell, Inc., Minneapolis, Minn. 791,367, pub. 4–6–65. Cl. 26.
Hooper Chemical Corp., Niagara Falls, N.Y. 791,262, pub. 4–6–65. Cl. 6.
Houilleres du Bassin de Lorraine, Faulquemont (Moselle), France. 791,227, pub. 4–6–65. Cl. 24.
Hudson Fur Cleaning Co., Providence, R.I. 678,217, canc. Cl. 52.
Huf, John: *See*—
Huf Tool & Mfg. Co., Inc.
Huf Tool & Mfg. Co., Inc., from J. Huf, d.b.a. Huf Tool & Mfg. Co., Chicago, Ill. 678,052, canc. Cl. 32.
Huffman Mfg. Co., The, Dayton, Ohio. 791,279, pub. 4–6–65. Cl. 13.
Hughes, E. Griffiths, Ltd., Buckinghamshire, England. 197,532, ren. 6–22–65. Cl. 51.
Humble Oil & Refining Co., Houston, Tex. 791,252, pub. 4–6–65. Cl. 6.
Hunter Design Products: *See*—
Giltzow, James H.
Ideal Shoe Co., Philadelphia, Pa. 791,430, pub. 4–6–65. Cl. 39.
Ideal Toy Corp., Hollis, N.Y. 791,340–1, pub. 4–6–65. Cl. 22.
Illinois Tool Works Inc., Chicago, Ill. 791,230, pub. 4–13–65. Cl. 2.
Impell, Thomas, Cold Spring, N.Y. 411,894, ren. 6–22–65. Cl. 51.
Industrial Undergarment Corp., Poughkeepsie, to Stardust, Inc., New York, N.Y. 416,187, ren. 6–22–65. Cl. 39.
Ingersoll-Rand Co., New York, N.Y. 791,561, pub. 4–6–65. Cl. 103.
International Nickel Co., Inc., The, New York, N.Y. 791,292, pub. 4–6–65. Cl. 14.
International Paper Co., New York, N.Y. 791,482, pub. 4–6–65. Cl. 37.
International Pipe and Ceramics Corp., East Orange, N.J. 791,294, pub. 4–6–65. Multiple Class (Classes 1, 6, 12, 16, and 20).
International Shoe Co., St. Louis, Mo., to Chips 'N Twigs, Inc., Philadelphia, Pa. 411,049, ren. 6–22–65. Cl. 39.
Internationale Bleghert Gesellschaft J. Schwaiger & Co., Erbaustein, near Darmstadt, Germany. 791,522, pub. 4–6–65. Cl. 46.
Inver House Distillers, Ltd.: *See*—
Continental Distilling Corp.
Ionics, Inc., Cambridge, Mass. 791,270, pub. 4–6–65. Cl. 26.
Ireland, Bennett, Inc., Norwich, N.Y. 678,091, canc. Cl. 24.
Ives, Sybil, Inc., from Sybil Ives Ltd., Yonkers, N.Y. 791,542–3, pub. 6–30–64. Cl. 51.
Ives, Sybil, Ltd.: *See*—
Ives, Sybil, Inc.
Jerks Socks, Inc., Cincinnati, Ohio. 791,455, pub. 4–6–65. Cl. 39.
Jewett & Sherman Co., d.b.a. Madison Food Products, Milwaukee, Wis. 791,523, pub. 4–6–65. Cl. 46.
Jitney-Jungle, Inc., Jackson, Miss. 791,516, pub. 4–6–65. Cl. 46.
Johnson & Johnson, New Brunswick, N.J. 678,230, canc. Cl. 44.
Jurgensen, Bernard L., d.b.a. Jurgensen Mfg. Co., Hastings, Mich. 678,113, canc. Cl. 37.
Jurgensen Mfg. Co.: *See*—
Jurgensen, Bernard L.
K-D Mfg. Co., Cleburne, Tex. 677,945, canc. Cl. 2.
Kadet-Kruger & Co.: *See*—
Kadet Kruger Co.
Kadet Kruger Co., to Kadet-Kruger & Co., Chicago, Ill. 199,910, ren. 6–22–65. Cl. 39.
Kahan, J., Co.: *See*—
Kahan, Mortimer J.
Kahan, Mortimer J., d.b.a. J. Kahan Co., New York, N.Y. 678,244, canc. Cl. 46.
Kellogg Co., Battle Creek, Mich. 791,514, pub. 4–6–65. Cl. 46.
Kellogg, L. H., Chemical Co., Minneapolis, Minn. 791,502. Cl. 52.
Keltex Industries, Inc., from Aero Geo Astro Corp., Alexandria, Va. 791,234–5, pub. 4–6–65. Multiple Class (Classes 21 and 26).
Kendall Co., The: *See*—
American Bleached Goods Co., Inc.
Kepco Inc., Flushing, N.Y. 791,316, pub. 4–6–65. Cl. 21.
Kimberly-Clark Corp., Neenah, Wis. 678,120, canc. Cl. 37.
King & Hamilton Co., Ottawa, Ill. 678,022, canc. Cl. 23.
Kinnert, I. B., Rubber Co., New York, N.Y. 189,188, ren. 6–22–65. Cl. 39.
Knabe, Wm., & Co. Mfg. Co. of Baltimore City, Baltimore, Md., to Aeolian American Corp., New York, N.Y. 44,738, ren. 6–22–65. Cl. 36.
Knabe, Wm., & Co. Mfg. Co. of Baltimore City, Baltimore, Md., to Aeolian American Corp., New York, N.Y. 45,967, ren. 6–22–65. Cl. 36.
Knight, Horace C., d.b.a. Knight Mfg. Co., Portland, Oreg. 678,022, canc. Cl. 23.
Knight Mfg. Co.: *See*—
Knight, Horace C.
Kommel, A., & Sons, New York, N.Y. 416,515, ren. 6–22–65. Cl. 26.
Kresge, S. S., Co., Detroit, Mich. 791,339–40, pub. 4–6–65. Cl. 21.
Land O'Lakes Creameries, Inc., d.b.a. Bridgeman Creameries, Minneapolis, Minn. 791,524, pub. 4–6–65. Cl. 46.
L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Paris, France. 791,466, pub. 4–6–65. Cl. 24.
Lake Shore Electrotype Division: *See*—
Electrographic Corp.
Landau, Wilma E., d.b.a. Sanline Home Products, Brooklyn, N.Y. 791,535, pub. 4–6–65. Cl. 50.
Lawry's Foods, Inc., Los Angeles, Calif. 791,513, pub. 4–6–65. Cl. 46.
Lazy El, The, Boulder, Colo. 678,124, canc. Cl. 23.
Lauder, Estee, Inc., New York, N.Y. 791,503. Cl. 51.
Lauder, Estee, Inc., New York, N.Y. 791,509–602. Cl. 51.
Lectro-Lift Inc., Portland, Oreg. 791,348, pub. 4–6–65. Cl. 20.
Le Fevre Chemical Co., Oklahoma City, Okla. 791,394, pub. 4–6–65. Cl. 6.
Lehn & Fink Products Corp.: *See*—
Gray, Dorothy.
Leetz, Gerald S., Lancaster, Pa. 678,125, canc. Cl. 23.
Likit Windows, Inc., Hayward, Calif. 791,270, pub. 4–6–65. Cl. 12.
Link-Belt Co.: *See*—
Syntron Co.
Lion Ribbon Co., Inc., New York, N.Y. 678,260, canc. Cl. 39.
Locatelli: *See*—
Locatelli, Mattia.
Locatelli, Mattia, d.b.a. Locatelli, Lecco, Italy. 678,246, canc. Cl. 44.
Lohnes, Franklin W., d.b.a. Dearborn Piano Service Co., Dearborn, Mich. 678,101, canc. Cl. 36.
London Records, Inc., New York, N.Y. 791,415–16, pub. 4–6–65. Cl. 36.
Loma Linda Foods: *See*—
Pacific Union Association of Seventh Day Adventists.
Low, N. S., & Co. Inc., New York, N.Y. 202,913, ren. 6–22–65. Cl. 44.
Lowe, Joe, Corp., Englewood, N.J. 791,515, pub. 4–6–65. Cl. 44.
Lutz Tire Inc., San Francisco, Calif. 791,410, pub. 4–6–65. Cl. 35.
Lynn, Jan, Enterprises, Reading, Pa. 678,208, canc. Cl. 50.
Lytle Engineering & Mfg. Co., Chicago, Ill. 677,962, canc. Cl. 21.
M. & D. Specialty Co., Montgomeryville, Pa. 791,247, pub. 4–6–65. Cl. 26.
Madison Food Products: *See*—
Jewett & Sherman Co.
Maidenform, Inc., New York, N.Y. 791,470, pub. 4–6–65. Cl. 39.
Manufacture d'Horlogerie Rayville S.A., Montres Blancpain (Rayville Watch Mfg. Co., Ltd., Blancpain Watches), Villeret, Switzerland. 791,458, pub. 4–6–65. Cl. 37.
Marlboro Shirt Co., Inc., Baltimore, Md. 678,186, canc. Cl. 39.
Mare Industries, Inc., New York, N.Y. 791,403, pub. 4–6–65. Cl. 39.
Martin-Marietta Corp.: *See*—
Master Builders Co., The.
Master Builders Co., The, Cleveland, Ohio, to Martin-Marietta Corp., New York, N.Y. 200,180, ren. 6–22–65. Cl. 12.
Matson Navigation Co., San Francisco, Calif. 791,565, pub. 4–6–65. Cl. 105.
Mathieson Alkali Works, The, to Olin Mathieson Chemical Corp., New York, N.Y. 200,700, ren. 6–22–65. Cl. 6.
Melville Shoe Corp., New York, N.Y. 791,443, pub. 4–6–65. Cl. 39.
Mercantile Machine & Mfg. Co., Inc., New York, N.Y. 678,009, canc. Cl. 23.
Merck & Co., Inc., Rahway, N.J. 417,921, ren. 6–22–65. Cl. 18.
Merrill Hosiery Co., Hornell, N.Y. 199,824, ren. 6–22–65. Cl. 39.
Merrill Mfg. Corp., Merrill, Wis. 791,269, pub. 4–6–65. Cl. 13.
Metex Electronics Corp.: *See*—
Ferrodynamics Corp.
Methods Engineering, Inc., Chicago, Ill. 791,319, pub. 7–21–64. Cl. 21.
Miami Tile and Terrazzo, Inc., Fla. 791,276, pub. 4–6–65. Cl. 12.

Michaud, A., Co.: *See*—
Michaud, Abner.

Michaud, A., Co., Philadelphia, Pa. 678,248, canc. Cl. 46.

Michaud, Abner, d.b.a. A. Michaud Co., Philadelphia, Pa. 701,499, pub. 12–15–64. Cl. 46.

Microwave Associates, Inc., Burlington, Mass. 701,515, pub. 4–6–65. Multiple Class (Classes 21 and 26).

Mr. Kenneth, Inc., Philadelphia, Pa. 678,185, canc. Cl. 39.

Monarch Chemical, Inc.: *See*—
Sep-Ko Chemicals, Inc.

Monsieur Henri Wines, Ltd., Brooklyn, N.Y. 701,501. Cl. 47.

Monro Dispensers, Inc., Rahway, N.J. 701,285, pub. 4–6–65. Cl. 13.

Moore's Products, Inc., Elkhart, Ind. 701,310, pub. 4–6–65. Cl. 19.

Moran Shoe Co., Carlyle, Ill. 701,524–5. Cl. 39.

Morrell, John, & Co., Ottumwa, Iowa. 701,509, pub. 4–6–65. Cl. 46.

Mossberg, Inc., Cincinnati, Ohio. 678,064, canc. Cl. 23.

Mount Vernon Mills, Inc., Baltimore, Md. 701,587. Cl. 42.

Mutual Orange Distributors, to Pure Gold, Inc., Redlands, Calif. 197,826, ren. 6–22–65. Cl. 46.

Movie Star, Inc.: *See*—
Herman, Louis, & Co.

McCullough, J. Chas., Seed Co., The, Cincinnati, Ohio. 678,030, canc. Cl. 23.

McDonald, A. L., Mfg. Co., Dubuque, Iowa. 701,403, pub. 4–6–65. Cl. 54.

McGarvey-Atwood Coffee Co., Minneapolis, Minn. 678,178, canc. Cl. 46.

McKesson & Robbins, Inc., New York, N.Y. 701,502. Cl. 49.

Mason Rubber Co., Inc., Boston, Mass. 701,295, pub. 4–6–65. Cl. 32.

National Association of Real Estate Executives, Inc., Tampa, Fla. 701,548, pub. 4–6–65. Cl. 200.

National Biscuit Co., New York, N.Y. 701,502, pub. 1–19–65. Cl. 46.

National Biscuit Co., New York, N.Y. 701,504, pub. 4–6–65. Cl. 46.

National Biscuit Co., New York, N.Y. 701,510, pub. 4–6–65. Cl. 46.

National Summer Palaestrum, Inc., Champaign, Ill. 701,485, pub. 4–6–65. Cl. 38.

New Britain Machine Co., The, New Britain, Conn. 200,815, ren. 6–22–65. Cl. 28.

New Syndicate Co., Inc., assor. to Pacific & Atlantic Photos, Inc., to United Press International, Inc., New York, N.Y. 197,569, ren. 6–22–65. Cl. 38.

Norlee Undergarment, Inc., New York, N.Y. 678,154, canc. Cl. 39.

North Atlantic Industries, Inc., Plainview, N.Y. 701,368, pub. 4–6–65. Cl. 26.

Northam Warren Corp., to Chesebrough-Pond's Inc., New York, N.Y. 199,705, ren. 6–22–65. Cl. 44.

Northam Warren Corp., Stamford, Conn., to Chesebrough-Pond's, Inc., New York, N.Y. 414,787, ren. 6–22–65. Cl. 51.

Northam Warren Corp., to Chesebrough-Pond's Inc., New York, N.Y. 200,955, ren. 6–22–65. Cl. 44.

Northwestern Redning Co., St. Paul Park, Minn. 701,295, pub. 4–6–65. Cl. 13.

Northwestern Rubber Co., Ltd.: *See*—
Northwestern Rubber Co.

Northwestern Rubber Co., Akron, Ohio, and Liverpool, England, to Northwestern Rubber Co., Ltd., Liverpool, England, 194,690, ren. 6–22–65. Cl. 1.

Nortronics Co., Inc., The, Minneapolis, Minn. 701,417, pub. 4–6–65. Cl. 26.

Odyssey Trailer Co., The: *See*—
Spencer, Stephen L.

Officine Alfieri Maserati S.p.A., Modena, Italy. 677,942–3, canc. Cl. 19.

Ogrodnicki, Olga T.: *See*—
Ogrodnicki, Walter, and Olga T. Ogrodnicki.

Ogrodnicki, Walter, and Olga T. Ogrodnicki, Philadelphia, Pa. 701,452, pub. 4–6–65. Cl. 29.

O'Leary, Lydia, Inc., New York, N.Y. 701,603. Cl. 51.

Olin Mathieson Chemical Corp.: *See*—
Mathieson Alkali Works, The.
Winchester Repeating Arms Co.

Olsen Mfg. Co., Clawson, Mich. 678,032, canc. Cl. 23.

Owens-Illinois Glass Co., Toledo, Ohio. 701,341, pub. 4–6–65. Cl. 2.

Oxford Filing Supply Co., Inc., Garden City, N.Y. 701,421, pub. 5–26–64. Cl. 37.

Onon Products, Inc., Brooklyn, N.Y. 701,548, pub. 4–6–65. Cl. 51.

Pacific & Atlantic Photos, Inc., to United Press International, Inc., New York, N.Y. 199,995, ren. 6–22–65. Cl. 21.

Pacific Coast Co., The, Bedford, Ohio. 701,271, pub. 4–6–65. Cl. 13.

Pacific Laboratories Ltd., Vancouver, British Columbia, Canada. 701,541, pub. 4–6–65. Cl. 51.

Pacific Union Association of Seventh Day Adventists, d.b.a. Loma Linda Foods, Riverside, Calif. 701,503, pub. 4–6–65. Cl. 46.

Panek, Joseph J., Jr., d.b.a. Roto-Faze Ignitions, Inglewood, Calif. 701,314, pub. 4–6–65. Cl. 21.

Paper Mate Mfg. Co., Culver City, Calif. 677,871, canc. Cl. 11.

Paperless Cigarette Co.: *See*—
Rehfeld, George W.

Park Sherman, Inc., Roseland, N.J. 701,430, pub. 4–6–65. Cl. 37.

Parke, Davis & Co., Detroit, Mich. 701,483, pub. 4–6–65. Cl. 44.

Parker-Hannifin Corp., Cleveland, Ohio. 701,307–8, pub. 4–6–65. Cl. 23.

Parker, Ralph E., Wichita, Kans. 677,868, canc. Cl. 12.

Peachtree Doors, Inc., Atlanta, Ga. 701,272, pub. 4–6–65. Cl. 12.

Peanut Fluf Co.: *See*—
Sunshine Biscuits, Inc.

Pearson Candy Co., d.b.a. Sperry Candy Co., St. Paul, Minn. 701,500, pub. 4–6–65. Cl. 46.

Pennsylvania Forestry Association, The, Ardmore, Pa. 701,544–5, pub. 4–6–65. Cl. 107.

Perling Industries, Inc.: *See*—
Hi-Pals Footwear, Inc.

Petroleum Heating Co., Seattle, Wash. 677,967, canc. Cl. 21.

Pfizer, Chas., & Co., Inc., New York, N.Y. 701,268, pub. 4–6–65. Cl. 6.

Philco Corp., to Philco Corp., Philadelphia, Pa. 415,189–90, ren. 6–22–65. Cl. 21.

Phoenix Oil Co., Atlanta, Ga. 701,259, pub. 4–6–65. Cl. 6.

Phoenix Records, Inc., Kansas City, Mo. 701,419, pub. 4–6–65. Cl. 34.

Photo Research Corp., Hollywood, Calif. 701,269, pub. 4–6–65. Cl. 26.

Pierce Pre-Cooked Foods, Inc., Moorefield, W. Va. 701,494, pub. 4–6–65. Cl. 46.

Plastic Coating Corp., The, Holyoke, Mass. 701,260, pub. 4–6–65. Cl. 6.

Plastic Industries, Inc., Athens, Tenn. 701,304, pub. 4–6–65. Cl. 32.

Pott, H. H. NFGR. Rumhandelshaus, Flensburg, Germany. 701,529, pub. 4–6–65. Cl. 49.

Printing Arts Research Laboratories, Inc., Santa Barbara, Calif. 677,927, canc. Cl. 16.

Procon Pump & Engineering Co., Oak Park, Mich. 701,488, pub. 4–6–65. Cl. 44.

Prym, William, Inc., Dayville, Conn. 414,454–5, ren. 6–22–65. Cl. 40.

Pure Gold, Inc.: *See*—
Mutual Orange Distributors.
Strait, J. H., & Co.

Pureta Sausage Co., Inc., Sacramento, Calif. 701,519, pub. 4–6–65. Cl. 46.

Quality Distilled Products: *See*—
Hart, Alfred, Co., The.

Radio Corp. of America, New York, N.Y. 417,179, ren. 6–22–65. Cl. 38.

Rapid-American Corp.: *See*—
Small Talk, Inc.

Ray-Block Stationery Co., Inc., The, Queens Village, N.Y. 701,422, pub. 3–18–64. Cl. 37.

Reames Foods, Inc., Clive, Iowa. 701,500. Cl. 46.

Reflectone Corp., The, Stamford, Conn. 677,983, canc. Cl. 21.

Rehfeld, George W., d.b.a. Paperless Cigarette Co., Manhattan, Kans. 678,234, canc. Cl. 8.

Reilly Electrotype Division: *See*—
Electrographic Corp.

Reinforced Molding Corp., Monroeville, Pa. 701,315, pub. 4–6–65. Cl. 21.

Reliance Universal, Inc., Louisville, Ky. 701,275, pub. 4–6–65. Cl. 12.

Renault, L. N., & Sons, Inc., Egg Harbor City, N.J. 701,511–12, pub. 4–6–65. Cl. 46.

Research Instrument Corp., d.b.a. Analytic Systems Co., Pasadena, Calif. 678,052, canc. Cl. 26.

Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 701,577–8. Cl. 17.

Reynolds Yarns, Inc., Plainview, N.Y. 701,588. Cl. 46.

Rheem Electronics Corp., Hawthorne, Calif. 701,375, pub. 4–6–65. Cl. 26.

Rilling Dermetics Co., The: *See*—
Turner Hall Corp.

Ripon Foods, Inc., Ripon, Wis. 701,505, pub. 4–6–65. Cl. 46.

"Ronotte" Piezo-Electrische Industrie (Ronotte P.E.I.) N.V., Amsterdam, Netherlands. 678,110, canc. Cl. 26.

Robertson, H. L., Mfg. Co. Ltd., Milton, Ontario, Canada. 701,280, pub. 4–6–65. Cl. 13.

Robinson Clay Product Co., The, Akron, Ohio. 701,276, pub. 4–6–65. Cl. 12.

Roebling's, John A., Sons Corp., Trenton, N.J. 677,962, canc. Cl. 21.

Rotary Drilling Services, Inc., Tulsa, Okla. 701,571. Cl. 6.

Roth Knitting Mill: *See*—
Roth, Nicholas.

Roth, Nicholas, d.b.a. Roth Knitting Mill, Philadelphia, Pa. 678,139, canc. Cl. 39.

Roto-Faze Ignitions: *See*—
Panek, Joseph J., Jr.

Rotolite Corp., Stirling, N.J. 701,561, pub. 4–6–65. Cl. 26.

Royal-T Products Co., Kansas City, Mo. 678,006, canc. Cl. 23.

Royce Hosiery Mills, Inc., New York, N.Y. 701,458, pub. 4–6–65. Cl. 39.

Rustic Crafts Co., Inc., The, Englewood, N.J. 701,274, pub. 4–6–65. Multiple Class (Classes 12 and 21).

Rutger Fabrics Corp., New York, N.Y. 678,159, canc. Cl. 42.

Safina, Joseph X., Brooklyn, N.Y. 701,302, pub. 4–6–65. Cl. 22.

St. Regis Paper Co., New York, N.Y. 701,572. Cl. 7.

Sales Affiliates, Inc.: *See*—
Zotos Corp.

San Diego Products Co., San Diego, Calif. 701,551, pub. 4–6–65. Cl. 52.

San Diego Products Co., San Diego, Calif. 701,501, pub. 4–6–65. Cl. 46.

San Diego Products Co., San Diego, Calif. 701,491, pub. 4–6–65. Cl. 46.

San Diego Products Co., San Diego, Calif. 701,435, pub. 4–6–65. Cl. 31.

Sanden, Inc., Hanover, N.J. 701,303, pub. 4–6–65. Cl. 6.

Santer Laboratories, Inc., Palo Alto, Calif. 701,506, pub. 4–6–65. Cl. 46.

SchenLabs Pharmaceuticals, Inc., New York, N.Y. 678,215, canc. Cl. 51.

Schering Corp., Bloomfield, N.J. 677,967, canc. Cl. 15.

Schoenmaker, Frank, New York, N.Y. 701,296, pub. 4–6–65. Cl. 32.

Schoenmaker, Frank, Distributors: *See*—
Schoenmaker, Frank.

Schwitzer-Cummins Co., Indianapolis, Ind., to William Wallace Corp., Wilmington, Del. 413,594, ren. 6–22–65. Cl. 19.

Schoenmaker, Frank, d.b.a. Frank Schoenmaker Distributors, New York, N.Y. 701,526, pub. 4–6–65. Cl. 47.

Schratz Products, Inc., Detroit, Mich. 701,540, pub. 4–6–65. Cl. 51.

Schweppes (Overseas) Ltd., London, England. 678,175, canc. Cl. 46.

Seal, Inc., Shelton, Conn. 701,562–6, pub. 4–6–65. Cl. 26.

Security Bank & Screen Co., Detroit, Mich. 677,898, canc. Cl. 12.

Seng, V. F.: *See*—
Seng, Vincent F.

Seng, Vincent F., d.b.a. V. F. Seng, Anaheim, Calif. 701,494, pub. 4–6–65. Cl. 46.

Shachihata Kogyo Kabushiki-Kaisha Nishi-Ku, Nagoya, Japan. 677,870, canc. Cl. 11.

Sherbourne Press, Inc., Los Angeles, Calif. 701,464, pub. 4–6–65. Cl. 38.

Shelby Seamless Hosiery Mills, Inc., Shelby, N.C. 701,438, pub. 9–22–64. Cl. 39.

Shriptrine Co.: *See*—
Camthol Co., The.

Sigler, Irvin L., Dayton, Ohio. 677,991, canc. Cl. 22.

Simonis Co., Chicago, Ill. 701,346, pub. 4–6–65. Cl. 4.

Simplex Shoe Mfg. Co., Inc.: *See*—
Simplex Shoe Mfg. Co.

Simplicity Mfg. Co., Port Washington, Wis. 701,354, pub. 4–6–65. Cl. 23.

Skinner, William, & Sons, New York, N.Y. 678,163, canc. Cl. 42.

Societe Suisse des Explosifs, Gamsen-Brigue, Valais, Switzerland. 701,306, pub. 4–6–65. Cl. 9.

Small Talk, Inc., from Rapid-American Corp., New York, N.Y. 701,441, pub. 4–6–65. Cl. 39.

Soundcraft, Inc., Detroit, Mich. 678,102, canc. Cl. 36.

Southern Athletic Co., Inc., Knoxville, Tenn. 701,461, pub. 4–6–65. Cl. 39.

Speed Check Co., Inc., The, Atlanta, Ga. 701,259, pub. 4–6–65. Cl. 24.

Sep-Ko Chemicals, Inc., from Monarch Chemical, Inc., Minneapolis, Minn. 701,549, pub. 4–6–65. Cl. 52.

Spencer, Stephen L., d.b.a. The Odyssey Trailer Co., Menlo Park, Calif. 677,947, canc. Cl. 19.

Sperry Candy Co.: *See*—
Pearson Candy Co.

Spinnerin Yarn Co., Inc., to Spinnerin Yarn Co., Inc., New York, N.Y. 417,001, ren. 6–22–65. Cl. 46.

Stainless Foundry & Engineering, Inc., Milwaukee, Wis. 701,286, pub. 4–6–65. Cl. 1.

Staley, A. E., Mfg. Co., Decatur, Ill. 701,247, pub. 5–2–61. Cl. 6.

Staley, A. E., Mfg. Co., Decatur, Ill. 701,257, pub. 4–6–65. Cl. 6.

Stauffer Chemical Co., New York, N.Y. 701,305, pub. 4–6–65. Cl. 13.

Stardust, Inc.: *See*—
Industrial Undergarment Corp.

Star Brush Mfg. Co., Inc., Boston, Mass. 701,357–6, pub. 4–6–65. Cl. 20.

Staron Inc., New York, N.Y. 701,475–6, pub. 4–6–65. Cl. 42.

Stein, Hall & Co., Inc., New York, N.Y. 415,667, ren. 6–22–65. Cl. 61.

Stein, Joseph, Coat Co., Inc., New York, N.Y. 701,466, pub. 4–6–65. Cl. 39.

Stevens, J. P., & Co., Inc., New York, N.Y. 701,481, pub. 4–6–65. Cl. 42.

Stevens Paper Mills, Inc., The, Windsor, Conn. 701,823, pub. 4–6–65. Cl. 21.

Stone Mfg. Co., Greenville, S.C. 701,457, pub. 4–6–65. Cl. 39.

Strait, J. H., & Co., Bloomington, to Pure Gold, Inc., Redlands, Calif. 199,190, ren. 6–22–65. Cl. 46.

Style Shoes Ltd., Harehills, Leeds, England. 701,442, pub. 9–22–64. Cl. 39.

Strozer Candy Co., Inc., Denver, Colo. 701,521, pub. 4–6–65. Cl. 46.

"Suber" Aktiengesellschaft Electro-Chemische Fabrik, Metall- & Hattenprodukte, Zurich, Switzerland, to Wyandotte Chemicals Corp., Wyandotte, Mich. 197,280, ren. 6–22–65. Cl. 16.

Sun Flame Appliances Ltd., New York, N.Y. 613,600, ren. 6–22–65. Cl. 34.

Sunline Home Products: *See*—
Landau, Wilma R.

Sunshine Biscuits, Inc., Long Island City, N.Y., from Peanut Fluf Co., Detroit, Mich. 678,241, canc. Cl. 46.

Swiss American Provision Imports, Inc., Playa Del Rey, Calif. 701,552, pub. 4–6–65. Multiple Class (Classes 29 and 26).

Syntron Co., to Link-Belt Co., Homer City, Pa. 415,209, ren. 6–22–65. Cl. 28.

Square D Co., Park Ridge, Ill. 701,237, pub. 4–6–65. Cl. 21.

T.V. Container Co., Los Angeles, from Calvidoo Electronics, Inc., Compton, Calif. 701,569. Cl. 2.

Target Toy Co., Hollywood, Fla. 678,009, canc. Cl. 22.

Taub, Ronald H., d.b.a. Collectables, Chicago, Ill. 701,396, pub. 4–6–65. Cl. 23.

Taylor, Kenneth N., Wheaton, Ill. 701,562. Cl. 26.

Texize Chemicals, Inc., Greenville, S.C. 701,505. Cl. 52.

Tidewater Boats, Inc., Annapolis, Md. 701,312, pub. 4–6–65. Cl. 19.

Tilton Industries, Inc., Montpelier, Vt. 678,156, canc. Cl. 49.

Theodor Mfg. Corp., Los Angeles, Calif. 701,542, pub. 4–6–65. Cl. 2.

Thiokol Chemical Corp., Bristol, Pa. 701,306, pub. 4–6–65. Cl. 26.

Toledo Scale Corp., Toledo, Ohio. 701,264, pub. 4–6–65. Cl. 28.

Topco Associates, Inc., Skokie, Ill. 701,503, pub. 4–6–65. Cl. 46.

Tupman Thurlow Co., Inc., The, New York, N.Y. 701,517, pub. 4–6–65. Cl. 46.

Turner Hall Corp., New York, N.Y., from The Rilling Dermetics Co., Bridgeport, Conn. 701,538, pub. 4–6–65. Cl. 51.

Tramp Trips, Inc., New York, N.Y. 701,437, pub. 4–6–65. Cl. 38.

Tropical Gas Co., Inc., Panama, Panama. 678,073, canc. Cl. 31.

Tru-Fax Corp., Greensboro, N.C. 678,115, canc. Cl. 37.

Ultraphone Records, Inc., Mount Kisco, N.Y. 701,418, pub. 4–6–65. Cl. 26.

Underwood Corp., New York, N.Y. 678,062, canc. Cl. 26.

Unglesby, Lewis H., Warrensburg, Mo. 701,342, pub. 4–6–65. Cl. 22.

Unico Chain & Mfg. Co., The, Sandusky, Ohio. 678,061, canc. Cl. 23.

United Elastic Corp., Easthampton, Mass. 701,479, pub. 4–6–65. Cl. 42.

United Merchants and Manufacturers, Inc., New York, N.Y. 701,474, pub. 4–6–65. Cl. 42.

United Pillow Co., Dallas, Tex. 701,301, pub. 4–6–65. Cl. 32.

United Press International, Inc.: *See*—
New Syndicate Co., Inc.
Pacific & Atlantic Photos, Inc.

United States Rubber Co., New York, N.Y. 701,467, pub. 4–6–65. Cl. 39.

U.S. Vitamin Corp., New York, N.Y. 677,930, canc. Cl. 16.

Universal Cigar Corp., New York, N.Y. 701,300, pub. 4–6–65. Cl. 17.

Universal Pictures Co., Inc.: *See*—
Universal Pictures Corp.

Universal Pictures Corp., to Universal Pictures Co., Inc., New York, N.Y. 196,123, ren. 6–22–65. Cl. 38.

Upjohn Co., The, Kalamazoo, Mich. 430,004, canc. Cl. 6.

Upjohn Co., The, Kalamazoo, Mich. 699,669, canc. Cl. 46.

Upjohn Co., The, Kalamazoo, Mich. 704,721, canc. Cl. 6.

Upjohn Co., The, Kalamazoo, Mich. 644,575, canc. Cl. 18.

Upjohn Co., The, Kalamazoo, Mich. 636,975, canc. Cl. 6.

Upjohn Co., The, Kalamazoo, Mich. 668,475, canc. Cl. 18.

Upjohn Co., The, Kalamazoo, Mich. 707,725, canc. Cl. 18.

Upjohn Co., The, Kalamazoo, Mich. 714,578, canc. Cl. 6.

Upjohn Co., The, Kalamazoo, Mich. 709,527, canc. Cl. 18.

Upjohn Co., The, Kalamazoo, Mich. 709,945, canc. Cl. 18.

Upjohn Co., The, Kalamazoo, Mich. 701,261, pub. 4–6–65. Cl. 6.

Upravlenie Bulgarski Tiutiuni-Bulgartabak Sofia, Bulgaria. 701,308, pub. 4–6–65. Cl. 17.

Valley Metallurgical Processing Co., Inc., Essex, Conn. 701,297, pub. 4–6–65. Cl. 14.

Valmarie Ranches: *See*—
Giannini, Gabriel M.

Valsit Hosiery, Inc., New York, N.Y. 701,468, pub. 4–6–65. Cl. 39.

Vee-Jay Records, Inc., Chicago, Ill. 678,103, canc. Cl. 26.

Viacount Products, Inc., New York, N.Y. 701,543, pub. 4–6–65. Cl. 32.

Vitelli, Maria R., nee Valenza, Rome, Italy. 701,306, pub. 4–6–65. Cl. 19.

Vitelli, Maria R., nee Valenza, Rome, Italy. 701,570. Cl. 19.

Volkswagenwerk Aktiengesellschaft, Wolfsburg, Germany. 701,311, pub. 4–6–65. Cl. 19.

Wallace Laboratories, Inc., New Brunswick, N.J., to Carter Products, Inc., New York, N.Y. 417,218, ren. 6–22–65. Cl. 18.

Wallace, William, Corp.: *See*—
Schwitzer-Cummins Co.

Waste Heat Engineering Corp., Houston, Tex. 701,495, pub. 4–6–65. Cl. 34.

Wellington Sears Co.: *See*—
Wellington, Sears & Co.

Wellington, Sears & Co., Boston, Mass., to Wellington Sears Co., New York, N.Y. 44,167, ren. 6–22–65. Cl. 42.

Wellington, Sears & Co., to Wellington Sears Co., New York, N.Y. 201,993, ren. 6–22–65. Cl. 42.

Welty, John A., Hastingen, Tex. 701,494, pub. 4–6–65. Cl. 44.

Welty, John A., Hastingen, Tex. 701,532, pub. 4–6–65. Cl. 50.

Werner, R. D., Co., Inc., Greenville, Pa. 701,293. Cl. 32.

West Texas Appliance Co., San Antonio, Tex. 678,057, canc. Cl. 34.

Western Popcorn Co., Atlantic, Iowa. 678,169, canc. Cl. 46.

Weyerhaeuser Co., Tacoma, Wash. 701,427–8, pub. 4–6–65. Cl. 37.

Wheeler-Schebler Carburetor Co., The, Indianapolis, Ind., to Borg-Warner Corp., Chicago, Ill. 206,764, ren. 6–22–65. Cl. 23.

Whidden Royal Jelly: *See*—
Whidden, Woodrow W.

Whidden, Woodrow W., d.b.a. Whidden Royal Jelly, Titusville, Fla. 678,212, canc. Cl. 51.

White Consolidated, from White Sewing Machine Corp., Lakewood, Ohio. 701,262, pub. 4–6–65. Cl. 13.

White, S. S., Dental Mfg. Co., The, Philadelphia, Pa. 701,496, pub. 4–6–65. Cl. 44.

White Sewing Machine Corp.: *See*—
White Consolidated.

Winchester Repeating Arms Co., New Haven, Conn., to Olin Mathieson Chemical Corp., New York, N.Y. 44,869, ren. 6-22-65. Cl. 9.
Windjammer, The, Evanston, Ill. 791,567, pub. 4-6-65. Cl. 107.
Witt, Elmer W., Chicago, Ill. 677,908, canc. Cl. 22.
Woodward, Baldwin & Co., Inc., New York, N.Y. 791,478, pub. 4-6-65. Cl. 42.
Worlz Corp., Rochester, N.Y. 791,570. Cl. 2.
World Agencies Pty., Ltd., Sydney, Australia. 678,309, canc. Cl. 51.
Wyandotte Chemicals Corp.: *See*—
"Sulzer" Aktiengesellschaft Electro-Chemische Fabrik, Metall- & Metallprodukte.
Wyandotte Chemicals Corp., Wyandotte, Mich. 791,556-8, pub. 4-6-65. Cl. 52.
Wyndmoor Knitting Mills, Inc., Elizabeth, N.J. 791,471, pub. 4-6-65. Cl. 42.
Yao Denki Kabushiki Kaisha, Kawasaki, Japan. 791,513, pub. 4-6-65. Multiple Class (Classes 21 and 26).
Zotos Corp., to Sales Affiliates Inc. of New York, N.Y., to Sales Affiliates, Inc., New York, N.Y. 412,063, ren. 6-22-65. Cl. 44.
Zymak Biochemical Corp., Bayamon, Puerto Rico. 791,249, pub. 4-6-65. Cl. 6.
Zimmerman, J., & Co., Ltd., Birmingham, England. 791,585, pub. 4-6-65. Cl. 26.
Zimmer Mfg. Co., Warsaw, Ind. 791,462, pub. 4-6-65. Cl. 44.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of May 1965

Examiner affirmed	223
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Examiner reversed	64
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International Convention for the Protection of Industrial Property

Adherence of U.S.S.R. to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective July 1, 1965, of the Union of Soviet Socialist Republics to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 17, 1965.

Disclaimers

2,966,966.—*Donald R. Kerr*, Bucyrus, Ohio. SAND SPREADING MECHANISM WITH REVERSIBLE CONVEYER. Patent dated June 13, 1961. Disclaimer filed May 24, 1965, by the assignee, *Shunk Manufacturing Company, Inc.*

Hereby enters this disclaimer to claims 4, 5, 6 and 7 of said patent.

3,075,724.—*Anthony Hennel*, Skokie, Ill. PAPERBOARD POLE STAND. Patent dated Jan. 29, 1963. Disclaimer filed Mar. 24, 1965, by the assignee, *Container Corporation of America.*

Hereby enters this disclaimer to claims 1, 2 and 3 of said patent.

3,178,395.—*Irving H. Mosher, Miami, Fla.* METHOD FOR POLYMERIZING VINYL MONOMERS AND MALEIC ANHYDRIDE. Patent dated Apr. 13, 1965. Disclaimer filed Mar. 30, 1965, by the inventor; the assignee, *Sinclair Research, Inc.*, consenting.

Hereby enters this disclaimer to the terminal portion of said patent subsequent to April 13, 1980.

Adjudicated Patents

(C.A. Wis.) Frantz Patent No. 2,880,794 (251—62), for OPERATING VALVE. Claims 5, 6 and 9 *Held* invalid. *Graham-White Sales Corp.* v. *Prime Mfg. Co.*, 333 F.2d 534; 145 USPQ 5.

(C.A. Wis.) Frantz Patent No. 2,720,570 (91—234), for AUTOMATIC BELL RINGER. Claims 1 to 5 *Held* invalid; claim 6 *Held* valid. *Id.*

Erratum

In the OFFICIAL GAZETTE, issue of May 18, 1965, under the heading "List of Patentees," p. iv, first column, after line 10, insert "Armour Pharmaceutical Company: *See*—Bardos, Thomas J. and Chmielewicz. 3,184,449."; same page, second column, after line 37, insert "Bardos, Thomas J., and S. F. Chmielewicz, to Armour Pharmaceutical Company. Lipid soluble anti-folic material and method of preparing same. 3,184,449. 5-18-65, Cl. 260—239.5."; p. vii, first column, sixth line from the bottom, insert "Chmielewicz, Stalaw F.: *See*—Bardos, Thomas J., and Chmielewicz. 3,184,449."

Patents Available for Licensing

In accordance with the provision of 10 C.F.R. § 81.10-81.12, the U.S. Atomic Energy Commission is prepared to grant nonexclusive, revocable, royalty-free licenses under the following patents.

Applications for licenses should be addressed to the Assistant General Counsel for Patents, U.S. Atomic Energy Commission, Washington, D.C., 20545, indicating the State of incorporation, if a business firm; or citizenship, if an individual.

3,169,567.	SOLID STATE POWER MAPPING INSTRUMENT.
3,171,714.	METHOD OF MAKING PLUTONIUM OXIDE SPHERES.
3,171,715.	METHOD FOR PREPARATION OF SPHERICAL THORIUM DICARBIDE AND THORIUM-URANIUM DICARBIDE PARTICLES.
3,171,788.	ROTATING PLASMA DEVICE.
3,171,815.	METHOD FOR PREPARATION OF THORIUM DICARBIDE AND THORIUM-URANIUM DICARBIDE PARTICLES.
3,173,284.	DRAWING APPARATUS.
3,173,757.	PURIFICATION OF STRONTIUM SOLUTIONS BY ION EXCHANGE.
3,173,859.	MOISTURE INDICATOR AND METHOD OF MAKING THE SAME.
3,173,973.	GRAPHITE DISPERSION.

New Applications Received During April 1965

Patents	7918
Designs	294
Plant Patents	9
Reissues	18
Total	8449

Issues—June 29, 1965

Patents	1,251—No. 3,191,185 to No. 3,192,535, incl.
Designs	49—No. 201,490 to No. 201,538, incl.
Plant Patents	1—No. 2,542
Reissues	4—No. 26,211 to No. 26,214, incl.
Total	1,305

3,173,963. ARC POSITIONING SERVO.
3,174,152. SWEEPING IMAGE MIRROR CAMERA.
3,174,618. REDUCING CORROSION OF STAINLESS STEEL IN HOT NITRIC ACID SOLUTIONS BY ADDING CARBON BLACK OR ELEMENTAL SULFUR TO THE SOLUTION.
3,174,834. FLUIDIZED BED REACTOR.
3,174,921. POLYMERIZATION OF ISOBUTYLENE.
3,175,104. HIGH VOLTAGE ELECTRIC GENERATOR.
3,175,181. MAGNET CONSTRUCTION FOR A VARIABLE ENERGY CYCLOTRON.
3,175,922. METHOD FOR COATING ACTINIDE PARTICLES.
3,175,931. TREATMENT OF ALUMINUM SURFACES.
3,175,955. GRADIENT FUEL PLATES.
3,176,154. THREE STATE MEMORY DEVICE.
3,176,186. SUPERCONDUCTING SOLENOID.
3,177,373. TRANSISTORIZED LOADING CIRCUIT.
3,177,408. SUPERCONDUCTOR SOLENOID WITH OVERHEAT PROTECTIVE STRUCTURE AND CIRCUITRY.
3,177,482. SERVO-STABILIZED ANALOG-TO-DIGITAL CONVERTER FOR HIGH RESOLUTION PULSE ANALYSIS.
3,177,553. APPARATUS FOR SOLVENT-ISOSTATIC PRESSING.
3,178,256. METHOD FOR SEPARATING TRANSPLUTONIUM ELEMENTS FROM RARE EARTH FISSION PRODUCTS.
3,178,268. SEPARATION OF PLUTONIUM HEXAFLUORIDE FROM URANIUM HEXAFLUORIDE BY SELECTIVE SORPTION.
3,178,269. NITRIDED ELECTRODE PROCESS OF PREPARING URANIUM MONONITRIDE.
3,178,356. NUCLEAR REACTOR.
3,179,501. COUNTERCURRENT NUCLEAR-FUEL LIQUID-LIQUID EXTRACTION APPARATUS.
3,179,503. EXTRACTION OF CESIUM FROM AQUEOUS SOLUTION USING PHENOLS.
3,179,581. ELECTROCHEMICAL DOSIMETER.
3,179,722. METHOD OF PREPARING SPHERICAL NUCLEAR FUEL PARTICLES.
3,179,723. METHOD OF FORMING METAL CARBIDE SPEROIDS WITH CARBON COAT.
3,180,704. PROCESS OF MAKING ACTINIDE SULFIDE AND SIMILAR COMPOUNDS.
3,180,756. COPPER METALLIZING OF ALUMINA CERAMICS.
3,180,800. NEUTRONIC REACTOR INCLUDING MEANS FOR UNLOADING AND HEROMETICALLY ENCLOSING SPENT FUEL ELEMENTS.
3,180,801. HEAVY WATER MODERATED ORGANIC COOLED NUCLEAR FISSION REACTOR.
3,181,004. BINARY MEMORY DEVICE EMPLOYING FLIP-FLOP THAT IS CONTROLLED BY IN-PHASE DRIVERS.

General Signal Corporation is prepared to grant non-exclusive licenses under the following 50 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patents may be addressed to: General Railway Signal Company, a Unit of General Signal Corporation, Attention, Manager, Patent Department, P.O. Box 600 Rochester, N.Y., 14602.

2,812,425. RAILWAY TRACK CIRCUIT.
2,812,426. SWITCH MACHINE.
2,814,765. OSCILLATING CODE TRANSMITTER.
2,814,996. CAR RETARDER CONTROL SYSTEM.
2,815,097. RAILWAY CAR RETARDER OF THE TRACK BRAKE TYPE.
2,816,218. CONTROL OF MANUAL BLOCK SIGNAL BY A MULTIPLE FREQUENCY CARRIER SYSTEM.
2,816,977. CONTROL SWITCH.
2,817,009. TRACK CIRCUIT FOR RAILROADS.
2,817,010. TRACK CIRCUIT RESPONSIVE TO VARYING TRAIN-SHUNT.
2,817,011. BLOCK SIGNAL SYSTEM FOR RAILROADS.
2,817,012. INDUCTIVE CONTROL SYSTEM FOR RAILROADS.
2,817,013. SAFETY TRACK SWITCH CONTROL SYSTEM.
2,819,410. POWER SUPPLY FOR CENTRALIZED TRAFFIC CONTROL SYSTEM.
2,825,801. TRACK CIRCUIT RESPONSIVE TO VARYING TRAIN SHUNTS.
2,833,866. POLARIZED RELAY.
2,833,884. DAMPING DEVICE FOR MECHANICALLY RESONANT RELAYS.
2,835,857. TRAIN SPEED CONTROL SYSTEM.
2,847,536. SAFETY DEVICE TO RESTRICT OPERATION OF SWITCH CONTROL LEVERS.
2,854,547. FLASHING RELAYS.
2,856,907. CAR RETARDERS FOR RAILWAY CLASSIFICATION YARDS.
2,859,335. TRACK CIRCUIT RESPONSIVE TO VARYING TRAIN SHUNTS.
2,859,434. SPEED MEASURING APPARATUS FOR RAILROAD CLASSIFICATION YARDS.
2,859,435. SPEED MEASURING SYSTEM.
2,865,472. MOTOR AND BRAKE CONTROL CIRCUITS.
2,866,963. CODE COMMUNICATION SYSTEM.
2,868,534. WEIGHT DETECTOR FOR RAILWAY CARS.
2,868,962. CODE COMMUNICATION SYSTEMS.
2,874,368. ELECTRONIC CODE COMMUNICATION SYSTEM.
2,881,309. HIGHWAY CROSSING WITH INSULATED TRACK SECTION AT CROSSING.
2,881,420. GLASS INSERT RETAINER FOR LIGHT SIGNAL SPECTACLES.
2,888,553. RAILWAY BLOCK SIGNALLING APPARATUS.
2,895,042. RAILWAY SIGNALING SYSTEM FOR THE PROTECTION OF TRAINS INCAPABLE OF RELIABLY SHUNTING TRACK CIRCUITS.
2,895,043. CHECK-IN AND CHECK-OUT BLOCK SIGNALING SYSTEM USING REGULAR TRACK CIRCUITS.
2,896,068. ELECTRONIC TRACK CIRCUIT FOR RAILROADS.
2,896,069. DRAGGING EQUIPMENT DETECTING SYSTEM FOR RAILROADS.
2,896,126. LIGHTNING PROTECTION FOR AN ELECTRONIC TRACK CIRCUIT.
2,900,497. AUTOMATIC SWITCHING SYSTEM.
2,900,498. FAIL-SAFE PROTECTION FOR CODE COMMUNICATION CONTROL SYSTEM.
2,900,581. MECHANICALLY RESONANT DECODING APPARATUS.
2,903,572. ROUTE CHECK SCHEME FOR RAILWAY CODE COMMUNICATION SIGNALING SYSTEM.
2,903,573. SWITCH CONTROL CHECK FOR RAILWAY SIGNALING CODE COMMUNICATION SYSTEMS.
2,903,574. IMPULSE TRACK CIRCUIT WITH FILTERED ALTERNATING CURRENT SUPPLY.
2,905,810. MOTOR CAR PROTECTION SYSTEM FOR RAILROADS.
2,907,032. SPEED MEASURING APPPARATUS.
2,907,980. MULTIPLE STATION CODE COMMUNICATION SYSTEM.
2,907,981. CODE COMMUNICATION SYSTEM.
2,907,982. CENTRALIZED TRAFFIC CONTROL SYSTEM FOR RAILROADS.
2,914,274. RAILWAY SWITCH POINT CONNECTION.
2,914,662. SWITCH AND SIGNAL CONTROL SYSTEM FOR RAILROADS.
2,914,663. HIGHWAY CROSSING SIGNALING SYSTEM HAVING HIGH SENSITIVITY.

Patents Available for Licensing or Sale

3,176,461. INTERNAL COMBUSTION ENGINE EXHAUST GAS CONVERTERS. Willard R. Calvert, 809 Teakwood Drive, Severna Park, Md., 21146.

3,188,662. HEAT ENGINE. Theodore Y. Keegren, Sr., 350 Willow Road, Barrington, Ill.

3,190,557. MODEL TWO RAIL ELECTRIC RAILROAD AND TURNOUT SWITCH THEREFOR. Jules Nagy, R.D. 2, Baptist Road, Collegeville, Pa., 19426.

3,190,656. FREE-CHOICE AMUSEMENT AND EDUCATIONAL DEVICE. Joseph A. Weisbecker, 1230 Wayne Ave., Relton, Cherry Hill, N.J.

General Electric Company is prepared to grant non-exclusive licenses under the following 37 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent should be addressed to: Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,177,107. METHODS OF MAKING INSULATION AND PRODUCTS FORMED THEREBY.

Applications for license under the following 18 patents should be addressed to: Patent Counsel, General Electric Company, X-Ray Department, 4855 Electric Ave., Milwaukee, Wis., 53201.

2,885,583. ROTATING STRUCTURE.
2,909,664. X-RAY APPARATUS.
2,909,686. X-RAY TUBE.
2,957,079. PENETRATING RAY EMISSION CODING.
2,995,728. PATTERN RECOGNITION AND INSPECTION SYSTEM.
3,004,101. COLOR RADIOGRAPHY.
3,004,163. RADIATION GAUGING SYSTEM.
3,025,402. RADIANT ENERGY CONTROL.
3,045,093. METHOD FOR CONSTRUCTING ARC DISCHARGE DEVICES.
3,100,261. X-RAY ANALYZING APPARATUS WHEREIN TWO COMPARATIVE DETECTOR CHANNELS HAVE DIFFERENT ABSORPTION VERSUS FREQUENCY CHARACTERISTICS.
3,142,803. DRIFT COMPENSATED DC INTEGRATOR HAVING SEPARATE SELECTIVELY INSERTABLE FEEDBACK LOOPS.
3,143,652. X-RAY COLLIMATOR COMPRISING A PLURALITY OF SPACED PLASTIC LAMINA WITH X-RAY ABSORBENT MATERIAL COATED THEREON.
3,143,738. METHOD FOR MAKING A COLLIMATOR FOR AN X-RAY BEAM.
3,151,967. METHOD OF SEAL-OFF FOR LOW PRESSURE TUBES.
3,158,744. FLAW DETECTION APPARATUS USING TWO DETECTORS TO ASSURE UNBALANCE IN A COMPARISON CIRCUIT.
3,158,745. X-RAY TUBE WITH MEANS TO SELECTIVELY DEFLECT THE ELECTRON BEAM TO PLURAL TARGETS.
3,163,754. THERMALLY EXCITED X-RAY SPECTROMETER.
3,179,991. ATTACHMENT FOR AN ELECTRIC CORD OR THE LIKE.

Applications for license under the following 7 patents should be addressed to: Patent Counsel, Power Generation Division, General Electric Company, 1 River Road, Bldg. #53, Schenectady 5, N.Y.

3,151,479. METHOD FOR TESTING DYNAMOELECTRIC MACHINES.
3,152,273. POLYPHASE GENERATORS.
3,164,064. FLUID-ACTUATED SERVOMECHANISM WITH MULTIPLE INPUTS.
3,168,666. DYNAMOELECTRIC MACHINE ELECTRICAL COLLECTOR ASSEMBLY USING LIQUID METAL.
3,168,810. TWO SHAFT GAS TURBINE CONTROL SYSTEM.
3,173,292. TORQUE-MEASURING ARRANGEMENT.
3,176,176. COIL-TO-COIL CONNECTIONS FOR DYNAMOELECTRIC MACHINE ROTOR WINDING.

Applications for license under the following 11 patents should be addressed to: Hotpoint Division, 5600 W. Taylor St., Chicago, Ill., 60644, Attn: Patent Counsel.

2,895,328. ELECTRONIC HEATING METHODS AND APPARATUS.
2,919,336. COMBINATION ELECTRONIC AND ELECTRIC RANGES.
2,929,905. ELECTRONIC COOKING APPARATUS.
2,962,683. ELECTRIC HEATING UNITS AND METHODS MAKING THE SAME.
2,996,598. SUPPORT STRUCTURE FOR SURFACE HEATING UNITS.
3,016,445. SURFACE HEATING UNIT CONSTRUCTION.
3,030,475. CONTROL DEVICE.
3,065,327. SURFACE COOKING UNITS.
3,109,412. CALIBRATION ADJUSTMENT FOR DIALS AND THE LIKE.
3,154,357. ELECTRIC COOKING APPLIANCE WITH ADJUSTABLE CONTROLS HOUSING.
3,161,757. COOKING APPLIANCE.

Removal From Register

Pursuant to the provisions of Rule 347 of the Rules of Practice of the United States Patent Office in Patent Cases, a letter was directed on December 10, 1964, to the last post office address furnished to the Committee on Enrollment by each of the persons whose name and address appear on the following list. With respect to some of the letters, no reply was received within the period of thirty days therein set. Other letters were returned by the Post Office with notations to the effect that the addressee was deceased, unknown, or had moved and left no forwarding address. Accordingly, the names of the following persons are being removed from the Registers of Patent Attorneys and Patent Agents.

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Chairman, Committee on Enrollment.

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TITLE 37—PATENTS, TRADEMARKS AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Accessibility of Assignment Records

Notice is hereby given that the United States Patent Office proposes to amend one of its rules relating to records and files of the Patent Office. The amendment is proposed pursuant to the authority contained in Title 35, United States Code, section 6.

All persons who desire to present their views, objections, recommendations or suggestions are invited to do so on or before June 29, 1965, on which date a hearing will be held at 10:00 a.m. in Room 3886B of the Department of Commerce Building. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

The proposed amendment is for the purpose of limiting public accessibility to the assignment records of the Patent Office relating to patents only, and to keep confidential the assignment records relating to pending and abandoned applications. The proposed amendment will apply only to assignments recorded after the date the amendment becomes effective. Assignments recorded prior to that date together with the indexes and digests relating to them will continue to be open to public inspection as provided for by Rules 12 prior to amendment.

Section 1.12 of Title 37 C.F.R. (Patent Rule 12) is proposed to be amended by adding the words *relating to original or reissue patents* after "records" in the first sentence thereof, and by adding the following as the second and third sentences: Assignment records, digests and indexes, relating to any pending or abandoned application are not available to the public. Copies of any such assignment records and information with respect thereto shall be obtainable only upon written authority of the applicant or his assignee or attorney or agent or upon a showing that the person seeking such information is a bona fide prospective or actual purchaser, mortgagee or licensee of such application, unless it shall be necessary to the proper conduct of business before the Office or as provided by these rules of this part.

The text of the proposed rule, as amended, reads as follows:

§ 1.12 *Assignment records open to public inspection.*—The assignment records, relating to original or reissue patents, including digests and indexes, are open to public inspection and copies of any instrument recorded may be obtained upon payment of the fee therefor. Assignment records, digests and indexes, relating to any pending or abandoned application are not available to the public. Copies of any such assignment records and information with respect thereto shall be obtainable only upon written authority of the applicant or his assignee or attorney or agent or upon a showing that the person seeking such information is a bona fide prospective or actual purchaser, mortgagee or licensee of such application, unless it shall be necessary to the proper conduct of business before the Office or as provided by these rules. An order for a copy of an assignment should give the identification of the record. If identified only by the name of the patentee and number of the patent, or in the case of a trademark registration by the name of the registrant and number of the registration, or by name of the applicant and serial number of the application, an extra charge will be made for the time consumed in making a search for such assignment.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

J. HERBERT HOLLOMON,
Assistant Secretary for Science and Technology.

Approved: May 26, 1965

Published in 30 F.R. 7195, May 28, 1965

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF MAY 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager	7-11-62	3- 3-65
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.		
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager	12- 3-62	9-15-60
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Polymer; Medicines; Cosmetics; Steroids.		
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager	2- 5-65	6-20-60
Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.		
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager	8- 1-62	8-14-59
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.		
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager	9-18-62	1-22-59
Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.		
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager	7-20-62	8- 7-59
Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures		
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager	9- 6-62	7- 1-59
Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.		
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager	12-18-62	1- 5-61
Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.		
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager	10- 5-62	4- 2-60
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.		
SECURITY, GROUP 220—S. BOYD, Manager	12-18-62	4-15-60
Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.		
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager	10-19-62	1-19-60
Communications; Multiplexing Techniques; Facsimile and Related Art.		
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager	7- 5-62	5-20-58
Data Processing, Computation and Conversion; Storage Devices and Related Art.		
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager	10- 3-62	1- 5-60
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.		
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager	9-10-62	2-11-59
Optics; Radiant Energy; Measuring.		
ELEMENTS, GROUP 270—E. J. SAX, Manager	1-18-62	7- 6-60
Conductors; Switches; Miscellaneous.		

Total number of pending applications (excluding Designs)	198,013
Total number of Design applications pending	5,327
Total number of applications awaiting action (excluding Designs)	143,033
Total number of Design applications awaiting action	1,913
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during June 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (54 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 593. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents..... Numbers 3,462,290 to 3,464,411, inclusive

Plant Patents..... None

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)

	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-10-63	12- 1-60
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Founding; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	7-27-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	9-29-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	3-24-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	3- 1-63	8-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GARBAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	3-25-63	7-13-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-27-62	11-19-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-26-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-12-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	5-14-63	1- 9-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-58
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	3- 7-64	4- 9-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRANCIS N. APEL, LOUIS B. CONTE AND HOWARD L. BENDER

No. 7245. Decided March 18, 1965

[52 CCPA —; 342 F.2d 459; 144 USPQ 748]

1. PATENTABILITY—PROCESS—OBVIOUSNESS.

With respect to appellants' process which reacts phenols and aldehydes to produce alkylidene bisphenols, *Held* that "• • • when the claimed subject matter as a whole is considered, including not only the particular catalyst used but the claimed temperature conditions and molar ratios as well, we think the cumulative differences over the prior art are such that appellants' invention would not have been obvious to one of ordinary skill in this art."

2. SAME—PARTICULAR SUBJECT MATTER—PROCESS FOR PRODUCTION OF BISPHENOLS.

The refusal of certain claims to a process for the production of bisphenols, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 768,093.

REVERSED.

Walter C. Kehm (*John F. Hohmann*, *Paul A. Rose*, of counsel) for appellants.

Clarence W. Moore (*J. F. Nakamura* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*.

SMITH, *J.*, delivered the opinion of the court.

The issue here, as in companion appeal PA 7244, arises under 35 U.S.C. 103 and requires us to determine whether the differences between appellants' invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in this art.

The process disclosed in appellants' application [1] and claimed in appealed claims 1 through 6 reacts phenols and aldehydes to produce alkylidene bisphenols, the reaction being catalyzed by a cation exchanging resin. The cation exchanging resin is used as a condensation catalyst, in lieu of the strong mineral acids previously so used in known commercial practice. Commercially available cation exchange resins such as "Amberlite XE–100" and "Dowex 50–X–4" are disclosed as effective catalysts. The resin, if wet, is dried, for example under a vacuum or in an oven, but preferably by displacement of the water with phenol. The molar ratio of phenol to aldehyde in the reaction mixture is disclosed as more than 2:1 and preferably from 6:1 to 12:1. The process is carried out at temperatures of from 65° to 98° C. in a continuous column operation, and at temperatures of from 40° to 98° C. in a batch operation.

The rejection of the appealed claims are affirmed by the Board of Appeals which found the invention to be obvious in view of the following references:

DeGroote et al., 2,499,361, March 7, 1950.
Jansen, 2,468,982, May 3, 1949.
"Amberlite Ion Exchange," p. 10, Rohm and Haas Co., The Resinous Products Div., Philadelphia, September 1953.

[1] Serial No. 768,093, filed October 20, 1958.

Appellants' position as stated in their brief is:

The process now provided by appellants' invention, *for the first time provides* a system whereby high purity bisphenols can be secured in a rapid reaction without the concomitant problems of by-product formation, the separation of soluble acid catalysts and the use of corrosion resistant equipment. The invention also provides, *for the first time*, a system which is continuous by passing a reaction mixture of the aldehydes and the phenols through a packed bed of the cation exchanging synthetic resin to secure a conversion of the reactants to the bisphenols.

Appellants refer to claims 1, 4 and 6 as typical of those on appeal. These claims are as follows:

1. A process for the production of bisphenols from a phenol reactive in the para position and a saturated aldehyde which comprises contacting a mixture comprising said phenol and an aldehyde in a molar ratio of more than 2 to 1 with catalytic quantities of a cation exchanging resin at a temperature of less than about 100° C.

4. The process claimed in claim 3 wherein the cation exchanging resin is anhydrous.

6. A continuous process for the production of bisphenols from a phenol and an aldehyde which comprises forming a mixture of a phenol having a reactive hydrogen in the ring position para to the phenolic hydroxyl and an aldehyde free of olefinic unsaturation in a molar ratio of at least 3 to 1, contacting said mixture with a cation exchanging resin saturated with said phenol in a reaction zone maintained at a temperature between about 65° C. and 95° C., drawing off the bisphenol product and the unreacted phenol and aldehyde, separating the bisphenol therefrom, recharging the phenol aldehyde mixture with additional phenol and aldehyde, and again contacting said mixture with said cation exchanging resin.

The rejection of the claims is based primarily on DeGroote in view of Amberlite. The DeGroote patent relates to (1) the preparation of diphenylolmethanes from an aldehyde and a phenol, (2) the preparation of oxyalkylated derivatives of diphenylolmethanes. The patent discloses a process for preparing a diphenylolmethane from o-cresol and heptaldehyde in a molar ratio of 2:1.05 by adding the aldehyde to the phenol and 4 pounds of sulfuric acid, refluxing for 1 hour at 100°–110° C. following a rapid drop in temperature from an initial rapid rise to 140° to 160° C., adding 100 pounds of xylene and distilling off the water of reaction. DeGroote points out that the phenol to aldehyde molar ratio of 2:1.05, rather than the theoretical 2:1 ratio, is "desirable" to yield the maximum amount of diphenylolmethane, and that a higher molar ratio (excess of phenol) "* * * merely results in incomplete combination of the phenol." The product in xylene solution is dark red and soft-to-fluid.

The Amberlite publication, under the heading "Catalysis by Acids and Bases," discloses that "Amberlite" ion exchange resins are in the nature of "solid" acids and catalyze many reactions catalyzed by acids. A number of reactions are pointed out, including the reactions of formaldehyde and styrene to yield 4-phenyl-1,3-dioxane, and phenol and isobutylene to yield t-butyl phenol. The publication discloses the advantages of separating the resins from reactants or products by simple filtration or decantation, and of eliminating the requirement for neutralization, as with soluble acids, and the need for acid-resistant equipment.

Jansen is directed to the soluble acid catalyzed condensation of phenols with ketones in the presence of a mercapto substituted aliphatic carboxylic acid. The Examiner relied upon the showing in Example 10 of the use of formaldehyde and phenol in securing a product which the reference says contains methylene bisphenol.

The principal contribution to the art made by Jansen appears to lie in the increased catalytic effects resulting from the use of the mercapto aliphatic acids as catalytic aids. It was applied against the appealed claims as showing the use of formaldehyde with a molar excess of phenol with an acidic catalyst.

While the subject matter of the present appeal is related to the subject matter of the companion appeal (PA 7244), we are here concerned with different claims to a different process and with different prior art. As pointed out by the Board of Appeals:

* * * The instant application differs from Appeal No. 422-37 [PA 7244] in that an aldehyde rather than a ketone is employed for condensation with a phenol in order to produce bisphenol. * * *

While both the application here in issue and that in the companion appeal relate to processes for the production of bisphenols employing a cation exchange resin to catalyze the reaction, we agree with the position stated in appellants' brief that "it was error to apply the same reasons of rejection here as in the companion docket D-7244 since [the] references are different and the reaction is different."

It is apparent from the above that the Examiner properly considered that the DeGroote reference alone is not an effective anticipation and that reliance on the Amberlite and Jansen references was necessary to supply some of the deficiences of DeGroote. The question thus posed is whether the teachings of these combined references made the invention as a whole, *as claimed in the appealed claims*, obvious under section 103. We think they did not.

DeGroote does not teach the use of the molar ratios of phenol to aldehyde specified in the appealed claims. Thus, claim 1 requires a molar ratio of "more than 2:1," and claims 2 and 6 specify a molar ratio of "at least 3:1" while claims 3, 4 and 5 call for ratios of "from 6:1 to 12:1." DeGroote, on the other hand, makes the following statement:

Use of an appreciably smaller ratio of aldehyde to phenol than 1 to 2 merely results in incomplete combination of the phenol, the amount remaining uncombined contributing little or nothing to the value of the product and at the same time raising its cost. Therefore, reactant proportions should be quite closely adhered to, and should be of the order of those just recited above.

This passage would, if anything, tend to lead one skilled in the art away from appellants' claimed molar ratios.

As to the importance of the molar ratios claimed, appellants' specification states:

It is necessary in the process of this invention to utilise more than stoichiometric amounts of phenol to aldehyde in the reaction zone. Generally at least 3 moles and up to about 20 moles of phenol per mole of aldehyde is suitable. It is preferred, in order to achieve higher conversions and greater efficiency, to employ mole ratios of phenol to aldehyde between about 6:1 and 12:1. The reaction of the phenol and aldehyde to the corresponding bisphenol with the cationic exchange resin catalysts hereinbefore described is preferably accomplished by contacting a mixture of a phenol and an aldehyde, containing 6 to 12 moles of phenol per mole of the aldehyde, with an amount of phenol modified-ion exchange resin catalyst sufficient to provide 1 mole equivalent of acid per mole of aldehyde at a temperature between 65° and 95° C., for a time sufficient to yield at least a 50% conversion of the reactants to bisphenol. The time during which the reactants are in contact with the catalyst, or the residence time, determines the percent conversion for a given resin.

The importance of the claimed temperature conditions is likewise set forth in the specification:

The ion exchange resin of this invention is generally effective at moderate temperatures of about 40° to 100° C. Temperatures above 100° C. are not

necessary or particularly advantageous since the rate of by-product formation appears to increase rapidly above this temperature and no corresponding increase in rate of bisphenol production or total bisphenol yield occurs. At temperatures above 100° C., it is also possible that some of the polymeric catalysts could be degraded, significantly lowering their useful life.

Nor do we think the Jansen reference suggests appellants' claimed molar ratios. While it is true that Example X of Jansen shows a ratio of phenol to aldehyde which falls within the range claimed by appellants, it is also true that Jansen is directed to the use of *a particular type of catalyst* for this reaction, which catalyst is in no way related to appellants' cation exchanging resin. We think this difference in catalysts is highly significant and destroys much of the pertinence of Jansen's teaching of molar ratios to appellants' invention. Cf. *Corona Cord Tire Co.* v. *Dovan Chem. Corp.*, 276 U.S. 358 (1928). And, we might add, the same reasoning applies with equal effect to the teachings of the DeGroote reference.

[1] Thus, when the claimed subject matter as a whole is considered, including not only the particular catalyst used but the claimed temperature conditions and molar ratios as well, we think the cumulative differences over the prior art are such that appellants' invention would not have been obvious to one of ordinary skill in this art.

[2] The decision of the Board is accordingly reversed.

REVERSED.

MARTIN, *J.*, dissenting, with whom ALMOND, *J.*, joins.

In the related case, *In re Farnham* (PA 7244) 52 CCPA —; — F.2d —; — USPQ —, we held that:

> • • • It seems to us that a person of ordinary skill in this art should be charged with the knowledge of the references as to the availability and use of ion exchange resins in catalyzing chemical reactions and that, as stated by the Board:
>
> • • • Although the specific reaction claimed is not disclosed by these secondary references, we see no reason to believe it would not be operative when catalyzed with an acidic resin instead of free acid. Obviousness under 35 U.S.C. 103 does not require absolute predictability. *In re Moreton*, 48 CCPA 875; 1961 C.D. 277; 771 O.G. 295; 288 F.2d 708; 129 USPQ 227.

The single reason for reversing as to claims 3, 7 and 8 was because those claims called for a pretreatment of the catalyst to reduce its moisture content to below 3% (as disclosed in the specification). We stated:

> • • • Appellants appear to have discovered that the desired reaction required pre-treatment of the ion-exchange resin catalyst to reduce its moisture content before it could be successfully used in the process. • • •
>
> • • • • • • • • • • • •
>
> We think appellants' recognition of the necessity for low water content in the catalyst is an important and unobvious contribution to this art. • • •

I might add that that contribution was the one evident on the basis of the record before us.

The present appeal differs from the former in that one reactant is an aldehyde rather than a ketone. The differences in reactivity are well known in the art as seen in the Jansen reference. Jansen was concerned with the "condensation of a phenol with a carbonyl compound, especially a ketone." He also found that:

> • • • the acid condensation of phenols with formaldehyde, as well as other aldehydes such as acetaldehyde, propionaldehyde, butyraldehyde, benzaldehyde and the like is catalyzed by the presence of the above-described catalyst. Such condensations are inherently much more rapid than condensations of phenols with ketones and much more likely to lead to resin formation and as such are not generally considered equivalent to condensation of phenols with ketones. However, they are effected even more rapidly by the catalysts of this invention, although, of course, because of their more rapid nature, the advantage in using a catalyst is not so pronounced.

Jansen's claims call for carbonyl compounds, which is inclusive of aldehydes and ketones.

The majority opinion in the present case hinges allowance of all the claims on the temperature and mole ratio limitations. That I think is in error. The following table will be helpful in noting the "differences between the subject matter sought to be patented and the prior art." I think the proper approach is to compare the appealed *claims* with the *examples and disclosure of the references*. The *similarities* ought to be considered in order to show that the *differences* between the claims and the most similar prior art are such that the subject matter is unobvious, if indeed that is so. Since some terms in the appealed claims are not self-defining, I have added a column headed "Appellants' Specification" to show the scope intended to be covered by such terms.

	De Groote	Claim 1	Appellants' Specification
Aldehyde	". . . formaldehyde . . . Its homologues . . . butyraldehyde, and heptaldehyde, are obvious equivalents"	"a saturated aldehyde"	"aldehydes . . . from 2 to 12 carbon atoms"
Phenol	". . . monocyclic phenols . . . also required to be monohydric . . ." "O-Cresol"	"a phenol reactive in the para position"	". . . phenols . . . with or without one or more substituents in the position ortho and meta to the phenolic hydroxyl . . . ortho and meta cresol"
Ratio pH/ald	"molal," 2/1.05	Molar "more than 2 to 1"	". . . more than stoichiometric amounts . . . Generally at least 3 . . . preferred . . . about 6:1 and 12:1 . . ."
Catalyst	Conc. HCl; conc. H_2SO_4	"a cation exchanging resin" [not phenol-dried or anydrous]	". . . The water content can be as much as 50 to 100% by weight based on the dry resin . . . It is preferred . . . to remove this water . . ."
Solvent	None. ". . . in general, preparation of the diphenylolmethane may be accomplished merely by reacting the phenol and the aldehyde in absence of inert solvent."	Silent	None—[water distilled off].
Temperature	". . . The reaction is decidedly exothermic the temperature rising rapidly to from 140° C. to 160° C. before beginning to fall rapidly with formation of water of reaction to 100-110° C."; "Heating is stopped at 130° C. . . ."	"less than about 100° C."	". . . moderate temperature of about 40° to 100° C. Temperatures above 100° C. are not necessary or particularly advantageous . . ."
Product	". . . diphenylolmethanes prepared from certain phenols and aldehydes . . ."	"bisphenols"	". . . bisphenol or phenol-bisphenol complex . . ."

It is clear that there are three differences, the catalyst, the mole ratios, and the temperature. That the application of the catalyst to this process would be obvious to one of ordinary skill in this art is evident from our holding in the companion appeal, *In re Farnham*, supra. I turn then to the remaining limitations.

Temperatures less than 100° C. are shown in Jansen for ketones, and aldehydes are stated to react more rapidly, therefore temperatures

should be *at least* no higher, thus suggesting temperatures within the terms of the claims. Further, there is some overlap in the temperature with the DeGroote reference for claim 1 which calls for a temperature of "less than *about* 100° C." [Emphasis supplied.]

Jansen was relied on to support the position that use of an excess of phenol would be obvious. He states:

> The proportion of the phenol and ketone reactants, of the acid condensing agent and of the catalyst may be varied widely. In general, a molecular excess of phenol, that is, more than two molecular proportions of phenol for each mole of ketone, is advantageous, best results being secured when about 4 to 8 moles of phenol are used for each mole of ketone. The proportion of the acid condensing agent is in no way critical but ordinarily about 0.1 to 0.5 mole of condensing agent is used for each mole of ketone reactant. When anhydrous hydrogen chloride is used as the acid condensing agent, it is most convenient to saturate the reaction mixture therewith.

We keep in mind the relationship between ketones and aldehydes taught in that reference. Jansen then discloses in his Example X the reaction of 8 moles of phenol with 1 mole of formaldehyde, as acknowledged by appellants' brief.

The real difference in mole ratios relied on by the majority opinion arises from Jansen's use of a different catalyst. The majority states: "* * * We think this difference in catalysts is highly significant and destroys *much* of the pertinence of Jansen's teaching of molar ratios to appellants' invention. [Emphasis supplied.]

I think that the teachings of the references referred to above indicate that the present temperature and mole ratio limitations of the claims are no more than those resulting from the routine experimentation which one of ordinary skill in the art would determine in finding the optimum conditions in the operation of the process. There is no real showing of criticality in those limitations.

Concerning the instant catalyst, "a cation exchanging resin," we know:

> * * * The catalytic properties of ion-exchange materials have been known for many years, and the newer ion-exchange resins have recently been investigated. The strongly acidic sulfonic acid cation-exchange resins have been shown to be effective as an esterification catalyst for most homogeneous or heterogeneous acid-catalyzed reactions. The strongly basic anion-exchange resins have also been shown to be effective base catalysts. The advantages of the ion-exchange resins as catalysts over the convention soluble acids and bases are: (1) the resulting products are not contaminated by the catalyst, (2) the catalyst can be used over and over again, and (3) the resin catalysts may frequently cause fewer side reactions.[3]

The application of that catalyst to the old reaction of phenol with aldehyde was correctly stated in the companion appeal to be obvious. I do not think the application of cation exchange resins to the instant reaction can "destroy" the pertinence of the teaching of Jansen as to mole ratios. The majority opinion admits as much, stating only that "much of the pertinence" is destroyed.

It is clear that in no single element, including the dried resin, is there criticality for the reaction of aldehydes with phenols. The whole concatenation does not impress me as being beyond the skill of the art, as exemplified by the references of record. The companion case *In re Farnham*, supra, showed a criticality in the dried resin which determined whether or not the process would operate. The claims in that case which defined an operable process, by reciting the predried resin, were held to be patentable over the art of record. No such criticality exists here. The two cases should be consistent.

[3] Encyclopedia of Chem. Technology, vol. 8, Kirk et al. ed. (1952), pp. 16–17.

The majority opinion in this case seems to stand for the proposition that although it is obvious to use a well-known catalyst, the cation exchange resin, to catalyze a well known reaction, the process becomes an unobvious one upon the determination of two operational parameters, temperature and mole ratios, although neither is critical to the operability of the reaction with the particular catalyst. I cannot agree and would affirm the rejection of all the claims here as obvious variations of the cited art.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,690,603, R. L. Bard, ELECTRICALLY OPERATED ADDING MACHINES; 1,939,114, Sjoholm and Brisbois, RADIO INTERFERENCE ELIMINATOR; 2,692,290, Orr and Sands, MAGNETIC DEFLECTION MEANS FOR ELECTRON DISCHARGE DEVICES; 2,719,226, I. L. Auerbach, BINARY COMPUTATION CIRCUIT; 2,721,005, Fan and Kuchinsky, MULTIPOSITION BEAM LUBE; Reg. No. 566,176 (BURROUGHS), Burroughs Adding Machine Company, Electrical appliances—namely, electric motors, interference eliminators, radio filters, condensers, circuit protectors, and the parts thereof; Reg. No. 618,595, same, Business machines—namely, adding machines, listing machines, calculating machines, etc., filed Oct. 24, 1961, D.C. Conn. (New Haven), Dec. 2009, *Burroughs Corporation* v. *Burroughs Electronics, Inc.* Stipulation for dismissal Jan. 31, 1962.

1,960,114. (See 890,900.)

2,660,810, F. J. St. Lucas, ENGINE STOP DEVICE, filed Jan. 19, 1965, D.C. Nebr. (Omaha), Dec. 02208, *Frank J. St. Lucas et al.* v. *General Motors Corporation.*

2,612,962, William A. Vinson, SLEEVE-COMPRESSING TOOL, filed Jan. 28, 1965, Ct. Cls., Dec. 29–65, *AMP Incorporated* v. *The United States.*

2,625,905, S. L. Richards, Jr., APPARATUS FOR APPLYING COATING MATERIAL TO PIPE; 2,689,486, C. K. Smith, APPARATUS FOR PREPARING AND APPLYING PLASTIC COATING MATERIAL; 2,764,518, S. L. Richards, Jr., APPARATUS FOR COATING AND REINFORCING PIPE, filed Oct. 27, 1960, D.C., S.D. Tex. (Houston), Dec. 13,280, *Pipeline Service Corp.* v. *Anchor-Wate Co. et al.* (Pipeline Service Corp. substituted for Rosson-Richards Processing Company, Inc. as plaintiff on Jan. 21, 1965). Stipulation of dismissal Jan. 21, 1965.

2,652,975, N. J. Angelo, CENTRIFUGAL COUNTERCURRENT EXCHANGE DEVICE; 2,760,704, W. J. Podbielniak et al., CENTRIFUGAL COUNTERCURRENT EXCHANGE DEVICE; 2,638,305, Doyle and Costello, LIQUID FEED ARRANGEMENT FOR CENTRIFUGAL DEVICES, filed Jan. 22, 1965, D.C., N.D. Ill. (Chicago), Dec. 65c104, *Dresser Industries, Inc.* v. *Liquid Dynamics Corporation et al.*

2,699,436. (See 2,638,305.)

2,652,360. (See 890,900.)

2,690,834, L. H. Conover, TETRACYCLINE, filed Jan. 11, 1965, D.C., E.D.N.Y. (Brooklyn), Dec. 65C–18, *Chas. Pfizer & Co., Inc.* v. *Evsco Pharmaceutical Corp.* Same, filed Mar. 18, 1965, D.C., S.D.N.Y., Dec. 65/209, *Veterinary Corp. of America* v. *Chas. Pfizer & Co.* Same, filed Mar. 29, 1965, D.C., S.D. Iowa (Des Moines), Dec. 6–1652–C–2, *Chas. Pfizer & Co., Inc.* v. *Diamond Laboratories, Inc.* Same, filed Mar. 29, 1965, D.C.N.J. (Newark), Dec. 323–65, *Chas. Pfizer & Co., Inc.* v. *Biocraft Laboratories, Inc.* Same, filed Mar. 29, 1965, D.C., N.D. Ill. (Chicago), Dec. 65c426, *Chas. Pfizer & Co., Inc.* v. *Botco Laboratories, Inc.* Same, filed May 5, 1965, D.C., E.D.N.Y. (Brooklyn), Dec. 65C–475, *Chas. Pfizer & Co., Inc.* v. *Henry Schein.* Same, filed Nov. 12, 1963, D.C., S.D.N.Y., Dec. 63/3237, *Chas. Pfizer & Co., Inc.* v. *Davis-Edwards Pharmacal Corp.* Consent judgment; defendant enjoined; counterclaim dismissed May 19, 1965. Same, filed Dec. 12, 1963, D.C., S.D.N.Y., Dec. 63/3619, *Chas. Pfizer & Co., Inc.* v. *West-Ward, Inc.* Consent judgment; on and after June 12, 1965, defendants enjoined May 27, 1965 Same, filed June 1, 1965, D.C., E.D.N.Y. (Brooklyn), Dec. 65C–542, *Chas. Pfizer & Co., Inc.* v. *Weiss Pharmacal Corp.* Same, filed June 1, 1965, D.C., S.D. Calif. (Los Angeles), Dec. 65–310–EC, *Chas. Pfizer & Co., Inc.* v. *Mike Berk Associates.*

2,710,668, L. K. Sanders et al., MEANS FOR POSITIONING AN ELEVATOR PLATFORM AT PREDETERMINED LEVELS; 2,708,196, same, VEHICLE DOLLY; 2,708,504, same, ELEVATOR PLATFORM SAFETY LOCK; 2,845,189, L. D. Sanders, AUTOMOBILE PARKING APPARATUS; 2,845,190, V. A. Sanders, PLATFORM LEVELING MECHANISM; 2,901,130, L. D. Sanders, AUTOMOBILE PARKING APPARATUS; Re. 25,902, L. K. Sanders, et al., AUTOMOBILE PARKING ELEVATOR, filed Jan. 13, 1965, D.C., E.D. Wash. (Spokane), Doc. 2642, *Pigeon Hole Parking, Inc.* v. *Systematic Parking Co. et al.*

2,717,573, Montgomery and Campbell, COMBINATION CLARIFIER AND DIGESTER, filed Aug. 26, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1512, *Marcellus S. Campbell et al.* v. *Yeomans Brothers Company.* Cause dismissed without prejudice June 12, 1964.

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2,721,955. (See 890,900.)

2,704,760, Berger and Ludwig, DICARBOMATES OF SUBSTITUTED PROPANE DIOLS, filed Jan. 4, 1965, D.C., S.D.N.Y., Doc. 65/4, *Carter Products, Inc.* v. *Riverton Laboratories, Inc.*

2,740,695, J. J. Sackett, MACHINE FOR APPLYING SEALING MATERIAL TO ARTICLES, filed Mar. 12, 1964, D.C. Minn. (Minneapolis), Doc. 4–64/80, *The Wolf, Detroit Envelope Co.* v. *Heinrich Envelope Co.* Stipulation and judgment granting injunction Jan. 27, 1965.

2,700,704. (See 2,652,975.)

2,704,313. (See 2,638,305.)

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2,709,305, R. N. Page, METAL FOIL APPLIQUES AND METHOD OF MAKING SAME, filed May 21, 1962, D.C., S.D. Calif. (Los Angeles), Doc. 62–704WB, *The Boeing Company et al.* v. *Nelson Name Plate Company.* Final judgment in favor of defendant; plaintiff enjoined from alleging claims to Patent No. 2,709,305 as valid Jan. 19, 1965.

2,772,419, M. Silverstein, LADIES' UNDERGARMENT, filed Apr. 10, 1964, D.C., S.D.N.Y., Doc. 64/1122, *Murray Silverstein* v. *Sherman Underwear Mills, Inc.* Stipulation and order of dismissal Jan. 26, 1965.

2,709,192. (See 2,716,466.)

2,709,204. (See 2,716,466.)

2,845,189. (See 2,716,466.)

2,909,689. (See 2,716,466.)

2,901,130. (See 2,716,466.)

2,917,792, V. F. Espenschied, PRE-ASSEMBLED DOOR AND CASING, filed Aug. 19, 1964, D.C., N.D. Ohio (Toledo), Doc. C64–122, *The F. E. Schumacher Company* v. *Airco Northwest, Inc., also known as Airco Aluminum Products.* Final consent decree; defendant enjoined (notice Jan 22, 1965).

2,894,268, R. Berning, BUCKLE FOR BELTS OR THE LIKE, filed Jan. 25, 1965, D.C., S.D.N.Y., Dec. 65/223, *Firma Asterwerk Otto Berning & Co.* v. *Jomibe Novelty Co., Inc. et ano.*

2,994,988, W. F. Curran, DUAL SPEED CLUTCH ASSEMBLY, filed Jan. 26, 1965, D.C., E.D. Mich. (Detroit), Doc. 26400, *Deuly Machine Specialties, Inc.* v. *E. W. Bliss Company.*

2,995,222, J. F. Kaelin, METHOD FOR PRODUCING DECORATIVE WOOD PANELS, filed Jan. 19, 1965, D.C. Oreg. (Portland), Doc. 65–28, *Farley & Loetscher Manufacturing Company* v. *Pacific Custom Loaders, Inc. et al.*

2,977,962, R. H. L. Johansen, APPARATUS FOR TRIMMING AND CUTTING PREDETERMINED LENGTHS OF SPAGHETTI, filed Nov. 29, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c2014, *Campbell Soup Company* v. *Libby, McNeill & Libby.* Stipulation and order dismissing complaint without prejudice June 16, 1964.

2,994,926, R. N. Haynie, METHOD FOR MAKING FLUID SEALS; 2,910,742, same, RADIAL SHAFT SEAL WITH RESILIENT SEALING ELEMENT BONDED TO AN ANGULARLY EXTENDING PERIPHERAL CASE PORTION, filed Jan. 5, 1965, D.C., E.D. Mich. (Detroit), Doc. 26220, *Federal-Mogul-Bower Bearing, Inc.* v. *Yale Rubber Manufacturing Co.*

2,910,742. (See 2,994,926.)

2,918,317, Karlan and Silver, DRY TRANSFER SHEET AND METHOD, filed Mar. 12, 1963, D.C., E.D.N.Y. (Brooklyn), Doc. 63C–261, *Max Karlan et al.* v. *Celic Tak Mfg. Co.* Consent judgment for injunction Jan. 15, 1965. Same, filed May 13, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–189, *Max Karlan et al.* v. *Visual Art Industries, Inc. et al.* Same, filed Apr. 20, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c677, *Max Karlan et al.* v. *Para-Tone, Incorporated.* Stipulation and order dismissing complaint and counterclaim without prejudice May 17, 1965.

2,994,767, T. B. Gordon, POWERED WARPING BLOCK FOR HAULING CRAB POTS AND THE LIKE, filed Nov. 7, 1963, D.C., W.D. Wash. (Seattle), Doc. 6065, *Marine Construction and Design Co.* v. *Commercial Machine Works, Inc.* Consent judgment; injunction issued Jan. 25, 1965.

2,993,990, M. B. Kock, LUMINAIRE; 3,006,206, D. E. Husby et al., same; Des. 197,780, same, filed Jan. 14, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c50, *Westinghouse Electric Corporation* v. *Revere Electric Mfg. Co.*

2,993,921, J. Fried, ACETALS AND KETALS OF 16,17-DIHYDROXY STEROIDS, filed Jan. 12, 1965, D.C., E.D. Va. (Richmond), Doc. 4213, *Pharmaceutical Research Products, Inc.* v. *Richard C. Trimble et al.*

3,000,322. (See 2,662,075.)

3,005,335. (See 3,043,850.)

2,996,247, P. Robinson, ELECTRICAL CAPACITORS, filed Mar. 9, 1964, D.C. Del. (Wilmington), Doc. 2810, *Sprague Electric Company* v. *Dickson Electronics Corporation.* Stipulation dismissing complaint and counterclaim without prejudice Mar. 5, 1965.

3,180,576, Carrel and Mayes, MULTI-BAND LOG PERIODIC ANTENNA; Re. 25,740, same, LOG PERIODIC BACKWARD WAVE ANTENNA ARRAY, filed Feb. 12, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c230, *The University of Illinois Foundation* v. *The Finney Manufacturing Co. et al.* Re. 25,740 included by supplemental complaint Mar. 12, 1965. Same, filed Apr. 29, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c371, *The Finney Company* v. *JFD Electronics Corporation et al.*

3,171,572, Reich and Ayres, HEATER FOR AEROSOL FOAM DISPENSING PACKAGES, filed Mar. 2, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–333–TC, *Carter Products, Inc.* v. *Sverchorp, Inc.*

Re. 25,980. (See 2,716,498.)

Re. 25,740. (See 3,180,576.)

Des. 197,780. (See 3,043,950.)

Erratum

In the OFFICIAL GAZETTE, issue of October 27, 1964, vol. 807, p. 808, under the heading "Patent Suits," second column, line 40, for "dismissed with prejudice" read *dismissed without prejudice.*

REISSUES

JUNE 29, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,811

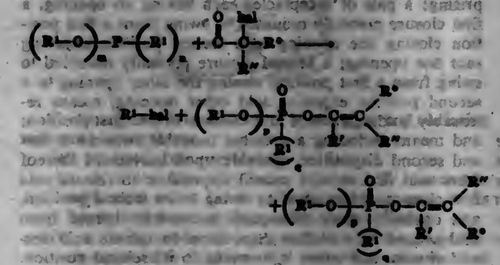
PREPARATION OF VINYL ESTERS OF PHOSPHOROUS ACIDS [USEFUL AS INSECTICIDES]

Charles H. Thomas and Alan R. Stiles, Modesto, Calif., by Shell Oil Company, Emeryville, Calif., a corporation of Delaware, assignee

No Drawing. Original No. 3,068,263, dated Dec. 11, 1962, Ser. No. 87,648, Feb. 13, 1961. Application for reissue Sept. 24, 1963, Ser. No. 312,825

9 Claims. (Cl. 260—461)

6. In a process which involves the reaction:



wherein m is an integer from 1 to 3, m+n=3, p=m−1, p+q=2, "hal" is middle halogen, R^1 is an organic radical containing up to 10 carbon atoms of the group consisting of alkyl, cycloalkyl, aryl, alkaryl and aralkyl radicals and such radicals substituted by from one to a plurality of substituents of the group consisting of middle halogen, nitro, amino of the formula $—N(H)_v(R^1)_w$ and other of the formula $R^1—O—$, with the proviso that in at least one of $R^1—O—$ in the reactant of the formula $(R^1—O)_mP(R^1)_n$, "R^1 is lower alkyl, R' is a member of the group consisting of hydrogen and organic radicals represented by R^1, R" is a member of the group consisting of hydrogen [middle halogen] and organic radicals represented by R^1, and R° is a member of the group consisting of [middle halogen,] organic radicals represented by R^1, and functional radicals of up to 10 carbon atoms of the group consisting of carboalkoxy, ether of the formula $R^1—O—$, alkyleneoxycarbonyl, acyloxyalkoxycarbonyl wherein the acyl moiety has the formula $R^1—C(O)—$, aralkyloxycarbonyl, amido of the formula $—C(O)—N[(H)_v(R^1)_w]$ *(alk.)*$_2$, *wherin alk. is alkyl of 1 to 4 carbon atoms,* and the sulfur analogs of these radicals, with the proviso that R° is different from and of higher molecular weight than R", the improvement which comprises conducting the said reaction in the presence of a minor amount of an acidic compound free from olefinic and acetylenic unsaturation and of the group consisting of phenols, thiophenols, aliphatic and cycloaliphatic acids unsubstituted by other than hydrocarbon and oxygen-containing substituents, unsubstituted aromatic acids, unsubstituted alkaryl acids, unsubstituted aralkyl acids, such acids wherein the aromatic moiety is substituted by from one to a plurality of substituents of the group consisting of halogen, nitro, cyano, hydroxy, alkoxy and amino of the formula $—N(H)_v(R^1)_w$, with the proviso that v is an integer from 1 to 2 and v+w=2.

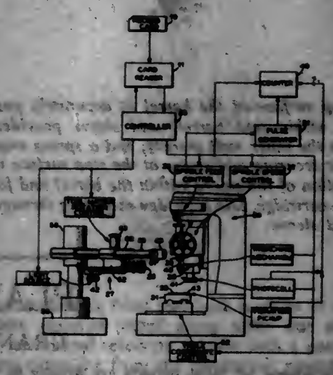
25,812

AUTOMATIC MACHINE TOOL

Mark Mangus, Poughkeepsie, N.Y., by Kearney and Trecker Corporation, a corporation of Wisconsin, assignee

Original No. 2,901,927, dated Sept. 1, 1959, Ser. No. 705,701, Dec. 27, 1957. Application for reissue Jan. 17, 1964, Ser. No. 338,316

31 Claims. (Cl. 77—4)



1. A digital data programmed machine tool comprising a boring machine including a worktable movable to any desired coordinate position;

a tool receiving spindle movable rotatably and longitudinally;

a tool storage matrix positioned adjacent said boring machine and containing a plurality of tools for use in said machine; and,

a controller responsive to said digital data for controlling said storage matrix to bring a selected tool in line with said spindle, for positioning said worktable at a predetermined coordinate position beneath said spindle referable to the selected tool and for operating said spindle to secure said selected tool for operating on said workpiece at said coordinate position.

25,813

DISPLAY BALL-POINT PEN

Warren Shea, Jersey City, N.J., assignor to Redfast Pen Corp., Kenilworth, N.J.

Original No. 3,077,852, dated Feb. 19, 1963, Ser. No. 166,554, Jan. 16, 1962, which is a division of Ser. No. 147, Jan. 4, 1960. Application for reissue Oct. 13, 1964, Ser. No. 418,963

2 Claims. (Cl. 40—330)

2. *A writing instrument comprising a ball-point cartridge, a barrel entirely made of transparent material having a mouth for inserting the cartridge, and an opening*

through which the cartridge projects; a cap engaging and covering the mouth of the barrel having a protract and retract mechanism therein, said barrel having an inner wall extending from the mouth to the region adjacent the opening and a stop surface; a tubular sleeve for supporting display material positioned within said barrel and engaging



the stop surface of the barrel to accurately position the sleeve within said barrel, said sleeve provided with a seat on the inner wall thereof, and a spring engaging the seat for securing said sleeve at the stop surface to prevent dislocation of the sleeve within the barrel and for retracting the cartridge, said cartridge extending through the barrel and sleeve.

26,514
APPARATUS FOR DISPENSING PARTICULATE MATERIALS
Edmund J. Benicky, Robert E. Johnson, James R. Hilkenewold, and Russell J. Milliser, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Original No. 3,038,641, dated June 12, 1962, Ser. No. 853,268, Nov. 16, 1959. Application for reissue June 3, 1964, Ser. No. 372,951
16 Claims. (Cl. 222—129)



1. Apparatus for dispensing particulate material, comprising: a pair of receptacles each having an opening; a first closure pivotally mounted to swing from a first position closing one opening to a second position exposing said one opening; a second closure pivotally mounted to swing from a first position closing the other opening to a second position exposing said other opening; means releasably holding each of said closures in said first position; and means including a member movable between a first and second disposition operable upon movement thereof from said first to said second disposition to release said first closure and cause it to swing to its second position, and operable upon subsequent movement thereof from said second to said first disposition to release said second closure and cause it to swing to its second position.

PLANT PATENTS

GRANTED JUNE 29, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,542
ROSE PLANT
Herbert C. Swim, Ontario, and O. L. Weeks, Chino, Calif., assignors to O. L. Weeks, doing business under the trade name and style of Weeks Wholesale Rose Grower, Chino, Calif.
Filed Mar. 31, 1964, Ser. No. 356,343
1 Claim. (Cl. Plt.—34)

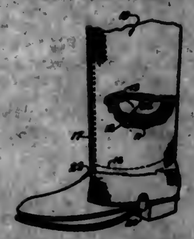
A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a low-growing, compact but somewhat spreading habit of plant growth, distinctive and attractive form and good petalage of the buds and flowers, an intermittent habit of bloom, with relatively few flowers bridging the gap between peak blooms, a massive color effect of the plants when in full bloom, a distinctive and attractive lemon and white general color tonality of the flowers, and a variable flower fragrance ranging from tea rose to that of the common lilac (*Syringa vulgaris*).

PATENTS

GRANTED JUNE 29, 1965

GENERAL AND MECHANICAL

3,191,185
SNAKE-PROOF TROUSERS AND THE LIKE
Robert F. Martin, Houston Peak, Selma, Ala.
Filed Aug. 21, 1963, Ser. No. 303,639
4 Claims. (Cl. 2—22)



1. As a protective article of clothing, a leg enclosing garment comprising,
(a) an outer fabric cylinder,
(b) an inner fabric cylinder substantially concentric with said outer fabric cylinder and secured at its upper and lower ends to said outer cylinder,
(c) a lining made of an expanded lightweight plastic material of a thickness for preventing the ends of the fangs of common poisonous snakes penetrating therethrough and of a shape and size to fit snugly between said inner and outer fabric cylinders,
(d) there being an opening in said outer fabric cylinder of a size to permit removal and replacement of said lining, and
(e) fasteners positively to close said opening, thereby to hold the lining between said outer and inner fabric cylinders.

3,191,186
WORKMAN'S SAFETY APRON
Clarence W. Robertson, 1553 Harriman, Memphis, Tenn.
Filed Apr. 27, 1962, Ser. No. 190,570
3 Claims. (Cl. 2—51)



1. A workman's apron adapted to be worn as a covering over front parts of the shirt and pants of a workman comprising an elongated body having upper and lower portions and inward and outward sides, said upper portion being of solid fabric except the provision of a button hole adapted to engage a button on the front of the workman's shirt, and a substantially rectangular tab transversely affixed to said body on said inward side intermediate said upper and lower portions, said tab being adapted to be interposedly tucked between the workman's shirt and pants, and said apron including said tab being made substantially entirely of a sheet-like easily flexible and unstiff material.

3,191,187
GLOVE
Edward Wayne Conner, Oldwick, N.J., and Joseph C. Gerard, Arlington, Tex., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Oct. 28, 1963, Ser. No. 319,320
The portion of the term of the patent subsequent to Apr. 20, 1982, has been disclaimed
2 Claims. (Cl. 2—167)



1. A glove having front and back sections of thermoplastic film material joined along outer side edges to define a metacarpal receiving portion with a portion for the fingers extending from the metacarpal receiving portion at one end and having a wrist portion open at the top and extending from the metacarpal receiving portion at the other end, a first cuff portion extending from the top of the wrist portion to a free terminal edge to present a substantial area of said first cuff portion adjacent the outside face of the front glove section, a second cuff portion extending from the top of the wrist portion to a free terminal edge to present a substantial area of said second cuff portion adjacent the outside face of the back glove section, said cuff portions respectively being sealed to said front and back sections along lines coincident with the lines of joinder along said side edges; and being free of said front and back sections in areas thereof between their terminal edges and the tops of their respective wrist portion, whereby there is presented cuff pocket means opening in a direction away from the wrist portion and toward the metacarpal receiving portion of the glove.

3,191,188
METHOD OF TREATING OTOSCLEROTIC DEAFNESS BY SUBSTITUTING AN ARTIFICIAL STAPES FOR THE HUMAN STAPES
Eduardo Campo Maranillas and Juan Carlos Tizzolo, both of 1264 Santa Fe St., Buenos Aires, Argentina
Filed Oct. 19, 1961, Ser. No. 145,285
3 Claims. (Cl. 3—1)

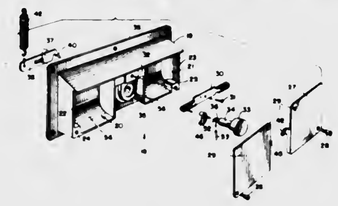
1. A method of alleviating otosclerotic deafness, comprising the steps of carrying out a stapedectomy and replacing the removed stapes with a prosthesis comprising a hollow tubular strut having two opposite end portions

through which the cartridge projects; a cap engaging and covering the mouth of the barrel having a protract and retract mechanism therein, said barrel having an inner wall extending from the mouth to the region adjacent the opening and a stop surface; a tubular sleeve for supporting display material positioned within said barrel and engaging



the stop surface of the barrel to accurately position the sleeve within said barrel, said sleeve provided with a seat on the inner wall thereof, and a spring engaging the seat for securing said sleeve at the stop surface to prevent dislocation of the sleeve within the barrel and for retracting the cartridge, said cartridge extending through the barrel and sleeve.

25,814
APPARATUS FOR DISPENSING PARTICULATE MATERIAL
Edmund J. Buzicky, Robert E. Johnson, James R. Hilmanowski, and Russell J. Milnar, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Original No. 3,038,641, dated June 12, 1962, Ser. No. 853,368, Nov. 16, 1959. Application for reissue June 3, 1964, Ser. No. 382,981
16 Claims. (Cl. 222—129)



1. Apparatus for dispensing particulate material, comprising: a pair of receptacles each having an opening; a first closure pivotally mounted to swing from a first position closing one opening to a second position exposing said one opening; a second closure pivotally mounted to swing from a first position closing the other opening to a second position exposing said other opening; means releasably holding each of said closures in said first position; and means including a member movable between a first and second disposition operable upon movement thereof from said first to said second disposition to release said first closure and cause it to swing to its second position, and operable upon subsequent movement thereof from said second to said first disposition to release said second closure and cause it to swing to its second position.

PLANT PATENTS

GRANTED JUNE 29, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,542
ROSE PLANT
Herbert C. Swim, Ontario, and O. L. Weeks, Chino, Calif., assignors to O. L. Weeks, doing business under the trade name and style of Weeks Wholesale Rose Grower, Chino, Calif.
Filed Mar. 31, 1964, Ser. No. 356,343
1 Claim. (Cl. Plt.—24)

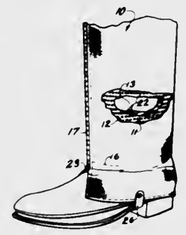
A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a low-growing, compact but somewhat spreading habit of plant growth, distinctive and attractive form and good petalage of the buds and flowers, an intermittent habit of bloom, with relatively few flowers bridging the gap between peak blooms, a massive color effect of the plants when in full bloom, a distinctive and attractive lemon and white general color tonality of the flowers, and a variable flower fragrance ranging from tea rose to that of the common lilac (*Syringa vulgaris*).

PATENTS

GRANTED JUNE 29, 1965

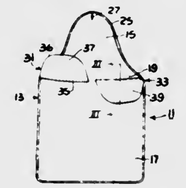
GENERAL AND MECHANICAL

3,191,185
SNAKE-PROOF TROUSERS AND THE LIKE
Robert F. Martin, Houston Park, Selma, Ala.
Filed Aug. 21, 1963, Ser. No. 303,629
4 Claims. (Cl. 2—22)



1. As a protective article of clothing, a leg enclosing garment comprising,
(a) an outer fabric cylinder,
(b) an inner fabric cylinder substantially concentric with said outer fabric cylinder and secured at its upper and lower ends to said outer cylinder,
(c) a lining made of an expanded lightweight plastic material of a thickness for preventing the ends of the fangs of common poisonous snakes penetrating therethrough and of a shape and size to fit snugly between said inner and outer fabric cylinders,
(d) there being an opening in said outer fabric cylinder of a size to permit removal and replacement of said lining, and
(e) fasteners positively to close said opening, thereby to hold the lining between said outer and inner fabric cylinders.

3,191,186
WORKMAN'S SAFETY APRON
Clarence W. Robertson, 1553 Harrison, Memphis, Tenn.
Filed Apr. 27, 1962, Ser. No. 190,570
3 Claims. (Cl. 2—51)



1. A workman's apron adapted to be worn as a covering over front parts of the shirt and pants of a workman comprising an elongated body having upper and lower portions and inward and outward sides, said upper portion being of solid fabric except the provision of a button hole adapted to engage a button on the front of the workman's shirt, and a substantially rectangular tab transversely affixed to said body on said inward side intermediate said upper and lower portions, said tab being adapted to be interposedly tucked between the workman's shirt and pants, and said apron including said tab being made substantially entirely of a sheet-like easily flexible and unstiff material.

3,191,187
GLOVE
Edward Wayne Comer, Oldwick, N.J., and Joseph C. Gerard, Arlington, Tex., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Oct. 28, 1963, Ser. No. 319,220
The portion of the term of the patent subsequent to Apr. 20, 1982, has been disclaimed
2 Claims. (Cl. 2—167)



1. A glove having front and back sections of thermoplastic film material joined along outer side edges to define a metacarpal receiving portion with a portion for the fingers extending from the metacarpal receiving portion at one end and having a wrist portion open at the top and extending from the metacarpal receiving portion at the other end, a first cuff portion extending from the top of the wrist portion to a free terminal edge to present a substantial area of said first cuff portion adjacent the outside face of the front glove section, a second cuff portion extending from the top of the wrist portion to a free terminal edge to present a substantial area of said second cuff portion adjacent the outside face of the back glove section, said cuff portions respectively being sealed to said front and back sections along lines coincident with the lines of joinder along said side edges; and being free of said front and back sections in areas thereof between their terminal edges and the tops of their respective wrist portion, whereby there is presented cuff pocket means opening in a direction away from the wrist portion and toward the metacarpal receiving portion of the glove.

3,191,188
METHOD OF TREATING OTOSCLEROTIC DEAFNESS BY SUBSTITUTING AN ARTIFICIAL STAPES FOR THE HUMAN STAPES
Eduardo Campo Mercandino and Juan Carlos Tarasido, both of 1854 Santa Fe St., Buenos Aires, Argentina
Filed Oct. 19, 1961, Ser. No. 146,255
3 Claims. (Cl. 3—1)

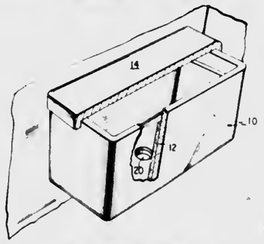
1. A method of alleviating otosclerotic deafness, comprising the steps of carrying out a stapedectomy and replacing the removed stapes with a prosthesis comprising a hollow tubular strut having two opposite end portions

and a lamina integral with and extending across said strut spaced from said two opposite end portions thereof,



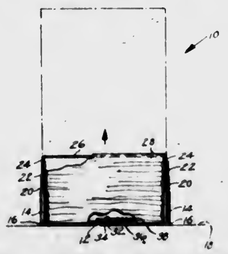
so as to rest said lamina on the edge of the niche of the oval window.

3,191,189
ANTI-SWEAT WATER CLOSET TANK
E. Peter Robare, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,320
2 Claims. (Cl. 4—68)



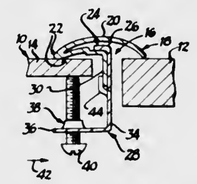
2. A ceramic water closet flush tank comprising a bottom wall and upright walls defining said tank; a vinyl plastisol insulating liner in said tank, said insulating liner being formed and hardened-in-place within the tank by pouring liquid vinyl plastisol into the tank and allowing it to gel adjacent the tank surfaces to thereby form an integral layer of a tough, stable, one-piece, homogenous mass of vinyl plastisol which conforms to the internal shape of the tank, means between the inside surfaces of the tank and the liner causing said liner to be bonded to and in effect integral with the tank thereby forming a permanent part of the tank and eliminating voids and preventing bacterial growth between the tank and liner, said liner insulating the tank from the water therein to reduce condensation of moisture on the outside of the tank.

3,191,190
PORTABLE COLLAPSIBLE HEALTH BATH
Beatrice N. Lowry, P.O. Box 924, Del Rio, Tex.
Filed Nov. 20, 1962, Ser. No. 247,427
5 Claims. (Cl. 4—177)



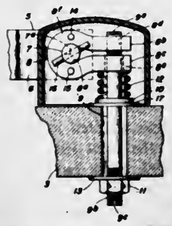
1. A portable health bath structure comprising, in combination, a substantially circular base made of plastic or other suitable material, a plurality of radially spaced apart large vertical and substantially circular sleeves carried by said base providing a means for receiving telescopingly a plurality of inter-receiving sleeves, a plurality of vertical rods carried by said sleeve on said base provjding a means for supporting a substantially circular rod carried by said inter-receiving sleeves, a substantially circular and pleated collapsible wall carried by said circular rod providing a means for containing water and salts for bathing, a substantially circular drain cover made of plastic or other suitable material and a chain, providing a means for the occupant of said bath to drain the contents from within, a plurality of suction cups carried by said bottom end of said spaced apart circular sleeves providing anti skid means with the ground.

3,191,191
APPARATUS FOR MOUNTING PERIPHERALLY FLANGED APPLIANCES
William A. Juergens, 18711 Roscommon, Harper Woods, Mich.
Filed Dec. 15, 1961, Ser. No. 159,549
4 Claims. (Cl. 4—187)



1. In a system for mounting a self-framed appliance in an opening in a countertop, a sub-wall connected beneath the frame of the appliance and forming a gap generally centrally beneath and adjacent the appliance frame, a bracket having a wall with first and second spaced edges and a face surface, an overturned lip formed along said first edge and inserted into said sub-wall gap, a lug-receiving opening in said wall and spaced from said lip, a two-ended lug extended through said opening and having one end engaged with one of the bottomside of the countertop and the bottomside of the appliance, and adjustable means on the other end of said lug to engage the other of the bottomside of the appliance and the bottomside of the countertop and thereby lock the appliance and countertop in assembled relation.

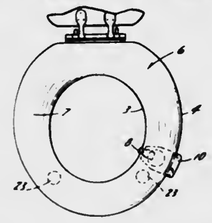
3,191,192
HINGE CONSTRUCTION FOR WATER CLOSET SEAT
Allen L. Midyette, Jr., Monson, Mass., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 17, 1962, Ser. No. 223,929
4 Claims. (Cl. 4—240)



1. A hinge for attaching a water closet seat to a water closet bowl having an apertured flange, comprising elongated anchor bolts having lower portions passing through said apertures in said water closet bowl flange, stop means

fixed to each of said anchor bolts to engage an upper surface of said flange to limit the downward movement of said anchor bolts through said aperture, pintles fixed to the water closet seat, generally U-shaped clamping members formed to pivotally receive each of said pintles and to present leg portions relatively movable to adjust the pressure of said clamping members on said pintles, said clamping member leg portions having aligned apertures to receive the upper portion of each of said anchor bolts, one of said leg portions slidably receiving said anchor bolt in its respective aperture, the other of said leg portions being adjustably attached to said anchor bolt, a resilient member carried by each of said anchor bolts and disposed between said stop means and said one leg portion such that said resilient member tends to urge said one leg portion towards the other leg portion, each of said anchor bolts being rotatable relative to its respective clamping member to move said other leg portion towards said one leg portion to vary the amount of force applied by the resilient member to said clamping member and thereby vary the force with which said pintles are clamped, and securing means attachable to the lower portions of each of said anchor bolts and rotatable relative to said anchor bolts to engage a lower surface of said flange and wedge the latter between said stop means and said securing means to thereby secure the anchor bolts in place on said flange independently of the force applied by the resilient members to said clamping members.

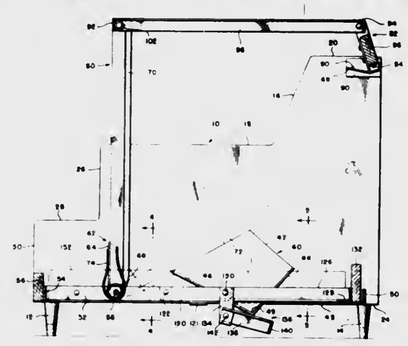
3,191,193
TOILET SEAT ATTACHMENT
Esther E. Bogenberger, 3736 N. 39th St., Milwaukee, Wis.
Filed Feb. 19, 1962, Ser. No. 173,954
3 Claims. (Cl. 4—251)



1. An attachment for a toilet seat which is supported in spaced relation to a toilet bowl, the attachment comprising a shallow fitting receivable within the space between the seat and bowl and extending transversely beneath a portion of the seat, and means for connecting the fitting with the seat and comprising hook portions fitting the inner and outer peripheral marginal portions of the toilet seat and constituting the means for attaching the fitting to the seat, the fitting having a pocket for the reception of vaporizable material, the fitting being further provided with a laterally projecting handle for the manipulation of the seat to which the fitting is attached.

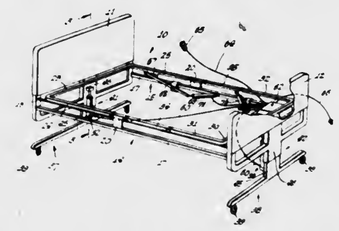
3,191,194
SOFA-BUNK BED
Mickey Earl Griffin, 16430 NE. 29th, Bellevue, Wash.
Filed Aug. 27, 1962, Ser. No. 219,523
19 Claims. (Cl. 5—9)

10. A lower bunk and seat assembly for a convertible sofa and bunk bed, comprising: a pair of arm structures having legs and interconnected by permanent front and rear frame means; a folding frame means pivotally connected by a first linkage means near the rear of said permanent front frame means, said folding frame means having a first frame means pivotally secured to said first linkage means, said permanent front frame means and said first linkage means and said first frame means forming a lower bunk support; and said folding frame means also including a second linkage means and a second



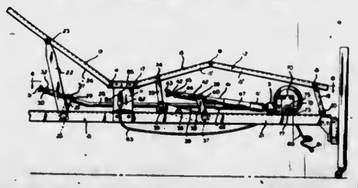
frame means pivotally connected to said first linkage means, said first and second frame means being capable of folding around the mattress used in the lower bunk to form a sofa seat support.

3,191,195
BED CONSTRUCTION
Joseph Schlackman, Forest Hills, N.Y., and Roland A. Benoit, Dayville, Conn., assignors to Royalmetal Corporation, New York, N.Y., a corporation of Illinois
Continuation of application Ser. No. 818,426, June 5, 1959. This application Mar. 8, 1962, Ser. No. 181,835
1 Claim. (Cl. 5—63)



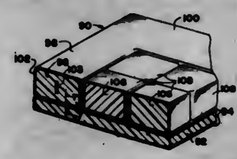
In a bed of the character described, the combination of a rigid, rectangular frame formed with laterally spaced-apart side members connected by cross members comprising a head end and a foot end, pedestal supports for said frame located one at each of said frame ends, each of said supports comprising a relatively narrow and elongate base extending crosswise relative to the frame for a distance substantially co-extensive with the width of the frame, an extensible stanchion connected to and rising from said base and being located medially of the ends of the base, said stanchion being wider than deep with its width extending lengthwise of the base and crosswise of the frame, means connecting the stanchion to the respective ends of said frame, mounting brackets mounted on and extending from said stanchion and fluid operated motive means mounted in said brackets in spaced juxtaposed relation to said stanchion in a vertical plane coincident with a median vertical plane passing transversely through the stanchion and connected to said base and said frame whereby said motive means is accessible for repair and maintenance, and control means for operating said motive means at will to raise and lower the frame relative to the base, the stanchion extending and retracting therewith and at all times maintaining the frame in a horizontal plane.

3,191,196
HEAD AND KNEE REST OPERATING DRIVES FOR HOSPITAL BEDS AND THE LIKE
Luther E. Holm, Kenosha, Wis., assignor to Holm's Manufacturing Co., Kenosha, Wis., a corporation of Wisconsin
Filed Dec. 7, 1962, Ser. No. 243,077
15 Claims. (Cl. 5—68)



1. A power drive for hospital beds and the like having various sections for adjustable movement and locking upon command control comprising operating instrumentalities for each of said bed sections, a motor to electrically propel said operating instrumentalities, crank arms between said operating instrumentalities and said motor, means to vary the relationship between said operating instrumentalities and said motor so that the various bed sections may be pre-selectively timed for movement relative to each other and said bed.

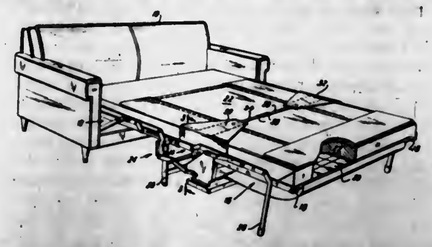
3,191,197
MATTRESS CONSTRUCTION
Louis E. Frey, 382 Fairway, Wichita, Kans.
Filed Jan. 9, 1962, Ser. No. 165,132
6 Claims. (Cl. 5—243)



1. A mattress comprising, in combination, a resilient member constructed of a foam material, a plurality of deep slots in one surface of said resilient member defining a ledge portion at the outer periphery of said resilient member and a plurality of individually compressible block shaped segments positioned in close proximity and arranged in longitudinally extending columns and transversely extending rows in the central portion thereof, the outer surfaces of said compressible segments being substantially coplanar, cover means with said ledge portion and each of said compressible segments to entirely and separately enclose same, said cover means being the outer surface of said mattress, said mattress being constructed and adapted so that said ledge portion and said compressible segments are individually movable in response to a load placed thereon in use.

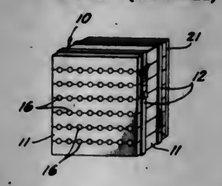
3,191,198
PROTECTIVE COVERING FOR BEDDING IN A CONVERTIBLE SOFA-BED
Bernard Castro, Fort Lauderdale, Fla., assignor to Castro Convertible Corporation, New Hyde Park, N.Y., a corporation of New York
Filed June 27, 1962, Ser. No. 205,627
7 Claims. (Cl. 5—320)

1. In a convertible bed of the type adapted to be folded to form a sofa, said bed including a number of hinged sections, bedding supported between said sections, said bedding including a matress having at least one substantially integral mattress section, and a bed folding mechanism at each side of said bed, each of said mechanisms being adapted to bend and fold said integral mattress section to guide said bed into and out of a folded position, each of said mechanisms including a set of links and levers passing one another in scissors-like fashion when said bed is folded and unfolded; a pair of flexible covers, each of which is positioned between one side of said bedding and one of said sets of links and levers and is



adapted to cover a portion of said one side of said bedding, said portion of said one side of said bedding including a region of said integral mattress section in which it is bent for folding, and means for drawing said covers toward each other and connecting them together to hold said sides of said bedding inwardly and prevent said bedding from being damaged by contact with said links and levers while said bed is being folded and unfolded.

3,191,199
ARTIFICIAL NEST FOR WILD BEES
Lawrence V. Barnes, Jr., Fillmore, Utah, assignor of one-third to Charles B. Reed, Bakersfield, Calif., and one-third to Waterman-Loomus Company, Bakersfield, Calif., a corporation of California
Filed Aug. 5, 1963, Ser. No. 299,986
9 Claims. (Cl. 6—11)



1. An artificial nest for wild bees comprising a plurality of segments each having parallel faces, removable securing means encircling the segments to secure them together with faces of adjacent segments in contact, at least one of each pair of contacting faces having a plurality of parallel grooves therein and extending to an end of the segment, whereby bee cell openings are defined between each pair of segments, and whereby, upon removal of the securing means any pair of contacting faces may be separated.

3,191,200
BOAT CONSTRUCTION
Christian Fournillier, Chamonix, Haute-Savoie, France (86 Ave. Victor Dalbiez, Perpignan, Pyrenees-Orientales, France)
Filed Feb. 19, 1963, Ser. No. 259,644
Claims priority, application France, Feb. 22, 1962, 888,845, Patent 1,323,728
3 Claims. (Cl. 9—6)

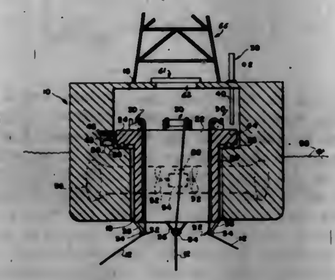
1. A decked boat comprising a molded hull member and a molded deck member, said hull member having side walls projecting towards the deck member, means on the underside of the deck member defining longitudinal grooves along the sides thereof, the outer edge portions of said hull walls being received in said grooves and permanently fixed to the faces defining the grooves, a

web extending between said members on the longitudinal midplane of the boat, and further means on the underside of the deck member and the upper side of the hull member defining longitudinal grooves along the midlines thereof, opposite edge portions of said web being respec-



tively received in said longitudinal grooves and permanently fixed to the faces defining said longitudinal grooves, to provide a watertight assembly between said members and define two separate watertight longitudinal compartments therebetween.

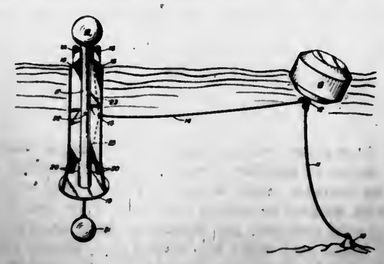
3,191,201
MOORING SYSTEM
George T. Richardson, Baton Rouge, La., and Joseph A. Scruggs, Fort Lauderdale, Fla., assignor to The Offshore Company, Baton Rouge, La., a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 184,466
18 Claims. (Cl. 9—8)



1. A floatable vessel from which drilling operations on a submerged bottom may be conducted comprising: an elongated hull having a streamlined bow to reduce resistance to movement of said hull through the water; a well extending vertically through said hull; a vertical hollow cylinder supported by said vessel mounted in said well for rotation about a vertical axis relative to said hull; and means secured to said cylinder for attaching at least one anchor line thereto, whereby when said cylinder is anchored to a submerged bottom said hull may be rotated about said cylinder and oriented in a direction to minimize wind and water forces on said hull and whereby marine-bottom drilling operations can be carried out from said vessel by operating downwardly through said cylinder.

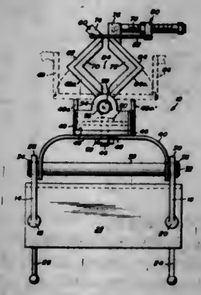
3,191,202
MINIMUM MOTION MOORED BUOY SYSTEM
Eugene H. Handler, 4217 Brookfield Drive, Kensington, Md.
Filed July 31, 1963, Ser. No. 299,121
2 Claims. (Cl. 9—8)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The combination of structure for providing a stabilized, floating, directional, transmitter platform comprising:
an elongated cylindrical buoy;
longitudinal fin means attached to said buoy for impeding the motion of said buoy from the vertical position;
a plate means attached to said buoy transverse of the longitudinal axis of said buoy for impeding the vertical motion thereof;
an environmental sensing means suspended from the lower end of said buoy for detecting and providing an output indicative of the conditions of its surroundings;
a transmission means attached atop said buoy and operatively coupled to the output of said sensing means for transmitting data obtained by said sensing means;
a float means;
a rigid linking element connected at one end to said float means and at the other end to one of said fin



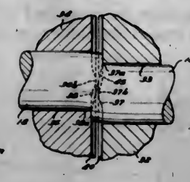
means at a point substantially horizontal with the center of buoyancy of said buoy;
an anchor and
a mooring line connected at one end to said anchor and at the other end to said float;
whereby said buoy will maintain a substantially vertical position so that a minimum arc of the transmitter beam will be required thereby to require a low power transmission means.

3,191,203
SCULLING SUPPORT FOR AN OAR
Alexander W. McClay, Jr., 28 Perry St., Petersburg, Va.
Continuation of application Ser. No. 109,994, May 15, 1961. This application Nov. 4, 1963, Ser. No. 322,275
18 Claims. (Cl. 9—26)



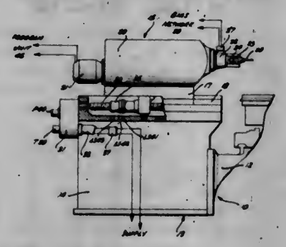
7. A support for a paddle adapted for sculling comprising a paddle clamp; frame means supporting the paddle clamp for universal movement relative to a boat to be propelled through first, second and third pivot axes; a thrust abutment for the frame means adjustably fixed relative to the boat to limit the universal movement about the first pivot axis; said frame means mounting the paddle clamp for movement about the second pivot axis in a plane normal thereto; and said second pivot axis being disposed at an angle less than 90° to the water in the limited position to cause said plane to intersect the water whereby the paddle movement is confined to said plane thereby transmitting thrust to the boat.

3,191,204
METHOD AND APPARATUS FOR FORMING SOCKET-HEAD CAP-SCREW BLANKS
Herbert L. McClellan and Donald E. Huss, Tiffin, Ohio, assignors to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio
Filed Sept. 17, 1962, Ser. No. 223,962
11 Claims. (Cl. 10—24)



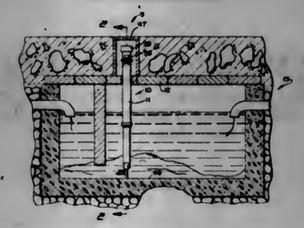
3. A cutter for shearing cylindrical metal stock having a degree of ductility comprising a quill member, a cutter ring member, each member being formed with a bore being adapted to receive said stock, drive means supporting said members for movement from the first position in which said bores are aligned to a second position in which said bores are non-aligned, the adjacent ends of each member being formed with a concave recess intersecting the associated bore and extending across said member in a direction parallel to the direction of movement between said first and second position, the intersection of said recesses and associated bores defining opposed curved cutting edges axially spaced apart, said drive means maintaining an axial spacing between said quill member and cutter ring.

3,191,205
MACHINE TOOL WITH FEED RATE CONTROL
Lynford W. Gilbert, Palos Verdes Estates, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 28, 1962, Ser. No. 176,348
1 Claim. (Cl. 10—139)



A machine tool, comprising:
a pair of relatively movable members;
an electric spindle drive means on one of said members;
a rotatable tool spindle mounted on said one member coacting with said spindle drive means for rotation thereby;
an electrical energy source means connected to said spindle drive means;
means included in said source means to program the electric energy to said spindle drive means in relation to a desired mode of operation of said machine tool;
voltage generating means coacting with said tool spindle for producing a voltage proportional to the speed of rotation of said spindle;
means included in said voltage generating means to bias said generated voltage as a function of the desired mode of operation of said machine tool;
power means connected to said biasing means and mounted on said one member for producing movement thereof as a function of the speed of rotation of said spindle;
means coacting with said one member to sense the position of said one member relative to the other member; and
means included in said last mentioned means and connected to said spindle drive means to produce a voltage potential directly related to the relative position of said one member adapted to control the direction of rotation of said tool spindle.

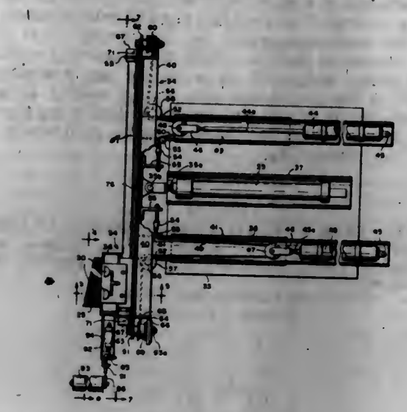
3,191,206
TANK CLEANER
Alberic J. Hamel, 520 Robinhood Road, West Vancouver, British Columbia, Canada
Filed Apr. 30, 1963, Ser. No. 276,970
6 Claims. (Cl. 15—1.7)



1. A tank cleaning apparatus insertable into a tank for removing liquid and sediment therefrom comprising a rotatable fluid discharge pipe being connected at one end to a source of high pressure fluid and having a discharge nozzle at the other end, said nozzle being adapted to emit a jet of fluid into the tank to thereby agitate the sediment therein, means to rotate the pipe to thereby direct the jet of fluid, a suction pipe having an intake end and a discharge end, having said intake end immersed in the liquid within the tank and being adapted when connected at its discharge end to a vacuum pump to remove the liquid and agitated sediment therefrom, and a cleaning member operatively connected to the discharge pipe and disposed across the intake end of the suction pipe to clean said intake end of blocking sediment when the discharge pipe is rotated.

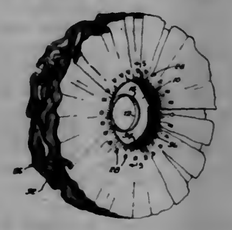
3,191,207
AUTOMATIC WHEEL WASHER
Russel A. Van Brakel, Wooddale, Ill., assignor to Haverberg Auto Laundry Equipment Co., Inc., a corporation of Illinois
Filed July 8, 1963, Ser. No. 293,474
14 Claims. (Cl. 15—21)

1. A wheel washer comprising, means for advancing a wheel to be washed along a given travel path, means for rotating said wheel considerably faster, rim speed considered, than the bodily speed of the wheel while being moved along said travel path, an elongated carriage paralleling said travel path and presenting a track thereabove, a brush and nozzle assembly slidably mounted on said track, anchored first double-acting means for moving said carriage at cross-angles to said travel path, second double-acting means carried by said carriage for moving said assembly along said track, and control means responsive to the travel of a wheel along said travel path for selectively activating said first and second double-acting means such as to cause said first double-acting means to move said carriage toward said travel path to bring said assembly into wheel engaging position and to cause said second double-acting means to advance said assembly along said track with the advancing wheel when said wheel is near the beginning of said track, and such as to cause said first double-acting means to move said carriage away from said travel path to remove said assembly from wheel engaging position and to cause



said second double-acting means to return said assembly to the beginning of said track when said wheel is near the end of said track.

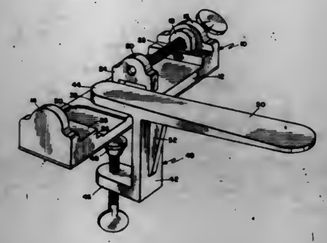
3,191,208
BUFFING WHEEL
George R. Churchill, Cohasset, Mass., assignor to George R. Churchill Company, Inc., Hingham, Mass., a corporation of Massachusetts
Filed Apr. 19, 1962, Ser. No. 188,790
10 Claims. (Cl. 15—230.17)



1. A buffing wheel section comprising a continuous length of buffing material folded around and secured to a length of wire, said length of buffing material being helically wound and compacted together to provide a closed ring composed of a plurality of turns, and a single retaining disk having portions extending through and clinched over the buffing material for supporting and permanently securing the assembly of turns together to provide a buffing wheel section having a helical working surface.

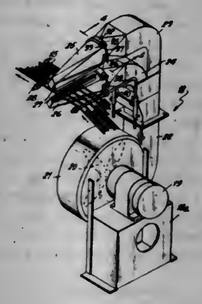
3,191,209
PORTABLE SHOESHINE HEEL CLAMP
Wilmot C. Chalberg, 4025 Cherokee Ave., Apt. J, San Diego, Calif.
Filed Apr. 1, 1963, Ser. No. 269,529
4 Claims. (Cl. 15—267)

1. A portable shoeshine heel clamp adapted to be secured to a supporting surface comprising:
an elongated base member;
a fixed abutment on one end of said base member;
a movable abutment on the opposite end of said base, said abutments providing an adjustable clamp for clamping a heel therebetween;
an adjustable clamping means having a generally C-shaped clamping portion including a second fixed abutment and a second movable abutment, said base member being adapted to be mounted between said second fixed abutment and said second movable abutment; and



a shoe sole supporting means integral with said adjustable clamping means and extending in the opposite direction from, and generally co-planar with, the second fixed abutment.

3,191,210
FLUID DRYING APPARATUS
Philip L. Fischer, 42—51 Hunter St., Long Island City, N.Y.
Continuation of application Ser. No. 125,171, July 19, 1961. This application May 9, 1963, Ser. No. 279,290
6 Claims. (Cl. 15—307)

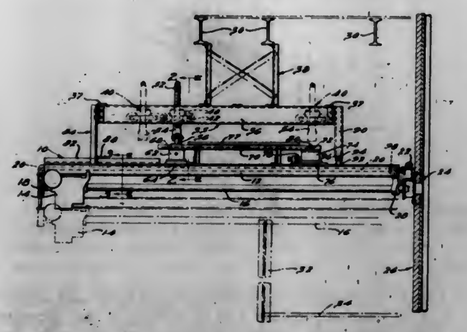


1. Apparatus for removing liquid from a group of soft plastic fibres continuously moving from an extruding machine to a grinding machine, said apparatus comprising a source of air under pressure, a duct connected to said source of air and having a pair of spaced branch portions terminating in outlet openings, a substantially conical nozzle member connected to each of said branch portions and having an open end of large diameter communicating with the outlet opening of said branch portion and a closed end of small diameter, an elongated narrow slit in each nozzle member extending longitudinally thereof, adjustable means for guiding the group of fibers in a freely-suspended linear row centrally between said nozzle members, the nozzle members being located on opposite sides of said group of fibers with the nozzle members adjustable to direct streams of air at high pressure to said opposite sides in a direction opposite to the direction of feed for squeegeeing moisture off said fibres before said fibres reach said grinding machine.

3,191,211
SOOT BLOWER MOUNTING

John R. Seitz, John E. Clark, and Robert F. Ehrler, Fairfield County, Ohio, assignors to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio

Filed May 16, 1962, Ser. No. 195,100
7 Claims. (Cl. 15—317)

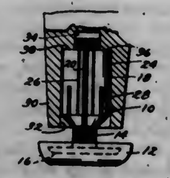


1. A heat exchanger cleaning apparatus comprising a long retracting soot blower supported on a mounting mechanism disposed exteriorly of a wall of a heat exchanger apparatus, said soot blower comprising a first rail, a carriage movably mounted on said first rail, a lance tube extending longitudinally of said first rail and carried by said carriage, and means for moving said carriage and said lance tube to and from a retracted position and a projected position, said mounting mechanism comprising a second rail extending from a position adjacent to a wall of a heat exchanger apparatus to a position spaced outwardly therefrom, supporting means movably mounted on said second rail, connecting means for connecting said supporting means to said soot blower at substantially the center of gravity thereof, elevating means for raising and lowering said connecting means and said soot blower to and from a raised position and a lowered position, coacting means on said mounting mechanism and said soot blower for engaging and maintaining said first and said second rail in longitudinal aligned relationship wherein said lance tube is disposed in alignment with a port in a wall of a heat exchanger apparatus, said coacting means disengageable when said connecting means is in said lowered position permitting angular swinging and longitudinal movement of said soot blower relative to said second rail.

3,191,212
ADJUSTABLE FLOOR GLIDE

Raymond H. Reiss, Sr., Deal, Raymond H. Reiss, Jr., Glen Ridge, Paul R. T. Hahn, Westfield, and Robert J. Randall, Morristown, N.J., assignors to Rostbor Reiss Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,849
7 Claims. (Cl. 16—42)

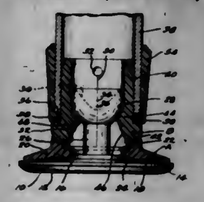


1. In combination with a furniture leg having a generally cylindrical hole bored therein at the bottom in a direction generally parallel to the longitudinal axis of the leg, an adjustable furniture leg floor glide system comprising a threaded metal shank; an elongated shank head integrally secured to one end of the shank; a glide button of thermoplastic material molded in place on the shank held so as to at least partially envelop the shank head; a bushing of thermoplastic material molded directly onto the shank intermediate the ends thereof so as to have cooperating threads coincidentally molded therein, said bushing being split by a narrow gap extending parallel to the longitudinal axis of said bushing along the entire length of said bushing said bushing being positioned in the hole so that the guide button protrudes beneath the furniture leg.

3,191,213
SWIVEL TYPE FURNITURE-SUPPORTING GLIDE

George L. Congdon, Fort Atkinson, Wis., assignor to Plastocon Corp., Oconomowoc, Wis., a corporation of Wisconsin

Filed Sept. 12, 1963, Ser. No. 308,430
11 Claims. (Cl. 16—42)

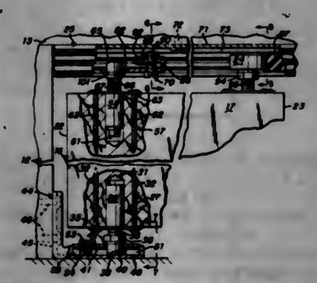


1. A furniture leg glide for use with a tubular member and comprising a foot member provided centrally with an upright stem having a terminal knob spaced above the member and having materially greater cross section than said stem, means providing a concave annular bearing surface on the foot member and encircling the stem, an integral sleeve of flexible material having a lower end portion split to receive the knob, said lower end portion being provided internally with an annular shoulder underlying the knob and surrounding the stem and said sleeve also having an exposed lower surface which is downwardly convex and is seated on the said concave bearing surface for universally yieldable support from the foot member, the split lower end portions of the sleeve being held closed about the knob by said tubular member.

3,191,214
FOLDING DOOR APPARATUS

John M. Protzman, Dayton, Ohio, assignor to The Ever-Roll Manufacturing Corporation, Dayton, Ohio, a corporation of Ohio

Filed Oct. 16, 1963, Ser. No. 316,559
2 Claims. (Cl. 16—87)



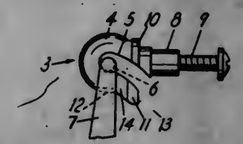
1. Hardware for mounting in a door opening to control movement of a folding door having an upper pivot pin extending from the upper edge of the door, comprising an elongated inverted U-shaped track section adapted to be mounted above the door and including a horizontal

base wall having vertical side walls extending perpendicularly downward from the opposite edges of said base wall, each of said side walls having longitudinally parallel grooves in the inside surfaces thereof in oppositely disposed pairs, an anchor adapted to be adjustably secured in said track section and including generally flat upper and lower plate members each having a uniform width slightly greater than the distance between said inside surfaces of said side walls so that the entire length of the opposite side edges of said upper and lower plates are received in said oppositely disposed pairs of said grooves for smooth longitudinal movement of said anchor in said track section, a vertically extending portion integrally interconnecting said plate members at one end thereof, said lower plate member having an aperture to receive said upper pivot pin, aligned openings in each of said plate members spaced midway between said side edges thereof, said upper plate member having thread receiving means thereon aligned with said openings for receiving a screw which is inserted through said opening in said lower plate and tightened into said thread receiving means to clamp said plate members together and to said track section, and said screw being positioned to provide for convenient adjustment of said support.

3,191,215
DRAWER PULL

William Doyle Watt, Jr., Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich.

Filed Nov. 26, 1963, Ser. No. 326,052
8 Claims. (Cl. 16—126)



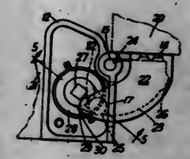
1. A drawer pull comprising an annular handle having a journal, a unitary supporting and coupling member including a head member having a spherically curved outer surface and having an inwardly and downwardly opening slot therein adapted to receive the journal of said handle, there being a bearing for said journal at the outer end of said slot, said coupling member including an inwardly projecting tubular stud adapted to be inserted in a bore of a drawer and being internally threaded to receive an attaching screw, there being a support engaging shoulder at the outer end of said stud, the portion of said head member below said slot having a support engaging abutment and a support engaging brad projecting from said abutment, the portion of said head member below said slot having laterally projecting stops with which a portion of said handle adjacent said journal is in supported engagement when the handle is in depending position thereby preventing the handle engaging a surface to which the pull is attached and facilitating the grasping of the handle, the outer end or face of said head member being curved.

3,191,216
HINGES

Peter Frederick Hufton, Rollaston-on-Dove, and William Robert Brake, Burton-on-Trent, England, assignors to BTR Industries Limited, London, England, a British company

Filed Mar. 13, 1963, Ser. No. 264,910
Claims priority, application Great Britain, Mar. 14, 1962, 9,884/62
9 Claims. (Cl. 16—141)

1. A hinge unit having:
(a) two hinge plates hinged together for movement between open and closed positions;
(b) a curved cam surface on one plate;
(c) an arm pivotally attached to the other plate;
(d) a cam follower on the arm and arranged to engage the cam surface;
(e) spring means acting between the arm and the other plate to urge the cam follower into engagement with the cam surface;

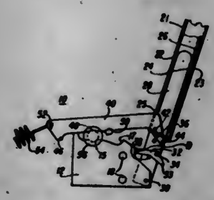


(f) the cam follower moving along the cam surface between the end portions thereof during movement as aforesaid;
(g) the cam surface being shaped such that the distance between the hinge axis and the surface varies progressively whereby during the aforesaid movement of the plates in either direction the tension of the spring means is progressively changed.

3,191,217
HINGE STRUCTURE

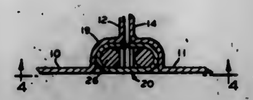
Herbert D. Squire, Galesburg, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Mar. 6, 1963, Ser. No. 263,311
9 Claims. (Cl. 16—145)



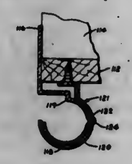
8. A hinge structure for a door pivotally movable between a first and a second position comprisinng: a bracket; a lever arm movable with said door and pivotally connected to said bracket; a linking arm connected at one end thereof to said lever arm; roller means interposed between said linking arm and said bracket; biasing means for biasing said linking arm against said roller means to engage said roller means between one edge of said linking arm and one edge of said bracket and for urging said linking arm in one direction to resist movement of said door to said second position, said linking arm and said bracket each being constructed with first and second positioning surfaces on said edges thereof defining said first and said second positions, said roller means being rolled between said one edge of said linking arm and said one edge of said bracket when said door is being moved between said first and second positions, in engagement with said first positioning surfaces to yieldingly hold said door in said first position or in engagement with said second positioning surfaces to yieldingly hold said door in said second position, said roller acting as a pivot for said linking arm when in engagement with said second positioning surfaces.

3,191,218
HINGE STRUCTURES WITH MULTIPLE PINTLES
Frank Skiba, Yonkers, N.Y., assignor of twenty-five percent each to Stanley M. Skiba, Sam Sokoloff, and Seymour Levy
Filed Dec. 3, 1963, Ser. No. 327,701
6 Claims. (Cl. 16—163)



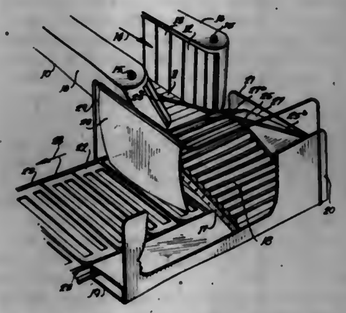
1. A hinge for a door or the like and formed from two angle members, each having first and second flanges disposed at an angular relation to each other, the first flanges of the members being generally co-planar when a door supported by the hinge is in closed position, the second flanges forming, with the first flanges, outer and inner angular corner sections, portions of said corner sections being struck inwardly to form short inner channels which are aligned with each other in the two angle members, a link of sheet metal whose ends are curved inwardly and are positioned in said channels, and pintles passing through said curved sections, the opposed ends of the pintles positioned above and below said struck-in channels being supported by the inner angular corner sections which form knuckles for the pintles.

3,191,219
SEPARABLE HINGE WITH STOP MEANS
Louis D. Vagi, 420 Sunningdale Drive, Inkster, Mich.
Original application Apr. 27, 1960, Ser. No. 25,146, now Patent No. 3,034,758. Divided and this application Oct. 16, 1961, Ser. No. 145,355
1 Claim. (Cl. 16—171)



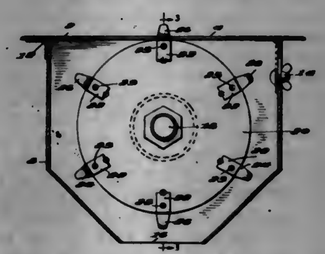
A connector comprising a first hollow tubular member of semi-cylindrical transverse cross section extending substantially 270° in its circumferential extent to define a pair of axially extending edges spaced substantially 90° from each other, a second hollow tubular member telescopically received within said first tubular member with the outer surface of said second member in face-to-face engagement with the inner surface of said first member, an outwardly projecting shoulder on said second member engageable with one of said axially extending edges to limit relative rotation of said members in one direction, one of said members having an axially extending recess therein, an integral radially projecting detent on the other of said members complementary in shape to said recess and engageable therein to define an end limit to relative rotation of said members in the opposite direction, at least one of said members being constructed of a relatively stiff but resilient material to accommodate resiliently opposed radial flexing of one of said other members to permit relative rotation of the telescoped members with said detent disengaged from said recess, said detent being operable when engaged in said recess to lock said members against rotation relative to each other.

3,191,220
APPARATUS FOR DIRECTING THE FALL OF STUNNED ANIMALS
Ervin L. Lunde, Mason City, Iowa, assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed May 23, 1963, Ser. No. 282,680
12 Claims. (Cl. 17—1)



12. In an apparatus for directing the fall of stunned animals, an elongated stationary guide member having front and rear portions adapted to extend longitudinally between the legs of a stunned animal, means for urging an animal forwardly along said member, and a guide plate adjacent said front portion of said guide member, said guide plate having a downwardly sloping portion for engaging the legs on one side of said animal as the same is urged forwardly by said means.

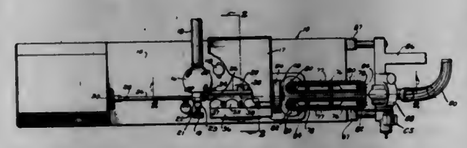
3,191,221
ARRANGEMENT FOR REMOVING OIL SACS FROM FOWL
Hoyt O. Kesler, 2125 Skyline Drive NE., and Henderson Steele, P.O. Box 707, both of Gainesville, Ga.
Filed July 8, 1963, Ser. No. 293,436
12 Claims. (Cl. 17—11)



1. A machine for removing the oil sac from a fowl carcass comprising a shaft, means to rotate the shaft, a knife carried by the shaft to rotate therewith, said knife having its part furthest from the shaft formed of two portions curved inwardly towards each other and coming together at the point most remote from the shaft forming a cutting member having a size slightly larger than the oil sac of a fowl.

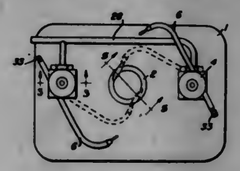
3,191,222
MACHINE FOR ENCASING SAUSAGE AND THE LIKE
Ray T. Townsend, Des Moines, Iowa, assignor to Townsend Engineering Company, Des Moines, Iowa, a corporation of Iowa
Filed Apr. 22, 1963, Ser. No. 274,700
13 Claims. (Cl. 17—33)

1. In a product encasing machine of the character disclosed, a stuffer tube adapted to have a folded casing positioned thereon, means for pumping plastic product into said stuffer tube and from said stuffer tube into the casing, a chuck mounted to receive the filled casing from the discharge end of said stuffer tube and having means to frictionally engage a portion of the casing, linking means for the filled casing issuing from said casing chuck, said chuck and said linking means cooperating during operation thereof to form said casing into links, a looper for the links as they issue from said linking means comprising a spiral-shaped tube having one end rotatably mounted on a horizontal axis and its other end extending



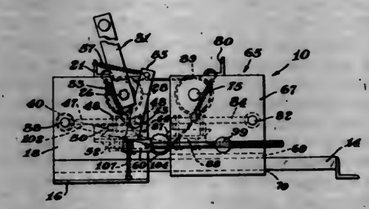
radially from the axis of rotation, said rotatably mounted end receiving the links from said linking means and the other end thereof expelling them at substantially the same speed as the speed of rotation of said other end and in loop-forming circles, and a conveyor having a loop pick-up end adjacent said other end of said spiral-shaped tube and having spaced hooks to periodically engage the loops between links thereof whereby the links are looped on the hooks of the conveyor for ready removal therefrom and are continuously conveyed thereby away from said spiral-shaped tube.

3,191,223
APPARATUS FOR CLOSING THE OPEN END OF A CONTAINER OF THERMOPLASTIC MATERIAL
Albert Quinche, St.-Sulpice, and Edouard Leclayse, Vevey, Switzerland, assignors, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Original application Sept. 13, 1954, Ser. No. 455,654, now Patent No. 3,052,926, dated Sept. 11, 1962. Divided and this application May 2, 1962, Ser. No. 193,062
5 Claims. (Cl. 18—1)



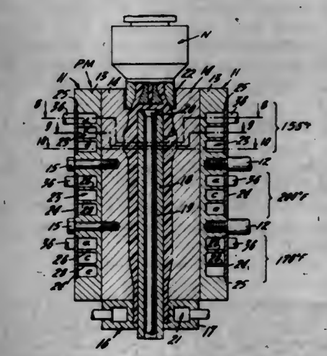
4. Apparatus comprising a frame, an article support carried by said frame, heating means mounted on said frame for movement toward and away from said support, a spring biasing said heating means into an inoperative position remote from said support, a lever having a lost motion connection with said heating means for moving the latter into an operative position adjacent said support, a latch operatively associated with said heating means to hold the latter in its operative position, a timing device, an element movable in response to movement of said heating means into its operative position for actuating said timing device, and a lost motion connection between said timing device and said latch for moving the latter after a predetermined period of operation of said timing device to release said heating means from its operative position and permit said spring to return the same to its inoperative position.

3,191,224
FLEXIBILIZING RIGID FOAMS
Masao Nakamura, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application May 31, 1962, Ser. No. 198,824. Divided and this application Jan. 2, 1964, Ser. No. 344,154
4 Claims. (Cl. 18—1)



1. An apparatus for the flexibilizing of a cellular plastic cellular plastic sheet, said apparatus comprising a means to forward a cellular plastic sheet, a means to retard the forwarding of said cellular plastic sheet comprising a pair of generally opposed surfaces adapted to retract from and to engage adjacent surfaces of foam plastic sheet and while engaging the foam plastic to move relative to the means to forward the expanded plastic sheet, said means to retard the forwarding of said cellular sheet adapted to permit the advancement of the cellular sheet at a linear rate less than that of the means to advance said plastic sheet, said means to advance the plastic sheet being positioned adjacent said means to retard said plastic sheet, and so constructed and arranged so as to partially crush said plastic sheet in the plane of the sheet between said means to advance said plastic sheet and said means to retard said plastic sheet.

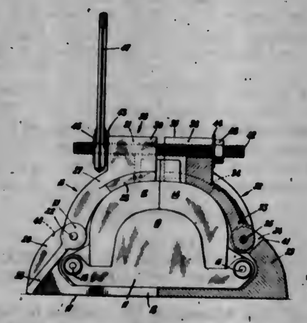
3,191,225
APPARATUS FOR CONTROL OF MATERIAL DISTRIBUTION IN BLOW MOLDED PLASTIC ARTICLES
Eugen Franz Polka, Algonquin, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 30, 1962, Ser. No. 234,136
4 Claims. (Cl. 18—5)



1. An injection mold for forming hollow, thermoplastic parisons to be blow molded into plastic containers, comprising outer mold sections interiorly contoured and being relatively moveable into and out of closing engagement to form the outer confining surface of an annular mold cavity, and an elongated core supported co-axially within said mold sections when in closed position to form the

inner confining surface of said cavity, said mold sections being provided with a plurality of passages at spaced increments along its longitudinal axis and extending arcuately about said axis a predetermined distance outwardly from said outer confining surface, each passage in one mold section being positioned with respect to a passage in another mold section to form cooperating sets of passages substantially encircling said cavity at each of said spaced increments, said mold sections also being provided with a plurality of passages extending longitudinally thereof at spaced circumferential increments about said axis outwardly from said outer confining surface, inlet and outlet conduits communicating with each of said passages for circulating therethrough heat transfer media at predetermined temperatures, said conduits for each of said passages being independently controllable and separately supplied with a heat transfer medium at a different temperature to thereby impose upon said mold cavity, in aggregate effect, a predetermined, three-dimensional temperature gradient.

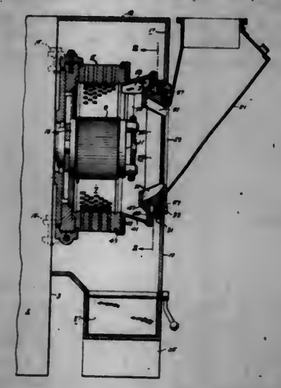
3,191,226
PRESS FOR A DENTAL FLASK
Samuel Harris, 94—15 69th Ave., Forest Hills, N.Y.
Filed July 20, 1962, Ser. No. 211,333
2 Claims. (Cl. 18—5.7)



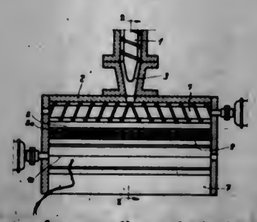
1. The combination with a hinged dental flask having an elongated base member, a first arcuate shaped upper flask member pivotally connected to said base member, and a second arcuate shaped upper flask member pivotally connected to said base member, of a press adapted to encircle a closed flask longitudinally in a vertical plane comprising a bottom support member on which said flask is placed, a first pressure member arcuately shaped to conform substantially to said first flask member and pivotally connected to one end of said support member for contact with said first flask member, a second pressure member arcuately shaped to conform substantially to said second flask member and pivotally connected to the other end of said support for contact with said second flask member, and means for urging said pressure members about their pivots into clamping relationship with the dental flask placed therein.

3,191,227
EXTRUSION MILL WITH VENTED FEEDER
James T. Keefe, San Carlos, Calif., assignor to California Pellet Mill Company, a corporation of California
Filed Sept. 1, 1961, Ser. No. 135,560
3 Claims. (Cl. 18—12)

1. An extrusion mill having a perforated cylindrical die to provide a die chamber; means within said die chamber for extruding material through said perforations; a housing enclosing said die and having a feed opening to said die chamber; a ring carried by said housing and having a conical surface flaring inwardly and substantially coaxial with said die chamber and said feed opening; means for receiving material through said feed opening and precompacting the same in said die chamber prior to extrusion through said die; said means including a plurality of spiral impeller blades circumferentially arranged with one edge of each in proximity to said conical surface and rotatable as a unit to positively impel feed material from said surface into said die chamber and precompact the same; and means forming at least one air vent passageway out of said mill from the region of precompaction and terminating in an exit lying outside the path of material being fed into said mill, whereby air entrained in said feed material is released from said region of precompaction in said die chamber without interruption of continuous flow of material into said mill.

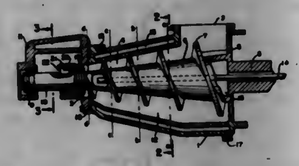


3,191,228
APPARATUS FOR MAKING THERMOPLASTIC TILES WITH COLOR EFFECTS
Werner Schluter, Bergdorferdamm 35, Hannover, Germany
Filed Jan. 11, 1962, Ser. No. 165,519
Claims priority, application Germany, Mar. 23, 1961, B 61,835; May 26, 1961, B 62,651
5 Claims. (Cl. 18—12)



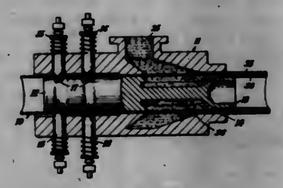
4. Apparatus for extruding polyvinylchloride or other thermoplastic material comprising an extruder worm, a die housing, an extrusion die having an elongated slot, said die being secured in one side of said die housing, the opposite side of said die housing being secured to said extruder worm, means forming a passageway through said die housing and communicating between said worm and said die, a screw mounted in said passageway adjacent said worm, means for rotating the screw, a shaft mounted in said passageway adjacent said die, means in the conduit between said screw and said shaft for dividing said material into a plurality of streams, and means for rotating said shaft, said shaft having a plurality of plane surfaces thereon, said screw and said shaft being substantially parallel to said slot.

3,191,229
APPARATUS FOR THE CONTINUOUS MIXING OF PLASTIC MATERIAL
Marcello Vanzo, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy
Filed July 13, 1962, Ser. No. 209,618
Claims priority, application Italy, July 19, 1961, 13,278/61
9 Claims. (Cl. 18—12)



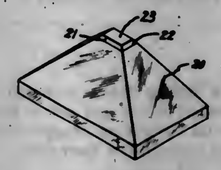
1. An apparatus for the continuous treatment of plastic material comprising a receiver having an inlet opening, a discharge opening, and a generally frusto-conical cavity communicating therebetween, the smaller end of said cavity communicating with the discharge opening and the larger end of said cavity communicating with the inlet opening, a frusto-conical feed screw rotatably mounted in said cavity and being substantially coextensive with said cavity, the end of the feed screw of greater diameter being disposed adjacent said inlet opening, the coils of said feed screw extending substantially throughout the length of the core of the feed screw, said coils defining with said screw core at least one helical channel, the cross section of said channel progressively decreasing from the inlet end to the discharge end of said receiver, said feed screw having an addendum envelope which together with the inner surface of said receiver defines a generally annular chamber substantially coextensive with said cavity, said chamber being of a height, measured radially with respect to said screw, varying progressively from a minimum to a maximum and returning to a minimum.

3,191,230
MACHINES FOR EXTRUDING TUBES
Ernest William Sheldon Ashton, Bentham, near Lancaster, England, assignor to George Angus & Company Limited, Newcastle-upon-Tyne, England, an English company
Filed Aug. 1, 1963, Ser. No. 299,266
Claims priority, application Great Britain, Aug. 9, 1962, 30,618/62
5 Claims. (Cl. 18—13)



1. A machine for the continuous production of an impermeable tube comprising a permeable reinforcing sleeve having an impermeable internal coating of thermoplastic material, said machine comprising an extrusion head having a passage extending through it and terminating in an extrusion orifice, a mandrel within said passage, said mandrel being adapted to support the reinforcing sleeve and being provided along part of its length inside the passage with internal passages communicating with said extrusion orifice and terminating at its forward end in a portion of smaller cross-section, clamping means inside the head and external to the mandrel which coact with said mandrel at spaced points to locate it in position, mechanism for moving said clamping means being effective alternately in relation to the mandrel to hold the sleeve and mandrel alternately and intermittently at said spaced points within said extrusion head, means for drawing the sleeve continuously under tension over the mandrel and through the passage and the extrusion orifice, and means for injecting thermoplastic coating material under pressure into the extrusion head exteriorly of said sleeve, whereby some of said coating material is forced through the sleeve and into the internal passages of the mandrel and is extruded through the orifice as an internal coating on the sleeve as the latter is drawn through the head.

3,191,231
HIGH PRESSURE HIGH TEMPERATURE PUNCH MEMBER
Robert H. Wentorf, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 26, 1963, Ser. No. 268,096
2 Claims. (Cl. 18—16)



1. In a high pressure apparatus wherein a plurality of punches are arranged in opposed relationship with suitable gasket material contiguous with each punch whereby movement of at least one punch causes compression of the gasket material and transmits high pressure to a closed reaction vessel, the improvement comprising:

(a) a nib positioned on and extending from the distal end of each of said punches inwardly toward the closed reaction chamber,

(1) each of said nibs being harder than the material comprising said punches and the base area of each nib being similar to and in mating relationship with the face of the distal end of its respective punch.

3,191,232
HYDRAULIC COMPACTING PRESS
John Haller, 18500 Sheldon Road, Northville, Mich.
Filed Dec. 7, 1961, Ser. No. 157,780
4 Claims. (Cl. 18—16.7)

1. A hydraulic compacting press for producing flanged workpieces, comprising

a press frame,

a main die table mounted for reciprocation on said press frame, a tubular die mounted on said main die table,

a secondary die table connected to said main die table for reciprocation relatively thereto, a tubular flange punch mounted on said secondary die table in telescoping relationship with the tubular die,

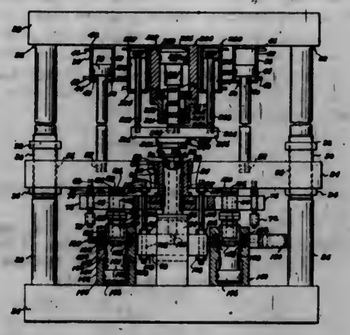
a bottom punch support mounted on said press frame, a bottom punch mounted on said bottom punch support in telescoping relationship with the flange punch,

a hydraulic main die table reciprocatory motor operatively connected to said main die table,

a main pressing platen mounted for reciprocation on said press frame above said main die table, a main pressing punch mounted on said main pressing platen,

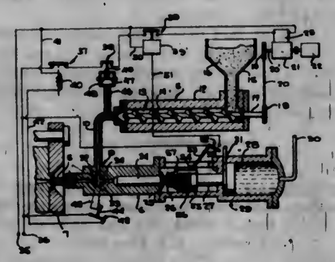
a main hydraulic reciprocatory pressing motor operatively connected to said platen,

a hydraulic reciprocatory cushioning motor disposed adjacent said secondary die table and having a reciprocable cushioning plunger yieldingly engageable thereby in response to motion of said secondary die table toward said cushioning motor during the compacting stroke of said main pressing platen,



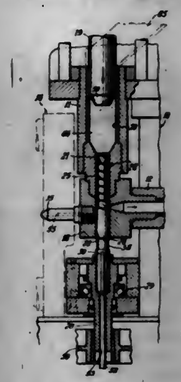
and a movable locking device anchored to said press frame and movable into and out of locking engagement with said cushioning plunger into and out of immobilizing relationship therewith.

3,191,233
FLOW CONTROL APPARATUS
Lambert S. Linderoth, Jr., Battle Creek, Mich., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 30, 1962, Ser. No. 241,386
17 Claims. (Cl. 18—30)



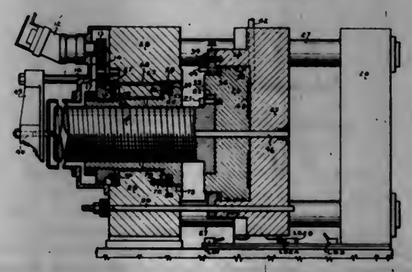
1. A flow control apparatus in combination with an injection molding apparatus of the type including an extruder having a driven feed member, an injection cylinder and an injection nozzle, said flow control apparatus comprising an electrically controlled variable speed drive unit connected to said feed member, a conduit means including a multiple position valve disposed between said extruder, said injection cylinder and said injection nozzle for selectively communicating said extruder with said injection cylinder to supply plastic thereto and said injection cylinder to said injection nozzle to deliver plastic from said injection cylinder through said injection nozzle, and an electrical system connected to said electrically controlled variable speed drive unit for controlling the operation of the same and varying the speed thereof, said electrical system including a drive unit control switch operatively connected to said valve and actuated in accordance with the position of said valve.

3,191,234
APPARATUS FOR INJECTION MOLDING
James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 4,978, Jan. 27, 1960. This application Sept. 24, 1963, Ser. No. 311,594
14 Claims. (Cl. 18—30)



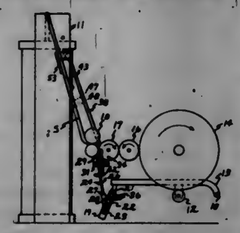
1. An injection molding apparatus comprising:
an injection chamber;
a plasticizing chamber;
a passageway connecting one end of said plasticizing chamber with said injection chamber;
a screw rotatably supported concentrically and snugly within said passageway and means for rotating said screw;
positive displacement means within said plasticizing chamber for moving plastic material from said plasticizing chamber through said passageway and around said screw and thence into said injection chamber;
an injection nozzle and means within said injection chamber for discharging plastic material from said injection chamber through said nozzle.

3,191,235
APPARATUS FOR CLOSING, LOCKING AND OPENING A MOLD
Rene Louis Rougement, 6 Baxton St., Worcester, Mass.
Filed May 28, 1964, Ser. No. 373,598
7 Claims. (Cl. 18—43)



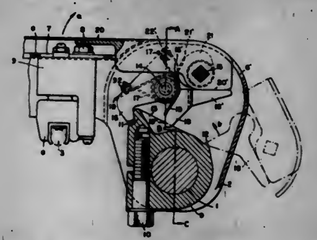
1. Molding apparatus for reversely closing and locking a mold comprising a frame having a stationary casting provided with an opening therethrough, a fixed mold platen, tie rods connecting the casting and platen fixedly together which are separately subject to a differential heat elongation during a molding operation, a movable mold platen mounted slidably on said tie rods, a single driven screw passing through said opening and connected to move said movable platen between open and closed mold positions, a nut threaded on said screw and rotatively mounted to transmit thrust to said casting adjacent to said opening and arranged to move the screw axially a reversible motor mechanism connected to rotate the nut rapidly in opposite directions, a reversible high pressure hydraulic mechanism comprising a cylinder with end walls forming a piston chamber and a piston movable in said chamber between said walls, one of said walls being fixed to said movable platen and said screw being connected medially to said piston to move it to a definite stationary position whereby engagement of the piston with either of said walls causes the movable platen to be moved by the screw, said cylinder and piston being relatively floatable and providing angular compensation for a differential elongation of the tie rods, means including valve mechanism for introducing fluid under pressure into said cylinder on the platen side of the stationary piston to move said cylinder and movable platen to lock the mold and on the opposite side of the piston to move the cylinder and unlock the mold, and remote control mechanism governing the nut rotating motor comprising a limit switch on the frame operated by the movable platen which is adjustably positioned to cause the screw to compensate for variations in mold thickness and move the platen to a mold closed position.

3,191,236
AUTOMATIC STOP FOR CARDS
George B. Blomquist, Jr., Columbus, Ga., assignor to Swift Spinning Mills, Inc., a corporation of Georgia
Filed Aug. 23, 1961, Ser. No. 133,495
20 Claims. (Cl. 19—.25)



1. In apparatus for stopping the carding operation of a card upon interruption of the normal running of its sliver in a predetermined path between its calender rolls and coiler, said card having a movable member mounted on a fixed axis and disposed to engage a driving element of the card with a driven element thereof upon movement of said movable member in one direction whereby the card feed and delivery means are driven and disposed to disengage said driving element and said driven element upon movement in the other direction whereby the carding operation is stopped, the improvement which comprises:
(a) a hook carrying member operatively connected to said movable member and having a hook disposed to move from an inoperative position to an operative position,
(b) a detent carried by a rotatable element of the card in position to engage said hook when said hook is in said operative position and disposed to be out of engagement with said hook when said hook is moved to said inoperative position,
(c) actuating means mounted in position for a first portion thereof to move in a plane generally perpendicular to the axis of the calender rolls and engage said hook carrying member, and with another portion thereof disposed to move in a plane generally perpendicular to the axis of the calender rolls and engage said sliver at a sensitive position between and spaced from the calender rolls and the coiler and move laterally in response to a decrease in resistance to lateral deflection of the sliver whereby the sliver moves out of said predetermined path between said calender rolls and the coiler, to thereby retain said hook in said inoperative position by said first portion of the actuating means while the sliver is running normally in said predetermined path and to release said hook upon interruption of the normal running of the sliver in said predetermined path, and
(d) means to move said hook to said operative position upon interruption of the normal running of the sliver in said predetermined path and release of said hook carrying member by said first portion of the actuating means whereby said detent engages said hook and moves said movable member in said other direction to stop the carding operation.

3,191,237
LATCHING DEVICE FOR LOAD ARMS FOR SPINNING MACHINES
Shigematsu Takita, Takarazuka, Hyogo, Japan, assignor to Meiko Boki Co., Ltd., Nagoya, Japan
Filed Feb. 6, 1962, Ser. No. 171,523
7 Claims. (Cl. 19—267)

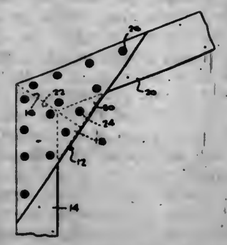


1. A load arm mechanism for a textile machine, comprising, a load arm journaled for rotation about a fixed axis, from an operating to a raised position, a manually operable lever carried by said arm for movement between first and second positions relatively to said arm, a fixed abutment, first means operated by movement of said lever to first position when said arm is in operating position, to engage said fixed abutment and thereby releasably secure said arm in operating position about said axis, and second means operated by movement of said lever to first position when said arm is raised, to releasably secure said arm in raised position, movement of said lever to second position when said arm is raised operating said second means to free said arm for rotation to operating position.

3,191,238
METHOD OF PRODUCING A TIMBER ARCH CONSTRUCTION
Sylvan L. Olson, Rte. 4, Richland Center, Wis.
Continuation of application Ser. No. 9,892, Feb. 19, 1960. This application Nov. 3, 1961, Ser. No. 150,034
2 Claims. (Cl. 20—1)

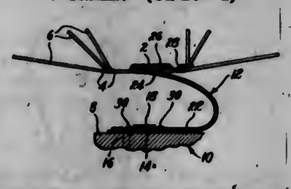
1. The method for producing a timber arch construction comprising providing a timber column piece, cutting away a right-angled triangle flat end piece from one end of said timber piece to form a mitered end surface, providing a timber rafter piece, cutting away another right-angled triangle flat end piece from one end of said rafter piece to form another mitered end surface, arranging said column and rafter pieces so that the mitered end surfaces abut each other, cementing abutting mitered end surfaces to form a haunch, positioning said end pieces so that the vertical legs abut each other and the hypotenuse legs abut and extend along the inner edge of said haunch, cementing the abutting vertical legs of said end pieces to each other and the abutting hypotenuse legs of said end pieces

to the inner edge of said haunch, bridging each of the opposite faces of said haunch and said end pieces with a



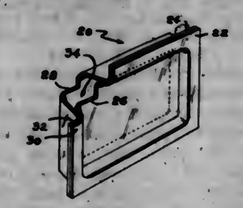
timber triangle plate, and cementing the triangle plates to the opposite faces of said haunch and said end pieces.

3,191,239
BIRD AND RODENT BARRIER CLIP
Roy T. Moore, Davenport, Iowa, and Marie A. Gellerstedt, Moline, Ill., assignors to Nixalite Company of America, Rock Island, Ill., a corporation
Filed Apr. 12, 1963, Ser. No. 272,597
7 Claims. (Cl. 20—1)



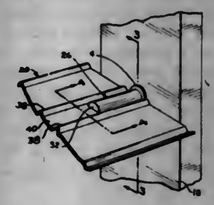
1. In combination; a barrier device having a flexible elongated and flat ribbon-like base member and a multiplicity of spaced upwardly diverging elongated resilient spines thereon; supporting clips spaced along said base member; said supporting clips each including a substantially flat base portion for attachment to a supporting structure, an upwardly extending spring arm angularly disposed relative to said base portion and holding means at the upper end of said arm engaging and holding said base member spaced a substantial distance above said base portions, said spring arm being sufficiently resilient to respond to small forces to induce vibration of the barrier device whereby birds will not be able to grasp and alight on said spines.

3,191,240
MULTI-PANE WINDOW PANELS
Albert Slaman, 3504 Runnymeade Place, Washington, D.C., and Angelo Gualtieri, 10030 Counselman Road, Bethesda, Md.
Filed Apr. 20, 1961, Ser. No. 104,343
5 Claims. (Cl. 20—40.5)



1. A window panel construction consisting of a pair of transparent plastic sheets of similar peripheral configuration, said sheets having cups drawn centrally thereof with peripheral marginal flanges thereabout, one sheet cup being shallow and the other sheet cup being deep, said sheets positioned with the shallow cup seated in the deep cup and the peripheral marginal edges of the two sheets and the side walls of the two cups to the extent of their contiguous depth being in contact, and said marginal edges of the two sheets being secured together throughout the extent of their contact.

3,191,241
DAMPER BLADES AND MEANS FOR PIVOTING SAME
Edward H. Johnson, Maumee, Ohio, assignor to The American Warming & Ventilating, Inc., Toledo, Ohio, a corporation of Ohio
Filed Oct. 29, 1962, Ser. No. 233,627
2 Claims. (Cl. 20—62)



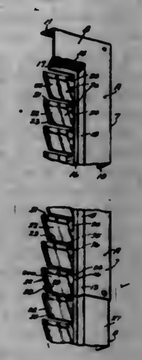
1. A damper or the like comprising a blade; positioning means on said blade extending longitudinally and generally centrally thereof; an axle having a cylindrical bearing portion, a slotted portion of uniform cross section throughout its length, and a shoulder therebetween, said slotted portion having a slot engaging an end of said blade, the entire length of the edges of the slot extending longitudinally of said slotted portion and being contiguous with and parallel to said positioning means over substantially the entire length of said slotted portion, said positioning means being effective to prevent lateral movement of said slotted portion of said axle on said blade and to maintain said slotted portion in a fixed position parallel to the longitudinal extent of said blade and in a central portion thereof, said bearing portion of said axle extending beyond the end of said blade, and said shoulder of said axle extending laterally outwardly beyond said bearing portion; a side frame member; a bearing in said side frame member to receive said bearing portion of said axle; and a flange on an inner end of said bearing and cooperating with said shoulder for spacing the end of said blade from said side frame member.

3,191,242
SIMULATED LOUVERED SHUTTER
Math W. Rasen, Oconomowoc, Wis., assignor to Lyf-Alum, Inc., Oconomowoc, Wis., a corporation of Wisconsin
Filed Jan. 3, 1961, Ser. No. 80,249
1 Claim. (Cl. 20—63)

A simulated shutter comprising the overlapped assembly of

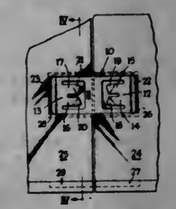
(a) prefabricated separately incomplete shutter units,
(b) each comprising integrally prefabricated sash and louver portions,
(c) a part of one unit overlapping a part of the other unit and being longitudinally adjustable with respect to one another in a direction transverse to said louvers to adjust the overall length of the assembly,
(d) the louvers of each unit extending to the overlapped ends thereof,
(e) the exposed ends of said units respectively having top and bottom sash portions beyond said louvers,
(f) and means for interlocking said units in any one of a plurality of overlapping positions in which all of the louvers in the overlapping part of one unit register in face contact with corresponding louvers in the overlapping part of the other unit,

(g) whereby the overlapped assembly of said units simulates a single unitary shutter with evenly spaced louvers, regardless of the degree of overlap of the respective units,
(h) each louver of one unit having a flange integrally connecting its end with a sash portion of said one unit,



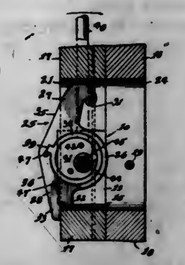
(i) said flange having an edge transverse to the edge of the corresponding louver of the other unit,
(j) said flange edge and louver edge abutting to define registration of said louvers, at least one louver of one unit having a marginal hook flange engaged in the assembly of said units with a corresponding margin of a louver of the other unit.

3,191,243
FASTENER
Eric Birger Fernberg, Wavendon, near Bletchley, and Clifford Alexander Seckerson, Uxbridge, England, assignors to United-Carr Incorporated, a corporation of Delaware
Filed Nov. 28, 1960, Ser. No. 72,241
Claims priority, application Great Britain, Nov. 27, 1959, 40,471/59; Feb. 29, 1960, 7,069/60; Apr. 4, 1960, 11,864/60
4 Claims. (Cl. 20—92)



1. An assembly of two members in abutting relationship and connector between said members, at least one of said members having a dovetail groove adjacent an edge thereof, said dovetail groove including a bottom portion, spaced side walls and having a uniform cross section, said connector having a head portion and a tail portion, said head portion received within said dovetail groove and said head portion having a base portion, said base portion having resilient prongs extending therefrom, said prongs directed at the line of abutment between said members and bearing against the bottom portion of said dovetail slot, and the distance between the points of engagement of said prongs with the bottom portion of said slot and the points of engagement of said base portion with the side walls of said slot being less than the length of said prongs, and said tail portion having means of engaging said other members.

3,191,244
SECTIONAL COOLER LATCH
William O. Burke, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Mar. 27, 1962, Ser. No. 182,849
11 Claims. (Cl. 20—92.4)



1. A latch assembly mounted in one of a pair of adjoining panels for latching engagement with a latch pin in the other panel for joining the panels in abutting relation, comprising a housing having spaced sides with aligned openings therein, anchoring flanges on said sides and a connecting portion for said sides, and a latch bolt assembly rotatably mounted in said housing including a latch bolt having a body portion with a central circular opening therein, an arm extending from the body portion and offset from the center thereof, said arm terminating in a hook partion adapted to engage the latch pin in the adjoining panel, a locking projection extending from said body portion, locking means on said housing cooperating with said locking projection to retain the bolt in unlatched position, a pair of circular cam members of a diameter greater than the central opening having centrally circular depressed portions received within the opening in the body portion with a cam member on each side of and frictionally engaging the latch bolt, said central depressed portions abutting and secured together, said cam members having aligned offset openings extending through the depressed portions to receive a suitable tool for rotation of the cam members, an ear formed on the periphery of each cam member and a pair of spaced pins on the body portion of the latch bolt cooperating with said ears to limit the arc of movement of the cam members.

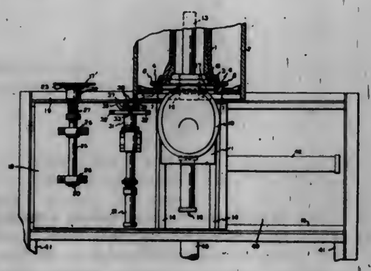
3,191,245
CENTRIFUGAL CASTING APPARATUS
Belton Y. Cooper, Mountain Brook, and Clifford M. Luna, Birmingham, Ala., assignors to United States Pipe and Foundry Company, Birmingham, Ala., a corporation of New Jersey
Filed Feb. 19, 1962, Ser. No. 173,995
9 Claims. (Cl. 22—65)

1. Centrifugal casting apparatus comprising:
(A) A cylindrical pipe mold rotatably mounted about its longitudinal axis,
(B) A support mounted adjacent an end of the mold and movable transversely and longitudinally with respect to the longitudinal axis of the mold,
(C) Shifting means for moving the support from a first transverse position to a second transverse position with respect to the longitudinal axis of the mold,
(D) A horngate mounted on said support so as to be aligned with the bore of the mold when the said support is in a first transverse position with respect to the longitudinal axis of the mold,
(E) Core holding means for rotatably holding a core and core ring about the spout of said horngate coaxially with respect to the longitudinal axis of the

mold when the support is in the first transverse position with respect to the longitudinal axis of the mold.

(F) A core ring pick-up means rotatably mounted on said support with its axis parallel to the longitudinal axis of the mold and which coincides with the longitudinal axis of the mold when the support is in the second transverse position with respect to the longitudinal axis of the mold,

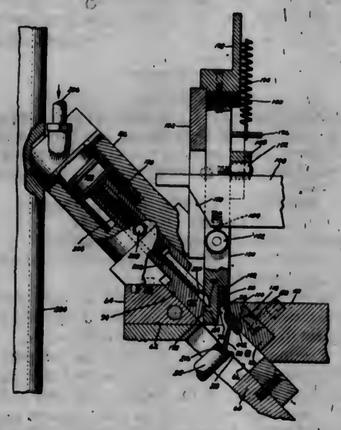
(G) Transfer means for transferring a core ring from the core ring pick-up means to the said core holding means,



(H) Latching means for holding a core and core ring securely in the end of the mold while it is rotating, and

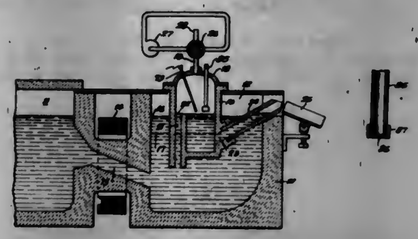
(I) Means for moving the support longitudinally with respect to the mold whereby said horngate spout and said core holding means are inserted into and withdrawn from the end of the mold.

3,191,246
DIE CASTING APPARATUS
Harry E. Powell, Logansport, Ind., assignor, by direct and mesne assignments, of one-sixth to George A. Gust and one-sixth to Robert G. Irish, both of Fort Wayne, Ind., and one-third to Mary M. Fouch, Kokomo, Ind.
Filed June 9, 1961, Ser. No. 116,120
21 Claims. (Cl. 22—68)



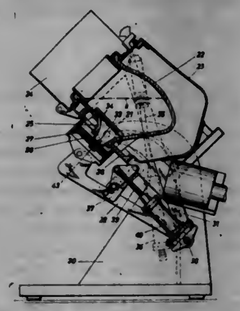
1. Die casting apparatus comprising in combination a support, a single die mounted on said support and having a recess therein, said die being divided into two mold sections having abutting surfaces, means mounting said mold sections for movement in a first rectilinear direction toward each other to engage said abutting surfaces and then away from each other to disengage said abutting surfaces, a sprue hole passing through said single die in registry with said abutting surfaces when engaged, one portion of said hole being in one surface and the other portion being in the other surface, one portion of said recess being in one mold section and the other portion thereof being in the other mold section, a movable die mounted on said support for movement in a direction transverse to said first direction selectively into and out of engagement with said single die, said movable die having a recess therein, said single and movable dies having engageable surfaces which surround a die cavity formed by the recesses therein, a sprue-shearing device mounted on said support and having a reciprocable shear head thereon which moves in the space between said abutting surfaces when said mold sections are parted, means for moving said mold sections into engagement with each other and said movable die into engagement with said single die formed by the engaged mold sections, injection means for injecting molten metal through said space hole into said die cavity, means for separating said mold sections and movable die from each other after said metal has hardened, said shear head having sprue-cutting means movable to a position contiguous with a portion of the wall of said cavity and a portion of said injection means, and means for actuating said sprue-shearing device to move said shear head between the separated abutting surfaces for shearing off the sprue formed by said sprue hole.

3,191,247
FURNACE LADLING APPARATUS
George W. Holz, Chicago, Ill., assignor to Lindberg Engineering Co., a corporation of Illinois
Filed Sept. 8, 1959, Ser. No. 838,584
1 Claim. (Cl. 22—79)



Furnace ladling apparatus comprising a furnace body defining a chamber adapted to hold molten metal and vented to atmosphere, a crucible fitting into the chamber to be partially immersed in the molten metal therein, a tube extending downward into the molten metal in the chamber and terminating at its upper end in an inlet opening in the crucible above its bottom, the crucible having a discharge opening below the inlet opening, a discharge tube communicating with the discharge opening and extending upward therefrom to a level above the normal maximum level of molten metal in the chamber and discharging outside of the chamber, means connected to the top of the crucible to subject the upper part of the crucible to a subatmospheric pressure sufficient to draw molten metal from the minimum level in the chamber through the first named tube and inlet opening into the crucible, control means responsive to the level of molten metal in the crucible to interrupt the subatmospheric pressure in the crucible and subject the crucible to an intermediate pressure sufficient to depress the molten metal in the first named tube below the inlet opening, means to supply a high pressure to the crucible to force molten metal out the discharge tube but insufficient to blow past the molten metal in the first named tube, a vent tube opening into the crucible at a level slightly above the maximum desired level of molten metal therein, and a fusible closure for the lower end of the vent tube to be melted by molten metal if its level exceeds said maximum desired level.

3,191,248
MACHINE FOR CASTING OF METAL WORK PIECES IN PERMANENT MOLDS
Paul Junghanns and Herbert Frede, Heiligenhaus, Rhineland, and Friedhelm Bürger, Velbert, Rhineland, Germany, assignors to Firma Wilh. Engstfeld, Heiligenhaus, Rhineland, Germany, a corporation of Germany
Filed Nov. 20, 1961, Ser. No. 153,294
Claims priority, application Germany, Nov. 19, 1960, E 20,207; Aug. 19, 1961, E 21,561
4 Claims. (Cl. 22—79)



1. A machine for casing of metal working pieces in a permanent mold comprising at least two parts, said machine comprising

a tiltable melting vessel having a plurality of walls,

a mold connected with said vessel,

said mold having filling means,

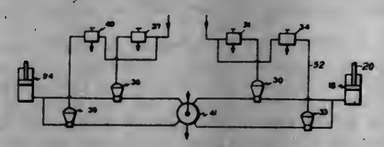
said melting vessel having a mouth-piece defining a chamber widening into said melting vessel,

a cap closing said chamber,

a pouring sleeve of melt-resistant and heat-capacitive metal disposed in and secured to said cap,

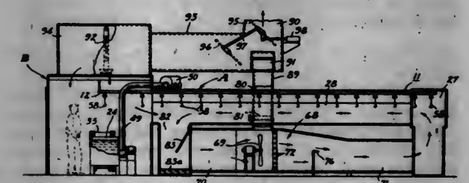
said pouring sleeve having a bore conically widening and extending into said mold, as well as tapered down and projecting into said chamber.

3,191,249
CASTING APPARATUS
Paul L. Arnold and William A. Montgomery, Hayward, Calif., assignors to United States Pipe and Foundry Company, Birmingham, Ala., a corporation of New Jersey
Filed Feb. 12, 1962, Ser. No. 172,663
1 Claim. (Cl. 22—82)



A centrifugal casting apparatus comprising a cylindrical mold rotatably mounted about its longitudinal axis, a machine ladle for receiving and holding the metal to be cast, means for delivering the metal from the machine ladle to the mold, a support mounted adjacent the machine ladle, said support being movable in the direction transverse the longitudinal axis of the mold from a first position to a second position, two cradles mounted on said support pivotably on trunnions, each cradle being adapted to receive and hold a transfer ladle so that it may be tilted by pivoting the cradle on its trunnions, the first cradle being aligned with the machine ladle when the support is in said first position and the second cradle being aligned with the machine ladle when the support is in said second position, and a hydraulic cylinder connected between each cradle and the support for pivoting each cradle independently of the other, the hydraulic cylinders being connected to a hydraulic system in such a manner as to permit the operation of only one hydraulic cylinder at a time, the hydraulic cylinder in operation at any time being connected to the cradle in alignment with the machine ladle.

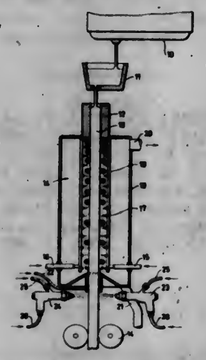
3,191,250
HIGH SPEED DRYING APPARATUS FOR REFRACTORY SHELL MOLDS
Edward J. Mellen, Jr., 2123 Lee Road, East Cleveland, Ohio; Robert J. de Fasselle, Gates Mills, Ohio; and John M. Webb, Chagrin Falls, Ohio; said De Fasselle and said Webb assignors to said Mellen
Filed Apr. 16, 1964, Ser. No. 365,547
13 Claims. (Cl. 22—87)



1. An apparatus for rapidly forming and drying layers of refractory material over destructible patterns to form thin-walled shell molds comprising: a series of narrow tubular drying tunnels, each having an incoming leg and an outgoing leg arranged side by side, the two legs of each said tunnel having the same length and being open at one end of said apparatus, enclosure means at one end of said apparatus defining a dip-dust work room and receiving the open ends of all of said legs, an endless overhead conveyor extending through all of said tunnels to connect all the legs of the tunnels in series and to carry the coated patterns through all of said legs at the same speed from the first through the last tunnel, said conveyor being installed to move the patterns in one direction through the incoming legs and in the opposite direction through the outgoing legs, blower means for forcing air through both legs of each tunnel in the same direction at a velocity of at least 1000 feet per minute, means for removably suspending the coated patterns from said conveying means and for continually rotating the suspended patterns as they move longitudinally through the legs of the tunnels, a series of refractory coating dip tanks disposed in said enclosure means for coating the patterns with ceramic slurry, a series of ceramic dusting means disposed in said enclosure means for applying dry ceramic particles to the outer surfaces of the coated patterns after they have been coated with the wet slurry, each dusting means having means for continually imparting motion to said ceramic particles, one of said dip tanks and one of said dusting means being positioned near each tunnel, means associated with the first tunnel for regulating the relative humidity of the air in the first tunnel, means associated with the last tunnel for regulating the relative humidity of the air in that tunnel and means associated with the intermediate tunnels of the series between the

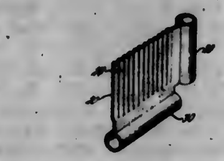
first and last tunnels for regulating the relative humidity of the air in the intermediate tunnels, said means for controlling the relative humidity in said tunnels also serving as means for maintaining the wet-bulb temperature in all of the tunnels substantially constant, whereby changes in the temperatures of the patterns are minimized.

3,191,251
PROCESS FOR TREATING CONTINUOUSLY CAST MATERIAL
Erik Allan Olsson, Zürichstrasse 66, Kusnacht, Zurich, Switzerland
Filed Aug. 16, 1962, Ser. No. 217,330
2 Claims. (Cl. 22—200.1)



1. Process for continuously and simultaneously casting and coating a ferrous, or like high temperature, metal which comprises the steps of feeding molten ferrous metal into a mold open at both ends, withdrawing a metal ingot from the mold, applying a cooling liquid to said ingot in a cooling zone immediately adjacent the discharge end of the mold to cool the ingot to a temperature above 900° C., and coating said ingot with a material selected from the group consisting of glass, enamel and clay and suspended in a liquid to prevent oxidizing and decarburizing in a coating zone immediately following the cooling zone.

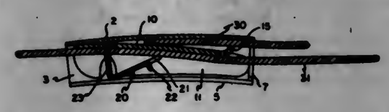
3,191,252
COATING PROTECTION OF METAL SURFACES DURING CASTING
Fred J. Webbere, Commerce, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Dec. 29, 1958, Ser. No. 783,370, now Patent No. 3,045,301, dated July 24, 1962. Divided and this application Dec. 18, 1961, Ser. No. 159,847
7 Claims. (Cl. 22—216.5)





7. A method of casting which comprises coating a cylinder head mold steel insert with a mixture which comprises approximately, by weight, about 20% to 40% of a powdered metal having a particle size of from approximately 400 mesh to about 2 microns from the group consisting of aluminum and aluminum base alloys, about 5% to 20% levigated alumina having a particle size of about 2 microns to 10 microns, and about 40% to 75% of a binder to form a coating having a thickness of at least 0.0005 inch, drying said coating, placing said part in a cylinder head mold and introducing molten cast iron into said mold so as to cast said molten cast iron around said coated insert.

3,191,253
BELT BUCKLE
Robert L. Stevenson, 2226 Old Welsh Road, Willow Grove, Pa.
Filed Apr. 16, 1963, Ser. No. 273,358
6 Claims. (Cl. 24—77)



1. In a belt buckle for adjustably securing the ends of a flexible belt, the combination of:
(a) an outer shell member having rearwardly directed and spaced apart upper and lower retaining means,
(b) an inner plate member insertable behind said outer shell member and having rearwardly extending flanges engaged by said retaining means, said inner plate member frictionally held within said outer shell member when one end of a belt is disposed and held therebetween, said flanges being provided with opposed open-ended slots therein closed by said retaining means when said inner plate member is inserted in said outer shell member, and
(c) clamping means mounted in said slots to releasably clamp the other end of said belt against said inner plate member.

3,191,254
BUTTON COVER
James Adams Van Meter, Van Nuys, Calif., assignor of one-tenth each to Vickie Van Meter and Baron Van Meter, both from Van Nuys, Calif., and Mickey Craig, Sunland, Calif.
Filed Mar. 21, 1961, Ser. No. 97,381
8 Claims. (Cl. 24—108)



1. A button cover for a button secured by fastening means to a garment having an overlying portion with a button hole therein, comprising: a base having a pair of opposing arms extending from one side thereof and offset in spaced substantially parallel relationship thereto, one of said arms being appreciably longer than the other of said arms, each arm having tab means extending outwardly therefrom; an ornamental article secured to an opposite side of said base and being appreciably larger than the button hole so that it will not pass through the button hole; a pair of parallel flexible resilient members

spaced apart a distance less than the width of said button, each resilient member having an end secured to one of said tab means so as to be in spaced parallel relationship to said arms; said arms being selectively extensible through the button hole so as to position said arms adjacent to the inner surface of said overlying portion and to said button, and to position said base adjacent to the outer surface of said overlying portion, said resilient member being laterally and longitudinally expandable so as to receive the button therethrough in edgewise relationship for positioning the button in flat relationship between said resilient members and said arms with said fastening means residing between said resilient members.

3,191,255
PLASTIC ZIPPER
Raymond N. Neails, 11 Harvest Road, Levittown, Pa.
Continuation of application Ser. No. 847,841, Oct. 21, 1959. This application Aug. 13, 1962, Ser. No. 216,613
1 Claim. (Cl. 24—205.12)



A separable, interlocking zipper-type fastener unit comprising in combination:
a pair of flexible support strips;
means on each strip to secure the same to an article;
on each strip, a pair of parallel, adjacent rows of flexible fastener elements having stems annular in cross section attached to and upstanding from the support strip, the elements having heads annular in cross section located on their outer ends and the heads being of greater diameter than the stems and having tapered outer surfaces and shouldered undersides and the heads, the stems and the strips all being integral;
the elements of the adjacent rows being staggered in position and spaced apart at such a distance that when the strips are closed the head of each element on one strip, except the end elements, is located below the heads of and between the stems of three opposed elements on the other strip, said below and between location of the heads providing for engagement of heads and stems and the engagement preventing separation of the fasteners by lateral forces but permitting separation by forces operating to peel one strip away from the other; and
slider mechanism mounted on the strips for movement along the strips to close the same together to effect said below and between location of heads, the slider mechanism having means partially surrounding and engaging each strip for holding the slider mechanism on the strips and for effecting said closure.

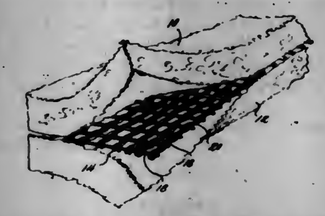
3,191,256
HOSE CLAMP
Herbert Müller-Neuhaus, Walsdorf uber Bamberg, Germany, assignor to Universal Clip Company Limited, London, England, a British company
Filed Feb. 6, 1963, Ser. No. 256,689
1 Claim. (Cl. 24—278)

In a hose clamp having at least one clamping strap of a substantially uniform width with at least one slot therein extending centrally in the longitudinal direction of the strap and having at least one reduced part formed by a pair of notches opposite to each other in the edges of the strap and having a depth so that at any point along the length of said reduced part, as seen in the direction of the axis of said strap, said reduced part has a width vertically to said axis considerably greater than the difference between the full width of the strap and the double of the greatest depth of either of said notches, said notches being of the same shape and extending in opposite directions to each other in the longitudinal direction of the strap, the corresponding edge portions of said notches being parallel to each other and the deepest points of said notches being offset relative to each other in the longitudi-



nal direction of the strap, and said slot having end surfaces extending parallel to a line connecting said deepest points of said opposite notches with each other, said strap being wound around itself and said reduced part thereof passing through said slot so as to form two interconnected rings around each other; and means for tightening the inner ring.

3,191,257
METHOD FOR MAKING A DECORATIVE NAPPED NEEDLED FABRIC
Alexander M. Smith II, Elkin, N.C., assignor, by mesne assignments, to The Fiberwoven Corporation, Elkin, N.C., a corporation of North Carolina
Original application Mar. 13, 1961, Ser. No. 95,232, now Patent No. 3,117,905, dated Jan. 14, 1964. Divided and this application Feb. 8, 1963, Ser. No. 268,169
10 Claims. (Cl. 28—72.2)

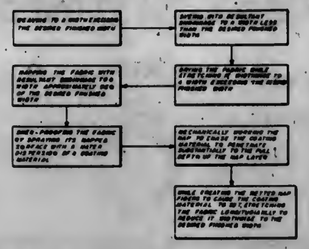


1. A process for making a decorative napped needled fabric comprising the steps of: providing a decorative pattern on a foundation web; positioning the foundation web substantially midway between webs of loosely matted fibers; and needling the fibers of each web of loosely matted fibers into a cohering entanglement with each other and through the foundation web positioned therebetween and into cohering entanglement with the fibers in the other web and thereafter napping the needled fabric whereby the decorative pattern of the foundation web is visible through the entangled fibers after needling and napping.

3,191,258
METHOD OF MAKING SHED-PROOF NAPPED FABRIC
Francis T. Spencer, Biddeford, Maine, assignor to Pepperell Manufacturing Company, Boston, Mass., a corporation of Massachusetts
Filed Dec. 6, 1961, Ser. No. 157,487
15 Claims. (Cl. 28—74)

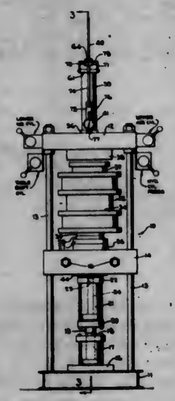
1. That method of making shed-proof napped blanket fabric of a predetermined finished width which includes the steps of weaving the fabric to a width substantially exceeding the desired finished width, dyeing the fabric with resultant shrinkage to a width less than the desired finished width, drying the fabric while stretching it widthwise to a width exceeding the desired finished width,

napping the fabric with resultant shrinkage to a width approximately 90% of the desired finished width, shed-proofing the napped fabric by spraying its napped surfaces with a dilute water dispersion of a coating material, mechanically working the nap to cause the coating ma-



terial to penetrate substantially to the full depth of the nap layer and, while treating the wetted nap fibers to cause the coating material to set, stretching the fabric widthwise thereby to bring the same to the desired finished width.

3,191,259
APPARATUS FOR MOUNTING BEARING ASSEMBLIES ON A SHAFT
Frank E. Dalton, 2304 Abalone Ave, Torrance, Calif.
Filed June 21, 1963, Ser. No. 289,623
4 Claims. (Cl. 29—201)



1. Apparatus for measuring axial clearance between a shaft and axially spaced bearing assemblies for the shaft within a shell, the shell having a pair of spaced coaxial bores each with an adjacent shoulder, the shaft projecting through the bores and having axially aligned bearing support portions, each with an adjacent shoulder, the bearing assemblies each being mounted on one of the support portions of the shaft and received within one of the bores of the shell and adapted to engage an abutment, respectively, comprising in combination: a pair of adapter rings, each adapted to encircle a portion of the shaft and each having a projecting part to engage one of the bearing assemblies within its bore and having a surface to engage one of said shoulders, respectively, means for clamping the shell axially between the adapter rings with the shell shoulders engaged by said surfaces of the adapter rings, said projecting parts serving to limit axial movement of the shaft and bearing assemblies when the shell is clamped as aforesaid, means for moving the shaft axially while the shell is in clamped position, and means for measuring the extent of axial movement of the shaft.

3,191,260
MACHINE TOOL TURRET HAVING MULTIPLE TOOLS
William H. Jorgensen, 201 Jacobs, Green Bay, Wis.
Filed July 27, 1961, Ser. No. 127,264
15 Claims. (Cl. 29—26)



1. In a machine tool having a spindle, and bearing means for supporting the spindle for rotation and for axial movement the combination with a turret independent of said bearing means and having a plurality of chuck-storage pockets, of means for rotating the turret to present a selected pocket in registry with the spindle, a chuck releasably stored on the turret in the selected pocket, means for clutching the spindle to a chuck registering therewith while the chuck is still stored on the turret, and means for thereafter advancing the spindle through the turret and for carrying the chuck from said turret in the course of such advance.

3,191,261
CUTTING TOOLS
Robert F. Yore, 212 Dalton Ave., Tonawanda, N.Y.
Filed Mar. 22, 1962, Ser. No. 181,706
8 Claims. (Cl. 29—96)



5. In a turning tool, the combination comprising an indexible prismatic cutting bit and a holder therefor; said bit having equilateral triangular end faces connected by elongated rectangular side faces defining primary included angles on said end faces, a pair of said side faces being cut away along their juncture to define a cutting edge extending from one toward the other of said end faces and a secondary included angle on said one end face greater than the corresponding one of said primary angles, for varying the effective side clearance and/or top rake angles for said holder; said holder comprising an elongated bit supporting body of generally polygonal cross section including an

offset end portion having lateral front and rear surfaces connected by a longitudinal side surface, said end portion being cut away to form a V-shaped, bit receiving recess and a bit clamping surface, said recess being defined by two intersecting bit back-up sufaces extending longitudinally of said body from said front surface to said rear surface, said clamping surface extending longitudinally of said body from said front surface and laterally of said body to one of said back-up surfaces, and the other of said back-up surfaces extending laterally of said body to said longitudinal surface; said bit being arranged in said recess with said one end face extending transversely of said recess adjacent said front surface, the remaining one of said side faces supported by said one back-up surface, and said cutting edge adjacent the juncture of said other back-up surface and said longitudinal surface; separate means arranged in said recess and engaging the other of said end faces for locating said bit longitudinally of said recess; and separate means engaging said clamping surface and one of said pair of side faces for clamping said bit in said recess.

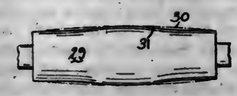
3,191,262
METAL CUTTING TOOL WITH ADJUSTABLE CHIP BREAKER
Manfred Wallace Gustafson, Fagersta, Sweden, assignor to Fagersta Bruks Aktiebolag, Fagersta, Sweden, a joint-stock company of Sweden
Filed July 30, 1962, Ser. No. 213,532
Claims priority, application Sweden, Aug. 2, 1961, 7,889/61
4 Claims. (Cl. 29—96)



1. A tool for metal cutting work comprising a holder, a cutting bit of hard cutting material detachably mounted on said holder and having a top surface and a side surface intersecting each other and forming a cutting edge at said intersection, an adjustable chip breaker mounted above said cutting bit, and a clamp disposed above said cutting bit and said chip breaker for clamping the cutting bit and the chip breaker in their respective operative positions on said holder; eccentric means for displacing said clamp a variable amount in a direction perpendicular to said cutting edge; said chip breaker fixed to and forming a unit with said clamp by engagement means for making said chip breaker participate in said displacement of the clamp, leaving it free to be displaced to infinite positions through a limited range of adjustment relative to the clamp in a direction parallel to said cutting edge.

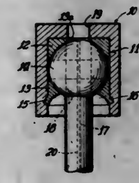
3,191,263
CALENDER ROLLS
Howard E. Kuehn, Orange, Conn., assignor to Farrel-Birmingham Company, Incorporated, Ansonia, Conn.
Filed Oct. 23, 1962, Ser. No. 232,547
10 Claims. (Cl. 29—121)

1. For use in a calender or like device having a plurality of cooperating rolls and having at least one roll adapted to have its axis crossed with respect to the axis of a cooperating roll to provide an effective crown on said one roll; a calender roll having a contour along its face predetermined by the difference between a crown contour based upon the shape of a uniformly loaded beam between two points of support, and an effective crown defined by the distance between adjacent surfaces



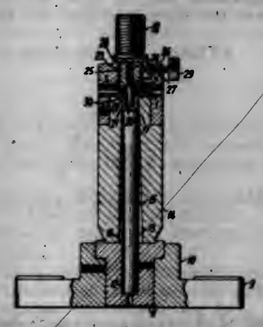
of a pair of cooperating uniform diameter rolls arranged for cross axes operation.

3,191,264
METHOD OF MAKING A PISTON AND PISTON ROD ASSEMBLY
Herbert N. Underwood, Chicago, and Thomas G. Dietrich, Roselle, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 26, 1962, Ser. No. 182,356
3 Claims. (Cl. 29—149.5)



1. In a method of fabricating a ball and socket joint comprising the steps of: providing a socket having a finished interior surface, providing a ball having a finished exterior surface, coating said ball with a hardenable soluble lacquer film, inserting the said ball in the said socket after the said hardenable soluble lacquer film has hardened, deforming the said socket to tightly retain said ball in said socket, and subject said ball and socket assembly to a solvent bath to remove the said hardenable soluble lacquer film to thereby provide space predetermined by the thickness of the said film of the said hardenable soluble lacquer whereby space is provided for the passage of lubricating oil.

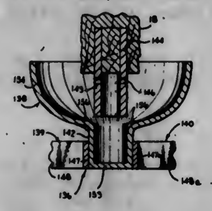
3,191,265
METHOD OF MAKING SELF-ALIGNING BEARINGS
Albert R. McCloskey, Fairfield, Conn., assignor to The Heim Universal Corporation, a corporation of Delaware
Filed Jan. 29, 1963, Ser. No. 254,646
3 Claims. (Cl. 29—149.5)



1. The process of producing a self-aligning self-lubricating bearing including the steps of preforming an inner member having a convex outer face, preforming a ring-

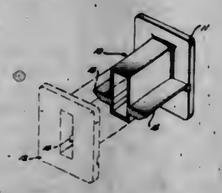
like outer member having a concave inner face, forming an intermediate member of lubricating cold flowable plastic material, telescoping the three members, placing the telescoped members in a tapered reducing die, diminishing the space between the members throughout the length of the outer member by exerting radial contractive pressure on the outer member and thereby contracting the outer member and the intermediate member, and coining the top and bottom of the outer member between coining members while the outer member is free to expand radially.

3,191,266
METHOD FOR ERECTING A CHRISTMAS TREE
James C. Breaquias, Charleston Township, Kalamazoo County, Mich. (10571 Miller Drive, Galesburg, Mich.)
Filed Apr. 9, 1962, Ser. No. 185,884
3 Claims. (Cl. 29—150)



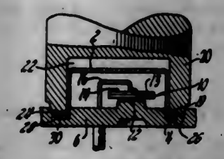
1. In a method for mounting a Christmas tree upon a standard having an upwardly opening cylindrical socket of circular cross section, the steps including:
holding the butt of the tree in a fixed position;
cutting an annular slot into the butt of the tree and for a selected distance lengthwise of said tree, the outside diameter of said slot substantially equal to the inside diameter of the socket;
inserting into said slot one end of a pipe having inside and outside diameters substantially equal to the inside and outside diameters of said slot, said pipe having a length substantially equal to the combined, axial length of said slot and the socket in the standard; and
inserting the other end of said pipe into said socket.

3,191,267
CAST ALUMINUM MAGNETIC FERRITE ATTENUATOR AND THE LIKE
Jerome I. Stillman and Robert Y. Scapple, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Original application Dec. 2, 1958, Ser. No. 777,649. Divided and this application Sept. 20, 1961, Ser. No. 139,469
6 Claims. (Cl. 29—155.5)



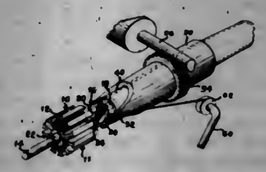
1. The method of making a waveguide device including an aluminous metal waveguide and ferrous metal pole pieces which comprises the steps of tin-plating the pole pieces, fusing the tin plate on the pole pieces to form an adherent continuous plating thereon, mounting the plated pole pieces in position in the waveguide to form joints to be brazed between the waveguide and the pole pieces, applying a brazing alloy to the joints, immersing the resulting assembly in molten flux to braze the pole pieces to the waveguide, and recovering the brazed assembly from the molten flux.

3,191,268
PROCESS FOR ENCAPSULATING TRANSISTORS
Edmund M. Matea, Covina, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Feb. 28, 1958, Ser. No. 718,275, now Patent No. 3,113,252, dated Dec. 3, 1963. Divided and this application Jan. 16, 1963, Ser. No. 251,803
3 Claims. (Cl. 29—155.5)



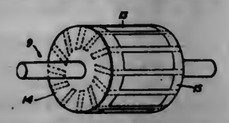
1. The method of making an encapsulated signal translating device which comprises the steps of supporting a signal translating body on a metallic capsule base member, said base member having a relieved portion surrounding said body for mating engagement with a radially extending perimetric flange on a capsule cover member, coating at least one mating face of said members with a fluorocarbon sealing material, placing said cover over said signal translating body in said relieved area on said base, cutting a portion of said base member adjacent said relieved area, folding down the cut portion onto said cover flange and pressing the folded base member portion against said cover flange.

3,191,269
METHOD OF WINDING ARMATURES
Harry W. Moore, 5051 Kittridge Road, Dayton, Ohio
Filed Dec. 12, 1958, Ser. No. 780,150
2 Claims. (Cl. 29—155.53)



1. In a method of winding an armature core fixedly mounted on a shaft upon which a commutator is also fixedly mounted, the armature core having a plurality of circumferentially spaced radial slots and the commutator having a plurality of circumferentially spaced lead receiving tangs, the method including the steps of shielding the tangs by a movable shield overlying a portion of the commutator, placing a coil in a pair of slots, the coil having a wire lead extending therefrom projecting out of a slot, removing the shield from tang shielding position, deflecting the lead extending from the coil into permanent engagement with a selected tang circumferentially offset from said last mentioned slot, and moving the shield into tang shielding position while placing a succeeding coil in another pair of slots.

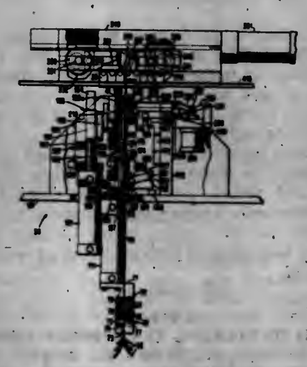
3,191,270
ELECTRIC MOTORS
Ronald George John Martin, Overstone, Peter Stanwell, Wanstead, and Henry F. Davies, Buckingham, England, assignors to The Plessey Company Limited, London, England, a company of Great Britain
Filed Dec. 11, 1959, Ser. No. 859,073
Claims priority, application Great Britain, Dec. 12, 1958, 40,111/58
1 Claim. (Cl. 29—155.53)



A method of making a squirrel-cage rotor of non-laminated construction for an electric motor, comprising the steps of:
(a) preparing a mixture consisting of ferrous material in divided form,
(b) pressing from the said material a plurality of identical cylindrical laminations having each a plurality of slots extending inwardly from the cylindrical surface of the body,
(c) stacking the said cylindrical laminations co-axially and with the said slots in adjacent laminations aligned to form a slotted laminated cylinder,
(d) inserting into each slot a conductor bar of length equal to the length of the slot in the laminated cylinder,
(e) applying to each end of the laminated cylinder a conductive metal in divided form in an area defining a rotor end ring joining the ends of the conductor bars, and
(f) heating the assembly in a reducing atmosphere to a temperature sufficient to sinter the conductive metal and to sinter and unite the ferrous laminations into a coherent non-laminated body.

3,191,271
METHOD OF FORMING AND PULLING CONTACT TERMINALS INTO AN ELECTRICAL RECEPTACLE
Alfred H. Johnson, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application June 29, 1959, Ser. No. 823,565, now Patent No. 3,077,023, dated Feb. 12, 1963. Divided and this application Feb. 26, 1962, Ser. No. 175,467
4 Claims. (Cl. 29—155.55)

2. A method for forming contact elements from strips of stock and inserting the formed contact elements into a receptacle which comprises:
positioning said receptacle at a first work station so that one row of passageways of said receptacle is aligned in a predetermined position;
inserting strips of stock into said aligned one row of passageways and into and beyond a first plurality of cavities of said receptacle, said first plurality of cavities communicating with said one row of passageways and opening opposite to the direction of insertion;
forming contact elements of a first configuration from the portions of said strips of stock extending beyond said first plurality of cavities, said contact elements of said first configuration being formed with first portions adapted to reside within said first plurality of cavities, second portions to reside within said one row of passageways and third portions to extend from said receptacle, said second portions being formed to have an interfering fit with said one row of passageways and said third portions being contiguous and integral with said strips of stock;
pulling said strips of stock relative to said one row of passageways and away from said first plurality of cavities to cause said second portions to anchor said formed contact elements within said receptacle;
severing said third portions of said formed and inserted contact elements of said first configuration from said strips of stock;
indexing said receptacle to a second work station so that an alternate row of passageways is aligned in a predetermined position thereat;
inserting strips of stock into said aligned alternate row of passageways and into and beyond a second plurality of cavities of said receptacle, said second plurality of cavities communicating with said alternate row of passageways and opening opposite to the direction of insertion;
forming contact elements of a second configuration from the portions of said strips of stock extending



beyond said second plurality of cavities, said contact elements of said second configuration being formed with first portions adapted to reside within said second plurality of cavities, second portions to reside within said alternate row of passageways and third portions to extend from said receptacle, said second portions being formed to have an interfering fit with said alternate row of passageways and said third portions being contiguous and integral with said strips of stock;
pulling said strips of stock relative to said alternate row of passageways and away from said second plurality of cavities to cause said second portions to anchor said formed contact elements within said receptacle; and
severing said third portions of said formed and inserted contact elements of said second configuration from said strips of stock.

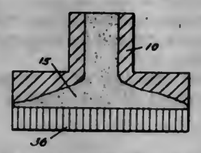
3,191,272
METHOD OF MAKING AN ELECTRICAL CONTACT
Children B. Gwyn, Jr., Export, Pa., assignor, by mesne assignments, to Talon, Inc., a corporation of Pennsylvania
Filed Mar. 2, 1960, Ser. No. 12,354
4 Claims. (Cl. 29—155.55)

1. The method of making an electrical contact rivet which comprises:
(a) providing a composite enlongated member of two metal components in continuity with each other, one of said components being in the form of a jacket substantially surrounding the other of said components defining a core within said jacket,
(1) said core being constituted of a contact working face material having a first melting point

and selected from the group consisting of silver and silver alloys, and

(2) said jacket being constituted of a contact backing material having a second, higher melting point and being selected from the group consisting of nickel and ferrous metals;

(b) applying pressure to one end of the composite member to form an enlarged rivet head thereon having a surface formed transversely of the length of the rivet, said surface being defined substantially entirely by said contact working face material;



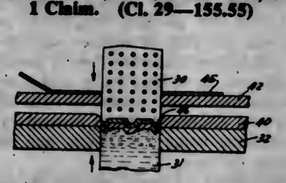
(c) mounting a preformed porous facing element constituted of a material selected from the group consisting of tungsten, molybdenum, rhenium, carbides of said metals and a mixture of silver and nickel in excess of 5%, adjacent and in proximity to said facing surface: and

(d) heating the resulting assembly to melt said contact working face material and effect flow of the same into said porous contact facing element, thereby simultaneously brazing the composite rivet shaped member to the contact facing element and infiltrating said element with said contact working face material.

3,191,273
METHOD OF MAKING ELECTRICAL CONTACTS

Childress B. Gwyn, Jr., Export, Pa., assignor, by mesne assignments, to Talon, Inc., a corporation of Pennsylvania

Filed Nov. 16, 1960, Ser. No. 69,639
1 Claim. (Cl. 29—155.55)



A process for making projection welding composite electrical make-and-break contacts which comprises:

(a) superposing a silver contact facing material blank and a weldable steel base material blank in spaced substantially parallel relation;

(b) moving at least one punch having a convex central protuberance and a convex peripheral protuberance through said contact facing material blank to shear a contact facing element therefrom, said facing element being simultaneously deformed to conform to the shape of said punch and including an outer facing having a convex central portion and a convex periphery;

(c) moving a coining die toward and into abutment with the side of said base material blank opposite from said contact face material side;

(d) moving said punch toward the base material blank to force said contact facing element into the blank and form an indentation therein, including a bottom wall having a central concave depression formed by and superimposed with the convex central portion of said facing element, and a peripheral concave depression formed by and superimposed with the convex periphery of said facing element;

(e) moving said punch away from the weldable base material blank to disengage the punch from the facing element seated in said blank;

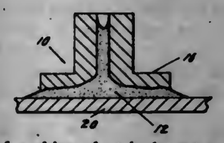
(f) heating said base material and said facing element to liquefy said facing element and cause the material thereof to flow along the walls of the indentation and fuse to the abutting base material, the surface of the fused facing element remote from the bottom wall of said indentation being convex in shape and having a peripheral edge defining a concave meniscus within said indentation;

(g) moving a concave-shaped punch against each such composite fused element with a force sufficient to shear the same from the base material blank, to provide the desired contact having a facing element of substantially uniform thickness.

3,191,274
METHOD OF MAKING AN ELECTRICAL CONTACT

Childress B. Gwyn, Jr., Export, and Frederick R. Farnham, Pittsburgh, Pa., assignors, by mesne assignments, to Talon, Inc., a corporation of Pennsylvania

Filed Feb. 20, 1961, Ser. No. 90,571
3 Claims. (Cl. 29—155.55)



1. A method of making electrical contact rivets which comprises

(a) providing a generally cylindrical contact body component constituted of a base metal and having a core of an alloying material which melts at a lower temperature than said base metal, said alloying material being selected from the group consisting of brazing and soldering alloys;

(b) cold heading said body component to form a flanged subhead in which at least a portion of the alloying material of said core is spread across the exposed face of said subhead permitting intimate contact with a precious metal contact facing material, as set forth hereinafter;

(c) placing a plurality of said contact body components against aligned areas of a sheet constituted of said precious metal contact facing material with said exposed face of the subhead of each of said components intimately contacting corresponding aligned areas of said sheet;

(d) heating the resulting composite assembly to effect melting of said alloying material across the interface between each said subhead and the aligned area of said sheet of contact facing material;

(e) cooling the composite assembly to bond said contact body components and said aligned areas and thereby form a plurality of integral composite contacts therefrom; and

(f) removing said plurality of integral composite contacts from said sheet.

3,191,275
METHOD OF MAKING ELECTRICAL CONTACTS

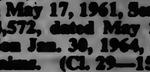
Childress B. Gwyn, Jr., Export, Pa., assignor, by mesne assignments, to Talon, Inc., a corporation of Pennsylvania

Filed Sept. 26, 1961, Ser. No. 140,835
1 Claim. (Cl. 29—155.55)

A method of making a contact element, which comprises

providing a disc shaped subhead of base metal including, on at least one side thereof, a first, substantially planar horizontal surface extending over the major portion thereof, a second, substantially planar horizontal surface disposed vertically below and annularly of said first surface and extending over a minor portion of said side, and a substantially vertical wall member connecting said first and second surfaces;

disposing a segment of precious metal contact face material adjacent said first surface;



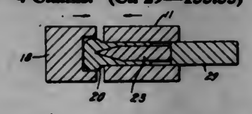
heating the assembly to effect melting of the precious metal segment and gravity flow of the molten metal across said first and second surfaces and simultaneously

fusing the molten precious metal to form a contact face of material thickness disposed in juxtaposition with said first and second surfaces to the periphery of said subhead.

3,191,276
METHOD OF MAKING COMPOSITE ELECTRICAL CONTACT BODIES

Childress B. Gwyn, Jr., Export, Pa., assignor, by mesne assignments, to Talon, Inc., a corporation of Pennsylvania

Filed Nov. 22, 1961, Ser. No. 154,285
4 Claims. (Cl. 29—155.55)



4. The method of forming a unitary electrical contact comprising the steps of cutting a first body from raw stock and applying a plunger thereto to pass said first body through a first die and into a second die spaced from said first die whereby said plunger forms an opening in one end of said first body and the other end of said first body is enlarged by pressing against said second die, and thereafter removing said plunger and cutting a second body from raw stock, pressing said second body into said opening in said first body while exerting a pressure of at least 2000 pounds per square inch on said bodies to cause a portion of said second body to flow into said enlarged portion of said first body and effect an interfacial bonding and alloying between the abutting surfaces of said first and second bodies by moving said first and second dies toward one another; said bonding and alloying occurring within a period not longer than 2 seconds after cutting of said second body from stock; and heating the resulting electrical contact to a temperature of 1000° F. ot 1600° F. to complete the eutectic bonding of said first and second bodies therein.

3,191,277
VALVE SEAT

Clarence O. Glasgow, 2620 S. Yorktown, Tulsa, Okla.

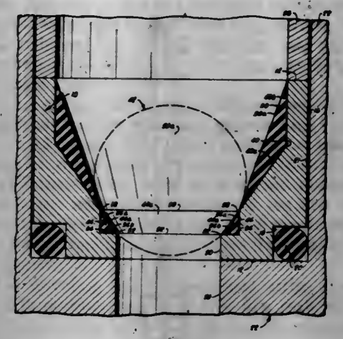
Original application May 17, 1961, Ser. No. 110,770, now Patent No. 3,134,572, dated May 26, 1964. Divided and this application Jan. 30, 1964, Ser. No. 347,327
2 Claims. (Cl. 29—157.1)

1. A method of manufacturing a valve seat for a spherical valve member comprising the steps of:

fabricating a metallic sleeve having a first annular, self-conforming seating surface and an annular recess adjacent thereto;

filling the recess with a resilient material, bonding the resilient material to the walls of the recess, and forming a second annular seating surface on the surface of the resilient material, the second annular seating surface being of a diameter to engage the spherical valve member before the first annular seating surface; and,

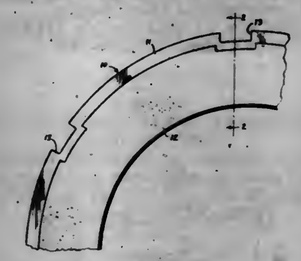
seating a hardened spherical valve member on the second seating surface and subjecting the valve member to a high pressure to compress the resilient material and deform the first seating surface to conform to the valve member, the resilient material serving as a seal to permit the buildup of the high pressure.



3,191,278
FRICTION COMPOSITION

Fred E. Kendall, Pepper Pike, and Robert L. Shaw, Northfield, Ohio, assignors, by mesne assignments, to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Oct. 21, 1963, Ser. No. 317,695
9 Claims. (Cl. 29—182.5)



1. Heavy duty brake, clutch and like product, comprising a friction facing composition, solid support for said facing composition and a solid opposing surface for the facing, at least one of which said support and opposing surface is of ferrous metal, which products are characterized by being substantially free of cracking of support and of opposing surface, said friction facing composition being substantially free of tin and essentially consisting of a sintered mixture of copper in major amount; ingredient of the group consisting of silicon, titanium, vanadium, and arsenic in minor amount; and friction modifying agent therefor.

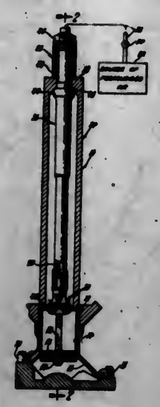
3,191,279
PRESS-FITTING APPARATUS

Peter Ashurkoff, Grosse Pointe Farms, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 21, 1963, Ser. No. 289,644
8 Claims. (Cl. 29—200)

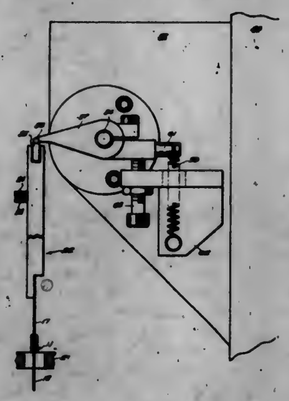
1. An apparatus for facilitating the press-fitting of two members together where one of the members has an opening and the other is to be inserted into the opening, com-

prising an elongated bar means, vibration generating means coupled to one end of said bar means so as to cause a resonant standing-wave movement of the latter in a longitudinal mode to permit the other end of said



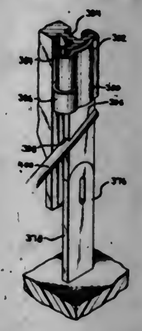
bar means to reciprocate in a longitudinal direction, and means on said other end for engaging one of said two members and thereby transmitting vibratory energy thereto for joining said members together.

3,191,280
APPARATUS FOR ASSEMBLING SEMICONDUCTOR DEVICES
John Hill, Wakefield, Mass., assignor to National Transistor Manufacturing Company, a division of International Telephone and Telegraph Company, Lawrence, Mass., a corporation of Massachusetts
Filed Apr. 23, 1963, Ser. No. 275,070
6 Claims. (Cl. 29—203)



1. In a machine for assembling a first and a second work piece said first work piece including a body element and said second work piece terminating in a resilient element adapted to contact said body element which includes an intermittently rotating generally circular work table, a plurality of first work piece holding stations arranged on the periphery of said table, a plurality of vertically reciprocating second work piece holding stations each arranged above one of said first work piece holding stations and adapted to retain a second work piece in axial alignment with the first work piece retained in each of said first work piece holding stations, said table adapted to bring said work piece holding stations successively to a succession of stationary work stations arranged around said table, means associated with one of said work stations for depressing said vertically reciprocating second work piece holding stations to the extent that said resilient member of the second work piece retained in said station is impressed a predetermined amount against the body of the first work piece retained in the corresponding first work piece holding station which comprises, a lever arm mounted on a shaft and adapted to contact the end of said first work piece holding; drive means for rotating said shaft at a predetermined constant speed; disconnect means including a clutch for disconnecting said shaft from said drive means; tension means cooperating with said shaft and said lever arm for returning said lever arm to its initial position when said shaft is disconnected from said drive means, detector means for detecting the instant of contact between said resilient member and said body, and timer means actuated by said detector means for disconnecting said clutch after the lapse of a predetermined length of time.

3,191,281
APPARATUS FOR MAKING ELECTRICAL CONNECTIONS
Robert Franklin Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed June 4, 1964, Ser. No. 372,651
4 Claims. (Cl. 29—203)

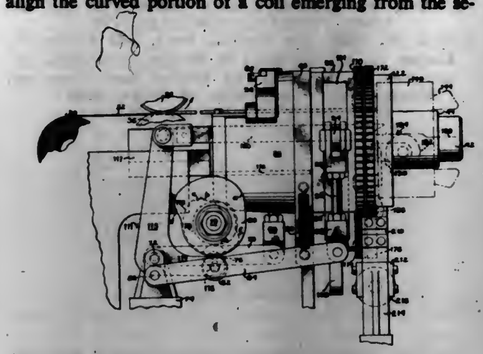


1. Apparatus for making an electrical connection between a conductor and a terminal post by means of a clip, said clip being telescopically movable into said post, said apparatus comprising, a generally T-shaped mandrel having a head portion and a rib portion, said head portion having a conductor receiving opening extending inwardly from one side thereof, and transversely thereacross, and means for moving said clip over, and beyond one end of, said mandrel whereby, upon locating said conductor in said opening and moving said clip over said mandrel, beyond said one end of said mandrel, and onto a terminal post, said clip moves against said conductor and drags said conductor from said opening and onto said terminal post, said clip functioning to hold said conductor against, and in electrical contact with, said opening after coming to rest thereon.

3,191,282
DEVICE FOR INSERTING WEDGES IN COIL SLOTS
Harry W. Moore, 5051 Kittridge Road, Dayton, Ohio
Filed Sept. 8, 1961, Ser. No. 136,947
9 Claims. (Cl. 29—205)

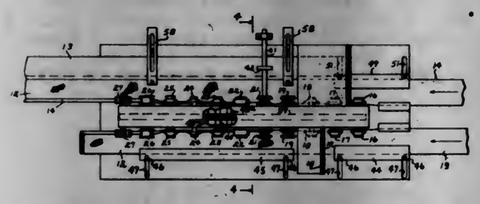
1. In an apparatus for inserting wedges into the slots of a cylindrical field member into which coils have been deposited, said coils curving circumferentially away from

said slots on emerging therefrom, a wedge supply means adapted to advance a wedge axially along a predetermined path into a selected slot of said field member, means to support said field member adjacent said wedge supply means with a slot therein located in said path, said support means supporting said field member for rotation relative to said wedge supply means, coil engaging means mounted on said wedge supply means, means to rotate said field member relative to said wedge supply means to align the curved portion of a coil emerging from the se-



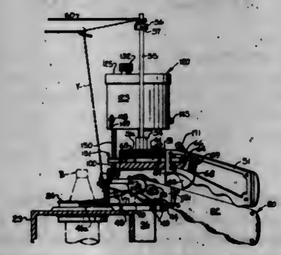
lected slot in said field member with said coil engaging means, means to actuate said coil engaging means to engage the curved portion of the coil aligned therewith, and means to rotate said field member relative to said wedge supply means so as to align said selected slot in said path to receive a wedge advanced by said wedge supply means, said coil engaging means holding the curved portion of said coil stationary as said field member is rotated to align the selected slot in said path and holding said coil while a wedge is being advanced into said slot.

3,191,283
APPARATUS TO SECURE A FLEXIBLE STRIP TO METAL STRIPS
William A. Cain, Jr., Birmingham, Ala., assignor to Elgen Manufacturing Corp., a corporation of New York
Original application Mar. 1, 1961, Ser. No. 92,683. Divided and this application May 22, 1962, Ser. No. 203,420
7 Claims. (Cl. 29—243.5)



1. Apparatus for producing an elongated strip-like product composed of a relatively flexible strip having a pair of opposite edge portions each securely engaged to a respective marginal portion of one of a pair of relatively rigid metal strips, said apparatus comprising:
- means for moving a first of said pair of metal strips along a path in a lengthwise direction;
- first positioning means along said path for positioning said flexible strip relative to said first metal strip, when the latter is moving along a first portion of its path, in a first disposition with one edge portion of the flexible strip lying atop the first metal strip and located adjacent one marginal portion of the first metal strip and the remaining portion of the first metal strip extending widthwise underneath the flexible strip;
- means for moving said flexible strip along said path with said first metal strip;
- means for deforming said one marginal portion of the first metal strip onto the adjacent edge portion of the flexible strip and for securely engaging said portions of the two strips as they move along said first portion of said path;
- means for directing said engaged strips from said first path portion through a looping second path portion;
- means located in said second path portion for effecting a change in the relative disposition of the first metal strip and the flexible strip, to a second disposition in which the unengaged portions of the first metal strip and the flexible strip extend widthwise in respective non-overlapping directions from the engaged portions thereof;
- means for directing said two engaged strips along a third path portion, parallel to said first path portion, while maintaining the two strips in said second disposition;
- means for moving a second of said pair of metal strips in a lengthwise direction;
- means for guiding said second metal strip along a path parallel to said third path portion of the first metal strip and flexible strip;
- second positioning means at the third path portion for positioning said flexible strip relative to the second metal strip with the unengaged other edge portion of the flexible strip lying atop the second metal strip and located adjacent one marginal portion of the second metal strip and the remaining portion of the second metal strip extending widthwise underneath the flexible strip;
- and means for deforming said one marginal portion of the second metal strip onto the adjacent edge portion of the flexible strip and securely engaging said portions of the two strips as they move along their respective paths.

3,191,284
TRAVELER REPLACING APPARATUS AND METHOD
Edward E. Emrey, Newberry, S.C., assignor to Excel, Inc., Lincolnton, N.C., a corporation of North Carolina
Filed Apr. 18, 1962, Ser. No. 188,506
26 Claims. (Cl. 29—401)



1. Apparatus for replacing travelers on rings of a yarn processing machine, said apparatus comprising
- (a) frame means adapted to be positioned on the yarn pressing machine adjacent the rings,
- (b) means carried by said frame means for removing a traveler disposed on the ring of the yarn processing machine, and
- (c) means carried by said frame means and operatively associated with said traveler removing means for mounting a new traveler on the ring.

21. A method of replacing travelers on the rings of a yarn processing machine having a yarn threaded under the traveler disposed on the ring, said method comprising the steps of

(a) positioning the traveler at a predetermined point on the ring,

(b) removing the traveler on the ring while controlling the yarn threaded thereunder to position the yarn in superposed relation to the ring, and

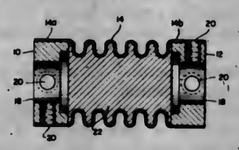
(c) mounting a new traveler on the ring over the thusly positioned yarn.

3,191,285

METHOD OF MAKING PLATED CONSTRUCTION SHAFT COUPLING

Raymond Shamie, Norwood, Mass., assignor to Metal Bellows Corporation, Wellesley, Mass.

Filed Feb. 27, 1963, Ser. No. 261,371
2 Claims. (Cl. 29—423)



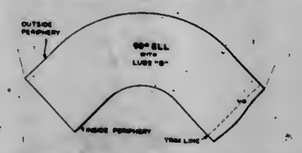
1. A method for fabricating a flexible shaft coupling having an elongated plated bellows with end portions thereof attached to a pair of metallic hubs, said method comprising the steps of spacing said hubs a predetermined distance apart, providing a removable bellows forming means and an electrically conducting surface in the space between said hubs, said surface and said hubs comprising a continuous bellows forming surface, plating in continuous fashion over said electrically conducting surface and the surface of said hubs, thereby connecting said bellows end portions to said hubs, and removing the bellows forming means.

3,191,286

MULTI-LAYER LUBRICATION UTILIZING ENCAPSULATING COATING

David E. Armstrong, Doylestown, and Gerald P. Roeser, Lahaska, Pa.; said Armstrong assignor to Horace T. Potts Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 12, 1961, Ser. No. 116,527
15 Claims. (Cl. 29—424)



1. The method of reducing the coefficient of friction between opposed metal contacting surfaces of metal workpiece and die contacting each other under extreme lateral and normal forces to overcome the tendency to seize and gall comprising: encapsulating the workpiece in a hard, tough substantially incompressible synthetic plastic barrier material having an adhesion shear strength for said metal of at least about 600 pounds per square inch, a film tenacity of at least 3000 pounds per square inch, a Brinell hardness value of at least 20 and a high modulus of elasticity as evidenced by an elongation of at least about 3% up to about 15% before rupture, to isolate the rubbing metal surface of said workpiece from said die by the barrier consisting of said plastic material; treating the entire surface of said plastic with a lubricant having a melting point in the range of 37–110° C. and a coefficient of friction between said plastic barrier and steel of 0.01 to 0.02; cold-forming the plastic encapsulated and lubricant-treated workpiece in said die and thereafter removing the lubricant from said workpiece by treating with a solvent for the lubricant.

3,191,287

METHOD OF MAKING LARGE DIAMETER ACCORDION TYPE EXPANSION JOINTS

George W. Hall, Des Moines, Iowa, and George C. Harper, Jr., and Frederick W. Songer, Coraopolis, Pa., assignors to Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 1, 1962. Ser. No. 199,355
4 Claims. (Cl. 29—454)



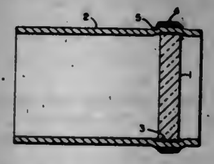
1. The method of making a large diameter accordion type expansion joint from flat rectangular steel plates that includes the following steps: bending the plates about their longitudinal axes to form lobe members having a generally U-shaped cross section with outwardly curved edge portions extending in a direction substantially perpendicular to the sides of the lobe members, forming lobe members into complete circular arcs and welding the abutting ends of those arcs to form circular rings with the sides of each U-shaped lobe member extending parallel to the general plane of the ring and with its outwardly curved edge portions forming the outer periphery of the ring and extending in a direction substantially perpendicular to the general plane of the ring, trimming the edge portions of each ring to a predetermined width, assembling two or more rings coaxially with the outwardly curved edges of adjacent rings in axially abutting relationship, and welding together these abutting edges to form a cylinder with accordion folds in its side.

3,191,288

METHOD OF FORMING ASSEMBLIES INCORPORATING SOLDERED JOINTS

Henri J. C. George, Paris, France, assignor to Quartz & Silice S.A., Paris, France, a corporation of France

Filed Sept. 9, 1960, Ser. No. 55,081
Claims priority, application France, Sept. 10, 1959, 804,784, Patent 1,243,919
5 Claims. (Cl. 29—470.5)



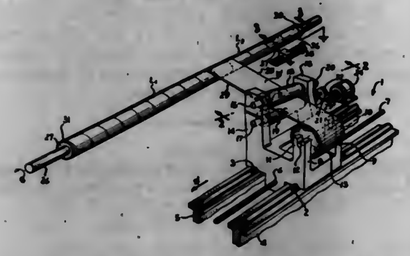
1. The method of forming a joint between a tube of solderable material and a member of solderable material having a substantially lower coefficient of expansion than the tube and abutting the interior of the tube, which comprises the steps of inserting the member in assembled relation in the interior of the tube, forming a soldered joint between the member and the tube, and winding a filament of quartz having a lower coefficient of expansion than the tube and capable of maintaining substantial strength at elevated temperatures about the tube under tension at a location circumferentially spaced about the member.

3,191,289

METHOD OF MAKING A TAPERED TUBULAR MEMBER OF FLEXIBLE METALLIC FOIL

Joseph Fleischer, 2511 W. Fargo Ave., Chicago, Ill.

Filed Dec. 16, 1960, Ser. No. 76,396
2 Claims. (Cl. 29—473.3)



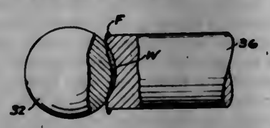
1. A method of making a tapered tubular member, said method comprising feeding a first strip of material through cooperating rollers and driving the rollers to grip and elongate said first strip lengthwise thereof beyond its elastic limit with the amount of elongation uniformly increasing from one longitudinal edge to the other, and after effecting said elongation wrapping said first strip a plurality of times about a mandrel having a taper equal to the gradient of elongation between said longitudinal edges and with each successive wrap partially overlapping the preceding wrap and the strip having a width which is a minor fractional part of the length of said mandrel, elongating a second strip of material lengthwise thereof to the same extent as the elongation of said first strip, thereafter wrapping said second strip over the first strip with each successive wrap thereof partially overlapping the preceding wrap, repeating the elongation and wrapping until the desired thickness of the wall of the tubular member is obtained, securing the strips together at their interfaces and thereafter separating the tubular member thus formed from the mandrel.

3,191,290

METHOD OF MAKING A PUSH ROD

David R. Knox, Detroit, Mich., assignor to Bundy Tubing Company, Detroit, Mich., a corporation of Michigan

Filed June 2, 1961, Ser. No. 114,389
5 Claims. (Cl. 29—475)



1. The method of making a push rod by welding an end piece to an end face of a length of rod stock, said end face having irregularities such as are caused by shearing and the like, said method comprising,

centering a punch substantially on the longitudinal axis of said rod, advancing said punch longitudinally substantially axially of said rod toward said end face while said punch is so centered, and striking with said punch a portion of said end face having a diameter which is smaller than the diameter of said end face, and thereby providing said end face with a rounded surface portion defining a seat having said smaller diameter, said seat having a central portion and having adjacent portions which slope substantially symmetrically to said central portion,

providing an end piece having a first surface portion dimensioned and contoured so that it is engageable with said central portion of said seat substantially in a point contact, and having a second portion forming a bearing surface adapted to engage a part of a machine with which said push rod is adapted to be used,

engaging said first surface portion against said central portion of said seat substantially in a point contact,

applying pressure to said rod and end piece to urge them toward each other, and utilizing said symmetrical slope of said seat to maintain said point contact substantially at said central portion of said seat,

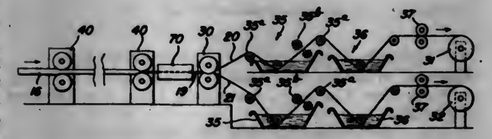
and, while applying said pressure, applying heat to the interengaged portions of said rod and end piece, said pressure and heat being sufficient to cause the metal of said rod and end piece to fuse and form a welded connection.

3,191,291

ART OF PRODUCING VERY THIN STEEL AND LIKE SHEETS IN WIDE STRIPS

Curtis E. Maier, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Jan. 21, 1959, Ser. No. 788,157
3 Claims. (Cl. 29—527)



1. A method of producing thin wide strips of steel and like work-hardening materials comprising the steps of preparing a billet by superposing sheet steel pieces with interposed weld preventing material terminating laterally short of the longitudinal edges of the billet thereby forming two metal regions extending from end to end of the billet, welding the longitudinal edges together at spaced points along their lengths to provide sealing joinder of only the two metal regions, hot-roll bonding the longitudinal edges of the billet, cold-rolling the billet to elongate the metal and the weld-preventing material concurrently to form a rolled strip and therewith reduce the material to form laminations having a thickness of 0.002 to 0.007 inch separated by a layer of weld-preventing material for the longitudinal regions where the metal overlies said material, annealing this strip after the cold-rolling operation, longitudinally slitting the strip through the layer of weld-preventing material along lines adjacent the lateral edges of said layer after the sheet has been annealed, separating the laminations from one another and from the connected edge portions, and thereafter, cold-temper rolling at least one of the individually annealed and separated laminations.

3,191,292

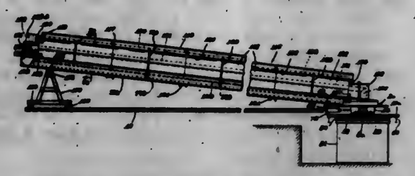
METHOD OF PRODUCING ROLLED METAL ARTICLES

Charles F. Strom, Glen Ellyn, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed July 16, 1963, Ser. No. 295,547
11 Claims. (Cl. 29—528)

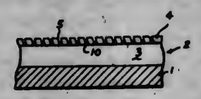
1. In a method of producing commercial rolled steel product directly from cast billets, blooms or slabs, the steps of: applying pressure against the upper surface of molten steel in a container to force the molten steel upwardly at a nonturbulent flow rate through a pouring tube into a bottom gate of an elongated chill mold having a thermal conductivity coefficient value at 18° C. of the

order of 0.1 cal./sec./cm.²/° C./cm., or greater, said mold having a riser at its upper end to seal internal shrinkage of the steel for a limited depth from the top of the mold; then, when the mold has been filled with said molten steel, closing said gate by a chill having a thermal conductivity coefficient value at 18° C. of the order of 0.1 or greater; then, after the steel in the mold has solidified into a casting, cutting off the riser at an area of the casting



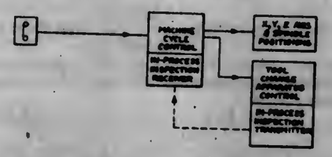
above said depth which is entirely solid and spaced from internal shrinkage cavities in said casting; then heating the casting to a temperature at least as great as its welding temperature; and then, without otherwise conditioning its outer surface, rolling the casting before it has cooled to a value below said welding temperature until all internal shrinkage has been eliminated by internal welding and the desired product is produced.

3,191,293
METHOD OF MAKING A PIANO PLATE
Henry G. Wickham, Red Bank, N.J., assignor to Wickham Piano Plate Company, Springfield, Ohio, a corporation of Ohio
Filed Feb. 23, 1960, Ser. No. 10,224
3 Claims. (Cl. 29—529)



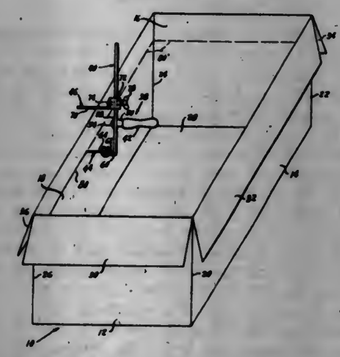
1. A method of forming a bridge section on a piano plate, including the steps of forming integrally with the plate a raised bead of longitudinal extent solid in cross-section and convexly curved in a transverse sense, there being an integral rib extending longitudinally of the bead at the top thereof, and cutting a longitudinal series of transverse string receiving slots in said rib to a depth reaching to the convex surface of said bead, said slots being cut with parallel sides inclined to the axis of said bead, the bottoms of said slots extending to and providing for the bearing of a received string directly on said bead.

3,191,294
IN-PROCESS INSPECTION APPARATUS
Jesse Daugherty, 142 Doty St., Fond du Lac, Wis.
Continuation of application Ser. No. 205,381, June 26, 1962. This application Feb. 3, 1965, Ser. No. 431,774
8 Claims. (Cl. 29—568)



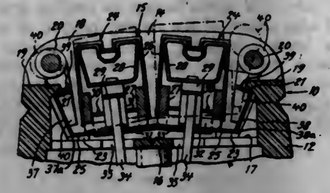
1. In a machine tool having a tool support, a workpiece support adjacent said tool support, and power means for relative movement of said workpiece support and said tool support, the combination comprising a plurality of tool elements including a workpiece gage device constructed to be received in said tool support, said workpiece gage device having means for transmitting a measurement representing signal, a storage matrix for said plurality of tool elements mounted adjacent said tool support, tool change means for transferring tool elements between said storage matrix and said tool support, control means for operating said machine tool to carry out an operating cycle including a step whereby said gage device is transferred by said tool change means from said matrix to said tool support for inspection of a workpiece dimension and said gage device and workpiece are moved relatively into contact by said power means, and means included in said control means for receiving a signal from said workpiece gage device designating the workpiece dimensions being measured.

3,191,295
DEVICE FOR SCORING CARTONS OR THE LIKE
Lawrence L. Falk, 364 Bianca Ave., Tampa 6, Fla.
Filed Jan. 23, 1964, Ser. No. 339,796
1 Claim. (Cl. 30—2)



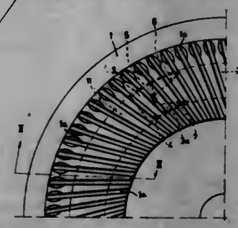
A device for scoring cartons or the like comprising, in combination, an elongated flat support member including a flat laterally offset flange at one end thereof and an elongated longitudinally extending central slot, said flange having an opening therein and a fixed upstanding pin aligned with said opening, a blade, having a cutting edge and an elongated open ended slot, seated on said flange, a bolt extended through said opening and said open ended slot, a wing nut on said bolt clamping said blade to said flange, said pin extending into said open ended slot to preclude rotation of said blade about said bolt, a guide arm extending transversely from said support in parallelism to said flange and blade, said guide arm including a flat portion of a length greater than the combined length of said flange and said blade, a sliding block secured to one end of said flat portion, and having a slotted passage therethrough, said support member extending through said slotted passage; said block having a threaded bore therein intersecting said slotted passage, a bolt having a wing head extending through said threaded bore, said bolt having a diameter greater than the width of said central slot in said support, whereby to engage said support on opposite sides of the slot to clamp said block against sliding movement on said support, and a handle extending from said support on the side opposite said guide arm, and between said guide arm and said blade, said handle having a longitudinally threaded bore therein and a bolt extended through said central slot in said support and engaging in said last mentioned threaded bore, whereby said handle is releasably clamped to said support member and longitudinally adjustable thereon by loosening said last mentioned bolt.

3,191,296
CUTTER HEAD ATTACHMENT MEANS
David R. Locke, Bridgeport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,156
5 Claims. (Cl. 30—34.2)



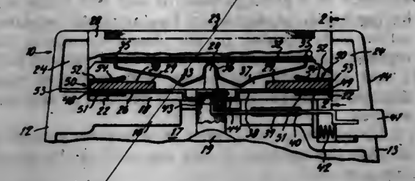
1. A cutter head attachment means for an electric dry shaver, comprising
(a) a casing having exterior wall portions defining a recessed portion in said casing,
(b) a cutter head disposed in said recessed portion,
(c) said cutter head having a cutting surface exposed in said recessed portion and bounded by said exterior wall portions,
(d) spaced detent projections on said casing adjacent said recessed portion, and
(e) resilient latch means carried by said cutter head engaged by said spaced detent projections to lock said cutter head to said casing,
(f) said latch means having a portion projecting out of said recessed portion,
(g) said projection portion of said latch means being movable under pressure from without said casing to unlock said latch means from said detent means to release said cutter head from said recessed portion of said casing.

3,191,297
ELECTRIC SHAVER CUTTER AND SHEAR PLATE COMBINATION WITH SKIN SCRAPING PREVENTION
Gerrit Starre, Arie Franses, and Henricus Josef Driessen, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 21, 1963, Ser. No. 266,911
Claims priority, application Netherlands, Apr. 13, 1962, 277,237
3 Claims. (Cl. 30—43.6)



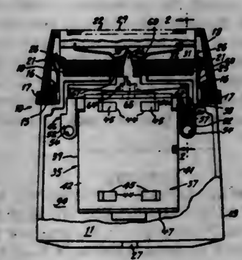
1. A shaving head for a dry shaver comprising a shear plate provided with a plurality of apertures, a cutting member having the cutting edges thereof adapted to move adjacent to the undersurfaces of said apertures, the face of said cutting member oriented toward the undersurface of said shear plate including a portion ascending upwardly toward the rear of said cutting member taken in the direction of movement thereof, said portion terminating in a face substantially parallel to and adapted to engage said undersurface of said shear plate.

3,191,298
MEANS FOR SECURING CUTTER HEAD UNITS TO A MOUNTING PLATE
David R. Locke, Bridgeport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,189
3 Claims. (Cl. 30—43.92)



1. A cutter head assembly for an electric dry shaver, comprising
(a) a mounting plate having recessed portions at opposite ends thereof,
(b) a cutter head unit disposed on one side of said mounting plate and having recessed portions at opposite ends thereof registering with said recessed portions of said mounting plate,
(c) detachable resilient clamp members at opposite ends of said mounting plate,
(d) a first portion of each of said clamp members slidably engaging the opposite side of said mounting plate,
(e) a second portion of each of said clamp members slidably engaging and detenting said cutter unit to said mounting plate, and
(f) an intermediate portion of each of said clamp members disposed in a pair of said registering recesses to prevent transverse movement of said cutter head unit on said mounting plate.

3,191,299
MOUNT FOR CUTTER DRIVE MEMBER
David R. Locke, Bridgeport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,031
4 Claims. (Cl. 30—43.92)



1. An electric shaver comprising,
(a) a casing having a motor compartment with one wall thereof provided with an opening,
(b) a motor disposed in said motor compartment and having a rotatable shaft with its axis of rotation extending normal to said wall,
(c) end bells for the motor adjacent opposite ends of the shaft for supporting the latter for rotation, and said shaft extending through one of said end bells,
(d) said one end bell having a portion disposed in a first plane extending transversely of the axis of said

shaft and a pair of oppositely disposed end portions arranged in planes disposed perpendicular to said first plane,

(e) said oppositely disposed end portions being formed to provide recessed bearing portions,

(f) a cutter drive member connected in driving relationship with said motor for operation thereby,

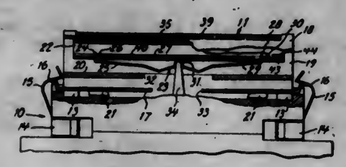
(g) said cutter drive member having a first surface arranged in a plane parallel to said first plane and having a pair of depending legs arranged in planes substantially parallel to the planes containing the oppositely disposed end portions of said one end bell,

(h) said depending legs having their respective ends disposed in the recessed bearing portions of said one end bell,

(i) a driving arm on said cutter drive member extending through the opening of said one wall of the motor compartment,

(j) and a cutter head assembly disposed externally of the motor compartment and adjacent said one wall, said cutter head assembly having a movable cutter element operable by said drive arm movable thereby.

3,191,300
GUIDE MEANS FOR INNER CUTTER OF A DRY SHAVER
David R. Locke, Bridgeport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,356
5 Claims. (Cl. 30—43.92)



1. A cutter head unit for an electric dry shaver, comprising

(a) a stationary metal outer cutter,

(b) an inner cutter disposed for movement within said outer cutter,

(c) said inner cutter having portions thereof in cutting engagement with said outer cutter,

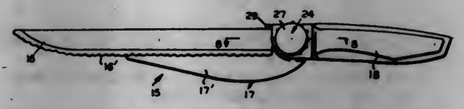
(d) an inner cutter guide member disposed within said inner cutter for movement therewith,

(e) a pair of flexible leg portions provided at each opposite end of said inner cutter guide member,

(f) a foot portion provided on each of said flexible legs and extending from said inner cutter to bear against the sidewalls of said outer cutter to prevent shifting of said inner cutter from its path of movement.

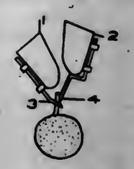
3,191,301
CUTTING IMPLEMENTS AFFORDING ADJUSTMENT FOR THICKNESS OF SLICE
Joseph Rubinstein, Newburgh, N.Y., assignor to General Slicing Machine Co., Inc., Walden, N.Y., a corporation of New York
Filed July 3, 1963, Ser. No. 292,613
1 Claim. (Cl. 30—293)

In a cutting implement, a hand knife comprising a knife blade joined to a handle at one end thereof, a track means on the hand knife, positioned at the junction of said knife blade and said handle, to one side of said knife blade and substantially perpendicular to its plane, a gage blade positioned along said one side of the knife blade, a track follower extending from said gage blade, releasably held by said track means for sliding movement therealong towards and away from said knife blade; said track follower having a threaded hole therethrough parallel to the direction of said movement; the hand knife having a keyhole-shaped slot, a rotatable screw positioned through the smaller portion of said keyhole slot, releasably threadedly engaged in said threaded hole; said track follower holding the screw against lateral movement into the larger portion of said keyhole slot when said screw is in said threaded hole; said screw having an annular groove; the marginal edge region of the smaller portion of said keyhole slot being positioned within said annular groove and holding the screw against longitudinal movement while said screw is through the smaller portion of said keyhole slot; said screw upon being rotated, will cause the gage blade to move laterally of the knife blade while said



screw is engaged in said threaded hole; said screw being laterally movable into the larger portion of said keyhole slot when moved out of said threaded hole and is then removable from the hand knife by a longitudinal movement; the gage blade being free for removal from the track means when said screw is disengaged from said threaded hole; the end of the knife blade which is joined to the handle being within the handle; said keyhole slot being through that part of the knife blade which is within said handle; said track means being on the handle and said handle having openings therein, extending from each side thereof, exposing said keyhole slot; said slot being inward of said openings, and including a hand knob fixed on said screw, accessible at that side of the handle which is most remote from the track means.

3,191,302
STRAWBERRY PICKING THIMBLES
Ralph Spencer Jacobson, 2448 240th St., Langley, British Columbia, Canada
Filed Jan. 13, 1964, Ser. No. 337,330
2 Claims. (Cl. 30—298)



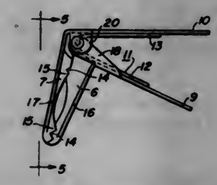
1. An attachment for picking strawberries comprising thimbles to be worn one each on the thumb and forefinger of the user, and including blades on the thimbles, in which the blades have straight cutting edges and are attached on the outer sides of the thimbles, with the blade on the forefinger extending forwardly of the finger and having its cutting edge aligned centrally and transversely of the finger end, and with the blade on the thumb inclining forwardly inward and having its cutting edge aligned centrally and transversely of the thumb end, and by which said cutting edges may be brought together in opposing relation to each other for engaging a strawberry stem therebetween and cutting the stem by pressure on the opposing blades towards each other.

3,191,303
TOOTH FILLING MATERIAL
Lloyd Baum, Riverside, Calif. (11460 Aster St., Loma Linda, Calif.)
Filed May 21, 1962, Ser. No. 196,240
5 Claims. (Cl. 32—15)



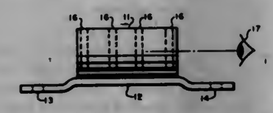
1. An individually formed dental filling having a maximum cross section not exceeding four millimeters comprising a gold foil wrapper and a body of discrete powdered gold particles enveloped by said wrapper.

3,191,304
DENTAL MATRIX CLAMP OR RETAINER
Paul D. Mattern, 86 Williams Lane, Hatboro, Pa.
Filed Mar. 7, 1963, Ser. No. 263,670
7 Claims. (Cl. 32—63)



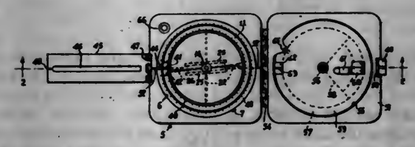
1. A dental matrix clamp for holding in place in a taut condition a flexible dental matrix strip around a tooth whose cavity is to be filled with a dental filling-material, including a pair of thin sheet-metal jaws having their co-acting edges in operative alignment with each other so that they abut each other when the jaws are in their fully closed positions, an integral handle formed in continuation of each of said jaws and extending in a direction transversely of the jaw, a pivot-receiving portion formed integrally with each jaw and handle, said pivot-receiving portions having aligned pivot holes therethrough, a pivot extending through said pivot holes and permanently securing said jaws and their respective handles in pivotal relation to each other, a spring resiliently urging said jaws toward their closed positions and said handles into their spread-apart positions, the co-acting edges of said jaws having tooth-like serrations along juxtaposed portions thereof near the pivoted ends thereof and along juxtaposed portions thereof near the ends thereof farthest from the pivot and having relieved non-abutting portions between the serrated portions thereof.

3,191,305
SIGHTING DEVICE
George R. Gamertsfelder, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Nov. 29, 1961, Ser. No. 155,705
7 Claims. (Cl. 33—47)



1. A sighting device comprising, a number of substantially opaque elements positioned in at least two spaced-apart limited planes in space, the areas of said planes not occupied by said opaque elements being substantially transparent, said spaced-apart limited planes intersecting the same straight line, the transverse arrangement of elements in each said plane composing a gross random pattern occupying at least a substantial central area of each plane, a holder for said elements, said elements being so positioned and oriented that the gross patterns of all said elements in all said planes when projected to a single transverse plane do not substantially overlap.

3,191,306
COMBINATION COMPASS-CLINOMETER AND HAND LEVEL
Martin De Valera Kieran, 345 Hennessy St., Bathurst, New Brunswick, Canada
Filed Mar. 18, 1963, Ser. No. 265,645
9 Claims. (Cl. 33—72)

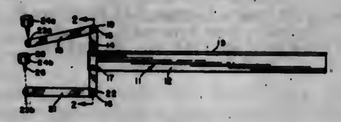


1. A hand or tripod held pocket magnetic surveying compass-clinometer instrument comprising a compass case and a clinometer case hingedly connected together for closure with each other, a central axis mark on said compass case, a compass within said compass case, the said compass comprising a liquid tight container of transparent material filled with a compass dampening liquid, a rotatable graduated ring in said compass case located about the periphery of the said container, a pivot member centrally located in said container, a first cylindrical sleeve axially located about said pivot member, the said sleeve having a jewel pivot bearing at its upper end for engagement with the said pivot member, a graduated compass dial axially mounted on said first cylindrical sleeve, the said rotatable graduated ring adapted to be oriented with the said compass dial when the said compass dial is rotated to a desired orientation, a second sleeve rotatably mounted about said first cylindrical sleeve and movable axially thereon, a magnet assembly mounted on said second sleeve co-axial with said pivot member and compass dial, means accessible from without the said compass case to elevate and disengage the said compass dial and magnet assembly from said pivot member and to non-rotatably engage the said first cylindrical sleeve and compass dial with the said container, means accessible from without said compass case to rotate the said second sleeve and magnet assembly relative to said first cylindrical sleeve and compass dial when the said first cylindrical sleeve and compass dial are elevated and engaged with the said container, a weighted clinometer in said clinometer case, and sighting means on said compass case and clinometer case and aligned when the said central axis mark on said compass case when the said compass case and clinometer case are in the opened position and in a common plane with respect to each other, the said sighting means including a mirror in which is viewed for direct reading the movement of said weighted clinometer.

3,191,307
METHOD AND APPARATUS FOR DRAWING THREE DIMENSIONAL VIEWS OF OBJECTS
George De Angelis, 9830 Allen Road, Allen Park, Mich.
Filed May 7, 1962, Ser. No. 192,698
9 Claims. (Cl. 33—77)

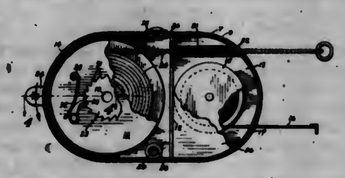
1. An apparatus for drawing three dimensional views of objects in combination with a flat surface on which said views are drawn, said apparatus comprising a generally horizontally extending first member having at least one horizontal straight edge, a second member extending generally normal to said first member and having its bottom

surface attached intermediate its ends to the top surface and at one end of said first member, the inward side of said second member being a vertical straight edge, a first link having one end pivotally connected to one end at the bottom surface of said second member adjacent its outward side, a second link having one end pivotally connected to the other end at the bottom surface of said second member adjacent its outward side, first means at the other end of said first link for pivotally connecting the



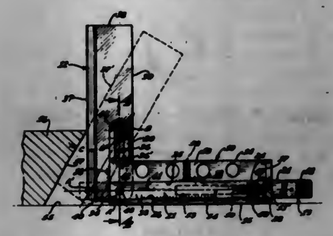
latter to said surface, second means at the other end of said second link for pivotally connecting the latter to said surface remote from said first means, and retaining means on said second member to receive said first and second links upon the latter being positioned on the bottom surface of said second member, the distance between said first means and said second means after pivotally connecting said other ends of said first and second links to said surface being less than the distance between said one ends of the first and second links.

3,191,308
MEASURING AND LINING TOOL
Walter K. Lindenau, Daly City, Calif.
(1201 Edinburgh St., San Mateo, Calif.)
Substituted for abandoned application Ser. No. 38,034, June 22, 1960. This application Aug. 8, 1962, Ser. No. 216,025
2 Claims. (Cl. 33—87)



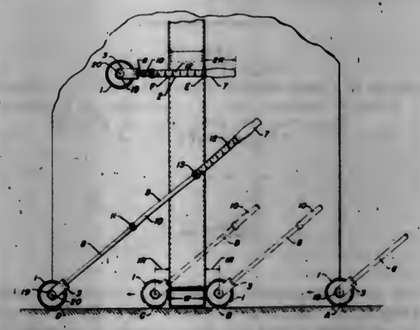
1. A measuring and lining tool comprising a casing partitioned to form two non-communicating compartments at opposite ends thereof, a flexible spring retractable measuring tape mounted within the compartment at one end of the casing and arranged to be extended and retracted through an opening in an end of the casing, a shaft journalled upon the casing and extending transversely thereacross in the compartment at the other end of the casing, a reel rotatably mounted upon the shaft within the casing, a marking cord wound onto the reel and arranged to be extended and retracted through an opening in the casing, means for introducing a marking material into the cord reel compartment, a tube extending from said cord reel compartment through the measuring tape compartment and providing a passage therethrough whereby the measuring tape and the marking cord may be extended in parallel relation through spaced openings in the same end of the casing, a crank secured to the shaft upon the outside of the casing, a ratchet secured to the shaft inside the casing, and a spring actuated pawl mounted upon the reel and engageable with the ratchet, said pawl and ratchet being arranged to permit the cord to be paid out from the reel independently of the crank and to be rewound onto the reel by operation of the crank.

3,191,309
SINE-SQUARE
Herve R. Duchesneau, 4117 E. Buchanan, Phoenix, Arizona
Filed June 8, 1962, Ser. No. 201,075
5 Claims. (Cl. 33—102)



1. A tool of the character described comprising
a body
having
a flat base surface,
an actuator slide
carried by and movable lengthwise of said body parallel to said base surface, and
a blade
having
a longitudinal work contacting edge,
said blade being connected to said actuator slide by
a fixed pivot
and to said body by
a sliding pivot,
said pivot connections when on a line exactly at right angles to said base surface holding said blade with said work contacting edge precisely at right angles to said base surface,
said fixed pivot connection being movable with said actuator slide in one direction from said line to position said work contacting edge in acute angular relation to said base surface and in the opposite direction from said line to position said work contacting edge in obtuse angular relation to said base surface.

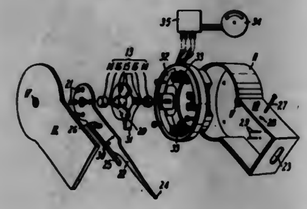
3,191,310
DISTANCE MEASURING DEVICE
Frederick G. Carlson, 1169 Margret St., Des Plaines, Ill., and Richard J. Brandt, 737 Florence Ave., Park Ridge, Ill.
Filed Apr. 10, 1963, Ser. No. 271,908
1 Claim. (Cl. 33—141)



A linear distance measuring device comprising a handle, a wheel having a circumference of 12 inches, rotatably mounted at one end of the handle and a separate handle

grip approximately 3.8 inches in length on the other end of the handle, a counter mechanism axially engaged by said wheel which registers the number of rotations of the wheel in units of length correlated to the distance to be measured, and a rule marked on said handle in inches and parts of inches, the point corresponding to zero on said rule being the end of the handle grip opposite the end of the handle on which said wheel is mounted.

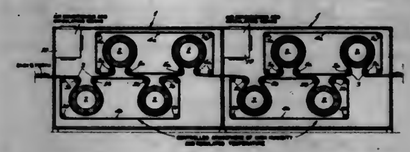
3,191,311
COMPARATOR GAUGES
Kenneth Robson Brown, Wilkieston, Kirknewton, Midlothian, and Charles Ian Crawford, Edinburgh, Scotland, assignors to Ferranti, Limited, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Oct. 22, 1962, Ser. No. 232,054
Claims priority, application Great Britain, Oct. 25, 1961, 38,129/61
4 Claims. (Cl. 33—169)



1. A comparator gauge comprising in combination a supporting framework, a torsion rod having between a centre portion and each end portion a torsional portion which is of less torsional rigidity than the centre portion and that end portion and which transforms smoothly into them, the end portions being secured to the framework against rotation with respect thereto, a probe arm secured at one end to the centre portion of the rod and extending radially from the rod for angular movement about the axis thereof to allow the tip of the free end of the arm to engage a workpiece, spring means for adjusting the datum angular position of the probe arm with respect to the framework in either direction of the probe movement, staying means secured to said probe arm and said framework and spaced from the secured end of the probe arm for staying the rod against deflections of its axis caused by movements of the probe tip parallel to the axis of the rod, an electrical pick-off responsive to the angular position of the probe arm with respect to the framework including a rotor secured to the centre portion of the rod and a co-operating wound stator secured to the framework, electrical stages structurally separate from said framework for deriving a measurement in response to the output of said pick-off, said stages including means for energising the network, display means for indicating the extent and sense of unbalance of the network, and means for adjusting the balance of the network independently of the probe arm position, thereby allowing the display means to be adjusted to a datum reading.

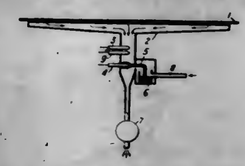
3,191,312
METHOD OF UNIFORMLY MOISTENING PAPER AND LIKE HYGROSCOPIC WEB MATERIAL
Claes Allander, Bromma, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Apr. 16, 1962, Ser. No. 187,991
Claims priority, application Sweden, Apr. 17, 1961, 3,999/61
2 Claims. (Cl. 34—13)

1. The method of uniformly moistening a continuous web of paper or similar hygroscopic material, comprising the following steps: providing a closed treatment chamber having disposed therein a plurality of spaced, rotatable, cooled rolls, said treatment chamber having walls lying closely adjacent to said rolls, advancing the web in a number of back-and-forth passes over said rolls, maintaining within said chamber a controlled atmosphere of relatively high humidity and regulated tempera-



ture, pressing an endless felt against the web alternately on the exterior of said web as it passes over said rolls, and concurrently therewith maintaining said felt web wholly within said chamber whereby said web has a relatively uniform moisture condition throughout its extent.

3,191,313
MEASUREMENT AND CONTROL OF MOISTURE
William Joseph Moorhouse, Nabwood, Shipley, and Gowan Coendoz Rogers and George Charles Lee Campbell, Bradford, England, assignors to The Bradford Dyers' Association Limited
Filed June 20, 1961, Ser. No. 118,368
Claims priority, application Great Britain, June 21, 1960, 21,744/60
4 Claims. (Cl. 34—52)

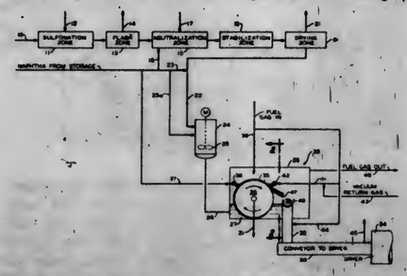


1. Apparatus for measuring the moisture content of material comprising
first and second thermistor thermometers,
means for maintaining one of said thermistor thermometers wet,
a compensating thermistor thermometer,
means for drawing air in moisture equilibrium with the material from about the material at a low rate of speed and past said thermometers,
a bridge circuit for converting the electrical response of said first and second thermistor thermometers to a single electrical signal,
a nonlinear amplifier,
means for applying said single electrical signal to said nonlinear amplifier, and
means connecting said compensating thermistor thermometer so as to control the gain of said nonlinear amplifier.

3,191,314
GAS CIRCULATION IN A PRE-COAT FILTER
Houston R. Flournoy, Kansas City, Kans., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,333
2 Claims. (Cl. 34—70)

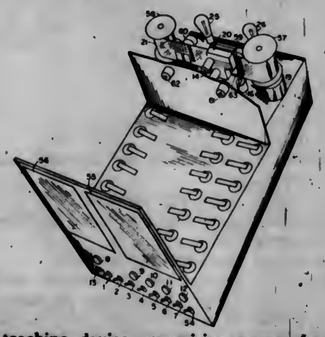
1. In the process of filtering petroleum sulfonate slimes produced by sulfonating a viscous, highly refined bright stock and neutralizing the resulting sulfonic acid with a basic alkaline earth metal compound wherein the sulfonate slime is filtered on a precoated, rotary vacuum filter contained in a vapor-tight case and the filter cake is passed by means of an enclosed chute and an enclosed

conveyor to a drying zone, a substantially constant positive pressure being maintained in the vapor-tight case by a noncondensible gas introduced into said case, the improvement comprising passing a stream of noncondensible hydrocarbon gas into said enclosed chute; dividing said stream so that a first portion of said gas intro-



duced into said chute passes into said filter case and a second portion of said gas passes from said chute into the conveyor leading to the dryer; venting from the conveyer outlet the gas passing to the conveyor; and venting gas from the filter case in excess of that required to maintain a substantially constant positive pressure in the filter case.

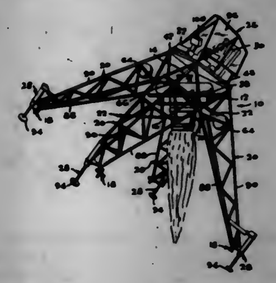
3,191,315
TEACHING MACHINE
Jack W. Hannah, 653 Cherry St., Galion, Ohio
Filed Nov. 30, 1961, Ser. No. 155,931
14 Claims. (Cl. 35—9)



1. A teaching device comprising means for visually projecting individual frames of a self-contained filmed lesson series and individual frames of reference material corresponding to said lesson series, each of said frames of the lesson series and the reference material containing a coded address and several codes corresponding to subsequent frames to be viewed, and means for automatically selecting and positioning any desired individual frame of the filmed lesson series and the reference material in the teaching device for visual projection by receiving the coded address of said individual frame from the frame being viewed.

3,191,316
LUNAR LANDING FLIGHT RESEARCH VEHICLE
Hugh L. Dryden, deputy administrator of the National Aeronautics and Space Administration, with respect to an invention of Kenneth L. Levin and John G. Allen, Jr.
Filed June 26, 1963, Ser. No. 290,868
5 Claims. (Cl. 35—12)

1. A flight research vehicle for simulating flight in a lunar environment comprising, in combination:
(a) an airframe that includes a landing gear framework and an operator's capsule;
(b) an engine mounting framework gimbal mounted to said landing gear framework so as to permit pivotal movement of said engine mounting framework about a first axis with respect to said landing gear framework;
(c) an operator throttled jet engine gimbal mounted in said engine mounting framework to permit pivotal movement of said jet engine about a second axis normal to the first axis;
(d) air bleed jets mounted to said engine mounting framework and connected to said jet engine for controlling the thrust direction thereof when operating;
(e) control means mounted on said airframe for sensing the direction of thrust of said jet engine and actuating said air bleed jets to maintain the direction of thrust from said jet engine exactly vertical and downward with respect to the center of gravity of the vehicle, whereby said jet engine can be throttled to a point where the thrust generated thereby will

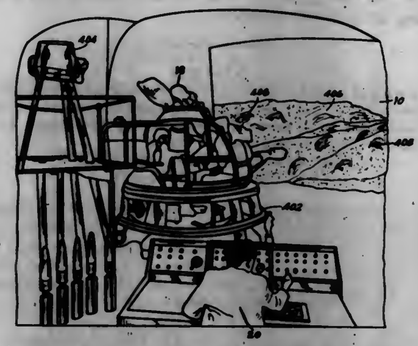


overcome approximately five-sixths of the earth's gravitational pull on said vehicle;
(f) a plurality of operator throttled lift rockets attached to said engine mounting framework in a fixed position;
(g) said lift rockets having a substantial thrust capability which, when operating in conjunction with said jet engine, can be throttled to overcome more or less than one-sixth of the earth's gravitational pull; whereby, when said jet engine is generating a thrust equal to five-sixths earth's gravitational pull, the lift rockets can be employed to move the vehicle in a gravity condition very similar to that which would be encountered in a lunar landing; and
(h) attitude control rockets attached to said landing gear framework for controlling the attitude of said airframe and thus the thrust direction of said lift rockets which are fixed thereto, whereby said airframe can be tilted to control the horizontal and vertical movement of said vehicle.

3,191,317
TANK TURRET TRAINER
Alfred M. Davock, Birmingham, and Dana C. Manning, Detroit, Mich., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 15, 1961, Ser. No. 159,801
3 Claims. (Cl. 35—25)

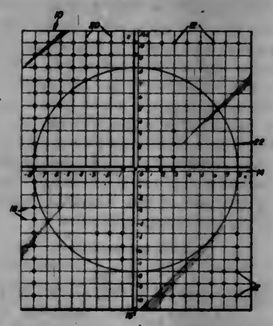
1. A tank turret trainer comprising a simulated tank turret rotatably mounted on a supporting stand, a hemispherical screen operatively mounted in front of said tank turret, a terrain projector operative with said hemispherical screen for projection of wide-angle photographic slides of up to five real targets and backgrounds, separate projectors operable with said hemispherical screen for projection of tracer, burst and point of aim, means for controlling said projectors and said simulated tank turret, said control means being located within said tank turret

in simulation of actual operating controls whereby targets, terrain, burst and tracer displays are projected on the screen and said controls within said simulated tank turret are operated by a trainee, actual hits, bursts and tracers being visible to the trainee in cooperation with



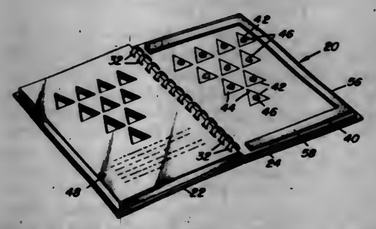
simulated gun controls whereby an actual operational battle is simulated for training purposes, and means for determining whether the trainee has selected to aim at the target of highest strategic priority, operatively coupled to said control means.

3,191,318
MATHEMATIC TEACHING AID
Robert G. Hoffmann, 1726 NW. 10th Terrace, Gainesville, Fla.
Filed Apr. 27, 1962, Ser. No. 190,625
4 Claims. (Cl. 35—34)



1. A mathematical teaching aid comprising a flat board provided with a plurality of holes in one face thereof, said holes being arranged in the pattern of a rectangular grid representing points in two dimensional space, said board further including, in said one face, a single horizontal centrally orientated groove and a single vertical centrally orientated groove representing rectangular coordinate axes, horizontal and vertical lines extending through the centers of all of the holes so as to provide a rectangular graph on said one face, and indicators freely receivable within said holes and said grooves in a manner so as to project outwardly therefrom, and a plurality of rigid planar mathematical forms, said forms each being smaller than the board and selectively positionable on said one face thereof in overlying relation to the holes, grooves and lines thereon, said forms including holes, grooves and lines of the same size and spacing as the board holes, grooves and lines within the limit of each form, said forms being releasably securable to said board by said indicators with the form holes, grooves and lines aligned with the board holes, grooves and lines; said grooves being of greater width than said holes and coextensive with a centrally orientated horizontal row of holes and a centrally orientated vertical row of holes, the indicators receivable in said grooves having the lower portions thereof of a greater cross-sectional area than the upper portions, the cross-sectional area of the upper portions of the groove indicators being the same as the cross-sectional area of the hole indicators, said upper portions being receivable in said holes.

3,191,319
SPECIMEN CARRYING BOOK
William Waisgerber, 16522 Labrador St., Sepulveda, Calif.
Filed June 21, 1962, Ser. No. 204,235
1 Claim. (Cl. 35—49)

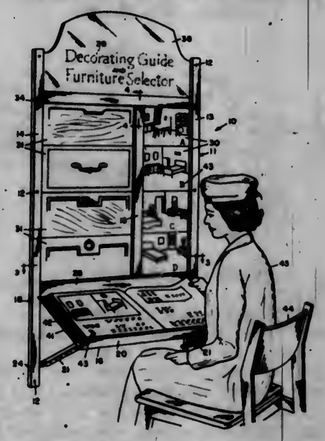


A book comprising a top cover,
a rear cover,
and leaves bearing indicia therebetween,
specimens within the book attached to a planar surface close to the rear of the book,
said specimens being spaced from one another,
a leaf next adjacent said planar surface being provided with discrete apertures, one for each specimen, exposing all of said specimens when said leaf is otherwise covering the plane surface, a thick edging on the planar surface to form a spacing medium between the surface and said next adjacent leaf, superimposed leaves having apertures registering with the discrete apertures in said leaf, but each successive superimposed leaf having one aperture less than the leaf therebeneath, with the uppermost leaf having a single aperture.

3,191,320
DISPLAY APPARATUS
Bernard Lee Copeland, Waynesboro, Va., and Sanford Wallack, Chevy Chase, Md., assignors to Basic-Witz Furniture Industries, Inc., Waynesboro, Va.
Filed Oct. 18, 1962, Ser. No. 231,450
1 Claim. (Cl. 35—53)

An apparatus for coordinated display of merchandise, said apparatus comprising in combination, a vertically disposed supporting frame including first and second side members and an intermediate member therebetween, said side members and intermediate member being parallel and coplanar, a first pair of grooves provided in opposing edges of the first side member and of the intermediate member, a second pair of grooves provided in opposing edges of the intermediate member and of the second side member, said intermediate member being shorter than said side members and being disposed so that upper and lower end portions of the side members project respectively above and below the upper and lower ends of the intermediate member, a table-like panel having a rear edge portion extending between said connected to said side members in a plane below the lower end of said intermediate member, a cross member having its ends slidably received in the grooves of said side members below the lower end of said intermediate mem-

ber, said cross member resting on and being supported by said rear edge portion of said table-like panel, means connecting the lower end of said intermediate member to said cross member, a plurality of picture panels disposed in a vertical row and having opposite side edges thereof slidably received in said first pair of grooves with the bottom edge of the lowermost panel resting on said cross member, said picture panels illustrating different species of merchandise, a plurality of panel-like merchandise specimens disposed in a vertical row and having opposite side edges thereof slidably received in said second pair of grooves with the bottom edge of the lowermost specimen resting on said cross member, said merchandise specimens being transversely aligned with the respective picture panels and the identities of the merchandise species illustrated by the picture panels be-



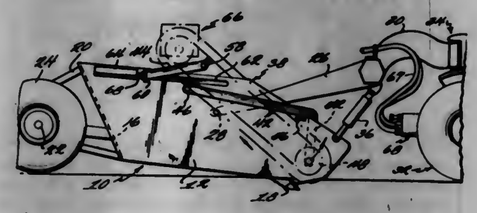
ing represented by the respective merchandise specimens, the upper edges of the uppermost picture panel and of the uppermost merchandise specimen being horizontally aligned with the upper end of said intermediate member, a transverse top member having its ends slidably received in the grooves of said side members and resting on said upper edges of the uppermost picture panel and of the uppermost merchandise specimen and on the upper end of said intermediate member, means connecting the upper end of said intermediate member to said top member, said connecting means at the lower and upper ends of the intermediate member being separable from said cross member and top member respectively, and a top display panel having its opposite side edges slidably received in the grooves of said side members with the lower edge of said top display panel resting on said top member.

3,191,321
SOCCER SHOE WITH BALL CONTROL SURFACE
Eugen Brittling, Heufenfelderstrasse 17, Schwaig, near Nuraberg, Germany
Filed Apr. 30, 1962, Ser. No. 191,112
Claims priority, application Germany, July 7, 1961, B 65,177; Dec. 22, 1961, B 65,310, B 65,311
7 Claims. (Cl. 36—2.5)



1. A soccer shoe having a toe portion and an upper which has inner and outer front vamp portions, said portions being provided with apertures which are filled with plugs which are made of a material having a compressibility different from that of the material of which said portions are made, said plugs being part of a single entity which incorporates a layer that is adjacent to said portions and lies against the inner surfaces thereof, said plugs being integral with said layer.

3,191,322
EARTH SCRAPER WITH PIVOTED CONVEYOR
Charles M. Johnson and James E. Lowder, Lubbock, Tex., assignors to Johnson Manufacturing Company, Lubbock, Tex., a corporation of Texas
Filed Feb. 8, 1963, Ser. No. 257,277
8 Claims. (Cl. 37—8)

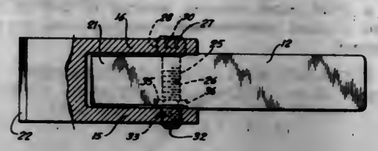


1. A mobile earth-scraping machine comprising: an open-front container having bottom, side and rear walls; a scraper blade carried by said container at the front of said bottom wall and an endless scraper-type, rigid-frame endless chain conveyor extending upwardly and rearwardly in the forward part of said container; means mounting said conveyor for movement in a vertical plane toward and away from the bottom wall of said container; a conveyor support arm on each side of the conveyor, each arm being pivoted at one end to the upper portion of said conveyor frame and at its other end to a pivot point on the adjacent side wall for pivotal movement in a vertical plane; means mounting said pivot points for movement with respect to said side walls whereby the rear end of said conveyor is free to swing upwardly and downwardly relative to said container so as to assure that said conveyor continuously acts on substantially the entire forward face of the pile of dirt which accumulates in said container during a scraping operation.

3,191,323
DIGGING TOOTH WITH NUT AND BOLT CONNECTING MEANS
Anthony F. Compagnoni, Chicago Heights, Ill., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,412
3 Claims. (Cl. 37—142)

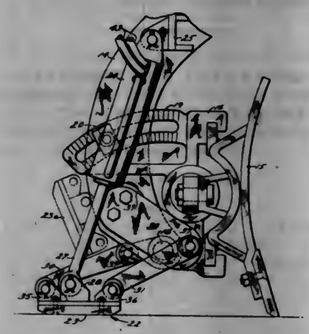
1. A tooth assembly of the kind described including a holder and a point being detachably secured thereto; said point having first and second opposite walls defining a recess in which is received a complemental part of the holder; said holder having first and second walls on said complemental part and having a bore therethrough, said bore terminating in an enlarged seat in said second wall of said holder opposite the second wall of said point; said point having a first opening in said first wall aligned with said bore and a second, non-threaded opening in said second wall opposite said seat and aligned with said bore; a bolt having a head portion for seating within said first opening in said point and into engagement with said first wall of said holder, said head portion being closely dimensioned to the first opening in said point to prevent relative movement between said first walls of said holder

and points, respectively; a nut seated in said seat in said holder and being wholly within said seat, said seat being dimensioned to prevent turning of said nut in said seat, and an end portion of said bolt extending into said non-threaded opening in said second wall of said point, said



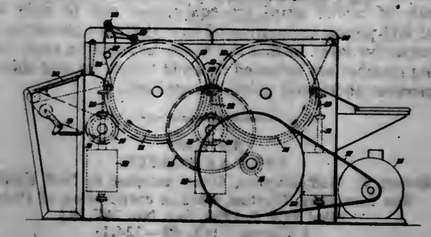
non-threaded opening being closely dimensioned to said bolt, engagement of said end portion with said non-threaded opening in said second wall preventing relative movement between said second walls of said point and holder, respectively.

3,191,324
BLADE STABILIZER FOR MOTOR GRADER
Marvin E. Beyers and John W. Carter, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 13, 1963, Ser. No. 287,633
1 Claim. (Cl. 37—156)



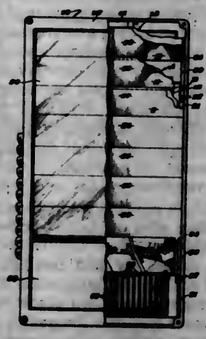
The combination with a grading machine of the rubber tired type having a grading blade with a cutting edge engageable with the ground, a skid plate of substantially the same length as the blade, means supporting the skid plate for contact with the ground rearwardly of the blade, means for adjusting the skid plate in a substantially vertical direction to reduce bounce of the machine and blade with respect to the ground, the means for supporting the skid plate comprising two sets of two links of equal lengths connecting the skid plate and the draft beam, a forward link of each set having a pivotal connection with the draft frame and extending rearwardly and downwardly to a pivot near the forward edge of the skid plate when the plate is on the ground, a rearward link of each set having a pivotal connection with the draft frame and extending rearwardly and downwardly to a pivot near the rear edge of the skid plate, and said rearward link pivotal connection with the draft frame being slightly lower than the forward one, whereby slight vertical adjustment may be made with the skid plate in a substantially horizontal position, and greater raising movement will effect upward swinging of the skid plate toward a substantially vertical position behind the blade.

3,191,325
IRONING MACHINES
William Jack, Jr., West Kilbride, Scotland, assignor to Baker Perkins Jaxons Limited
Filed Aug. 13, 1962, Ser. No. 216,553
Claims priority, application Great Britain, Aug. 24, 1961, 30,572/61
3 Claims. (Cl. 38—56)



1. An ironing machine for use in laundries comprising a padded roll mounted for rotation about a horizontal axis, a flexible heated trough embracing the lower portion of said roll and cooperating with said roll to provide a pressure zone for ironing articles fed through the machine, said trough consisting of a first metal plate having a steam channel cut in one surface thereof in serpentine configuration and a second metal plate welded in face to face relation against the first metal plate and over said steam channel, said first metal plate being thicker than said second metal plate, jacks beneath the trough which apply upward pressure to the ends of the trough and means for rotating the rolls to feed articles through the machine.

3,191,326
AUTOMATIC MAPS
Imre Lucas, Lynn, Crowborough, Sussex, England
Filed May 21, 1963, Ser. No. 281,867
Claims priority, application Great Britain, May 24, 1962, 20,018/62
4 Claims. (Cl. 40—65)



1. An automatic map comprising a framework structure, a map mechanism located in said structure and including a series of separate map sheets showing different map regions, each map sheet being composed of a plurality of strip elements arranged parallel with one another, a pair of carrier strips for each map sheet to which said strip elements of the sheet are attached so as to extend transversely of said carrier strips in their proper positional relationship, all such carrier strips being assembled side by side in parallel relationship so as to guide one another for longitudinal movement, and shifting members disposed transversely of and fixed one to each pair of carrier strips, and levers pivoted to one side of

said structure, each having a pin-and-slot form of pivotal connection to a respective one of said shifting members, and projecting from the other side of said structure for manual operation to shift longitudinally the respective pair of carrier strips relative to the other carrier strips in a predetermined sequence to expose to view the associated map sheet, and wherein said carrier strips of each pair of carrier strips are equi-spaced one to each side of said pivotal connection of their shifting member to the respective lever so that the forces imposed on each shifting member are balanced to avoid torque on said shifting member about said pivotal connection.

3,191,327
DISPLAY POSTER
Robert C. Neff, Dayton, Ohio, assignor to Neff Folding Box Company, Dayton, Ohio, a corporation of Ohio
Filed July 3, 1962, Ser. No. 207,203
4 Claims. (Cl. 40—124.1)



1. A lightweight display poster of the character described comprising, a rectangular sheet of relatively thin flexible paperboard having an uncoated side substantially incapable of legibly receiving print and an ink receiving coating on the other side thereof, said sheet being sufficiently thin and flexible to be printed in a high speed printing press, a pair of fold lines in said sheet parallel to the ends of said sheet and defining a central display panel therebetween with integral reinforcing flaps connected along said fold lines to opposite edges of said display panel, said reinforcing flaps having a total area substantially equal to the area of said display panel, a single easel formed in one of said reinforcing flaps and having an integral connection therewith for pivotal movement between a retracted position wherein it lies in the plane of said reinforcing flaps thereby minimizing the thickness of the poster in its unfolded condition and an extended position wherein it extends perpendicularly outwardly from said plane of said reinforcing flaps and supports said display panel in an upright position, and adhesive means interconnecting the entire area of contact between said uncoated side of said reinforcing flaps and the uncoated side of said display panel except for said easel so that said display panel and said reinforcing flaps cooperate to form an inexpensive lightweight paperboard poster having said coating only on the outer surfaces thereof to present a smooth outer appearance capable of receiving print, said poster being substantially free of warpage due to the balancing effect of said coatings on the outer surfaces and being capable of supporting itself in an upright position.

3,191,328
ANIMATED GREETING CARD
Howard E. Lohnes, Prairie Village, Kans., assignor to Hallmark Cards, Incorporated, Kansas City, Mo., a corporation of Missouri
Filed Mar. 19, 1963, Ser. No. 266,307
9 Claims. (Cl. 40—124.1)

(1) An animated greeting card comprising:
(a) a sheet member having a pair of panel members rotatable about an axis at their contiguous hingedly associated inner edges,
(b) one of said panel members having a cut-out portion forming an opening therein,
(c) a movable member hingedly connected to one edge of said opening,
(d) a third panel member secured to one of said pair of panel members and extending along one side thereof,



(e) a fourth panel member hingedly attached to said third panel member and adapted to extend slidably along the outside of the other of said pair of panel members,
(f) said fourth panel member having a tongue portion extending through said opening in said panel member,
(g) and means attaching said tongue to said movable member whereby opening and closing said card will animate said movable member.

3,191,329
DISPLAY CAP BALL-POINT PEN
Warren Shea, Jersey City, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Filed June 21, 1963, Ser. No. 289,534
4 Claims. (Cl. 40—334)



1. A display ball-point pen, comprising a barrel, a cartridge and a spring therein, a display cap therefor comprising a tubular base cap made of opaque material having engaging means formed on the inner wall thereof, an outer tubular transparent auxiliary cap positioned over the base cap and forming a compartment therebetween, said caps provided with top openings; a hollow fastener for pinching together the two edges of the top openings of the auxiliary and base caps to seal the compartment; a plunger mechanism for projecting and retracting the cartridge against the action of the spring, said plunger mechanism slidably extending through the hollow fastener positioned in the top opening of said caps, and having means cooperating with the cap engaging means for alternately holding the cartridge in a projected and retracted position, said auxiliary and base caps provided with bottom openings; means formed on the inner wall of the base cap; corresponding means formed on the outer wall of the barrel for engaging the means on the base cap, means for securing the edge of the bottom opening of the auxiliary cap to the edge of the bottom opening of the base member for closing the bottom of the compartment.

3,191,330
VIBRATION DAMPER FOR FIREARMS
Ole N. Olson, 2909 Quentin, Minneapolis, Minn.
Filed June 29, 1964, Ser. No. 378,669
3 Claims. (Cl. 42—1)



1. In a pistol having a barrel
(a) means for dampening the horizontal vibrations of the muzzle end of the barrel thereof,
(b) said means comprising structure associated with said muzzle end defining an axially elongated fluid-tight chamber positioned below said barrel and having an axis substantially parallel to the axis of said barrel,
(c) said chamber having a transversely cross-sectionally arcuate bottom wall,
(d) a substantial air space in the upper portion of said chamber and liquid metal occupying the lower portion of said chamber to permit free dampening movement of said liquid metal therein.

3,191,331
RIFLE BOLT AND SLEEVE FOR A RECEIVER HAVING AN OVAL BORE
Gerald I. Hurley, % Groves, Dufford, Nelson & Splecker, P.O. Box 1598, Grand Junction, Colo.
Filed Oct. 25, 1962, Ser. No. 233,017
3 Claims. (Cl. 42—16)



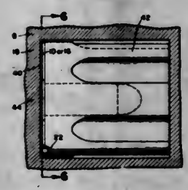
1. In a rifle including a barrel provided with a bore, a receiver having an oval bore extending therethrough disposed adjacent one end of said barrel with the bore thereof in alignment with the bore of said barrel, a bolt sleeve conformably shaped to fit within said receiver bore slidably mounted in said receiver bore, a bolt slidably mounted in a portion of said sleeve adjacent one end thereof, said bolt having a head on one end and a cylindrical shank conformably shaped to fit the interior of said sleeve, there being a closed ended slot in said shank, said slot having a straight portion adjacent said head and a curved portion remote from said head, said head being conformably shaped to fit said receiver bore, a pin traversing said slot and anchored in said sleeve, said bolt upon sliding movement of said sleeve in one direction executing a quarter of a turn, said receiver bore having a portion adjacent one end provided with opposed abutments engageable with said head upon execution of said quarter turn, and a firing pin extending slidably through said bolt shank from one end to the other and through said bolt head, and through said traversing pin.

3,191,332
FIREARM MAGAZINE
Edward J. Ardolino, 6 Whiting Farms Road, Branford, Conn.
Filed May 29, 1963, Ser. No. 284,205
5 Claims. (Cl. 42—50)



1. In a system of interchangeable magazines for a firearm a first magazine and a second magazine; means for coupling said magazines together comprising a first stud and a first aperture mounted on said first magazine; a complementary second stud and a complementary second aperture mounted on said second magazine; said first aperture receiving said second stud and said second aperture receiving said first stud respectively each in fitting relationship; each of said studs provided with a neck; each of said apertures provided with a locking member for engaging said necks when said studs are received in said apertures respectively to retain said studs therein; resilient means for biasing said locking members in locking engagement with said necks respectively whereby said magazines are retained against unintentional separation after being coupled together.

3,191,333
CARTRIDGE REVOLVER SAFETY DEVICE
Alexander Kolten, 2368 Hollyridge Drive, Los Angeles 28, Calif.
Continuation of application Ser. No. 140,395, Sept. 25, 1961. This application Feb. 18, 1964, Ser. No. 346,586
4 Claims. (Cl. 42—59)



1. In combination, a revolver of the type having a cylinder, a firing plate spaced from an end of said cylinder by a clearance space, a plurality of chambers in said cylinder wherein cartridges may be inserted with their rims extending beyond said cylinder and into said clearance space between said end of said cylinder and said firing plate, and a safety device comprising a disc having openings through its entire thickness, said openings through said entire thickness being larger than said cartridge rims to permit said cartridge rims to be slidable through said openings in either direction, said disc being sufficiently thick to substantially enclose the cartridge

rims between the walls of said openings, and means for securing said disc to said breech end of said cylinder, with said openings aligned with the chambers of said cylinder.

3,191,334
GUN SPRING FIRE-CONTROL MECHANISM
Jay P. Jarvis and Edwin S. Vartanian, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Jan. 27, 1964, Ser. No. 340,332
8 Claims. (Cl. 42—69)



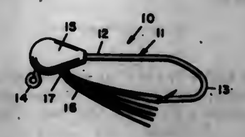
4. In a fire-control apparatus for a firearm having a trigger member, the combination comprising a hand lever-operated safety catch for said trigger, a trigger-operated sear for holding and releasing a hammer, a transverse pin member pivotally mounting said catch, and a bifurcated spring member including a pair of fingers and a base portion, said base portion of said spring member having one side abutting a portion of the firearm, said pin member engaging said fingers of said spring member on the other side of said spring member at a point adjacent said base portion, one of said fingers biasing said safety catch into trigger-blocking safety relationship, and the other of said fingers biasing said sear into holding relationship with said hammer.

3,191,335
FISHING LURE RETRIEVER
Herbert H. Sobetzer, 4771 Broadway Ave., Depew, N.Y.
Filed Mar. 4, 1963, Ser. No. 262,733
3 Claims. (Cl. 43—17.2)



2. In a fishing lure retriever, the combination comprising a longitudinally split tubular body having external threads at opposite ends extending to the end extremities, each of said external threads being convergently tapered axially of said body toward the corresponding one of said end extremities, a first longitudinally split ring having internal threads engaging said threads at one of said ends, and a second longitudinally split ring having internal threads engaging said threads at the other of said ends, each of said internal threads being convergently tapered axially of said body toward the corresponding one of said end extremities.

3,191,336
FISHING LURE AND METHOD OF MAKING THE SAME
Carl R. Cordell, Jr., 1211 Richard St., Hot Springs, Ark.
Filed Sept. 24, 1962, Ser. No. 225,715
3 Claims. (Cl. 43—42.24)



2. In a fishing device, the combination of a lead body, a tuft of filaments of material having a melting point lower than that of lead, a sleeve of material having a melting point higher than that of lead, said sleeve enclosing an end portion of said filament tuft and being embedded therewith in said body, terminal ends of filaments in said tuft projecting beyond said sleeve, said projecting terminal ends being embedded in said body and forming laterally expanded anchorage means in said body whereby to prevent the filaments from being withdrawn.

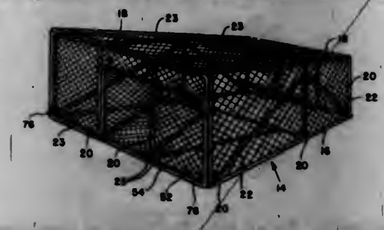
3,191,337
MINNOW BUCKET
John W. Faust, 207 E. Earl St., Anderson, S.C.
Filed Dec. 10, 1962, Ser. No. 243,323
1 Claim. (Cl. 43—57)



A portable minnow bucket including, a first container open at the top thereof, a receptacle for batteries carried by said first container for access externally thereof, a horizontal partition, means removably supporting said partition in the lower portion of said first container, a motor operated by said batteries, a compressor operated by said motor, said motor and compressor carried within said first container and mounted on the lower surface of said partition, a second smaller, water-receiving container carried within said first container above said partition, an air dispensing means contained within the lower portion of said second container, and an elongated air line of sufficient length to permit the withdrawal of said second container from said first container and said line extending upwardly from said compressor to a point approaching the top of said second container and downwardly to said dispensing means.

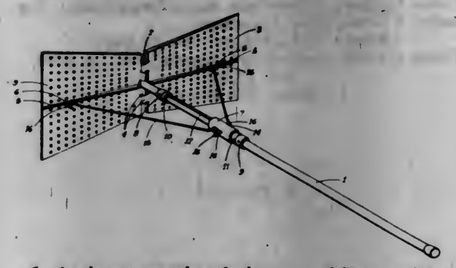
3,191,338
CONVERTIBLE AND NESTING COMMERCIAL CRAB TRAP
Stanley R. G. Burgess, 610 W. 1st, Aberdeen, Wash., and Roy C. Furford, Box 245, Westport, Wash.
Filed Dec. 20, 1961, Ser. No. 160,791
2 Claims. (Cl. 43—102)

1. A convertible and nesting commercial crab trap comprising: a pot composed of a bottom frame, a top frame, side walls and end members; said top and bottom frames being substantially trapezoidal and wider at one end with respect to the opposing end; said bottom frame being substantially horizontal, said top frame sloping toward the narrower end of said pot forming a large end higher and wider than the opposing lower and narrower small end member; a plurality of struts connecting said top and bottom frames forming tapering side walls; said trapezoidal bottom frame, said sloping trapezoidal top frame and the inclined tapering walls forming a trap which is nestable in a similar trap to conserve space; a plurality of substantially diagonal bracing members reinforcing said top and bottom frames, side walls and end members; both end members having entrance tunnel openings; suitable mesh material secured to said top and bottom frames, side walls and end members exclusive of said entrance tunnel openings; said large end member having hinge and locking devices forming a closure door,



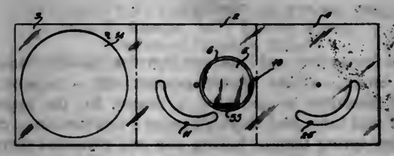
and said small end member being fixedly secured; said entrance tunnel openings each being fitted with an entrance tunnel, said entrance tunnels having upwardly sloping mesh covered bottom surfaces, downwardly inclined mesh covered top surfaces and tapering inclined mesh covered side walls to facilitate nesting; said closure door hinge permitting a swing through substantially three quarters of a circle and disengageable to allow removal of said closure door; said hinge and locking devices including two spaced apart short pieces of tubing secured and parallel to the top of said closure door, two spaced apart short pieces of tubing secured and parallel to the top frame of said pot in juxtaposition to said tubing secured to said closure door, and U-shaped hinge pins having two parallel members disposed to engage said tubing members.

3,191,339
INSECT SWATTER
Harold D. Dougherty, P.O. Box 65, Farmersville, Calif.
Filed Dec. 18, 1961, Ser. No. 160,120
8 Claims. (Cl. 43—137)



1. An insect swatting device comprising an elongated handle, a pair of swatter flaps, means hinging the flaps at adjacent ends on the front end of the handle for swinging motion of said flaps from oppositely laterally projecting initial positions to forwardly projecting positions in face to face engagement, a member loosely slidably supported by the handle, such member being adapted to slide forwardly from an initially retracted position lengthwise of the handle, stop means on the handle to limit forward and rearward sliding movement of said member, and connecting means between said member and flaps operative to impart such swinging motion to said flaps so as to forcibly clap the same together upon and in response to such forward sliding movement of said member; said member being relatively heavy whereby upon the handle being manually thrust forwardly and then abruptly stopped, said member will advance of itself by reason of inertia.

3,191,340
AMUSEMENT AND EDUCATIONAL DEVICE FOR SELECTIVELY DISPLAYING PICTURES BEHIND A TRANSPARENT CONTAINER CONTAINING LOOSE, SHIFTABLE PIECES
Leo V. Jacobson, 127 W. Swon Ave., Webster Groves, Mo., and Beverly W. Taylor, 1820 St. Catherine Lane, Florissant, Mo.
Filed Mar. 19, 1962, Ser. No. 180,453
4 Claims. (Cl. 46—37)



1. An amusement and educational device comprising a one-piece frame having upper, lower and central leaves each hinged to another on an edge and at least the upper and central leaves being secured together flatwise, the upper leaf having an aperture, a flanged transparent container with a part projecting through said upper leaf aperture and with its flange on the underside of said upper leaf, said container containing loose pieces of material shiftable within said container, the central leaf having an aperture below the aperture in the upper leaf, said apertures sufficiently coextensive that a picture framed within the upper leaf aperture and visible therethrough is also framed within the central leaf aperture, and means, connected to the lower leaf and free of said central leaf, mounting a plurality of pictures for selective viewing through said transparent container.

3,191,341
METHOD OF POWERING A PRECESSION TOY
Lynn W. Martin, 2633 Grail, Wichita, Kans.
Filed Oct. 10, 1960, Ser. No. 61,745
2 Claims. (Cl. 46—65)



1. The method of powering a spinning top comprising the steps of, spinning a top having a spherically shaped tip on a movable surface that is large in comparison to the major diameter of the top, manipulating the movable surface by rocking same to obtain and maintain a continually changing skew relation between the spin axis of said top and the axis of said surface to thereby cause said spinning top to move in substantially an annular path on said movable rocking surface in the same direction as the direction of rotation of said top, continuously positioning the movable surface so that said top continually moves in a downhill direction on said surface under the influence of gravity wherein a torque is applied to the spherical shaped tip sufficient to overcome normal friction and windage losses.

3,191,342
TOY ROCKET LAUNCHER
James C. Chalmers, 20 De Savery Crescent, Toronto 7, Ontario, Canada
Filed Apr. 19, 1962, Ser. No. 188,801
1 Claim. (Cl. 46—74)



In a toy rocket and launcher therefor, the combination of an elongated tube having an open end, a tapered toy rocket insertible in said tube, a closure for the opposite end of said tube, said closure having a slot therein, a compression spring therein having one end extended through and secured in said slot, a plurality of radial ribs interiorly of said tube, said ribs defining an enclosure annularly encompassing said spring and said tapered rocket at the widest diameter thereof, thereby guiding said rocket at the widest diameter thereof as it leaves said tube, a projection on the outer side of said tube adjacent the open end thereof, a spring biased trigger place pivotally mounted on said projection, said tube having a side opening therein adjacent said projection, an angularly disposed tongue on said trigger plate extended through said side opening engaging said toy rocket in said tube, said rocket including tail fins adapted to be positioned between said ribs, a soft nose, a groove engageable by the end of said tongue, said ribs being reduced in thickness adjacent the open end of said tube forming a shoulder and said rocket having a rim thereon which contacts said shoulder to prevent excessive insertion of the rocket into said tube.

3,191,343
OBJECT PROPELLING MOVABLE TOY
Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif.
Filed Nov. 12, 1963, Ser. No. 322,644
13 Claims. (Cl. 46—103)



1. A simply constructed and operated movable toy adapted to improve a child's coordination during solitary play while sustaining interest with constant action but without requiring substantial skill or excessive activity on the part of the child, comprising:
(a) a toy having a body including rolling means for facilitating easy movement of said toy across a supporting surface;
(b) a propelling means mounted on said body for ejecting an object placed on said body;
(c) power means for moving said toy mounted on said body and charged by rotating said rolling means in a first direction; and
(d) trigger means mounted on said body for releasing said propelling means, said trigger means being actuated by said power means when a set level of power is reached during charging.

3,191,344
ILLUMINATED AERIAL TOP
Ralph A. Yaglian, 144 Elm St., Worcester, Mass.
Filed Feb. 19, 1962, Ser. No. 174,191
1 Claim. (Cl. 46—228)



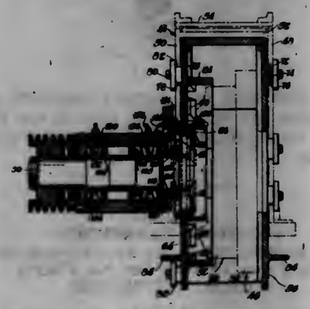
An illuminated "Yo-yo" including a pair of translucent cups, means for detachably connecting said cups in spaced relation, a plurality of pins mounted in each cup, each cup containing an illuminating unit comprising a combination battery-engaging plate and electric light bulb supporting bracket, of resilient, electrically conducting material, the battery-engaging plate being shaped to conform to the contour of one end of a battery within the confines of a plurality of said pins, and a second battery-engaging plate of electrically conducting material, said plate being shaped to engage and be supported by the other end of the battery within the confines of a second plurality of said pins, one end of said plate forming a contact for the electric light bulb normally spaced therefrom, and a cord, one end of which is convoluted on said means for effecting spinning of the "Yo-yo," under manipulation of the free end of the cord, for lighting said units by vibrating the resilient brackets, or opening and closing the circuits.

3,191,345
SPACER FOR BUILDING CONSTRUCTION
Ernst Schwachula, Essen (Ruhr), Germany, assignor to Firma Ingeborg Schwachula, K.G., Essen (Ruhr), Germany, a corporation of Germany
Filed Feb. 8, 1961, Ser. No. 87,948
Claims priority, application Germany, Feb. 11, 1960, Sch 27,409
2 Claims. (Cl. 50—519)



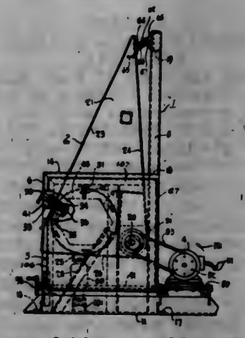
1. A spacer for maintaining a reinforcing element in spaced relation to a base, said spacer comprising two substantially identical members interfittingly interlocked in mutually inverted relationship, each member comprising a substantially flat body portion having an element-receiving seat at the geometrical center thereof, each member further including a recess extending from a first edge of said body portion to said seat and communicating therewith, each recess being defined by serrated bounding edges, and oppositely extending integral legs on each of said body portions, said legs extending from a second edge opposite said first edge to said seat, one of said legs on each member being laterally enlarged beyond the outline of the other leg on opposite sides thereof and having serrated edges shaped complementary to the serrated edges of said recess and interfitted therewith, the oppositely extending legs and said second edge on one of said body portions constituting a stabilizing base for said spacer.

3,191,346
BLASTING WHEEL CONSTRUCTION
Howard S. Chambers, Chambersburg, Pa., assignor, by mesne assignments, to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Aug. 9, 1961, Ser. No. 130,313
4 Claims. (Cl. 51—9)



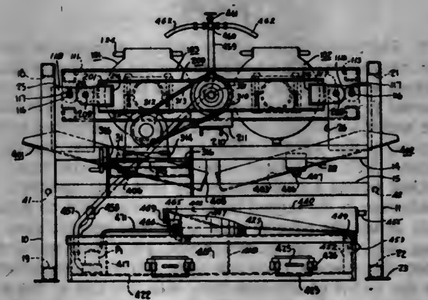
2. A blasting wheel assembly for projecting a stream of blastant particles at work articles, said assembly including a projecting wheel with outwardly extending propelling vanes, a walled housing covering said wheel for guarding against the escape of particles in any undesired direction, wear plates lining said walled housing, each of said wear plates having a housing face disposed toward said housing and an interior face disposed toward said wheel, said interior face being smooth and imperforate, spaced bosses on said housing face of each of said wear plates projecting through said walled housing and having cast in place nuts therein, and threaded fasteners secured to each of said nuts and to said walled housing.

3,191,347
APPARATUS FOR ABRASIVE FINISHING OF ARTICLES BY VIBRATORY ACTION
John F. Rampe, 3417 Fairfax Road, Cleveland Heights, Ohio
Filed Apr. 17, 1962, Ser. No. 188,128
15 Claims. (Cl. 51—163)



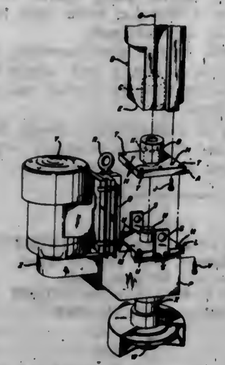
11. A vibratory finisher comprising a frame structure, a carrier including means providing a compartment for receiving and holding a loose mass of articles to be finished and abrading media to accomplish the finishing,
resilient means reacting against the frame structure and exerting a force component on the carrier along a vertical axis through the compartment; stabilizing means connecting the carrier to the frame structure for relative movement,
said stabilizing means being spaced above the compartment a distance more than twice the height of the compartment,
and rotary eccentric means interconnecting the carrier and the frame structure and adapted to impart orbital movement to the carrier compartment and a received mass,
the rotational axis of said eccentric means being below the center and spaced horizontally beyond the vertical projection of the compartment.

3,191,348
APPARATUS FOR ORBITAL FINISHING
John F. Rampe, 3417 Fairfax Road, Cleveland Heights, Ohio
Filed Mar. 1, 1963, Ser. No. 261,981
18 Claims. (Cl. 51—163)



1. A vibratory device for finishing articles, said device comprising:
tub means for containing a load of such articles and finishing media,
counterpoise means having a mass substantially equivalent to the mass of the tub means including the design load,
eccentric means journaled in both the tub means and the counterpoise means for rotation about an axis in close juxtaposition to the centers of inertia of the tub means and of the counterpoise means,
the tub means and the counterpoise means being coupled through the eccentric means in centrifugal force compensating opposition to one another,
frame means,
resilient means connected between the frame means and both the tub means and the counterpoise means at points spaced from said axis, said resilient connecting means constituting the sole support for the tub means, the counterpoise means and the eccentric means and supporting the tub means and the counterpoise means in non-rotative relation to one another and to the frame means,
drive means operatively associated with the eccentric means for rotating it, and
said tub means having a concave bottom shaped about an axis substantially parallel to the eccentric axis whereby rotation of the eccentric means produces orbital motion of the tub means and the counterpoise means in balance with one another and in a plane normal to the eccentric axis and the load is induced to progress by mass movement across the concave tub bottom in planes generally normal to said axes and over closed paths about the tub axis.

3,191,349
ATTACHMENT MOUNTING MEANS FOR A BORING MILL RAM
Raymond A. Hahn, Cincinnati, Ohio, assignor to Setco Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 16, 1963, Ser. No. 309,213
8 Claims. (Cl. 51—241)



1. The combination of an axially reciprocable boring mill ram having a head end face including a socket axially aligned with the ram axis, said end face being in a plane normal to the ram axis and having formed therein about the socket a plurality of tapped holes for receiving anchor screws, a flat adapter plate having apertures therein to register with the tapped holes of the ram end face, and anchor screws accommodated by said plate apertures for anchorage in the tapped holes of the ram face, to detachably secure the adapter plate in flatwise contact upon the ram end face, an axially bored pilot stud upstanding upon the adapter plate for close fitting accommodation by the socket of the ram face, with the axis of the pilot stud bore in alignment with the socket axis, the adapter plate having a flat nether face in which the pilot stud bore is exposed, and having further a group of tapped holes spaced from the apertures aforesaid and located near the perimeter of the adapter plate, a plurality of tool unit suspension screws removably receivable by the tapped holes of the adapter plate, and a tool unit including a flat mounting pad having apertures therein registrable with the tapped holes of the adapter plate, the last mentioned tapped holes and apertures being receptive of the unit suspension screws for holding the mounting pad in flatwise contact against the nether face of the adapter plate, and an upstanding locating stud on the mounting pad closely accommodated by the pilot stud bore of the adapter plate, with the axis of the pilot stud bore coinciding with the axis of the mounting pad locating stud, whereby the mounting pad and the tool unit associated therewith are rigidly suspended from the adapter plate and the adapter plate is in turn rigidly suspended from the ram end face in precision relationship determined by the pilot elements aforesaid.

3,191,350
POLISHING APPARATUS
Donald R. Yokel, Glenshaw, Pa., assignor to Schaffner Manufacturing Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 8, 1963, Ser. No. 250,114
9 Claims. (Cl. 51—336)

9. A polishing wheel for polishing an article including an annulus of flaps, the radially inner surfaces of said flaps being bonded together along a predetermined length radially from the inner ends of said flaps to form a hub for said wheel and the remaining portions of said flaps extending as leaves from said hubs, the flaps in said annulus including a flap of a first type and a flap of a second type, and said flaps being so formed that when said flap of said first type and said flap of said second type



are placed with their hub portions coincident and the leaves abutting, the leaves of the flaps of said first type overlap the leaves of the flaps of said second type on at least one side.

3,191,351
ICE DRILL SHARPENER
Louis A. Balz, 123 N. 3rd Ave., Wausau, Wis.
Filed Apr. 29, 1963, Ser. No. 276,376
1 Claim. (Cl. 51—358)



An ice drill sharpener including a flexible disc having one surface at least partially coated with abrasive material and having a central hole and a short radial slot communicating with said hole, the total length of the slot being substantially less than the radius of said disc, an arbor extending through said hoe, the arbor carrying a keying member in keying engagement with said slot, and an extension member pivotally secured at one end to one end of said arbor.

3,191,352
CONTAINER SEALING METHOD AND APPARATUS
David G. Nelson and Frank M. Kelly, Richmond, Ind., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1962, Ser. No. 224,456
11 Claims. (Cl. 53—22)

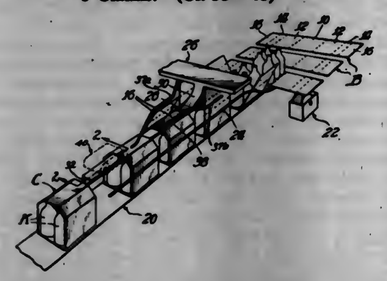
1. In the art of sealing product-filled containers having an external screw thread neck finish, the method which comprises placing a plain-skirt cap loosely on the mouth of a container, subjecting the cap to the lifting force of upwardly and inwardly directed vapor jets directed against the cap skirt to raise the cap relative to the container and admit vapor into the head space of the container for an interval sufficient effectively to purge air therefrom, forcibly pressing the cap down into hermetic sealing relationship with the mouth rim of the container to trap the admitted vapor in said head space while the cap is subjected to said vapor jet flow, and

progressively deforming the cap skirt around its entire periphery and downwardly into conformity with the



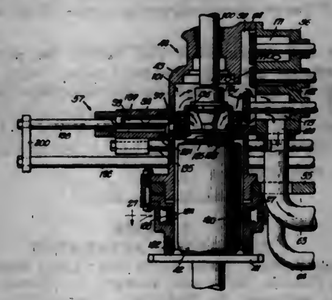
screw thread on the container neck while the cap is being forcibly pressed down in said sealing relationship.

3,191,353
APPARATUS FOR GLUING OVERWRAPPED PORTIONS OF WRAP-AROUND BOTTLE CARRIER CARTONS
Francis A. Childsey, Jr., Wayne, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,374
3 Claims. (Cl. 53—48)



1. Apparatus for sealing overlapped top wall sections of a tubular, open-end, wrap-around, paperboard carrier carton containing two parallel rows of necked bottles arranged in side-by-side relation, said apparatus comprising:
(a) conveyor means;
(b) a first compression member located over the conveyor means and presenting an outwardly facing surface disposed between the necks of the bottles of adjacent rows in substantial alignment with the upper extremities of the bottles;
(c) said first compression member including an elongated anvil-like mandrel element supported at the trailing end in a cantilever arrangement and having an unsupported free leading end;
(d) means for applying adhesive to a surface of at least one of the carton top wall sections of said blank;
(e) means acting as the carton advances for folding portions of the blank around the outer sides of the bottles and the top wall sections of the blank over the bottles into overlapped abutting relation with each other and against said first compression member; and
(f) a second compression member located over a portion of said first compression member and presenting an inwardly facing surface spaced a slight distance from the surface of said first compression member for cooperation therewith to compress said overlapped carton top wall sections between said surfaces.

3,191,354
VACUUM CAPPING MACHINE AND COMPONENTS THEREOF
Robert K. McElroy, Elmhurst, and Frank P. Lawler, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 7, 1961, Ser. No. 122,498
30 Claims. (Cl. 53—96)

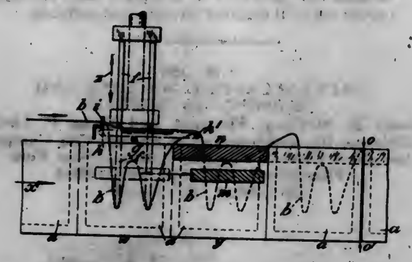


1. A machine for automatically evacuating air from a filled container and capping the same, said machine comprising a center column, a container supporting assembly rotatably mounted on said column near the base thereof, a container evacuation and capping assembly rotatably mounted on said column above said container supporting assembly, drive means for said assemblies to rotate the same in synchronized relation, said container evacuation and capping assembly including container confining chambers spaced radially outwardly from said column, cam actuated evacuation means and cap delivery means forming a part of each chamber, and a cam actuating assembly mounted on said column above said container evacuation and capping assembly and fixed against rotation relative to said column, said cam actuating assembly having a portion thereof extending downwardly between said chambers and said column for actuation of said evacuation and cap delivery means.

3,191,355
TEA BAGS AND APPARATUS FOR USE IN THEIR MANUFACTURE
Fulvio Morpurgo, Via Genova 23, Trieste, Italy
Filed Jan. 9, 1961, Ser. No. 81,329
Claims priority, application Italy, Jan. 16, 1960, 743/60
5 Claims. (Cl. 53—134)

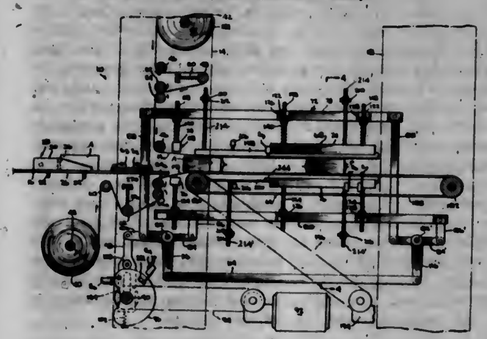
1. In a tea bag filling and sealing apparatus of the class in which a continuous ribbon of interconnected tea bags of heat sealable flexible sheet material, all having mouths opening through a single mouth defining edge of the ribbon, is moved intermittently in the direction of its length past relatively spaced heat sealing and cutting stations in uniform increments such that each bag dwells at a predetermined location in advance of said heat sealing station, the combination with said filling and sealing apparatus of apparatus for inserting suspension strings in the respective bags in succession comprising, string guiding

means for guiding string to a point in line with the mouth of the bag at said location, a string guide for holding a bight of the string over the mouth, a pronged pusher movable to push part of the bight into the bag at the said location, a retaining member for keeping back an intermediate part of the bight between the prongs of said pusher, said retaining member being retractable to



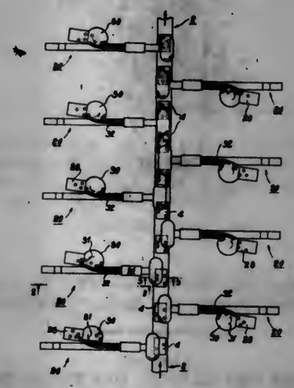
release said intermediate part before the prongs have fully entered the bag, clamping means being provided to grip the string in the zig-zag formation upon withdrawal of the said prongs, said clamping means being movable with the feed movement of the bags to hold the string while the ribbon of bags is fed to bring a fresh bag to said location.

3,191,356
PACKAGING APPARATUS
Seymour Zelnick, Toms River, N.J., Lloyd Barton, Jackson Heights, N.Y., and Edward A. Wetzel, Hillside, N.J., assignors to Weldotron Corporation, Newark, N.J., a corporation of New Jersey
Filed Apr. 16, 1962, Ser. No. 187,699
15 Claims. (Cl. 53—182)



1. Apparatus for packaging articles in heat-sealable material, comprising:
(a) means for supplying a pair of superposed webs of said material for movement longitudinally in the direction of their lengths,
(b) means movable in said longitudinal direction to insert an article endwise between said webs of material,
(c) heat-sealing and cutting means extending transversely of said webs of material and operable in response to the movement of said movable means for sealing and cutting said material along a transverse line, and
(d) other heat-sealing and cutting means, longitudinally spaced from said first mentioned heat-sealing and cutting means, and extending longitudinally of said material, and operable concurrently with said first mentioned heat sealing and cutting means for sealing and cutting said material along a longitudinal line.

3,191,357
APPARATUS FOR PACKAGING CONFECTIONS
George F. Hawley, Bogota, N.J., Hugh W. Murphy, Saratoga, Calif., Jean E. Moulder, Hartsdale, N.Y., Joseph H. Miller, Old Greenwich, Conn., and Robert F. Crane, Scarsdale, N.Y., assignors to AEL Food Machinery Division, Inc., Stamford, Conn.
Filed June 24, 1960, Ser. No. 38,543
27 Claims. (Cl. 53—240)

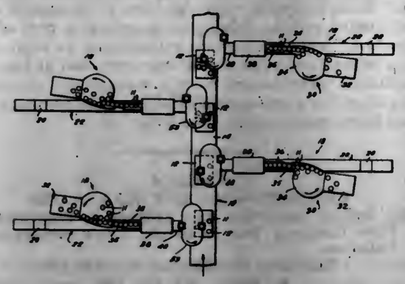


1. A system for wrapping articles and for loading the wrapped articles into boxes comprising a main conveyor adapted to carry the boxes to be loaded, a wrapper conveyor for transporting the wrappers, drive mechanism for moving continuously said wrapper conveyor and said main conveyor, wrapper dispensing apparatus adapted to place the wrappers upon said wrapper conveyor at spaced intervals while said wrapper conveyor continues to move, article supplying mechanism for releasing the articles at timed intervals in synchronism with the movement of said spaced wrappers, wrapper loading mechanism receiving the articles from said supplying mechanism and placing the articles into said wrappers as said wrappers move along said wrapper conveyor, box loading apparatus positioned near said main conveyor and having a movable inserter mechanism travelling along a closed path including a portion which is above a box on said main conveyor, said inserter mechanism receiving a wrapped article from said wrapper conveyor, said box loading apparatus including control means for lowering said insert mechanism into a box while said inserter mechanism is moving along said portion of its path in synchronized relationship with the box for loading the wrapped article therein in a predetermined position within the box.

3,191,358
AUTOMATIC PACKAGING MACHINERY
Robert E. Scherr, Old Greenwich, and Jean E. Moulder, Huntington, Conn., George F. Hawley, Bogota, N.J., and John H. Buettner, Ridgefield, Conn., assignors, by mesne assignments, to AEL Food Automation Division, Inc., Stamford, Conn.
Filed June 18, 1962, Ser. No. 203,280
22 Claims. (Cl. 53—240)

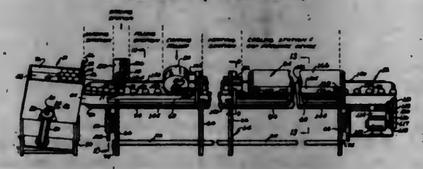
1. A machine for loading confections into containers such as boxes comprising main conveyor means for carrying the containers to be loaded, confection supply means for supplying the confections to be loaded, confection positioning means for positioning the supplied confections at a predetermined position near said main conveyor

means, movable jaw means for grasping the confections at said position and for placing the confections into said containers, means for moving said jaw means toward the



containers, and orientation control means for turning said jaw means after grasping the confection and as said jaw means move toward the containers before placing the confections into the containers.

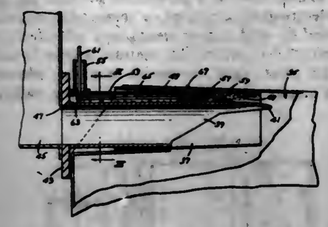
3,191,359
MACHINE FOR CONTINUOUS FILLING AND SEALING OF CANS HAVING HEAT SEAL ENDS
Martin H. Stark, 223 N. Porter, Saginaw, Mich.
Filed Dec. 18, 1961, Ser. No. 159,993
2 Claims. (Cl. 53—282)



1. An apparatus for applying a metallic closure to a fibrous can comprising a continuous conveyor for conveying cans from a loading station to a discharge station, means for loading cans on the conveyor at the loading station, a filling station traversed by the conveyor where the cans can be filled and a closure cap placed on each can, the caps each bearing a heat-activatable adhesive, a roller spaced from the conveyor and having its axis disposed tranversely to the direction of travel of the conveyor, means for adjusting the spacing between the conveyor and the periphery of the roller to a spacing corresponding to the height of the can to enable the roller to press the closure caps into a seated position on the cans as they pass between the roller and the conveyor, a heating station traversed by the conveyor downstream from the roller and including radiant heating means spaced above the conveyor to overlie the closure caps for heating the seated closure caps to activate the adhesive.

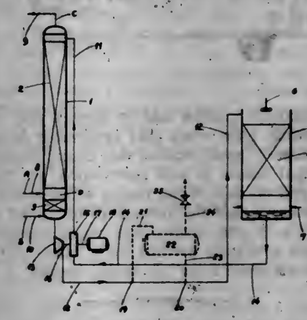
3,191,360
APPARATUS FOR ADHESIVELY BONDING SURFACES
William E. Meissner, Devon, Pa., and Gardiner Lane, Darien, Conn.; said Meissner assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Apr. 10, 1961, Ser. No. 101,986, now Patent No. 3,151,427. Divided and this application Aug. 16, 1962, Ser. No. 217,406
12 Claims. (Cl. 53—383)

12. In a valve bag filling machine the combination comprising a filling spout adapted to be inserted into the valve opening of a valve bag, means for delivering a material to be packaged to and through said filling spout, a conduit opening along the outer periphery of said spout for containing tacky film-forming material, means for supplying tacky film-forming material to said



conduit, means for breaking the tacky film-forming material into individual masses as it is discharged from said conduit and means for inflating said individual masses of tacky film-forming material into a bubble form.

3,191,361
METHOD OF RELIEVING A HYDROGEN-CONTAINING GAS-MIXTURE OF READILY SOLUBLE GASES CONTAINED IN THE MIXTURE
Haldor Frederik Axel Topsøe, 73 Rønnegardsvej, Hellerup, Denmark
Filed Mar. 31, 1961, Ser. No. 99,892
1 Claim. Cl. (55—44)

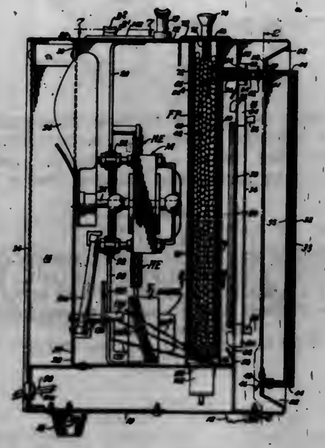


Method of removing CO_2 from a hydrogen-containing gas-mixture containing CO_2, comprising subjecting a current of the hydrogen-containing gas mixture under superatmospheric pressure to contact with water, thereby effecting an extraction of CO_2 therefrom together with some hydrogen dissolved together with said CO_2 in the said water, and subsequently contacting the aqueous solution thus obtained with gaseous nitrogen at substantially the same superatmospheric pressure as the absorption process so as to effect a substantial liberation of the said hydrogen dissolved by the water, mixing the hydrogen thus liberated, and non-dissolved nitrogen, with the current of hydrogen-containing mixture, and subsequently liberating the CO_2 from the aqueous solution in a step separate from the liberation of hydrogen, under a pressure lower than that used during the absorption process.

3,191,362
ELECTROSTATIC AIR PURIFIER
Louis M. Bourgeois, St. Louis, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 5, 1962, Ser. No. 171,109
8 Claims. (Cl. 55—126)

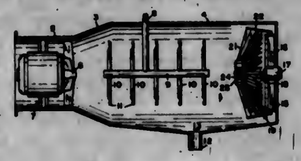
3. An air purifier comprising, in combination, casing means, a high voltage electrostatic air filter in said casing

means, a control switch in said casing means normally biased open for controlling energization of said electrostatic air filter, a ground switch in said casing means normally biased toward a grounding position for grounding said electrostatic air filter, a removable actuator element carried by said casing means and selectively removable therefrom for permitting manual access to said electrostatic air filter, said removable actuator element operating to engage and move said grounding switch away



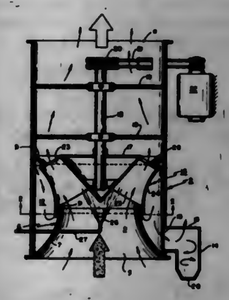
from grounding position and to engage and close said control switch only when said removable actuator element is properly positioned on said casing means so as to deny manual access to said electrostatic air filter, a removable grid on said casing means which when removed permits access to said electrostatic air filter, and connector means for said grid within said casing means and accessible for operation thereof only when said actuator element is removed from the casing means.

3,191,363
APPARATUS FOR TREATING AIR
William C. Martin, Jr., Syracuse, and Harris S. Rush, Clay, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 7, 1961, Ser. No. 101,579
6 Claims. (Cl. 55—257)



1. In an eliminator for removing droplets of water from an air stream, a rotatably mounted hub, a plurality of blades extending radially therefrom, each of said blades having a resinous material covering the outer peripheral edge thereof and at least a first planar portion and a second planar portion, said portions being angularly disposed with respect to each other and intersecting with a line drawn radially from said hub, said blades defining a plurality of axial paths each having at least one change in direction and means for at least partially enclosing the periphery of said blades, said means comprising at least one layer formed from a substantially continuous line dipped in a resinous material wound successively over said blade periperal edges to form a substantially uninterrupted surface, fabric means around a part of said one layer, said fabric means extending in an axial direction beyond one edge of said one layer, and at least one additional layer formed from a substantially continuous line dipped in a resinous material wound successively over said fabric means and said one layer.

3,191,364
CENTRIFUGAL DUST SEPARATOR
Stig Sylvan, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,320
8 Claims. (Cl. 55—257)



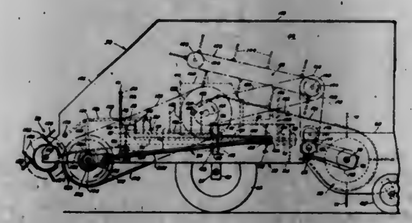
1. A dust separator for a dirty gas stream comprising:
(a) a housing having dirty gas inlet means and clean gas outlet means;
(b) partition means disposed within said housing to divide said housing into a primary chamber communicating with said dirty gas inlet means and said clean gas outlet means and a secondary chamber adjacent said primary chamber;
(c) said partition means having a passageway therein between said primary and said secondary chamber; and,
(d) a semi-axial flow-type impeller means completely disposed within said housing intermediate said dirty gas outlet and said clean gas outlet thereof to serve as the sole prime mover and centrifugal separator for said dirty gas stream, said impeller means cooperating with said housing to move said dirty gas stream therethrough as it simultaneously centrifuges and separates contaminant particles therefrom, said impeller means having an inlet side and an outlet side and including a rotatable hub member disposed in said primary chamber and spaced blade members extending radially from said hub member;
(e) said blade members being radially dimensioned to extend through said passageway so that said outer portions of the upstream and downstream edges of said blade members fall within said secondary chamber with the diameter of said outlet side of said impeller means being greater than the diameter of said inlet side so that the gas pressure at the inlet side is less than at the outlet side during rotational operation to maintain a pressure gradient in said secondary chamber with the gas flowing in said secondary chamber from said outlet side toward said inlet side whereby contaminant particles from said dirty gas stream centrifuged outwardly are readily passed into said secondary chamber.

3,191,365
MULTIPLE-USE BAG MEANS AND CLAMP FOR A VACUUM CLEANER
John M. Feeley, 21 Alaska Ave., Bedford, Mass.
Filed Nov. 18, 1963, Ser. No. 324,579
4 Claims. (Cl. 55—369)



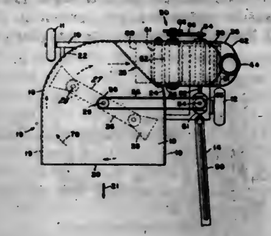
1. A multiple-use bag and clamp means for a vacuum cleaner, comprising: an air-transmissive dust-non-transmissive bag means of thin-sheet filter material defining a hollow interior chamber and having a vacuum cleaner connection end provided with vacuum cleaner connection means cooperable for removable sealed connection to a dirty air inlet portion of a vacuum cleaner, and having exit aperture-defining means at another location provided with clamp means exteriorly engaging and controllably removably closing said exit aperture-defining means, said clamp means comprising two opposed similarly transversely directed, substantially flat blade-like jaw members provided with rearwardly projecting spaced digitally engageable operating members and interconnecting ear members provided with transversely aligned aperture means and pivot pin means carried thereby, said pivot pin means being provided with biasing torsion spring means having at least one portion thereof in forcible engagement with the inside of one of said operating portions and having at least one other portion thereof spaced from said first mentioned portion in forcible engagement with the inside of the other of said operating members for biasing it outwardly away from the first mentioned one of said operating members.

3,191,366
HAY WAFER FORMING MACHINE
Joseph Molitoriez, East Lansing, Mich., assignor to Michigan State University, East Lansing, Mich.
Filed Mar. 18, 1963, Ser. No. 265,805
18 Claims. (Cl. 56—1)



1. A machine for making rolled units of hay comprising a rotatable hay wrapping spindle having a free discharge end, hay roll feeding and forming means for directing hay to and confining its becoming wrapped about the spindle to form a compressed hay roll of limited diameter, means for exerting an axial force upon the hay roll to move it along the spindle, and reciprocable means operative in a direction normal to the axis of said spindle after said axial force has moved said hay roll along the spindle for subdividing the hay roll into unit lengths while it remains on said spindle.

3,191,367
FORAGE HARVESTER
Bruce D. Schwalm, Leola, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,911
7 Claims. (Cl. 56—23)



1. A double cut forage harvester comprising, in combination, a wheel supported frame adapted for ground travel in a forward direction, a hood on said frame having a generally horizontally extending top wall and vertically extending walls depending therefrom, said walls defining a forwardly located inlet and a rearwardly located side discharge outlet, a rotary cutter within said hood having radially extending knife means and having a diameter traversing a major portion of said inlet, means supporting said cutter on said top wall for rotation about a vertical axis, said cutter severing a wide swath of standing crop material admitted to said hood through said inlet, said cutter subjecting the crop material to a plurality of cutting actions and discharging the cut material laterally through said side wall outlet, a housing having transversely disposed vertical side walls, a top wall and a bottom wall defining an infeed opening facing toward said hood outlet and forming a discharge opening spaced from the outlet, a reel type chopper within said housing and supported on the housing side walls for rotation about a fore-and-aft horizontal axis, a shear bar on said housing extending across said infeed opening and generally parallel to said horizontal axis, said chopper having angularly spaced knives successively cooperative with said shear bar, power means connected to said cutter and chopper, said power means including a fore-and-aft extending drive shaft to a forward axial end of said chopper and a transverse drive to said cutter, guide means carried on said frame between said hood outlet and said housing infeed opening to support and direct material discharged from said cutter to said chopper, said cutter discharging material directly to said chopper, and a spout connected to said housing in communication with said discharge opening and through which material passes that has been cut first by said cutter and then by said chopper.

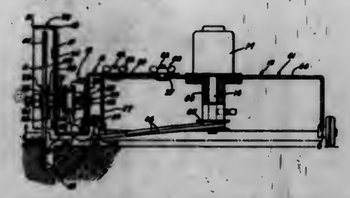
3,191,368
LAWN EDGER ATTACHMENT FOR POWER MOWER
Fred C. Hidalgo, 15360 Charmeran Ave., San Jose, Calif.
Filed Feb. 3, 1964, Ser. No. 342,114
4 Claims. (Cl. 56—25.4)

1. For mounting a lawn edger on the hood of a power mower having a drive shaft concentric to such hood and drivingly connected by a belt and pulley arrangement to a pulley on an arbor shaft having an edger blade at one of its ends, an attachment member comprising:
a single piece main body having a mounting plate disposed to overlie such hood and provided with slots located parallel to a line radially of the center of such hood,
bolt means on said hood extending through the slots in said mounting plate for securing the latter to said hood,

a U shaped frame formed on said mounting plate beyond the periphery of such hood and including a downwardly extending leg portion,

an integral bight portion extending laterally from the lower end of said downwardly extending leg portion in a direction opposite to said mounting plate,

a countershaft secured to said bight portion and the downwardly extending leg portion in the corner of merger thereof for supporting an idler pulley of such

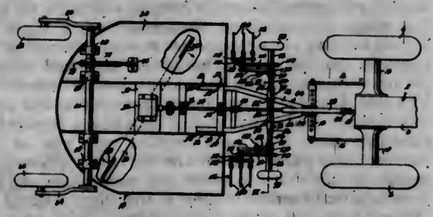


pulley arrangement at each end of said countershaft,

an upwardly extending leg portion formed integrally with said bight portion in parallel relation to said downwardly extending leg portion of said U shaped frame, and

bearings supported in alignment with each other and said leg portions radially of such hood and above and transverse to said countershaft for supporting such arbor shaft with a pulley of said pulley arrangement between said leg portions.

3,191,369
WEED PICK-UP ATTACHMENT FOR MOWING MACHINES
Frank Cowan, Rte. 1, Golden City, Mo.
Filed Aug. 28, 1964, Ser. No. 392,753
10 Claims. (Cl. 56—25.4)



1. For use in connection with a mowing machine adapted to be towed behind a wheeled vehicle and operable to cut a swath wider than the transverse wheel span of said towing vehicle, a weed pick-up attachment comprising:

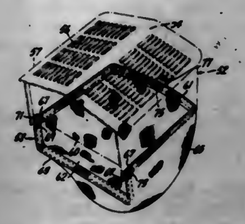
(a) a mounting member adapted to be affixed to said mowing machine forwardly of the cutter elements thereof and rearwardly of said towing vehicle,

(b) a pair of ground-engaging drive wheels carried rotatably by said mounting member and adapted to engage the ground respectively directly behind the rear wheels of said towing vehicle, and to be rotated by virtue of said engagement as said mowing machine is towed forwardly,

(c) a pair of weed pick-up reels disposed respectively directly behind each of said drive wheels and carried by said mounting member for rotation about an axis parallel to the axis of said wheel, said reel being disposed slightly higher than said drive wheel whereby to clear the ground, and

(d) drive means interconnecting each of said drive wheels with its associated pick-up reel, whereby the latter is driven by the former.

3,191,370
GRASS COLLECTOR FOR A LAWNMOWER
Isidore Epstein, New Hyde Park, N.Y., assignor to G. W. Davis Corporation, Richmond, Ind., a corporation of Indiana
Filed June 5, 1964, Ser. No. 372,994
2 Claims. (Cl. 56—202)



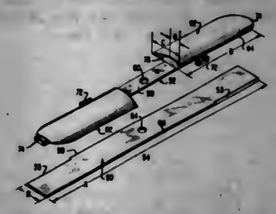
2. In a rotary mower,

a blade casing having an exiting area for cuttings,

a platform integral with the casing having an upper surface extending away from and below the exiting area of the casing, and

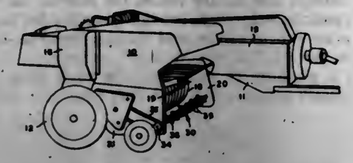
a collector having a rigid enclosed upper portion and a flexible lower portion, the lower portion including a vertically disposed generally C-shaped supporting element which is fastened at its ends to the upper portion and which forms an opening in the collector and a flexible bottom surface fastened at its perimeter to the generally C-shaped supporting element and the upper portion, the collector being removably positioned on the platform with the opening in the collector placed adjacent the exiting area of the blade casing, the flexible bottom surface conforming to the upper surface of the platform when positioned adjacent thereto and expanding and lowering the cuttings when the collector is removed from the platform.

3,191,371
AIRFOILS FOR ROTARY LAWN MOWER
William A. Brewer, Huntington, W. Va.
Filed Dec. 26, 1963, Ser. No. 333,589
9 Claims. (Cl. 56—295)



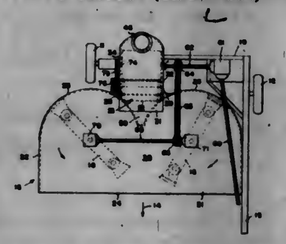
1. An improved cutting blade having portions in the form of airfoils of airplane wing configuration for a rotary lawn mower or the like having a generally vertical, high speed rotating shaft with the blade adapted to rotate horizontally adjacent the surface of a lawn, said blade comprising: a main portion in the form of a thin rectangular strip including longitudinally extending cutting surfaces disposed along respective blade leading edges, airfoils disposed on opposite sides of the blade axis of rotation, adjacent the blade cutting surfaces, and above the plane formed thereby, said airfoils including leading edges extending longitudinally, parallel to, but disposed rearwardly of the leading edges of said cutting surfaces, said airfoils further including a convex upper surface and a span dimension at least as large as the airfoil chord dimension whereby the presence of the airfoils provides greatly increased lift in the area of the rotating blade.

3,191,372
PICK-UP
John H. Shepley, Lancaster, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 29, 1964, Ser. No. 363,425
4 Claims. (Cl. 56—364)



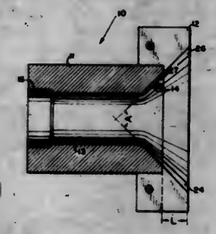
1. A pick-up structure for lifting crop material from the ground for delivery into a harvester comprising a frame structure wheel supported for travel in a forward direction, a main pick-up reel carried on said frame and extending transversely of the direction of travel, said pick-up being generally cylindrical and having a plurality of radially outwardly projecting crop engaging tines thereon, and auxiliary rotatable pick-up carried on said frame directly in front of said main pick-up and parallel thereto, said auxiliary pick-up having a diameter substantially smaller than the diameter of the main pick-up and comprising a shaft, a plurality of discs mounted on said shaft in axially spaced relation and extending in parallel vertical planes diagonal to the shaft, said discs overlapping in a direction perpendicular to said shaft and each disc having a plurality of radially extending substantially angularly spaced crop engaging fingers, and said auxiliary pick-up being operative to lift said crop material and pass the material over the auxiliary pick-up and rearwardly and discharge it directly into the path of said main pick-up tines.

3,191,373
FORAGE HARVESTER
Bruce D. Schwalm, Leola, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,910
3 Claims. (Cl. 56—504)



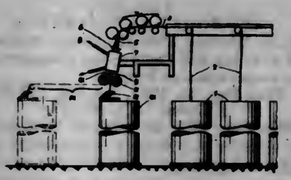
1. A double cut forage harvester comprising, in combination, a wheel supported frame adapted for ground travel in a forward direction, a hood on said frame having a generally horizontally extending top wall and vertically extending walls depending therefrom, said vertically extending walls having parallel portions, said walls defining a forwardly located inlet across the front of the hood for standing crop material and a center rearwardly located discharge outlet, a pair of rotary cutters located side by side within said hood and supported on said top wall for rotation about laterally spaced vertical axes, said horizontal top wall being uninterrupted through its horizontal extent and covering said rotary cutters, power means rotating one of said cutters in one direction and the other cutter in an opposite direction, both cutters cooperating to cut a swath of material substantially the distance between said parallel portions and discharging the material rearwardly toward said center outlet, a housing having laterally spaced side walls, a top wall and a bottom wall providing a discharge opening facing rearwardly and defining an infeed opening facing forwardly in register with said hood outlet, a reel type chopper within said housing and supported on said side walls, said chopper being rotatable on a horizontal transverse axis, a transverse shear bar on said housing and over which material passes on entering the housing through said infeed opening, said chopper having angularly spaced knives successively cooperative with said shear bar, guide means mounted on said frame in front of said housing opening to receive material discharged from said pair of rotary cutters and to direct the material to said chopper, and a rearwardly located spout on said housing in communication with said discharge opening and through which material passes that has been cut first by said pair of cutters and then by said chopper.

3,191,374
FORMING DIE
Sigmund Ege, Hastings on Hudson, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Dec. 15, 1961, Ser. No. 159,704
8 Claims. (Cl. 57—138)



1. In an apparatus for filling and stranding a cable strand of the type wherein a bank of putty-like filler material is retained at the upstream entrance of a strand-forming die the combination with said apparatus of a strand-forming die comprising a block having an internal bore, a split collar replaceable around said strand having a tapered aperture for retaining said bank, said aperture having a wide entrance and a reduced outlet, said outlet matching said bore and means for connecting said collar to said block with said outlet in registration with said bore.

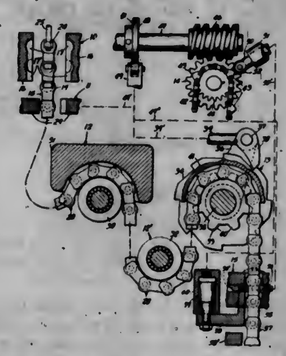
3,191,375
PROCESS FOR THE MANUFACTURE OF A TWISTED YARN
Werner Naegeli, Winterthur, Switzerland, assignor, by mesne assignments, to Pavena A.G., Basel, Switzerland, a corporation of Switzerland
Filed Aug. 2, 1963, Ser. No. 299,550
Claims priority, application Germany, Aug. 16, 1962, M 53,900
7 Claims. (Cl. 57—164)



1. Process for the production of a spun yarn containing a soluble fixing agent from an already doubled staple fiber silver arrangement, comprising the steps of:

(a) drafting the doubled staple fiber sliver arrangement into a highly parallelized web,
(b) gathering together the web while maintaining the parallelism of the fibers as much as possible,
(c) introducing the dissolved fixing agent into the web after the gathering thereof,
(d) withdrawing superfluous fixing agent and condensing the web into a thin sliver possessing a small specific volume and smooth surface,
(e) accumulating the sliver,
(f) mechanically breaking the set bond between the individual fibers by drafting in a single-zone drafting arrangement under deletion of a preliminary draft and forming a yarn by imparting twist and winding.

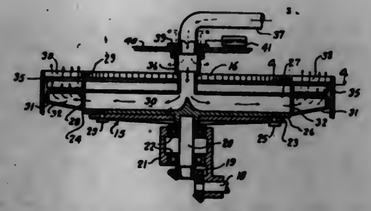
3,191,376
CAST CHAIN AND METHOD OF PRODUCING THE SAME
Louis H. Morin, Bronx, N.Y.
(125 Beechwood Ave., New Rochelle, N.Y.)
Filed Mar. 27, 1963, Ser. No. 268,263
14 Claims. (Cl. 59—1)



1. The method of producing chains of the character defined, which comprises forming links comprising spaced side plates having pivot lugs on adjacent surfaces thereof at one end of each link and a cylinder portion at the other end of each link at a casting station, forming the cylinder portion of one link upon inner surfaces of the side plates and said lugs of an adjacent link at said casting station in uniting the links one with the other to form a workpiece chain, trimming each of the links at a trimming station, then passing the workpiece chain through a working-in station, flexing the links of the chain one with respect to the other in several directions then, passing the workpiece chain through a feeding station, spreading side plates of each link slightly at said feed station, and then passing the workpiece chain through a link easing and end product forming station.

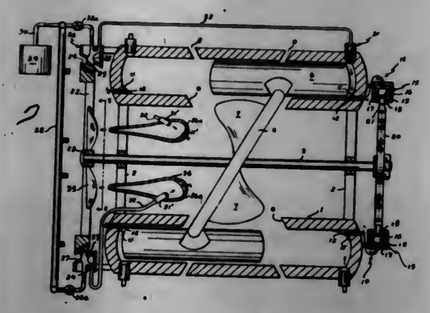
3,191,377
TURBO-JET FAN MUFFLER
Frederick A. Hiersch, Detroit, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Dec. 11, 1961, Ser. No. 158,521
1 Claim. (Cl. 60—13)

In combination with an internal combustion engine having an exhaust manifold, a combination muffler and fan assembly comprising
(a) a drum member having a central chamber and being rotatably carried on said engine,
(b) a plurality of hollow fan blades carried by said drum member,
(c) each of said fan blades having a trailing edge portion provided with an opening,
(d) means rotating said blades to produce cooling air flow,
(e) means directing the flow of exhaust gases from said exhaust manifold through said chamber and through said hollow blades for exhaust through said openings whereby to provide a muffler for the exhaust gases and to utilize said exhaust gases to contribute to the rotation of said drum member,
(f) a plurality of vane elements each being disposed closely adjacent to the trailing edge of a corresponding fan blade and located for boundary layer control,



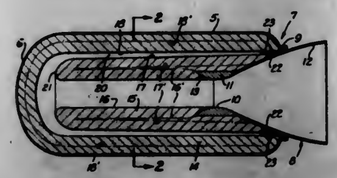
(g) means securing said vane elements to said fan blades whereby they will rotate together,
(h) a shroud structure carried on said engine and housing said muffler-fan assembly, said shroud structure being provided with air entering means disposed adjacent said fan blades and exhaust gas-air exiting means disposed closely adjacent said vane elements,
(i) said exhaust gas-air exiting means being provided with a plurality of radially disposed guide vane elements, and
(j) said rotating means including means drivingly connecting said fan assembly and said engine.

3,191,378
POWER PLANTS
Sheemon A. Wolfe, 2422 Salem Ave., Dayton, Ohio
Filed Jan. 5, 1962, Ser. No. 164,511
8 Claims. (Cl. 60—24)



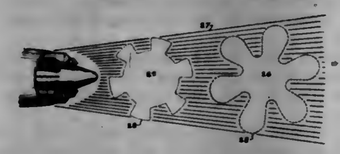
8. An engine including a drive shaft, internal combustion means comprising a plurality of piston and cylinder combinations conjointly connected to said drive shaft, means for supplying a combustion mixture to each of said internal combustion means, means for igniting said mixtures comprising certain crystal means and a wedge device for transmitting impact shocks thereto, said means for delivering said shocks comprising a disc fixed to said drive shaft, said disc having cam-like peripheral projections thereon to strike said wedges.

3,191,379
PROPELLANT GRAIN FOR ROCKET MOTORS
Ralph M. Pierce, Redlands, Calif.; granted to National Aeronautics and Space Administration under provisions of 42 U.S.C. 2457(a)
Filed Mar. 8, 1961, Ser. No. 94,259
3 Claims. (Cl. 60—35.6)



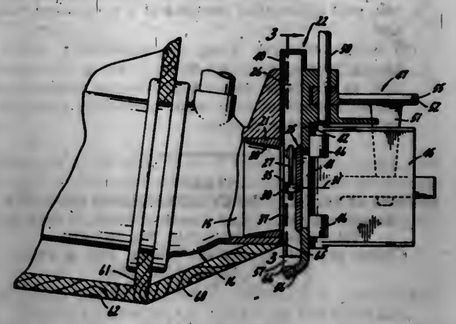
3. A solid propellant rocket motor comprising a cylindrical casing having a rounded end closure at one end and an opening at the other end, a tubular body of solid propellant grain having a cylindrical bore and positioned within said casing concentrically with and spaced therefrom and defining an annular space, a grain of solid propellant bonded to the entire inner surface of the casing, means closing the annular space between the open end of the casing and said tubular body, an outwardly flared nozzle attached to the open end of the casing and extending into the cylindrical bore, whereby after ignition the combustion products of said grain pass forward through the annular space toward the closed end of the casing and then out through the cylindrical bore, combining with the combustion products of the tubular body and continuing out through said nozzle.

3,191,380
JET NOISE SUPPRESSOR
Louis B. Gratzer, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Substituted for abandoned application Ser. No. 816,984, May 29, 1959. This application May 10, 1963, Ser. No. 281,077
8 Claims. (Cl. 60—35.6)



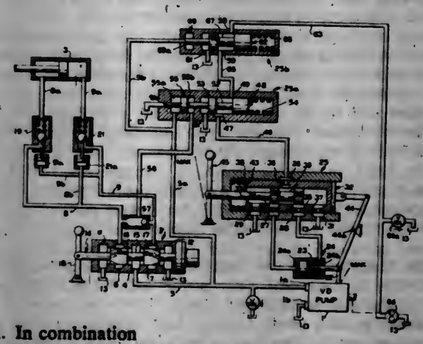
1. A noise suppressor for modulating the noise generated about the exhaust gas stream of an engine comprising,
(a) an engine nozzle including a tail cone having a forward portion and an aft portion, and an annular housing circumscribing and concentric to said tail cone forward portion,
(b) a plurality of parallel blades mounted on said tail cone, one end of each blade being connected to said nozzle internally of said housing, each blade extending aft and externally of said housing in a longitudinal radial plane of said tail cone, the other end of each blade being connected to the tail cone aft portion to form parallel passageways between each pair of adjacent blades,
(c) said blades being flexible in a circumferential direction about the tail cone peripheral surface whereby the width of said passageways may be varied,
(d) means for flexing said blades, and
(e) said blade flexing means deflecting adjacent blades in opposite directions thereby forming alternate wide and narrow passageways for maximum noise suppression.

3,191,381
ROLLING DISC GATE
Howard P. Lerwick and William N. Engel, Indianapolis, Ind., assignors to The Bachler Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Jan. 5, 1962, Ser. No. 164,481
4 Claims. (Cl. 60—35.54)



1. In jet boat valve and valve operating means including a conduit having a wall, said conduit having an exit opening through said wall, means for pumping water through said conduit toward said exit, and a flat gate received within said conduit, said gate being of larger size than said opening and being in close adjacency and generally parallel to said wall, the improvement which comprises an arm loosely and rotatably mounting said gate centrally thereof for movement across said wall while in such parallel closely adjacent relation thereto to and from a position covering said exit opening, said gate being free to roll and rotate and to cant and tilt relative to said arm and conduit to avoid obstructions when said gate moves to and from said position.

3,191,382
HYDRAULIC SYSTEM
Charles O. Weisenbach, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed June 29, 1964, Ser. No. 378,608
6 Claims. (Cl. 60—52)



1. In combination
(a) a variable delivery hydraulic pump;
(b) a discharge pressure compensator for varying pump delivery rate in inverse relation to discharge pressure to thereby limit that pressure to a predetermined value;
(c) a fluid pressure motor;
(d) distributing means, including a closed center distributing valve capable of throttling flow, for selec-

tively delivering fluid discharged by the pump to the motor;

(e) means effective when the distributing valve is throttling flow to the motor and discharge pressure is below said predetermined value to vary pump delivery rate in inverse relation to the pressure differential across the distributing valve to thereby maintain said differential constant at a preselected value; and

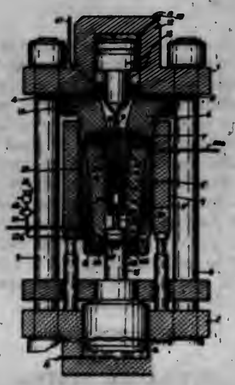
(f) means effective when the distributing valve is closed for varying pump delivery rate in inverse relation to discharge pressure to thereby maintain said pressure constant at a value materially lower than said predetermined value.

3,191,383

TWO STAGE FLUID COMPRESSING DEVICES

Jacques Basset, 8 Rue Troyon, Sevres, France

Filed June 20, 1962, Ser. No. 203,920
Claims priority, application France, July 8, 1961, 867,387, Patent 1,329,584
4 Claims. (Cl. 60—54.5)



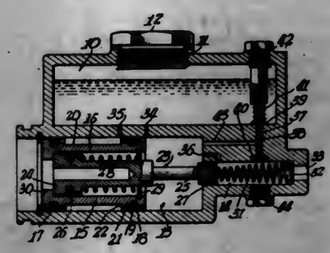
1. A two-stage fluid compressing device comprising an outer cylinder defining an outer chamber and being closed at one end and open axially at the other end, an inner cylinder defining an inner chamber and being housed entirely and coaxially within said outer cylinder, one end of said inner cylinder being closed and rigidly secured to the closed end of said outer cylinder and the other end of said inner cylinder opening axially into said outer chamber and being spaced axially inward from said open end of said outer cylinder, said inner cylinder further having a transverse port extending therethrough adjacent said other end of the inner cylinder for communicating the inner chamber with the outer chamber, an inner piston slidable in said inner cylinder through said other end of the latter, means for feeding a precompressed fluid into said outer chamber and including means defining an entry port at a point near the open end of said outer cylinder, an outer piston slidable in said outer cylinder through said open end of the latter and facing the outer end of the inner piston, and hydraulically actuated means operative to urge said outer piston axially into said outer cylinder for successively closing said entry port of the means feeding precompresed fluid, compressing the precompressed fluid trapped in the outer and inner chambers by closing of the entry port and then urging the inner piston axially into the inner cylinder so that said inner piston initially closes said transverse port of the inner cylinder for isolating said inner chamber from said outer chamber and thereafter compresses the fluid in the inner chamber to a pressure rising considerably above that prevailing in the outer chamber.

3,191,384

MULTI-STAGE HYDRAULIC MASTER CYLINDER

Frederick A. Krussmark, 303 S. 2nd Ave., Maywood, Ill.

Filed May 17, 1963, Ser. No. 281,087
5 Claims. (Cl. 60—54.6)



1. A multi-stage master cylinder for a hydraulic brake system, comprising in combination:

(a) a low pressure cylinder,

(b) a high pressure cylinder in coaxial alignment and communication with said low pressure cylinder,

(c) a cylindrical sleeve operable in said pressure cylinder,

(d) a cylindrical bore in said sleeve,

(e) a compound piston having a relatively large piston head and a relatively small piston head operable within said cylindrical bore and said high pressure cylinder, said compound piston being directly operably connected to a brake pedal,

(f) a first spring interposed between said relatively large piston head and a retaining means at one end of said cylindrical bore, urging said relatively large piston head against an annular flange at the opposite end of said cylindrical bore,

(g) a return spring in said high pressure cylinder interposed between said relatively small piston head and a check valve that overlies an outlet,

(h) a fluid reservoir for supplying fluid to said cylinders,

(i) a valve means spring influenced to a normally closed position with respect to said fluid reservoir and to an open position with respect to said high pressure cylinder,

(j) a first fluid passage in intercommunication between said low pressure cylinder and said valve means,

(k) a second fluid passage in intercommunication between said low pressure cylinder and said high pressure cylinder,

(l) and a first port communicable between said fluid reservoir and said low pressure cylinder positioned slightly forward of said cylindrical sleeve.

1. A simply constructed and operated movable toy adapted to improve a child's coordination during solitary play while sustaining interest with constant action but without requiring substantial skill or excessive activity on the part of the child, comprising:

(a) a toy having a body including rolling means for facilitating easy movement of said toy across a supporting surface;

(b) a propelling means mounted on said body for ejecting an object placed on said body;

(c) power means for moving said toy mounted on said body and charged by rotating said rolling means in a first direction; and

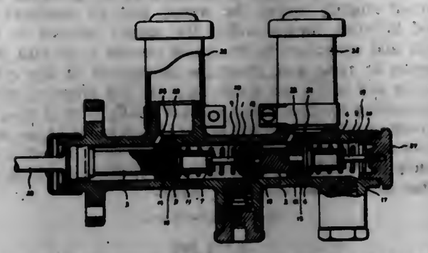
(d) trigger means mounted on said body for releasing said propelling means, said trigger means being actuated by said power means when a set level of power is reached during charging.

3,191,385

DUAL SUSPENSION TANDEM MASTER CYLINDER

Masaru Watanabe, 16 6-chome, Takinogawa-machi, Kita-ku, Tokyo, Japan

Filed Sept. 27, 1963, Ser. No. 312,047
3 Claims. (Cl. 60—54.6)



1. A tandem master brake cylinder apparatus for use with first and second brake systems, comprising a cylinder including first and second end walls, a brake rod extending through said first end wall and adapted for movement in a forward direction towards said second end wall and a rearward direction away from said second end wall, a first piston within said cylinder connected to said brake rod, a floating piston in said cylinder disposed in the region between said first piston and said second end wall, the region between said first piston and said floating piston within said cylinder defining a first fluid chamber, the region between said floating piston and said second end wall defining a second fluid chamber, a first port in said cylinder in the region of said first fluid chamber for connecting said first fluid chamber to said first brake system, a second port in said second fluid chamber for connecting said second fluid chamber to said second brake system, a first suspension means, including spring means, operatively coupling said first piston to said floating piston, and a second suspension means substantially identical to the first suspension means and including spring means operatively coupling said floating piston to said second end wall, said first and second suspension means cooperating to prevent rearward movement of said floating piston until said brake rod is moved from its initial rearward position and then to permit movement of said floating piston in both a forward and a rearward direction, said first suspension means including a first spring disposed between said first piston and said floating piston for urging them apart and first slidable stop means between said first piston and said floating piston for limiting the separation therebetween, said second suspension means including a second spring disposed between said floating piston and said second end wall for urging said floating piston away from the latter said end wall and second slidable stop means between said floating piston and said end wall for limiting the separation therebetween, said first and second stop means being axially aligned in said cylinder and respectively acting on said floating piston to maintain the same in an initially preestablished and fixed rearward position in the cylinder.

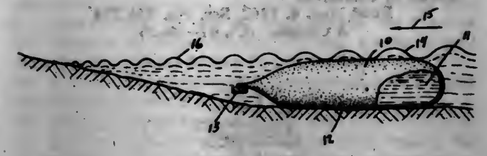
3,191,386

HOVERING BAG BREAKWATER

Robert L. Wiegel, Berkeley, and Richard A. Friend, Richmond, Calif., assignors to the United States of America as represented by the Secretary of Navy

Filed Jan. 19, 1962, Ser. No. 167,455
3 Claims. (Cl. 61—5)

1. A hovering bag breakwater used in a natural body of water adjacent to a shore thereof for protecting that portion of the body of water between said breakwater and said shore from the impact of high amplitude, low frequency water waves comprising a bag of plastic materials filled with ambient water, said plastic being of substantially the same density as the water, said bag having a longitudinal axis longer than its transverse axes, said bag being moored with its longitudinal axis substantially perpendicular to the wave front of said water waves and with its upper surface substantially coincidental with the troughs of said water waves, the said longitudinal axis of said bag being at least twice the wave length of said water waves.

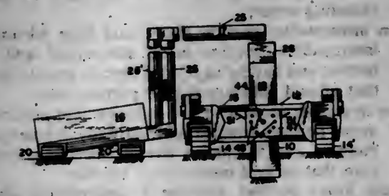


3,191,387

METHOD FOR MAKING PERMEABLE CONDUITS IN SUBTERRANEAN LINES OF DRAINAGE

Harry D. Durston, Pasco, and Alfred Perry, Moses Lake, Wash., assignors to J. A. Terteling & Sons, Inc., Boise, Idaho, a corporation of Idaho

Original application Mar. 18, 1964, Ser. No. 352,866. Divided and this application Aug. 4, 1964, Ser. No. 392,989
7 Claims. (Cl. 61—11)



1. The method of forming a permeable conduit in an open trench in the foundation for a surface structure, which conduit comprises a core of relatively coarse interstitial material, such as gravel, separated from the trench walls by layers of denser interstitial filter material, such as sand, which comprises the cyclical repetition of the following steps:

laying against the bottom wall of the trench and continuously across that entire wall a bottom filter layer of relatively dense interstitial particulate material, such as sand,

densifying and forming a central core portion of said bottom layer of substantially uniform vertical thickness,

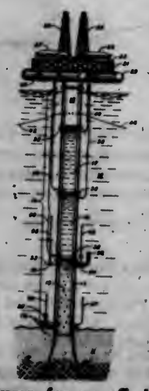
laying against the respective side walls of the trench, in such fashion as to be continuous with said bottom layer, spaced filter layers of the same relatively dense interstitial particulate material,

while maintaining the resultant side wall layers of relatively dense material in position against the side walls of the trench, laying a core layer of coarser interstitial particulate material than said relatively dense material, such as gravel, directly upon the central core portion of said bottom wall layer and between said side wall layers, finally to provide support of the side wall layers by direct contact with said side wall layers,

and densifying the core and side wall layers,

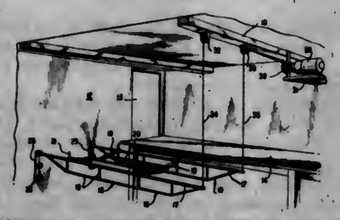
the steps of laying, densifying and forming the bottom wall layer preceding the steps of laying the side wall and core layers.

3,191,388
SLENDER COLUMN SUPPORT FOR OFFSHORE PLATFORMS
Milton Ladwig, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of California
Filed Nov. 8, 1962, Ser. No. 236,774
8 Claims. (Cl. 61—46.5)



1. A support column for an off shore structure, said column comprising:
a submerged base portion, said base portion having an overall specific gravity exceeding that of the surrounding water;
an intermediate portion above said base portion, said intermediate portion being submerged and under tension and having an overall specific gravity less than that of said submerged base portion; and
an upper portion above said intermediate portion, said upper portion being at least partially submerged and buoyant and having an overall specific gravity less than that of said intermediate portion;
said lower portion exerting a downwardly directed, ballasting force on the base of said intermediate portion sufficient to hold said column in contact with submerged surface means underlying said base portion and said upper buoyant portion exerting an upwardly directed, lifting force on the top of said intermediate portion sufficient to maintain said intermediate portion in tension.

3,191,389
BOAT LIFT
Joe Burns Poe, 1507 Dixon, Longview, Tex.
Filed Nov. 27, 1961, Ser. No. 155,148
11 Claims. (Cl. 61—48)



1. The combination of a boat handling apparatus with a boat shelter having a substantially upright wall protruding above the surface of a body of water and a stationary roof fixed to said wall and extending over the water, said apparatus comprising an elongated boat supporting cradle within said shelter and capable of extending longitudinally under a boat to seat the latter longitudinally thereon, bracket means fixed to said upright wall and including vertically shiftable pivot means supporting one end of the cradle at one of a number of different elevations relative to the surface of the water so that said one end of the cradle may be pivotally supported slightly above the water, and an overhead lift and lowering means within the shelter secured to said roof and connected to the cradle remote from said pivot means to raise and lower the other end of the cradle above and below the water, said lift and lowering means controlling the movement of said cradle from a boat receiving position in which the cradle depends at an angle from said pivotally supported one end with the other end below the water to a boat elevating position in which said other end is lifted above the water.

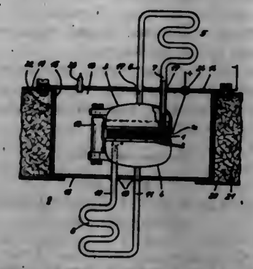
3,191,390
METHOD OF PREPARING SUBSURFACE AND FORMING CONCRETE COLUMN THEREIN
Myles H. Schutte, Houston, Tex., assignor to Bell Bottom Foundation Co., Houston, Tex., a corporation of Texas
Filed Dec. 2, 1960, Ser. No. 73,285
2 Claims. (Cl. 61—53.6)



1. A method of forming a concrete column in the soil comprising the steps of:
drilling into the subsurface with a drill bit to drill a bore hole,
introducing drilling liquid including water into the bore hole during drilling to maintain a level of liquid for substantially the full depth of the bore hole as it is drilled to prevent collapse of the walls of the bore hole,
removing some of the cuttings made by the drill bit during drilling to reduce the thickness of the liquid in the bore hole,
thereafter introducing cement into the liquid in the bore hole separately from the drill bit,
thereafter rotating and longitudinally reciprocating the drill bit in the liquid to thoroughly mix the cement, water and soil in the bore hole,
thereafter removing the drill bit from the bore hole to allow the cement, water and soil to harden to become a hardened column in the soil,
subsequently drilling a bore in the hardened column of a smaller diameter than the hardened column so as to leave an annular wall thickneses of the hardened column around the smaller diameter bore, and
thereafter introducing concrete into the smaller diameter bore to form a concrete column therein.

3,191,391
THERMOELECTRIC COOLING APPARATUS
Heinz Müller, Berlin-Charlottenburg, Germany, assignor to Siemens-Electrogeräte Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Jan. 3, 1962, Ser. No. 164,079
Claims priority, application Germany, Jan. 6, 1961, S 71,976
8 Claims. (Cl. 62—3)

1. Apparatus for thermoelectric cooling comprising a multiplicity of electrically interconnected thermocouples jointly forming a block having a cold-junction side and a hot-junction side, two heat transferring circulation systems each having a fluid-containing vessel joined in direct heat contact with said block at one of said respective sides for heat exchange with said block, a relatively thin-walled vacuum container in which said block and said two vessels are mounted in spaced relation to the con-

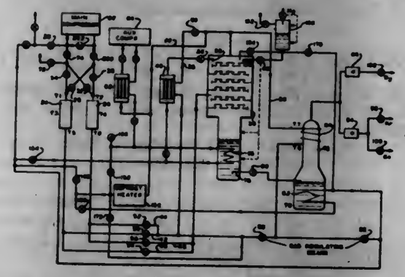


tainer walls, each of said two circulation systems having fluid lines extending from one of said respective vessels through the container wall to the outside thereof, whereby any heat contact with said container is limited to the passages of said lines through said walls.

3,191,392
COOLING PACK COMPOSITION AND METHOD OF COOLING
William R. Donnelly, 903 Washington Ave., Piqua, Ohio
No Drawing. Filed May 15, 1963, Ser. No. 280,705
18 Claims. (Cl. 62—4)

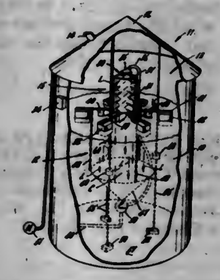
1. A method of cooling by effecting the endothermic solution reaction of a mixture of differentialy soluble salts comprising the steps of mixing a water donating mixture containing as a source of water, a completely hydrated salt with a water accepting mixture of ammonium sulfamate and at least one other differentially soluble salt to initiate a mild controlled endothermic reaction between said mixtures so as to form a semi-fluid gelatinous mass and applying said total mixture to the object to be cooled.

3,191,393
KRYPTON-XENON SEPARATION FROM A GAS MIXTURE
Wolcott Dennis, Basking Ridge, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1959, Ser. No. 863,013
2 Claims. (Cl. 62—42)



1. In apparatus for recovering krypton and xenon from a process stream containing these elements, a primary rectification column, a concentrating column, means to transfer an enriched liquid fraction from said primary column to said concentrating column, said transfer means comprising the following: condensing means at the top of said concentrating column connected to receive said enriched liquid fraction from said primary column, wherein said enriched liquid fraction is vaporized by heat transfer from said condensing means to form an enriched evaporated fraction, thereby forming reflux in said concentrating column by condensation of vapor therein, catalyzing means connected to said condensing means, wherein said enriched evaporated fraction is treated for removal of hydrocarbons, and means for introducing into the concentrating column as feed thereto the fraction thus freed from hydrocarbons; reboiling means in said concentrating column heated by low boiling effluent from said primary column whereby krypton-xenon rich liquid accumulates in said concentrating column, means to return reboiled vapor from said concentrating column to said primary column, a simple batch still, means for intermittently transferring accumulated krypton-xenon rich liquid from said concentrating column to said simple batch still for fractional distillation of krypton and xenon, said batch still having a top condenser refrigerated by low boiling effluent from said primary column and having a reboiler heated by warmed up low boiling effluent from said primary column, and means for withdrawing the fractionally distilled krypton-xenon from the still, the withdrawal operating in accord with the temperature of the top condenser.

3,191,394
CONSERVATION ARRANGEMENT AND METHOD
Hazelton H. Avery, Clarks Hill, Ind., and Rolland G. Sturm, Chicago Heights, Ill., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 26, 1963, Ser. No. 268,069
21 Claims. (Cl. 62—54)

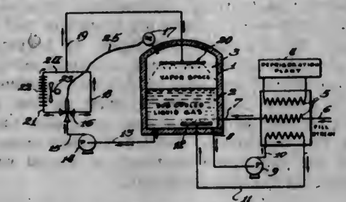


1. In a volatile liquid storage tank including a liquid containing portion and a chamber portion wherein vapors collect, a conservation arrangement comprising; vertically disposed passage means in the chamber portion, said passage means being open to the chamber portion at an upper end and at a lower end of said passage means, a source of liquid mercury, and means for spraying said liquid mercury downwardly through said passage means to cool warm vapors in said passage means, wherein a draft is created through said passage means from said upper end to said lower end, said warm vapors being cooled and coalesced while being drawn through said passage means to reduce the pressure in said chamber portion.

3,191,395
APPARATUS FOR STORING LIQUEFIED GAS NEAR ATMOSPHERIC PRESSURE
James B. Maher and James Mair, Chicago, Ill., assignors to Chicago Bridge & Iron Company, Hinsdale, Ill., a corporation of Illinois
Filed July 31, 1963, Ser. No. 298,867
1 Claim. (Cl. 62—54)

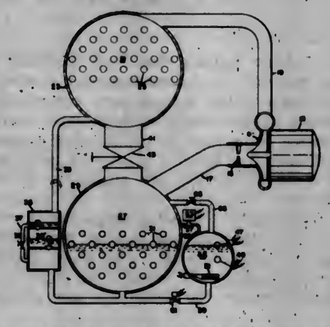
Apparatus comprising an enclosed insulated storage tank capable of holding subcooled liquefied gas in the tank with a vapor space above the level of the liquefied

gas, a pressure controller communicating with, and responsive to, variations in pressure of the gas vapor in the tank, means for pumping subcooled liquefied gas from the tank to a distribution valve responsive to, and actuated by, the pressure controller, first conduit means communicating with the valve and the vapor space of the tank for delivering liquefied gas from the valve to the vapor space in the tank when the vapor pressure is higher than a preselected pressure, a second conduit means communicating with the valve and a vaporizer for vaporizing the liquefied gas, and a conduit means leading from the vaporizer to the vapor space in the tank for delivering vaporized gas thereto from the vaporizer when the vapor



pressure in the tank is lower than a preselected pressure, access to the first conduit being selectively closable and open to the second conduit by the valve in response to the pressure gauge when the vapor pressure in the tank reaches a preselected minimum pressure and gas vapor is to be introduced therein, and access to the second conduit being selectively closable and open to the first conduit by the valve in response to the pressure gauge when the vapor pressure in the tank reaches a preselected maximum pressure, said valve further being closed to both the first and second conduits when the vapor pressure in the tank is within a preselected range between the said preselected maximum and minimum pressures.

3,191,396
REFRIGERATION SYSTEM AND APPARATUS FOR OPERATION AT LOW LOADS
Edward F. Raddock, Camillus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,083
6 Claims. (Cl. 62—115)



4. The method of operating a refrigeration machine including a compressor, a condenser, a cooler with tubing therein and a receiver storing liquid refrigerant connected to the cooler, under low load conditions when the compressor is inoperative comprising the steps of:

(a) increasing the pressure in the receiver above the pressure in the cooler sufficient to induce liquid passage into the cooler,

(b) supplying liquid refrigerant from the receiver to the cooler in an amount raising the liquid level in the cooler to submerge the tubing therein,

(c) evaporating liquid refrigerant in the cooler by passing a fluid medium to be cooled through the tubing of the cooler,

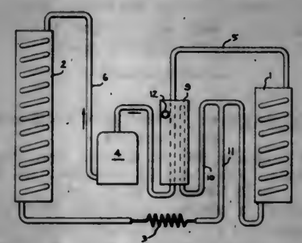
(d) conducting vapors from the cooler directly into the condenser,

(e) condensing the vapors in the condenser by passing a fluid cooling medium through the condenser,

(f) returning condensed liquid refrigerant from the condenser to the cooler, and

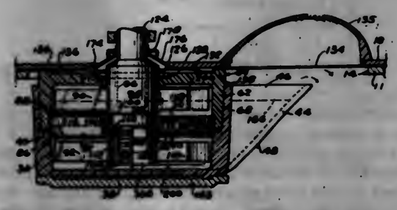
(g) retransferring the liquid refrigerant supplied to the cooler back into the receiver before resuming normal operation of said refrigeration machine employing the compressor.

3,191,397
REFRIGERATION SYSTEM INCLUDING CHARGE CHECKING MEANS
Edwin C. Kennedy, Tyler, Tex., assignor to General Electric Company, a corporation of New York
Filed July 23, 1963, Ser. No. 296,959
1 Claim. (Cl. 62—125)



A refrigeration system comprising a condenser, fixed flow restricting means, an evaporator, a suction line and a compressor in series connected to form a closed refrigerant circuit, charge modulating means comprising a dead-end liquid storage receptacle in heat exchange relation with said suction line and connected by a two-way flow connection to the low pressure side of said system between said restricting means and said evaporator, said receptacle having a wall with an aperture formed therethrough and a sight glass means disposed in said aperture, said aperture disposed at a level so that a liquid-gas interface shows at said sight glass means only when said system is properly charged and said system is operated under modified conditions in which heat exchange at both said evaporator and said condenser is at a minimum.

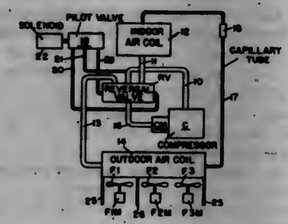
3,191,398
APPARATUS FOR CONGEALING LIQUIDS HAVING A MOVING SCRAPER
Robert Richard Rader, Port Huron, Mich., assignor to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan
Filed Dec. 7, 1962, Ser. No. 243,110
20 Claims. (Cl. 62—138)



11. In a machine of the type described, the combination of a housing, an evaporator in the housing, said evaporator having a freezing surface, means for directing the product

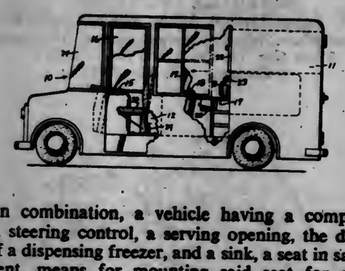
to be frozen to said surface of the evaporator, and for directing refrigerant into the evaporator, a motor-compressor unit connected with the evaporator, a frozen product harvester bar, a motor independent of said motor-compressor unit having a drive shaft conected at one end for rotating the harvester bar over said freezing surface of the evaporator to remove the product frozen thereon, the opposite end of the drive shaft of the last mentioned motor projecting upwardly and supporting a fan having a central hub, the hub of said fan being journalled on the upper end of said last mentioned drive shaft, a rotary cam driving connection between the hub of the fan and the drive shaft arranged such that the hub of the fan is displaced axially of the shaft in response to rotation of the drive shaft and switch means actuated by axial displacement of the hub of said fan for conditioning the circuit to the motor-compressor unit for operation whereby when the harvester bar driving motor stalls, the circuit to the motor-compressor unit is opened.

3,191,399
CONTROLS FOR HEAT PUMPS HAVING OUTDOOR AIR COILS
Robert S. Stewart, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 11, 1964, Ser. No. 388,853
1 Claim. (Cl. 62—160)



In a heat pump having an outdoor air coil, an indoor air coil, a refrigerant compressor, refrigerant reversal means and two-way expansion means connected in a refrigeration circuit, means for adjusting said reversal means to route refrigerant from said compressor to said outdoor coil to operate said outdoor coil as a condenser and said indoor coil as an evaporator for air cooling, or to route refrigerant from said compressor to said indoor coil to operate said indoor coil as a condenser and said outdoor coil as an evaporator for air heating operation, first, second and third fans for moving outdoor air over said outdoor coil, said first, second and third fans having first, second and third electric driving motors respectively, a two-stage outdoor thermostat having a first switch that is closed when the outdoor air is above a first predetermined temperature, having a second switch that is closed and a third switch that is open when the outdoor air is below a second predetermined temperature lower than said first temperature, a cooling control thermostat and a heating control thermostat, the combination of a cooling relay that is energized when said cooling thermostat calls for cooling, a heating relay that is energized when said heating thermostat calls for heating, said cooling relay having a switch that is closed when said cooling relay is energized, said heating relay having first, second and fifth, normally open switches that are closed, and having third and fourth, normally closed switches that are opened when said heating relay is energized, means including said switch of said cooling relay, said third switch of said heating relay and said second switch of said outdoor thermostat for energizing said second and third motors, and including said switch of said cooling relay and said first switch of said outdoor thermostat for energizing said first motor when the outdoor temperature is above said first temperature and said cooling relay is energized, means including said switch of said cooling relay, said fourth switch of said heating relay and said third switch of said outdoor thremostat for energizing said first motor when the outdoor temperature is below said second temperature and said cooling relay is energized, and means including said first and second switches of said heating relay and said third switch of said outdoor thermostat for energizing said second and third motors when said heating relay is energized and when the outdoor temperature is below said second temperature, and including said first and fifth switches of said heating relay for energizing said first motor when said heating relay is energized, said third switch of said outdoor thermostat opening and deenergizing said second and third motors when the outdoor temperature rises above said second temperature while said heating thermostat is calling for heating.

3,191,400
COMPACT VENDING TRUCK
Harvey F. Swenson, Seattle, Wash., assignor to Sweden Freezer Manufacturing Co., Seattle, Wash., a corporation of Washington
Filed Aug. 9, 1961, Ser. No. 130,415
2 Claims. (Cl. 62—239)



2. In combination, a vehicle having a compartment with a steering control, a serving opening, the discharge gate of a dispensing freezer, and a sink, a seat in said compartment, means for mounting said seat for swinging motion about a fixed vertical axis located at one side of said seat and adjacent the rear edge thereof, said seat being swingable about said axis for selective movement along a predetermined travel path between respective positions facing said steering control, serving opening, discharge gate, and sink.

3,191,401
AIR CONDITIONING UNIT INCLUDING CORROSION INHIBITING MEANS
Stanley J. Beyer and Jerry A. Priest, both of Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed May 4, 1964, Ser. No. 364,425
2 Claims. (Cl. 62—280)

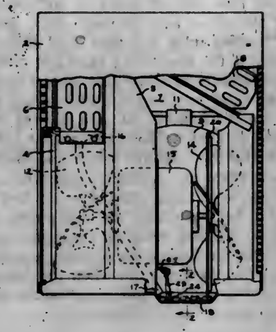
1. In an air conditioner comprising refrigeration apparatus including an indoor heat exchanger and an outdoor heat exchanger composed of a metal subject to corrosion by a saline atmosphere,

fan means for circulating a stream of outdoor air over said outdoor heat exchanger,

a sump for collecting condensate from said apparatus,

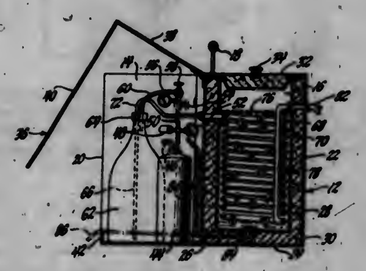
means for discharging condensate from said sump into the path of the stream of air circulating over said outdoor heat exchanger prior to contact thereof with said outdoor heat exchanger for contacting said condensate with said outdoor heat exchanger and means for supplying a corrosion inhibitor to the surfaces of said outdoor heat exchanger contacted

by said condensate comprising a porous bag containing a zinc chromate corrosion inhibitor arranged in said sump for contact by said condensate for



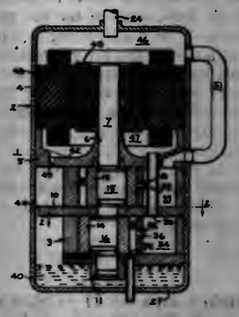
introducing said zinc chromate corrosion inhibitor into said condensate whereby corrosion of said surfaces contacted by said condensate is inhibited.

3,191,402
BEVERAGE DISPENSER
Stephen C. Baker, Detroit, Mich., assignor to Su-Ev, Inc., Birmingham, Mich., a corporation of Michigan
Filed Apr. 10, 1963, Ser. No. 272,045
3 Claims. (Cl. 62—399)



1. A portable beverage dispenser, comprising:
a lightweight portable box having a carrying handle, a pair of compartments provided in said box of comparable size and weight receptive capacity and in balanced relation to said carrying handle,
one of said compartments having a pressurizing chamber member and related valves and controls provided therein,
the other of said compartments being insulated and having a cooling coil provided therein,
said one compartment being receptive of household size fluid container means therein for engagement with said pressurizing chamber member and said cooling coil,
said other compartment being receptive of coolant fluid therein and about said cooling coil,
and said coolant receptive compartment having a fluid weight capacity at least equal to that of said fluid container means and having drainage means operatively connected thereto for maintaining an acceptable carrying weight balance therewith.

3,191,403
HERMETICALLY SEALED MULTIPLE COMPRESSOR UNIT
William T. Ladusaw, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 28, 1963, Ser. No. 305,147
2 Claims. (Cl. 62—505)

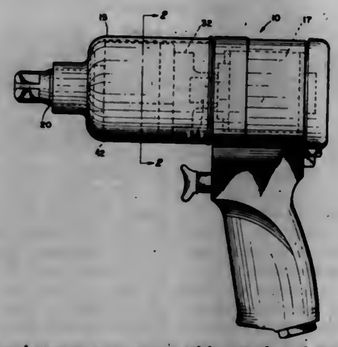


1. A hermetically sealed rotary compressor unit in combination with a refrigeration system including condensing means for condensing high pressure refrigerant discharged from said compressor and an evaporator, said compressor unit comprising a hermetic casing for containing a high pressure refrigerant gas,
a multiple compressor means in said casing comprising upper and lower annular cylinders separated by a plate forming one end wall of each cylinder,
a motor mounted in the upper portion of said casing above said compressor unit and including a shaft for driving both of said rotors,
a discharge line communicating with the top portion of said casing for conveying high pressure refrigerant to said condensing means,
means for introducing low pressure refrigerant from said evaporator into said cylinders,
upper and lower discharge chambers for each of said cylinders,
said discharge chambers being disposed one above the other and being separated by the said plate,
means for injecting condensed liquid refrigerant from said condensing means into said lower cylinder for cooling the high pressure gas discharged therefrom,
means comprising a conduit communicating with said lower discharge chamber and extending through said upper discharge chamber for directing the cooled high pressure refrigerant discharged from said lower cylinder against the lower end of said motor for passage through said motor,
and means for discharging the high pressure gas discharged from said upper discharge chamber into the portion of said casing above said motor for mixing with the high pressure refrigerant from said lower cylinder before passing out of the casing through said discharge line.

3,191,404
ACCELERATION CONTROL DEVICE
George P. Schivley, Jr., Bethlehem, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 16, 1963, Ser. No. 273,377
5 Claims. (Cl. 64—26)

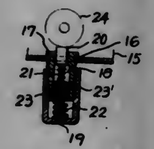
1. In an impulse tool having housing means provided with a cavity adapted to contain a fluid, spindle means in said housing means and the fluid, drive means operatively associated with one of said housing and spindle means for causing relative rotary movement about an axis between said housing and spindle means, the other of said housing

and spindle means being adapted to dynamically seal said cavity into a high pressure portion and a low pressure portion, and an acceleration control device comprising:
(a) said one of said housing and spindle means being provided with passage means in communication with said high and low pressure portions of said cavity,
(b) an operating member with its center of gravity offset from the axis of rotation of said housing and spindle means, and being reciprocal in said one of said housing and spindle means across said passage



means between an open position and a closed position,
(c) biasing means operatively associated with said operating member to hold said operating member in said open position until said one of said housing and spindle means is rotating at a predetermined speed, and
(d) said operating member being operated against the biasing means by centrifugal force at the predetermined speed to move from said open position to said closed position thereby blocking said passage means and permitting impulsing of said tool.

3,191,405
LIGHTER
Toshio Jinnai, Tokyo, Japan, assignor to Zenza Bronica Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Apr. 16, 1963, Ser. No. 273,524
1 Claim. (Cl. 67—7.1)



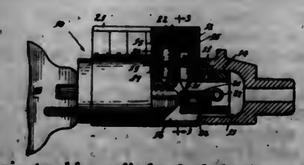
A mechanism for perfecting ignition in a lighter having a housing and a sparking wheel rotatably journalled thereon, the improvement of,
(a) a flint holder having an axial bore therethrough adapted to slidably receive thereon a piece of flint, said holder being disposed adjacent said sparking wheel so that the flint therein engages with said wheel,
(b) said flint holder having formed thereon external threads,
(c) a cup shaped cover formed with internal threads adjustably threaded to the end of said flint holder to render said flint holder axially adjustable with respect to said cup shaped cover threaded thereto,
(d) means interposed within said flint holder and cup shaped cover threaded thereto to bias the flint in said holder toward said sparking wheel.
(e) said latter means including a pair of relatively sized coil springs connected in compound elastic relationship with respect to one another,
(f) said springs being disposed in co-axial relationship between said flint and the base of said cup shaped cover,
(g) and a connector interposed between the adjacent ends of said springs,
(h) said connector having a cup shaped body and a laterally extending flange portion movably disposed so as to be freely floating within said bore,
(i) the body of said connector being disposed within the coil of said larger spring so that the flange portion thereof rests on the upper end of said larger coil spring and the bottom end of said larger coil spring being seated in contact with the base of said cup shaped cover,
(j) and the smaller of said springs having one end seated in the hollow of said connector and having its other end urged against said flint whereby the prestress of the compound spring urging said flint toward said wheel can be readily adjusted by relative movement between the flint holder and associated cup shaped member due to the threaded connection therebetween, and said connector floatably disposed between said springs cause said springs to effect a continuous and uniform compound elastic force on said flint.

3,191,406
PHOTOFLASH LAMP
Peter D. Johnson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1961, Ser. No. 161,803
3 Claims. (Cl. 67—31)



2. A photoflash lamp comprising an hermetically sealed light transmitting envelope; an atmosphere of oxygen within said envelope, and a charge of a combustible actinic light producing material within said envelope sufficient, on combustion within said envelope, to produce actinic light of a brightness corresponding to that of a black body radiator at the combustion temperature of thorium, said material comprising unoxidized thorium.

3,191,407
DE-MASTER KEY CYLINDER ASSEMBLY
Carroll V. Spon, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,894
4 Claims. (Cl. 70—383)



4. In a pin tumbler cylinder lock having a rotatable plug with a longitudinally extending keyway and columns of upper and lower spring-actuated freely movable pin tumblers, an elongated deformable wafer extending longi-

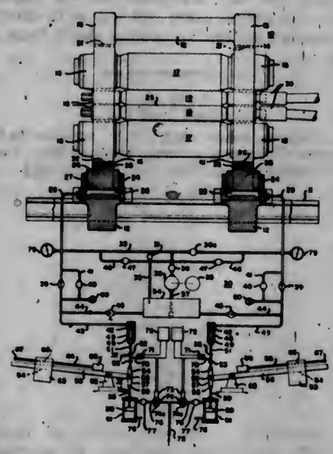
tudinally in said keyway having a vertical cross section corresponding to the contour of and positioned within the keyway below and supporting at least one lower pin tumbler in a position permitting rotation of the plug by a first key which lifts the other tumblers in their columns to the shear-line, a pin providing a rigid abutment in said plug against which the rear edge of said wafer abuts to aid in positioning the wafer in the keyway, and a second key which when inserted in the keyway engages and dislodges the wafer and moves it to a second extended position where the wafer is deformed and lodged under said pin to allow all the tumblers to intersect the shear-line upon withdrawal of the second key and render the first key inoperative.

3,191,408

HYDRAULIC PRESSURE REGULATING SYSTEM FOR ROLLING MILLS OR THE LIKE

Paul S. Bayan, Whitehall Borough, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,996
6 Claims. (Cl. 72—6)



1. In a hydraulic pressure regulating system for rolls in a rolling mill stand or the like, apparatus comprising, in combination, at least one pressure cylinder in said stand, a piston in said pressure cylinder to exert a selected rolling force, means for pumping hydraulic liquid at a selected positioning pressure into said pressure cylinder to raise said piston a selected amount, valve means connected to said pressure cylinder and adapted when closed to hold said piston generally in said raised position, a maintainer cylinder in communication with said pressure cylinder through said valve means, a plunger in said maintainer cylinder, counterweight and beam means to exert a lever force upon said plunger to provide a pressure at least as high as said first-named pressure and said selected rolling force and, further, to feed liquid in said maintainer cylinder incrementally toward said pressure cylinder to maintain the same without letdown, means responsive to a selected amount of movement of said plunger due to discharge of liquid from said maintainer cylinder in said incremental feed to cut off said communication between said maintainer cylinder and said pressure cylinder without release of pressure in said pressure cylinder, means responsive to withdraw said plunger relative to said maintainer cylinder and such last-named means to refill said maintainer cylinder, and means responsive to movement of said plunger relative to said maintainer cylinder due to said refilling to reestablish said communication upon completion of said refilling.

3,191,409

HYDRAULIC DRAWBENCH

George A. Mitchell, Youngstown, Ohio, assignor, by mesne assignments, to Lombard Corporation, Youngstown, Ohio, a corporation of Ohio

Filed Apr. 10, 1961, Ser. No. 101,715
4 Claims. (Cl. 72—14)



1. A drawbench assembly comprising a die through which workpieces are drawn, a track structure extending parallel to the central axis of said die on one side of the die, a draw carriage movable along said track structure and adapted to pull workpieces through the die, fluid motor means for moving the draw carriage away from the die and for returning the draw carriage to the die at the completion of a drawing operation, said fluid motor means including a cylinder having a piston reciprocable therein, means operatively connecting said piston to the draw carriage whereby movement of the piston in one direction will cause the draw carriage to move away from the die while movement of the piston in the opposite direction will cause the draw carriage to move toward the die, a fluid reservoir, a pump having an input port connected to said reservoir and a pair of output ports, means connecting the respective output ports to opposite ends of said cylinder, means including a first electromechanical device electrically actuable to cause said pump to deliver fluid under pressure from said first port to one end of the cylinder to cause the draw carriage to move away from said die, means including a second electromechanical device electrically actuable to cause said pump to deliver fluid under pressure from said second port to the other end of the cylinder to cause the draw carriage to move toward said die, means including a third electromechanical device electrically actuable to cause the pump to deliver a rate of fluid flow from said first port which is less than that delivered when the first electromechanical device is actuated, load responsive switch means actuable when fluid under pressure is delivered from said first port as the draw carriage moves away from the die and pulls a workpiece through the die, a first limit switch device positioned along the track structure immediately adjacent said die and actuable by the draw carriage at its extreme limit of travel along the track structure toward the die, a second limit switch device positioned along the track structure ahead of the first limit switch device and actuable by movement of the draw carriage as it approaches the die but before the draw carriage reaches its extreme limit of travel adjacent the die, first electrical circuit means including the first limit switch device for actuating said first electromechanical device to initially cause the pump to deliver fluid under pressure from said first port when the first limit switch device is actuated and the draw carriage is at its extreme limit of travel adjacent the die, second circuit means including said pressure responsive switch means for actuating said first electromechanical device to cause the pump to continue to deliver fluid under pressure from said first port when the load responsive switch means is actuated upon delivery of fluid under pressure from said first port and for deactuating the first electromechanical device to stop the flow of fluid under pressure from said first port when the pressure at said first port drops at the completion of a drawing operation as the trailing end

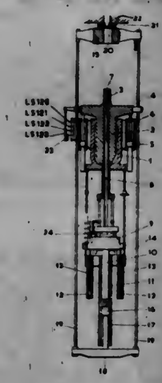
of a workpiece passes through said die, third circuit means for actuating said second electromechanical device after the completion of a drawing operation to cause said pump to deliver fluid from said second port and thereby cause the draw carriage to travel toward said die, and fourth circuit means including said second limit switch device for actuating said third electromechanical device as the draw carriage approaches the die to thereby decrease the rate of fluid flow from said second port and reduce the rate of travel of the draw carriage toward the die.

3,191,410

MACHINE TOOL CONTROL

Hans R. Fernbach, Bournemouth, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain

Filed June 8, 1961, Ser. No. 115,785
Claims priority, application Great Britain, June 8, 1960, 20,114/60
10 Claims. (Cl. 72—21)



1. A metal extrusion press comprising a main ram, hydraulic means for driving said ram, a plurality of control devices regulating the supply of liquid to the hydraulic means, the speed of the ram being variable by the use of different combinations of said control devices, and electrical control equipment comprising a plurality of stage switches, switch-operating means movable together with the ram and arranged to operate said stage switches in turn during a cycle of the press, and selector means operating different groups of said control devices in response to actuation of different stage switches by said switch-operating means, said electrical control equipment further comprising multi-position switches each providing a number of control paths at each position, for controlling the operation of each of said control devices, and interconnections between each position of each said multi-position switch and said control devices, whereby different combinations of said control devices are rendered operative via different positions of each of said multi-position switches and whereby the speed of the ram is varied in a pre-determined sequence during the cycle of the press.

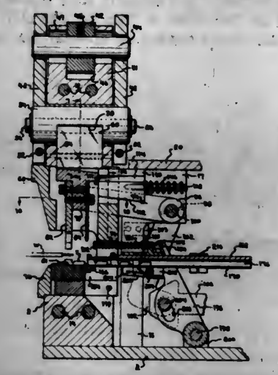
3,191,411

COMPRESSING APPARATUS

Gilbert C. Sitz, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Aug. 16, 1962, Ser. No. 217,435
23 Claims. (Cl. 72—22)

1. A compressing device comprising, a ram, means for applying thrust to one end of said ram intermittently and alternately on opposite sides of the axis of said ram, said thrust applying means having an amplitude substantially less than the stroke of said ram, and motion take-up means movable between said thrust applying means



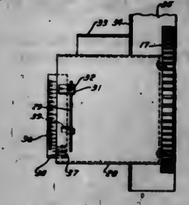
and said ram thereby to transmit thrust to said ram and drive said ram along its path of reciprocation.

3,191,412

PRESS BRAKE CONTROL

Clarence E. Duvall, 3503 N. El Vista Ave., Peoria, Ill.

Filed June 25, 1962, Ser. No. 204,799
8 Claims. (Cl. 72—26)



1. In a press brake having a bed adapted to hold a die, a ram adapted to hold a complementary die, power operated means connected to the ram to move it through a predetermined stroke toward and away from the bed, and means to adjust the ram relative to the power operated means thereby to adjust the movement of the ram toward the bed, bending control means comprising a motor connected to the adjusting means to move it, a rotatable drum drivably connected to the motor to be driven thereby to a position corresponding to the position of the ram relative to the power operated means, a pair of switches mounted adjacent to the drum and operably connected to the motor to stop it when either switch is actuated, at least one finger adjustably mounted on the drum and engageable with the switches selectively to actuate them when the drum is rotated to different angular positions, and a manually operable switch operably connected to the motor to energize it regardless of the actuated condition of the first named switches.

3,191,413

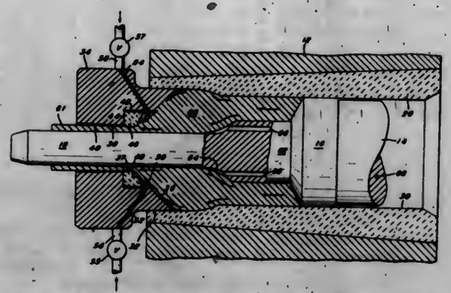
EXTRUSION APPARATUS WITH REMOVABLE DIE INSERT

Walter H. Stulen, North Caldwell, N.J., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 28, 1962, Ser. No. 219,917
23 Claims. (Cl. 72—41)

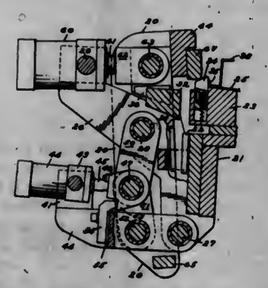
1. In an extrusion apparatus comprising a container assembly adapted to support a billet therewithin, a die means having an orifice, ram means associated with said

assembly for applying pressure on a billet in the container assembly to force the billet to flow through said orifice, means for providing a low pressure zone wherein the flowing material of the billet is free of laterally restrictive forces, said die means having an annular die insert made



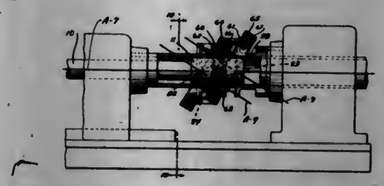
from a clay bearing material capable of being fired, and means for introducing a flowable medium into said low pressure zone and around said die insert so that the flowable medium is between the periphery of said insert and the juxtaposed portion of said die means.

3,191,414
HEMMING MACHINE OR FIXTURE
James A. Kollar, 6544 Knollwood Circle, and Anthony J. Barone, 25425 Tweed Drive, both of Birmingham, Mich.
Filed Feb. 27, 1963, Ser. No. 261,438
12 Claims. (Cl. 72—48)



1. A hemming machine actuating unit initially developing motion in a side direction to fold an upstanding workpiece flange over on the workpiece and then developing motion in a down direction to clinch the flange against the workpiece in a smooth ironed-out hem comprising,
a base structure including an anvil such as a shaped form for supporting a workpiece in the hem location,
at least one bracket fixed on said base structure; bottom, intermediate, and top pins constituting fixed pivot points supported on said bracket,
toggle links having a first end pivoted on said bracket intermediate pin, a knee joint, and a second end,
at least one rocker arm having an inner end pivoted on said bottom pin, an intermediate portion pivotally connected to said toggle links second end, and an outer end,
clinch power means on said rocker arm outer end connected to said toggle knee joint to pivot said knee joint to cock said links to raise said rocker arm and to straighten said links to lower said rocker arm,
at least one jaw having a bottom end pivotally connected to said rocker arm for raising and lowering therewith; said jaw having an upper end including a hemming steel positioned relative to said anvil; and
fold power means on said top pin pivotally connected to said jaw upper end for moving said hemming steel in a side direction relative to said anvil;
said fold power means upon activation moving said jaw and hemming steel in a side direction to fold a flange over on a workpiece on said anvil;
said clinch power means upon activation moving said links, jaw, and hemming steel in a down direction to clinch a flange down on a workpiece on said anvil in an ironed-out hem.

3,191,415
METAL WORKING
Claus L. Sperck, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 2, 1963, Ser. No. 277,623
4 Claims. (Cl. 72—78)

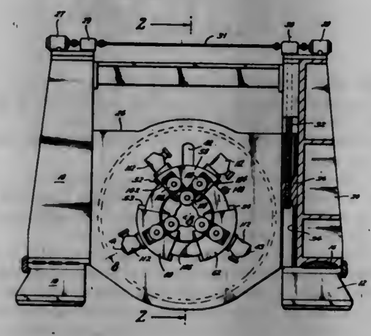


1. In a tube forming machine:
means for supporting an elongated blank;
a roller head having an open-center configuration to accommodate the blank and a tube made therefrom;
means mounting said roller head for rotation about an axis co-axial with the axis of the blank;
means connected with the blank for moving the blank relative to the head in a direction along the blank axis;
roller means formed in the shape of an annulus disposed on said head, the roller means having a pair of annular working sections surrounding said blank and making simultaneous engagement with the outside of the blank respectively on opposite sides of the blank axis, the engagement areas of the working sections being the same radial distance from the blank axis and lying in the same radial plane so that the working force of one section radially balances the working force of the other section; and
mounting mechanism including means rotatably connecting said annular working sections with the head for rotation relative to the head about axes respectively making an acute angle with said blank axis and lying in a plane containing the blank axis, the axes being spaced from one another in said axial plane, said blank axial motion, said head rotation and said working section rotation causing each said working section to progressively engage the blank along a helical path around the blank axis.

3,191,416
PIPE FORMING MACHINE
Oris D. Pritchett and Michael W. Zolton, Houston, Tex., assignors to Pritchett Engineering & Machine, Inc., Houston, Tex., a corporation of Texas
Filed Dec. 24, 1962, Ser. No. 246,821
1 Claim. (Cl. 72—106)

Apparatus for rolling the end of a tubular member which comprises
a face plate having a center opening coaxial with said member,

at least three radial slots intersecting said center opening,
a die-mounting segment adjustably mounted over each slot,
an inner die guide slidably mounted in each segment for movement radially of said face plate,
a rotatable inner die mounted on each inner die guide and extending perpendicularly from said face plate,
means mounted on each said inner die guide for rotating the inner die mounted on said die guide,
a floating cam ring rotatably disposed concentric with said center opening,
a cam surface on said cam ring for each inner die,



a cam roller mounted on each inner die guide engaging a cam surface on said cam roller,
means mounted on said face plate operably engaging said cam ring for rotation thereof whereby said inner dies are moved radially outwardly,
an outer die guide slidably mounted on each segment for movement radially of said face plate,
a rotatable outer die mounted on each outer die guide and extending perpendicularly from said face plate and parallel to and radially outwardly from the inner die mounted on the same segment, and
means mounted on said face plate operably engaging each said outer die guide for movement of said outer dies radially of said face plate.

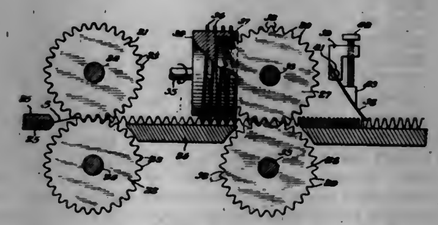
3,191,417
APPARATUS FOR SHAPING HOLLOW MEMBERS
Václav Adam, Semily, Czechoslovakia, assignor to Vyzkumny a zkusebni letecky ustav, Letnany, Czechoslovakia
Filed Aug. 22, 1963, Ser. No. 303,862
Claims priority, application Czechoslovakia, Sept. 4, 1962, Pv 5,108/62
8 Claims. (Cl. 72—126)

1. In a shaping device, in combination:
(a) carrier means having an axis and adapted to rotate about said axis;
(b) a cam member having an axially tapering face extending about said axis, said member being mounted on said carrier means for axial movement;
(c) actuating means for actuating said axial movement of said member;
(d) a plurality of segment members circumferentially offset about said tapering face and formed with respective circumferentially successive grooves, said grooves jointly defining a track about said axis;
(e) guide means on said carrier means for guiding radial movement of said segment members toward and away from said tapering face;
(f) a plurality of roller members; and
(g) cage means movable relative to said segment members about said axis for retaining said roller members in circumferentially spaced relationship while



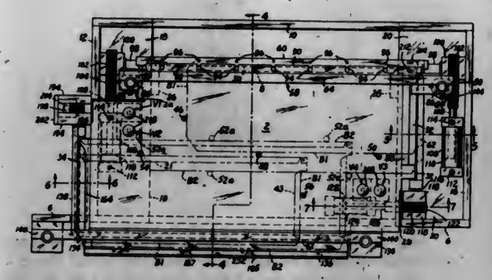
free to move radially relative to said cage means, and for rotation of said roller members about respective axes radially spaced from the axis of said carrier means while said roller members are in rolling engagement with said track.

3,191,418
METHOD AND APPARATUS FORMING SERPENTINE FINS
Arthur B. Modine, 119 11th St., Racine, Wis.
Filed Jan. 6, 1961, Ser. No. 81,670
16 Claims. (Cl. 72—187)



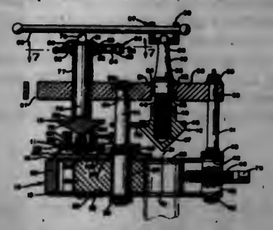
1. The method of forming a serpentine fin structure for a heat exchange structure, said fin structure comprising a plurality of fin elements adapted to be connected along their lateral edges to respective tube elements of the heat exchange structure with each fin element being connected at one of its edges to a corresponding edge of an adjacent fin element at one side thereof and at its opposite edge to the corresponding edge of the adjacent fin element at the other side thereof, providing a generally corrugated or serpentine shaped structure, the connecting portions between adjacent fin elements providing means by which the fin element may be connected to associated tube elements of the heat exchange structure, said method comprising the steps of forming a strip of metal into a generally corrugated shape, simultaneously reducing and tapering the thickness of the strip by squeezing and coining at intermediate portions of the fin elements, whereby the latter generally taper in thickness from their lateral edges toward the central portion thereof, and stretching the fin element at said intermediate portions of reduced thickness as may be necessary to provide said fin structure with fin elements of uniform width, gathering the corrugations to bring the latter into closer proximity than desired in the finished structure, and releasing the corrugations to permit expansion thereof to the desired spacing.

3,191,419
BENDING APPARATUS
Dondeville M. Rippe, Webster Groves, Mo., assignor to Dondeville Products Co., Inc., Webster, Mo., a corporation of Missouri
Filed May 10, 1962, Ser. No. 193,724
20 Claims. (Cl. 72—294)



1. Apparatus for bending the margins of a generally rectangular sheet metal blank to form first, second, third and fourth hooks at the four edges thereof, the first and second hooks extending along first and second margins of the blank at right angles to one another on one face of the blank and the third and fourth hooks extending along the other two margins of the blank at right angles to one another on the other face of the blank, said apparatus comprising a table structure having first and second edges at right angles to one another and third and fourth edges at right angles to one another, said table structure being adapted to receive a blank in a first position wherein its first and second margins extend beyond the first and second edges of said table structure, means at said first and second edges of said table structure for bending said first and second margins of the blank in said first position in one direction to form the first and second hooks, the blank being shiftable relative to the table structure after formation of the first and second hooks to a second position wherein the third and fourth margins of the blank extend beyond said third and fourth edges of the table structure, and means at said third and fourth edges of said table structure for bending said third and fourth margins of the blank in said second position in the opposite direction to form the third and fourth hooks, the means for bending the first and second margins of the blank comprising first and second vertically movable clamping bars each carrying a bending blade adapted to clamp the blank to the table structure, and first and second bending bars mounted for movement to bend the first and second margins of the blank up and around the edges of said bending blades and over the latter, the means for bending the third margin of the blank comprising a third vertically movable bar carrying yielding presser means for clamping the blank to the table structure and means for bending down the third margin of the blank around said third edge of the table, and a third bending bar adapted to move in under said third edge of the table and bend in the third margin of the blank, and the means for bending the fourth margin of the blank comprising a fourth vertically movable clamping bar adapted to clamp the blank to the table structure and a fourth bending bar mounted for movement to bend the fourth margin of the blank downward around the fourth edge of the table structure and under the latter.

3,191,420
FLARING TOOL
Frank R. Wilson, Memphis, Tenn., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 26, 1963, Ser. No. 327,580
13 Claims. (Cl. 72—317)



1. A tube flaring tool comprising:
(a) clamping means for holding a tube to be flared,
(b) a post having first and second ends,
(c) means for supporting said clamping means on said first end,
(d) an arm supported on said second end,
(e) a flaring cone having an internally threaded hole,
(f) a spindle having an externally threaded end portion for threadedly engaging said hole,
(g) means for journaling said spindle in said arm for non-axial rotary movement for driving said cone toward and away from said clamping means, and
(h) means interengaging said post and said flaring cone to prevent rotation of said cone when said cone is driven.

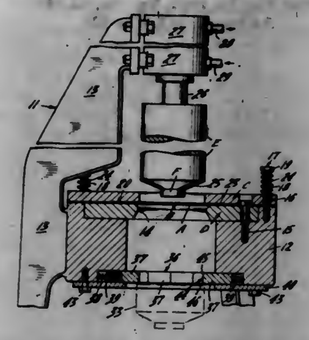
3,191,421
METHOD OF MAKING LOUDSPEAKER FIELD STRUCTURE
Aldo L. Coen, 1640 E. 50th St., Chicago, Ill.
Filed Mar. 30, 1961, Ser. No. 99,414
6 Claims. (Cl. 72—329)



1. A method of making a field structure for the magnetic circuit of a loudspeaker from sheet metal in the configuration of a cylindrical cup having a closed bottom and an open mouth of diameter substantially less than the inner diameter of said cup, which comprises blanking a disc and drawing same to cup configuration with a rounded bottom, confining the rounded bottom and curling the upper edge of the cup to neck the same inwardly to form an interior lip thereat, flattening the upper edge of the lip with the rounded bottom confined, cutting the inside edge of the lip to a cylindrical configuration of predetermined internal diameter and flattening the interior bottom of the cup while confining the flattened upper edge in cylindrical configuration.

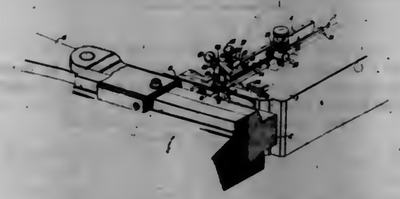
3,191,422
METHOD AND APPARATUS FOR FORMING METAL ARTICLES
Richard Robert Bolt, Lake Villa, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 10, 1961, Ser. No. 81,727
9 Claims. (Cl. 72—344)

1. An apparatus for forming a thin metal blank having a hole therein into a cup-shaped article having a side wall and an end with a longitudinally extending open-ended tubular neck disposed on said end comprising, a die having a die aperture, metal working surface means on said die aperture for cold working said blank material as said material is slidably moved across and in contact with said surface means, a holding member adapted to position and releasably hold a peripheral margin of said blank against said die with a predetermined force, a punch reciprocably mounted in axial alignment with said die aperture, an end surface on said punch, means for moving said punch through said die aperture and withdrawing all of



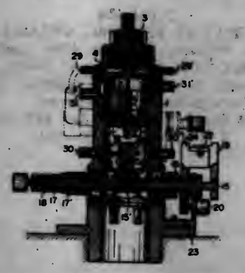
said peripheral margin from between said holding member and said die and transporting all of said peripheral margin across and in contact with said surface means to form all of said peripheral margin into a side wall portion of a cup-shaped article having an end, and plug means disposed on said punch end surface for forming an open-ended tubular neck extending longitudinally outwardly from said end by distending a portion of said end adjacent said hole simultaneously with the forming of said side wall portion of said cup-shaped article.

3,191,423
FEED DEVICE FOR THREAD ROLLING MACHINES AND THE LIKE
Edward G. Groboski, Litchfield, Conn., assignor to The Hartford Special Machinery Company, Simsbury, Conn., a corporation of Connecticut
Filed July 13, 1964, Ser. No. 383,551
13 Claims. (Cl. 72—428)



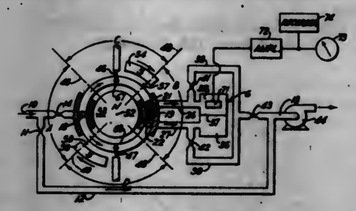
1. In a thread rolling machine having stationary and movable dies and a feed track for conveying screw blanks in a predetermined position to a location adjacent the stationary die, a cover assembly for the track comprising a main cover and an extension cover positioned coextensive with the track with the extension cover located at one end of the main cover generally at the discharge end of the track, each of said covers having a guide face engageable with the screw blanks being fed along the track to the dies, means connecting the extension cover to the main cover for movement between a first position wherein the adjacent portions of the guide faces are continuous and parallel to the track and a second position wherein the extension cover is positioned away from the track with the adjacent portions of the guide faces lying in different planes to thereby expose a number of the screw blanks, and a latch for releasably locking the extension cover in said first position.

3,191,424
DEVICE FOR MEASURING MICROHARDNESS OF MATERIALS
Sakae Ohishi, Bunkyo-ku, Tokyo, Japan, assignor to Nippon Regaku K.K., Tokyo, Japan, and Cohen Co., Ltd., Yokohama-shi, Japan, both corporations of Japan
Filed Oct. 24, 1961, Ser. No. 147,318
5 Claims. (Cl. 73—15.4)



1. An apparatus for observing and measuring the microhardness of test specimens at high temperatures in a frame body having an evacuated region and a fixed base an evacuated region comprising an indenter within the evacuated region, means for selectively loading the indenter with weights within the evacuated region, an electrical heater within the evacuated region for supporting a test specimen for indentation by the indenter, a peep aperture in one wall of the frame body, a normally closed transparent closure for the peep hole aperture, means for selectively shifting the position of the test specimen relative to the indenter to receive the impact of the indenter, means for rotating the heater selectively from alignment with the indenter to alignment with the peep aperture, a measuring microscope in alignment with and externally the peep aperture for measuring the indentation of the test specimen produced by an impact of the indenter with the specimen remaining in the heater.

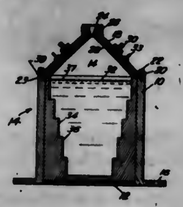
3,191,425
MEASUREMENT OF THE CONCENTRATION OF A PARAMAGNETIC GAS IN A GASEOUS MIXTURE
James L. Waters, Framingham, Mass., assignor to Mine Safety Appliances Company, Pittsburgh, Pa.
Filed Aug. 21, 1961, Ser. No. 132,653
9 Claims. (Cl. 73—23)



1. Apparatus for measuring the concentration of a paramagnetic gas in a gaseous mixture comprising means for producing substantially identical magnetic fields of non-uniform distribution across two spaced air gaps symmetrically disposed about a given axis, means for rotating the air gaps and their associated magnetic fields about the axis, means defining two separate arcuate flow paths for substantially equal portions of the gaseous mixture, said flow paths being symmetryically disposed on opposite sides

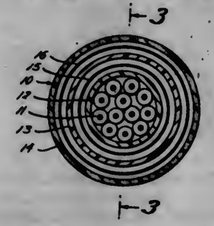
of said axis in the path of the air gaps when those gaps are rotated, means for locally heating the mixture in defined portions of each flow path to provide two temperature differential junctions therein, the junctions in one flow path being substantially diametrically opposed to the corresponding junctions in the other flow path, and pressure responsive means connected to said separate flow paths for measuring pressure pulses produced in the gaseous mixture by the periodically varying magnetic fields at said junctions, said pressure pulses being in a direction from the cold to the hot side of each junction.

3,191,426
ROCKET FUEL TESTING APPARATUS
Verbon H. B. Willsie, Brigham City, and Joseph R. Barrios, Ogden, Utah, and Henry H. Nocke, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 9, 1962, Ser. No. 165,181
5 Claims. (Cl. 73—35)



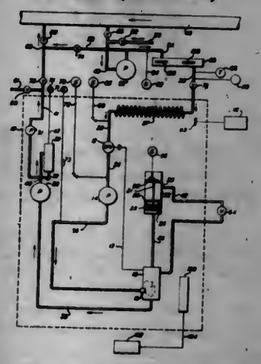
1. A device for determining burning rates, at various pressures, of combustible substances in one state for predicting the burning rate of the substance in another state comprising a pressure vessel having an orifice in the upper portion thereof, closable access means for the pressure vessel for introducing a substance in one state to be tested therein, ignition means in the pressure vessel, pressure-responsive means within said pressure vessel, means operated by the pressure responsive means for indicating the pressure in the vessel at the exterior thereof, and the interior of said pressure vessel having a contour from the highest feasible level of substance therein to the base thereof in which the internal surface of said pressure vessel defines varying horizontal, cross-sectional areas from the top to the bottom to produce a burning rate in said one state functionally related to the probable burning rate in said other state.

3,191,427
DETECTION OF CONDUIT LEAKS
William J. Rapeen, Jr., Houston, Tex., assignor to The Scott Corporation, Houston, Tex., a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,057
10 Claims. (Cl. 73—40.5)



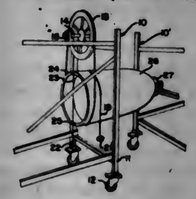
1. A method of determining the location of a leak in a conduit where the leak establishes communication with another conduit comprising, measuring the time required for a first marker to travel through one of the conduits between two points spaced a known distance apart, injecting a second marker through the leak into the same conduit through which the first marker traveled, and measuring the time for the second marker to reach one of the spaced points.

3,191,428
VAPOR PRESSURE MEASURING APPARATUS
John J. Pires, Homewood, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 24, 1961, Ser. No. 84,556
5 Claims. (Cl. 73—53)



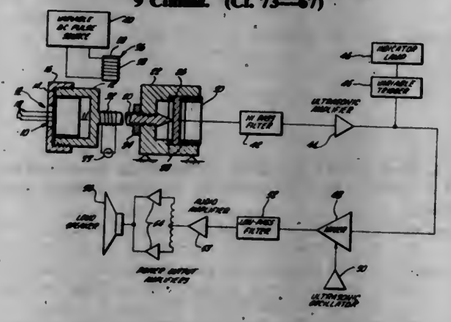
4. An apparatus for measuring fluctuations in the vapor pressure of a liquid which comprises a vaporizing chamber having drain means and an inlet means comprising a nozzle to substantially completely atomize liquid introduced to said vaporizing chamber, two pressure lines leading from a point in said vaporizing chamber in contact with the vapor phase to opposite sides of a bellows in a pressure sensing chamber, said pressure sensing chamber comprising two fluid tight compartments separated by said bellows, said bellows being movable in response to changes in pressure in either of said compartments and being connected to means for measuring said bellows movement, one of said fluid pressure lines having a valve for maintaining in one of said compartments a reference pressure derived from said vaporizing chamber and independent of later changes of pressure in said vaporizing chamber.

3,191,429
WEIGHT AND BALANCE EQUIPMENT
Carroll C. Smith, Silver Spring, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 22, 1962, Ser. No. 167,986
3 Claims. (Cl. 73—65)



1. A weight and balancing device comprising a pair of wheeled dollies, one of said dollies having a grooved pulley thereon for rotation about a horizontal axis, an endless wire rope sling over said pulley for supporting an end portion of a self propelled cylindrical underwater object to be balanced in a zero roll position for rotation about a horizontal axis concentric with the object, means on said cylindrical underwater object for indicating the zero roll position thereof, means on the other dolly for pivotally mounting the object at the other end thereof for rotation about said axis, and means for applying a constant righting moment to said object comprising a weight suspended from the outer peripheral surface of the object and of just sufficient mass to bring the object into a predetermined state of balance while the object is self-propelled through the water.

3,191,430
TESTING MEANS USED IN DETERMINING THE PRESENCE OF LOOSE PARTICLES WITHIN A CONTAINER
Ted H. Gourley, Mountain View, Calif., assignor to Delcon Corporation, Palo Alto, Calif., a corporation of California
Filed Nov. 8, 1963, Ser. No. 322,425
9 Claims. (Cl. 73—67)



1. Apparatus for detecting ultrasonic vibrations in a device which has parts that move relative to each other and produce ultrasonic vibrations when the device is vibrated, the apparatus comprising an ultrasonic transducer, an elongated rod having one end in contact with the transducer, a holder on the rod and spaced from the said one end of the rod for holding a device under test, means for vibrating the rod to shake the holder and device to cause the said parts to move relative to each other and produce ultrasonic vibrations which travel from the holder along the rod to the transducer to produce an electric signal, and means for detecting the signal to indicate the presence of ultrasonic vibrations in the device.

3,191,431
PHASE MEASURING DEVICE
Fred Schloss, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 28, 1961, Ser. No. 134,480
1 Claim. (Cl. 73—67.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

Apparatus for determining the phase angle between the force applied to a vibratory system and the resulting vibration of said system comprising:

vibration generator means, coupled to said vibratory system, for generating vibrations in said vibratory system of a predetermined frequency;

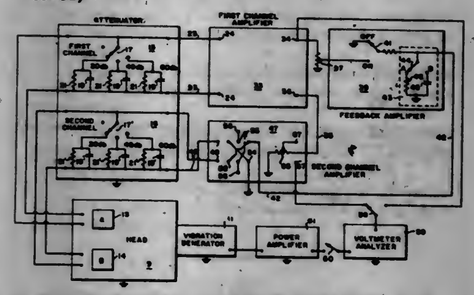
first transducer means for generating a first electrical signal proportional to the acceleration of said vibratory system;

second transducer means for generating a second electrical signal proportional to said force applied to said vibratory system by said vibration generator means;

control means, electrically connected to said first transducer means, for adjusting the amplitude of said first electrical signal to equal the amplitude of the in-phase components of said second signal;

phase-shifting means, electrically coupled to said control means, for shifting the phase of said second electrical signal by discrete multiples of ninety degrees;

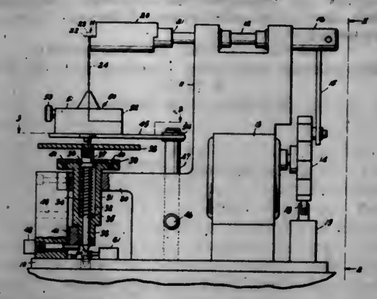
subtracting means, electrically coupled to said phase shifting means and said second transducer means, for subtracting one of said electrical signals from the other electrical signal, whereby the in-phase components of said first and second signals are cancelled;



filter means, electrically connected to said subtracting means and to said vibration generator means, for passing the out-of-phase components of said first and second signals that are of said predetermined frequency; and

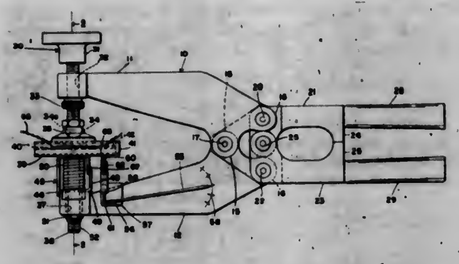
voltage measuring means, coupled to said filter means and to said control means, for measuring said first electrical signal and said out-of-phase components of said predetermined frequency.

3,191,432
ARTICLE BENDING TEST FIXTURE
Henry R. Siebach, Wyomissing, and Walter E. Zimmerman, Laureldale, Pa., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 8, 1961, Ser. No. 158,139
6 Claims. (Cl. 73—91)



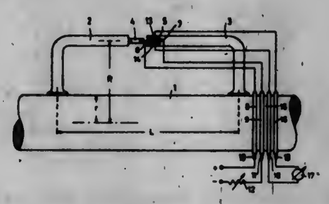
1. A bend test fixture for testing at least one metallic lead used in a semiconductor device, which comprises a shaft adaptable for holding one end of the lead, a weighted unit connectable to and suspendable from the other end of the lead for applying a predetermined tensile force to the lead, a spring-loaded platform located beneath the weighted unit in spaced relationship thereto, a plunger pin depending from the platform, means for oscillating the shaft through a desired angle to bend the lead repeatedly, a counter, cam means connected to the oscillating means for pulsing the counter during each bend of the lead, and a switch located in the path of and operable by the movement of the plunger pin when the weighted unit falls upon the platform after a breakage of the lead, said switch causing the counter to stop recording the pulses imparted thereto by the cam means.

3,191,433
SURFACE CONDITION TESTING METHOD AND APPARATUS
John C. Hintermaier, Troy, N.Y., assignor to Hoyck Corporation, New York, N.Y., a corporation of New York
Filed Jan. 3, 1962, Ser. No. 164,019
8 Claims. (Cl. 73—104)



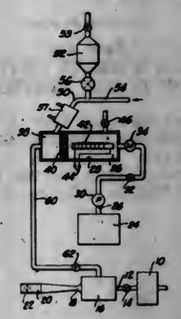
1. A method of testing the surface condition of a fibrous material which comprises positioning a permanently deformable member movably carried by a support adjacent a surface of said fibrous material, urging said permanently deformable member and said material together under pressure, said deformable member moving relative to said support upon the application of said pressure, applying gradually increasing resistance to the movement of said deformable member to gradually increase said pressure, arresting the application of said pressure when it reaches a predetermined maximum value, to thereby form a permanent impression on said deformable member of the condition of said surface, and examining the impression of said surface condition.

3,191,434
DEVICE FOR MEASURING TORQUE ON SHAFTS
Julius Brunner and Friedrich Kuhrt, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed Nov. 27, 1962, Ser. No. 240,341
Claims priority, application Germany, Nov. 29, 1961, S 76,903
9 Claims. (Cl. 73—136)



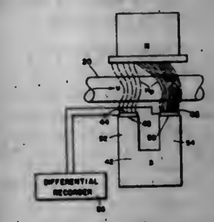
1. An apparatus for gauging torque upon a shaft having an axis, said apparatus comprising, a magneto-resistive plate positioned substantially in a plane through the axis of said shaft, means for energizing said magneto-resistive plate, a magnet member, first and second holder means for respectively securing said plate and said member to mutually spaced portions along the axis of said shaft and for locating said plate and said member close enough for the magnet member to have a measurable effect upon the magneto-resistive plate, and means for responding to the effect of said magnet plate upon said magneto-resistive member, whereby when the shaft is subjected to torque said last-mentioned means will respond according to the value of the torque.

3,191,435
PRODUCTION OF HOT GASEOUS STREAMS AND USE OF SUCH STREAMS IN AERODYNAMIC TESTING
Sol W. Weller, Santa Ana, Calif., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 5, 1961, Ser. No. 143,191
7 Claims. (Cl. 73—147)



1. In a method of testing aerodynamic characteristics of a model at high temperatures, the improvement comprising:
reacting a heated stream of an oxide of nitrogen with less than a stoichiometric amount of carbon to produce a high temperature gaseous product containing carbon monoxide and nitrogen and utilizing the high heat content of the gaseous product to initiate the composition of a further quantity of the nitrogen oxide to produce oxygen and nitrogen; and
suspending the model being tested in the resulting gaseous stream from the foregoing reactions.

3,191,436
ELECTROMAGNETIC FLOWMETER
Karl A. Davis, Woodland Hills, Calif., assignor to North American Aviation, Inc.
Filed Dec. 27, 1961, Ser. No. 162,365
2 Claims. (Cl. 73—194)



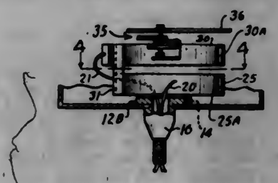
1. An improved magnetic flowmeter comprising a permanent magnet producing a primary magnetic field, said permanent magnet having a first pole piece, a second pole piece oppositely spaced therefrom by an air gap spanned by said primary field, said second pole piece being bifurcated and having branches of equal cross-sectional area to provide equal flux densities therein under no fluid-flow conditions; a nonmagnetic conduit having low electrical conductivity, which channels a fluid transversely through said primary field in said air gap; a magnetic field sensor mounted on each branch of said bifurcated pole piece, said field sensors producing a D.C. signal in response to said primary field acting thereon; and an electrical means connected to said field sensors for measuring the differential of said D.C. signals.

3,191,437
DEVICE FOR MEASURING THE TEMPERATURE OF A CONTINUOUSLY ADVANCING STRAND
Charles B. Heard, Jr., Greenbelt, Md., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 26, 1962, Ser. No. 239,952
5 Claims. (Cl. 73—339)



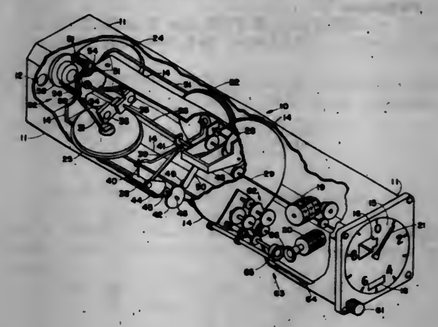
4. A device for measuring the temperature of a moving length of conductor, comprising:
support means,
a wheel mounted for free rotation on said support means, said wheel including a groove formed in the periphery of said wheel for receiving the conductor and being composed at least in part of a heat-insulating material,
a heat conductive element mounted adjacent the bottom of said groove and adapted to make contact with the conductor when the conductor is inserted in said groove,
said groove having a depth sufficient to inhibit the dissipation of heat between said element and the conductor during wheel rotation, and
means for measuring the temperature of said element.

3,191,438
THERMOMETERS
Errol L. Myers, Novi Township, Novi, Mich., assignor to Howard O. Trerice, Detroit, Mich.
Filed Dec. 18, 1961, Ser. No. 159,918
1 Claim. (Cl. 73—368.6)



A compensated thermometer comprising
(a) a support,
(b) a graduated scale carried by said support,
(c) a first Bourdon spring and means securing said first Bourdon spring to said support,
(d) a second Bourdon spring and means securing said second Bourdon spring to said first Bourdon spring,
(e) said Bourdon springs each being arcuately constructed and each being substantially C shaped to form a pair of spaced ends, said Bourdon springs further being disposed on a substantially common axis with said second Bourdon spring overlying said first Bourdon spring and with the ends of said second Bourdon spring overlying the corresponding ends of said first Bourdon spring,
(f) said first mentioned securing means comprising a bracket member fixing one end of said first Bourdon spring to said support,
(g) said second mentioned securing means comprising means fixing the opposite end of said first Bourdon spring to the end of said second Bourdon spring overlying same,
(h) a pointer element associated with said scale and link members connecting the opposite end of said second Bourdon spring wtih said pointer element and operable to move said pointer element over said dial in response to changes in the position of the end of said second Bourdon spring connected with said link members,
(i) a first capillary tube having one end connected to the end of asid second Bourdon spring which is fixed to said first Bourdon spring,
(j) a second capillary tube having one end connected to the end of said first Bourdon tube which is fixed to said support,
(k) a temperature sensing fluid filled bulb communicating with said first capillary tube and second Bourdon spring,
(l) each of said capillary tubes and Bourdon springs being at least partially filled with a temperature sensing fluid, and
(m) said first capillary tube extending closely adjacent said second capillary tube but terminating short of the end thereof.

3,191,439
ALTITUDE SENSING APPARATUS
Carl E. Johansen, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Feb. 24, 1961, Ser. No. 91,386
4 Claims. (Cl. 73—387)

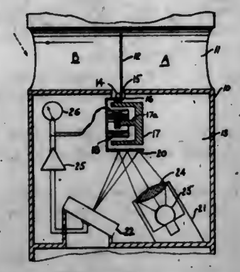


1. An instrument for indicating true altitude above ground level wherein correction is made for variations in indicated altitude pressure incident to variations in a flight condition and ground level pressure, comprising a housing having a dynamic pressure inlet, means for indicating altitude, a shaft rotatably mounted within said housing and connected to said means for indicating an expansible element responsive to static pressures and an expansible element responsive to dynamic pressure, said elements enclosed by said housing and connected to said shaft for rotating said shaft as a function of altitude corrected for variations in said flight condition, means for moving said expansible elements relative to said housing for adjustably rotating said shaft as a function of variations in ground level pressure and a flexible conduit extending between and interconnecting said inlet and the interior of said dynamic pressure capsule.

3,191,440
PRESSURE GAUGE INSTRUMENT
Jack V. Miller, Azusa, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif.
Filed Feb. 11, 1963, Ser. No. 257,495
7 Claims. (Cl. 73—398)

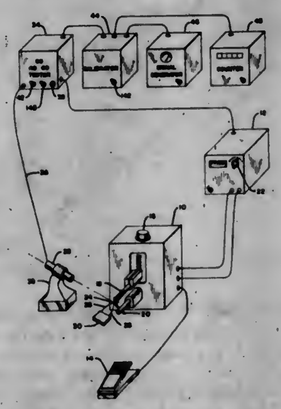
3. A pressure gauge comprising: a housing structure having an opening therethrough and a sealed chamber; a vane rotatably mounted on a flexure pivot and extending

from the pivot into said chamber and across said opening; a magnet mounted in said chamber near said vane; a coil mounted on said vane and coupled to said magnet; and electro-optical apparatus for producing a flow of



current through said coil whose magnitude and polarity correspond to the displacement of said vane from its null position in response to fluid pressures exerted against said vane.

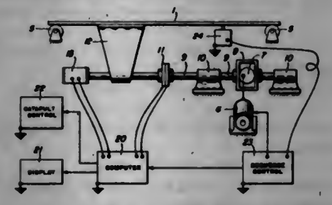
3,191,441
WELD QUALITY MONITORING DEVICE FOR WELDING MACHINES
Robert A. Erickson, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,275
12 Claims. (Cl. 73—432)



7. A method of determining the quality of a weld comprising the steps of:
(1) performing a series of welds at various weld schedules, and monitoring the radiated time-temperature integral of the energy dissipation of each weld by an infrared detector,
(2) destructively testing the welds of (1) to determine the correlation of their pull-strength with the time-temperature integral of the energy dissipated in the weld,
(3) plotting the results of (2) as pull-strength vs. the monitored energy dissipation,
(4) plotting an acceptable minimum pull-strength from the data of (2) as a straight line limit on the graph of (3),
(5) determining an acceptable minimum energy dissipation from the limits of (4),
(6) calibrating the detector to indicate an unacceptable weld in accordance with (5).

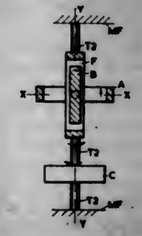
8. A testing device for determining the quality of a weld comprising:
(1) sensing means for sensing the radiant energy emitted by the weld and producing a related electrical signal,
(2) integrating means responsively coupled to said sensing means for integrating the related electrical signal over the weld duration,
(3) electronic signal comparing means responsively coupled to said integrating means for comparing the magnitude of the integrated related electrical signal to a previously determined electrical signal magnitude,
(4) electronic means respectively coupled to said comparing means for providing an indication of the result of the comparison of (3).

3,191,442
APPARATUS FOR WEIGHING
Robert M. Hutchinson, Havertown, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed July 12, 1963, Ser. No. 294,699
6 Claims. (Cl. 73—432)



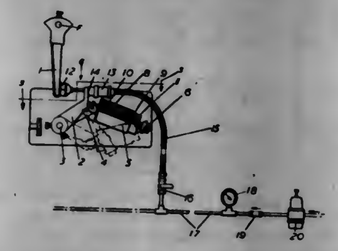
1. An automatic weigher comprising drive means for supporting and accelerating an object to be weighed over a predetermined physical displacement, load cell means operative to measure the accelerating force supplied by said drive means, accelerometer means operative to measure the induced acceleration of said object, and computing means responsive to said load cell means and said accelerometer means to compute the inertial mass of said object to be weighed.

3,191,443
OSCILLATING GYROSCOPIC DEVICE
Geoffrey Harold Hunt, Farnham, Surrey, England, assignor to the Minister of Aviation, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Oct. 22, 1962, Ser. No. 232,129
8 Claims. (Cl. 73—505)



1. Gyroscope apparatus in which two oscillatory bodies on a first torsion bar mounting have equal natural frequencies of oscillation, respectively, about the axis of said mounting whereby oscillation of either body is accompanied by oscillation of the other in anti-phase, and two further oscillatory bodies one of which includes the first torsion bar mounting with the two oscillatory bodies thereon, on a second torsion bar mounting whose axis intersects that of the first torsion bar mounting at right angles, have equal natural frequencies of oscillation respectively about the axis of said second torsion bar mounting whereby oscillation of either is accompanied by oscillation of the other in anti-phase, the equal natural frequencies of oscillation of the two bodies on the second torsion bar mounting being equal to those of the two bodies on the first torsion bar mounting, whereby when the oscillatory bodies on either of the two torsion bar mountings are oscillating, deflection of the whole about a predetermined response axis brings about oscillation of the bodies on the other torsion bar mounting.

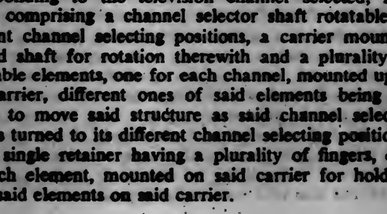
3,191,444
TORQUE CONTROL DEVICE FOR DIFFERENTIAL SPEED SCROLL CENTRIFUGE
Laurence Francis Hession and Douglas Bradley, Camberley, England, assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 13, 1964, Ser. No. 344,706
5 Claims. (Cl. 74—2)



1. In a centrifuge comprising a hollow bowl, a scroll inside the bowl for discharging solids from said bowl, means for driving the bowl, differential gearing means rotatably linking the bowl and scroll, a torque control mechanism, the gearing means having a pinion, said mechanism including a torque arm attached and extending radially from the shaft of said pinion and overload tripping means opposing and normally blocking the rotation of said torque arm, said overload tripping means comprising a torque lever, a torque axle free to pivot about a fixed axis and fixedly mounting one end of said torque lever, a bell arm mounted on the torque axle spaced from said torque lever, a compression spring assembly having one end secured to a fixed pivot point and the other end pivotally secured to a movable pivot point on the distal end of said bell arm, the movable pivot point being normally disposed on one side of an imaginary line drawn between the torque axle and the fixed pivot point whereby the compression spring assembly imparts a biasing force to said torque lever causing the torque lever to oppose rotation of the torque arm and whereby an excessive force from the torque arm in opposition to the torque lever the compression spring assembly will yield to permit the movable pivot to trip to the other side of the imaginary line so that the torque lever is thereby moved out of the path of the torque arm and the latter is permitted to rotate freely, the improvement including fluid motor means having a cylinder and movable plunger, the distal end of said torque lever mounting said cylinder, the plunger yieldingly engaging the torque arm of said mechanism when said movable pivot point is on the said one side of said line, and means supplying fluid pressure to said fluid motor means.

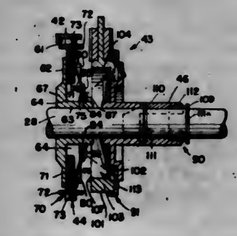
3,191,445
ANGULAR RATE MEASURING DEVICE
Harry Nils Ekland, Pacific Palisades, Calif., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 135,972
11 Claims. (Cl. 74—5.6)

1. An angular rate measuring device comprising:
a gyroscope having a housing;
a rotating shaft firmly radially constrained and journalled adjacent its ends in said housing;
a gyroscope rotor mounted on said shaft, said rotor having a spin axis coaxial with the axis of said shaft;
said rotor having unequal moments of inertia about two mutually perpendicular axes in the plane of rotation of said rotor;
vibration sensing means in physical force-reactive communication with said rotor and said housing;
said gyroscope having at least one input axis and at least one output axis, said input and output axis being perpendicular to said spin axis;



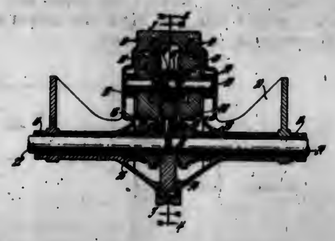
said rotor being constrained with respect to movement about said output axis, whereby upon rotation of the said rotor about an input axis, an oscillatory torque having a frequency which is twice the rotor spin frequency, is generated by said rotor about an output axis which results in oscillating radial forces being communicated by said shaft to said vibration sensing means; and
whereby an output signal is generated by said vibration sensing means in response to said force communicated thereto.

3,191,446
FINE TUNING MECHANISM FOR TELEVISION TUNERS
Jimmie E. Warthan, Stinesville, Ind., assignor to Sarkes Tarzian, Inc., Bloomington, Ind., a corporation of Indiana
Filed Jan. 21, 1964, Ser. No. 339,289
30 Claims. (Cl. 74—10)



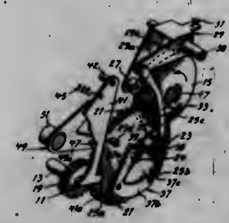
1. In a fine tuning mechanism for use in a television tuner the combination of a fine tuning impedance device having a movable element, movable structure acting on said element to vary the impedance of said device, and means for moving said structure to different positions corresponding to the television channel selected, said means comprising a channel selector shaft rotatable to different channel selecting positions, a carrier mounted on said shaft for rotation therewith and a plurality of adjustable elements, one for each channel, mounted upon said carrier, different ones of said elements being effective to move said structure as said channel selector shaft is turned to its different channel selecting positions, and a single retainer having a plurality of fingers, one for each element, mounted on said carrier for holding all of said elements on said carrier.

3,191,447
TRANS-AXLE DRIVE ASSEMBLY
Melvin L. Ollman, Detroit, Mich., assignor to Dura Corporation, Oak Park, Mich., a corporation of Michigan
Filed Oct. 27, 1961, Ser. No. 148,064
20 Claims. (Cl. 74—700)



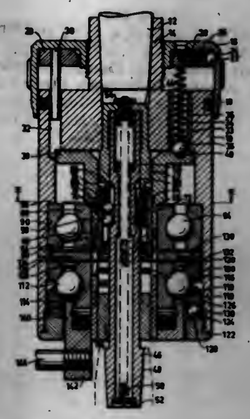
1. A trans-axle assembly, comprising: an integral transmission and axle housing having a pair of coaxially disposed and spaced gear members provided therein, means engaged with said gear members for driving them in opposite rotational directions, separately mounted gear toothed members provided between said oppositely driven gear members, axle driving means including a gear member engaged with said gear toothed members, and means for alternatively engaging one of said gear toothed members with one of said oppositely driven gear members.

3,191,448
MOTION TRANSMITTING MECHANISM
George R. Murphy, Searcy, Ark., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 23, 1963, Ser. No. 297,014
7 Claims. (Cl. 74—125)



1. A motion transmitting mechanism comprising, a driven gear, a driving cam, cam follower means actuated into motion by said driving cam, an intermediate gear constantly meshed with said driven gear and provided with a plurality of axially projecting studs angularly spaced one from the other, a pivotably mounted pawl movable into and out of stud engaging position, linkage means operatively connecting said cam follower means and said pawl, said cam being configurated to actuate said pawl through said linkage into said stud engaging position and to drive said engaged stud for transmitting said cam follower motion to drive said driven gear with said intermediate gear, and means actuatable for controlling said transmitting by selectively urging said pawl out of and into said stud engaging position.

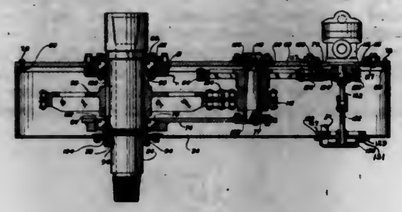
3,191,449
REVERSING DEVICE FOR USE PRIMARILY IN SCREW THREAD CUTTING DEVICE
Alf Anders Anselm Eriksson, 92 Altavagen, Nacka, Sweden
Filed Oct. 11, 1962, Ser. No. 229,957
Claims priority, application Sweden, Oct. 11, 1961, 10,100
9 Claims. (Cl. 74—202)



1. A device for use in an apparatus of the type including screw thread cutting apparatus, comprising a driving part, a rotatable part driven by said driving part in either direction, ring members carried by said parts for selectively reversing the direction of rotation of said driven part, a pair of raceways formed on said ring members and facing one another, a plurality of torque transmitting rolling bodies mounted in said raceways, one of said ring members comprising two separate part-rings mounted coaxially of one another and together forming at least one of said raceways, a holder member for maintaining said torque transmitting bodies against rotation about the axis of the driven part, means to generate a variable pressure in response to the magnitude of the reversing torque to press said torque transmitting bodies against said raceways, and means operable by relative axial movement between said part-rings for yieldably accommodating said variable pressure without transmitting it axially between said ring members.

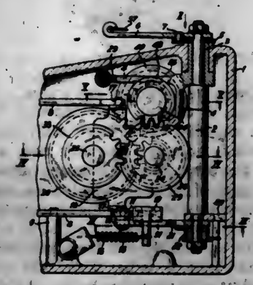
3,191,450
FLUID DRIVEN PIPE ROTATING DEVICE FOR ROTARY DRILLING
John Hart Wilson, % Wilson Manufacturing Co., Inc., P.O. Box 1031, Wichita Falls, Tex.
Filed Sept. 24, 1962, Ser. No. 225,666
3 Claims. (Cl. 74—219)

1. A drive mechanism for rotating pipe in the drilling of a bore hole, which drive mechanism comprises:
(a) a top mounting plate,
(b) a frame plate,
(1) legs extending upwardly from said frame plate and being weldably secured to said top mounting plate to hold said frame plate a spaced distance from said top mounting plate,
(2) said top mounting plate and said frame plate each having axially aligned first bore holes formed therein,
(3) said top mounting plate and said frame plate each having axially aligned second bore holes



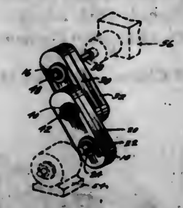
formed therein and being spaced laterally from said first bore holes,
(4) said top mounting plate having a third bore hole formed therein which hole is laterally spaced from said second bore hole in said top mounting plate,
(c) a bearing fitted in each of said first and in each said second bore holes,
(d) a hollow shaft journaled within said bearings in said first bore holes and being fixed against longitudinal movement with respect to said top mounting plate and said frame plate,
(e) a gearing member fixedly secured to said hollow shaft intermediate said top mounting plate and said frame plate,
(f) a countershaft journaled within said bearings within said second bores in said top mounting plate and in said frame plate,
(g) a pair of gearing members mounted on said countershaft intermediate said top mounting plate and said frame plate and being fixedly secured to said countershaft,
(1) one of said gearing members being connected in driving relation with said gearing member mounted on said hollow shaft,
(h) motor drive means mounted on the upper side of said top mounting plate,
(1) the shaft of said motor drive means extending through said third bore hole in said top mounting plate,
(2) gearing means on said shaft connected in driving relation with the other of said gearing members on said countershaft,
(i) a housing,
(1) said housing having a bore hole formed therein which is in axially aligned relation with the first bore holes in said top mounting plate and in said frame plate when said housing is fitted in place on the lower side of said top mounting plate,
(2) said top mounting plate, said frame plate and said legs being constructed so that the legs extending between said frame plate and said top mounting plate are apaced apart sufficiently to permit the insertion of gearing members into operating position and to permit the removal of said gearing members therefrom, said assembly being maintained in operable relation independently of said housing,
(j) sealing means surrounding said hollow shaft and forming a seal between said housing and said shaft on the lower side of said housing, and
(k) bolt means securing said housing to said top mounting plate.

3,191,451
MULTIPLE SPEED GEAR TRANSMISSION WITH REVERSE SPEED
Kurt Diebsch, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Dec. 1, 1961, Ser. No. 156,291
Claims priority, application Germany, Dec. 2, 1960, F 32,682
10 Claims. (Cl. 74—337.5)



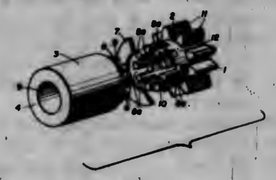
1. A transmission for an automotive vehicle and the like comprising, in combination:
(a) an input shaft;
(b) an output shaft rotatable in a forward direction and in a reverse direction;
(c) a plurality of gears on each of said shafts,
(1) each gear on said input shaft meshing with a gear on said output shaft and constituting therewith a pair of meshing gears,
(2) one gear of each pair being secured on the respective one of said shafts against rotation relative thereto, and the other gear being normally rotatable on the other shaft,
(3) the gears on said one shaft differing in pitch diameter from each other;
(d) clutch means sequentially movable between a plurality of operating positions in which said clutch means simultaneously engages said other gears respectively and said other shaft for securing the engaged other gear to said other shaft against rotation relative thereto, and a plurality of inoperative positions, each inoperative position being interposed between two operative positions, said clutch means when in said inoperative positions being out of simultaneous engagement with said other shaft and with said other gears;
(e) clutch actuating means for moving said clutch means between said positions thereof;
(f) reverse gearing;
(g) reverse speed control means for moving said reverse gearing toward and away from an engaged position in which said reverse gearing connects said output shaft to said input shaft for rotation of said output shaft by said input shaft in said reverse direction; and
(h) motion transmitting means connecting said clutch actuating means to said reverse speed control means for moving said clutch means from each of said operative positions to an inoperative position when said reverse gearing is moved toward said position thereof by said reverse speed control means.

3,191,452
POWER TRANSMISSION APPARATUS
Mitchell Lipski, 5270 W. 90th St., Oaklawn, Ill., and Thomas Romanek, 5208 S. Troy St., Chicago, Ill.
Filed Mar. 17, 1964, Ser. No. 352,589
6 Claims. (Cl. 74—384)



1. In a power transmission apparatus, a pair of elongated housings, a central shaft through both housings adjacent one end thereof, a drive shaft rotatable in one of said housings adjacent its other end, a driven shaft rotatable in the other of said housings adjacent its other end, and a pair of power transmission means, one enclosed within each of said housings and protected thereby from contact with foreign matter, said pair of power transmission means extending, one from said central shaft to said drive shaft and the other from said central shaft to said driven shaft, said housings being rotatable about said central shaft for varying the distance between the axes of said drive and driven shafts.

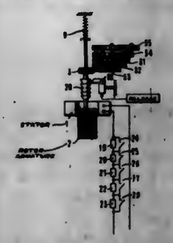
3,191,453
SINTERED METAL ARTICLE
Wilhelm Hoven, Wurselen, Germany, assignor to Garbe, Lahmeyer & Co., A.G., Aachen, Germany, a corporation of Germany
Filed Nov. 14, 1962, Ser. No. 237,526
Claims priority, application Germany, Nov. 14, 1961, G 33,582
2 Claims. (Cl. 74—432)



1. A machine element, comprising
(a) a first portion formed from pressed and sintered powdered metal having a plurality of locking teeth,
(b) a second portion formed from pressed and sintered powdered metal having a plurality of locking teeth, the portions being assembled with the locking teeth in inter-engaging relationship, and
(c) means locking the portions together, the assembled first and second portions forming an elongated generally-cylindrical shape with enlarged parts at the ends and a reduced portion in the center where the locking teeth are located.

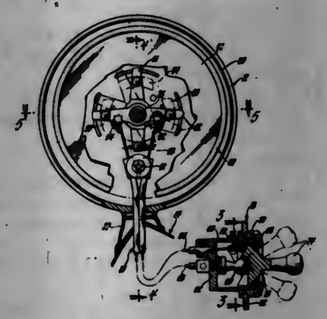
3,191,454
GEAR OPERATING DEVICE
Walter Heiser, Drosteweg 19, Moersburg (Bodensee), Germany
Filed May 1, 1961, Ser. No. 106,881
Claims priority, application Germany, May 17, 1960, H 39,449
4 Claims. (Cl. 74—472)

1. A driving and power transmission apparatus suitable for washing machines, comprising: an electromagnetic member for defining and providing a stator field; an armature rotating in said stator field, and being axially movable relative thereto, said electromagnetic member and said armature defining an electromotor within an axially displaceable rotor; electric circuit means connected to said electromagnetic member for adjustably energizing said electromagnetic member; a shaft on said armature; spring means connected to said shaft for urging said armature in axial direction out of the magnetic field as being set up by said electromagnetic member upon energization thereof; a detent mechanism comprising a



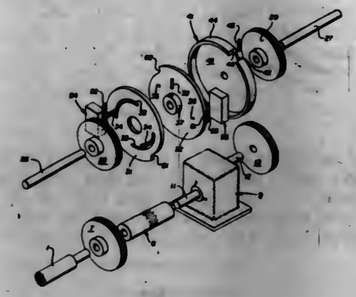
first member on said shaft and a second, stationarily positioned pawl for engaging said first member in one of a plurality of at least three positions so as to axially, positively arrest said shaft with said armature in one of said positions while permitting rotation of said shaft, each position being attainable upon a different adjustment of the energization of said electromagnetic member; a like plurality of gearing means selectively engageable with a gear on said shaft for being driven therefrom, depending upon the respective axial armature position; and means for releasing said pawl from engaging said first member.

3,191,455
REMOTELY CONTROLLED REAR-VIEW MIRROR
Lloyd T. Fuqua, Fortville, George C. Campbell, Middletown, and Lucien W. Pryor, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1963, Ser. No. 273,356
9 Claims. (Cl. 74—501)



9. A remotely controlled rear-view mirror comprising, a housing, a mirror support, means universally pivotally supporting the mirror support on the housing, first and second members mounted on the housing for independent rotation about an axis passing through said means, cooperating camming means formed with the mirror support and said members for moving the mirror support about said means upon rotation of the members, first and second axially displaceable means for imparting rotation to said first and second members, and manually operated universally pivotally supported means for selectively and simultaneously imparting axial movement to said first and second axially displaceable means.

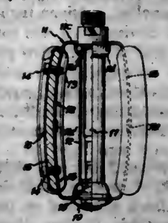
3,191,456
COUNTING CONTROL DEVICE
Robert J. Dexter, Antioch, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Apr. 26, 1962, Ser. No. 190,395
11 Claims. (Cl. 74—568)



1. A control device for effecting control functions in response to predetermined angular displacements of a shaft to which said device is operatively connectable; comprising frame structure, a cam member rotatably supported by said frame structure and having a cam surface provided with a recess therealong, cam disc structure rotatably supported by said frame structure adjacent said cam member and having a pair of spaced apart camming portions therelong, means operatively connected with said cam member and with said cam disc structure for rotating each at a velocity different from that of the other to effect relative rotation therebetween in response to angular displacements of such shaft, a pair of cam followers rotationally fixed relative to said cam member and cam disc structure and being oriented and located in alignment both with said cam surface so as normally to ride thereon and also with said cam disc structure for engagement with the camming portions thereof and being respectively periodically projectable into said recess as said cam member rotates to engage said cam disc structure and thereby enable engagement with any camming portion thereof then in angular alignment with said recess, and control means operatively connected with said cam followers for providing control response to engagement of the respective cam followers with any camming portion of said cam disc structure during such relative rotation of said cam member and said cam disc structure.

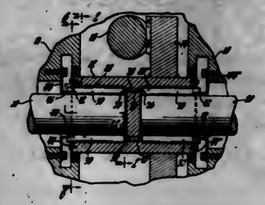
3,191,457
PEDALS
Frederick Arthur Adcock, Wollaton, Nottingham, England, assignor to Raleigh Industries Limited, Northern Ireland and the Isle of Man, a company of Great Britain
Filed Mar. 5, 1963, Ser. No. 263,052
Claims priority, application Great Britain, Apr. 14, 1962, 14,514/62
2 Claims. (Cl. 74—594.4)

1. A pedal assembly comprising a spindle; a barrel concentric with said spindle; two identical U-shaped members each having a portion of one end of one arm offset inwardly; one arm of each member overlying the offset portion of the one arm of the other member, whereby a continuous outer surface is presented at the zone of overlay; the base of each U-shaped member having a dish integral therewith and forming a ball bearing cup, each ball cup having an inwardly directed circular lip; each lip being atttached to an end of said barrel; a plurality of bearing balls in each cup; and means on each end of said spindle retaining said bearing balls in each cup, and thereby retaining said U-shaped members on the spindle;



a pedal block on each outer surface formed by the joined arms of the U-shaped members, and securing means passing through the pedal blocks and joined arms.

3,191,458
GEARLESS DIFFERENTIAL
Herbert L. Adams III, Pontiac, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 5, 1963, Ser. No. 271,628
10 Claims. (Cl. 74—650)

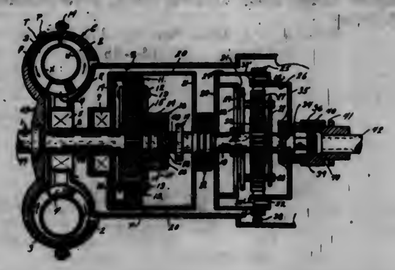


5. A positive drive differential mechanism including a differential housing having a carrier rotatably mounted therein and receiving a pair of axles, a pair of two way overrunning and interacting clutches interposed between the axles and the carrier for selectively locking either or both of the axles with the carrier for drive in the same direction, each clutch including a sprag carried by the carrier and pivotal with respect thereto in opposing directions from a normally clutch disengaged position to first and second opposing clutch engaged positions, each sprag having a first clutch surface and second and third opposing clutch surfaces spaced from the first surface by a distance greater than the distance between the carrier and the axle, the first clutch surface being in engagement with the carrier when the sprag is in either clutch engaged position and the second and third clutch surfaces being respectively in engagement with the axle when the sprag is in the first and second clutch engaged positions, and a pair of resilient sprag actuators secured to the housing with each actuator protruding axially inward of the carrier from the housing, each actuator being located in the rotational path of a sprag of a clutch and between the pivot axis of the sprag and the axle for causing the sprag to pivot with rotation of the carrier in a given direction from the clutch disengaged position to the corresponding clutch engaged position and jam between the axle and the carrier to lock the axle and carrier together.

3,191,459
TRANSMISSION
Arthur L. Welch, P.O. Box 731, Wasilla, Alaska
Filed Mar. 4, 1963, Ser. No. 262,577
2 Claims. (Cl. 74—688)

1. A hydrodynamic and planetary split torque transmission comprising coaxially aligned, spaced driving and

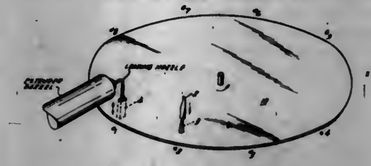
driven shafts, a first extension shaft rigidly connected with and rotatable with the driving shaft and extending rearwardly therefrom, a hydraulic torque converter embodying a housing, an impeller, a driven turbine; said impeller connected with said driving shaft and rotatable therewith, a pair of planetary gear units; the first planetary gear unit having a sun gear mounted upon and secured to the rear end of said first extension shaft, said sun gear having a hub portion extending rearwardly therefrom, a plurality of pinion gears forming reaction members rotatably mounted on pins, said pins fixed to a first pinion gear carrier rotatably mounted on said first extension shaft and forming an output member, a hydramatically operated multiple disc clutch mounted on the hub portion of said sun gear embodying friction discs interlaced with friction plates found inside a clutch drum connected with said pinion gear carrier and adapted to lock said pinion gear carrier and said sun gear together when actuated, a ring gear supported upon said first extension shaft and having internal teeth meshing with said pinion gears, a hollow shaft connected with said turbine and surrounding a portion of said first extension shaft, a one way clutch drivingly connecting said hollow shaft and said ring gear,



a drum enclosing said first planetary gear unit and connected with said hollow shaft, a second planetary gear unit comprising a plurality of elements, a second disc clutch connecting said drum to one of said elements, said second planetary unit having a second sun gear element mounted upon and secured to the rear end of a sun gear supporting shaft drivingly connected with said first pinion gear carrier, a second plurality of pinion gear elements rotatably mounted on pins fixed to a sceond pinion gear carrier rotatably mounted upon said second sun gear supporting shaft, a brake drum extending over said second planetary gear unit and connected with a vertical flange portion of said second disc clutch, a second ring gear element arranged between said brake drum and said second plurality of pinion gears and having external teeth mating with internal teeth of said brake drum, said second ring gear having internal teeth mating with said second plurality of pinion gears, said second pinion gear carrier attached to an output shaft having spline teeth on the rear end thereof connectable to a coupling slidably mounted upon splines on the said driven shaft receiving the combined output of both said first and second planetary gear units.

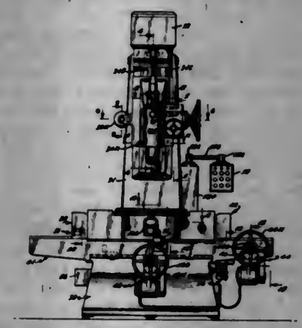
3,191,460
METHOD OF MAKING A KNIFE
Joseph N. Christian and Howard A. Jones, Oneida, N.Y., assignors to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed July 7, 1961, Ser. No. 121,781
3 Claims. (Cl. 76—104)

1. Method of forming hollow handled cutlery which comprises injecting melted thermoplastic synthetic resin having substantial mold shrinkage through a nozzle into the handle commencing at a point close to the bottom of the handle and moving upwardly so as to keep the nozzle substantially at the level of the synthetic resin as the handle is filled, inserting the end of the tapered tang of a knife blade, which tang is thicker at its said end, in the handle so as to displace some of the synthetic resin therefrom and bring the bolster of the blade against the upper



edge of the hollow handle so as substantially to close off the space within the handle, and then setting the synthetic resin so as to contract the same longitudinally of the handle and compress the same around the tang, thereby eliminating transverse mold shrinkage around the tang.

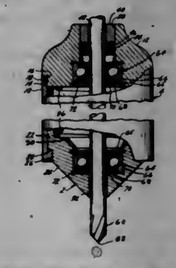
3,191,461
JIG BORER
Michael P. Budney, Berlin, Henry S. Budney and Thaddeus W. Budney, Newington, and Matthew F. Saczawa, Wethersfield, Conn., assignors to Atlantic Machine Tool Works, Inc., Newington, Conn.
Filed Apr. 17, 1961, Ser. No. 113,581
1 Claim. (Cl. 77—4)



A motor drive for rapidly operating the feed screw of a transversely movable slide relative to a way carrying member on a machine tool comprising a gear housing mounted on the way carrying member, a feed screw having a helical groove thread formed therein mounted on the way carrying member, a nut having helical groove threads for cooperating with said feed screw for mounting on a member having bearing surfaces for engagement with the ways of a way carrying member, a plurality of ball bearings mounted in said nut and cooperating with the helical groove thread in said screw and nut, whereby rolling contact is obtained through said ball between said feed screw and said nut to assure a minimum of friction and a minimum of lost motion, whereby accurate adjustment can be made between the way carrying member and the slide thereon supported, a first shaft mounted on said base, said shaft having a bore extending from the exterior thereof and terminating in a transverse slot open to the periphery of the shaft, a rod extending into said bore and having a first key receiving aperture, a key in said aperture and in said first slot projecting from opposite sides of the said shaft, a double clutch element slidably mounted on said shaft and having apertures therethrough in alignment with said slot and receiving said key, means to secure the key in said double clutch element whereby movement of said rod will cause movement of said clutch element

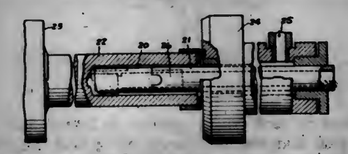
axially of said shaft, a gear freely rotatable on said shaft meshing with a gear mounted on said feed screw and having a clutch surface for receiving one clutch surface of said double clutch element, a first handwheel rotatably mounted in said housing on a bearing supporting said shaft, said first handwheel having a clutch surface for engagement with the other clutch surface of said double clutch element, whereby axial movement of the clutch element toward and away from the first handwheel causes the handwheel to be engaged and disengaged, respectively, with said shaft, and screw means for operating the rod to move said double clutch element into selected clutch engagement with said shaft gear and said handwheel, a second shaft mounted in said housing, gear means on said second shaft meshing with the gear on said first shaft, a drive on said second shaft, a motor suspended from said gear housing and carrying a pulley for cooperating with the pulley on said second shaft, a belt interconnecting said pulleys, a switch to operate said motor in feed and reversing feed directions, and a second handwheel mounted on said second shaft for turning said second shaft when said motor is inoperative.

3,191,462
CENTERING TOOL
Norman K. Planske, 240 Sun Valley Drive, Southington, Conn.
Filed Nov. 23, 1962, Ser. No. 239,479
12 Claims. (Cl. 77—55)



1. A tool for locating the center of an aperture comprising a housing having a tubular body portion at one end with a closure portion at the other end thereof, said closure portion having an aperture extending therethrough aligned with the center of said body portion; a centering element slidably received within said housing and having a generally conical portion extending outwardly of said one end of the housing and an aperture extending therethrough aligned with the aperture of said housing; resiliently compressible means in said housing biasing said centering element outwardly thereof; means limiting movement of said centering element outwardly of said housing; a locating member having an elongated slide portion slidably seated in the apertures of said closure portion and centering element and dimensioned to extend outwardly of said centering member and closure portion, said aperture in the closure portion having a portion dimensioned to provide sliding support for said locating member and an axially extending portion of enlarged cross section intermediate the length thereof; and a collar of resiliently deformable material in said enlarged cross-sectional portion of the closure aperture, said collar being of lesser axial dimension than said enlarged cross-sectional aperture portion and having an axial aperture therethrough of lesser cross-sectional area than the cross section of said locating member to engage frictionally the periphery of said locating member, said collar being of lesser external transverse dimension than said aperture in the closure portion to permit expansion thereof upon insertion of the locating member thereinto, said collar having limited axial movement in said enlarged aperture portion to permit limited free axial movement of said locating member and permitting relative axial movement of said locating member upon application of axial force to said locating member to move it therethrough.

3,191,463
SOLID BORING APPARATUS
Jack S. Ladendorf, Detroit, Mich., assignor to American Heller Corporation, Detroit, Mich., a corporation of Michigan
Filed July 25, 1962, Ser. No. 212,229
14 Claims. (Cl. 77—58)



1. In a solid boring apparatus wherein
a boring tool head is brought into engagement with a workpiece and relative rotation is produced between the workpiece and the tool head,
liquid coolant is applied externally and the chips are removed internally through the tool head,
the combination comprising a solid boring head comprising a head body having a radial slot extending axially through the periphery in one end thereof,
said slot defining a transverse axial surface,
said body having an axial locating surface at an angle to said axial surface,
said body having an axial recess at the juncture of said axial locating surface and said transverse axial surface,
said body having a second locating surface extending radially at an angle to said transverse axial surface,
said body having a radial recess at the juncture of said second locating surface and said transverse axial surface,
said body having an axial chip opening through which the chips pass extending from said one end thereof adjacent said slot and defining a chip mouth at one end of said body,
said body having axially extending cavities along the periphery thereof for receiving pressure pads,
said body being made by investment casting in substantially final form,
a pressure pad in each of said pressure pad openings,
a cutter in said radial slot and having a flat surface brazed to said transverse axial surface,
said cutter having a side edge engaging said first locating surface and an end edge engaging said second locating surface,
a tubular boring bar,
and means for mounting said boring head on said boring bar.

3,191,464
ADJUSTABLE WIRE STRIPPING DEVICE
Henry W. Demler, Lebanon, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of abandoned application Ser. No. 13,956, Mar. 9, 1960. This application Oct. 23, 1963, Ser. No. 318,451
2 Claims. (Cl. 81—9.5)

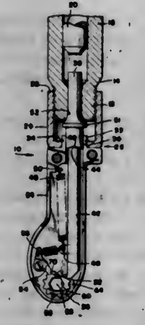
1. In a tool for stripping insulation from a conductor including a frame member having a recess at one end, an insulation cutting blade fitted in the said recess for sliding movement axially of said frame member and supported within said frame member, means for adjusting said blade axially of said recess including an eccentric bearing member in said recess affixed to said frame

for rotary movement, the said bearing member having surfaces of different radii and adapted to engage said blade and position such at different points in said recess, a driven member adapted to engage portions of said frame member for axial sliding movement within said frame member, a further insulation cutting blade fixedly



mounted on said driven member in face-to-face relationship with said first mentioned blade and adapted to cooperate with said first mentioned blade to cut insulation on a conductive lead, means for actuating said driven member axially in relative movement to said frame member to effect closure of said blades to accomplish insulation stripping.

3,191,465
RATCHET DEVICE
Earl B. Parker, Plainfield, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 26, 1963, Ser. No. 333,577
2 Claims. (Cl. 81—52.35)



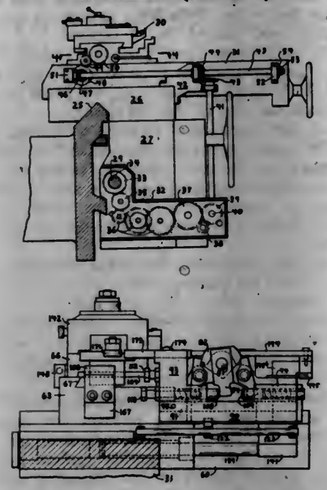
1. A ratchet attachment for connection to a reciprocatory power tool to provide rotary movement of a ratchet socket in response to reciprocatory movement from the output end of said power tool comprising:
(a) a frame having a rear end portion adapted for detachable connection to said output end of said power tool and a front end portion carried by said rear end portion for one-hundred and eighty degree rotation thereon for allowing the ratchet attachment to be used for both tightening and loosening a rotatably adjustable fastening means;
(b) a ratchet socket carried by said front end portion of said frame and rotatable thereto;
(c) said ratchet socket including circumferentially disposed teeth and having an opening therein for receiving said rotatably adjustable fastening means;
(d) an anvil carried by said rear end portion of said frame and having an end extending into said output end of said power tool to be longitudinally displaced thereby;
(e) a rod carried by said front end portion of said frame in longitudinal alignment with said anvil to be longitudinally displaced thereby upon longitudinal displacement of said anvil;
(f) an end of one of said anvil and said rod having a convexly curved surface and the adjacent cooperating end of the other of said anvil and said rod having a concavely curved surface ensuring longitudinal alignment of said anvil and said rod when said front end portion of said frame is rotated one-hundred and eighty degrees on said rear end portion thereof;
(g) said rod having a finger portion adjacent its end opposite to that having said curved surface and engaging said teeth upon said ratchet socket to transmit reciprocating movement of said power tool into limited unidirectional movement of said ratchet socket upon longitudinal displacement of said rod;
(h) a pawl upon said front end portion of said frame engaging said ratchet socket and restraining rotary movement thereof in a direction opposite to the rotary movement provided by said rod; and
(i) resilient means connected to said rod and urging such away from said ratchet socket.

3,191,466
RATCHET SPINNER HANDLE
Kyozo Kawashima, 43 Higashi 1-chome, Hamaguchi, Sumiyoshiku, Osaka, Japan
Filed Oct. 9, 1962, Ser. No. 229,437
Claims priority, application Japan, June 21, 1962, 37/32,759
2 Claims. (Cl. 81—62)



1. A ratchet device comprising a head portion adapted to have a turning means attached thereto, said head portion having a depending central portion with a laterally opening cavity therein, said cavity being elongated transversely of the direction in which it opens from said central portion and said central portion having opposed upper and lower grooves opening into said cavity and extending in the direction of elongation of said cavity, a hollow body portion around said head portion having inwardly projecting ratchet teeth thereon, said body portion being adapted to have a tool thereon, and a pawl having a base positioned within said cavity and having upper and lower projections thereon projecting into said grooves pivotally mounting the pawl in the cavity, said pawl being engageable with said ratchet teeth, said pawl being resiliently urged to pivot outwardly from said cavity and said projections being slidably mounted in said grooves for sliding from one to the other ends thereof, said pawl pivoting outwardly in one rotational direction when it is at one end of said grooves and pivoting outwardly in the other rotational direction when it is at the other end of said grooves.

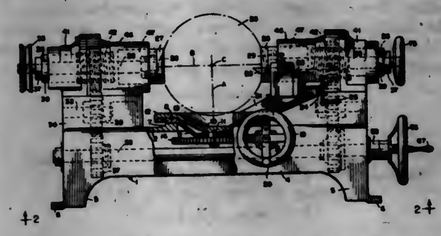
3,191,467
AUTOMATIC THREAD CUTTING MACHINE
Myron S. Curtis, Santa Barbara, Calif., Harry Schoepe, Cleveland, and Edwin J. Fisk, Mayfield Village, Ohio, assignors to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 806,325, Apr. 14, 1959. This application Jan. 27, 1964, Ser. No. 340,482
13 Claims. (Cl. 82—5)



1. In a threading mechanism, a slide reciprocable in opposite directions along a first path to effect movement of a tool carried thereby in work and return passes, power actuated means for effecting movement of said slide along said path, control means on said slide for said power actuated means comprising a control member having first and second positions for effecting operation of said power actuated means in first and second directions respectively along said path, operating means for said control member including snap-acting mechanism on said slide and operable between two positions and having normally engaged latch means for preventing operation of said mechanism and means for operating the mechanism upon the release of said latch means, means operatively connecting said mechanism to said control member to actuate the latter between its said positions upon actuation of said mechanism between its said positions, said mechanism including a trip member supported on said slide for movement relative thereto between first and second positions to effect a release of said latch means and actuation of said snap-acting mechanism between its said positions, stop means adjacent said slide at the end of each of said passes for holding said trip member against movement with said slide to produce relative movement therebetween and to actuate said snap-acting mechanism to a respective one of its positions, said means for actuating said snap-acting mechanism comprising a spring which is loaded to operate said mechanism in response to movement of said slide to said stop means.

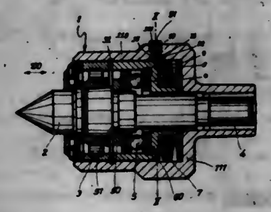
3,191,468
BALL SURFACING MACHINE
Robert D. Malmquist, 727 North East Ave., Oak Park, Ill.
Filed Apr. 16, 1962, Ser. No. 187,499
6 Claims. (Cl. 82—12)

1. An apparatus for surfacing bowling balls and like spheres to close tolerances, said apparatus comprising, in combination,
(a) a machine base for supporting various components of the apparatus;
(b) a pair of oppositely but coaxially disposed headstocks supported on said base;
(c) a pair of oppositely but coaxially disposed hollow, longitudinally reciprocable hollow spindle means, including exterior threads thereon, for supporting a pair of rotatable spindles;
(d) means for preventing rotation of said hollow spindles;
(e) a pair of rotatable spindles, including workpiece-engaging jaws, each of said spindles being journalled in one of said hollow spindles and longitudinally reciprocable therewith;
(f) a pair of rotatable sleeve means, including interior threads for engagement with said exterior threads, for



causing longitudinal movement of said hollow spindles toward and away from a workpiece;
(g) means for preventing longitudinal movement of said sleeve means;
(h) means for rotating said sleeve means at a common rate causing movement of said hollow spindles toward and away from a centerpoint disposed therebetween;
(i) a cutting tool for surfacing a workpiece; and
(j) an arcuately movable support for said cutting tool, said support being so constructed and arranged that the support and the tool held therein are pivotable about a pivot axis which intersects the rotational axis of said rotatable spindles.

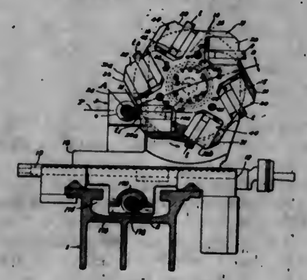
3,191,469
TAILSTOCK CENTRE APPARATUS WITH A PRESSURE INDICATOR
Tiberius Wozar, Esslingen-Krummenacker, Germany, assignor to Bohner & Köhle, Esslingen (Neckar), Germany
Filed July 16, 1962, Ser. No. 210,154
11 Claims. (Cl. 82—33)

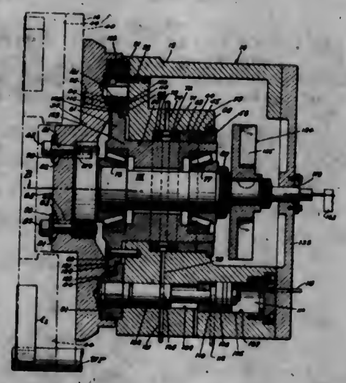


1. A tailstock centre apparatus comprising in combination a centre means extending centrally and longitudinally of the apparatus; a sleeve means co-axil with and surrounding, said centre means, and having a radially extending wall portion, said centre means being supported for rotary movement within said sleeve means, said centre means and said sleeve means being interconnected for resilient to and fro movement in the axial direction; a hollow housing co-axial with, and surrounding, said sleeve means and having a radially extending wall portion opposite said radially extending wall portion of said sleeve means, said sleeve means and said centre means

being axially displaceable within said housing; resilient means resiliently acting in the axial direction and interposed between said radially extending wall portions of said sleeve means and said housing; at least one through-bore in said housing extending from the outside to the interior thereof; an operating surface on said pressure transmitting sleeve; a pin having an inner and outer end and received in said through-bore for slidable to and fro movement; the inner end of said pin bearing against, and cooperating with, said operating surface, whereby upon an axial movement of said centre taking place under the influence of pressure exerted by the work-piece upon said centre a movement of said pin relative to its respective through-bore is caused to take place, said pin being of such length that upon the pressure exerted by the work-piece upon said centre reaching a predetermined value the outer front end of the pin lies flush with the outer surface of said housing surrounding said pin.

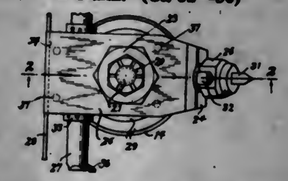
3,191,470
LATHE
Carl F. Pabst, 1336 Thornwood Drive, and Holland R. Hudson, 8844 Long Lane, both of Cincinnati, Ohio
Filed Aug. 21, 1962, Ser. No. 218,322
10 Claims. (Cl. 82—36)





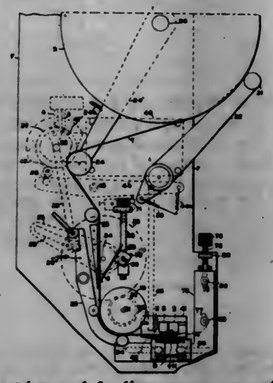
5. In a machine tool:
a bed;
means on the bed mounting a workpiece for rotation about an axis;
a support;
means mounting the support on the bed for movement in a direction parallel to said rotational axis and for movement transverse said rotational axis;
a turret head;
mechanism mounting the turret head on the support for rotation about an axis parallel to the rotational axis of the workpiece and for movement in a direction along its rotational axis;
a yieldable connection between said turret head and said mechanism and providing for axial motion of the mechanism relative to the turret head;
means mounting a plurality of cutting tools on the turret head, the tools being spaced from one another around the rotational axis of the head and the cutting tips of the tools lying in a plane normal to the rotational axis of the workpiece;
means on the support forming a fixed, annular locating surface surrounding the rotational axis of the turret head, the locating surface lying in a plane normal to the rotational axis of the workpiece;
means on the turret head forming a bearing surface parallel to and facing the locating surface, said axial movement of the turret head providing for the locating and bearing surfaces to be spaced from one another to permit rotation of the turret head and for the locating and bearing surfaces to engage one another;
means on the turret head forming a clamping surface spaced from the bearing surface in a direction along the rotational axis of the turret head;
drive means connected between said support and said mechanism for axially moving the mechanism and the turret head to cause said bearing surface to engage said locating surface;
clamp means on said mechanism and operative when said bearing and locating surfaces are engaged to be moved axially by axial movement of said mechanism to engage the clamping surface and exert axially directed forces on the clamping surface to tightly engage the bearing and locating surfaces and thereby locating the tips of the tools in predetermined, fixed position along the rotational axis of the workpiece and maintaining the tips in the fixed position during a working operation, the axial movement of said mechanism to operate said clamp being permitted by said yielding connection and the axial movement of said mechanism being effected by said drive mechanism.

3,191,471
LATHE TOOL HOLDER
Lawrence T. Stewart, 439 1st St., Benicia, Calif.
Filed Nov. 29, 1962, Ser. No. 240,891
1 Claim. (Cl. 82—36)



In a lathe tool holder of the character described, the combination of a tubular post adapted and arranged to be carried in a vertical position by the tool carriage of a lathe, said tubular post having a cylindrical portion intermediate its ends, a bolt having a T-slot engaging head and a cooperating nut thereon for securing said tubular post upon the said tool carriage of a lathe, a pair of superimposed tool clamping members having bores for positioning same upon said tubular post, said clamping members having faces forming an angularly disposed bore at one side of said central bore and portions of a horizontal boring tool supporting bore at the other side of said central bores, and overhanging jaws on the face of said clamping member for supporting a flat cut-off tool a post supporting means having a T-slot engaging extension upon which said tubular post is keyed, and threaded means carried by said tubular post operating independently of said bolt for securing said clamping members in clamping engagement with one or more metal cutting tools in the bores of said clamping members, whereby the position of said clamping members may be changed without disturbing the attachment of said tubular clamping post upon the lathe carriage.

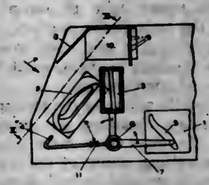
3,191,472
WEB CUTTING AND STACKING MEANS
Floyd A. Lyon, Brookville, N.Y., assignor to Halm Instrument Co., Inc., Glen Head, N.Y.
Filed Jan. 21, 1964, Ser. No. 339,251
4 Claims. (Cl. 83—61)



1. Web cutting and feeding means comprising;
a frame,
means to mount a roll of printed tape of the type having a continuous surface and conductive registration marks,
magnetic clutch drive means on said frame adapted to advance said tape,
a motor,
oscillating means connecting said motor to said clutch drive means,
a knife oscillatably mounted on said frame and adapted to cut said tape,
adjustable means connecting said motor to said knife,
and means responsive to registration of said printed tape to control said drive means,
comprising a pair of finger contacts adapted to complete a circuit through said registration marks and a first switch in series with said contacts, said switch being operably connected to said knife,
said contacts being connected to disengage said magnetic clutch and stop said tape,
and safety switch means to keep said tape feeding forward if said contact fingers misses a registration mark comprising,
a second switch in parallel with said finger contacts,
and cam means connected to close said switch immediately after the predetermined operation time of said finger contacts.

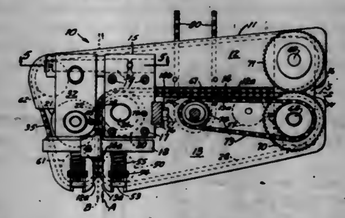
3,191,473
APPARATUS FOR CUTTING A LEAF OF PREDETERMINED SHAPE OUT OF A TOBACCO LEAF
Henricus J. Maas, Eindhoven, and Marten G. Aalpoel, Nuenen, Netherlands, assignors to Arenco-P.M.B.n.v., Eindhoven, Netherlands, a company of the Netherlands
Filed Mar. 2, 1964, Ser. No. 348,356
Claims priority, application Netherlands, Mar. 18, 1963, 290,310
3 Claims. (Cl. 83—98)

1. An apparatus for cutting a leaf of predetermined shape out of a tobacco leaf, comprising a cutting die, a band-shaped knife bent in said shape and having an upstanding cutting edge, said knife forming part of said die, rollers adapted to be moved over the cutting edge of said knife and to press the leaf to be cut out onto said cutting edge, guiding cams associated with said knife for guiding the rollers, a stationary blow-pipe directed to the upper surface of the cutting die, blow-passages directed



upwards and discharging in the immediate vicinity of the guiding surfaces of said cams and a controllable valve, through which said blow-pipe and said blow-passages are connected to a compressed air conduit, said blow-pipe and said blow-passages forming part of a pneumatic device to blow away the leaf parts left on said cutting die after a leaf has been cut out and taken away from said die.

3,191,474
TRIMMING APPARATUS WITH DIVERGENT SCRAP REMOVAL
John J. Grevich, Star Prairie, and Stanley D. Denker, New Richmond, Wis., assignors to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed Oct. 19, 1962, Ser. No. 231,653
2 Claims. (Cl. 83—107)



1. Apparatus for trimming the edges of flexible sheet material as in bags and the like, comprising
a frame,
first and second juxtaposed rotary cutting discs oriented generally horizontally, said first disc overlying said second disc in generally parallel but slightly angular relation therewith, said discs having sharp-edged material-shearing peripheral portions in lapped relation with each other along an elongate and narrow area, said elongate area of overlap having a leading end defining a point of convergence at which the sharp-edged peripheral portions of the discs engage each other for shearing the sheet material supplied thereto,
mounting means journalling said first disc on the frame,
mounting means journalling said second disc and pivotally connecting the second disc to the frame for swinging movement about a horizontal pivot axis extending generally transversely of said elongate and narrow area of overlap, said pivot axis being spaced from said point of convergence in a direction generally parallel to said elongate area,
elongate sheet material gripping and conveying means on the frame and above said discs and in closely spaced relation with said discs and holding the edge portion of the sheet material in substantially upright condition, said conveying means extending and mov-

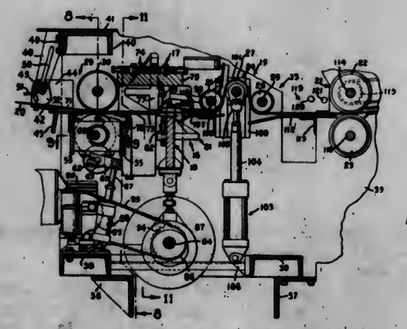
ing generally parallel of and toward said elongate area of overlap and toward said point of convergence for moving the sheet material to the discs for cutting, said conveying means also extending rearwardly from said point of convergence along said elongate area of overlap and thence transversely of said elongate area and outwardly from said discs for carrying the upper edge of scrap sheet material away from the area of the overlap,

means resiliently urging said discs toward each other to maintain the discs in engagement with each other at the point of convergence,

means for vertically adjusting the location of said pivot axis to facilitate changing the angle between said discs when the discs have been worn and thereby improve the cutting action of the discs,

and rotary means secured to said discs and connected with said conveying means and revolving said discs to move the sharp-edged peripheral portions thereof toward and through said point of convergence and in the general direction of travel of the conveyor means and at a speed substantially identical to that of the conveyor means.

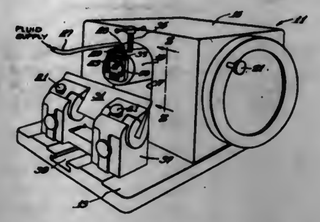
3,191,475
SHEAR ASSEMBLY FOR A MOVING WEB
Harry A. Scott, Western Springs, and Charles A. Uncapher, Oak Lawn, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 18, 1963, Ser. No. 265,663
13 Claims. (Cl. 83—155)



1. A method of shearing a moving portion of a web utilizing a fixedly mounted shear comprising the steps of initially forcing a free end of the web through the shear, then drawing the web through the shear while discontinuing the forcing of the web, storing a portion of the moving web, and at the time of shearing stopping the movement of the web at the shear by paying out the stored web portion in accordance with the movement of the web.

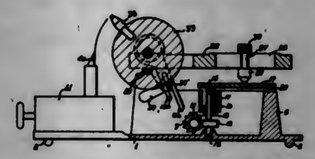
2. A shear assembly for a moving web comprising a shear fixedly mounted along a path of web movement, web feed means for drawing a web through said shear, and web slack providing means disposed intermediate said shear and said web feed means for automatically supplying the web to said web feed means with said web being stationary at said shear at the time of operation of said shear, second web feed means intermittently operable to advance a newly formed web leading edge through said shear and said web slack providing means to the first mentioned web feed means in timed relation to the operation of said web slack providing means.

3,191,476
ANTI-ROLL DEVICE
James B. McCormick, La Grange, Ill., assignor, by mesne assignments, to Ames Atominum, Inc., Billerica, Mass., a corporation of Massachusetts
Filed Mar. 1, 1962, Ser. No. 176,751
7 Claims. (Cl. 83—169)



1. The method of providing a thin section of a specimen for use in microscopic examination, which method includes the step of slicing a generally planar uniform thin section from a surface of the specimen by means of a knife while directing a stream of gaseous fluid toward that edge of the specimen which is the first to be contacted by the knife so as to urge the section against the face of the knife as the section is being formed and thereby minimize curling thereof.

3,191,477
MICROTOME
David Danon, 16 Henkin St., Rehovoth, Israel
Filed June 29, 1962, Ser. No. 206,305
Claims priority, application Great Britain, July 3, 1961, 24,009/61
8 Claims. (Cl. 83—267)

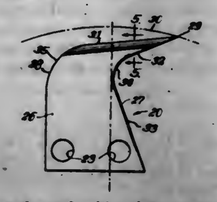


1. A microtome comprising a first and second lever; a gear system including a ratchet wheel, a micrometric screw threaded shaft operatively driven by the ratchet wheel, and a nut on said threaded shaft held against rotation on said micrometric screw, said nut having an extension engaging said first lever for raising said lever as said nut moves up said rotating screw, a pin operated by said first lever and engaging said second lever to raise said second lever, a rotatable drum carried by said second lever, a specimen carried by said rotating drum, a cutting knife, rotation of said drum moving said specimen past said cutting knife, an eccentric member having a detent mounted on said drum to engage and operate said ratchet wheel once for each revolution of said drum, the relative position of said specimen and said detent on said drum being such that upon rotation of said drum, the specimen moves past the cutting knife before the gear system is actuated by the detent for the next cutting operation.

3,191,478
BRISTLE BRANCHING BLADE
Harold C. Peterson, Geneva, Ill., assignor to Carlson Tool & Machine Company, a corporation of Illinois
Filed June 28, 1962, Ser. No. 205,940
2 Claims. (Cl. 83—663)

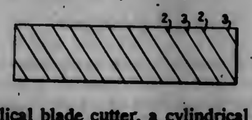
1. A rotary bristle branching blade, comprising: a body adapted for rotation about an axis; a straight blade edge

at one end of the body, said edge having a leading portion with a sharp point therein defining an outermost circular path when said body is mounted for rotation about said axis, said blade edge describing a chord of the circular path



defined by the rotation of said point at any one of an infinite number of positions of said blade in said path; and a rounded smooth edge extending from said point and inwardly of said blade edge into a curved portion directed generally toward said axis.

3,191,479
HELICAL CUTTER FOR TEXTILE FIBERS
Isamu Kikuchi, Kosakai-cho, Hoi-gun, Aichi-ken, Japan, assignor to Fuji Spinning Co., Ltd.
Filed July 2, 1962, Ser. No. 206,857
7 Claims. (Cl. 83—672)



1. In a helical blade cutter, a cylindrical body having first and second non-intersecting blades fixed to and extending helically about the cylindrical surface of said body, said blades having different helix angles and extending in the same direction of rotation about said cylindrical body.

3,191,480
MUSICAL INSTRUMENT
Charles Thomas Lowe, 974 Stocker Ave., Flint, Mich.
Filed June 26, 1962, Ser. No. 205,268
12 Claims. (Cl. 84—318)



7. A stringed musical instrument of the class described comprising a neck provided with a plurality of fixed frets, a head provided with string tension posts and with a plurality of strings, nut means operatively associated with said posts, said neck having longitudinally extending series of peg sockets disposed between the frets and below one of the strings, a peg having an opening therein through which the string above said socket members is threaded selectively and supportedly engageable with said peg socket members, the fret in front of the peg constituting a nut for the string threaded through the peg, a capotasto unit mounted on the neck for adjusment longitudinally thereof and comprising a string engaging body member dispoeed transversely of the neck above the strings for clasping engagement therewith and selectively positionable between frets, springable extensible neck engaging means for holding said body member in its adjusted position, a neck-engaging nut element mounted on said body member and slidably engageable with one of the strings, the fret adjacent said nut means at the head end of said neck being spaced to permit positioning of said capotasto unit at the outer side thereof, said nut element thereon being adjustable to string releasing position.

3,191,481
REED WIND INSTRUMENT
Mel Miller, Box 96, Tremonton, Utah
Filed May 20, 1963, Ser. No. 281,645
2 Claims. (Cl. 84—380)



1. A wind instrument assembly of components comprising a mouthpiece having a tip portion at its rear end, a shoulder and a reduced diameter portion at its forward end, an axial bore having an entrance that angles upwardly at the tip portion, and a reed fastened to said mouthpiece overlying the entrance of the axial bore at the tip portion thereof; a center-piece of tubular cylindrical formation having tapered rear and forward ends, an axial bore therein terminating at the forward tapered end in a shoulder and an enlarged diameter portion; said mouthpiece having its reduced diameter portion separably friction-fitted within the axial bore of the center-piece at its rear end and with its shoulder in abutting engagement with the rear end of the center-piece; a horn amplifier having a thin wall providing an axial bore flaring outwardly towards the forward end thereof, the rear end portion of said horn amplifier separately friction-fitted into the enlarged diameter portion at the forward tapered end of the center piece and in abutting engagement with the shoulder thereat, bracing fin means extending longitudinally exteriorly of the horn amplifier wall and integral therewith, the rear ends of said fin means having a taper corresponding to the forward tapered end of the center piece and in abutting engagement therewith; and a mute separably friction-fitted within the flared forward end of the horn amplifier and projecting forwardly thereof, said mute having a tapered axial bore with its smaller diameter end at the rear end of the mute, and the axial bores of each of said component parts of the wind instrument in the assembled relation thereof being co-axial.

3,191,482
MUSICAL WIND INSTRUMENT KEY STOP
Leon Leblanc, 70 Rue des Rigoles, Paris, France
Filed Oct. 28, 1964, Ser. No. 405,104
11 Claims. (Cl. 84—382)

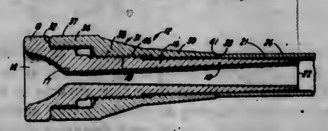
1. A key construction for a musical wind instrument of the type having a hollow body with a substantially radially opening tone hole therein, comprising a key including a finger piece, an arm interconnected with said finger piece and extending therefrom, a key cup on said arm, and a tone hole closure member carried by said key cup, means pivotally mounting said key on said body

intermediate said arm and said finger piece, said arm, key cup and tone hole closure member rising to hole opening position upon depression of said finger piece towards said body, a movable stop member on said key extending inwardly therefrom toward said body and having a lateral



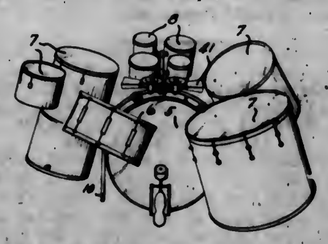
stopping surface, said movable stop member being movable laterally of itself in the direction of said stop surface upon depression of said key finger piece, and means on said body forming a fixed stop engageable by said lateral stop surface of said movable stop member to limit pivotal movement of said key.

3,191,483
MUSICAL INSTRUMENT MOUTHPIECE
William R. Williams, 1548 Olive Ave., Redding, Calif.
Filed Dec. 14, 1964, Ser. No. 418,106
3 Claims. (Cl. 84—398)



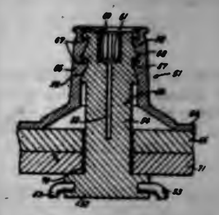
1. A musical instrument mouthpiece for use on an instrument tube, said mouthpiece comprising:
(a) a mouthpiece bell;
(b) a hollow shank mounted on one end of said bell, said shank having exterior screw threads formed thereon adjacent said bell and being tapered on the end remote from said bell for wedging engagement with the interior walls of an instrument tube; and,
(c) a mouthpiece dislodging member including a hollow circular cylindrical head portion provided with interior screw threads in threaded engagement with said exterior screw threads on said shank and a hollow stem portion mounted on one end of said head portion and extending into abutting engagement with the shoulder on the end of an instrument tube for dislodging said shank as said threads are screwed relative to each other.

3,191,484
DRUM SUPPORT
Albert S. Walling, 2967 Canal Ave., Long Beach, Calif.
Filed June 24, 1963, Ser. No. 289,960
2 Claims. (Cl. 84—421)



2. In a device of the class described, a drum, a base of inverted U-shape attached about that drum, a plurality of extensions removably attached to said base and extending substantially horizontally at right angles therefrom, each extension including a T-fitting, a ball socket joint affixed to the stem of each T-fitting, and an extension extending substantially horizontally and outwardly from said base and having adjustably attached thereto a plurality of sleeves, and suitable means for the adjustable attachment of percussion instruments to said sleeves at a predetermined distance from said drum.

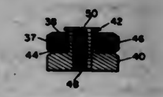
3,191,485
THREADED FASTENING DEVICE
William Dzus, West Islip, N.Y.; Theodore Dzus, Francis X. Clarke, and Daniel H. Kane, executors of said William Dzus, deceased
Original application Sept. 3, 1959, Ser. No. 837,907. Divided and this application Sept. 11, 1962, Ser. No. 222,813
1 Claim. (Cl. 85—1)



A threaded fastening device comprising a receptacle member formed with a base plate and a projecting relatively rigid, non-contractible and non-expansible tubular portion having internal helical threads and a cooperating stud member having a head portion and a shank portion connected thereto, said shank portion having an external helical thread at the end opposite the head and being unthreaded adjacent the head, said shank portion having a longitudinal slot extending from the threaded end into and terminating in the unthreaded portion whereby the threaded portion of the shank is resilient and expandible and contractible, said external helical thread of the shank portion being complementary to and engageable with the internal thread of the receptacle and said threads presenting confronting, overhanging, re-entrant load bearing surfaces which directly engage each other to exert an expanding force on the shank of the stud member when the members are stressed in tension causing the receptacle and stud members to tightly engage each other, said shank portion being formed with a recess in its outer threaded end and being coaxial with said slot and being of less axial depth than the length of the threaded portion, and having a ring frictionally retained in the inner end of said recess and spaced from the outer end thereof, said ring being of sufficient diameter to maintain the shank portion at the predetermined diameter of a normally relaxed condition of said shank portion and to prevent contraction inwardly beyond said predetermined diameter.

3,191,486
AUTOMATIC TORQUE INDICATING AND APPLYING DEVICES
Roy P. Gibbens, Orlando, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Oct. 29, 1962, Ser. No. 233,816
11 Claims. (Cl. 85—61)

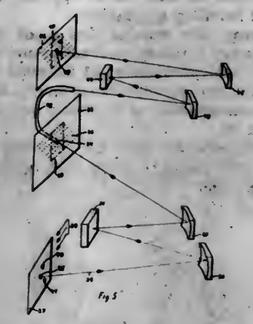
1. An automatic torque device for indicating and applying a predetermined value of torque to a nut and bolt arrangement comprising, in combination:
(a) an internally threaded nut adapted to be threadably connected to a corresponding bolt, said nut comprising a base, a cylindrical shank integrally connected to said base, an internally threaded bore extending through said base and shank, and a single opening in said shank having an axis transverse to the axis of said threaded bore;
(b) an internally bored head releasably connected to said shank of said nut, said head comprising a circular central bore extending through said head and a single opening having an axis transverse to the axis of said central bore and co-axially positionable with said opening in said shank;
(c) said head being co-axially positioned about said shank so that said central bore slidably engages said shank of said nut thereby slidably holding said head in relative position about said shank so as to guide said nut in a predetermined circular path about the axis of rotation of said torque device when said head is rotated;
(d) sleeve means positioned within said opening within said head for adapting the head to receive a shear



pin having a diameter smaller than the said openings in said head and nut;
(e) an elongated shear pin partially positioned within said sleeve means in said shank and partially positioned within said opening in said head so that any rotation of said head about its axis causes a corresponding rotation of said nut about its axis so as to cause said nut to threadably advance along its corresponding bolt until a predetermined torque is applied, whereupon said shear pin fractures and said head separates from said nut so that any subsequent rotation of said head will not cause a corresponding rotation of said nut; and
(f) means for releasably securing said sleeve means within said opening within said head, whereby said sleeve means may be removed and replaced with sleeves having variable inner diameters so that variable size shear pins may be utilized to provide a variable torque selection.

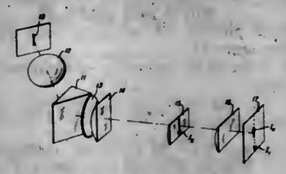
3,191,487
OPTICAL SYSTEM HAVING LIGHT DISPERSING MEANS FOR TRANSMITTING AND RECEIVING AN IMAGE OF AN OBJECT
Percy Norman Kruythoff and Sipke Lau Boersma, Delft, Netherlands, assignors to N.V. Optische Industrie "De Oude Delft," Delft, Netherlands
Filed July 10, 1961, Ser. No. 123,057
Claims priority, application Netherlands, July 9, 1960, 253,627
3 Claims. (Cl. 88—1)

1. A system for transmitting and receiving an optical image of an object which is capable of emitting polychromatic light along an optical path between a transmitting station and a receiving station, comprising, at said transmitting station, focusing means adapted to form an image of said object in a given plane, light dispersing means arranged in the optical path between said object and said given plane so that each elemental area of said object to be optically resolved by the system is reproduced as a spectrum in the image formed in said given plane, spectra of different elemental areas of said object having relative positions in said given plane in accordance with the relative positions of the respective elemental areas in the object, aperture means in said given plane adapted to pass light that is incident on said given plane within a small area corresponding in size to the elemental areas of the object, said small area being so positioned relative to said spectra that of each of the spectra a different elemental portion is incident on said small area and is passed by said aperture means, light combining means for combining the light passed by said aperture means for transmission, means for directing the combined light on said optical path to the receiving station, and, at said



receiving station, light dispersing means to project a spectrum of the light received onto a receiving surface so that the relative positions of different elemental portions of the spectrum on the receiving surface correspond to the relative positions of corresponding elemental portions in the spectra in said given plane.

3,191,488
SPECTROGRAPH UTILIZING ANAMORPHIC LENS SYSTEM
Edward Elmer, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 28, 1962, Ser. No. 205,907
3 Claims. (Cl. 88—14)



1. A spectrograph comprising a light source consisting of a vertical slit, disperser means for selectively dispersing the light from the light source according to wavelength, a first spherical lens spaced from the source so as to direct an essentially parallel beam of light into the disperser, a second spherical lens for focusing the dispersed light onto the image plane and at least two cylindrical lenses which with the spherical lenses comprise an anamorphic lens system, said cylindrical lenses each placed between said second spherical lens and the image plane with their longitudinal geometric axes normal to the vertical axis of said slit to reduce the height of the image from the slit and focus the vertical light components onto the image plane without affecting the horizontal components.

3,191,489
APPARATUS FOR PHOTOGRAPHICALLY MODIFYING ONE DIMENSION OF REPRODUCEABLE DATA
Douglas S. Dougan, Bernardsville, and Richard I. Mansel, Cranford, N.J., assignors to Lithold, Inc., New Brunswick, N.J.
Filed Nov. 22, 1961, Ser. No. 154,210
3 Claims. (Cl. 88—24)

1. Apparatus for the reproduction of printed matter onto a photographic medium and for modifying one di-

mension of the data transferred without modifying the other dimension thereof comprising

(1) a base 10,

(2) card handling mechanism 20 mounted on said base for receiving data bearing cards,

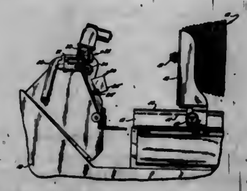
(a) guides 36 attached at opposite sides of said card handling mechanism,

means for moving said cards through said card-handling mechanism one at a time,

(3) photographic mechanism 11 mounted on said base,

(a) said photographic mechanism 11 being adjustable relative to said card handling mechanism 20,

(4) trigger means 24', 24" for actuating said photographic mechanism 11 when each of said cards engages the same,



(5) a lens system 25 interposed between said photographic mechanism 11 and said card handling mechanism 20,

(a) said lens system 25 including a curved lens 27,

(b) a holder 26 detachably mounting said lens,

(1) a pair of parallel rack-forming arms 35 mounting said holder,

(a) said arms 35 being disposed at opposite sides of said card handling mechanism,

(b) said arms 35 being slidably received within said guides 36,

(6) spaced pinions 38 engaging said parallel rack forming arms 35,

(a) a sleeve 39 mounting said pinions in fixed relation,

(1) an operating member for rotating said sleeve 39,

(2) a shaft 45 anchored at one end and extending through said sleeve 39 and having its other end threaded 47 and

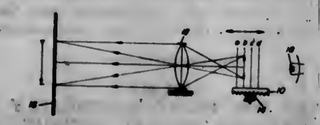
(3) a nut on said threaded end for securing said shaft and sleeve in fixed relation.

3,191,490

MULTI-LEVEL TRANSPARENCY PROJECTOR FOR SEARCHING STORED DATA

Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Nov. 30, 1961, Ser. No. 156,056
3 Claims. (Cl. 88—24)



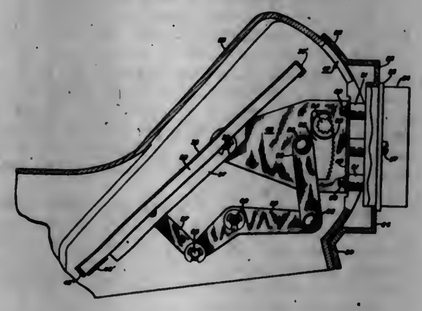
3. In a display system to facilitate searching and displaying data stored in transparencies arranged face-to-face as a group, said transparencies having alpha-numeric and graphic information composed of lines with the thickness of the lines being a small fraction of the interface distance between transparencies of said group, each transparency being complete of itself and informationally independent of the adjacent transparencies, and the information of each transparency being two dimensional while the spacing of the transparencies defines a third dimension, a light source directing light through said group of transparencies, optical image forming means in optical alignment with said group of transparencies and having a focus at an image plane occupied by one of said transparencies of the group, and means to search said group in said third dimension by providing relative motion between said image forming means and the entire group of transparencies in a manner such that any selected transparency of said group occupies said image plane at said focus and becomes in-focus while the remaining transparencies of said group are out of focus causing the major portion of the light to pass therethrough owing to said remaining transparencies being out of focus, and also owing to said transparencies having information composed of lines with thicknesses a small fraction of said interface distance.

3,191,491

HEAD FOR OVERHEAD PROJECTORS

Joseph Pignone, West Orange, and Philip M. Field, Maplewood, N.J., assignors to Charles Beseler Company, East Orange, N.J., a corporation of New Jersey

Filed Dec. 26, 1961, Ser. No. 161,928
7 Claims. (Cl. 88—24)



1. A projection head for an overhead projector comprising:

(a) a housing adapted to receive a light beam,

(b) a light-reflecting mirror pivotally mounted within the housing,

(c) a lens carried by the housing,

(d) means mounting the lens for rotation about the pivotal axis of the said mirror, said means including a rotatable member having a plurality of tooth elements lying in a circle having a center on the pivotal axis of the mirror, and

(e) manually-operable means for simultaneously rotating the lens and the mirror, said means including a knob external of the housing and secured to a pinion gear that is in mesh with the said tooth elements.

3,191,492

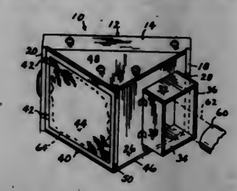
TRI-FOLD REAR PROJECTION SCREEN

Guilford L. Moutray, 2433 NW. 36 Terrace, Oklahoma City, Okla.

Filed Mar. 14, 1963, Ser. No. 265,144
1 Claim. (Cl. 88—24)

A daylight rear projection portable folding screen for receiving an image from a projector, comprising: a box-like housing having ends and one side of substantially equal transverse width and a second side transversely greater in width a distance equal to its thickness, said housing having a back connecting said ends and said

sides; a ferrotype reflecting plate secured within said housing adjacent the inward surface of said housing back; an open screen frame hingedly connected by one of its sides to one end of said housing for swinging movement into and out of the housing between the sides thereof; a flexible screen extending tautly across and secured to the respective four sides of said frame; a door hingedly connected by one of its sides to the other end of said housing for swinging movement into and out of the latter between the sides thereof, said door having a central rectangular window; upper and lower flaps hingedly secured to said door for vertical swinging movement through the window; opposing side flaps secured to the wall of said door



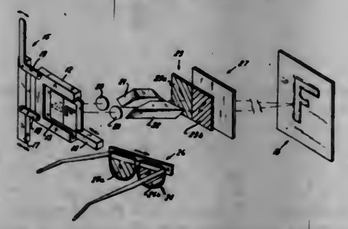
defining the sides of said window, said upper and lower and said side flaps projecting outwardly normal to the outer surface of said door to form a light shield in cooperation with said window for passing a picture image beam; and a pair of right triangular shaped closure members each hingedly connected at their respective base side to the respective free edge of said housing sides for movement toward and away from the open side of said housing, said screen frame and said door each being of a size to coincide with the respective plane defined by the free edges of said triangular shaped closure members when the latter are positioned laterally of said housing to define a closed projection booth.

3,191,493

STEREOSCOPIC IMAGE-PROJECTING SYSTEM AND METHOD FOR ALIGNMENT OF IMAGES

Pompey Malnardi, 65 Gibson Place, Glen Rock, N.J., and Marcus N. Malnardi, 8—25 Henderson Blvd., Fair Lawn, N.J.

Filed Jan. 7, 1963, Ser. No. 249,660
14 Claims. (Cl. 88—26)



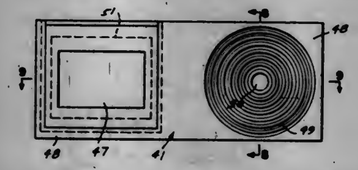
1. In a stereoscopic image-projecting system, in combination, a projector for projecting a pair of stereo images, said projector including a first polarizing means for producing a first pair of polarized beams whose axes have a predetermined angular relationship with respect to each other, so that the stereo images when accurately superimposed on a screen or the like can be viewed through a second polarizing means providing the same angular relationship between a second pair of beams reaching the eyes of a viewer viewing the images; and movable means movable to and from a position located in the path of said first polarized beams, said movable means when in said position thereof altering said first polarized beams to present to the viewer unintelligible images while maintaining substantially the same intensity of illumination of the images, so that the images projected with the thus altered beams can be aligned by the operator and then viewed by the viewer after said movable means is moved away from said position thereof.

3,191,494

COMBINED PHOTOGRAPHIC TRANSPARENCY AND STATIONARY SPIRAL-SHAPED SOUND TRACK CARRIER SUPPORT FRAME

Morris Schwartz, Plainville, Conn., and Edward K. Kaprelian, Red Bank, N.J., assignors to The Kalart Company Inc., Plainville, Conn.

Application Sept. 14, 1960, Ser. No. 63,710, now Patent No. 3,145,616, dated Aug. 25, 1964, which is a division of application Ser. No. 442,362, July 9, 1954, now Patent No. 2,961,922, dated Nov. 29, 1960. Divided and this application Sept. 20, 1961, Ser. No. 140,178
15 Claims. (Cl. 88—28)



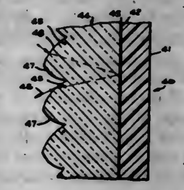
1. A device for simultaneous audio-visual reproduction by a sound projector for still pictures, said device comprising a substantially plane frame structure having a first area for supporting a single photographic transparency and a second area for supporting a sound record in a fixed spatial relationship in reference to the transparency, the frame structure being adapted to be inserted in the projector, said first frame area having a window therethrough and including a pocket for receiving a single transparency and holding the same in alignment with the window for projecting the transparency through said window and said second frame area mounting a stationary sound track.

3,191,495

PROJECTION SCREEN

Wendell S. Miller, 1341 Comstock Ave., Los Angeles, Calif.

Filed Mar. 14, 1963, Ser. No. 265,167
3 Claims. (Cl. 88—28.9)



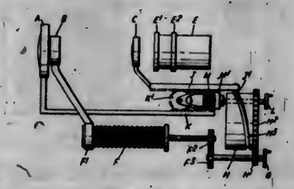
1. A projection screen onto which an illuminated image is to be directed by a projector comprising a plurality of mirrors distributed at different locations spaced across the area of said image for receiving light from different portions of the image and reflecting it toward a viewer, a body of transparent material forwardly of said mirrors having a front surface forming a plurality of curved lens faces for directing light from said different portions of the image onto said different mirrors respectively, and light absorptive means between the locations of said mirrors for absorbing which comes from sources other than the projector and does not fall on said mirrors, said front surface of said body of transparent material forming a plurality of additional faces extending betwen different ones of said lens faces and coated with light absorptive material, said lens faces being inclined in generally a predeter-

mined direction relative to said mirrors to receive light from an angularly offset projector location, so that the projector light may enter one of said lens faces and leave through the other after reflection by a mirror, said additional faces being inclined essentially in an opposite direction.

3,191,496
OPTICAL OBJECTIVES OF VARIABLE FOCAL LENGTH OF THE ZOOM TYPE AND CONTROL MEANS THEREFOR

Gordon Henry Cook, Leicester, England, assignor to The Rank Organisation Limited, London, England, a company of Great Britain

Filed Sept. 1, 1960, Ser. No. 53,413
Claims priority, application Great Britain, Sept. 3, 1959, 30,034, 30,046
22 Claims. (Cl. 88—57)



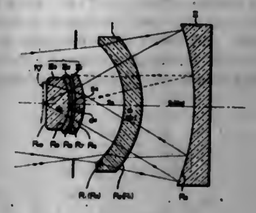
1. An optical objective of variable focal length of the zoom type having members relatively movable for effecting variation of the equivalent focal length of the objective whilst maintaining constant position of the final image plane, including in combination a normally stationary rear lens assembly, a front lens assembly which is substantially afocal throughout the range of relative movement and comprises three members constituting the relatively movable members for effecting the focal length variation the front and rear members being convergent and the middle member divergent, a zoom control element, transmission means comprising a cam and actuated by the zoom control element, said transmission means in turn actuating the convergent front and rear members of the front assembly and causing said members to perform equal and opposite axial movements dependent upon the cam shape, transmission means interposed between the zoom control element and the divergent middle member of the front assembly whereby such member is caused by the zoom control element to perform an axial movement bearing an approximately linear relationship to the movement of the zoom control element, the shape of the cam being such that the inter-related movements of the middle member and of the front and rear members cause the equivalent focal length of the objective to vary in accordance with an approximately logarithmic law relatively to the movement of the zoom control element.

3,191,497
CATADIOPTRIC OPTICAL SYSTEM OF LARGE RELATIVE APERTURE

Yoshiya Matsui, Tokyo, Japan, assignor to Canon Camera Co., Inc., Ohta-ku, Tokyo, Japan, a corporation of Japan

Filed July 18, 1961, Ser. No. 124,944
Claims priority, application Japan, July 23, 1960, 32,206/60
4 Claims. (Cl. 88—57)

4. A catadioptric optical system of large relative aperture comprising a weakly divergent correcting member of meniscus lenses, a concave spherical reflecting mirror positioned to the rear of the correcting member, and a convergent field flattener consisting of at least three single lenses including at least one divergent lens, the convergent field flattener being positioned in front of the correcting member, all of the refractive surfaces, except the surface of the field flattener the nearer the image field, of the lenses and the reflective surface of the mirror being concave toward the object, and the radius of curvature of the reflecting surface of the mirror is greater than $2.2f$, the



focal length of the field flattener is less than $2f$, the total thickness of the field flattener is in the range from $0.5f$ to $0.25f$, and the spacing between the image field and the most adjacent surface of the system is less than $0.08f$, where f is the focal length of the system.

3,191,498
REAR VIEW MIRROR

Edward T. Priebe, Roseville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 25, 1961, Ser. No. 112,619
1 Claim. (Cl. 88—98)

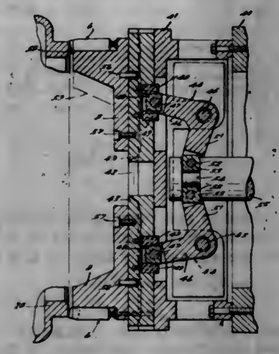


A rear view mirror assembly comprising a mirror support made from a flexible material and including a front flat seating face for a mirror element and a rear wall spaced therefrom, a mirror element, means including an integral flexible peripheral lip about said seating face removably holding said mirror element against said face, a socket integral with the rear wall of said mirror support, a ball member universally pivotally supported within said socket and including a mounting stud extending beyond said socket, a dished mirror case including a rear wall and an open front to receive said mirror support, an aperture in the rear wall of said mirror case, a socket seat on the rear wall of said mirror case surrounding said aperture, said mirror support being insertable through the open front of said mirror case to engage said socket with said seat with said mounting stud extending through said aperture and said mirror element closing the open front of said mirror case, cooperatively engageable means on said mirror case and said mirror support to removably retain the latter within said mirror case, said last mentioned means comprising an annular groove formed in said case, and a flexible annular locking rib radially projecting from said mirror support into said groove.

3,191,499
CUTTING TOOL

Frank A. Solski, 8442 Hazelton, Dearborn, Mich.; Ted Paczas, 1925 Forest Lane, Birmingham, Mich.; and Roy R. Gyger, 14098 Dale, Detroit, Mich.

Filed Sept. 6, 1962, Ser. No. 222,767
2 Claims. (Cl. 90—11)

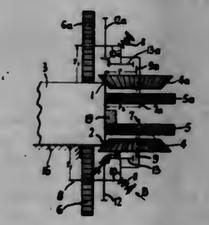


1. In a machine, a rotatable non-advanceable support, radially movable slides on said support, means for moving said slides radially in opposite directions as the support is rotated, and a series of spaced blades on each said slide located different radial distances from the center having cutting corners for machining the face of a workpiece when moved thereacross, the corners of the blades on one slide being in a plane offset from the plane of those of the other slide for performing a roughing operation while those of the other slide perform a finishing operation.

3,191,500
CHAMFERING APPARATUS

Roman Schuster, Funkweg 14, Senden (Iller), Bavaria, Germany

Filed Apr. 25, 1963, Ser. No. 275,576
Claims priority, application Germany, Apr. 28, 1962, Sch 31,382
23 Claims. (Cl. 90—11)



1. Apparatus for working on the corners of flat workpieces, comprising:

a motor and a rotary cutting tool mounted on the shaft of said motor;

a plurality of guide members having contact surfaces adapted to engage the surfaces of the workpiece on opposite sides of the corner to be worked on;

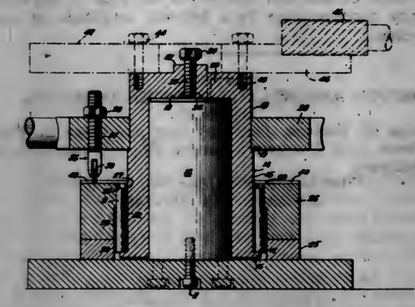
a common supporting element carrying said motor and said guide members, and means for adjusting said motor and said guide members on said supporting element;

resilient means urging said supporting element toward the workpiece so that said guide members are urged in a direction perpendicular to the corner to be worked on and are pressed against the surfaces of the workpiece on either side of said corner and the cutting tool is urged against the corner to be worked on.

3,191,501
FIXTURE FOR MAKING CAMS

Edward T. Cech, Sr., Albuquerque, N. Mex., assignor to William Kaiser, Albuquerque, N. Mex.

Filed Sept. 13, 1963, Ser. No. 308,824
8 Claims. (Cl. 90—13.9)

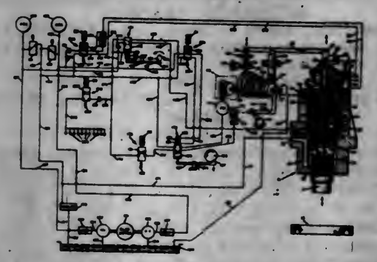


1. A fixture for feeding a workpiece to a rotary cutting tool for generating an annular cam surface on a face of the workpiece comprising a support means, mounting means disposed on said support means, carrier means rotatably and axially movably mounted on said mounting means, said support means having a follower surface having a predetermined contour, follower means engageable with said follower surface on said support means mounted on said carrier means, means disposed on said fixture for urging said follower means into engagement with said follower surface on said support means, said carrier means having stop means for limiting the axial travel thereof toward said follower surface, means for rotating said carrier means and means for mounting said workpiece on said carrier means adjacent said cutting tool.

3,191,502
HYDRAULIC PRESS

Edwin C. Pinsenschaum, Columbus, Ohio, assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Original application Dec. 1, 1961, Ser. No. 156,326. Divided and this application Apr. 3, 1963, Ser. No. 277,408
23 Claims. (Cl. 91—40)



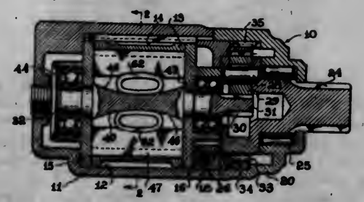
1. In an automatic hydraulic press comprising, a servo-controlled main valve of the type which includes a reciprocable servo-spool and a piston which moves in accordance with the amplitude and speed of movement of said servo-spool, a ram connected to said piston, a source of fluid pressure, and means connecting said source of pressure to said main valve, the improvement comprising, a fluid motor operated by said source, a

shaft rotated by said motor, a plurality of eccentric cams mounted to said shaft for rotation therewith, cam follower means engaged in cammed relation with said cams, means for shifting said cams relative to said cam follower means to position the respective cams for engagement with said cam follower means, the respective cams camming said cam follower means in differing amplitudes of cammed movement, and means mechanically interlinking said cam follower means with said servo-spool for reciprocating said servo-spool in response to cammed movement of said cam follower means, each of said cams thereby corresponding to a different amplitude of ram movement.

3,191,503
ROTOR ASSEMBLY FOR FLUID-HANDLING DEVICE

George H. Fuehrer, Downey, Calif., assignor to Thor Power Tool Company, Aurora, Ill., a corporation of Delaware

Filed Dec. 5, 1963, Ser. No. 328,405
8 Claims. (Cl. 91—140)



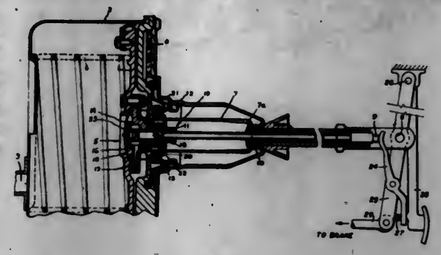
1. A rotary fluid-handling device comprising, a main housing having a cylindrical chamber provided with inlet and outlet passages, a rotor journalled eccentrically of the longitudinal axis of said chamber, said rotor having at least one radial slot opening through its periphery, vane means having a close sliding fit with said slot and its outer perimeter edge being adapted to form a sliding fit with the juxtaposed surfaces of said cylindrical chamber, and an endless loop of resilient non-metallic material interposed between the bottom edge of said slot and the inner edge of said vane means effective to urge the latter outwardly into light pressure engagement with the periphery of said cylindrical chamber.

3,191,504
BOOSTER FOR BOOSTER-ASSISTED ACTUATING SYSTEMS

Desmond Henry James Reynolds, Sutton Coldfield, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Oct. 18, 1962, Ser. No. 231,359
Claims priority, application Great Britain, Oct. 18, 1961, 37,313/61
11 Claims. (Cl. 91—377)

1. In a pressure-differential-operated booster comprising a cylinder in which a wall is movable in response to a fluid pressure difference, said movable wall being connected to an operating rod, a valve controlling the flow of a fluid pressure medium with respect to an end of said cylinder to cause said pressure difference, said valve being opened by a control member and being allowed to close by movement of said wall relative to said control member consequent on said pressure difference, and said valve comprising a valve head, a valve seating engageable by said head, and obturating means, said obturating means being secured to said head and extending into said seating in the closed position of said valve, and said obturating means being partially of cylindrical shape and said seating being likewise of cylindrical shape to restrict the flow of pressure medium through said valve on initial opening thereof, the degree of restriction being progressively

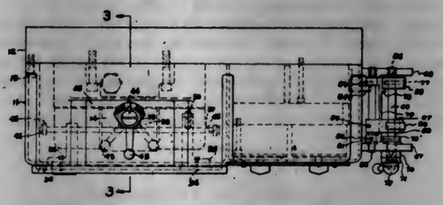


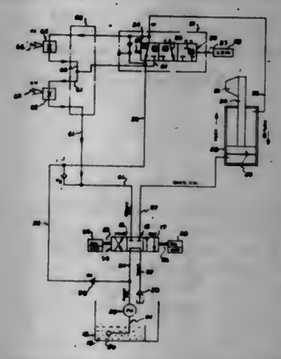
reduced on movement of said valve in the opening direction, whereby in the fully open position of said valve said obturating means are substantially clear of said seating.

3,191,505
HYDRAULIC CONTROL FOR A SLIDE UNIT

William L. Deibaugh, Warren, and Roger S. Naeyaert, Grosse Pointe Woods, Mich. (both of 3267 Wight St., Detroit, Mich.)

Filed Nov. 21, 1961, Ser. No. 155,241
8 Claims. (Cl. 91—407)





1. In a hydraulic control for a slide unit, a feed cylinder including a reciprocal piston rod operatively connected to said slide unit, a casing, a control valve in said casing adapted for connection to a source of pressure fluid and including a pair of cylinder ports, delivery and exhaust conduits respectively connecting said ports with opposite ends of said cylinder for selectively delivering pressure fluid to one end thereof for effecting a feed movement of said piston rod and connected slide unit and for receiving exhaust fluid from its opposite end, a deceleration valve body in said exhaust conduit, a ported movable valve element in said valve body normally spring-biased into a neutral position for directing exhaust fluid without restriction for exhausting, and movable into a second position for restricting said flow of exhaust fluid, a pair of brackets on said casing, a rotatable shaft journaled on said brackets, a cam plate secured to said shaft and extending radially therefrom and operatively engageable with the movable valve element of said deceleration valve, a second rotative shaft on said brackets parallel to and spaced from said first shaft, a cam on said second shaft operatively engageable with said cam plate, and a manual control lever secured on one end of said second shaft for selectively rotating the same and its connected cam for moving said valve element from its neutral position to said second exhaust restricting position for slowing down the feed movement of said slide unit, and a coarse feed exhaust fluid metering valve connected into said exhaust conduit, said valve element when moved into said second position directing said exhaust fluid through said coarse feed metering valve.

3,191,506
HYDROPNEUMATIC PROP

Howard Ledeen, La Canada, Calif., assignor to Ledeen, Inc., El Monte, Calif., a corporation of California

Filed Mar. 19, 1962, Ser. No. 180,591
6 Claims. (Cl. 91—454)



1. In a two-component modular support for maintaining two opposed surfaces in space relation, the combination of:

(a) an extensible and contractible hydropneumatic prop including an end disengageably seated against one of said surfaces and including a fluid-containing member having an annular abutment spaced from and facing away from said one end of said prop;

(b) said spacing of said one end of said prop and said annular abutment thereon varying as said prop is extended and contracted;

(c) a pipe separate from said fluid-containing member, and of a length equal to the difference between the spacing of said surfaces and said spacing of said one end of said prop and said annular abutment thereon when said prop is in an extended position;

(d) one end of said pipe being disengageably seated against the other of said surfaces;

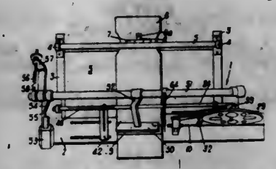
(e) said annular abutment being disengageably seated against the other end of said pipe; and

(f) means for extending said prop into its said extended position to maintain said one end of said prop seated against said one surface, said one end of said pipe seated against said other surface, and said annular abutment seated against said other end of said pipe.

3,191,507
APPARATUS FOR APPLYING A TEAR STRIP TO PLASTIC TUBING

William John Cowie, Palmerston North, Wellington, New Zealand, assignor to Transparent Packaging Limited, Palmerston North, Wellington, New Zealand, a corporation of New Zealand

Filed Nov. 26, 1962, Ser. No. 240,112
Claims priority, application New Zealand, Dec. 5, 1961, 130,878
8 Claims. (Cl. 93—1)

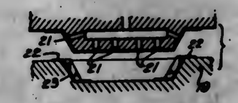


1. Apparatus for applying a tear strip to seamless tubular plastic material for manufacture into bags having a tear strip on part of the wall thereof, said apparatus comprising a floating anvil plate, two protruding rollers positioned to extend from the upper and lower surfaces of the anvil plate, a carrier for each protruding roller, a common pivot extending through the anvil plate on which the carriers are mounted, said plate and protruding rollers being adapted to be disposed within a length of seamless plastic material, a pair of transverse holding rollers spaced apart to provide a gap therebetween, the gap defined by the bounding surfaces of said holding rollers being sufficient to allow the anvil plate and the tubular plastic material thereover to pass therebetween, but with further longitudinal movement of said floating anvil plate being restrained by engagement of said protruding rollers with said holding rollers, strip supplying means for providing a tear strip over part of said plastic tubular material adjacent said anvil plate, and sealing means for sealing said tear strip to said plastic tubing cooperable with said floating anvil plate for providing on each bag length of material a free end for said tear strip of a size that may be gripped between at least a finger and thumb for pulling the tear strip from said plastic material in use with the tearing of the material being along the line of said tear strip.

3,191,508
METHOD OF MANUFACTURING CONTAINERS

Bernard D. Beamish, New Rochelle, N.Y., assignor to Johnson & Johnson, a corporation of New Jersey

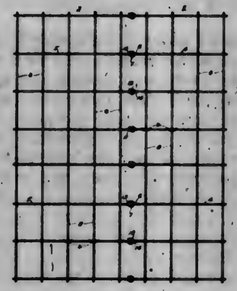
Original application Feb. 12, 1960, Ser. No. 8,373, now Patent No. 3,104,012, dated Sept. 17, 1963. Divided and this application Nov. 16, 1962, Ser. No. 243,966
2 Claims. (Cl. 93—36)



1. The method of making containers comprising forming a container blank of sheet material having a center portion and oppositely extending side portions (disposed at right angles), placing said blank over a concave die member having an inner contour the same as that of the outer contour of the finished container, pressing a convex die member having an outer contour the same as that of the inside of said container onto said blank to force said blank into said concave die member, said die members co-acting to fold the extending side portions of said blank with respect to said center portion to form container sides and container corners, holding said blank with said extending side portions so folded on said convex

die member while said die members are separated, placing sheeted thermoplastic material over the corners of said concave die member, bringing said convex die member with the folded blank thereon into said concave die member and heating said thermoplastic sheet material to above its flow temperature while pressing said die members together to fuse said thermoplastic sheet material to said folded blank over the corners of said container and stabilize said folded blank in the form of said container.

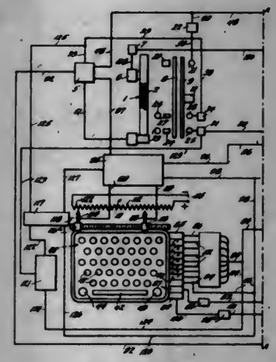
3,191,509
FOLDING MAT
William J. Pearson, Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Jan. 12, 1961, Ser. No. 82,204
3 Claims. (Cl. 94—8)



1. A foldable mat comprising:
(a) pairs of hinged single transverse rods,
(b) the hinge end of one transverse rod being bent upwardly at an obtuse angle to the plane of the mat and bent laterally and transversely to form an eye,
(c) the hinge end of the aligned companion transverse rod being bent upwardly and rearwardly to form another eye,
(d) the eye on each rod having a constricted throat opening thereto which is normally slightly smaller than the diameter of a mating rod whose eye is received therein,
(e) a plurality of longitudinal rods secured at right angles to the transverse rods,
(f) with each connected pair of transverse rods being in axial alightment in elevation when said mat is unfolded, and in parallel relationship when said mat is folded.

3,191,510
PHOTOTYPOGRAPHIC APPARATUS
Allen H. Carmack, 352 Mt. Pleasant Drive, Woodbridge, Va., and Jon W. De Frees, Norfolk, Va. (1126 N. Irving St., Arlington, Va.)
Filed Aug. 31, 1962, Ser. No. 220,836
11 Claims. (Cl. 95—4.5)

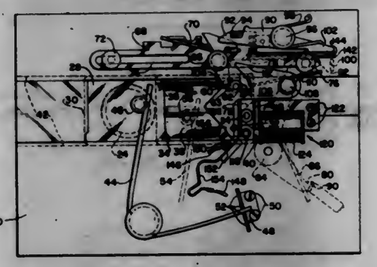
1. A phototypographic apparatus of the character described comprising:
a film holder which is adapted to have a photographic film removably mounted therein, mounting means by which said holder is mounted for lateral and vertical movements, translating means by which said holder is adapted to be intermittently moved laterally and/or vertically in response to code signals imparted to said translating means;
a stationary element having a character image projection window therein, a rotary element which is disposed adjacent to said stationary element in axial alignment therewith and is adapted to be constantly rotated during operation, an annular row of printing characters disposed on said rotary element in position to successively register with said projection window as said rotary element is rotated;
a character image projecting means comprising a photographic lens and a light source which are mounted in fixed position in axial alignment with said projection window with said lens disposed forwardly of said stationary and rotary elements between said elements and said film holder and said light source being disposed rearwardly of said elements, said lens being operative to project the image of a printing character in register with said projection window onto a film in said film holder;
control means by which said photographic lens is normally maintained inoperative to project a printing character image onto said film, said lens control means being operative in response to an actuating pulse imparted thereto to render said lens operative to project a printing character image onto said film;
a plurality of annularly and radially spaced character control windows, and a plurality of annularly and radially spaced character spacing control windows in said rotary element, a plurality of annularly and radially spaced auxiliary character control windows and a plurality of annularly and radially spaced



auxiliary character spacing control windows in said stationary element, certain of said character control windows being adapted to register with certain of said auxiliary character control windows, and certain of said character spacing control windows being adapted to register with certain of said auxiliary character spacing control windows when a printing character is in register with said projection window as said rotary element is rotated, there being a different combination of registering character control and auxiliary character control windows for each printing character on said rotary element, a first pulse generating means and a comparator decoder, the registration of said certain of said character control windows with said certain of said auxiliary character control windows causing said pulse generating means to emit a plurality of pulses constituting a character code signal, and the registration of said certain of said character spacing control windows with said certain of said auxiliary character spacing control windows causing said pulse generating means to emit a plurality of pulses constituting a character spacing code signal simultaneously with the character code signal, means by which said character code signal is imparted to said comparator decoder, and means by which said character spacing code signal is imparted to said translating means;

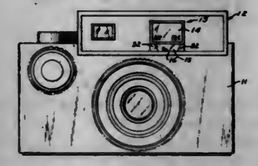
a manually operable key-board having a plurality of keys corresponding to the printing characters on said rotary elements, each of said keys being operative when actuated to effect the generation of a character code signal similar to the character code signal generated by the cooperative action of said stationary and said rotary elements which corresponds to the printing character represented by the actuated key, electronic means by which said key induced character code signal is generated and imparted to said comparator decoder, said comparator decoder being rendered operative by the two similar character code signals imparted thereto to impart actuating pulses to said control means and to said translating means, said control means being operative in response to the said pulse imparted thereto to render said photographic lens operative to project the image of a character in register with said projection window onto said film, and said holder translating means being operative by the said pulse imparted thereto to translate said film holder in accordance with the character spacing code signal imparted thereto.

3,191,511
PHOTOGRAPHIC APPARATUS
John P. Bargarella, Sudbury, and Milton S. Dietz, Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 269,002
14 Claims. (Cl. 95—10)



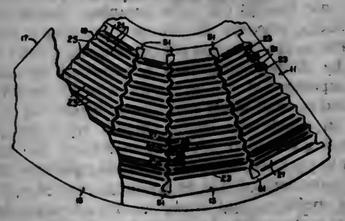
1. In a camera having an exposure aperture, a shutter mechanism comprising:
(a) a shutter blade movable between a cocked position and a rest position;
(b) first bias means urging said shutter blade toward said rest position;
(c) first retaining means effective to hold said shutter blade in said cocked position;
(d) release means mounted for movement in first and second directions;
(e) second bias means urging said release means toward movement in said first direction;
(f) second retaining means effective to hold said release means, when the latter is moved in said second direction to a predetermined position, against movement in said first direction;
(g) manually operable actuating means effective to release said second retaining means, thereby permitting movement of said release means in said first direction;
(h) means associated with said release means and effective to release said first retaining means in response to movement of said release means in said first direction;
(i) manually operable cocking means effective to move said release means in said second direction;
(j) an element mounted on said release means and arranged to move said shutter blade from said rest to said cocked position as said release means is moved in said second direction; and
(k) means for so connecting said element to said release means that the latter may continue to be moved in said second direction after said shutter blade reaches its terminal cocked position, thereby allowing for overtravel in the manual cocking operation without danger or damage.

3,191,512
EXPOSURE CONDITION INDICATION AND WARNING
Orbie E. Lind, Jr., Ann Arbor, Mich., assignor, by mesne assignments, to Mansfield Industries, Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 14, 1960, Ser. No. 68,968
5 Claims. (Cl. 95—11)



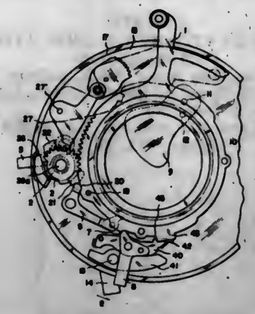
1. In a camera, a view finder, a photocell actuated meter assembly mounted for pivotal adjustment, means connecting the meter to automatically determine the diaphragm opening according to measured scene brightness, means for adjusting the meter assembly about its pivot to correct for exposure factors, a pointer on said meter extending into the field of view in said finder, relatively stationary laterally spaced signal means in said field of view defining a range coacting with the pointer to indicate limitations of automatic diaphragm adjustment for proper automatic exposure, and signal means movable with said meter assembly during adjustment to extend into said field of view and vary the extent of said range.

3,191,513
BELLOWS CONSTRUCTION
Donald C. Turner, 66 Highledge Drive, Penfield, N.Y.
Filed May 6, 1963, Ser. No. 278,346
7 Claims. (Cl. 95—39)



1. An expansible bellows comprising a plurality of sides together forming a hollow body of polygonal cross section expansible and contractable in an axial direction, each side having a plurality of pleats forming successive ridges and grooves, with the ridges of one side substantially alined with the grooves of an adjacent side, each ridge and groove being formed by approximately flat plane surfaces and having stiffening material tending to keep said surfaces approximately flat and plane, characterized by the fact that the stiffening material for at least certain of said flat surfaces on two adjacent sides of the bellows has inclined ends which are longer near the bottoms of the grooves than near the tops of the ridges, the inclined ends of the stiffening material on one side of the bellows projecting beyond a plane containing the bottoms of the grooves of the next adjacent side of the bellows.

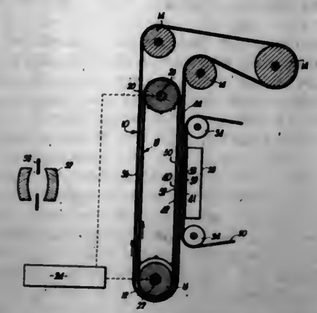
3,191,514
LENS SHUTTER FOR SINGLE-LENS REFLEX CAMERA
Naoyuki Ohara, 436 1-chome, Soshigaya, Setagaya-ku, Tokyo-to, Japan
Filed June 24, 1963, Ser. No. 289,880
Claims priority, application Japan, Mar. 21, 1959, 34/9,618; May 8, 1959, 34/24,996; Sept. 16, 1959, 34/29,145
3 Claims. (Cl. 95—42)



1. A shutter for single-lens reflex cameras having an exposure opening which comprises a plurality of shutter blades adapted to open and close said exposure opening, a shutter blade ring mounted for rotation about the optical axis of the lens to operate said shutter blades, said shutter blade ring having two pins one of which is fixed thereon and acts as an opening pin to actuate said ring in the direction for opening said shutter blades and second of which is provided with an end surface sloped in one direction to form a cam adapted to deflect said pin axially, said second pin constituting a closing pin to actuate said ring in the direction for closing said shutter blades at its normal position, a main operating member which has a center of rotation other than the optical axis, and a power source to drive said shutter blade ring to cause said shutter blade ring to open and close, whereby the primary exposure operation of the shutter is accomplished, said main operating member including an engagement part for engaging said shutter blade ring, means for bringing said engagement part to the position outside the path of movement of said closing pin after complete closing of said shutter blades, whereby the shutter blade ring is made to be rotatable in the direction for opening the shutter blades so that the shutter blades may be reopened immediately after completion of the exposure without cocking the shutter and so that, when said shutter blade ring is in the position in which said shutter blades are fully opened upon rotating said main operating member in the opposite direction to cock the shutter, said closing pin is within the path of movement of said engagement part of said main operating member, said engagement part engaging said sloped end surface of said second pin so that it is depressed downwardly by said engagement part, whereby said second pin permits rotation of said main operating member to enable the shutter to be cocked.

3,191,515
HIGH SPEED AERIAL CAMERA SHUTTER
John Scott Findlay, Wilmette, Ill., assignor to Memory Systems of Missouri, Inc., Kansas City, Mo., a corporation of Missouri
Filed Aug. 9, 1963, Ser. No. 301,142
13 Claims. (Cl. 95—57)

1. In a camera having structure for directing light rays onto a sensitive film:
an endless, opaque curtain having at least one film-scanning slit and a wide aperture therein spaced from the slit, said curtain being mounted for rotation between said structure and said film with the slit moving across the film during said rotation, the aperture permitting passage of said rays through the slit and onto the film during an exposure;
an endless member provided with a blind, said member being mounted for rotation between said structure



and said film with the blind normally aligned with said slit during said movement thereof across the film to prevent said rays from exposing the film; and
structure operably coupled with said curtain and said member for driving the curtain and member, said structure including means for changing the relative positions of the slit and the blind to expose the film when the slit moves thereacross.

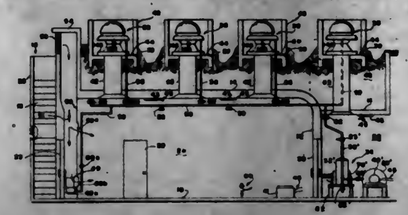
3,191,516
QUICK ACTING SHUTTER
John W. Corcoran, Redwood City, Calif., assignor, by mesne assignments, to Beckman & Whitley, Inc., San Carlos, Calif., a corporation of Delaware
Filed May 11, 1961, Ser. No. 109,396
6 Claims. (Cl. 95—59)



1. In a quick acting camera shutter the combination comprising an air solenoid of generally annular geometry, a generally circular opaque disc of non-magnetic electrically conductive material rotatably mounted about a line which is substantially a diameter of said disc and the opening in said solenoid, said disc having no diameter greater than the inner diameter of said solenoid, and electrical energy means for energizing said solenoid.

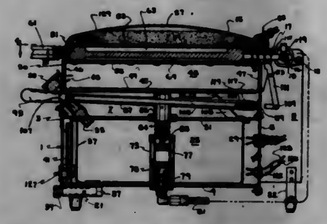
3,191,517
VENTILATING SYSTEM FOR FALLOUT SHELTER
Isel I. Selzman, 4108 Dodge St., Omaha, Nebr.
Filed Oct. 27, 1961, Ser. No. 148,143
4 Claims. (Cl. 98—33)

1. A personnel radiation shelter adapted to house a plurality of persons for an extended period of time comprising: radiation resistant walls defining an enclosure for personnel and equipment; at least one air inlet duct opening into said enclosure and extending to the atmosphere outside said enclosure; at least one air exhaust duct extending from said enclosure to the atmosphere outside said enclosure; an exhaust fan associated with said exhaust duct; an air motor drivingly connected to said exhaust fan and having a compressed air inlet and an exhaust air outlet, the latter being open to said enclosure; air compressor means disposed within said enclosure and having an air inlet and an air outlet; a compressed air storage tank; conduit means connecting the outlet of said compressor means with said storage tank and with the inlet of said air motor; valve means associated with said conduit means for selectively directing compressed air



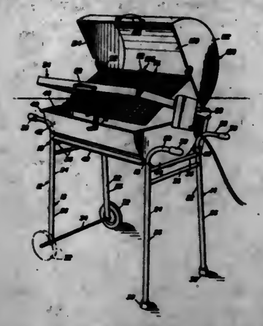
from said compressor means outlet to said storage tank and to the inlet of said air motor; additional valve means for discharging compressed air from said storage tank into said enclosure; conduit means extending from the inlet of said compressor means to the atmosphere outside said enclosure and provided with an air filter for removing radioactive dust; an internal combustion engine within said enclosure drivingly connected to said air compressor means, said internal combustion engine having air and exhaust conduits communicating with the atmosphere outside said enclosure.

3,191,518
FOOD FRESHENING APPARATUS
Joseph Pavelka, Jr., % The Toastswell Co. Inc., 620 Tower Grove Ave., St. Louis 10, Mo.
Filed June 11, 1962, Ser. No. 202,938
12 Claims. (Cl. 99—234)



1. Food freshening apparatus comprising a housing containing a water reservoir and a food chamber, structure pivoted to said housing and including a pivoted cover for said food chamber, a steam generator and means for discharging steam therefrom into said food chamber, a pump communicating with said reservoir and having its discharge connected to said generator, a lever fulcrumed to said housing and operatively connected to said pump, said housing having a slot therein of sufficient width to receive said lever and of greater width at one end whereby a shoulder is formed on one side of said slot, said lever extending through said slot, a bar extending substantially parallel to said lever and connected to said lever at a point remote from the fulcrum for movement lengthwise only of said lever, resilient means biasing said bar lengthwise of said lever into said enlarged end portion of said slot whereby to engage said shoulder and prevent movement of said lever when said cover is raised, and additional means actuated by said cover when the latter is closed to retract said bar from the slot.

3,191,519
BARBECUE ROTARY GRILL
Ephriam Henry Kidder, 617 Selma St., Cadillac, Mich.
Filed Sept. 19, 1961, Ser. No. 139,167
6 Claims. (Cl. 99—421)



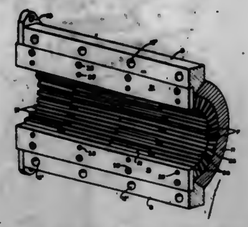
1. A rotary spit basket assembly adapted to be mounted over and movable toward and away from a fire pan, comprising a support structure, a spit basket supporting frame, means pivotally mounting the rear of the frame to the support structure, means for maintaining said frame in a plurality of pivotally adjusted positions, a spit basket, means rotatably mounting said basket on said frame, means for releasably fixing the spit basket in a plane substantially parallel to the plane of the frame, a hood, and means pivotally mounting the rear of the hood to the rear of the frame whereby said hood is movable with said frame and relative thereto, said hood being of a size so as to engage the upper surface of the frame about the entire extent thereof, thus being capable of completely enclosing the upper portion of the spit basket regardless of the orientation of the frame.

3,191,520
CORRUGATED FOIL BAKING PAN
Stanley J. Halter, Mundelein, Ill., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,315
7 Claims. (Cl. 99—442)



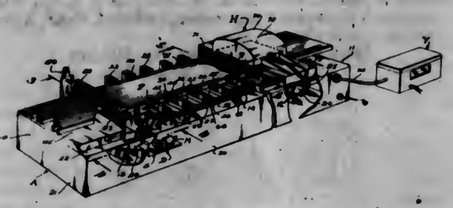
1. An annular receptacle for food products and the like comprised of a single, continuous piece of thin, readily bendable, yet self-sustaining aluminum foil of a few thousandths of an inch in thickness, said receptacle including a thickened bottom of relatively uncompressed corrugations, an outer corrugated side wall, the lower segment of said outer side wall constituting the major portion thereof and comprising substantially uncompressed corrugations and being of relatively greater average thickness as compared to the remainder of said outer side wall, and a central integral horn projecting upwardly from said bottom wall and defining, between the outer surface of the horn and the inner surface of the side wall, an annular product-receiving space, said horn extending upwardly substantially to the useful height of said side wall, the upper edge of said side wall having an integral, outwardly extending, cover-receiving ledge and an integral terminal edge foldable over said ledge to secure the cover to the receptacle.

3,191,521
FLUID EXPRESSING METHOD
Stanley Hiller, Berkeley, Calif., assignor to Coproducts Corporation, San Francisco, Calif., a corporation of California
Original application Aug. 24, 1959, Ser. No. 835,698, now Patent No. 3,130,666, dated Apr. 28, 1964. Divided and this application July 16, 1963, Ser. No. 301,227
8 Claims. (Cl. 100—37)



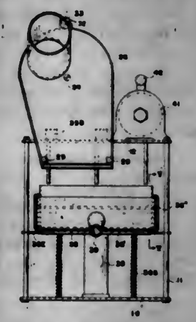
1. A method of expressing fluid from fluid bearing material comprising urging a quantity of said material through a generally cylindrical confined passageway having fluid flow passages through the wall thereof, simultaneously applying pressure to said material as the same is moved from one end of said passageway toward the other end thereof to extract fluid from said material, and maintaining pressure on said material as the volume of said material decreases as fluid is extracted therefrom by partially and progressively increasingly blocking said passageway from said wall thereof in an inwardly direction to restrict and decrease the volume of said passageway in predetermined proportion to the quantity of fluid extracted from said material.

3,191,522
CONTINUOUS PRESS
Theodore R. Drake, Seal Beach, and John L. Rados, San Pedro, Calif. (Both of P.O. Box 875, Wilmington, Calif.)
Filed Sept. 26, 1962, Ser. No. 226,235
5 Claims. (Cl. 100—93)



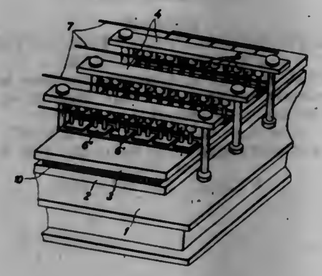
1. A continuous press of the character referred to, including an elongate horizontally disposed frame having front and rear ends, an elongate horizontally disposed feed roller rotatably supported at the rear end of the frame and extending transversely thereof, an elongate horizontally disposed return roller rotatably supported at the forward end of the frame and extending transversely thereof, an endless clamp chain engaged about and extending between the rollers to define a lower portion of the chain and an upper work supporting portion thereof, drive means rotating one of said rollers continuously in one direction whereby the upper portion of the chain is moved longitudinally forward of the frame, horizontal tracks extending longitudinally of the frame between the rollers to support the chain, said clamp chain including a plurality of like elongate C clamps arranged in spaced parallel relationship and extending transverse the axis of the frame, each C clamp having an elongate, horizontally disposed work supporting beam, outwardly projecting heads at the ends of the beam to occur at opposite sides of work supported by the beam, a horizontally disposed hydraulic cylinder and ram unit carried by one head and operable to urge work into clamped engagement against the other head, hinge means fixed to and pivotally connecting adjacent clamp members in side by side relationship, support rollers on the chain and engaging the tracks, fluid pressure supply means carried by the clamp chain and valving means carried by the clamp chain and related to the fluid supply means and the ram units and operable to shift the rams laterally inwardly into engagement with work supported by the chain when they disengage the feed roller and occur at the upper portion of the chain, to next shift the rams out of and back into engagement with work as work is advanced into engagement in the press and to then shift the rams laterally outwardly when they occur adjacent the forward return roller, said valving means including a plurality of longitudinally spaced projections on the frame adjacent the chain and operating levers projecting from the chain to engage the projections as the chain moves longitudinally.

3,191,523
FRUIT AND VEGETABLE JUICER
Roy J. Fritz, 2831 Finley Ave., Cornwells Heights, Pa.
Filed June 28, 1963, Ser. No. 291,369
2 Claims. (Cl. 100—97)



1. A portable fruit and vegetable juicer comprising a supporting structure having a base and an upwardly spaced platform, a horizontally disposed press platen slideably mounted for vertical movement between said base and platform, means positioned between said base and platen to raise and lower said platen, a removable open-topped pulp-receiving pan loosely and slideably mounted on said platen and having a forwardly disposed pouring spout extending outwardly of the general periphery of said structure, said pan being slideable fore and aft on said platen, a press cage open at the top and having perforated side walls positioned in said pan with the side walls of the cage spaced inwardly from the side walls of the pan, a loose plate to overlie the pulp in said cage, depending means carried by said platform to enter said cage and engage said plate upon upward movement of said platen and pan carried thereby, a motor-driven rotary comminuting device supported on said platform and having a flat and generally vertically disposed housing with a downwardly directed discharge nozzle aimed into said cage when said pan and cage are slid forwardly, a removable front cover for said housing, said housing cover having an enlarged opening therein eccentric of the axis of rotation of said rotary comminuting device, and a feed tube carried by and extending forwardly of said cover concentrically about said opening, the arrangement being such that with said plate removed and said pan and cage slid forwardly pulp may be discharged directly from said housing into said cage with the free juice thereof collected from said spout after which said plate may be put into position and said pan and cage slid back to pressing position while juice is continued to be collected from said spout.

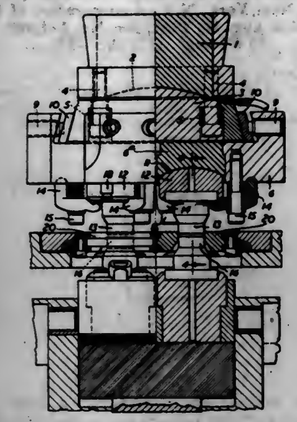
3,191,524
HYDRAULIC SYSTEM FOR PLATEN PRESS
Georg Ludwig, Schwelm, Germany, assignor to Wagener & Co. Maschinenfabrik, Schwelm, Germany
Filed Sept. 4, 1963, Ser. No. 306,662
Claims priority, application Germany, Sept. 4, 1962, W 32,896
9 Claims. (Cl. 100—269)



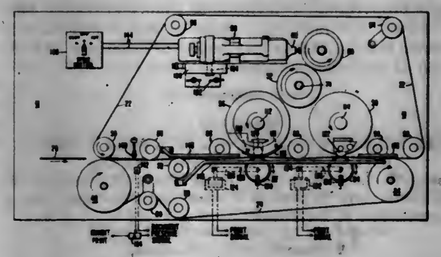
1. A hydraulic system for actuating a movable press platen, comprising a plurality of piston cylinders grouped in several rows, said cylinders being provided with piston means bearing upon said press platen; a main conduit leading to a source of fluid under pressure; a plurality of branch conduits connecting said main conduit with said cylinders, the number of said branch conduits being at least twice the number of said rows, each of said rows having a plurality of branch conduits assigned to it and having its cylinders divided into subgroups of at least two cylinders each, the cylinders of each subgroup being individually connected to respective branch conduits assigned thereto; check-valve means in the fluid-supply path of all the cylinders of a row between the cylinders and said main conduit; and individual shut-off means for said fluid in each branch conduit between said main conduit and the cylinders connected thereto.

3,191,525
COINING PRESSES
Henry Denis Challen, Birmingham, and Denis Ralph Cooper, Surrey, England, assignors to Taylor & Challen Limited, Birmingham, England, a British company
Filed June 12, 1963, Ser. No. 287,435
Claims priority, application Great Britain, June 15, 1962, 23,046/62
4 Claims. (Cl. 101—4)

1. A multiple die coining press comprising a slide member reciprocable linearly towards and away from a bed member, a carrier mounted on said slide member, mutually opposed engaging surfaces on said slide member and said carrier, said surfaces having an arcuate cross-section, means acting between said slide member and said carrier resiliently urging said surfaces into mutual contact, a plurality of coining dies mounted on said carrier with die faces arranged substantially in a common plane and symmetrically about a point in said plane, said point determining the centre of curvature of said arcuate cross-section, a plurality of dies mounted on said bed member and disposed to mate with said slide member, means for individually adjusting each die of one of said pluralities to enable tiltable adjustment of the face of each relative to the face of its mating die, and clamping means for securing each adjustably mounted die in its adjusted position relative to its mating die.

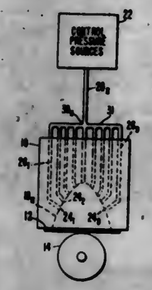


3,191,526
HIGH SPEED ROTARY SELECTIVE ENDORSER
William H. Ross, Dallas, Tex., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 29, 1962, Ser. No. 198,597
8 Claims. (Cl. 101—91)



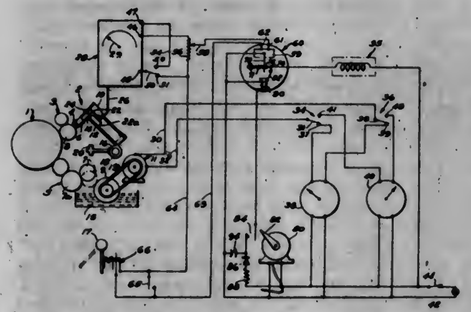
1. A high-speed check endorser the combination comprising a first rotary printing means and a second rotary printing means, an endorsement and a date die mounted upon said first rotary printing means, a batch numbering device positioned upon said second rotary printing means, an ink transferor roller, an ink transferee roller positioned in rolling contact with said ink transferor roller and the dies of said first and said second rotary printing means, means for spraying printing fluid upon said ink transferor roller, means coupled to said spraying means for actuating said spraying means to vary the ink pattern transferred to said ink transferor roller, a pair of belts forming a check transport system and in juxtaposition for advancing documents uninterruptively for imprinting by said first and said second rotary printing means, means positioned along the document transport system for detecting the presence of a document, first and second print rollers positioned adjacent said first and said second rotary print means, respectively, for positioning a document to be printed in rolling contact with the dies of said first and said second rotary printing means, and means coupled to said document detecting means for selectively actuating one or both of said print rollers.

3,191,527
FLUID PRESSURE WAVE PRINTER
Walter Geoffrey Wadey, Wynnewood, and Eugene M. Polter, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 16, 1961, Ser. No. 131,808
10 Claims. (Cl. 101—93)



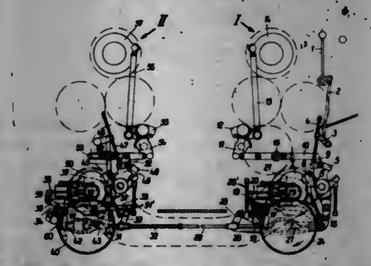
1. Printer mechanism comprising: a type face engraved into a surface, and apparatus for forcing a print receiving member against said type face, with said apparatus including a body of fluid a region of which is adjacent to a print receiving member, a finite plurality of actuable discrete sources of disturbance arranged symmetrically about an axis in said fluid body, where said axis extends to said region with each said source producing, when actuated, an individual longitudinal pressure wave which travels through said fluid body toward said region, and means to actuate initially the said source farthest from said region and thereafter to actuate each of the remaining sources at a time, as measured from said initial actuation time, which is approximately inversely proportional to its distance from said region, such that all of said individual pressure waves susbtantially reinforce one another in said region to develop a concentration of fluid energy therein.

3,191,528
AUTOMATIC DAMPENER CONTROL FOR A ROTARY LITHOGRAPHIC PRESS
George W. Jorgensen, La Grange Park, Ill., assignor to Graphic Arts Technical Foundation, Chicago, Ill., a corporation of Delaware
Filed Feb. 21, 1963, Ser. No. 260,255
9 Claims. (Cl. 101—148)



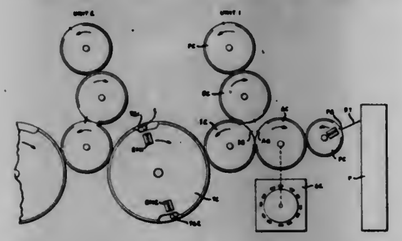
1. Means for automatically controlling the ink-water balance of a dampened press inking system having ink form rollers and a water pan roller operatively connected to the press cylinder thereof whereby an ink-water composite is provided on the press cylinder, comprising:
means for measuring the apparent tack of the ink-water composite on the surface of a press cylinder;
means for converting the apparent tack measurement into an electrical signal whenever the apparent tack reaches a predetermined level;
drive means for the water pan roller;
means adapted for connection to a power source for energizing the drive means at variable speeds;
relay switch means adapted in a first normal position to determine a first speed for the drive means and in a second energized position to determine a second speed for the drive means; and
relay means adapted to be actuated by the electrical signal so as to energize the relay switch means to its second position.

3,191,529
SUCCESSIVE INTERRUPTION FOR LETTERPRESS PRINTING MACHINES
Karl Barthel, Heidelberg, Germany, assignor to Schnellpressenfabrik Aktiengesellschaft Heidelberg, Heidelberg, Germany, a corporation of Germany
Filed Apr. 4, 1963, Ser. No. 270,567
Claims priority, application Germany, May 2, 1962, Sch 31,394
1 Claim. (Cl. 101—184)



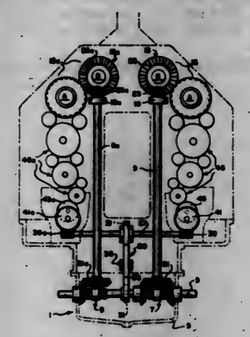
In a printing press having two printing units in series for printing impressions on sheets of material sequentially, each printing unit having printing elements operable to an on-impression position and an off-impression position, said printing elements of said units being disposed spaced from the printing elements of each other sufficiently to allow a plurality of sheets of stock to travel therebetween between impressions of the successive units, and means to deliver sheet stock from one unit to a next successive printing unit in series therewith, the improvement which comprises means operable to a position for mechanically setting the printing elements in a first one of said units in an on-impression position, means comprising only mechanical means responsive to the operation of the first setting means for developing a time-delayed command for setting the printing elements in said second printing unit in an on-impression position, said means for developing said time-delayed command comprising reduction gear means driven from the press, said gear means having a reduction gear ratio effective for developing said time-delayed command a given period of time after operation of the first mentioned means corresponding to the delivery of a given number of sheets of stock for printing between said units in order to have a sheet in readiness for delivery to said second printing unit when placed in an on-impression position, means coupling said printing elements responsive to said command for placing the printing elements in said second unit in an on-impression position, said reduction gear means comprising a pinion gear driven from the press at a constant speed, a reduction gear driven by said pinion, means cooperative with said reduction gear responsive to the angular position thereof for rendering said command effective upon one rotation of said reduction gear, and said means for developing said time-delayed command comprising clutch means for rendering effective and ineffective the driving of said pinion gear, and said means responsive to the setting on-impression of the printing elements of said first printing unit comprising means for clutching said clutch.

3,191,530
DETECTOR SYSTEM FOR PLURAL UNIT PRINTING PRESS
Douglas W. Fath, Brookfield, Paul M. Fischer, Elm Grove, and Robert W. Siebert, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,433
15 Claims. (Cl. 101—184)



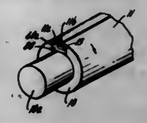
1. In article processing apparatus having means for moving precisely positioned, spaced apart articles through a plurality of stations in succession for treatment; means for detecting displaced articles and for providing output signals in response thereto for control of said apparatus comprising:
a plurality of detector means operating in synchronism with said moving means and being effective to detect unwanted displacements of the articles at points ahead of said stations and to prepare for transmission of detection signals;
a plurality of circuit means for the respective detector means responsive to input detection signals when conditioned therefor for providing output control signals to initiate control of said apparatus;
means operating in synchronism with said moving means for providing repetitive timing signals including trip signals and restoration signals for said circuit means, some of said timing signals being usable as trip signals or restoration signals for more than one circuit means depending upon the distance between said detection points;
means responsive to each said trip signal for conditioning for a timed interval the associated circuit means so that it can respond to a detection signal if applied thereto;
means operating in synchronism with said moving means for momentarily coupling each detector means to its associated circuit means during said timed interval to transmit a detection signal whereby to afford operation of said circuit means only when said displacement is initially detected thereby to prevent operation of said circuit means by extraneous signals;
and means responsive to said restoration signals for restoring each operated circuit means to its former condition a pretermined time after it has been operated thereby to terminate its output control signal and to prepare it for reoperation.

3,191,531
PRESS DRIVE MEANS
Emory W. Worthington, Ridgewood, and Earl Edward Britton, Plainfield, N.J., assignors to Wood Newspaper Machinery Corporation, Plainfield, N.J., a corporation of Virginia
Filed May 24, 1963, Ser. No. 282,909
5 Claims. (Cl. 101—219)



1. A rotary type printing press unit having selectively driven printing and inking rolls, comprising a horizontal main drive shaft extending outwardly along one side of said unit, an inking roll drive shaft parallel to said main drive shaft and positioned inwardly of said main drive shaft, unidirectional direct drive means connecting said main drive shaft and said inking roll drive shaft, a plurality of vertical drive shafts for driving said printing rolls, and reversible gear means operatively connecting said main drive shaft and each said vertical drive shaft whereby said vertical drive shafts may be selectively driven to rotate said printing rolls in a desired drection.

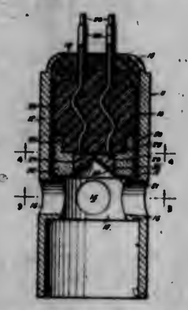
3,191,532
PLATE CLAMPING MECHANISM FOR ROTARY PRINTING PRESS
Carl J. Hermach, Westchester, and Louis S. Depa, Chicago, Ill., assignors to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,444
12 Claims. (Cl. 101—415.1)



3. In a plate clamping mechanism for clamping a thin plate on a cylinder body having a groove formed therein, first and second rails seated in said groove secured together to form a smooth continuation of the surface of the cylinder and together defining a longitudinally extending clamp receiving space having a narrow access slot, the edges of said rails at the leading and trailing edges of the access slot having an angular undercut, a leading edge jaw set having a reference jaw tapered for nesting adjacent the leading edge undercut and having a plurality of spring biased clamping jaws, said reference jaw having a base portion seated in said space and having manually adjustable means for moving and skewing the same a slight amount for effecting register of the printing plate, a trailing edge jaw set including a pluraility of trailing edge supporting jaws tapered for nesting adjacent the

trailing edge undercut and having spring biased clamping jaws, the clamping jaws for the leading and trailing edges being interspersed with one another and arranged side by side in said access slot, and means comprising a single longitudinal camshaft journaled in one of said rails for retracting said clamping jaws for insertion of the leading and trailing edges of the plate and for subsequently releasing them for clamping up said plate.

3,191,533
GAS DISCHARGE APPARATUS
William B. Hopson III, Arlington, Tex., assignor to Jet Research Center, Inc., Arlington, Tex., a corporation of Texas
Filed Jan. 23, 1963, Ser. No. 253,346
4 Claims. (Cl. 102—24)



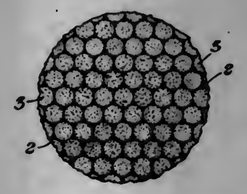
1. A shaped explosive charge unit comprising:
(a) a thick-walled ring having a top face and a bottom-face, said ring having an axial bore therethrough;
(b) a generally cylindrical plug having a bottom face and a top face, said plug being fitted to said ring with the bottom face of said plug closing said bore at its upper end;
(c) a generally cylindrical, thin-walled case having a bottom wall closing the lower end of said case, the top of said case being open, said case containing said ring and at least the lower portion of said plug with the bottom wall of said case closely fitted to the bottom face of said ring to close said bore at its lower end, and with the side walls of said case closely fitted to the periphery of said ring and to the lower portion of the sides of said plug;
(d) means securing said case to said plug;
(e) a charge of detonating explosive material in said bore;
(f) said bottom wall of said case having an axially symmetrical indentation extending into said charge of explosive material to provide a downwardly facing, lined cavity in said material; and
(g) means to detonate said explosive material.

3,191,534
ADJUSTABLE WAD DEVICE FOR HUNTING AND SHOOTING CARTRIDGES
Ado Vecchiotti, 185 Corso Mazzini, Ascoli Piceno, Italy
Filed Jan. 16, 1963, Ser. No. 251,972
Claims priority, application Italy, Jan. 20, 1962, 787/62; Dec. 10, 1962, 23,974/62
4 Claims. (Cl. 102—95)



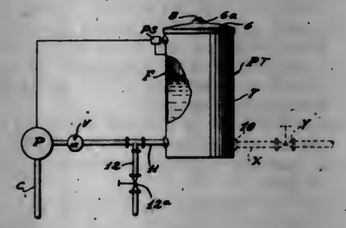
1. An adjustable wad for shooting cartridges comprising in combination a tubular housing having a bottom and top portion and having a central bore, a first disc of plastic material arranged transversely in said central bore, said disc having a series of ribs extending perpendicular from at least one flat surface, said ribs defining a plurality of grooves between said ribs and said one surface, at least one second disc of rubber contacting said ribs of said first disc in said housing and two cork discs forming the top and bottom elements of said wad, said tubular housing folded transversely on the top and bottom portions to contain all said discs as a unit wad, whereby upon firing said disc of rubber fills the grooves between said ribs of said disc of plastic material providing additional elasticity thereto and a secure gas seal.

3,191,535
SOLID CELLULAR METALLIC PROPELLANTS
John F. Mulloy, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 25, 1959, Ser. No. 815,739
10 Claims. (Cl. 102—98)



1. A solid propellant consisting essentially of a cellular structure of a material of the group consisting of aluminum, magnesium, beryllium, alloys and mixtures thereof and alloys and mixtures thereof with silicon, lithium, and titanium in minor proportions, said structure having substantially spherical, interconnecting cells, said cells being filled with an oxidant in solid form in an amount to substantially completely oxidize the cellular structure.
2. A solid propellant according to claim 1 wherein each of said voids in the cellular fuel has a cross-sectional area less than $\frac{1}{64}$ of the cross-sectional area of the element.

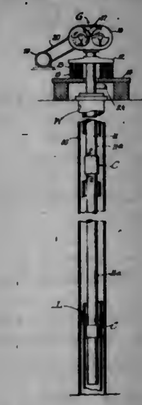
3,191,536
FLOAT AND HYDRO-PNEUMATIC TANK INCLUDING SAME
Stephen M. Taylor, Minneapolis, Minn., assignor to Metal Coating Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 18, 1962, Ser. No. 188,402
12 Claims. (Cl. 103—25)



1. An air-separating water float for use in a hydro-pneumatic tank of a water supply system that includes pressure regulating means in operative association with said tank, said float comprising a cellular free-floating float of air- and water-impervious, substantially rigid material having a density less than water, said float having a central web and a flanged peripheral edge extending below the web, said peripheral flange cooperating with the side walls of a water-containing hydro-pneumatic tank

to provide a narrow, extended, substantially annular, air-saturated column of water that serves as an air barrier and to provide a turbulence deflector, said web defining a lower face that floats in water while exposing an upper face substantially above the water during usage so as to be normally dry, said material having air- and water-impervious cells proportioned and shaped to provide rigidity and prevent the float from being compressed or waterlogged and submerging its upper face during usual pressure changes in the hydro-pneumatic tank, said float having at least one flexible peripheral liquid air sealing wiper means to provide an additional turbulence deflector extending normal and adjacent to the peripheral edge of the bottom portion of said float flange.

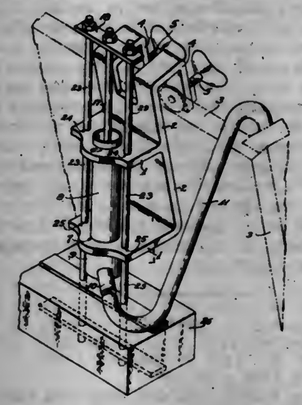
3,191,537
SONIC PUMP IMPELLER
Albert G. Bodine, Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed May 26, 1964, Ser. No. 370,377
5 Claims. (Cl. 103—43)



1. In a deep well sonic pump, the combination of:
an elastic column extending down into said well, which column is capable of transmitting elastic wave energy therealong,
an elastic wave generator coupled to said column for applying elastic vibrations thereto at an elastic wave frequency of said column,
a fluid impelling element driving connected to said column so as to be actuated by said elastic wave energy, said fluid impelling element being oriented within a conduit passage having an inlet and an outlet so as to have fluid impelling contact with fluid in said conduit,
said fluid impelling element thereby providing an acoustic coupling between said elastic column and said fluid,
and said fluid impelling element comprising a material having an acoustic impedance value which is less than that of the material of said elastic column.

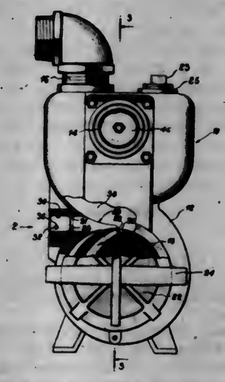
3,191,538
BILGE PUMP
Russell Adams, Somers Point, N.J.
Filed Nov. 3, 1961, Ser. No. 149,907
1 Claim. (Cl. 103—70)

A bilge-pump including cylinder-supporting and rod-guiding means for attachment to the stern of a boat, a cylinder supported by the aforementioned means in a generally upright position and stationarily with respect to said means, said cylinder having its upper end open to the atmosphere and having an intake closure at its lower end, a hose having one end operatively connected with said intake closure and communicating with the cylinder and its other end portion adapted to extend over the top of the stern of the boat and down into the bilge thereof, an inlet housing at the terminal of said other end portion of said hose, an inwardly opening check-valve in said inlet housing, a piston operatively disposed within said cylinder and having water-valving means therein for passing water past said piston on the down-stroke thereof and barring passage of water past said



piston on the up-stroke thereof, a piston-rod connected with said piston and extending upwardly therefrom substantially beyond the upper end of the cylinder, a rod-yoke secured to the upper end of said piston-rod, a pair of float-rods guided by the aforementioned rod-guiding means on either side of said cylinder and parallel to the axis thereof for up and down motion with respect to said cylinder-supporting and rod-guiding means, said float-rods having their upper ends secured to said yoke, and a buoyant float secured to the lower ends of said float-rods.

3,191,539
CUT-WATER FOR SELF-PRIMING CENTRIFUGAL PUMPS
Robert W. Davenport, Cedar Grove, N.J., assignor to Ralph B. Carter Company, Hackensack, N.J., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,497
3 Claims. (Cl. 103—113)



1. In a self-priming centrifugal pump, a casing including an impeller chamber with an impeller supported for rotation therein, said casing having a supply passageway

and a discharge chamber, a common partition separating the supply passageway and the discharge chamber, the supply passageway and the discharge chamber each having portions positioned above the impeller chamber and each being in serial communication therewith, a wall common to the impeller chamber and the discharge chamber and having an exterior defining the outside of the pump and an interior, surfaces extending along the interior of said wall in directions parallel to and normal to the axis of rotation of the impeller, said surfaces including portions converging in a direction normal to the axis of rotation and cooperating to establish an axially extending cut-off edge adjacent the periphery of the impeller, means for replacing said cut-off edge, said means extending through the common wall between the exterior and the interior thereof and including an opening communicating with the exterior and the interior and extending in the direction of the convergence of the cooperating surface portions, said opening being aligned with and intersecting said axial cut-off edge, and a replaceable cut-water in said opening, the cut-water having one end exposed to the exterior of the common wall and an opposite end including cooperating surfaces defining the cooperating surface portions which establish said cut-off edge.

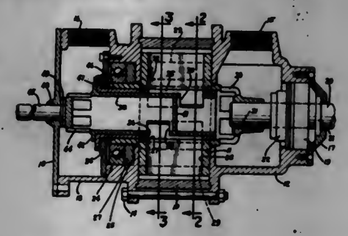
3,191,540
ARRANGEMENT FOR EQUALIZATION AND REDUCTION OF THE PRESSURE UPON A STUFFING BOX FOR A PUMP
Arne Skretting, Karlstad, Sweden, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden
Filed Oct. 4, 1963, Ser. No. 313,840
Claims priority, application Sweden, Oct. 6, 1962, 10,730/62
1 Claim. (Cl. 103—126)



Means for the equalization and reduction of the pressure upon a stuffing box for the shaft of a rotor of a pump, particularly a pump adapted for pumping of fibrous suspensions, and in which the rotor is subjected to different pressures on opposite sides of its shaft, comprising a groove in the wall of the pump casing and encircling said shaft, the groove on the high-pressure side of said rotor being covered by the plane end face of the rotor movable close to said wall and the groove on the low-pressure side being widened to extend beyond said end face, so that the pressure prevailing on the low-pressure side has free access to the groove and can spread therein, said rotor being provided with a projection which fits with a suitable clearance to the narrowest cross-section of the groove and serves to prevent clogging of the same.

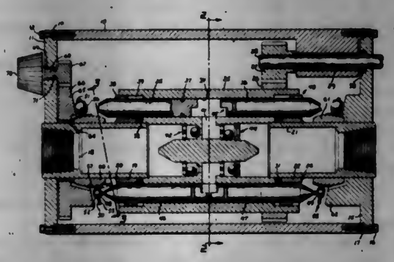
3,191,541
ROTARY FLUID DEVICE
Walter V. Brown, Minneapolis, Minn., assignor to Brown Steel Tank Company, Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 26, 1961, Ser. No. 161,919
8 Claims. (Cl. 103—136)

5. A rotary fluid device of the sliding vane type characterized by:
(A) a rotor
(1) that has a cylindrical central bore,
(2) ports extending from the cylindrical central bore to the periphery of the rotor between the vanes thereof,
(B) an outer sleeve
(1) fitting within the cylindrical central bore of said rotor and in substantially fluid-tight relation,
(2) ports spaced 180 degrees apart in said sleeve,
(3) said ports including first and second openings in most of said outer sleeve on opposite sides of a center plane for a distance matching the length of the ports in said rotor,
(C) an inner sleeve



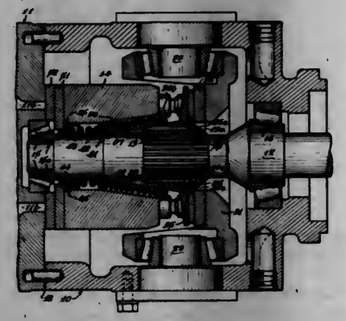
(1) fitting within said outer sleeve in substantially fluid-tight arrangement,
(2) pivotable with respect to said outer sleeve through at least 180 degrees,
(3) a pair of oppositely facing ports therein,
(4) means separating said ports from each other within said inner sleeve,
(D) a control shaft
(1) secured to said inner sleeve and
(2) extending to the exterior of said pump housing,
(E) a rotor shaft
(1) secured to said rotor via a spider
(2) extending to the exterior of said housing.

3,191,542
METERING PUMP
Kenneth D. Hughes, 3244 Blaisdell, Minneapolis, Minn.
Filed June 4, 1962, Ser. No. 199,810
6 Claims. (Cl. 103—162)



1. A metering pump comprising: a housing, opposed inlet and outlet pipes supported on said housing, a pump body rotatably supported by said inlet and outlet pipes, at least one cylinder formed in said pump body in an area outside the area occupied by said inlet and outlet pipe, oppositely acting one-way check valves interposed between said inlet pipe and outlet pipe and said cylinder, pistons in said cylinder, means journalled in said housing and engaging said pump body for rotating it in said frame, means secured to said housing and said pistons to reciprocate them a fixed amount for each revolution of said pump body, and means secured to said housing for varying the timing of the reciprocation of one of said pistons with relation to the other of said pistons to alter the maximum and minimum clearances therebetween during any given revolution of said pump body.

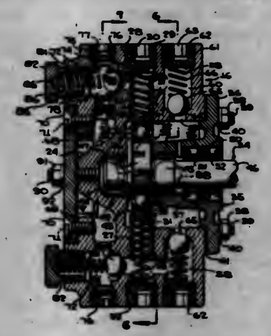
3,191,543
PUMP OR MOTOR DEVICE
Melvin M. Haun and Russell L. Power, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Filed July 27, 1962, Ser. No. 212,964
12 Claims. (Cl. 103—162)



1. An axial piston hydraulic fluid translating device comprising a housing, a rotatable cylinder block in said housing, an annular series of axially disposed cylinders within said block, a series of pistons having inner ends reciprocable within said cylinders, a drive shaft rotatably mounted in said housing, a driving connection between the cylinder block and drive shaft, a cam plate mounted in said housing at one end of said cylinder block and having a bearing face inclined to one end of the cylinder block, said pistons having outer ends, bearing means universally mounted on the outer ends of the pistons and having a bearing face engaging said cam plate, ports communicating the cylinders with the opposite end of said cylinder block, a port plate having inlet and outlet passages in the housing adjacent the opposite end of the cylinder block communicating successively with said cylinder ports upon rotation of the cylinder block, a hold-down ring engaging said bearing means, and a spherical collar engaging the hold-down ring, the center of the spherical collar being located at the approximate mid-point of said driving connection and falling upon the axis of said shaft at the point where the shaft axis pierces the plane containing the pivot points of the universally mounted bearing means, first spring means in recesses in the cylinder block and engaging said spherical collar, a collar on said shaft against which the first spring means bears to maintain said bearing means on the bearing face, and second spring means acting against said collar and said cylinder block to urge said cylinder block against the port plate, whereby the springs act independently on the spherical collar and the cylinder block.

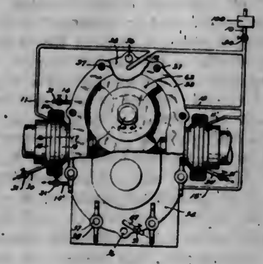
3,191,544
PUMP
Otto E. Szekely, West Palm Beach, Fla., assignor to Szemco Inc., West Palm Beach, Fla., a corporation of Florida
Filed May 10, 1962, Ser. No. 193,695
6 Claims. (Cl. 103—174)

1. A high pressure pump comprising a housing having an axial center, a plurality of cylinders formed integral with said housing and slightly projecting therefrom as parts of radiating cylinder blocks, said cylinders being disposed in a single plane and radiating from the axial center of said housing, a piston disposed in each cylinder, an inlet valve and an outlet valve for each cylinder in each cylinder block, a centrally located drive shaft having cam means engaging said pistons for reciprocating said pistons in response to rotation of said shaft, an annular inlet manifold in said housing around said axial center on one side of the plane of said pistons, radially radiating inlet passages in said housing and opening outwardly through said cylinder blocks into said inlet valves; each of said inlet valves including a radial passage extending from and in alignment with a respective one of said inlet passages through the respective one of said cylinder blocks to the exterior thereof, an axial passage opening into an outer portion of a respective cylinder and into an intermediate part of said radial passage, a valve seat at the intersection of said radial passage and the respective inlet passage, a valve member, a spring engaging said valve member to normally hold said valve member on said valve seat, and a removable plug closing the outer end of said radial passage and restraining said spring against outward movement, said plug providing access to said valve seat, said valve member and said spring for replacement and repair, an annular outlet manifold in said housing around said axial center on one side of the plane of said pistons, radiating outlet passages in said housing and opening outwardly through said cylinder blocks into said outlet valves, each of said outlet valves including an axial passage extending from a respective cylinder through an adjacent end of the respective one of said cylinder blocks to the exterior thereof, said first mentioned and second mentioned axial passages being in axial alignment, a respective outlet passage opening into said outlet valve axial passage intermediate the ends thereof, a valve seat around said outlet valve axial passage intermediate the respective outlet passage and cylinder, an outlet valve member engaged with said outlet valve seat, a spring urging said outlet valve member to a seated position, and a removable exposed plug in the end of the respective cylinder block and closing said outlet valve axial passage and bearing on the spring therein, said outlet valve plug providing access to said outlet valve seat, said outlet valve member and said outlet valve spring for replacement and repair, each of said cylinders opening out through the exterior of the respective cylinder block, a removable plug closing the outer end of each cylinder, a spring bearing against each cylinder plug and each piston to hold said pistons in engagement with said cam means, said cylinder plugs providing access to each piston and its associated piston spring for individual replacement, each piston having at least one closed end preventing fluid flow through its associated cylinder, and closure plates par-



tially defining said annular inlet and outlet manifolds in non-interfering relationship with each of said exposed plugs.

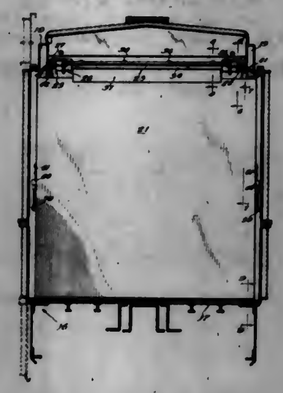
3,191,545
ASEPTIC JOINT SEAL
Gilbert R. Funk, Waukesha, Wis., assignor to Waukesha Foundry Company, Waukesha, Wis., a corporation of Wisconsin
Filed Jan. 22, 1962, Ser. No. 167,619
15 Claims. (Cl. 103—202)



13. A pump or the like for handling material required to be protected against contamination and comprising the combination with a chamber for such material, means within the chamber for acting on the material, a removable cover for the chamber, means providing inlet and outlet passages respectively leading to and from the chamber for the said material, motion-transmitting means extending into said chamber for actuating therein the said means for acting on material in said chamber, and means for completely protecting such material from contamination and comprising seals between the motion-transmitting means and the chamber and between the removable cover and the chamber, and between the chamber and the inlet and outlet passages, each of said seals comprising a pair of substantially continuous and mutually spaced elastically yieldable seal elements, means providing seats resisting the separation of said elements, and means for introducing a sterile fluid between the elements of each such pair under pressure exceeding the pressure of material in said chamber and also exceeding external pressure exerted toward said chamber, whereby said fluid resists contamination of such material from an external source and also resists escape of material from said chamber and also resists to-and-fro movement of material past said seals in response to variable differential pressures between said chamber and the exterior thereof.

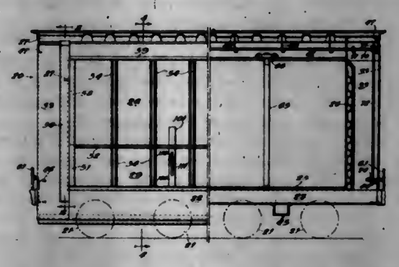
3,191,546
MOVABLE BULKHEAD
Franklin P. Adler, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,335
7 Claims. (Cl. 105—376)

4. A movable bulkhead construction for a cargo compartment having a pair of spaced tracks extending along the upper portion of the side walls thereof comprising a bulkhead, a bulkhead supporting trolley spanning the distance between and riding on said tracks, said trolley comprising two U-shaped yokes, one at each end, and each yoke providing a supporting platform, a pair of rollers supported by each yoke, and means connecting said yokes to each other, said bulkhead having laterally extending hangers located at the upper corner portions thereof and received in said yokes and overlying said platforms, a coil spring disposed between each supporting platform and one of said hangers and oriented for normally urging said bulkhead to a raised position and resiliently supporting said bulkhead from said trolley, operating means on said bulkhead and reacting against the structure of said cargo compartment for urging said bulkhead downwardly against the force of said coil spring so that



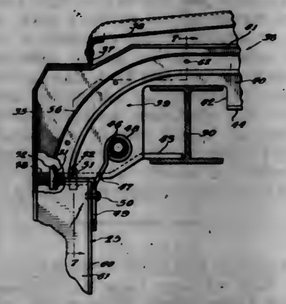
the bottom edge of said bulkhead will engage the floor of said compartment, and locking means locking the upper and lower edges of said bulkhead with respect to said tracks and said compartment floor respectively for locking said bulkhead in a desired transverse position.

3,191,547
SPLIT SIDE WALL RAILWAY CAR
Franklin P. Adler, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,455
15 Claims. (Cl. 105—378)



1. A railway car comprising side sills, end piers and compression members connected to each other to provide a unit frame type of construction, vertical door guides mounted at either end of the car in a fixed position relative to said end piers, door means extending the full length of one side of the car and being slidably mounted in said door guides for vertical movement, said door means comprising an upper door and a lower door, anchor means located at the top edge of said upper door and the lower edge of said lower door for anchoring the horizontal edges of said door means with respect to said frame when said door means is in closed position, and means for drawing said doors into engagement with each other in order to render said anchor means effective, whereby said door means, when closed, may serve as a side wall which is secured to the car structure at the top, bottom and side edges.

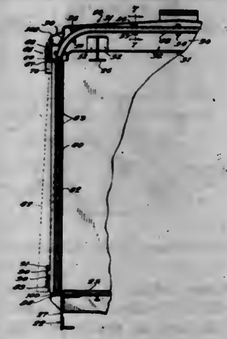
3,191,548
RAILWAY CAR CONSTRUCTION
Franklin P. Adler, Michigan City, Ind., William van der Sluys, Homewood, Ill., and James E. Candlin, Jr., deceased, late of Lansing, Ill., by First National Bank of Lansing, administrator, assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 2, 1961, Ser. No. 129,937
7 Claims. (Cl. 105—378)



5. An open side railway car comprising an underframe including two side sills, an upstanding end pier for each end of each side sill and rigidly connected thereto in perpendicular relationship, means including a compression member connecting the upper ends of the two end piers associated with each side sill, a side plate offset outwardly of each compression member, a roof sheet connected to said side plate, a transom located between the ends of said car and supported by said compression members and providing intermediate support for said side plates, at least a portion of said transom overlying the upper surface of said compression member whereby said roof sheet is spaced above said compression member, a removable door post extending between one of said side sills and said transom, and a two section door track having one section mounted on said door post and a second section mounted on said transom and aligned with said first track section to provide a continuous door track for a roll up door, said second track section extending along said transom between said roof sheet and said compression member, and being curved downwardly and extending between said side plate and said compression member and abutting the upper end of said first track section.

3,191,549
DOOR ASSEMBLY FOR OPEN SIDE RAILWAY CARS
Franklin P. Adler, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 28, 1961, Ser. No. 134,259
7 Claims. (Cl. 105—378)

1. In an open side railway car having two car end structures, a longitudinally extending top beam supported only by said car end structures and located toward one side of the car, a transom located at an intermediate point along the length of said car and overlying and being supported by said top beam, and a roof structure supported at its ends by said car end structures and at an intermediate point by said transom so as to provide an open car side which is free from intermediate structural members, the combination of an outwardly swinging roll up door assembly comprising two end door posts, an intermediate door post, door track means carried by said door posts, said transom, and said car ends, and a plurality of roll up doors cooperating with said door track means, means for pivotally connecting said end door posts at their upper ends to said car end structures, a post track mounted on said roof structure, means for slidably mounting said intermediate door post on said post track for sliding movement between an operative position and a loading position in which it is disposed adjacent one of said end door posts, said slidable mounting means also permitting outwardly swinging movement of said intermediate door post with respect to said post track whereby said roll up door assembly may be swung outwardly as a unit while said roll up doors are in the down position to permit disengagement of said doors from the lading within the car preparatory to subsequent movement of said roll up doors upwardly into their open position, said outwardly



swinging movement being of small angular extent so that the alignment between said transom carried door track means and said post carried door track means is maintained, means mounted on said intermediate door post and interlocking with said transom to lock the upper end of said door post in operative position with respect to said roof structure, and means for locking the lower end of said intermediate door post with respect to the car structure to prevent outwardly swinging movement of said intermediate door post about said post track, said upper end interlocking means being arranged so that outwardly swinging movement of said door post will cause disengagement thereof.

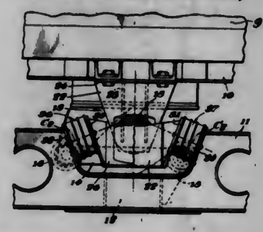
3,191,550
RAILWAY CAR CONSTRUCTION
Franklin P. Adler, Michigan City, Ind., and James E. Candlin, Jr., deceased, late of Lansing, Ill., by First National Bank of Lansing, Ill., administrator, assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 21, 1962, Ser. No. 208,659
(Filed under Rule 47(b) and 35 U.S.C. 118)
16 Claims. (Cl. 105—404)



1. An open side railway car characterized by the absence of intermediate roof supporting members comprising an underframe, load receiving means mounted on said underframe, an upright rigid U-shaped structure located at either side of said car, and a horizontal compression member connecting the open end of each of said U-shaped structures in order to provide two transversely spaced substantially vertical unit frame, each U-shaped structure comprising a side sill which forms a part of said underframe, and a vertically arranged end pier at each end of said side sill, the effective moment of inertia of the lower portion of said end pier being between one-fourth and three-fourths of the moment of inertia of the central por-

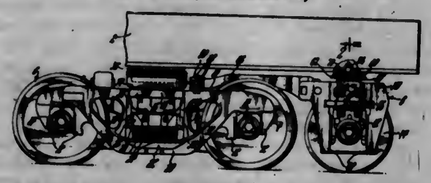
tion of said side sill, said side sills being initially cambered and said unit frames being initially prestressed so that said compression members are under tension when the car is not loaded.

3,191,551
RAILWAY VEHICLES
Archie John Hirst, Leicester, England, assignor to Metalastik Limited, Leicester, England, a British company
Filed June 4, 1963, Ser. No. 285,494
Claims priority, application Great Britain, June 6, 1962, 21,930/62
12 Claims. (Cl. 105—453)



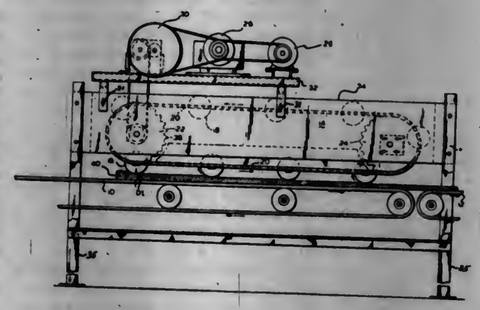
1. In a railway vehicle, a suspension supporting the body of the vehicle directly from a wheel-carrying frame of a bogie of the vehicle, the suspension being arranged towards one side of the vehicle and being paired with a corresponding suspension on the other side of the vehicle, the suspension comprising a rubber spring block which has its compression axis inclined to the vertical and set in a transverse vertical plane of the vehicle so that the block acts in combined shear and compression to support the vertical load of the vehicle body from the wheel-carrying frame and so that the block resists horizontal transverse movement of the body relative to the wheel-carrying frame also in combined shear and compression, the spring block permitting horizontal longitudinal movement of the body relative to the wheel-carrying frame at least in the main by shear deformation whereby pivoting of the bogie relative to the body is permitted, and rubber spring means arranged in series with said spring block and acting to transmit the vertical load supported thereby between the vehicle body and the wheel-carrying frame in combined shear and compression in the rubber, the rubber spring means comprising a pair of rubber springs having their compression axes arranged in V formation in a longitudinally extending plane of the vehicle whereby the rubber spring means permits transverse horizontal movement of the body relative to the wheel-carrying frame substantially wholly by shear deformation.

3,191,552
LEVELING PAD ARRANGEMENT
Ludvik F. Koci, Downers Grove, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 17, 1962, Ser. No. 231,063
4 Claims. (Cl. 105—176)



4. A railway vehicle comprising a vehicle body, a main truck supporting said vehicle body for pivotal movement in a horizontal plane, an auxiliary truck beneath said vehicle body longitudinally spaced from said main truck and connected to said main truck for pivotal movement in a horizontal plane, said auxiliary truck having a pair of transversely spaced flat surfaced upper portions, a pair of transversely spaced supporting pads secured to the underside of said vehicle body above said flat surfaced portions of said auxiliary truck, said supporting pads each including a flat surfaced pad member slidingly engaging said flat surfaced portion of said auxiliary truck, an intermediate member secured to the underside of said vehicle body, said members having mating spherical surfaces formed thereon whereby said flat surfaces assume a parallel engaging relationship, an adjustment member, said intermediate and adjustment members having mating spherical surfaces formed thereon, and securing means clamping said adjustment member and said pad member to said intermediate member whereby said flat surfaces are retained in parallel engaging relationship.

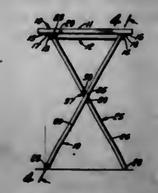
3,191,553
DOUGH ROLLING APPARATUS
Harold M. Rich, Chicago, Hans Van Elkeren, Lincolnwood, and Andrew Wolf, Wilmette, Ill., assignors to Kitchens of Sara Lee, Inc., Chicago, Ill., a corporation of Maryland
Filed July 23, 1962, Ser. No. 211,637
6 Claims. (Cl. 107—12)



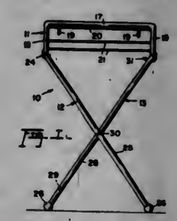
1. In apparatus for rolling dough into sheets of predetermined thickness: first means for moving dough in a first predetermined path; second means positioned adjacent said first means for moving dough in an extension of said first predetermined path; and rolling means positioned above said first means for engaging and rolling dough positioned on said first means into sheets of predetermined thickness; said rolling means comprising a series of individual freely rotatable rollers adapted to travel over said first predetermined path, spaced a predetermined distance from one another, and adapted to travel at a linear speed different from the speed of said first means; said second means adapted to receive dough positioned on said first means after said dough moves past said rolling means and said second means adapted to travel at a linear speed greater than the speed of said first means.

3,191,554
TABLE
Clarence D. Zierhut, Granada Hills, Calif., assignor to The Cal-Dak Company, Los Angeles, Calif., a corporation of California
Filed Apr. 8, 1964, Ser. No. 358,330
4 Claims. (Cl. 108—118)

1. A table comprising: a table top; a first pair of legs positioned in a downwardly and forwardly inclined plane, said first pair of legs having upper ends adapted to support said table top at two spaced positions, and lower ends converging toward each other along their entire lengths; and a second pair of legs fixed, respectively, to said first pair of legs at a position intermediate the ends of both pairs of said legs, said second pair of legs being positioned in a plane inclined upwardly and forwardly, said second pair of legs also having upper ends adapted to support said table top at least at a third position spaced from the upper ends of said first pair of legs, said second pair of legs having lower ends diverging along their entire lengths.



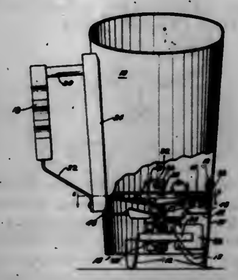
3,191,555
FOLDING DESKS
Jonathan Gimat, New York, N.Y., assignor to Maurice Duchin Creations, Inc., New York, N.Y., a corporation of New York
Filed Feb. 7, 1964, Ser. No. 343,360
3 Claims. (Cl. 108—119)



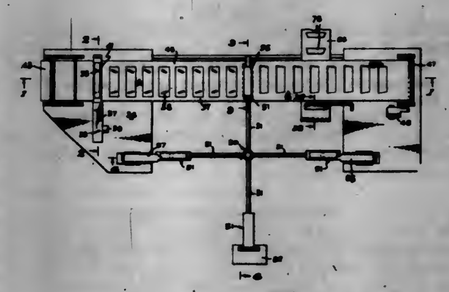
1. In a folding desk, the combination of a top unit having front and rear rails, a first inverted U-shaped leg member having a bight portion adjacent to and parallel with the rear rail of said top unit and also having a pair of side portions constituting a first pair of legs, means rotatably connecting the bight portion of the first leg member to said rear rail, a second inverted U-shaped leg member having a bight portion adjacent to and parallel with the front rail of the top unit and also having a pair of side portions constituting a second pair of legs, the first and second pairs of legs being mutually crossed, pivot means connecting the legs together at their point of crossing, and means for releasably clamping the bight portion of the second leg member to said front rail whereby to support the desk in an erected position, releasing of said clamping means permitting said leg members to be swung together about said pivot means into a substantially flat form and said top unit to be swung downwardly about said rotatable connecting means to a folded position wherein the top unit is juxtaposed to the folded leg members.

3,191,556
CHARCOAL STARTER
Frederick W. Hottenroth, Palos Verdes Peninsula, and Harry D. Jacoby, Palos Verdes Estates, Calif., assignors to Z.Z. Corp., Compton, Calif., a corporation of California
Filed June 24, 1963, Ser. No. 290,109
4 Claims. (Cl. 110—1)

1. In a charcoal starter, a vertically disposed cylindrical wall, air circulating means within said wall for forcing air upwardly therethrough, a bottom wall within said cylindrical wall intermediate the ends thereof and above said air circulating means, said bottom wall and that portion of said cylindrical wall above said bottom wall constituting a charcoal container, a separator spaced between said air circulating means and said bottom wall, said separator having a shallow cone-shaped portion for deflecting air from said air circulating means radially outward, and having means outside the diameter of said air circulating means and adjacent said cylinder wall for admitting air from said air circulating means to the space between said separator and said charcoal container, said bottom wall having air admission openings communicating with said space.



3,191,557
SHIRT COLLAR AND CUFF FORMING MACHINE
Verda Marie Meore, P.O. Box 2045, Long Beach, Calif.
Filed Dec. 26, 1962, Ser. No. 247,178
9 Claims. (Cl. 112—2)



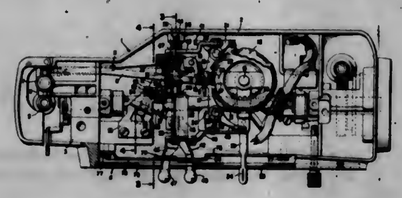
1. A shirt collar and cuff forming machine comprising;
a spider frame including a plurality of horizontal arms,
means rotatably mounting said spider frame,
means intermittently rotating said spider frame to successive spaced stations,
a table on the outer end of each of said arms adapted to receive a collar or cuff thereon,
one of said tables being adapted to receive a strip of cloth thereon in one position of the parts,
cutter means to cut the cloth to shape and deposit the cut out pieces on one of said tables,
a sewing machine mounted at another of said stations: said sewing machine adapted to stitch the pieces of cloth together,
and reversing means on said table engageable with the collar or cuff to turn the collar or cuff inside out after stitching.

3,191,558
HOSIERY FEEDER
Ralph M. Graves, 430 Clifty St., Harriman, Tenn.
Filed Sept. 23, 1963, Ser. No. 310,659
3 Claims. (Cl. 112—2)



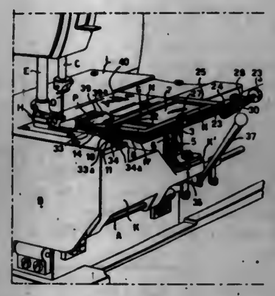
1. A sewing machine attachment for feeding the toe portion of tubular hosiery to a sewing position preparatory to forming the toe closure comprising a work table supporting the sewing machine, a shaft having one end extending through the top of the work table, means mounting said shaft in the top of said work table for oscillating movement, a radial arm affixed to the upper end of said shaft, a U-shape bracket having one end adjustably connected to said arm, a feeder arm having one end pivotally mounted in the open side of said bracket for swinging movement in a horizontal plane above the work table, the free end of said feeder arm being adapted to support the toe portion of the hosiery to be sewed, opposed radial arms extending from the lower end of said shaft beneath the top of the work table, a spring connected to the free end of one of the radial arms for biasing said shaft in one direction, a cable connected to the free end of the other radial arm, and a foot pedal connected to said cable for rotating said shaft against the bias of said spring.

3,191,559
ZIGZAG MECHANISM FOR SEWING MACHINES
Walter H. W. Marsh, Scotch Plains, William B. Strait, East Paterson, and Manfred R. Laidig, Union, N.J., assignors to The Singer Company, a corporation of New Jersey
Filed Apr. 29, 1963, Ser. No. 276,310
15 Claims. (Cl. 112—158)



1. In a zigzag sewing machine, a plurality of rotatable stitch pattern cams, a cam follower mounted for pivotal movement about and sliding on an axis parallel to the axis of said cams, bias means for biasing said cam follower pivotally into tracking engagement with said cams, cam selector means for pivotally retracting said cam follower from tracking engagement with said cams and for moving said cam follower into operative relation with a selected one of said cams, and means for rendering said bias means inoperative to facilitate actuation of said cam selector means comprising anchor means for said bias means movable between a first position wherein said bias means is operatively stressed and a second position wherein said bias means is relaxed.

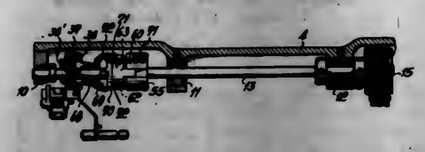
3,191,560
ATTACHING TRIMMING STRIPS TO KNITTED ARTICLES
Nerino Marforio, Milan, Italy, assignor to S.p.A. Virginio Rimoldi & C., Milan, Italy
Filed Jan. 22, 1963, Ser. No. 253,134
Claims priority, application Italy, Jan. 27, 1962, 2,011/62
4 Claims. (Cl. 112—197)



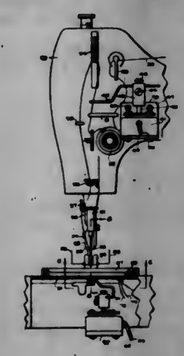
1. A double-chain sewing machine having a work support, a needle plate, work feed members and a needle bar for attaching an outer wear trimming strip split to form two similar flaps superposed in part at their borders and joined to the edge of a knitted article, said guide comprising a Y-shaped conduit in cross section with the open end of the Y turned toward the needle plate and the needle bar of the machine, said guide comprising bent over end portions on the diverging arms of the Y, converging sections connected to said bent over portions situated within and parallel with said diverging Y arms, a bridge piece joining said converging sections at their ends adjacent the junction of the diverging Y arms defining a substantially V-shaped conduit in cross section, a V-shaped plate in cross section supported by said bridge piece within said V-shaped conduit, tongues on said V-shaped plate fitting into each of the V-shaped conduit branches subdividing the said V-shaped conduit into two interconnecting guide portions, the middle portion of the Y-shaped conduit comprising a horizontally extending elongated plate of U-shaped cross section with the arms of the U merging with said diverging arms and defining a guideway in communication with said V-shaped conduit whereby the two split flaps of the trimming strip are guided by the V-shaped conduit and the remaining portion of the trimming strip is guided by the U-shaped plate for attachment of said trimming strip to a knitted article, and means supporting said Y-shaped conduit wherein the end sections of the diverging Y arms are intersected by the work support of the machine and the end of one diverging Y arm is beneath said work support.

3,191,561
SEWING MACHINE UPPER FEED CONTROL
Karl Nicolay, Bielefeld, Germany, assignor to Durkoppwerke Aktiengesellschaft
Filed Mar. 18, 1963, Ser. No. 265,761
Claims priority, application Germany, Mar. 26, 1962, D 38,480
7 Claims. (Cl. 112—212)

1. In a sewing machine, in combination with a presser foot having a lifting bar, an upper feeder foot having a lifting bar and means for lifting the feeder foot and the presser foot from a workpiece alternatively, a control device for varying the extent of lift of said presser foot and feeder foot comprising a lever having three pivot points in a substantially triangular arrangement, a first pivot connection between one of said pivot points of said lever and said presser foot lifting bar, a second pivot connection between a second point of said lever and said feeder foot lifting bar, spring means bearing upon and urging movement of said three point lever to depress the said lifting bars, a drive shaft, an oblique cam supported on said drive shaft for sliding movement thereon and connected thereto for rotation therewith, an eccentric fixed to said drive shaft and transfixed rotatably by said oblique cam, an eccentric strap on said eccentric, a rocker arm, a pivotal coupling between an end of said rocker arm and said eccentric strap, a third pivot connection between the third pivot point of said lever and an opposite end of said rocker arm, rotation of said shaft and its oblique cam causing said eccentric and rocker arm to tilt the said lever to and fro to raise the said lifting bars alternately, and means for imparting axial movement to the oblique cam to vary the throw of the eccentric and thereby vary the lift of said lifting bars.



3,191,562
THREAD TRIMMING DEVICE
Samuel R. Frankel, Shillington, Pa., assignor to American Safety Table Company, Inc., Mohnton, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 805,640, Apr. 10, 1959. This application Oct. 26, 1962, Ser. No. 233,242
27 Claims. (Cl. 112—252)



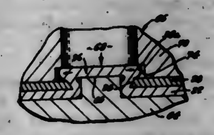
1. In combination with a sewing machine, a thread trimming device for severing the needle thread of the sewing machine comprising, an electrically energizable heat generating element, shiftable sewing machine presser foot means for supporting said element in operative position in closely spaced relationship to the upper surface of an article being stitched, energizing means effective when actuated to couple said element to a source of electrical energization, control means coupled to said energizing means and under the control of the sewing machine operator for selectively actuating said energizing means, and means for shifting the needle thread against said heat generating element when said shiftable presser foot is in a first selected position, whereby, when said shiftable presser foot is in said first selected position, when the needle thread is in engagement with said heat generating element, and when said control means is actuated, said element is energized and rendered effective to burn through the needle thread.

3,191,563
CONTAINER COVER AND METHOD OF FORMING SAME
Norbert Francis Mengelkoch, Arlington, Tex., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 3, 1962, Ser. No. 241,826
4 Claims. (Cl. 113—121)



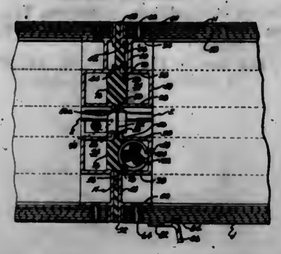
1. A method of forming a reclosure cover, comprising forming a cover having an annular vertical side wall, simultaneously forming a plurality of ribs in said vertical side wall extending radially outward thereof, and ironing a portion of each of said ribs to the annular contour of said vertical wall while leaving an unironed portion of each of said ribs unironed to provide a cover locking lug.

3,191,564
METHOD OF FABRICATING A SHEET METAL JOINT
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio
Filed May 15, 1963, Ser. No. 280,545
10 Claims. (Cl. 113—121)



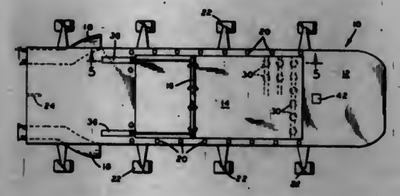
1. A method of joining a first sheet-like element to a second sheet-like element of a deformable material of substantially uniform minimum thickness for the strength required without a break in the continuity of the second element, comprising the steps of:
forming an aperture in the first element,
deforming said second element to form a hollow offset member integral therewith and of a length greater than the thickness of said first element and having a transverse wall of a thickness at least equal to the thickness of said second element;
superimposing said first element on said second element with the offset member extending through said aperture;
placing a rigid support internally of said hollow offset member to engage the inner surface of said transverse wall;
and striking the outer surface of said transverse wall with an impact blow to extrude the material of said wall outwardly to decrease the thickness thereof and simultaneously form an integral, outwardly-directed circumscribing hollow bead having a wall thickness greater than the decreased wall thickness of said transverse wall clamping overlying the edge portion of said aperture to effect the jointure while maintaining said rigid support in engagement with the inner surface of said transverse wall to hold said offset member against axial collapse under said impact blow to inhibit bending moments in the walls of said offset member.

3,191,565
MODULAR DOCKING AND UTILITY SYSTEM
Andrew M. Flink, 4105 Admirable Drive, Portuguese Bend, Calif.
Filed July 10, 1963, Ser. No. 294,074
12 Claims. (Cl. 114—.5)



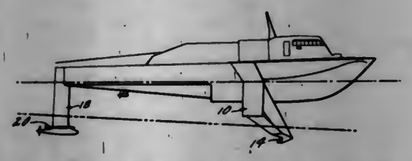
1. A first portable float unit that can be assembled on site from a plurality of lightweight, shippable sub-assemblies and held in a substantially fixed position relative to a second of said float units that is assembled by elongate resilient fastening members to provide a horizontal load-bearing surface, which first unit includes:
(a) a rectangular frame of substantial depth that is defined by two side pieces and two end pieces, with each of said end pieces having two transversely spaced first openings formed therein that are in longitudinal alignment with similar openings formed in the other of said end pieces;
(b) transversely and longitudinally extending reinforcing beams in said frame which are so disposed that one at least thereof can be coaxially aligned with either an edge portion of said second unit or one of said beams therein when said first and second units are adjacently disposed;
(c) a first rectangular rigid sheet;
(d) first means for removably connecting said sheet to the upper edge portions of said end pieces and side pieces, which frame, beams and sheet when connected by said first means comprises a first sub-assembly;
(e) a buoyant body;
(f) a second rectangular rigid sheet;
(g) second means for rigidly connecting the upper portion of said body to a lower surface of said second sheet;
(h) third means for removably connecting said second sheet to the lower edge portions of said end pieces and side pieces, which body and second sheet when connected by said second means comprises a second sub-assembly;
(i) a resilient pad disposed between the adjoining sides of said frames in said first and second float units;
(j) two tensioned elongate resilient members that extend through said openings in said frames of said first and second units;
(k) fourth means for maintaining tension on said members for said frames of said first and second units to at all times exert a compressive force on said pad, with said pad and said tensioned members cooperatively permitting transverse and vertical flexing of said first and second units one relative to the other; and
(l) two rigid pins that have longitudinally extending bores formed therein through which said resilient members extend, with said pins extending through said openings in said frames and those openings in said pad that are in alignment therewith, which pins are loosely mounted in said openings to permit limited flexing of said units one relative to the other, but prevent any substantial transverse movement of said units relative to one another.

3,191,566
WATER-BORNE TAKE-OFF AND LANDING CRAFT FOR AIRCRAFT
Fred H. Wilkes, 59 Mountain View Road, and Herman Roberts, 7 Heather Hill Road, both of Demarest, N.J.
Filed Feb. 21, 1964, Ser. No. 346,460
3 Claims. (Cl. 114—43.5)



1. A water-borne, mobile aircraft landing and take-off craft of a size to receive and carry only one aircraft at one time and comprising an elongated hydrofoil hull having a recess in its central upper section, a landing platform within said recess and generally flush with the top of the hull, resilient means within the hull supporting said platform, an aircraft speed arresting gear on said platform, a plurality of hydrofoil elements supported by the hull in spaced relation thereto, means for propelling the hull at a speed equal to aircraft landing and take-off speed.

3,191,567
CONTROL FOR HYDROFOIL CRAFT
Henry R. Ask, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 24, 1962, Ser. No. 225,665
14 Claims. (Cl. 114—66.5)

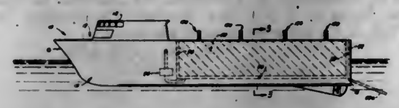


1. A control system for a water vehicle comprising a pair of fixed surface piercing foils connected with said vehicle and adapted to inherently provide lift to said vehicle, the amount of lift automatically varying in proportion to the area of the foils in water to thereby stabilize said vehicle, control surface means including movable flaps attached to each said foil, sensor means connected with said vehicle for producing a heave control voltage indicative of vertical accelerations of said vehicle, and means responsive to said control voltage for actuating said flaps collectively and damping the heave of said vehicle.

3,191,568
APPARATUS FOR TRANSPORTING AND STORING BULK CARGO
Carl E. Schroeder and David P. Cullen, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Feb. 13, 1963, Ser. No. 258,227
9 Claims. (Cl. 114—74)

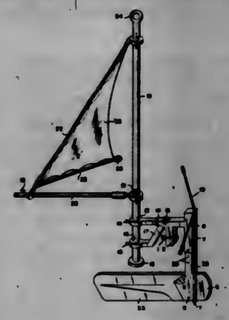
3. Apparatus for transporting and storing bulk cargo, comprising in combination:
a buoyant container means for containing the cargo;

a self-propelled vessel having a hull and a floodable hold therein;
closure means in the hull for opening the hold whereby the buoyant container means can be floated into the hold; and



fluid baffle means disposed between the hull and the container means when the container means is floating in the floodable hold for retarding vertical migration of water in the hold as the vessel pitches and rolls.

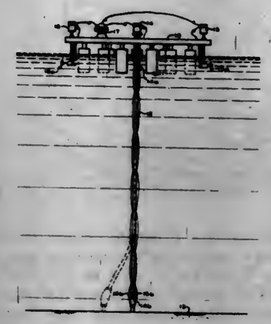
3,191,569
BOATING
Douglas Christian Coombe, 3464 South River Terrace, Edgewater, Md.
Filed Feb. 25, 1964, Ser. No. 347,280
5 Claims. (Cl. 114—102)



1. A sailing rig adapted to be attached to the transom of a boat comprising:
(a) a main frame having forward and rearward portions,
(b) means for attaching said main frame to a transom,
(c) a mast adjustably mounted on said forward portion,
(d) an adjustable member depending from said rearward portion,
(e) a counterbalance positioned in a forward direction and a rudder positioned in a rearward direction on said rearward depending portion whereby when said attaching means is secured to a boat transom, said mast may be adjustably positioned in the bilge of the boat while said counterbalance is adjustably positioned under the boat and said rudder positioned rearward of the transom.

3,191,570
HORIZONTAL STABILIZATION OF FLOATING STRUCTURES
Enlas W. Henderson, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,507
2 Claims. (Cl. 114—144)

1. A free-floating, water-borne, well drilling platform system comprising a platform; a plurality of floats secured to said platform so as to support said platform above a body of water; a casing having the upper open end secured to said platform and the lower open end secured in an earthen formation beneath said platform; at least 3 strain gauges secured to said casing at a point above and adjacent the bottom of said body of water and equally spaced about the casing; at least 3 propulsion units positioned on said platform each of which is in a vertical plane which includes one of said strain gauges, the center of the pipe and the direction of thrust of one of said



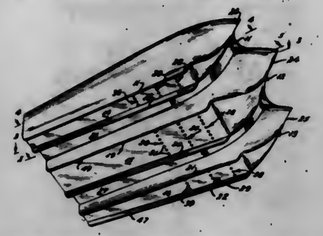
propulsion units; a prime mover operatively connected to each propulsion unit; and an electrical circuit comprising a Wheatstone bridge connecting each strain gauge with each motor in the same vertical plane wherein the strain gauge forms one arm of the Wheatstone bridge so that when the casing is bent thrust is produced to remove the bend from the casing.

3,191,571
LAND, WATER, ICE AND SNOW BOAT
Ronald Leroy Rue, 430 Poplar St., Kane, Pa.
Filed June 27, 1963, Ser. No. 290,798
8 Claims. (Cl. 114—1)



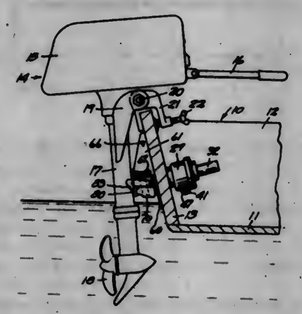
1. A boat hull for use in a convertible land, water, ice and snow vehicle comprising an elongated bottom and an upwardly inclined prow contiguous therewith, side wall portions connected with the bottom and a stern portion connected with the bottom and side wall portions to form a hull, said bottom and prow having a continuous inverted U-shaped, central hollow area extending throughout the length thereof with the section of the inverted U-shaped hollow area extending through the prow converging towards the upper end thereof, a pair of longitudinally disposed transverse flat sections disposed horizontally outwardly of the inverted U-shaped portion, said flat sections extending upwardly into the prow and reducing in transverse dimension to the upper end thereof, an upwardly and outwardly inclined section extending continuously longitudinally and laterally outwardly of the flat sections with the outer edge thereof joined with the side wall portions, said upwardly inclined sections converging in transverse dimensions from the forward end of the bottom to the upper end of the prow for enabling the hull to traverse water with less drag and enabling water to pass through the inverted U-shaped section without wedging out the water.

3,191,572
REDUCED FRICTION HULL CONSTRUCTION FOR POWER BOATS
Henry Allen Wilson, 1000 Eldorado Ave., Clearwater Beach, Fla.
Filed Aug. 21, 1963, Ser. No. 303,569
17 Claims. (Cl. 115—16)



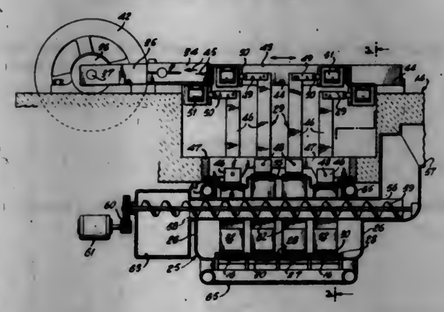
6. A boat having a tripartite bottom structure having laterally spaced longitudinally extending generally convex hull portions in transverse cross section, the central hull portion being of greater width than the others, said hull portions being spaced throughout their length by connecting concaved chines, said central hull portion having a relatively flat ski-like bottom extending throughout the major length thereof, downwardly extending rail-like keels flanking opposite sides of said bottom, and means for introducing air between said hull portions during propulsion of the boat and means for introducing other air under pressure to the underside of said bottom between said keels whereby the other air under pressure serves to reduce the friction drag with the water during starting and the air introduced between the hulls serves to raise and reduce the drag during high speed travel.

3,191,573
OUTBOARD MOTOR MOUNTING DEVICE
George D. Hixon, South Bend, Ind., assignor of one-half to Eli Goloubow and one-fourth to David M. Feferman, South Bend, Ind.
Filed May 21, 1962, Ser. No. 196,265
5 Claims. (Cl. 115—41)



1. A device for positioning an outboard motor pivotally mounted on the transom of a boat, comprising
a tubular member adapted to be mounted fixedly on and to extend through an opening in said boat transom,
an elongated member slidable endwise in said tubular member,
screw-threaded means for advancing and retracting said elongated member in said tubular member,
a member mounted to swing on a shaft mounted transversely on said transom above said elongated member, means slidably mounted on said swinging member and connected to said elongated member, and latch means for releasably connecting said outboard motor to said swinging member.

3,191,574
APPARATUS FOR DRY ENAMELING
John M. Robertson, Jr., Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 214,661
6 Claims. (Cl. 118—11)



1. Apparatus for applying enamel powder onto a workpiece, comprising a plurality of discrete zones, a perforate member underlying said discrete zones, means maintaining said perforate member in a stationary position, supply means overlying said perforate member supplying enamel powder to said discrete zones, said perforate member having openings sized so as not to pass enamel powder therethrough when the perforate member and the enamel powder immediately above the perforate member are in a static condition, agitators positioned in each of said zones, said agitators being operable to force enamel powder through the perforated member, a drive means, release means releasably connecting each of said agitators to said drive means so that said agitators may be actuated to force powder through the portions of the perforate member associated with the actuated agitators while the portions of the perforate member underlying the remaining agitators retain the powder in its associated zone, a workpiece support underlying said perforate member, means to move said workpiece support, and control means operatively connected to said release means and said means to move said workpiece to automatically and selectively operate any one or more of said agitators in accordance with the motion of the workpiece so that the actuated agitators apply a substantially even coating of powder to said workpiece.

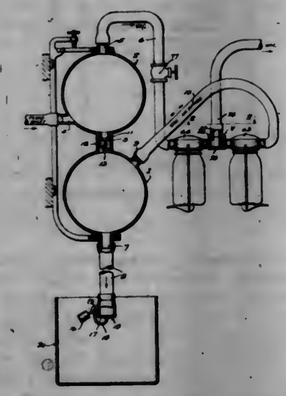
3,191,575
ENGINE PRESERVATION METHOD AND APPARATUS
Robert W. Martin, Cleveland, and Robert H. Jamrog, Strongsville, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 27, 1960, Ser. No. 5,005
3 Claims. (Cl. 118—317)

1. A preservation apparatus for an engine of the spark ignition type having an aperture for conventionally securing a spark plug thereto, comprising, an atomization nozzle adapted to be inserted in said aperture, said atomization nozzle including a central passage therein which terminates in a restricted discharge orifice, said discharge orifice having a smaller cross sectional area than the cross sectional area of said central passage, concentric conduit means fixed to said nozzle, said concentric conduit means comprising inner and outer conduits, said inner conduit extending into said central passage and having its discharge end positioned rearwardly of said discharge orifice so as to form a mixing chamber therebetween for creating a turbulent intermixing of air and preservative prior to introduction into said discharge



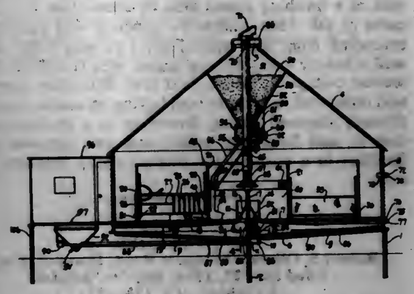
orifice, means supplying air and preservative under pressure to said atomization nozzle through said conduit means, and valve means for regulating the flow of air and preservative.

3,191,576
MILK LINE RELEASER AND WASHER APPARATUS
Lloyd F. Bender, Rte. 2, Hayward, Wis.
Filed Jan. 16, 1964, Ser. No. 338,144
2 Claims. (Cl. 119—14.07)



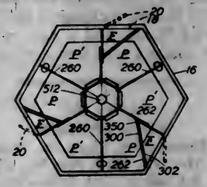
1. A milk line releaser and washer apparatus comprising a first fluid receiving generally spherical vessel having a fluid inlet and a vacuum inlet, a second generally spherical; vessel, a narrow neck portion forming a fluid communicating connection between said vessels, a one-way check valve in said connection which closes and prevents fluid flow from said second vessel to said first vessel when the latter is subjected to vacuum via said vacuum inlet, said second vessel having a discharge opening at its lower side for draining fluid therefrom by gravity, a normally closed valve for said discharge opening and openable by the fluid in said second vessel when the latter is at atmospheric pressure, a conduit in communication with the upper side of said second vessel, and valve means in communication with a source of vacuum and communicable with said conduit and said vacuum inlet for alternately (1) subjecting said first vessel to vacuum and said second vessel to atmospheric pressure, and (2) subjecting said second vessel to vacuum and consequently said first vessel also to vacuum with said check valve, said valve means including a shiftable element to which said source of vacuum is connected by means of a flexible conduit, electrically operated means for actuating said valve, and timer means for initiating actuation of said electrically operated means.

3,191,577
LIVESTOCK BARN
Paul H. McMurray, P.O. Box 126, Delphi, Ind.
Filed May 28, 1962, Ser. No. 198,030
6 Claims. (Cl. 119—16)



2. In a stock barn of the class described, in combination, a main enclosure, a series of radially arranged stock pens therein, said pens having a common foraminous floor therefor, central feeding means for said pens adjacent the axis about which they are located, a central axial structural support connected to said floor and feeding means, manure collecting means beneath the foraminous floor aforesaid, means to convey the manure away from the collecting means, said support providing the support for the floors aforesaid, said support likewise extending through and supporting portions of the feeding means, said support further including means to regulate ventilation of the enclosure, whereby heated air is exhausted from the enclosure.

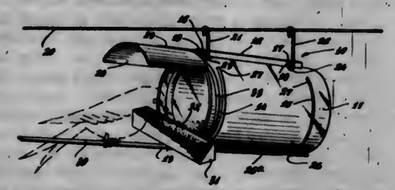
3,191,578
FARROWING AND FINISHING UNIT
Gaylord H. Magruder, 3332 N. 69th St., Lincoln, Nebr.
Filed Nov. 14, 1963, Ser. No. 323,743
2 Claims. (Cl. 119—20)



1. A farrowing and finishing unit comprising: an outer upright wall of annular shape in top plan view, an upright central wall inside said outer wall and of annular shape in top plan view and provided with a plurality of horizontally spaced piglet openings thereunder through each of which piglets of a same litter can pass respectively, a plurality of panels attached to and extending outwardly from said central annular wall and extending said outer annular wall and said panels forming with said central and outer walls a plurality of farrowing units each able to maintain separate a respective sow and litter, means mounting said panels in said positions, a divider assembly disposed within said central wall and dividing the space enclosed by said central wall during farrowing into a plurality of feed receiving areas divided apart in which certain ones of said panels are movably attached to said inner annular wall and to said outer annular wall, said certain panels being collapsible for the reduction and extension of their length when desired, said certain collapsible panels being arranged in pairs, the panels of a pair being connected to said inner wall at points closely adjacent each other for use during finishing, one panel of

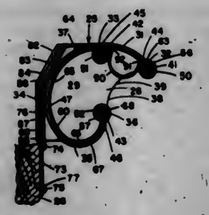
each pair being pivotally attached to said inner annular wall and disposed in an extended position for forming one wall of an access area, and the other panel of a pair being removably attachable to said inner annular wall and being collapsed to a reduced length for forming one wall of a finishing access area by connection to a medial point of the other collapsible panel of said pair and for extending from said medial point to said outer annular wall whereby said finishing access area is defined by said second collapsible panel, said first collapsible panel and said outer wall, said outer wall having an access door therethrough disposed during farrowing in a position for access to said farrowing access area and disposed during finishing in a position for access to said finishing access area.

3,191,579
BIRD FEEDER
Robert S. Oliver, 95 Rogers Road, Hamden, Conn.
Filed Jan. 27, 1964, Ser. No. 340,140
5 Claims. (Cl. 119—51)



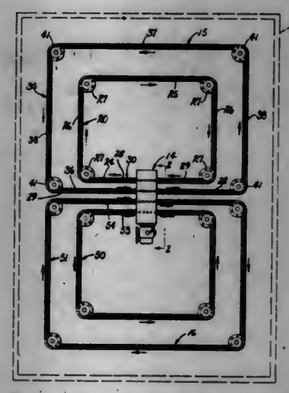
1. In an aerial bird feeder having a generally cylindrical food container provided with an open end, the improvement in mounting means, said improvement comprising a collapsible food container holding frame comprising a first resilient arcuate transverse member; a second resilient arcuate transverse member; a pair of spaced longitudinal members detachably connecting said first and second transverse members and respectively maintaining said transverse members in longitudinal spaced relationship; each of said transverse members having a free end inwardly biased to engage a food container when placed within said frame; and a pair of spaced supporting members to connect said frame to an aerial support.

3,191,580
BIRD FEEDER
Gilbert M. Dunn, 25 S. Main St., Penacook, N.H.
Filed Mar. 12, 1964, Ser. No. 351,371
6 Claims. (Cl. 119—51)



6. A bird feeder comprising:
a pair of mirror imaged side walls each having an inwardly projecting rim defining a recess of curvilinear outline and each having a pair of angularly disposed dead end slots in a rearward portion thereof;
a pair of spaced apart roof rods, connecting the upper portion of said side walls and a perch rod connecting said side walls intermediate of the height of the forward portion thereof;
a single sheet of transparent, semi-rigid, plastic having its opposite side edges seated within said side wall recesses and extending in a curvilinear configuration from adjacent one of the roof rods rearwardly to form a roof, downwardly to form a back, forwardly and upwardly to form a seed hopper and terminating at said perch rod, and
a pair of strip brackets, each adapted to be mounted in upstanding position on a windowsill and each selectively positioned in either of the said angularly disposed slots in each said side wall for adjusting the tilt of said feeder.

3,191,581
FEED LOT CONVEYOR SYSTEM
James V. Braham, 17250 S. Del Ray Ave., Kingsburg, Calif.
Filed Dec. 17, 1962, Ser. No. 245,274
4 Claims. (Cl. 119—52)



1. In a poultry feeding system having a feed hopper; sets of individually continuous feed troughs having feed receiving runs beneath the feed hopper, and feed distributing runs, each of said receiving runs having opposite feed outlet and return portions oppositely extended from the hopper; feed conveying means disposed in each of said troughs; and powered means having a plurality of drive members providing driving connection to each of said conveying means for circuitous movement of the conveying means longitudinally through their respective troughs, said powered means including a plurality of reversing members to cause the conveying means in successive troughs to move in opposite directions to distribute feed throughout the system so that the outlet portion of one of the feed receiving runs in each of said sets of troughs is adjacent to the return portion of the other feed receiving run in said sets of troughs.

3,191,582
FEEDER FOR STOCK ANIMALS
Norman B. Smoker, Intercourse, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Continuation of application Ser. No. 319,043, Oct. 25, 1963. This application Oct. 5, 1964, Ser. No. 405,002
1 Claim. (Cl. 119—61)

A feeder unit adapted to be situated in plural locations about a farmstead to feed steers and other stock animals and comprising, in combination, an elongated horizontally extending trough from which the animals feed, such trough having a bottom wall and upstanding side and end walls integral therewith and forming a unitary feed receptacle, a sled carrying said trough for sliding transport over the ground, said sled having trough supports spaced relative to each other along the length of the trough, side rails interconnecting said supports and located above and laterally outwardly of the trough, a pair of links connecting each support to said trough, each pair of links having ends pivotally connected to given locations on opposite sides of the trough and opposite ends of the links being connected to its associated support, said supports each providing two sets of connecting points for said links and selectively useable, spring means yieldably holding said trough in a given normal position relative to said supports, power means carried on said sled and connected to



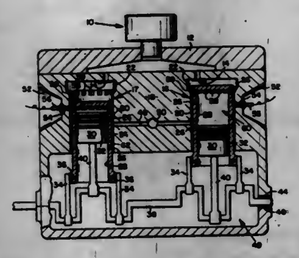
said trough to longitudinally reciprocate and vibrate the trough in its entirety, feed deposited in one end of said trough being vibrated and conveyed toward the opposite end of the trough when said links are connected to one set of said connecting points, feed deposited in said opposite end of said trough being vibrated and conveyed toward said one end of the trough when said links are connected to the other set of said connecting points, whereby when the feeder is moved about the farmstead either end of the trough may be located at a feed supply source, and the position of said trough relative to said side rails and said supports remaining the same regardless of which set of connection points said links are connected.

3,191,583
FLUE FOR COOLING COMBUSTIBLE OR WASTE GASES
Erwin Petritsch and Karl Nutz, Graz, Austria, assignors to Waagner-Biro Aktiengesellschaft, Vienna, Austria
Filed Nov. 21, 1962, Ser. No. 239,286
Claims priority, application Austria, Nov. 21, 1961, 8,795/61
10 Claims. (Cl. 122—7)



1. A cooling flue for hot gases, such as converter discharge gases, comprising, in combination, a plurality of individual relatively small diameter riser tubes arranged in juxtaposed substantially parallel and upwardly extending relation to form walls defining a gas flow passage; plural relatively large diameter upwardly extending downcomer tubes arranged at spaced locations exteriorly adjacent said walls; an upper header extending around the upper end of said passage laterally exterior to said walls, and communicating directly with and supported solely and directly on the upper ends of said downcomer tubes; said riser tubes having their upper ends communicating with and connected to said upper header; said upper header constituting the sole support suspending said riser tubes for downward expansion; and coolant inlet means connected to and supported by the lower ends of said riser tubes.

3,191,584
INTERNAL COMBUSTION ENGINE
Dean I. Brahler, 23 Walden Road, Rochester, N.Y.
Filed Nov. 13, 1963, Ser. No. 323,472
1 Claim. (Cl. 123—50)

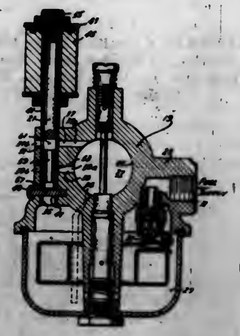


In combination, an engine having a piston cylinder defining a first chamber one end of which defines an enlarged annular precompression chamber having a diameter greater than said cylinder and which communicates through a valve to a source of fuel; a first piston slidably sealed within said chamber, said piston having an internal compression chamber slidably receiving a second piston in sealed relationship with the sidewalls of said compression chamber; means interconnecting said pistons for reciprocating said pistons in opposing directions within said first chamber; and fuel transfer means communicating between said compression chamber and said first chamber in fuel transfer relationship only when said pistons are at substantially the end of a combustion stroke, said fuel transfer means including a plurality of radial ports in an inner end of said first piston; means sealing said ports from said precompression chamber except when substantially at the end of said combustion stroke; and a plurality of radial vertical slots formed in the sidewalls of said piston cylinder sloping downwardly from the sidewalls of said enlarged annular chamber and communicating with said ports when said first piston is at substantially the end of said combustion stroke.

3,191,585
CARBURETOR
Harland A. Craft, Menomonee Falls, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,329
16 Claims. (Cl. 123—119)

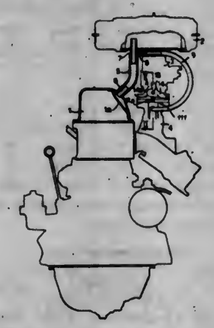
1. The combination of a duct having a portion subject to a pressure condition below atmospheric, a closed fluid reservoir, conduit means communicating with said fluid reservoir below the part thereof normally occupied by the fluid and with said duct portion so as to be subject to the pressure condition in said duct portion, first passage means communicating with said fluid reservoir above the part thereof normally occupied by the fluid, second passage means communicating with said duct portion so as to be subject to said same pressure condition to which said conduit means is subject, vent means communicating with the atmosphere, and valve means communicating with said first and said second passage means and with said vent means for alternatively and selectively establishing communication between said first passage means and said vent means and between said first passage means and said second passage means, whereby, when said first passage means communicates with said vent means, flow

of fluid is afforded from said fluid reservoir through said conduit means to said duct in response to a pressure condition in said duct portion below atmospheric, and



when said first passage means communicates with said second passage means, flow of fluid from said reservoir through said conduit means to said duct terminates.

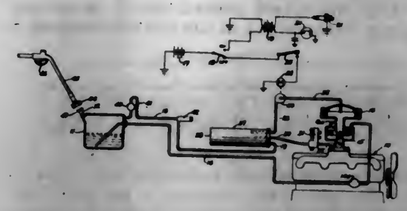
3,191,586
DEVICE FOR REMOVING VAPORS FROM CRANK CASE OF INTERNAL COMBUSTION ENGINES
Umberto Turra and Michele Allione, Turin, Italy, assignors to FIAT Società per Azioni, Turin, Italy
Filed Jan. 16, 1964, Ser. No. 338,166
Claims priority, application Italy, Jan. 22, 1963, 2,001/63
4 Claims. (Cl. 123—119)



1. A crankcase evacuating device for an internal combustion engine having a crankcase, an intake manifold, a carburetor throttle valve and an air cleaner, said device comprising a first conduit connecting the crankcase with the air filter; a second conduit branched off the first conduit, extending past the carburetor throttle valve and connected to the intake manifold; and a valve disposed in said second conduit; the opening of said valve in said second conduit being controlled by the carburetor throttle valve.

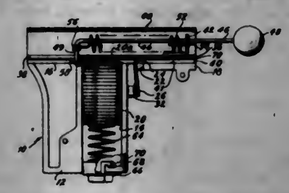
3,191,587
DEVICE FOR CONTROLLING THE HYDROCARBON EVAPORATION LOSSES FROM AUTOMOTIVE VEHICLES
Fred V. Hall, San Francisco, Calif., assignor to Brooks Walker, San Francisco, Calif.
Filed Aug. 18, 1960, Ser. No. 50,509
17 Claims. (Cl. 123—136)

1. A device for the control of evaporation losses from an automobile having an engine, an engine ignition switch, a carburetor, an air cleaner therefor, and a gasoline tank with a vent line and with a fuel line connected to the carburetor, including in combination: thermally actuated leaning means for sending additional intake air into said carburetor for leaning the fuel mixture as the temperature rises; means to vent the gasoline vapors evaporated from said carburetor into said air cleaner; filter means for withdrawing gasoline from air, said gasoline tank vent line being connected to said filter means; air



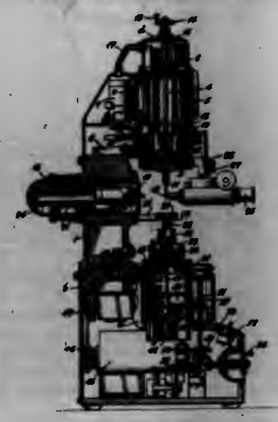
conduit means from said air cleaner to said filter means; air pump means for said air conduit; thermally actuated means connected to said engine ignition switch for operating said air pump when said engine ignition switch is off and said engine is hot and until said engine cools; and filter-regenerating means, comprising means for taking in atmospheric air through said filter into said thermal leaning device for supply to said carburetor.

3,191,588
COIN GUN
John G. Thew, Westport, Conn., assignor to Raphael Lyman, Norwalk, Conn.
Filed Oct. 10, 1962, Ser. No. 229,658
6 Claims. (Cl. 124—27)



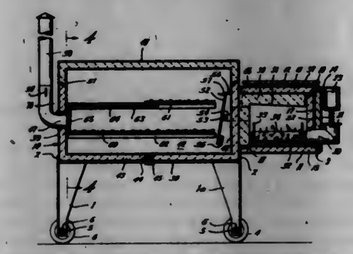
1. A coin discharge gun, comprising a grip section, a coin discharge nozzle at one end of said grip section, said nozzle including parallel top and bottom walls spaced a distance the thickness of a coin to be discharged therefrom, a coin cylinder disposed with its axis substantially normal to the planes of said walls, a portion of said top wall overlying said cylinder, said cylinder having a coin passage opening at its inner end connecting with said discharge nozzle, a coin ejector plate of a thickness substantially equal to the thickness of a coin, means supporting said coin ejector plate for reciprocal movement from a first position overlying a portion of said cylinder at said inner end below said top wall to a second position externally of said cylinder remote from said coin passage opening, a release trigger pivotally supported for movement of one end thereof to close said coin passage opening in one position and to open it in another position thereof, resilient means normally maintaining said trigger in said one position thereof, a member connected to said ejector plate and projecting therefrom for engagement for moving said ejector plate from one of its said positions to the other, and spring means connected to said member normally urging said member and said ejector plate into said first position thereof.

3,191,589
ULTRASONIC MACHINE FOR MAKING AND POLISHING HOLES IN BLANKS AND PARTS OF CARBIDES AND MINERALS, MAINLY DIAMONDS, BY THE SLOTTING METHOD
Ivan Vasilievich Stroganov, 16th Parkovaia Ulitza, Ia, Apt. 1, and Anatoly Nicolaevich Mayorov, Kotelnicheskaia Naberejnaia 17, Apt. 24, both of Moscow, U.S.S.R.
Filed July 11, 1962, Ser. No. 209,089
5 Claims. (Cl. 125—30)



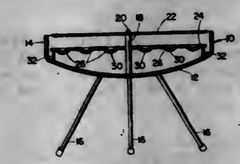
1. An apparatus for machining by ultrasonic oscillation of a tool, said apparatus comprising a base, an overhanging arm on said base, a magnetostrictive transducer mounted on said arm for vertical and rotary movement, power means for raising and lowering and for rotating said transducer, a tool chuck on the lower end of said transducer, a needle-shaped tool carried by said chuck, a table rotatably mounted on said base below said tool, a bowl mounted on said table for containing an abrasive slurry and for receiving and supporting an article to be machined, electro-magnetic means for imparting vertical vibrations to said table and bowl, said bowl having communicating inner and outer chambers and means to periodically transfer abrasive slurry from the outer chamber to the inner chamber and back to the outer chamber.

3,191,590
AUTOMATIC COOKING APPARATUS
Robert A. Haley, P.O. Box 1233, Kilgore, Tex.
Filed Sept. 19, 1961, Ser. No. 139,260
1 Claim. (Cl. 126—19)



In a cooking apparatus, a fire box and an oven having a hot gas flow passageway interconnecting their interiors, support means in said oven for supporting an object to be cooked and providing an uppermost cooking level, said fire box having an air supply port therein remote from said passageway and said oven having a flue port therein remote from said passageway, a thermostatically controlled damper in said air supply port and a thermostat connected to said damper to control the same and having a temperature sensitive element with two parts, one adjacent said flue port so as to be affected by the temperature of the gas leaving said oven and the other part in said oven remote from said port and said passageway, whereby the admission of air to support combustion in the fire box may be limited to those periods of time when the average temperature in said oven adjacent said flue port and remote from said flue port is below a predetermined minimum.

3,191,591
CHARCOAL GRILL
Richard R. Bennett, R.R. 4, Ferguson Road, Fort Wayne, Ind.
Filed Mar. 7, 1963, Ser. No. 264,480
3 Claims. (Cl. 126—25)



1. A charcoal grill comprising: an upwardly facing generally cylindrical receptacle having an open upper end, a bottom of extended area, and upstanding sides; an upright supporting post centrally secured to said bottom; a self-supporting substantially flat metallic plate of circular shape having a central opening with said post extending therethrough, said plate having an area substantially equal to that of said bottom, said plate having a plurality of shallow generally cup-shaped downwardly extending indentations formed therein, said indentations being arranged on a plurality of radially spaced circles concentric with said central opening, the indentations on each said circle being circumferentially evenly spaced and each successive one of said circles having a greater number of said indentations thereon than the next radially inner circle thereby to provide a generally uniform distribution of charcoal briquettes over the area of said plate and uniform heat therefrom, each of said indentations having an aperture formed in the bottom thereof, each of said apertures being substantially smaller than the respective indentation; and means for supporting said plate at an elevated position above said bottom.

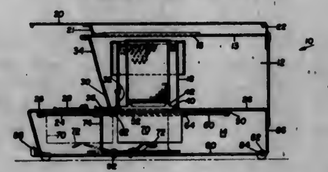
3,191,592
OUTDOOR COOKING GRILL
Alton G. Lorbacher, 306 E. Peace St., Raleigh, N.C.
Filed Oct. 15, 1963, Ser. No. 316,330
2 Claims. (Cl. 126—25)



1. In a device for outdoor cooking, a one-piece firebox including spaced vertical first and second end walls, a first pair of vertical laterally-spaced, parallel support bars detachably fixed to said first end wall, a second pair of vertical laterally-spaced parallel support bars detachably fixed to said second end wall, each said support bar

having a vertical side edge and a plurality of vertically-spaced notches extending inwardly from said edge, the ends of all notches of each said bar lying in a respective one of four vertical lines, the two lines thus determined by each said pair of bars being spaced a predetermined distance, a grill unit including a rigid frame including first and second horizontally-spaced parallel end strips, there being a pair of holes in each said end strip and horizontally spaced by said predetermined distance, first and second U-shaped handles each having its parallel arms speced by said predetermined distance, each arm of each handle slidably fitting a respective hole of a corresponding end strip, all said arms being adapted for simultaneous insertion each into a selected notch of a corresponding one of said support bars, to thereby support said grill at a selected height over and above said firebox, each said handle being slidable to position its bight portion into contact with a corresponding pair of said support bars.

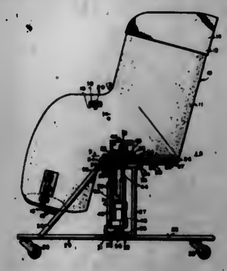
3,191,593
CONTROL OF VAPORIZATION OF SOLIDIFIED HYDROCARBON FUEL OR THE LIKE
Ralph E. Kruck, Bluedell Point, Clinton, Conn.
Filed July 29, 1963, Ser. No. 298,336
3 Claims. (Cl. 126—44)



1. In a perforated sleeve type burner of the normally liquid solidified fuel-burning type fixed relative to a housing and defining a combustion space for receiving upwardly issuing vaporized fuel, the improvement in a device for selectively controlling combustion of vaporized fuel in the burner comprising, a fuel receptacle, a retaining plate supported by and movable relative to the housing, gasket means secured to said retaining plate in bearing contact with the housing, resilient means carried by said retaining plate for supporting and upwardly urging said fuel receptacle into sealing relation with said gasket means and precluding the escape of vaporized fuel to atmosphere, said gasket means and retaining plate each having openings therethrough for the passage of vaporized fuel from said fuel receptacle to the burner, and manually-operable control means for moving said gasket means and retaining plate and fuel receptacle unisonly relative to the burner and transversely of the upwardly issuing vaporized fuel between a closed position in which said fuel receptacle is closed off from the burner for blocking the passage of vaporized fuel to the burner and a multiplicity of opened positions in which said fuel receptacle is in communication with the burner for the selectively controlled passage of vaporized fuel to the burner.

3,191,594
THERAPEUTIC CHAIR
Kenneth H. Bagnell, 2186 Bendamere Circle, Salt Lake City, Utah
Filed Jan. 10, 1963, Ser. No. 250,683
3 Claims. (Cl. 128—24)

1. A therapeutic chair including: a unitary frame comprising a seat portion having a front, a rear, and two side extremities, a back portion extending upwardly from the rear extremity of the seat portion, a leg rest portion depending from the front extremity of said seat portion, and a pair of retainer walls positioned one at each side extremity of the seat portion and extending the length of the back, the seat, and the leg rest; a pair of foot rests, each having a substantially flat surface; means mounting each of said foot rests on said leg rest for pivotal movement between a rest position wherein its substantially flat surface extends substantially normal to and below the leg rest portion and an out-of-the-way position wherein said flat surface is positioned substantially flush against the leg rest portion; rigid locking means interconnecting said re-

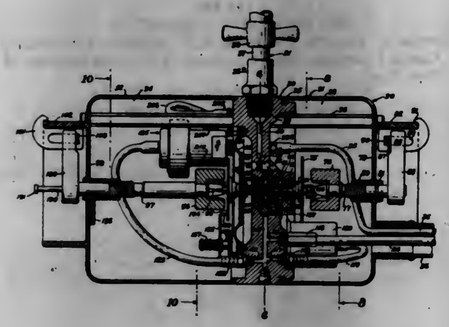


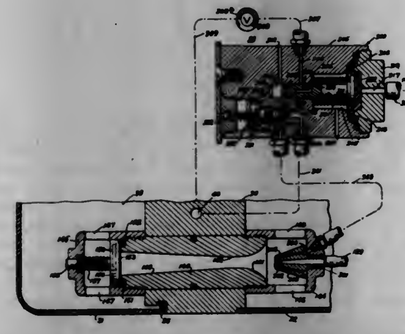
tainer walls, said rigid locking means extending over said seat portion, whereby a person sitting in the chair is securely held from falling in a forward direction out of the chair; a stand; means interconnecting the frame and the stand and for tilting the frame about a plurality of axes; and means for slowly driving said chair through a predetermined cycle of tilted and upright positions about said axes.

3,191,595
ELECTRICALLY CONTROLLED RESUSCITATOR APPARATUS
Robert K. Wilson, Los Angeles, Calif., assignor to Bennett Respiration Products, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 16, 1959, Ser. No. 853,256
10 Claims. (Cl. 128—29)

5. In resuscitator apparatus, the combination of a source of gas to be administered to a patient; means, including conduit structure, for coupling said source with the patient; valve means coupled with said structure for controlling the flow of gas through the latter; electrically responsive means operably associated with said valve means for controlling operation of the latter; an electrically multivibrator including a pair of electrical devices, a number of electrical impedance components and circuit means arranged and intercoupling said devices and components to present a multivibrator of the astable type in which the initiation and duration of both phases of cycling time are controlled by the values of certain of said components; electrical means coupling the output of said multivibrator with said electrically responsive means for alternately actuating and deactuating said electrically responsive means repeatedly; and a pressure responsive electrical switching mechanism pneumatically coupled with the extremity of said conduit structure adjacent the patient and electrically coupled with at least one of said certain components for shunting the latter to override the normal timing control effect thereof, whereby significant breathing efforts of the patient override the multivibrator controlled respiratory functions and allow the resuscitator apparatus to assist the patient in establishing normal breathing.

3,191,596
RESPIRATOR
Forrest M. Bird, Airport Box 970, Palm Springs, Calif., and Henry L. Pohndorf, 1227 Brewster Drive, El Cerrito 7, Calif.
Filed Sept. 19, 1960, Ser. No. 57,062
24 Claims. (Cl. 128—29)



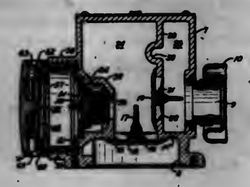


1. In a respiratory apparatus having an inhalation phase and an exhalation phase in its operative cycle, a controller having an inlet adapted to be connected to a source of gas under pressure, said controller having an outlet adapted to be connected to the airway of the patient, a main control valve in the controller movable between open and closed positions to control the flow of gas from the inlet to the outlet, means for operating said main control valve so that the main control valve is in an open position during the inhalation phase and in a closed position during the exhalation phase of the respiratory apparatus, said means including means for sensing when a predetermined pressure is reached in the outlet for shifting said main control valve from an open position to a closed position, a fluid source, valve means connected to the outlet for sensing when the predetermined pressure is not reached in the outlet in a predetermined time, and additional valve means controlled by said first named valve means for introducing additional gas into the outlet to cause the pressure in said outlet to reach the predetermined pressure, said first named valve means controlling the application of fluid from said fluid source to said additional valve means to cause operation of said additional valve means.

3,191,597
BONDED PLASTER OF PARIS PRODUCTS AND METHODS OF MAKING SAME
David F. Smith, 120 Grove St., Bay Head, N.J.
No Drawing. Filed Nov. 20, 1962, Ser. No. 239,058
14 Claims. (Cl. 128—91)

8. A settable, dry plaster of Paris bandage comprising a flexible backing material coated with a substantially unretarded, settable, dry plaster of Paris mix comprising in combination: 100 parts by weight of plaster of Paris and a minor amount corresponding to about 0.2 to 3 parts of substantially undegraded casein.

3,191,598
RESPIRATOR VALVE MECHANISM
Charles L. Leffler, Jr., Westminster, Calif., and Thomas R. Curran, Monroeville, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 26, 1962, Ser. No. 205,263
4 Claims. (Cl. 128—142)



3. The combination with a support carrying an air purifying and oxygen generating canister having an inlet and an outlet and a breathing bag communicating with said outlet and having an outlet, of a valve mechanism carried by said support and comprising a housing having an outlet communicating with said canister inlet and having an inlet communicating with said bag outlet, the housing also having a combination inlet and outlet opening adapted to be connected to one end of a breathing hose, check valves in the housing controlling flow between said opening and said housing inlet and outlet, the housing being provided with an auxiliary inlet port, a valve normally closing said port but movable inwardly away from it, a cylindrical flange projecting from the housing around the outer end of said inlet port for receiving a percussion ignitable oxygen candle, a cup in screw threaded engagement with said flange for pressing the candle against said last-mentioned valve to open it, said cup projecting from the flange and having an outer end wall provided with an opening to expose a portion of the candle, and a cap slidably mounted on the projecting portion of the cup for movement toward said flange, the inside of the cap being provided with a firing pin in line with said cup opening for striking the candle to ignite it when the cap is pushed sharply inward.

3,191,599
RESTRAINING HARNESS
Sara S. Kendell, 325 Peters Ave., Troy, Ohio
Filed Oct. 29, 1962, Ser. No. 233,745
2 Claims. (Cl. 128—134)

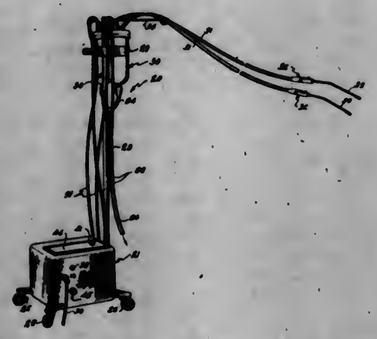
1. A restraining harness for a patient comprising a pair of strips of flexible material, one of said strips having a pair of loops for loosely receiving two separate portions of the other strip to form crossing points at the front and back of the harness, the upper portions of the strips between the crossing points being adapted to pass over the opposite shoulders of the patient, a third strip of flexible material being adapted to pass around the abdomen of the patient, one set of ends of said pair of strips being secured

at separate positions to said third strip, and the ends of all the strips except said one set of ends extending down the back and also from opposite sides of the patient and



adapted to be wrapped around stationary objects whereby a pull on the shoulder and abdomen strips causes restraint to be exercised on the patient.

3,191,600
BLOOD SUCTION APPARATUS
Hazen F. Everett, 120 Bedford Road, Hillsdale, N.J.
Filed May 4, 1962, Ser. No. 192,519
16 Claims. (Cl. 128—276)



1. In a blood suction apparatus, the combination of
(A) a source of vacuum having means tending to maintain the vacuum at a substantially constant value,
(B) a plurality of suction tips for immersion in pools of blood,
(C) means connecting said suction tips with said source so that vacuum is available at said suction tips for drawing blood into the latter, and
(D) pressure responsive flow metering means interposed in said connecting means between each of said suction tips and said source of vacuum, each of said flow metering means including a valve body having a cavity therein with ports communicating with said source of vacuum and the related suction tip, respectively, a valve spool moved in said cavity by differential pressures acting thereon through said ports between a first position occupied by said valve spool when the related suction tip is immersed in blood and a second position occupied by said valve spool when the related suction tip is substantially open to the atmosphere, and cooperative means in said valve body and spool defining a passage of relatively large cross-section between said ports when said spool is in said first position and defining a restricted passage between said ports when the spool is in said second position, thereby to permit a relatively high rate of flow into the related suction tip when the latter is immersed in blood and to substantially restrict the rate of flow into said related suction tip when the latter is open to the atmosphere, for avoiding substantial loss of vacuum at said source and the drawing in of large volumes of air with blood into said suction tips.

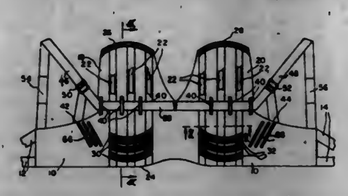
3,191,601
FOUNDATION GARMENT
Charles K. Wunsch, Cortland, N.Y., assignor to Cortland Corset Company, Inc., Cortland, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,818
2 Claims. (Cl. 128—436)



1. A foundation garment comprising front and side sections, and a back section secured at its side edges to said side sections along substantially vertical side seams arranged to overlie the body of the wearer at each side along lines extending from points substantially above the waistline to points substantially below the hip line, said back section comprising upper and lower parts telescopically overlapped in the region of the waistline with the lower portion of said upper part slidably overlying the upper portion of said lower part, said upper part adapted to engage the body above the hip line and at the waistline and having its lower edge free of attachment between its ends, said ends being anchored to said seam lines at points substantially coincident to the hip line with the lower edge midway its ends spaced a substantial distance above the waistline, said upper part having a central elastic panel and a nonelastic panel on each side thereof, said central panel extending from the top edge to the bottom edge of the upper part, whereby said upper part is adapted to lengthen as relative telescopic expansion movement takes place between said upper and lower parts and is adapted to shorten as relative telescopic contraction movement takes place between said upper and lower parts.

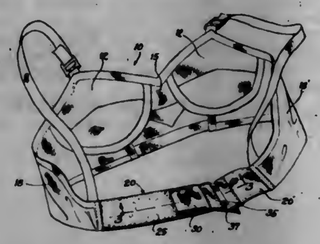
3,191,602
BRASSIERE CONSTRUCTION
Hulda R. Sturges, now by court decree Hulda R. Dombek, 7120 N. 12th St., Phoenix, Ariz.
Filed June 11, 1962, Ser. No. 201,390
8 Claims. (Cl. 128—477)

3. In a brassiere construction the combination of: a torso band; a pair of tabs connected to said band; said tabs extending upwardly, forwardly and downwardly from said band; one free end of each tab removably and adjustably secured to said band and forming a loop having an upwardly directed convex curvature disposed to bear beneath a breast of a wearer; and stay means disposed in each loop shaped tab, said stay means also extending upwardly, forwardly and downwardly from said band; a reinforcing means disposed internally of each of said loop portions, said reinforcing means abridging said stay means;



and shoulder straps coupled to said reinforcing means; additional support means coupled to said band and spaced from said tabs, said additional support means coupled to said shoulder straps.

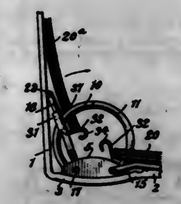
3,191,603
ADJUSTABLE GARMENT
Nicholas A. Marino, Chicago, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Sept. 3, 1963, Ser. No. 306,986
6 Claims. (Cl. 128—596)



1. In a garment adapted to encircle the body snugly,
(a) a pair of terminal members carried by said garment,
(b) the first of said members having a fixed-position fastener permanently secured thereto,
(c) the second of said terminal members having permanently secured thereto a strip of looped fibers,
(d) and a separable intermediate member having a fixed-position fastener detachably engageable with said first-mentioned fastener and having a multiplicity of resilient hook elements detachably engageable with said looped fibers by penetration thereof, to provide an infinite number of adjustments to accommodate numerous variations in girth.

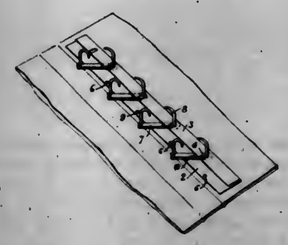
3,191,604
SHEET LIFTERS FOR LOOSE LEAF BINDERS
Frank Wence, Linden, N.J., assignor to S. E. & M. Vernon, Inc., New York, N.Y., a corporation of New York
Filed Sept. 26, 1963, Ser. No. 312,258
3 Claims. (Cl. 129—4)

3. A binder having a ring mounting including an elongated housing from which the rings project, a pair of sheet lifters having ends pivotally fitted in the opposite ends of the housing, the binder including a stack of sheets maintained on the rings between the sheet lifters, each of the lifters being formed with a loop encircling one of the rings of the binder, each of the loops being provided with a finger slidably fitted on it and having a projection extending behind the sheets, each of the fingers having a part slidably guided on the ring so that the finger is



caused to be slid along the ring and the loop upon which it is mounted to raise the sheets thereover by cam action exerted on the finger by the ring upon closing of the binder.

3,191,605
BINDING FOR LOOSE SHEETS, INCLUDING PIVOTAL OPEN LINKS
Georges Cott, Enghien les Bains, and Robert Georges Schmidt, Argenteuil, France, assignors to Reliure Industrielle S.T.D., Seine et Oise, France, a French joint-stock company
Filed Sept. 19, 1963, Ser. No. 310,174
Claims priority, application France, Sept. 21, 1962, 910,046; Mar. 14, 1963, 927,942; Apr. 8, 1963, 930,789
5 Claims. (Cl. 129—10)

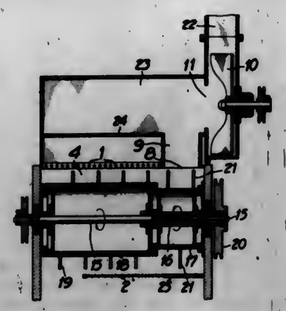


1. A binding for loose sheets comprising a plurality of open links including each a plate, crook-shaped pins rigid with corresponding ends of the plate and extending on the same side of the latter in parallel planes oblique with reference to the axis of the plate, the incurved ends of the pins facing inwardly of the plate, and means interconnecting said links and adapted to make the latter pivot simultaneously each around a pivotal axis registering with the axis of the end of one predetermined pin on the plate to shift the plates between an operative angular position for which the pins cross a predetermined longitudinal line registering with the medial position of a sheet in the binding and an inoperative angular position for which the pins lie to either side of said medial position.

3,191,606
STALK-DISCHARGING MEANS OF HARVESTING MACHINE
Miyoshi Suzue, 1343–1 Higashiseki, Nangoku-shi, Kochi-ken, Japan
Filed Oct. 21, 1963, Ser. No. 317,641
Claims priority, application Japan, Oct. 25, 1962, 37/47,709
4 Claims. (Cl. 130—6)

1. A stalk discharging means for a harvesting machine comprising a threshing chamber, a threshing cylin-

der rotatably mounted therein, a stalk discharging cylinder rotatably mounted in said chamber coaxially with



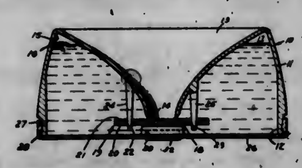
the threshing cylinder, and means for rotating said discharging cylinder in a direction opposite to the direction of rotation of the threshing cylinder.

3,191,607
COVER STRIP FOR THE CONCAVE ON THRESHING MACHINES
Alois Baumeister and Josef Vrastil, Eschwege, Germany, assignors to Massey-Ferguson G.m.b.H., Westhoven, Germany
Filed Feb. 6, 1963, Ser. No. 256,618
Claims priority, application Germany, Feb. 6, 1962, M 40,373, Patent 1,850,233
4 Claims. (Cl. 130—27)



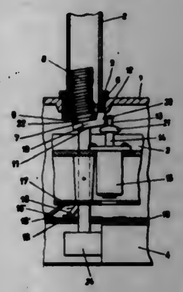
1. For use with a threshing concave defined by a plurality of spaced longitudinally extending ribs and a plurality of concave bars arranged side by side in spaced relation transversely interconnected to the ribs, a concave cover for seating upon and covering said bars, said cover being formed of left and right hand portions, said left and right hand portions being provided with oppositely facing hooks on the underside for engaging widely spaced ones of said bars when the portions of the cover are moved axially in opposite directions, and elastic means between said portions for urging said portions in said opposite directions.

3,191,608
CIGARETTE EXTINGUISHER
Joseph G. Licata, 2495 Queensberry Road, Pasadena, Calif.
Filed June 22, 1962, Ser. No. 204,313
1 Claim. (Cl. 131—256)



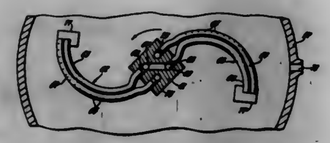
A cigarette extinguisher for dousing a burning cigarette with a liquid, comprising: a hydrostatic dome structure having a re-entrant center neck with a central opening, a closed and an open end providing an internal cavity in the form of a surface of revolution surrounding said neck and extending axially outwardly from the opening; an external lip on the dome at its open end; a fluid-tight lid with a peripheral flange adapted to snap over and continuously engage the lip to make a hermetic seal, the lid being imperforate, and extending across the open end to close the same, the opening standing substantially closer to the lid than to the closed end of the dome, whereby a major proportion of the volume of the dome structure lies above the opening when the assembled lid and dome structure stands on the lid, and whereby a substantially subatmospheric pressure is developed in the cavity as a consequence of the fluid interconnection between the opening and the inside of the closed end of the dome structure whereby liquid will stand at the level of the opening and not flow out, while backed up by a substantial quantity of liquid; guide posts attached to the inside of the structure and projecting downwardly; a buoyant valve member in the cavity beneath the opening adapted to raise and close the same, said valve member comprising a layer of buoyant foam material, and an upper layer of metalliconductive material and including a guide passage respective to each guide post for guiding the buoyant valve member, said guide posts engaging the float member at the guide posts to restrict lateral movement of the float.

3,191,609
ELECTRICALLY OPERATED MONEY CHANGER
Paul Gauselmann and Kurt Kube, both of Espelkamp-Mittwald, Germany, assignors to Wilhelm Harting Werk Fur Elektrotechnik und Mechanik, Espelkamp-Mittwald, Germany, a firm of the Federal Republic of Germany
Filed Jan. 22, 1962, Ser. No. 167,979
Claims priority, application Germany, Oct. 16, 1961, H 43,901
16 Claims. (Cl. 133—5)



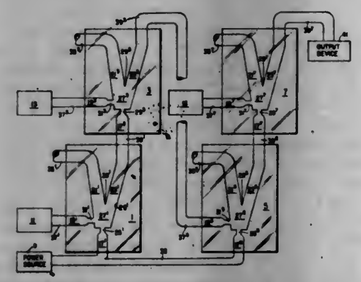
1. An electrically operated coin dispensing machine, comprising in combination, a base, a plurality of coin containers supported on said base, said coin containers being arranged in a closed path, carrying means operatively mounted in said base underneath said plurality of coin containers having a portion movable in a complementary closed path, electromagnetic actuating means supported on said portion of said carrying means, electric motor driving means operatively connected to said portion of said carrying means for driving the latter means and thereby moving said electromagnetic actuating means along said complementary closed path, and electric contacting means mounted on said carrying means for selectively connecting said electromagnetic actuating means to an electric power source.

3,191,610
CENTRIFUGAL VALVE HAVING VARIABLE CURVED ELASTIC SLITTED TUBES
Harry C. Zeisloft, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Jan. 14, 1960, Ser. No. 2,401. Divided and this application Apr. 16, 1963, Ser. No. 273,410
5 Claims. (Cl. 137—54)



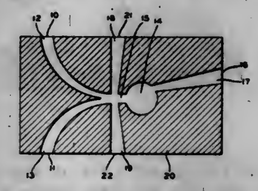
1. A speed-responsive throttling valve comprising, in combination, a rotatable shaft, at least one curved elastic tube mounted on the shaft so as to have its curvature varied by centrifugal force generated by rotation of the shaft, a fluid connection through the shaft to one end of the tube, the other end being closed, the tube having slits therein generally normal to the axis of the tube at one side, in the radial direction, of the axis of the tube so that variation of the curvature of the tube varies the area of the slits.

3,191,611
"AND" GATE
Peter Bauer, Rockville, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 25, 1963, Ser. No. 253,823
5 Claims. (Cl. 137—81.5)



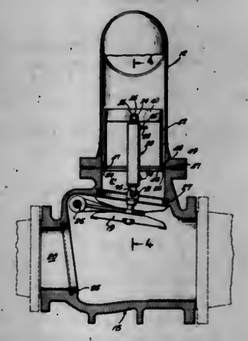
1. A fluid operated AND gate comprising: first and second groups of series-connected fluid amplifiers, each amplifier having a power stream input channel, a first output channel for normally receiving a power stream emerging from said power stream input channel, a second output channel, and a control signal input channel responsive to fluid signals for deflecting a power stream emerging from said power stream input channel into said second output channel; means for applying fluid power streams to the power stream input channels of the first amplifier in each of said groups; and means for selectively and simultaneously applying fluid signals to the control signal input channels of all of the amplifiers in said first group and all amplifiers except one in said second group, said second output channel of the last amplifier in said first group being connected to the control signal input channel of said one amplifier in said second group and said second output channel of the other of said amplifiers being connected to the power stream input channel of the next amplifier in its group.

3,191,612
JET PIPE PNEUMATIC OR GATE
Edwin R. Phillips, Westport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,981
6 Claims. (Cl. 137—81.5)



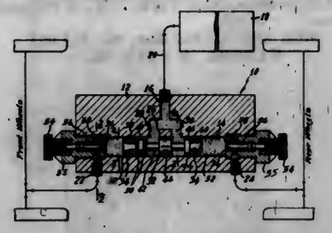
1. A fluid Or unit including a plurality of input ducts, a chamber having an input port formed therein, an output duct connected to said chamber, said input ducts being located relative to said chamber so that a fluid jet applied at the ends thereof will be introduced into said chamber through said input port, and an isolation duct connected to the junction of said input ducts and said input port of said chamber, the cross-sectional area of said isolation duct at said junction being greater than the cross-sectional area of any of said input ducts at said junction.

3,191,613
TWO-WAY CHECK VALVE COMBINATION
Marshall U. Bagwell, Houston, Tex., assignor to The Texas Pipe Line Company, Houston, Tex., a corporation of Texas
Filed July 26, 1962, Ser. No. 212,625
5 Claims. (Cl. 137—110)



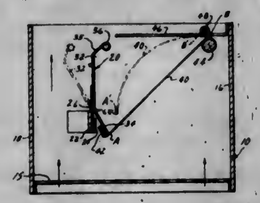
1. In combination, a two-way check valve for use in large quantity fluid flow, said valve having a body with three ports therein, a pivotally mounted clapper for alternatively closing two of said ports, said clapper comprising a body having integrally supported dual faced structure adapted for seating in a closing manner with either of said two ports, and double acting damper means comprising a cylinder and piston located at least partly within the body of said valve, means for pivotally attaching one end of said cylinder and piston to the body of the clapper, and support means located internally relative to said valve for having the other end of said cylinder and piston pivotally attached thereto.

3,191,614
SAFETY DEVICE FOR BRAKING SYSTEMS
Alexander Feibush, Plainview, N.Y., assignor to Alex Manufacturing Corporation, Jamaica, N.Y., a corporation of New York
Filed June 24, 1963, Ser. No. 290,004
6 Claims. (Cl. 137—118)



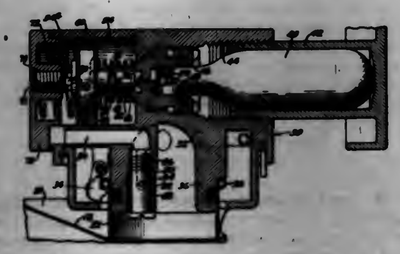
1. In a safety device for a braking system, a housing including a fluid inlet and fluid outlets, a chamber in said housing communicating fluid between said fluid inlet and said outlets, a valve movable in said chamber between a position of equilibrium wherein the same is spaced from said fluid outlets and wherein the same is in a position closing one of said fluid outlets, a plurality of surface means relatively spaced on said valve and spaced from said chamber to permit the passage of fluid thereabout, said surface means being acted upon by the fluid in said chamber to move said valve between said positions, said chamber having a wall and said valve having a separator between said surface means cooperating with said wall of said chamber to divide the fluid from said inlet into two passageways each of which directs inlet fluid only at a respective one of said plurality of said surface means and at a correspondingly directed side of said separator, said separator being smaller than said wall of said chamber and being spaced therefrom to enable the movement of the fluid thereabout and also from one of said surface means to the other to equalize the fluid pressure in said chamber.

3,191,615
AUTOMATIC FLUID CONTROLLER
Albert S. Edwards, Agawam, Mass., and Ernest H. Person, New Britain, Conn., assignors to Allied Thermal Corporation, New Britain, Conn., a corporation of Connecticut
Filed June 9, 1961, Ser. No. 116,196
14 Claims. (Cl. 137—499)



1. In a fluid distribution system a fluid controller, comprising; a housing for connection in the system, a damper interposed in said housing, said damper being pivotally mounted to move in opening and closing directions, a flexible blanket having one end attached to and supported by said damper at a point spaced from the damper pivot and positioned in the path of flow of the fluid, said blanket having the other end supported by the housing and spaced from said one end whereby the fluid creates a force on said blanket bringing about a moment on the damper in one of said directions, and means for varying the moment force of said blanket.

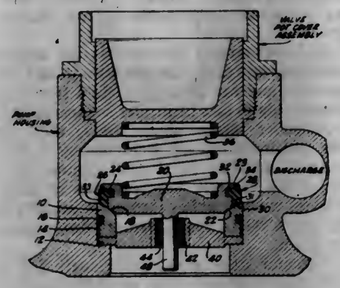
3,191,616
PRESSURE REGULATOR FOR DISPENSING APPARATUS
William B. Kochner, deceased, late of St. Louis, Mo., by Regina L. Kochner, administratrix, St. Louis, Mo., assignor to Knapp Monarch Company, a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 316,492
9 Claims. (Cl. 137—505.25)



1. An improved pressure regulator for use with a container for ebullient liquid that utilizes a source of high pressure gas to effect pressurized selective flow of the ebullient liquid from the container; said pressure regulator comprising, in combination: a hollow regulator body, means defining a valve seat that is adapted to communicate with a source of high pressure gas, a piston member freely and slidingly reciprocable within said hollow body in sealing relationship therewith to partially define a pressure outlet chamber spaced from said valve seat and adapted to be communicated with the interior of a container of ebullient liquid, an elongated annular collar surrounding said valve seat and extending toward said piston member, said piston member carrying a valve member having an elongated shank whose cross-section is similar to but only slightly less than the interior cross-section of the annular collar so as to be slidably disposed in said collar and to define a sliding space of restricted cross-section that offers relatively large resistance to gas flow therethrough, and the extended terminus of said shank being adapted for sealing engagement with the valve seat, gasket means carried on said elongated shank and slidably engaging said collar for effecting a seal therebetween for all positions of said piston member, by-pass conduit means for communicating gas under pressure from the sliding space region spaced axially between said gasket means and said valve seat to said pressure outlet chamber, thereby exposing the piston member to gas pressure that urges the valve member toward sealing engagement with the valve seat, and a coil spring surrounding the collar and engaging the piston member for automatically urging the piston member away from said valve seat when the gas pressure in said pressure outlet chamber falls below a predetermined level.

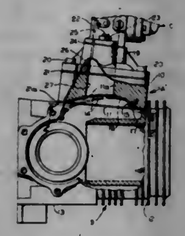
3,191,617
PUMP VALVE
William K. Maddox, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,816
1 Claim. (Cl. 137—516.29)

In a check valve, the combination comprising: a valve seat, said valve seat having an upper portion beveled to form a seating surface; a valve body adapted to rest on said valve seat, said valve body having a cylindrical wall and lower portion formed to cooperate with said seating surface; and an upper portion, said upper portion having a first groove formed in the periphery thereof and a second groove formed in the upper wall of said peripheral groove; and a flexible insert, said insert being coaxial with said valve body and having a portion encircling said cylindrical wall and lower portion formed to cooperate with said seating surface, and an upper portion, said upper portion having a flanged portion insertable in



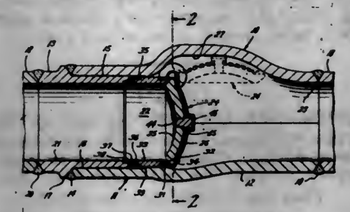
said peripheral groove and a ridge formed on the upper surface of said flanged portion insertable in said second groove, the groove and ridge being positioned radially outward of said cylindrical wall, whereby said insert is firmly engaged by said valve body when said flanged portion is inserted in said first groove and said ridge is inserted in said second groove.

3,191,618
CURVED SEAT REED VALVE
Carrol D. McKim, 791 34th Ave., San Francisco, Calif.
Filed Oct. 29, 1962, Ser. No. 233,581
3 Claims. (Cl. 137—525.3)



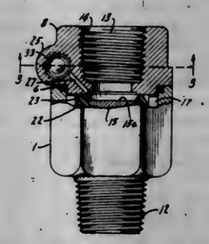
1. A reed valve comprising:
a valve reed of thin, normally flat, single thickness, springy, sheet material, which, when relieved of external stresses will lie flat, but which is flexed lengthwise thereof to define a curve determined by the normal flexure of the reed when the latter is fixedly held at one end thereof, and the other end thereof is offset laterally and without torque a selected distance from a plane tangent to the fixedly held end of the reed when so held by a force applied transversely to the other end of the reed,
a valve seat having a valve opening therein and curved to conform to the convex side of the thus flexed valve reed,
a valve mounting surface co-extensive with the valve seat and laterally adjacent the valve opening therein, and
means fixedly securing such fixedly held end of the valve reed onto the valve mounting surface, thereby flexing the normally flat valve reed into conforming relation with the valve seat throughout the length of the reed.

3,191,619
CHECK VALVE HAVING MOVABLY MOUNTED HEAD AND SEAT
Herbert Allen, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed Sept. 18, 1962, Ser. No. 224,445
2 Claims. (Cl. 137—527.4)



1. A check valve, comprising a body having a flowway therethrough, an annular seat comprising a ring within the flowway, means forming a sliding seal between the seat and flowway, a clapper type valve member, means mounting the valve member for swinging within the valve body between a first position providing an opening through the flowway and a second position sealably engaged against an end of the seat ring to close the flowway, and means between the valve body and seat ring yieldably urging said end of said ring toward sealing engagement with the valve member so as to cushion the swinging of same from said first position to said second position.

3,191,620
SAFETY CHECK VALVE
Arthur A. Berg, Lincolnwood, Ill., assignor, by mesne assignments, to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed Sept. 4, 1962, Ser. No. 221,207
1 Claim. (Cl. 137—551)



A check valve assembly for use in and as a part of a fluid pressure line, including a first fitting formed and adapted for attachment to an upstream pressure line portion and a second fitting formed and adapted for attachment to a downstream pressure line portion, said fittings together forming a housing and defining a first chamber in said housing, an inlet passage in said first fitting communicating with one end of said first chamber, an outlet passage in said second fitting communicating with the opposite end of said first chamber, a check valve member reciprocal in said first chamber and yieldingly urged toward a position closing said inlet passage, said check valve member permitting a build up of pressure in said downstream pressure line portion, a second chamber formed in said first fitting and axially disposed in a plane offset from the axis of said first chamber, a branch passage in said first fitting placing said second chamber in communication with said inlet passage, an outlet in said first fitting axially aligned with said second chamber and communicating said second chamber with atmosphere, a second valve reciprocal in said second chamber and yield-

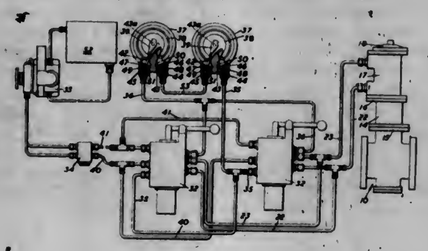
ingly urged against a seat to close said second chamber outlet, said second valve having an extension extending through said second chamber outlet and outwardly of said housing, said last-named outlet being larger than said extension to provide a clearance, said extension being operable to open said second valve and to communicate said first chamber with atmosphere through said branch passage, second chamber and second chamber outlet when said check valve member is out of said position.

3,191,621

HYDRAULICALLY-OPERATED VALVES

John Victor McKinnon, North Shields, and John Monson, Wallsend-on-Tyne, England, assignors to Donkin and Company Limited, Newcastle-upon-Tyne, England

Filed Feb. 21, 1963, Ser. No. 260,231
1 Claim. (Cl. 137—553)



In combination with a valve in a conduit embodying a gate linearly displaceable relative to a valve body and supporting an actuating rod projecting outwardly of the valve body.

a two station pressure fluid operated means for reciprocating the gate of the valve from either of the two stations including a closed hydraulic circuit and constituted by:

a pump subassembly for circulating hydraulic fluid under pressure in said circuit,

a motor subassembly for actuating the gate of the valve and including a cylinder fixed to the valve body and defining pressure and discharge chambers at opposite sides of a double-acting piston mounted upon the projecting portion of the actuating rod for slideable displacement within the cylinder between valve-closed and valve-opened positions,

reciprocation of the piston being adapted to effect reciprocation of the gate,

a pair of indicator subassemblies in said circuit for indicating the position of the valve and being serially related to each other,

each said indicator subassembly being positioned at one of the stations and including a cylindrical casing divided into a pair of variable compartments defined by a fixed radial wall and a cooperant flap swingable rotatively within the casing between the limits of its contact with the opposite faces of the radial wall responsively to the flow of fluid into and from the variable compartments and a valve position indicating means rotatable with and according to the rotation of the flap,

a pair of pressure fluid controller subassemblies in said circuit operable for directionally controlling fluid flow to and from said indicator subassemblies and motor and pump subassemblies and being serially related to each other;

each said controller subassembly being positioned at one of the stations and including a slide reciprocable within a casing and being manually operable selectively between effecting valve opening and effecting valve closing positions,

said controller subassemblies having fluid connection with said motor subassembly by a pair of fluid carrying feed ducts each communicating with one of the cylinder chambers through a primary flow passage and a valved supplementary flow passage spaced therefrom,

each feed duct serving alternatively for supplying fluid from said controller subassemblies to said motor subassembly and for conducting fluid from said motor subassembly to said controller subassemblies,

said controller subassemblies having fluid connection with said indicator subassemblies by a pair of fluid carrying indicator ducts each communicating with one of the variable compartments of each of said indicator subassemblies through a primary flow passage and a valved supplementary flow passage spaced therefrom,

each indicator duct serving alternately for supplying fluid from said controller subassemblies to said indicator subassemblies and for conducting fluid from said indicator subassemblies to said controller subassemblies,

said controller subassemblies having fluid connection with said pump assembly by a pump outlet duct for supplying fluid from said pump assembly and a pump inlet duct for returning fluid to said pump subassembly,

each said controller subassembly being operable by the positioning of the slide relative to the casing in effecting valve closing position for directionally controlling fluid passage from said pump subassembly through the pump outlet duct and controller subassemblies and one of the feed ducts into one of the chambers of each of said motor subassemblies and returnably from the other of the chambers of each of said motor subassemblies through the other of the feed ducts and controller subassemblies and one of the indicator ducts into one of the compartments of said indicator subassemblies and returnably from the other of the compartments through the other of the indicator ducts and said controller subassemblies and pump inlet duct to said pump subassembly and being operable in effecting valve opening position for directionally controlling fluid passage from said pump subassembly through the pump outlet duct and controller subassemblies and the said other of the feed ducts into the said other of the chambers of said motor subassembly and returnably from the said one of the chambers through the said one of the feed ducts and controller subassemblies and the said other of the indicator ducts into the said other of the compartments of said indicator subassemblies and returnably from the said one of the compartments through the said one of the indicator ducts and said controller subassembies and pump inlet duct to said pump subassembly,

the fluid capacity of said indicator assemblies being greater than the fluid capacity of said motor subassembly,

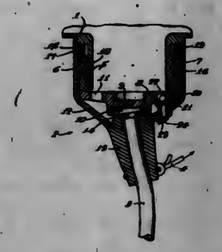
the exhausting of one of the chambers of said motor subassembly allowing reciprocation of the piston to the extreme limit of its travel and past the valved supplementary flow passage of the said one chamber for the escape of a volume of fluid therepast from the other of the chambers and through the return system of feed duct and said controller subassemblies and indicator duct to said indicator subassemblies for effecting an additional and subsequent increment of movement of the flap and corresponding movement of the respective indicating means.

3,191,622

DISPENSING VALVE

Thomas J. Finlayson, Forest Park, Ill., assignor, by mesne assignments, to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed May 2, 1963, Ser. No. 277,647
4 Claims. (Cl. 137—588)



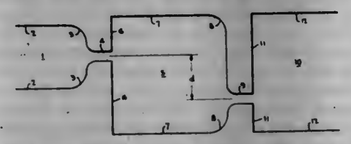
1. A dispensing valve for the outlet end of a liquid container, said valve comprising essentially two cup-shaped members nested one within the other, the inner member being constructed from rigid material and the outer member being constructed from elastic material, a discharge passage formed on the bottom of the inner member, a discharge conduit formed on the bottom of said outer member, said discharge passage and conduit being offset with respect to each other, an internal flange formed on the edge of said outer member, said flange being engaged with the edge of said inner member to stress the side walls of said outer member to retain the bottoms of said inner and outer members engaged to establish a seal between said discharge passage and conduit, means for distorting the bottom of said outer member to break said seal, and means formed on said inner member for engaging said dispensing valve with the outlet end of a liquid container and simultaneously sealingly clamping said flange between the edge of said outer member and the outlet end of a liquid container.

3,191,623

PASSIVE PURE FLUID COMPONENT

Ronald E. Bowles, 12712 Meadowood Lane, Silver Spring, Md.

Filed Feb. 21, 1963, Ser. No. 260,967
3 Claims. (Cl. 137—613)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A fluid-operated component comprising a fluid chamber, a passage for fluid, a first nozzle for directing fluid under pressure from said first passage into said fluid chamber, a second passage for fluid, a second nozzle for directing fluid from said fluid chamber to said second passage, the diameters of said nozzles being such that sonic flow velocities are maintained in said first and said second nozzles.

3,191,624

CONTROL DEVICE

Karl William Kern, Jr., Dayton, Ohio, assignor, by mesne assignments, to E. E. Sandifur, Springfield, Ohio

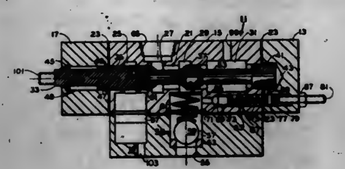
Filed Jan. 4, 1962, Ser. No. 165,063
8 Claims. (Cl. 137—625.6)

3. A control device for a fluid system comprising:

(a) a body having a bore and a plurality of ports communicating with said bore, said ports including an inlet port, a system port, a first discharge port and a second discharge port;

(b) a plunger reciprocable in said bore and having regions of reduced diameter that in conjunction with said bore define a plurality of passages, said passages establishing communication between said inlet and system ports at a first position of said plunger, between said inlet and first discharge ports at a second position of said plunger, and between said inlet and first discharge ports and between said system and second discharge ports at a third position of said plunger; and

(c) means responsive to a predetermined pressure of the system fluid for moving said plunger from said first position to said second position.

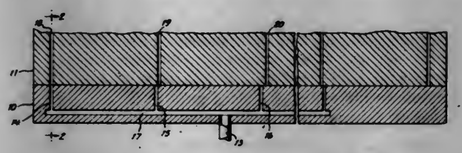


3,191,625

FLUID COMMUTATING DEVICE

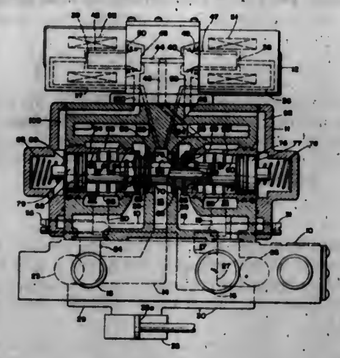
John L. Rawlings, Wilton, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 8, 1962, Ser. No. 236,297
1 Claim. (Cl. 137—625.11)



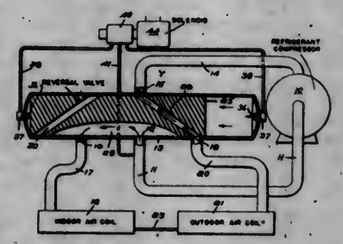
In a punched card reader; a first member having a flat surface, a plurality of columns of channels formed in said first member, each of said channels in said first member adapted to communicate between a source of fluid pressure and said flat surface of said first member, a second member having a flat surface abutting said flat surface of said first member, a column of channels formed in said second member for each of said columns in said first member with each channel in said column corresponding to a channel in one of said columns of said first member, adjacent ones of said columns of channels in said first member being separated by a distance equal to the distance minus the diameter of one channel between corresponding adjacent columns of channels in said second member with the spacing between adjacent columns of channels in said second member being equal to the diameter of a channel multiplied by the number of columns of channels in said second member, each of said channels in said second member adapted to communicate between said flat surface of said second member and an output port, said first and second members being adapted to move along their abutting surfaces relative to each other, said columns of channels in said first and second members being positioned so that each of the channels in a selected column of said first member communicates with a respective one of the channels in a selected column of said second member.

3,191,626
VALVE
Kurt W. H. Leibfritz, Norridge, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 13, 1962, Ser. No. 244,508
13 Claims. (Cl. 137—625.69)



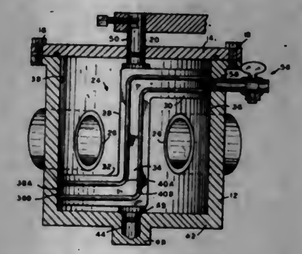
1. In a valve, a body having a bore, a high pressure passage, a cylinder passage, and first and second exhaust passages intersecting said bore at spaced locations, a valve member shiftable in said bore and having spaced sealing and porting means for closing and opening communication between selected ones of said passages, first and second bleed passages in said valve member communicating with each other and constantly exposed to said first and second exhaust passages respectively, said sealing means including a resilient member mounted in a groove in said valve member, passage means for directing fluid leaking along said bore past said resilient member to the bottom of said groove to said bleed passages, and valving means associated with each bleed passage and responsive to a higher pressure in the associated bleed passage than in the corresponding exhaust passage for opening such bleed passage.

3,191,627
REFRIGERANT REVERSAL VALVES
Watson L. Courtney, Staunton, Va., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 24, 1963, Ser. No. 283,049
1 Claim. (Cl. 137—625.29)



A refrigerant reversal valve having a central discharge gas port in one side for connection to the discharge side of a refrigerant compressor, having a second port to one side of said port for connection to a heat exchange coil, having a third port in said one side of said valve to the opposite side of said discharge gas port for connection to another heat exchange coil, and having a suction gas port in the opposite side of said valve opposite said discharge gas port for connection to the suction side of said compressor, a piston slidable within said valve from one end of said valve to the opposite end of said valve, said piston when at said one end of said valve having a passage connecting said third and suction gas ports and having a cavity connecting said discharge gas and second ports and extending towards said one end substantially beyond said second port, said piston when at said opposite end of said valve having a passage connecting said second and suction gas ports with said cavity connecting said discharge gas and third ports and extending towards said opposite end substantially beyond said third port, said cavity when said piston is at an intermediate position between said ends connecting said discharge gas, said second and said third ports.

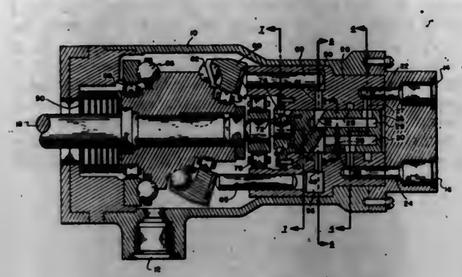
3,191,628
MULTI-PORT VALVE
Creal E. Kirkwood, 1423 S. 103 East Ave., and Bernard M. Moroney, 1520 E. 19th, both of Tulsa, Okla.
Filed Jan. 18, 1963, Ser. No. 252,501
8 Claims. (Cl. 137—625.43)



1. A multi-port valve comprising:
a body having an internal cylindrical surface, the body having at least four port openings in the cylindrical surface;
a gate member rotatably supported in the body dividing the interior of the body into separate flow chambers, the gate member having a continuous sealing surface therearound in close proximity to the internal cylindrical surface of the body;
said gate member having at least two continuous gaskets in the sealing surface each providing sealed contact with the internal cylindrical surface of the body sealably separating the separate flow chambers, the gaskets being spaced apart from each other and forming a continuous, closed passageway therebetween, and wherein the body has a test opening therein of a diameter less than the median distance between the gaskets, the test opening communicating the closed passageway between the gaskets with the exterior of the body.

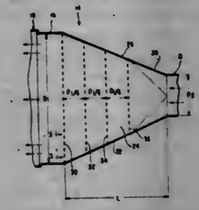
3,191,629
FLUID DISTRIBUTING MEMBER
Ludwig T. Stoyke, Elyria, Ohio, assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Feb. 16, 1962, Ser. No. 173,713
4 Claims. (Cl. 137—625.23)

4. A fluid receiving and distributing member for a mechanical transducer having a cylindrical peripheral surface, a contoured recess formed in said member through said surface, said recess defined by two planes which intersect along a line passing through said member in a direction perpendicularly to a plane containing an axis of said member, and a fluid conduit means within said distributing member communicating with said recess and



an orifice on the surface of said distributing member, permitting fluid to flow therethrough between said recess and said orifice.

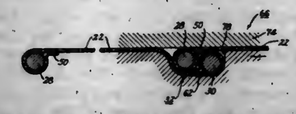
3,191,630
GAS FLOW CONTROL SYSTEM FOR SUB-SONIC DIVERGENT DIFFUSERS
Charles W. Demyan, Somerville, N.J., assignor to Research-Cottrell, Inc., Bridgewater Township, N.J., a corporation of New Jersey
Filed Apr. 11, 1963, Ser. No. 272,431
2 Claims. (Cl. 138—42)



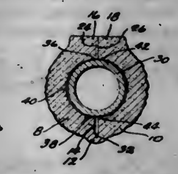
1. In a divergent passage for sub-sonic gas flow, gas flow control means comprising a series of flat perforated plates of thin cross-section compared to the transverse dimensions of said passage, said plates being non-buckling during gas flow and mounted in the divergent passage with the flat faces thereof positioned generally normal to the flow of gas in the passage, the perforations in each of the plates being discrete, circular in cross-section and of a uniform diameter, and comprising from about 30 to about 60% of the area of each of said plates, the ratio of the perforation diameter to the minimum dimension of the outlet end of the divergent passage being 1 to from about 80 to about 130, the first of said series of plates being positioned at the downstream end of the divergent passage, and each preceding plate of the series being spaced upstream of its adjacent downstream plate at a distance from about 15 to about 20 times the diameter of the perforations in the plates.

3,191,631
FLEXIBLE HOSE
Charles H. Smart, Amesbury, Mass., assignor to Callahan Mining Corporation, New York, N.Y., a corporation of Arizona
Filed May 6, 1963, Ser. No. 278,369
8 Claims. (Cl. 138—129)

1. A flexible hose comprising:
(A) an elongated tape;
(B) the long edges of said tape being thicker than the middle portion thereof;
(C) said tape being formed in a helix;
(D) the long edges of said tape being overlapped; and
(E) the thicker edge portions of each loop of said tape being in contact with the middle portions of adjacent loops of said tape.

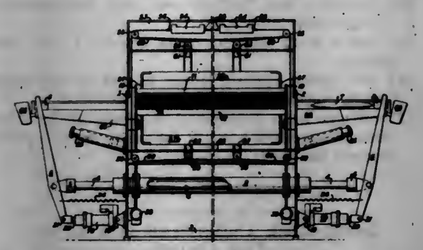


3,191,632
PIPE JACKET
Andrew Kelding, Milwaukee, Wis., assignor to Kelding Paper Products Company, Milwaukee, Wis., a co-partnership
Filed Jan. 29, 1962, Ser. No. 169,450
6 Claims. (Cl. 138—151)



1. As a new article of manufacture, a pipe insulating member having an interior surface in the form of a channel of semi-elliptical cross section and having substantially opposed surfaces at a lesser spacing then the diameter of a pipe to be received therebetween, the insulating member having sufficient resilience between said surfaces to permit the separation of said surfaces to receive a pipe and the clamping engagement thereof upon a pipe.

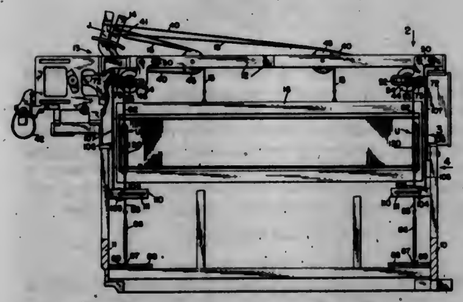
3,191,633
PNEUMATIC CONTROL FOR THE MAIN RECIPROCATORY MOVEMENTS OF A LOOM
Marius Piot, Roanne, France, assignor to Ateliers Diederichs, Bourgoin (Isere), France, a corporation of France
Filed Feb. 7, 1962, Ser. No. 171,659
Claims priority, application France, Feb. 10, 1961, 41,217, Patent 1,289,594; Jan. 8, 1962, 42,171
6 Claims. (Cl. 139—11)



1. A loom comprising heald shaft elements, warp threads being raised and lowered by said heald shaft elements in a shed arrangement, a reciprocating shuttle element, a weft thread being inserted into the shed the warp threads by said reciprocating shuttle element, a reed-carrier element beating up the weft thread, pistons operatively associated with said heald shaft elements, reciprocating shuttle element and reed-carrier element, electro-pneumatic valves operatively associated with said pistons, the movements of said heald shaft elements, shuttle and reed carrier elements being obtained pneumatically by a fluid under pressure acting on said pistons, under control of

said electro-pneumatic valves, and a static electronic control means regulating the movements of said heald shaft elements, shuttle and reed-carrier elements through a repeated sequence of steps and comprising a distributor coupled to said valves and ensuring rigorous rhythm of said elements and causing starting of each of the movements of said respective heald shaft elements, shuttle and reed-carrier elements at predetermined precise times which are independent of the completion of the preceding movements, said means including further means establishing time intervals between two sucessive movements of respective of said elements to control the end of movements of said elements and the stopping of said control means, which then prevents the next successive sequence of steps from taking place if one of the movements in the preceding sequence fails to be completed in the allotted time.

3,191,634
MEANS FOR FORMING SELVAGES IN LOOMS
Kenneth J. Hall, Worcester, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Jan. 2, 1964, Ser. No. 335,130
18 Claims. (Cl. 139—54)



18. In a selvage warp thread deflecting member for the carrier of a selvage forming unit having spaced parallel flanges and operating in a loom having an operating system,

(a) a body having upper and lower ears for attachment to said system and

(b) having a slot between said ears for passage of selvage warp threads,

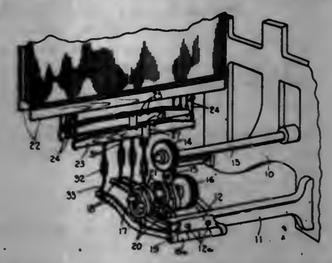
(c) and a warp deflector plate secured to said body having

(d) slots along opposite edges to receive said flanges and having

(e) oblique warp deflector slots positioned to receive throughout their length selvage warps passing through the slot in said body.

3,191,635
JACK STICK AND STRAP ASSEMBLY FOR LOOMS
Charlie C. Butler and Claude O. Kellett, Greenville, S.C., assignors to Loom Products Co., Inc., Greenville, S.C., a corporation of South Carolina
Filed Nov. 27, 1963, Ser. No. 326,568
2 Claims. (Cl. 139—88)

1. In a jack stick for use in connecting the harnesses to the treadles of a loom, said jack stick having an elongated wooden member of substantially rectangular cross section and means connecting same to the harnesses so that the wooden member is horizontally disposed with the major dimension of the rectangular cross section being vertically disposed, means connecting the wooden member to the treadles including, a plurality of horizontally spaced transverse notches in the upper portion of the wooden member, strap means carried by the wooden member for fastening the wooden member to the treadles, said strap means having a pair of vertical side members confining the wooden member therebetween, a horizontal upper portion bridging said sides normally engaging the upper surface of the wooden member and means spaced below said wooden member confining said strip means thereon but permitting limited vertical sliding movement on the wooden member, a transversely disposed insert fixed upon and extending downwardly from the upper portion of the strap extending within one of said notches, said notches being open to receive and release the insert through said limited vertical sliding movement of the strap, said strap means being horizontally slidable on the wooden member when said insert is released from said notches, and means connecting the strap member to the treadles adjustable to permit said limited vertical sliding movement and said horizontal sliding movement and to fix said insert within of said notches, whereby a strap may be easily and positively positioned and easily removed from a predetermined position upon the wooden member by sliding movement thereupon.

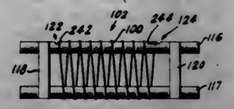


3,191,636
METHOD OF FORMING A SINUOUS SPRING STRIP
John C. Hampson, Bloomfield Township, Mich., assignor, by mesne assignments, to Rockwell-Standard Corporation, a corporation of Delaware
Original application June 12, 1956, Ser. No. 590,926, now Patent No. 3,057,380, dated Oct. 9, 1962. Divided and this application May 25, 1962, Ser. No. 210,272
7 Claims. (Cl. 140—71)



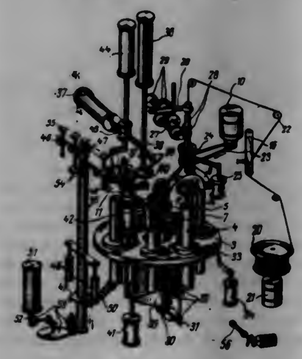
1. A method of forming a sinuous spring strip in which alternate successive segments are torsion bars and spacer bars from a substantially straight wire of pre-determined length substantially equal to the wire length of the finished spring strip comprising the steps of restraining a plurality of successive spaced portions of said wire equal in length to the successive torsion bars of said spring strip, each adjacent pair of said restrained wire portions being spaced apart along such wire a distance equal to the length of the spacer bar of said spring strip between the torsion bars to which such pair of restrained portions correspond, the portions of said strip between said restrained portions being unsupported and simultaneously folding alternate ones of said restrained portions in opposite directions in a common plane into substantially mutually parallel relation and more closely longitudinally congregating said restrained portions to maintain said wire substantially free of tension said unsupported portions of said wire strip being shifted laterally of the axis of said wire strip without substantial deformation while said restrained portions are folded.

3,191,637
METHOD AND APPARATUS FOR MANUFACTURE OF ELECTRODES
Alton L. Crosby, Austin, and Marion S. De Lucia, Stanley J. Gartner, and Harold D. Losey, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application Nov. 2, 1959, Ser. No. 850,407. Divided and this application May 14, 1962, Ser. No. 194,629
8 Claims. (Cl. 140—71.5)



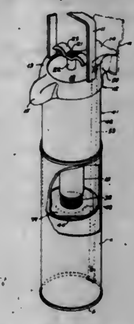
1. In an apparatus for manufacturing a grid having closely spaced turns of lateral grid wire wound about a grid frame the combination of a workstation, means for rotatively supporting said grid frame, a loading station, means for moving said support means from said loading station to said workstation, means for supplying said lateral wire, means for feeding said lateral wire to said frame, means at said workstation for securing said lateral wire to said frame, means for moving said lateral wire supply means to feed said lateral wire along said frame while being wound thereon, and means at said workstation for securing the lateral wire to said frame at the completion of said winding operation.

3,191,638
MACHINE FOR FORMER WINDING OF ONE- AND MULTI-RANGE COILS AND LAYING THEM INTO SEMI-CLOSED STATOR GROOVES OF ELECTRICAL MACHINES
Bendersky Isaak Shmoolovich, 3 Mirankaya Str. 4b, Apt. 9; Klushnev Ievgeny Dmitrivich, Matrosskaya Tishina 16a, Apt. 3; Maksiev Arkady Sergeievich, Shcherbakovskaya Str. 40/42, Apt. 39; Ovchinnikova Hadezhda Petrovna, Lialin by-street 8a, Apt. 5; and Popov Konstantin Konstantinovich, Shcherbakovskaya Str. 40/42, Apt. 7, all of Moscow, U.S.S.R.
Filed Apr. 3, 1962, Ser. No. 184,854
13 Claims. (Cl. 140—92.1)



1. An apparatus for winding coils and inserting said coils into the grooves of a stator for a dynamo-electric machine, said apparatus comprising a base, a turntable rotatably mounted on said base, means to rotate said turntable step-by-step, a plurality of mandrels mounted on said turntable and projecting upwardly therefrom, a slider on each mandrel movable from a position projecting above the upper end of the mandrel to a position below the upper end of the mandrel, a gap between said slider and the mandrel, a winding form mounted for vertical movement on said turntable adjacent each mandrel, cam means for moving said sliders and said coil forms vertically with respect to said mandrels and with respect to each other upon rotation of said turntable, a coil winding device disposed at a coil winding station, means for feeding wire to said winding device, means for rotatably driving said winding device and means to reciprocate said winding device to wind a coil on said form and the upwardly projecting portion of said slider, subsequent movement of said slider and form downwardly serving to deposit a portion of said coil in said gap and withdraw said form from said coil, a stator holder disposed at a coil inserting station and movable from a position above a mandrel downwardly over the mandrel and return, means to clamp a stator in said holder, means to index said holder to orient the grooves in the stator for the insertion of coils therein, whereby upon downward and upward movement of said holder a coil carried by a mandrel is inserted into the appropriate grooves of the stator and removed from the mandrel, means for pressing the heads of the inserted coil outwardly toward the perimeter of the stator and a transfer device for positioning a stator to be wound in said holder and for removing a wound stator therefrom.

3,191,639
DISPENSER FOR SEMI-FLUID HAND CLEANERS AND THE LIKE
James T. Jones, deceased, late of St. Charles Mo., by Mabel Lucille Jones, executrix, St. Charles, Mo., assignor to The Metalife Company, Wentzville, Mo., a corporation of Missouri
Filed Apr. 8, 1963, Ser. No. 271,522
7 Claims. (Cl. 141—18)



1. A dispenser for semi-fluid substances and the like, such substances being characterized in part by substantially greater viscosity than air, comprising

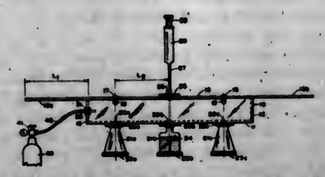
a dispenser vessel having a lower end and outer wall means extending therefrom to permit telescoping sliding of a supply receptacle thereover, further having

valve means at said lower end responsive to exterior pressure to admit material therethrough and into the vessel from such a supply receptacle on such telescoping sliding,

tubular dispenser discharge pump means extending downward into the vessel from the upper to the lower portion thereof spacedly above said valve means and terminating in a lower end pump valve,

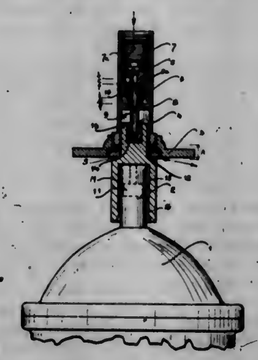
and means at the upper end of the vessel to admit air and to permit the expulsion of air with greater facility than of substances of greater viscosity, whereby the vessel may be filled by telescopingly pressing such a supply receptacle upwardly thereover and may be gradually emptied by a plurality of operations of the dispenser discharge pump means.

3,191,640
REACTIVE FLUID TRANSFER APPARATUS
Homer L. Hackett, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,702
8 Claims. (Cl. 141—63)



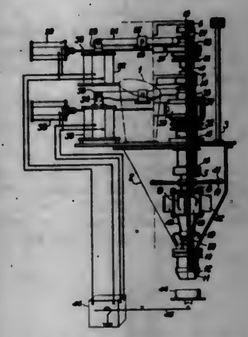
1. A device for permitting the transfer of fluids in an inert atmosphere by means of a hypodermic, and hypodermic needle, said device comprising: a container having a bottom and sides; a plurality of openings provided through the bottom of said container; a plurality of corresponding gaskets below said plurality of openings; means for communicating an inert atmosphere into the interior of said container; a cover slidably mounted on the top of said container and forming a substantially air-tight seal for the interior thereof, said cover having an opening therethrough and adapted to permit the insertion of said hypodermic needle, the cover additionally including extensions having a length sufficient to permit movement of said cover without exposing the interior of said container to the atmosphere during said movement.

3,191,641
TOOL FOR BLEEDING A FUEL CONTAINING MEMBER
Wolfgang Maltner, Oberstedten, Taunus, Germany, assignor to Heinrich Maltner G.m.b.H., Offenbach (Main), Germany
Filed Apr. 22, 1963, Ser. No. 274,505
Claims priority, application Germany, Apr. 21, 1962, M 41,151
5 Claims. (Cl. 141—98)



1. Apparatus comprising a lighter casing including a bottom portion provided with an opening therein, a sleeve in said opening having an innermost end extending into the casing and having a second end in hermetically sealed relation with said bottom portion, a flange on and within said sleeve between said ends, a valve body displaceable in said sleeve between said flange and the innermost end of said sleeve, a packing between said body and flange and adapted for limited movement in said sleeve, said body including a body portion extending slidably through said packing, means urging said body towards said flange and in a direction outwardly of said casing, said body being adapted to sandwich said packing against said flange, a hollow pin on said body portion, said body portion being provided with a passage coupling said pin with the interior of said casing, a container for supplying fuel under pressure to said casing, a hollow neck on said container and insertable into said sleeve and adapted to receive said pin, means in said neck engageable by said pin to release fuel into said casing via said neck and passage, and a container cover including first and second cover portions of generally cylindrical shape connected in coaxial relation, said first cover portion including a blind bore adapted to accommodate said neck, said first cover portion having an outer diameter exceeding that of the sleeve and therefore providing a shoulder adapted to abut against said sleeve, said second cover portion being provided with a blind bore having a diameter sufficient to accommodate said pin and further having bottom spaced axially from said shoulder, said second cover portion having an outer diameter enabling insertion thereof into the sleeve with clearance to permit escape of fuel from said casing via said passage, pin and clearance.

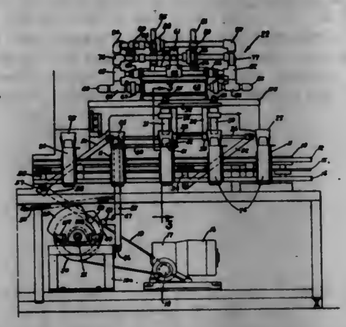
3,191,642
AUTOMATIC FEEDER OF PULVERULENT BODY
Yutaka Saito, Tokyo, Japan, assignor to Nissan Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Sept. 19, 1963, Ser. No. 310,091
Claims priority, application Japan, Sept. 24, 1962, 37/41,779
4 Claims. (Cl. 141—128)



1. An apparatus for quantitively feeding a pulverulent material comprising, a receptacle, outer shaft screw means for feeding an amount of material to said receptacle, inner shaft screw means having a portion thereof located axially within said outer shaft screw means and being independently rotatable with respect to said outer shaft screw means for feeding an amount of material through said outer shaft screw means to said receptacle, and a screen means mounted across the discharge ends of said outer and inner shaft screw means for impeding the movement of material therethrough and preventing unwanted movement of pulverulent material therethrough after the stopping of rotations of said outer and inner shaft screw means.

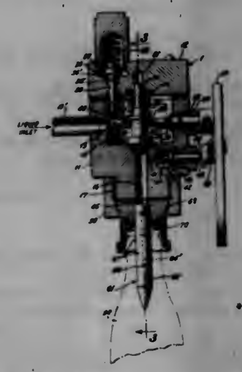
3,191,643
MOVING FILLER FOR LIQUIDS
Donald J. Roth, St. Paul, Minn., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Filed Apr. 16, 1962, Ser. No. 187,582
14 Claims. (Cl. 141—137)

12. A filler mechanism comprising at least one filler nozzle, a bracket supporting said filler nozzle, tracks slidably supporting said bracket, means for supporting said tracks horizontally as to be vertically movable, means for raising and lowering said tracks, means for sliding said bracket to and fro on said tracks, variable capacity metering means communicating with said discharge nozzle for discharging liquid therefrom whenever said nozzle is lowered and withholding the discharge of liquid therefrom whenever said nozzle is raised, said track



raising and lowering and said variable capacity metering means discharge all being controlled by mechanically interrelated means, an endless conveyor extending at least in part parallel to said tracks, said endless conveyor comprising guide rails, an endless powered means therebetween, plates movable on and stabilized by said guide rails and secured to said endless powered means and pockets removably secured to said plates.

3,191,644
FILLING DEVICE
Lawrence R. Hollifield, P.O. Box 193, Grover, N.C.
Filed Aug. 31, 1962, Ser. No. 220,629
3 Claims. (Cl. 141—302)



1. In a device for filling a container with a gas-impregnated liquid comprising a valve body having passages therethrough for a gas and said gas-impregnated liquid, respectively, a hollow filling stem on said body forming outlet extensions for said gas and gas-impregnated liquid passages respectively, said filling stem being adapted for insertion into a container to be filled, means to form a fluid-tight seal between said filling stem and said container, and a valve in each of said passages to control flow of fluid therethrough into said container, the improvement which comprises a common means for actuating said valves, said means comprising a lever arm mounted exteriorly of said body and operatively connected with said valves, means within said body for adjusting the order of opening said valves, a third valve within said body for controlling flow of fluid through a third conduit, and means on said lever arm to open said third valve after said first and second valves are closed and to close said third valve before said first and second valves are opened.

3,191,645
COMBINATION BOTTLE AND DISPENSING CUP
Donald E. Dailey, Evansville, Ind., assignor to John H. Breck, Inc., Springfield, Mass.
Filed Feb. 6, 1962, Ser. No. 171,491
2 Claims. (Cl. 141—381)



1. In combination, a cylindrical bottle having tapered side walls and a threaded neck extending outwardly from an annular shoulder portion at the upper reaches of said side walls, said threaded neck having a cap threaded thereon, a dispenser sleeved upon said bottle and having an annular body portion embracing the side walls of said bottle and having a shoulder portion resting upon the shoulder portion of said bottle, and having an upright cup portion integral therewith extending outwardly therefrom and adapted to encompass said cap and said threaded neck, said cup portion being of a certain size to receive and measure a predetermined amount of substance placed therein from said bottle.

3,191,646
CHAIN SAW BAR
Max Merz, Los Angeles, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 824,647, July 2, 1959. This application June 1, 1962, Ser. No. 200,607
15 Claims. (Cl. 143—32)



1. A generally elongate chain saw guide bar for a chain saw chain comprising a plurality of laminations disposed with the adjacent flat surfaces thereof secured together, the outer of said laminations being longer and wider than the inner of said laminations and thereby providing a saw chain guiding groove extending around the elongate edges and around one end of the guide bar, the inner of said laminations being relatively soft and including means defining retainer devices adjacent the other end of the guide bar and on its opposed elongate edges, relatively hard wear resistant insert means comprising a pair of elongate members respectively disposed within the groove along the elongate edges of said bar and a generally U-shaped nose piece disposed within the groove around said one end of the guide bar, and one end of each of said elongate members being respectively held in place in said groove by said retainer devices and the ends of said nose piece respectively engaging the other end of each of said elongate members for thereby holding the same in place, whereby a saw chain disposed within said groove rides over the elongate insert members

and the U-shaped nose piece and is effective to hold the latter in position within the groove during operation of the chain saw.

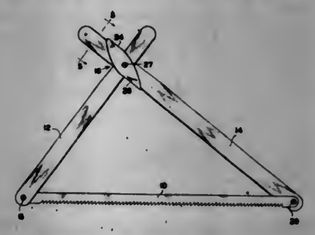
3,191,647
SCREWDRIVER
Théo Mounin, Neuchatel, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland
Filed Jan. 24, 1962, Ser. No. 168,394
Claims priority, application Switzerland, Feb. 4, 1961, 1,274/61
5 Claims. (Cl. 144—32)



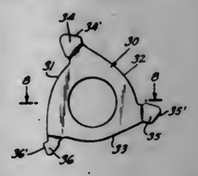
1. A tool comprising a housing, a drive member, an axially movable tool holding driven member movable inwardly and outwardly of the housing, a collar at the end of the driven member adjacent the drive member, a clutch member freely mounted on the driven member, a first spring interposed between the drive member and the collar urging the driven member outwardly providing driving action therebetween and adapted to slip for a torque load above a predetermined value thereby providing a screw-slot engagement torque of low value, a clutch surface on the drive member, a first clutch surface on the clutch member adapted to cooperate with the clutch surface on the drive member, a second clutch surface on the back of the clutch member, an abutment on the driven member, a second spring interposed between the abutment and the clutch member second clutch surface to provide for jump engagement of the clutch member surface with the second spring and to urge the clutch member against the collar, and means fixedly engaging one end of the second spring with the driven member, the second spring being of greater compressive strength than said first spring so that when the driven member is moved inwardly the other end of the second spring exerts a force against said clutch member second clutch surface thereby axially moving the clutch member against the engaging force of the first spring in order that the cooperating clutch surfaces of the clutch member and drive member become engaged thereby providing a screw-in torque releasable at a higher value than said screw-slot engagement torque provided by the clutch member second clutch surface jumping on the second spring, the second spring being ineffective against the clutch member when the driven member is moved outwardly thereby allowing the first spring to release the engagement of the clutch surface on the drive member with the first clutch surface on the clutch member.

3,191,648
FOLDING FRAME HANDSAW
Robert B. Dustrude, 1913 SW. 119th, Seattle, Wash.
Filed Mar. 5, 1964, Ser. No. 349,725
5 Claims. (Cl. 145—32)

1. A folding handsaw comprising a saw blade and handle means movable between open and folded positions, said handle means comprising a pair of elongated handle members disposed outboardly on opposite sides of said saw blade, pin means pivotally connecting an end of one of said handle members to an end of the saw blade, and an end of the other handle member to the opposite end of said saw blade, said pin means permitting pivotal movement of said handle members between a handle closed position, wherein the handle members are disposed substantially parallel to each other on opposite sides of the saw blade, and a handle open position wherein the handle members each make an angle with the saw blade and the other handle member and sidelaps the other handle member, and latch means pivotally connected to one of said handle members and pivotally movable between a lock position, which it occupies when the handle members are in closed position, wherein a portion thereof partly surrounds the other handle member and locks the handle members together, and an open position wherein the handle members can be separated for movement to a handle open position, said latch means also being pivotally movable between a slidelock position, which it occupies when the handle members are in handle open position, wherein said portion thereof again partly surrounds said other handle member which is sidelapping the handle member to which the latch means is connected, and an open position wherein the handle members can be separated for movement to a handle closed position.



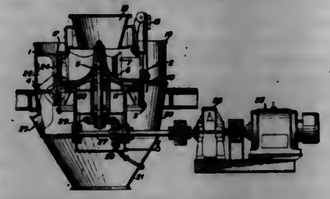
3,191,649
IMPLEMENT FOR OPERATING FASTENING DEVICES
William Dzus, West Islip, N.Y.; Theodore Dzus, Francis X. Clarke, and Daniel H. Kane, executors of said William Dzus, deceased
Filed Jan. 20, 1964, Ser. No. 338,856
1 Claim. (Cl. 145—50)



An improved handle for use in supporting and manipulating an implement having three separate tools comprising: a relatively thin flat body portion having a peripheral edge disposed in one plane extending therearound and arranged in a symmetrical, generally three-sided arcuate configuration with sides of approximately equal length and the peripheral edge being relieved and recessed at the three areas of connection between the three sides; said flat body portion having the three tools supported at the connection areas which project from said peripheral edge at the corresponding trailing ends of said three sides, and each of the tools forming thereby a projected extension of one of said sides and extending into the relieved, recessed

area whereby the tool does not project substantially beyond the adjacent side and allowing the implement to be used with one hand against a vertical surface in a confined area and corner.

3,191,650
CENTRIFUGAL BEET CUTTER
Ivan Petrovich Lichko, Vasily Michailovich Kamensky, and Kirill Alexandrovich Dery, all of Kiev, U.S.S.R., assignors to Kievski Mashinostroitelny zavod "Bolshevik"
Filed Apr. 18, 1961, Ser. No. 130,205
1 Claim. (Cl. 146—165)

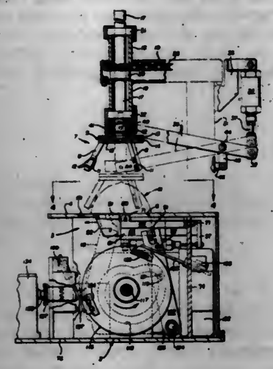


A centrifugal beet cutter comprising a fixed vertical drum, a wear resisting lining on said drum, radial ports in said drum, vertical grooves in said drum adjacent said ports, knife supporting frames slidably received in said grooves, blind frames slidably mounted in said grooves below said knife frames, winch means movably mounted on said drum for selectively engaging a blind frame to raise the same and move the associated knife frame out of the groove, said blind frame moving into the position in the groove previously occupied by said knife frame, means for adjusting said knife frames vertically, each adjusting means comprising a strap pivotally mounted on said drum for disposition over an adjacent groove and for movement away from said groove, an adjusting screw threadedly received in said strap, and a slotted swivel connecting said screw and the adjacent knife frame, whereby upon operation of said screw the height of the associated knife frame may be adjusted, a rotor mounted in said drum for rotation about a vertical axis, said rotor having a conical upper surface, radial blades projecting from said conical surface, said blades being curved rearwardly with respect to the direction of rotation of said rotor, adjustably mounted removable tips on said blades, means to drive said rotor, a casing surrounding said drum, said casing having a discharge opening at the lower end, and a charging hopper at the upper end of said drum, whereby cut beets pass radially outwardly through said ports into said casing and downwardly through said discharge opening.

3,191,651
COCONUT DEMEATING APPARATUS AND METHOD
Loyd C. Sindel, Oakland, Calif., assignor to Rogers International Corporation, San Francisco, Calif., a Liberian corporation
Filed Mar. 1, 1963, Ser. No. 262,037
35 Claims. (Cl. 146—241)

1. A method of removing meat from a shell in at least one well defined stream, comprising the steps of providing a shell section having meat therein and carried thereby, providing knife structure including a blade for removing meat from said shell, supporting said shell only externally thereof, rotating said knife structure and said shell relative to each other, and during such rotation moving said knife structure and said blade thereon through a positively controlled predetermined curved and nonlinear path while simultaneously urging said blade toward said shell in all positions of said knife structure.

15. Apparatus for removing meat from a shell, comprising a knife assembly insertable into said shell for removing the meat therefrom, said assembly including a cutting blade, means mounting said knife assembly for non-linear movement into said shell and for urging said blade toward said shell in all cutting positions, means for supporting said shell only externally thereof so that the interior of said shell is maintained unrestricted, means for rotating said knife assembly and said shell relative to each other, and program drive means for advancing said assembly through a predetermined positively controlled non-linear path during relative rotation of said shell and knife assembly.



3,191,652
GUN CASE
Walter E. Benson and James M. Lindsley, Fond Du Lac, Wis., assignors to J. M. Nash Company, Inc., Oshkosh, Wis., a corporation of Wisconsin
Filed Apr. 24, 1963, Ser. No. 275,347
5 Claims. (Cl. 150—52)

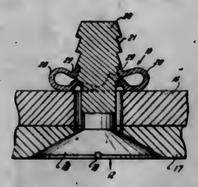


5. A gun case comprising inner and outer telescopically related sheaths having overlapping portions, infinitely variable releasable fastening means concealed between said overlapped portions, the overlapping portion of the inner sheath intervening between said fastening means and a gun portion within said inner sheath to isolate said gun portion from contact with the fastening means.

3,191,653
FASTENER RECEPTACLE FOR THREADED FASTENER STUDS
William Dzus, West Islip, N.Y.; Theodore Dzus, Francis X. Clarke, and Daniel H. Kane, executors of said William Dzus, deceased
Filed July 12, 1963, Ser. No. 294,583
1 Claim. (Cl. 151—21)

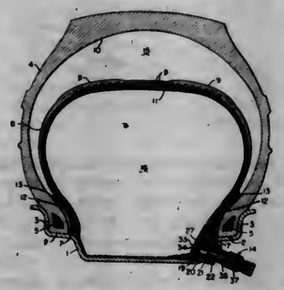
A fastener receptacle for use with a fastener stud having a shank formed with threads having first and second side walls and comprising: a body portion made of sheet metal and formed with an aperture large enough to accommodate the shank of the stud with which it is used extending through the body portion, a pair of threaded portions in the form of a pair of helical segments having substantially the same pitch as the threads of the stud with which it is used and being integral with the body

portion and extending along edge portions of the aperture in diametrically spaced relationship so as to be engageable with a first side wall of the threads of a stud extending therethrough, and a pair of retaining portions in the form of a pair of spring arms integral with the body portion and projecting from the peripheral edge thereof in diametrically opposite relationship in reversely curved bends and terminating in abutment portions bent outwardly away from the body portion having angularly disposed edges with a pitch corresponding generally to the pitch of



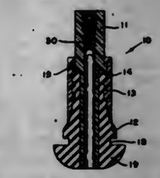
the threads of the stud with which the receptacle is used, and engageable with the first side wall thereof at points spaced from points of engagement with the segments, said abutment portions being disposed adjacent diametrically opposite edge portions of the aperture in a plane spaced outwardly therefrom and said spring arms having inwardly facing bearing surfaces beneath said abutment portions which resiliently and frictionally engage the second side wall of the threads of a stud extending through the aperture in engagement with the helical segments to thereby releasably retain the parts in assembled relationship.

3,191,654
SAFETY TIRE AND VALVE THEREFOR
Malcolm G. Anderson, Hudson, and Joseph S. Hawkes, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed May 31, 1962, Ser. No. 199,140
15 Claims. (Cl. 152—341)



1. In combination, a rim and a tubeless tire mounted thereon to form an annular air space therebetween, an inner tire in said space separate from said tubeless tire spanning said space from one inner sidewall of said tubeless tire to the other inner sidewall thereof to divide said air space into an inner chamber and an outer chamber, an inner tube in said inner chamber which when inflated maintains the pressure in the inner chamber, means for inflating said inner tube and outer chamber comprising a valve stem attached to said inner tube and having a first passage for receiving air under pressure from a supply source, a first port in said stem communicating with said first passage and said outer chamber through a second passage extending from said first port to said outer chamber externally of said tube, a second port in said stem communicating with said first passage and the interior of said inner tube, a normally closed first check valve in said first passage at the outer end of said stem through which air may be supplied to and withdrawn from said first passage when said first check valve is in open position, and a second check valve in said stem for opening and closing said second port and constructed and arranged to open and permit air to flow into said inner chamber from said first passage when the opening force on said second valve, created by the pressure of the air in said first passage, exceeds the closing force on said second valve, which latter force is composed at least in part by the pressure of the air in the inner chamber, and closing completely when said opening force is less than said closing force, said first and second valves being mechanically unconnected whereby the mere movement of either valve will not actuate the other valve, the effective cross-sections of said first and second ports being so proportioned with respect to the respective volumes of the chambers with which they are connected that, when air under pressure is supplied to said first passage for inflating said tube and outer chamber and said second check valve is open, the rates of flow of air to said inner tube and outer chamber will be such as to insure a build-up of pressure in the inner chamber to a sufficiently higher ultimate pressure than in the outer chamber to insure holding said second valve closed under operational use, the independence of movement of said first and second valves permitting opening of said first valve without opening said second valve to measure the pressure in said outer chamber.

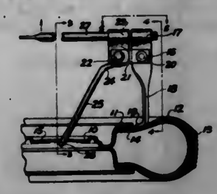
3,191,655
MOLDED ARTICLE, ESPECIALLY A TUBELESS TIRE VALVE STEM ASSEMBLY
Georgie P. McCord, Oaklandon, Ind., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 21, 1963, Ser. No. 266,922
6 Claims. (Cl. 152—427)



1. An article of manufacture comprising
a first rigid component,
a second rigid component,
one of said rigid components being composed of solid plastic,
one of said rigid components surrounding the other, and
an elastomeric component disposed between said rigid components, said rigid plastic component being molded in assembly with the other two named components and thereby in set condition maintaining said elastomeric component tightly compressed between said rigid components and forming a fluid-tight seal between said rigid components.

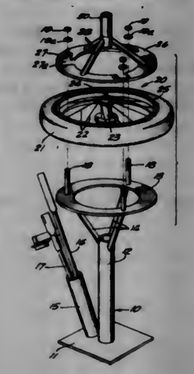
3,191,656
PORTABLE TIRE SEAL BREAKER
John Edwards, 4595 Bonnie Drive SW., Rte. 1, Warren, Ohio
Filed July 27, 1964, Ser. No. 385,344
4 Claims. (Cl. 157—1.17)

1. A portable tire seal breaker tool comprising a bifurcated body member having spaced portions arranged to engage a tire on a wheel adjacent the bead thereof, a secondary body member spaced with respect to the bifurcated member, said bifurcated body member and secondary body member having lever receiving configurations, means interconnecting the bifurcated body member and the secondary body member in pivotal arrangement, and an arm connected with said secondary body member and having a configuration on its free end engagable with



said wheel and arranged to hold said tool relative to said wheel, a lever for engagement with said lever receiving formations on said bifurcated body member and said secondary body member whereby said bifurcated body member may be moved relative to said secondary body member.

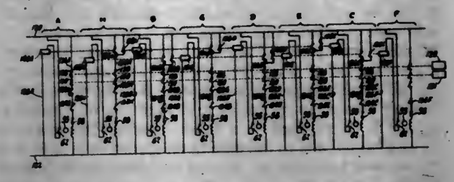
3,191,657
TIRE CHANGER FOR SPOKED WHEELS
Walter L. Lund, 13019 S. Berlin Ave., Downey, Calif.
Filed Aug. 16, 1963, Ser. No. 302,675
5 Claims. (Cl. 157—1.24)



1. A tire changer for spoked wheels comprising:
a base member having a plurality of clamp screws extending upwardly therefrom adapted to extend between the spokes of a wheel;
and a wheel hold-down member adapted for clamp engagement with said base member clamp screws having an integral tool-fulcrum cylinder portion.

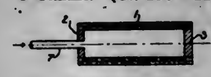
3,191,658
AUTOMATIC BURNER SEQUENCING CONTROL SYSTEM FOR MULTI-BURNER STEAM GENERATOR
Jack A. Schuss and Virginius Z. Caracristi, Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,704
10 Claims. (Cl. 158—28)

1. In a vapor generator having a furnace chamber, a burner system including a plurality of fuel burners positioned at predetermined points in said furnace chamber and burner operating means associated with each of said burners, a burner sequencing control system including means for simultaneously imparting actuating signals to the operating means of a pair of burners in said burner system, means for advancing the actuating signals from said previously actuated burner operating means to the remaining burner operating means in paired sequenced progression, each of said signals being adapted to actuate the operating means of half of the burners in said



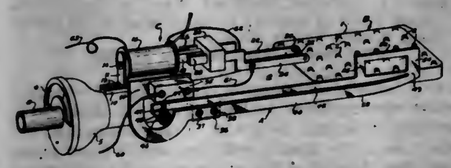
system, and means for effecting actuation of all of the remaining operative burner operating means by one of said actuating signals upon cessation of the progression of the other actuating signal.

3,191,659
RADIANT GAS BURNER
Gerhart Weiss, Flushing, N.Y., assignor to American Thermocatalytic Corporation, Mineola, N.Y., a corporation of New York
Filed Apr. 7, 1958, Ser. No. 726,720
5 Claims. (Cl. 158—116)



1. In a combustion apparatus, a closed, hollow rigid body to which a combustible gas-air mixture is supplied, said body having a combustion wall forming an exterior surface of said hollow body and comprising discrete, amorphous, inorganic, ceramic fibers arranged and bonded to each other at an elevated temperature to form a self-supporting, homogeneous, porous wall structure having opposed surfaces, the fibers on the exterior surface being adapted to incandesce and remain mechanically and thermally stable and said exterior wall structure being adapted to remain stable when said wall surface layer is maintained for prolonged period of time at high operating temperature, said pores being oriented generally in the direction between said surfaces to permit gas flow through said wall in the directon toward said one incandescent exterior surface from the other surface, and means for conducting a gas-air mixture into said closed hollow body so it may flow through said wall in said direction.

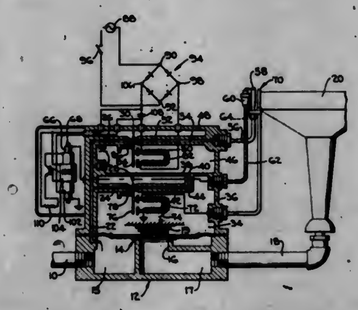
3,191,660
SAFETY FLAME DETECTOR
Harry A. Mudd, Clayton, Mo., assignor to McQuay-Norris Manufacturing Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 7, 1963, Ser. No. 263,597
4 Claims. (Cl. 158—122)



1. A safety flame detector responsive to flame temperature to operate a switch in an electric control for a fuel burner, the improvement in said safety flame detector comprising, a single plate-like element formed from a strip of sheet material and adapted to be mounted along side a fuel burner, said element having a heat sensitive end and

elongated fixed and movable jaws separated by a slot extending from one end of said plate-like element to said heat sensitive end and interconnected at said heat sensitive end and open at said one end, said jaws extending to a location away from a zone heated by burning fuel, a bridge on said element at said heat sensitive end formed in said plate-like strip and having legs at spaced points on the adjacent ends of said fixed and movable jaws, one leg being connected at said interconnected end and a second leg spaced therefrom and connected to said movable jaw, stationary means for mounting said fixed jaw to position said bridge to be exposed to a flame whereby changes in size of said bridge due to increase in temperature of said bridge moves said movable jaw toward said fixed jaw to actuate a switch.

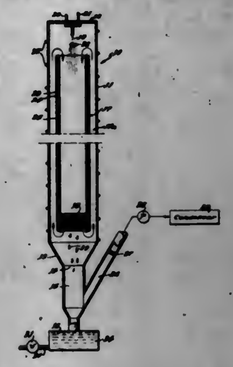
3,191,661
ELECTRIC IGNITION GAS CONTROL SYSTEM
William A. Ray, North Hollywood, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Apr. 11, 1963, Ser. No. 272,405
9 Claims. (Cl. 158—125)



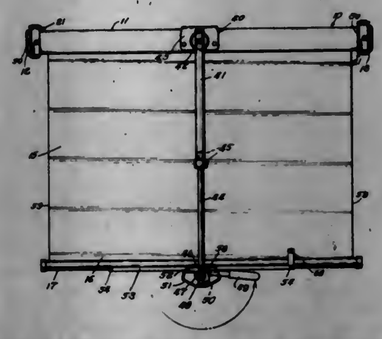
2. In a control of the character described, a casing having an inlet chamber and a first opening connectable to a pilot burner and a second opening connectable to a main burner, said casing having a first chamber and a second chamber, pressure-operated valve means defining a part of said inlet chamber and a part of said second chamber for controlling gas flow between said inlet chamber and said second opening, first pilot valve means for alternately communicating said first chamber either with said inlet chamber or said first opening, second pilot valve means for alternately communicating said second chamber either with said inlet chamber or to said first chamber.

3,191,662
CONTINUOUS SOLUTION CONCENTRATOR
Kenneth J. Schneider, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 18, 1962, Ser. No. 210,865
2 Claims. (Cl. 159—3)

1. A solution concentrator comprising an elongated vertical stationary first enclosure having an impermeable thermally conductive long wall, a second elongated stationary enclosure open at both ends and of lesser dimensions than the first enclosure, coaxially disposed therein and radially spaced therefrom, thereby defining an open coaxial vertical space between the enclosures, the said space being in communication with the space within the said second enclosure at both ends thereof, the said second enclosure having a long impermeable wall of low thermal conductivity, a spray nozzle adjacent the top of the first enclosure disposed to direct a spray into the second enclosure, an atomizing gas line and a solution line both leading from the outside to the spray nozzle, the first enclosure having an opening in its bottom, and means for drawing vapor out of the concentrator at a location below the lower end of the second enclosure.

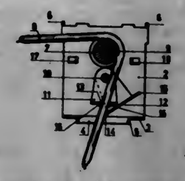


3,191,663
PROJECTION SCREEN
Hillard J. Bieschke, Schiller Park, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois
Filed July 26, 1962, Ser. No. 212,672
6 Claims. (Cl. 160—24)



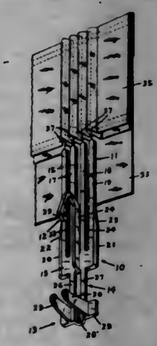
1. In a wall-mounted picture screen apparatus including a casing and a picture screen having an inner portion secured to said casing, said screen being selectively extendible from the casing and having an outer portion, apparatus for tautly retaining the screen in an extended arrangement comprising: a telescoping supporting standard pivoted to the casing and having a connecting portion, said standard being biased toward said screen-holding arrangement; means for selectively locking said standard in a screen-holding arrangement wherein said connecting portion is spaced from said casing a distance substantially similar to the distance that said outer portion of the screen is spaced from the casing when the screen is in said extended arrangement; means on the standard selectively engaging said outer portion of the screen for holding the screen tautly in said extended arrangement; and means on the screen for releasably holding the standard against the bias thereof when the screen is in a retracted position substantially fully within the casing.

3,191,664
LOCKING DEVICE FOR LIFT MEANS, SUCH AS FOR EXAMPLE LIFT CORDS OR LIFT TAPES OF A VENETIAN BLIND, A CURTAIN OR THE LIKE
Jozefus C. Harkmans, Rotterdam, Netherlands, assignor to Hunter Douglas International (Quebec) Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed June 26, 1961, Ser. No. 119,643
Claims priority, application Netherlands, July 4, 1960, 253,400
4 Claims. (Cl. 160—173)



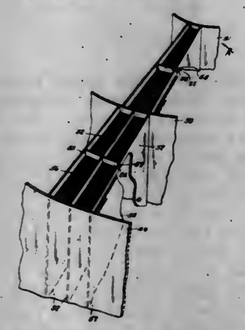
1. A locking device for lift means such as cords and tapes of window blinds, said locking device operating to automatically lock said lift means when said lift means is released by a person and comprising a housing, pivot means mounted in said housing, first and second generally U-shaped locking members having sides and a bottom wall connecting said sides, said first member being pivotally mounted on said pivot means about an axis extending transversely through said sides of said first member, said second locking member being pivotally mounted about an axis extending transversely through said sides of said second locking member, said first and second locking members being pivotable in the same plane with the bottom wall of said first locking member inscribing an arc radially inward from the arc inscribed by the bottom wall of said second locking member, the bottom wall of said first locking member comprising a through opening adapted to receive therein a lift means, the space between said arcs being such that said first and second locking members are adapted to clamp a lift means between the respective said bottom walls with said bottom walls being substantially parallel to each other, a lift means guide mounted in said housing and adapted to guide a lift means through said housing.

3,191,665
PLEATER HOOK
Charles H. Rosenbaum, Baltimore, and Henry Znamirowski, Ellicott City, Md., assignors to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed Dec. 18, 1962, Ser. No. 245,616
2 Claims. (Cl. 160—348)



1. A plastic pleater hook, comprising a base, four parallel, resilient, elongated pleater fingers integral with said base and projecting upwardly therefrom, a supporting arm projecting from said base and extending upwardly behind said fingers, said supporting arm having a drape-hanging, hook-like formation at the free end thereof, a pinch clip having a deformable body and a pair of pleat retaining and locking arms integral with and projecting from said body, said pleat retaining arms being toed-in toward each other when said body is undeformed and being movable into substantially parallel position upon predetermined manual deformation of said body, and suspending means integral with said base and said body for holding said pinch clip beneath said base and with said pleat retaining arms in substantial alignment with the spaces between respective outer pairs of said pleating fingers, said suspending means being bendable to permit said pinch clip to be moved from a position beneath said base to a position behind said base and, upon said predetermined deformation of said body, to a position in which said pleat retaining arms project into said respective spaces, a portion of said pleat retaining arms projecting in front of said pleating fingers in said last mentioned position of said pinch clip, said pleat retaining arms, upon release of said body, toeing-in to lock said pinch clip in said last mentioned position thereof, said body having finger engageable portions of the outsides of said pleat retaining arms and a thumb engageable portion between said pleat retaining arms to permit deformation of said clip by manually engaging said body with two fingers on one face and the corresponding thumb on the other face.

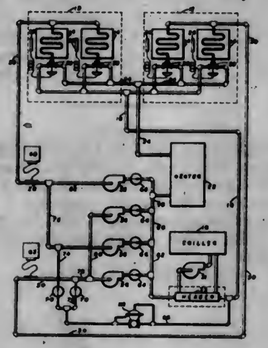
3,191,666
REGENERATIVE FLUID HEATER
Herbert Brandt, Westphalia Vahlberg, Germany, assignor to Apparatebau Rothemuhle, Dr. Brandt & Co., Rothemuhle uber Olpe, Westphalia, Germany
Continuation of abandoned application Ser. No. 752,616, Aug. 1, 1958. This application Nov. 22, 1963, Ser. No. 325,566
5 Claims. (Cl. 165—4)



1. A regenerative fluid heater having a durable radial seal and substantially free from dead sectors, said heater comprising a cylindrical regenerator chamber divided into sectors through which may pass the fluid to be heated and the heat-providing fluid, inflow and outflow members for the respective fluids, means for causing relative rotation of said regenerator chamber with respect to said inflow and outflow members, and sealing means between adjoining cross-sections of the regenerator chamber and adjacent inflow and outflow members, said sealing means being formed by providing the cylindrical regenerator chamber with coaxially equi-spaced cylindrical walls to form separate annular chambers, radially dividing the annular chambers into segments by means of sector walls so arranged that the angles between adjacent sector walls are equal, subdividing each of said segments of the annular chambers into narrow cells by means of equi-spaced

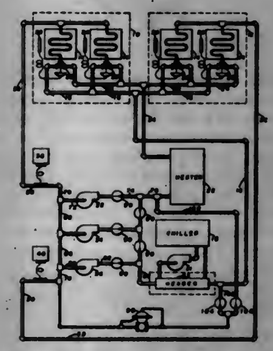
radial partitions the edges of which lie in the same plane as that formed by the radial chamber dividers and serving as sealing edges against comparatively narrow radial sealing strips provided between the inflow and outflow members for the fluid to be heated and the fluid providing the heat and the surfaces of the regenerator chamber, thereby eliminating the dead sectors which hitherto shut off flow through some 17 percent of the entire heat exchange surfaces, the mean circumferential width of the narrow cells formed by the radial partitions being approximately the same in all segments of the inner and outer annular chambers, and packets of heat storing elements filling said cells and having fluid passages between them, the edges of said heat storing elements terminating somewhat short of the plane of the seal and forming no part of said seal.

3,191,667
AIR CONDITIONING SYSTEM AND PUMP CONTROLS THEREFOR
John W. Lorenz, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Dec. 29, 1960, Ser. No. 79,305
3 Claims. (Cl. 165—22)



1. In an air conditioning system including first and second zones to be conditioned, a plurality of heat exchange units in each of said zones, a first conduit means for supplying a warm heat exchange fluid to each of said heat exchange units in each of said zones, a second conduit means for supplying a cold heat exchange fluid to each of said exchange units in each of said zones, separate valve means connected to each of said heat exchange units and to said first and second conduit means to selectively supply warm or cold heat exchange fluid to said heat exchange units as required, a heater, a cooler, means connecting said heater to said first conduit means, means connecting said cooler to said second conduit means, the improvement comprising: a first common return conduit means operably connected to each of said heat exchange units of said first zone for returning simultaneously spent warm and cold heat exchange fluids therefrom; a second common return conduit means operably connected to each of said heat exchange units of said second zone for returning simultaneously spent warm and cold heat exchange fluids therefrom; a first pump operably connected to said first common return conduit means and said heater; a second pump operably connected to said first common return conduit means and said cooler; a third pump operably connected to said second common return conduit means and said heater; a fourth pump operably connected to said second common return conduit means and said cooler; and control means for energizing said first pump when the temperature of the heat exchange fluid in said first common return conduit means is above a predetermined value and for energizing said second pump when the temperature of the heat exchange fluid in said first common return conduit means is below a predetermined value, and for energizing said third pump when the temperature of the heat exchang fluid in said second common return conduit means is above a predetermined value and for energizing said fourth pump when the temperature of the heat exchange fluid in second second common return conduit means is below a predetermined value.

3,191,668
PUMP CONTROL SYSTEM
John W. Lorenz, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Dec. 29, 1960, Ser. No. 79,371
6 Claims. (Cl. 165—22)



1. In an air conditioning system including first and second zones to be conditioned, a plurality of heat exchange units in each of said zones, a first conduit means for supplying a warm heat exchange fluid to each of said heat exchange units in each of said zones, a second conduit means for supplying a cold heat exchange fluid to each of said exchange units in each of said zones, separate valve means connected to each of said heat exchange units and to said first and second conduit means to selectively supply warm or cold heat exchange fluid to said heat exchange units as required, a heater, a cooler, means connecting said heater to said first conduit means, means connecting said cooler to said second conduit means, the improvement comprising: a first common return conduit means operably connected to each of said heat exchange units of said first zone for returning simultaneously spent warm and cold heat exchange fluid therefrom; a second common return conduit means operably connected to each of said heat exchange units of said second zone for returning simultaneously spent warm and cold heat exchange fluid therefrom; and thermostatically controlled pump means connected to both of said common return conduit means to return warm heat exchange fluid from said common return conduits predominately to said heater and cold heat exchange fluid predominately to said cooler in response to temperature of the heat exchange fluid in the respective common return conduit means.

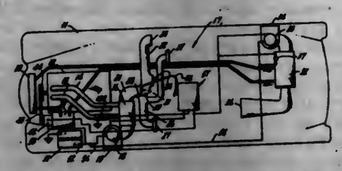
3,191,669
AUTOMATIC VEHICLE TEMPERATURE CONTROL
Dale E. Johnson, 1619 6th St.; Allen E. Hert, 1001 R St.; and Hubert H. Sakel, R.R. 3, Box 274, all of Bedford, Ind.
Filed May 21, 1962, Ser. No. 196,179
5 Claims. (Cl. 165—25)

1. In a vehicle having a compartment, a motor heating a fluid, and an air heater heated by said fluid with a fluid conduit connected between said heater and motor to convey said fluid in a fluid path through said motor and heater, and having an electric fan motor and fan for moving air through said heater and into the compartment, a compartment temperature control circuit comprising:

said fan motor;

a source of electrical energy coupled to said fan motor;

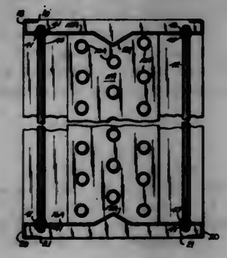
and a first temperature responsive electrical switch means coupled to said source and to said fan motor to complete the circuit, said first switch means being



located in said compartment remote from said heater to respond to compartment temperatures to open the circuit at compartment temperatures above a predetermined level;

and second temperature responsive electrical switch means in series with said first switch means and located to respond to temperature of said fluid in said conduit to open said circuit at a fluid temperature below a predetermined level.

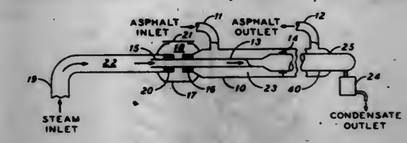
3,191,670
FINNED HEAT EXCHANGERS
William C. Jones, Medford, Mass., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1961, Ser. No. 126,263
1 Claim. (Cl. 165—76)



A heat exchanger comprising a plurality of spaced-apart, hollow tubes having parallel axes, a plurality of spaced-apart, parallel, plate-type fins around and in contact with said tubes, said fins having notches in the centers of their ends, casing walls of sheet metal in contact with said ends of said fins and having ribs in their centers shaped complemental to the shape of said notches in said notches, and tie rods extending through said walls on opposite sides of said fins, the ends of said rods being threaded, and nuts on said threaded ends on opposite sides of said walls.

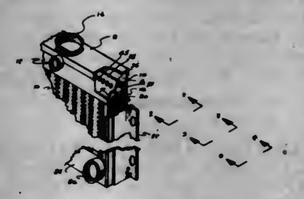
3,191,671
PIPELINE HEATING SYSTEM
George H. Horne, Menlo Park, and Milton Ludwig, Kensington, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Sept. 23, 1957, Ser. No. 685,627
9 Claims. (Cl. 165—84)

1. In a substantially straight, elongated pipeline for conveying heated asphalt or similar fluent material that will partially solidify along the length of said pipeline at ambient temperatures, said pipeline having an inlet at its inner end and an outlet at its outer end, an internal conduit for heating fluid extending throughout said pipeline and secured thereto only at its outer end, means for supplying heating fluid to the inlet of said conduit, means for withdrawing spent heating fluid at the outer end of said conduit, means for preventing lateral distortion of said pipeline and said conduit relative to each other and to maintain said pipeline substantially straight, comprising a single slidable fluid-tight connection between said con-



duit and said pipeline adjacent to their respective inlets and means for maintaining said conduit in progressive longitudinal tension relative to said pipeline and independently of changes in temperature in said fluent material to prevent buckling distortion of said heating fluid conduit within said pipeline due to longitudinal expansion and contraction thereof relative to said pipeline.

3,191,672
INSERTABLE SLAG TRAP ADAPTER FOR AUTOMOBILE RADIATORS
Burl L. Logan, Blythe, Calif., assignor to Walking Stick Radiators Inc., Blythe, Calif., a corporation of California
Filed Mar. 26, 1962, Ser. No. 182,386
1 Claim. (Cl. 165—119)

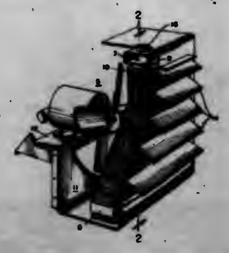


In an automobile radiator having an upper manifold which has at least two vertical sides and a water inlet, a lower manifold which has a water outlet, and a plurality of vertical tubes leading from the bottom of the upper manifold to the lower manifold, a slag trap and coolant flow distributor, comprising: an elongated piece of fluid impervious sheet metal bent to form a longitudinal ridge of two closely positioned walls each with a horizontal row of closely spaced openings thus providing a narrow elongated entry space between said walls, the elongated piece being bent outwardly from said walls to form two horizontal webs extending to the two vertical sides of the upper manifold and then bent downwardly to form vertical flanges in contact with said manifold sides, means securing said flanges in water-tight sealed relationship with said manifold sides, said trap extending the length of the interior of the upper manifold, the openings in the walls lying above the webs at each side of the ridge and having a total area approximately the same as the area of the water inlet, whereby said webs and flanges form margins of a pool immediately above said vertical tubes and below said narrow entry body whereby to provide an even coolant flow from said pool through the various vertical tubes of the radiator and the slag and scale particles entering the water inlet to the upper tank will tend to be deposited on the two horizontal webs below the level of the two horizontal rows of openings.

3,191,673
SECTIONALIZED HEAT-EXCHANGER CORE-UNIT

Fred M. Young, Racine, Wis., assignor to Young Radiator Company, Racine, Wis., a corporation of Wisconsin

Filed Apr. 25, 1962, Ser. No. 190,085
4 Claims. (Cl. 165—151)



1. A heat-exchanger core-unit, for use in a steam-heating system which is subject to constantly fluctuating pressures and temperatures, comprising:

(a) a pair of headers, each of one piece, elongated, having a single chamber of rectangular cross-section,

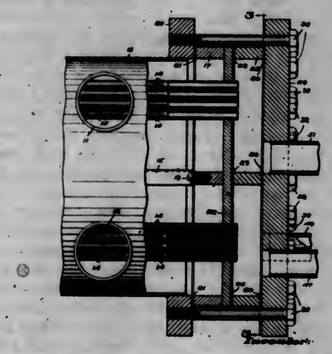
(b) a battery of tubes in multiple staggered rows bonded at their ends to the respective headers and disposing the headers in vertically-spaced relationship with fluid flow in one direction between the two headers, and

(c) a vertical series of transverse fins divided into multiple vertical groups approximately of the same length radially of the tubes, and embracing approximately the same number of tubes with the oppositely-spaced ends of the groups of fins disposed in common vertical planes extending throughout the entire distance between the headers and with said ends being inclined between the staggered tubes and sufficiently spaced to avoid buckling of said fins.

3,191,674
SHELL-AND-TUBE TYPE HEAT EXCHANGERS

Douglas K. Richardson, Staunton, Va., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 18, 1963, Ser. No. 288,648
2 Claims. (Cl. 165—158)

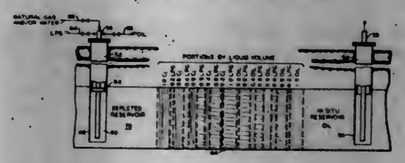


1. A heat exchanger comprising a shell, circular in section, having an open end, and having water inlet and outlet tubes; a metal inner manifold, circular in section, extending across said open end concentric therewith; a metal outer manifold, circular in section, and having substantially the same diameter as said inner manifold, spaced outwardly from said inner manifold concentric therewith; said manifolds having similar, aligned diametral ribs, having similar annular rims, and each having a plurality of spaced-apart ribs extending perpendicular to its respective diametral rib and extending to its respective rim, corresponding ones of said spaced-apart ribs being aligned, each of said manifolds having an equal number of hollow portions between its respective ribs and rim with one half of its hollow portions being on one side of its respective diametral rib and the other half of its hollow portions being on the other side of its respective diametral rib; a copper tube sheet, circular in section, and having substantially the same diameter as said manifolds extending between said manifolds concentric therewith; a plurality of copper tubes within said shell; said copper tubes having U-shaped bends and extending in straight lengths from said bends with one half of their ends extending through said hollow portions of said inner manifold that are on said one side of its respective diametral rib, through said tube sheet, and into said hollow portions of said outer manifold that are on said one side of its respective diametral rib, and with the other half of their ends extending through said hollow portions of said inner manifold that are on said other side of its respective diametral rib, through said tube sheet, and into said hollow portions of said outer manifold that are on said other side of its respective diametral rib, said ends of said copper tubes being brazed to said tube sheet; a metal head, circular in section, at the outer side of said outer manifold, concentric therewith; means for attaching said head to said shell; means comprising a plurality of bolts extending through said head and said ribs of said outer manifold, and threaded into said ribs of said inner manifold, for clamping said manifolds to said head with said tube sheet clamped between said rims and ribs; refrigerant inlet tubes extending into said head and connecting with said hollow portions of said outer manifold that are on said one side of its respective diametral rib; and refrigerant outlet tubes extending into said head and connecting with said hollow portions of said outer manifold that are on said other side of its respective diametral rib.

3,191,675
RECOVERY OF OIL

Ralph E. Gilchrist, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 30, 1961, Ser. No. 120,999
13 Claims. (Cl. 166—9)



1. In a miscible phase displacement process for producing oil from an oil-bearing reservoir penetrated by an injection well and a production well wherein a quantity of viscosity reducer miscible with the reservoir oil is injected thru said injection well into said reservoir to establish a transition zone between the oil and said viscosity reducer and driving fluid is injected thru said injection well behind said viscosity reducer to drive same, along with oil, thru said reservoir toward said production well, the improvement comprising establishing said transition zone by injecting said quantity of viscosity reducer in separate portions alternately with separate portions of heavy oil compatible with the reservoir oil and with said viscosity reducer, said portion of viscosity reducer increasing gradually in volume from a portion less than 0.25 of the volume of the first portion of oil and the portions of oil gradually decreasing in volume until the last portion of oil is less than 0.25 of the volume of the adjacent portion of viscosity reducer.

3,191,676
USE OF PHOSPHATES IN A WATER-FLOODING PROCESS

H Robert Froning, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

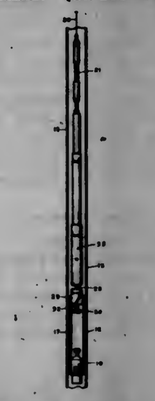
No Drawing. Filed Nov. 14, 1962, Ser. No. 237,742
13 Claims. (Cl. 166—9)

3. In a method of waterflooding a carbonate-containing oil-bearing earth formation penetrated by at least one injection well and at least one producing well in which method a phosphate is included in the flooding water to increase oil recovery from said producing well, the improvement comprising the addition to said water before it is injected into said at least one injection well of sufficient of a water-soluble carbonate to provide a molar ratio of carbonate to phosphate of at least about 0.3 to 1, and sufficient carbonate being added to provide a pH of at least about 6 in said water.

3,191,677
METHOD AND APPARATUS FOR SETTING LINERS IN TUBING

Myron M. Kinley, 103 Maple Lane, Chickasha, Okla.

Filed Apr. 29, 1963, Ser. No. 276,272
5 Claims. (Cl. 166—14)



1. The method of repairing tubing in a well under pressure which includes the steps of lowering a retrievable tubing stop through a lubricator into the tubing and setting it beneath the point to be repaired, then lowering a malleable liner through the lubricator into the tubing and setting it on the tubing stop, then lowering, on a wire line, an explosive jar and an expander unit through the lubricator into the tubing until the expander unit is in place on the liner, manipulating the wire line to cause the explosive jar to deliver a hammer blow upon the expander unit to expand a portion of the liner into tight engagement with the tubing.

3. Apparatus for securing a malleable liner in tubing in a well including the combination of a wire line, an explosive jar connected to and suspended on the wire line, and a retrievable expander unit connected to and suspended by the explosive jar, said explosive jar having an explosive charge, a firing pin and cap for firing the charge, means for actuating said firing pin in response to manipulation of said wire line, and an explosive actuated hammer, and said expander unit having an anvil adapted to receive blows from said hammer and an expander actuated by said anvil, the arrangement being such that as a blow is delivered to said anvil the expander forces a portion of the liner outwardly radially into tight engagement with the tubing.

3,191,678
METHOD AND APPARATUS FOR TREATING AN EARTH FORMATION PENETRATED BY A WELL

Foster R. Hinson, Houston, Tex., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Apr. 2, 1962, Ser. No. 184,446
17 Claims. (Cl. 166—36)



1. A method of increasing the productivity of a formation penetrated by a well comprising the steps of inserting a first plug into the well, pouring a liquid explosive upon the first plug, inserting a second plug attached to a pressure sensitive bomb into the well, applying pressure to the second plug until the first plug reaches a predetermined level, and applying further pressure to the second plug until the bomb reaches the first plug and detonates, thereby detonating the liquid explosive.

17. A well device comprising a first plug, a pipe attached to the first plug, said first plug having a passageway therethrough in contact with the interior of the pipe, a second plug positioned within the pipe, a rupturable disc attached to the bottom of the pipe and closing the end of the pipe, and a rod slidably mounted on said pipe and positioned opposite the disc, whereby the second plug may force any contents from the pipe after the rod is pushed through the rupturable disc allowing the contents to flow from the pipe.

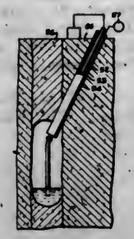
3,191,679
MELTING PROCESS FOR RECOVERING BITUMENS FROM THE EARTH

Wendell S. Miller, 1341 Comstock Ave., Los Angeles 24, Calif.

Original application Apr. 13, 1961, Ser. No. 113,577, now Patent No. 3,131,914, dated May 5, 1964. Divided and this application Apr. 20, 1964, Ser. No. 360,961
2 Claims. (Cl. 166—39)

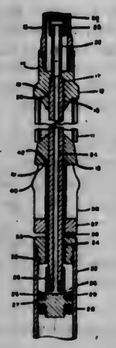
1. The process for removing from the earth a combustible and meltable solid bitumen emplaced in a formation in which a bituminous stratum communicates with the surface of the earth and adjoins a second non-combustible and infusible formation, comprising the steps of producing in said second formation a bore hole communication with said bituminous formation at a point remote from the surface of the earth and sufficiently remote from the said bituminous formation near the surface of the earth to provide thermal isolation of said formation from said bore hole, inserting in said bore hole conduit means communicating with said bituminous formation at a point remote from the surface of the earth, supplying oxidizing gas to said formation at a

point remote from the surface of the earth, igniting bitumen in said bituminous formation into in situ combustion with said oxidizing gas, melting portions of said



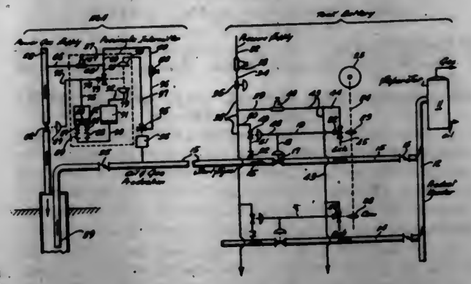
bitumen by means of the heat produced by said in situ combustion, removing said melted bitumen through said conduit by means of the gases produced by said combustion.

3,191,680
METHOD OF SETTING METALLIC LINERS IN WELLS
Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Mar. 14, 1962, Ser. No. 179,609
4 Claims. (Cl. 166—46)



1. A method for setting a metallic liner in sealed engagement with the wall of a previously unlined portion of a well comprising mounting a longitudinally corrugated tube of a malleable metal on a means for lowering said tube into said well, said tube having an internal cross-sectional perimeter between about 98 and about 110 percent as great as the final desired internal cross-sectional perimeter of said liner, applying around said corrugated tube a mat of glass fibers, saturating said mat with a liquid resin capable of being set to a hardened state, lowering into said well to the desired level for said liner said tube with its surrounding layer of resin-saturated mat of glass fibers, expanding said tube into substantially cylindrical shape in contact with the wall of said previously unlined portion of said well while said resin is in a liquid state, curing said resin to a hardened state, and withdrawing from said well said means for lowering said tube into said well, whereby a metallic liner is formed and bonded securely to earth formations penetrated by said well.

3,191,681
GAS LIFT CONTROL SYSTEM
Lawrence M. Hubby, Bellaire, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 6, 1962, Ser. No. 221,790
6 Claims. (Cl. 166—52)



1. A gas lift control system for a plurality of wells comprising in combination, first conduit means for receiving and transmitting pneumatic fluid under pressure from a source of pneumatic pressure, second conduit means for receiving and transmitting gas under pressure from a source of high pressure gas to the wells of said system, a central controller for providing pneumatic control signals in the form of pressure pulses and having said first conduit means connected thereto, a plurality of wells each having a cyclically operable timer associated therewith to control the duration of application of said high pressure gas to said well, a tank battery having flow lines thereto from each of said wells, means for applying said pneumatic signals from said central controller to each of said flow lines in sequence, pressure responsive means adjacent to each of said wells and being connected to each of said flow lines adjacent to each of said timers, and means actuated by said pressure responsive means for initiating a cycle by the corresponding one of said timers.

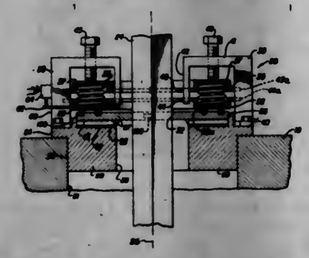
3,191,682
HYDRAULICALLY-ACTUATED WELL PACKERS
Chadleigh B. Cochran, Houston, Tex., assignor to Cicero C. Brown, Houston, Tex.
Filed May 31, 1961, Ser. No. 113,943
12 Claims. (Cl. 166—120)



1. A well packer adapted to be lowered and set within a well pipe, including, an elastic packing element, an upper abutment above said packing element, a lower abutment below said packing element and

upper and lower abutments each having a pair of parallel openings which are longitudinally aligned to form a pair of longitudinal parallel passages extending through the packer structure, a first tubular support extending through one of said passages and secured to the upper abutment, means releasably connecting the tubular support to the lower abutment, a second tubular support disposed within the other of said passages and secured to the lower abutment, said second support being slideable within the opening in the upper abutment, pipe-anchoring means mounted on the supports below the packing element, hydraulically-actuated means mounted on the supports below the pipe-anchoring means and above the lower abutment for setting said anchoring means and thereafter deforming the packing element into sealing position, and locking means engageable with said second support for locking the anchoring means against movement in a direction which would unset said anchoring means to thereby lock the anchoring means and packing element in its set position.

3,191,683
CONTROL OF WELL PIPE ROTATION AND ADVANCEMENT
Ford I. Alexander, 340 Arboleda Drive, Arcadia, Calif.
Filed Jan. 28, 1963, Ser. No. 254,178
8 Claims. (Cl. 166—178)



1. For use in the method of rapidly accelerating a pipe string stuck in a well, means by and through which rotation is transmissible for forwardly rotating the pipe at the well head to twist and place the string in torsion within the well without restricting vertical movement of the string, said means including a coupling releasable to allow counter rotation of the pipe at the well head substantially faster than forward rotation whereby the pipe string may be caused to untwist rapidly at different depths in the well, and actuator apparatus free of the string for exerting loading yieldably opposing said releasing of the coupling, said actuator apparatus including a force adjusting device for varying said loading to be applied for opposing said coupling release, said coupling comprising split sections sized for assembly about the pipe at the well head and in torque transmitting relation therewith.

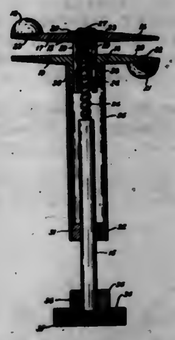
3,191,684
TUBING HOLD-DOWN TOOL
Forrest C. Pittman and Orum E. Seay, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,954
9 Claims. (Cl. 166—216)

1. In a tool for rotatably supporting tubing in a well casing, the combination of: a mandrel having means for attaching to the tubing, first means slidably and rotatably mounted on said mandrel, second means slidably and rotatably mounted on said mandrel, means on said first means for resiliently engaging the casing and frictionally resisting movement of said first means relative to the casing, means on said mandrel and first means for selectively and releasably interconnecting and locking said first means to said mandrel, casing engaging means mounted on said second means for movement toward and away from the casing upon axial movement of said casing engaging means relative to said second means, means interconnecting said



casing engaging means and said first means whereby relative axial movement between said first means and said second means causes the said movement of said casing engaging means toward and away from the casing, and said mandrel having means for engaging said second means for rotatably supporting said mandrel.

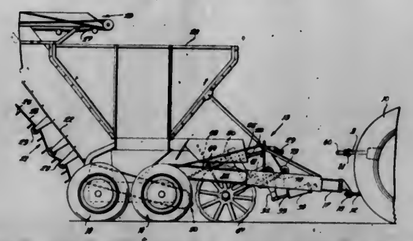
3,191,685
SPRINKLER HEAD SHUT OFF TOOL
William R. Warne, 833 E. Ellsworth Ave., Apt. 206, Denver, Colo.
Filed Jan. 18, 1963, Ser. No. 252,491
3 Claims. (Cl. 169—1)



1. A device for closing off the nozzle of a sprinkler head comprising: a tubular handle member; a shaft extending axially through said handle member and projecting upwardly therefrom and downwardly therebelow; a lower head member fixedly mounted on the upper extremity of said handle member through which said shaft is threaded; and upper head member rotatably mounted on the upper extremity of said shaft; a prying arm projecting horizontally from each of said heads; a closing arm projecting horizontally from each of said heads opposite to and in alignment with the prying arm on that head; a nozzle closing plug on each closing arm, the plug on the closing arm of the upper head facing upwardly and the plug on the closing arm of the lower head facing downwardly; means for rotating said shaft for forcing said

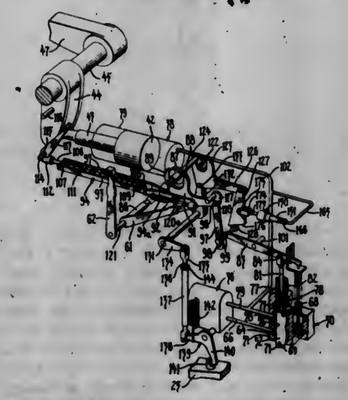
heads toward and away from each other; and means for maintaining the prying and closing arms of the second head directly over and in vertical alignment with the closing and prying arms, respectively, of the second head.

3,191,686
BEET HARVESTER WITH STEERABLE PULLER WHEELS
Charles V. Everett, Warrenville, and Everett M. Clark, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 26, 1962, Ser. No. 226,285
13 Claims. (Cl. 171—58)



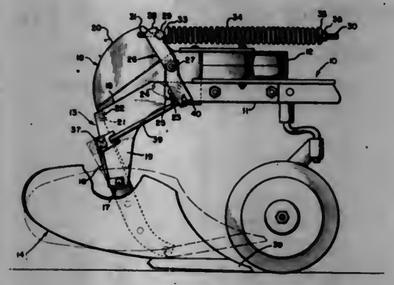
1. Beet harvesting apparatus including a mobile frame having laterally spaced supporting wheels thereon arranged to ride in furrows between crop rows, longitudinally extending linkage pivotally connected at one end to said frame on a vertical axis for lateral swinging relative thereto, a pair of laterally spaced puller members carried by the other end of said linkage for lateral swinging therewith, a hydraulic cylinder carried by said frame and operatively connected to said linkage for laterally swinging said linkage upon actuation of said cylinder to steer said puller wheels in the crop row.

3,191,687
AUTOMATIC DRAFT CONTROL AND COMPENSATING SYSTEM FOR TRACTORS
Ernest V. Bunting, Detroit, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Apr. 25, 1962, Ser. No. 190,164
7 Claims. (Cl. 172—9)



1. In a tractor having a hydraulic actuator for raising and lowering an implement hitch linkage pivoted on the tractor, the combination of valve means movable from a neutral position to control the supply of fluid to and exhaust of fluid from the actuator, control means including a variable linkage connected to said valve means shiftable in response to a predetermined increase in draft load on the hitch linkage to impart positive movements of said valve means away from said neutral position to effect the supply of fluid to the actuator and consequent increase in fluid pressure for raising the hitch linkage, and hydraulic compensating means coupled to the actuator to adjust the effective length of said linkage in response to changes in fluid pressure in the actuator, said compensating means acting on said valve means in opposition to said control means so as to dampen the control affect of the latter.

3,191,688
CUSHION SPRING TRIP UNIT FOR MOLDBOARD PLOWS
James Morkoski, Clarendon Hills, and Gerald G. Ward, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 9, 1964, Ser. No. 350,240
6 Claims. (Cl. 172—269)



1. In a trip beam plow having a traveling supporting frame and a plow-carrying standard assembly, means mounting the standard assembly on the supporting frame for tripping of the entire assembly in one direction in response to abnormal draft conditions encountered by the plow comprising, a lever mounted on the frame by pivot means accommodating longitudinal rocking of the lever on a transverse axis and connected to the standard assembly for angular swinging movement of the latter in one direction rearwardly and upwardly about said axis, spring means connected between the frame and said lever and opposing the tripping of the plow-carrying standard assembly, said standard assembly including an upper frame-connected section and a lower plow-carrying section, and pivot means connecting said plow-carrying section to said frame-connected section for angular swinging movement of the plow-carrying section in a direction opposite to the direction of tripping of said standard assembly, said spring means being operatively connected to said plow-carrying section to oppose said angular swinging movement thereof.

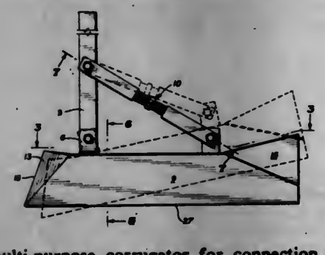
3,191,689
SPRING FORMED TOOL WITH A PIVOTAL MOUNTING
Cornelis van der Lely, Zug, Switzerland, assignor to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed Mar. 16, 1961, Ser. No. 96,159
Claims priority, application Netherlands, Apr. 8, 1960, 250,345
3 Claims. (Cl. 172—687)

1. A harrow comprising a frame, a plurality of tines, each tine including a substantially vertically disposed ground-working portion, a substantially horizontal supporting portion having at least one horizontally disposed loop between said supporting portion and ground-working portion, said supporting portion extending generally forwardly of the upper part of said ground-working portion, said tine including a supporting element freely



turnably mounted on said frame about a substantially vertical axis, said tine comprising a single length, torsionally deformable wire-like element.

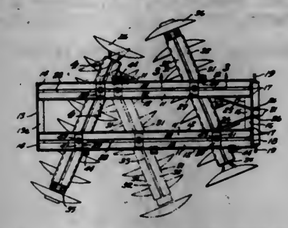
3,191,690
MULTI-PURPOSE CORRUGATOR
Isaac C. Hill, 809 E. Jackson, Riverton, Wyo.
Filed May 18, 1964, Ser. No. 368,094
3 Claims. (Cl. 172—722)



1. A multi-purpose corrugator for connection to the transverse tool bar of a tractor which comprises a pair of shanks connected to the tool bar in spaced relation to each other in combination with a corrugator, said corrugator, including a pair of side plates connected with each other along one edge to form a unit of upwardly opening, V-shaped cross-section over a portion of its length, said corrugator including integrally formed plow plates connected with the forward ends of the side plates and with each other so as to define a vertically extending cutting edge, a pair of first pivot means each connected between one side plate and one of the shanks and having a common axis to permit angular adjustment of the corrugator about such axis, a wing hinged to each side plate adjacent the rearward end thereof, adjustment means extending between said wings to simultaneously adjust the position of each wing inwardly or outwardly of the plane of each side plate, a second pivot means connected to each side plate along the upper edge thereof and rearwardly of each said first pivot means, a third pivot means connected to each shank at a point between the first pivot means and the tool bar connection therefor, and adjustment means extending between the second and third pivot means associated with each side plate for angularly adjusting the corrugator about the axis of the first pivot means.

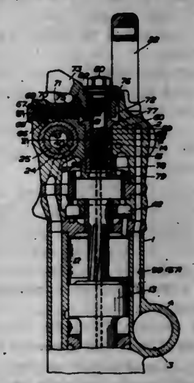
3,191,691
IMPLEMENT FRAME AND A TOOL CARRYING MEMBER AND MEANS FOR SECURING THE TWO
Clarence E. Newkirk, 227 N. Emily St., Anaheim, Calif.
Filed Sept. 30, 1964, Ser. No. 400,541
5 Claims. (Cl. 172—776)

1. Securing means for pairs of members L shaped in cross section, one pair forming an implement carrying frame structure wherein, the horizontal portion of the L is a base member and the vertical portion of an L the upstanding leg member, the pairs of members being secured in free base edge to free base edge relation but in spaced apart relation form an open channel therebetween, a second pair of L shaped in cross section angle members forming part of an implement gang frame structure, wherein the horizontal portion of the L is a base member and the vertical portion of this L a depending leg member, the pair of members being secured in free base edge to free base edge relation but in spaced apart relation to form an open channel therebetween, both of the open channels providing a guiding track means to secure the implement carrying frame structure to the gang frame structure, said securing means including a headed bolt member, the opposite end thereof having a



screw threaded portion and a screw threaded nut therefor, a first plate member positioned in abutting relation with the underside of the bolt head, said bolt projecting through the open channel of the implement carrying frame structure and through the open channel of the gang structure, the gang structure base portion positioned in juncture relation with the under side of the implement carrying frame structure base member, the open channels being positioned in register, and a second plate through which the bolt projects, is positioned on the upper side of the implement carrying frame structure base members, said open channels forming a track and guiding means for said bolt, the bolt nut securing said plates in intimate relation thereby providing rigid connection of the implement carrying frame structure and the gang structure.

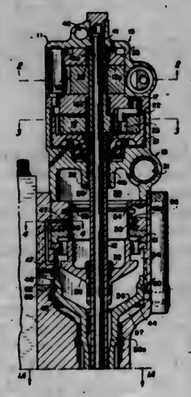
3,191,692
BACK HEAD OF PNEUMATIC TOOLS
Carl Göstа Bernhard Ekwall, Nacka, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Nov. 20, 1961, Ser. No. 153,552
13 Claims. (Cl. 173—77)



11. In control apparatus of the character described for controlling operations of a pneumatic tool, the combination which comprises a bore in said tool having an abut-

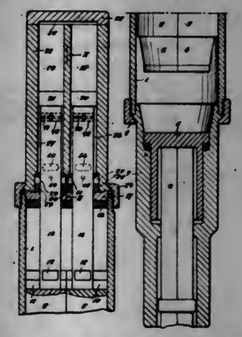
ment at one end thereof, a cylindrical member disposed in said bore, said cylindrical member having a shoulder disposed thereon for engagement with said abutment and an extended portion extending beyond said shoulder, securing means disposed on the extended portion of said cylindrical member on the side opposite said shoulder for maintaining said shoulder secured against said abutment, control means rotatably disposed on said cylindrical member in said bore, and means adjacent said control means and responsive to the different angular positions thereof around said bore for controlling the operations of said tool.

3,191,693
ROCK DRILL
Paul A. Lincoln, Bloomsbury, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed May 25, 1962, Ser. No. 197,655
3 Claims. (Cl. 173—78)



1. A rock drill comprising:
(a) a housing;
(b) a drill steel associated with said housing adjacent the longitudinal forward end thereof;
(c) a hammer piston slidably disposed within said housing adjacent the longitudinal rear end of said drill steel to deliver impact blows thereto;
(d) said hammer piston having a longitudinal centrally disposed bore therethrough;
(e) fluid actuated means for controlling the slidable movement of said hammer piston within said housing to cause said piston to deliver said impact blows to said drill steel;
(f) a first fluid port within said housing and communicating said fluid actuated means with a source of pressurized fluid; and
(g) means for supplying rotation to said drill steel independently of said slidable movement of said hammer piston;
(h) said rotation supplying means comprising fluid actuated motor means carried by said housing adjacent the longitudinal rear end thereof;
(i) a second fluid port within said housing and communicating said fluid actuated motor means with a source of pressurized fluid independently of said first fluid port;
(j) first shaft means rotatably carried within said housing adjacent said motor means to receive rotary movement from said motor means;
(k) second shaft means rotatably disposed within said housing and passing through said longitudinal bore in said hammer piston;
(l) said second shaft means being fixedly secured to said drill steel to impart rotation thereto; and
(m) gear means connecting said first and second shaft means and supplying said second shaft means with rotary movement at a speed reduced from that of said first shaft means.

3,191,694
PERCUSSIVE TOOLS
Kenneth Malcolm Elliott, High Barns, Sunderland, and George Vincent Bell, Ponteland, Newcastle upon Tyne, England, assignors to John Lyon & Co. Limited, Pallion, Sunderland, England, a company of Great Britain and Northern Ireland
Filed Mar. 5, 1962, Ser. No. 177,589
16 Claims. (Cl. 173—161)



1. A hydraulic percussive tool comprising a single anvil, two hammers reciprocable to engage said anvil, two pistons each of which is connected with a respective one of said hammers, two parallel cylinders in each of which one of said pistons is located, said cylinders having on corresponding sides of the pistons intercommunicating like spaces to constitute a closed balance chamber which is filled with hydraulic fluid whereby as one piston is forced in one direction, the other piston is correspondingly forced in the other direction, and hydraulic control means whereby spaces on the opposite corresponding sides of the pistons are alternately connectable respectively with supply and exhaust ducts for hydraulic fluid.

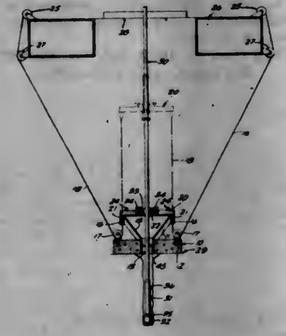
3,191,695
METHOD OF DRILLING AND LOCATING AN UNDERWATER WELL
William F. Bates, Arcadia, and Raymond A. Malott, Fullerton, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,880
9 Claims. (Cl. 175—5)

2. A method of inserting a pipe in an underwater well from a vessel on the surface of a body of water, said method comprising
(a) making up at the vessel a pipe string adapted to be closed near its lower end,
(b) closing the lower end of said pipe string,
(c) providing said pipe string with horizontally-directed unidirectional fluid discharge means above the closed lower end,
(d) lowering said pipe string from said vessel to a position near the formation beneath said body of water,
(e) positioning a well-finding unit near the lower end of said pipe string with an indicating unit on the vessel,
(f) moving at least the lower end of said pipe string and said well-finding unit relative to the formation to find the hole drilled in said formation and position the lower end of said pipe string in register thereabove, said moving step comprising the steps of pumping fluid down the pipe string and jetting it substantially horizontally out said fluid discharge



means to displace the lower end of the pipe string outwardly from its normal vertical position and scanning with the observation unit the formation traversed, and
(g) lowering said pipe string until at least the lower end thereof is in the hole.

3,191,696
OFFSHORE DRILLING SYSTEM
Robert O. Pollard, Downey, and Charles R. Ball, Jr., Ojai, Calif., assignors to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware
Filed May 16, 1958, Ser. No. 735,846
8 Claims. (Cl. 175—7)



2. Apparatus for guiding the lower end of a pipe string from a floating vessel into an opening in a submerged member comprising in combination: a submerged stationary member having a central opening therein, a yoke having a central opening and means associated therewith for engaging a portion of the lower end of said pipe string to transmit a downward force thereon, said engaging means permitting said pipe string to pass freely through said yoke downwardly, a pair of flexible cables each secured to said yoke, the cables extending upward from the submerged member to the yoke, cooperating parts on the submerged member and the yoke for laterally centering said yoke relative to said submerged member upon downward movement of said yoke, means for pulling said yoke downward including means at said vessel for tensioning the cables to thereby bring said cooperating parts into engagement when said yoke is pulled downward, and means on the floating vessel for resisting the downward pulling force exerted on said pipe string by said cables.

3,191,697
SUBSURFACE EARTH FORMATION TREATING TOOL
Marcus W. Haines, Long Beach, Calif., assignor to McGaffey-Taylor Corporation, Long Beach, Calif., a corporation of California
Original application Nov. 30, 1953, Ser. No. 394,928, now Patent No. 3,012,611, dated Dec. 12, 1961. Divided and this application May 22, 1961, Ser. No. 111,779
4 Claims. (Cl. 175—81)



1. A well tool including: a pair of elongated tubular members connected for relative axial movement; one of said members being adapted for connection with a tubing string for axial movement therewith in a well; anchor means operatively connected with the other of said members for anchoring the other of said members to the casing of the well responsive to joint axial movement of said members relative to said anchor means; first releasable means interconnecting said anchor means with said other member and releasable to allow joint axial movement of said members relative to said anchor means; second releasable means interconnecting said members for joint axial movement of said members and releasable to allow axial movement of said one member relative to said other member; and means for introducing fluid under pressure into the open formation below the well casing including a flexible tubular member connected with said one member for axial movement therewith; and a guide tube fixed to said other member; said guide tube having one end extended laterally into an opening on one side of said other member; said flexible tubular member being slidable through said guide tube so as to project therefrom into the open formation responsive to lowering of said string and said one member.

3,191,698
BLADE-TYPE DRILL BIT
Lot William Short, Dallas, Tex., assignor to Drilling & Service, Inc., Dallas, Tex., a corporation of Texas
Filed May 17, 1962, Ser. No. 195,595
10 Claims. (Cl. 175—329)

10. A drill bit comprising:
a bit body having at its upper end an axial recess and at its lower end a working face,
said working face being formed with a plurality of water grooves extending from near the center of said face to the periphery thereof,
the working face along the corresponding one side of each groove forming with the adjacent groove wall a blade-like projecting rib,

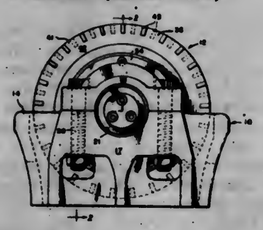
each of said ribs being set with a single row of closely spaced diamonds extending therealong and presenting abrasive cutting edges to the groove side thereof, the working face along the other side of each groove being generally flat and offset axially upwardly of



a plane transverse to the axis and passing through said abrasive cutting edges,

there being a bore through said bit body from said axial recess to each of said grooves to discharge drilling fluid into each of said grooves for high velocity flow over said abrasive cutting edges.

3,191,699
CUTTING WHEEL FOR ROCK DRILLING MACHINE
Richard J. Robbins, Seattle, and Douglas F. Wineberg, Bellevue, Wash., assignors to James S. Robbins & Associates, Inc., Seattle, Wash., a corporation of Washington
Filed Feb. 18, 1963, Ser. No. 259,273
5 Claims. (Cl. 175—374)

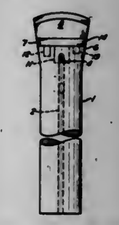


1. In a cutter for a machine having a rotary head which bores into rock so as to form a tunnel therein, said head functioning to form in the rock surface being bored a plurality of circular kerfs so as to fracture rock between a proximate pair of said kerfs in a manner to cause rock fragments to be separated from the rock being bored, said cutter acting to form a related one of said kerfs,

(a) a cutting wheel mounted on said cutter for rotary motion so as to be able to roll along the kerf being cut, said cutting wheel having a circumferential cutting edge and two circumferential outwardly tapering sides which form said cutting edge, said cutting edge with said outwardly tapering edge, said cutting edge with said outwardly tapering sides acting to form said kerf, the wheel providing a plurality of recesses in each of said tapering sides spaced at equidistant intervals of the circumference a distance greater than the maximum width of the recesses, each of said recesses being exposed to the side faces and being undercut along both lateral edges so that the recesses have a width in the plane of the side face narrower than the width in a paralleling plane which is removed inwardly therefrom, the recess in one side being staggered in relation to the recesses in the other side of the wheel,

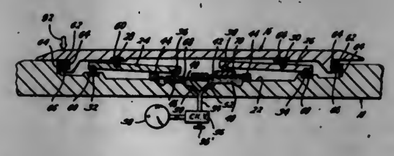
(b) a respective tooth occupying each of said recesses of said cutting wheel and being relatively hard with respect to the material of said cutting wheel, the tip of each tooth being at said circumferential cutting edge.

3,191,700
ATTACHMENT OF CARBIDE HARD ALLOYS TO STEEL TOOLS
Philip M. McKenna, Greensburg, Pa., assignor to Kennametal Inc., Latrobe, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1963, Ser. No. 271,635
4 Claims. (Cl. 175—410)



1. A carbide hard alloy faced tool, comprising a steel shank with an end face, a recess formed in that face, an alloy insert mounted in the recess, a cemented tungsten carbide cutting element brazed to said face and supported in part by said insert, the insert being formed from a high tungsten alloy consisting by weight of about 90% tungsten and 6% nickel and 4% copper and having substantially the same coefficient of thermal expansion as the carbide cutting element but having a greater elastic limit than the carbide cutting element.

3,191,701
WEIGHING APPARATUS
Tommy L. Gray, Dallas, Tex., assignor to General Electrodynamics Corporation, Garland, Tex., a corporation of Texas
Filed Dec. 24, 1962, Ser. No. 246,697
8 Claims. (Cl. 177—209)



1. Weighing apparatus comprising

a platform,

a pair of platform supporting beams each pivotally supporting one end of said platform at a fulcrum near one end of the supporting beam,

a beam fulcrum pivotally supporting each platform supporting beam at said one end,

separate fluid displacement means under the other end of each platform supporting beam,

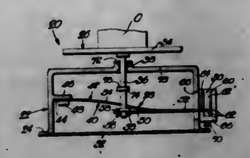
means limiting the displacement of fluid when the load on one fluid displacement means is greater than the load on the other,

a fulcrum pivotally engaging each fluid displacement means with a beam end,

means providing fluid communication between said fluid displacement means, and

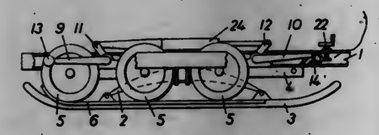
means for indicating the pressure of fluid in said fluid displacement means.

3,191,702
WEIGHING DEVICE OF SPRING-BALANCE TYPE
Walter Kohlhagen, 818 Oakley Ave., Elgin, Ill.
Filed June 18, 1963, Ser. No. 288,817
12 Claims. (Cl. 177—229)



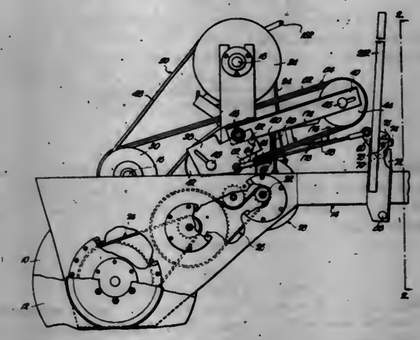
1. In a weighing device, the combination of a movable load unit; a stationary support; and a balancing spring unit having a longitudinal element fixedly mounted with one end on said support; and provided at its other end with an action arm, of which said element is resiliently flexible in a first plane and when non-flexed extends substantially in a second plane normal to said first plane, and said action arm is rigid and extends from said other end of said element toward but short of said one end thereof, with said load unit being guided for movement substantially normal to said second plane and resting on said action arm at a distance from said other end of said element, so that said element will respond in compound S-like flexure to a weight on said load unit.

3,191,703
VEHICLE WITH ENDLESS TRACKS SELF-ELEVATABLE RELATIVE TO SKIDS
Håkon Ole Romsdal, Marcellis Gate 27, Oslo, Norway
Filed Mar. 13, 1963, Ser. No. 264,949
Claims priority, application Norway, Mar. 16, 1962, 143,679
4 Claims. (Cl. 180—5)



1. In a belt driven vehicle of the class which includes at least one driving belt positioned between skids, skis, wheels or belts mounted along the side faces of a fixed vehicle frame, driving and supporting wheels for the driving belt mounted in a belt frame, a flexible connecting system between the said vehicle frame and the said belt frame permitting the latter to adopt various height and oblique positions relatively to the former, the improvement wherein the said connecting system includes at least one guide means situated in the vehicle frame and at least one control means pivotably mounted in the belt frame and cooperating with the said guide means so as to permit an adjustment of the relative position of the two said frames, said connecting system comprising between the belt and vehicle frames a pair of transversely extending shafts supported in the belt frame and provided with elbow bent arms forming end portions, an oblique face in said vehicle frame guide means associated and in engagement with said elbow bent arms, each shaft further provided with an arm extending at right angles to the shaft axis and a hydraulic cylinder and piston arrangement interconnecting the free ends of said last named arms.

3,191,704
DRIVING AND STEERING ASSEMBLY FOR WHEELED VEHICLES
Robert L. Shelton, Hesston, Kans., assignor to Hesston Manufacturing Co., Inc., Hesston, Kans., a corporation of Kansas
Filed Mar. 25, 1963, Ser. No. 267,682
19 Claims. (Cl. 180—6.26)



8. In combination with a vehicle having a pair of drive wheels and a tail wheel, mechanism for driving the drive wheels and for steering the vehicle comprising:

shiftable steering structure;

a driven shaft;

a control unit for each drive wheel respectively, each unit including:

a power transmitting shaft operably coupled with a corresponding drive wheel, a first pulley on the driven shaft, a second pulley on the power transmitting shaft, each pulley having a section rigid to its shaft and a section shiftable along its shaft but rotatable therewith, a belt trained around the pulleys between the sections, means spring-loading the shiftable section of the second pulley toward its rigid section, and apparatus coupled with the shiftable section of the first pulley for shifting the same toward its rigid section against the action of said spring-loading means;

control structure operably coupled with said steering structure;

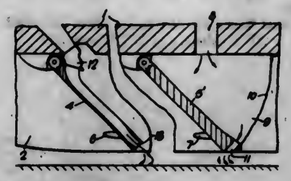
means operably connecting said apparatuses with said control structure for shifting the shiftable sections of the first pulleys toward their rigid sections alternately as the steering structure is shifted; and

means operably connecting said control structure with said tail wheel for steering the latter as the steering structure is shifted.

3,191,705
VEHICLES FOR TRAVELLING OVER WATER
Richard Stanton Jones and Derek James Hardy, Isle of Wight, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed Sept. 13, 1960, Ser. No. 55,675
Claims priority, application Great Britain, Sept. 25, 1959, 32,698/59
8 Claims. (Cl. 180—7)

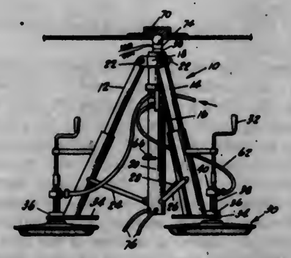
5. A vehicle for travelling over water of the kind which is at least partly supported above the surface of the water by a cushion of pressurised fluid contained beneath the body of the vehicle, comprising at least one side wall member depending from the body of the vehicle on each side of the fore and aft axis thereof, at least one obturating member attached to the vehicle body at each of the front and rear ends thereof, each such obturating member extending between the side wall members and being so constructed and arranged as to be

capable of flexing movement relative to the vehicle body, and means for forming at least one curtain of fluid issuing from the bottom portion of each of said obturating



members, the obturating and side wall members co-operating with the fluid curtains and the body of the vehicle to contain the vehicle supporting cushion of pressurized fluid.

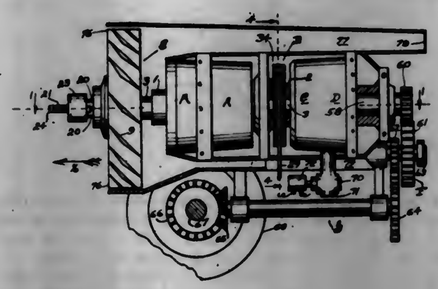
3,191,706
PNEUMATIC SUPPORT
Thorvald K. Petersen, Santa Monica, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Original application Sept. 6, 1960, Ser. No. 53,974. Divided and this application June 11, 1962, Ser. No. 201,700
1 Claim. (Cl. 188—7)



A terminus for a load supporting device, comprising: a post-like, member extending substantially vertically and having a downwardly-opening spheric socket on its lower end; a separate, rigid plate-like member having in its median portion an upward spheric member complementary to the spheric socket and engaged in same; a yieldable member united to the lower face of said plate-like member and having a lowermost surface confronting the ground plane; and means for supplying pressurized air to said lowermost surface so as to maintain a thin film of pressurized air between said surface and the ground plane; the virtual center of pivoting of the two aforesaid spheric members on each other lying in the plane of the lowermost face of said yieldable member, whereby to obviate tuck-under-caused drag of either the trailing edge or the leading edge of said pivoted terminus under movement thereof with reference to the ground plane.

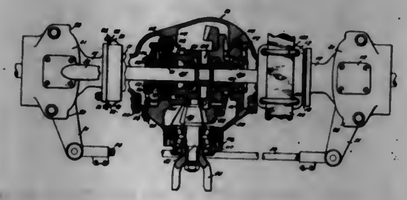
3,191,707
AUTOMOTIVE PROPULSION SYSTEM FOR VEHICLES
Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis 24, Minn.
Filed June 18, 1962, Ser. No. 203,230
14 Claims. (Cl. 180—7)

1. In propulsion means for vehicles: a primary engine driving a primary power shaft and having means supplying air and fuel to the engine for combustion therein; a secondary engine having a secondary power shaft and a transmission for transmitting driving power therefrom to a vehicle road-wheel means; conduit means by which gases under pressure are as exhausted from the primary engine delivered to the secondary engine for driving of the secondary engine and means for exhaust from said



secondary engine; an air duct by which ambient air is inducted at one end thereof and is expelled at the other end thereof to atmosphere; a propulsion air propeller located in said air duct to propel air through said air duct and for propulsion of a vehicle; a driving connection between said propulsion air propeller and said primary power shaft.

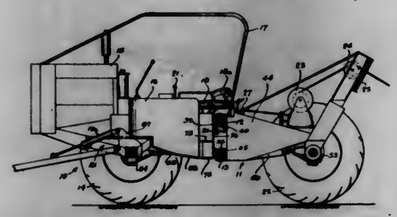
3,191,708
AXLE AND DRIVE-THROUGH GEAR
George D. Simonds, Robert W. Stieg, Arne V. Larson, and Scott B. Miller, all of Clintonville, Wis., assignors to FWD Corporation, Clintonville, Wis., a corporation of Wisconsin
Filed Mar. 9, 1960, Ser. No. 13,868
4 Claims. (Cl. 180—44)



1. In a vehicle, a pair of steerable wheels, a plurality of differential gear sets, each said differential gear set comprising a plurality of output shafts, a pinion cage, and a differential lock, power operated differential lock actuating means in each said differential gear set, a manual control for said power operated differential lock actuating means, at least one said differential gear set having said output shafts respectively operatively associated with said steerable vehicle wheels, the differential lock of said last mentioned differential gear set having an adjustable predetermined capacity to resist differentiation upon application of torque forces biased to cause differentiation, said last mentioned differential gear set being adapted to permit differentiation while in its locked condition upon application of torque in excess of said pre-determined capacity, said differential gear sets not associated with said steerable vehicle wheels being adapted to resist differentiation while in the locked condition upon application of torque in excess of said pre-determined capacity.

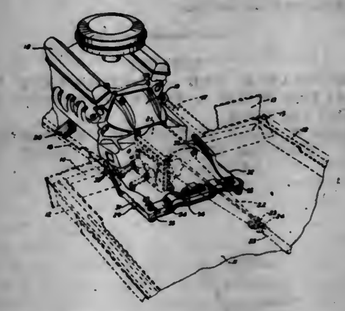
3,191,709
ARTICULATED VEHICLE
Robert C. Symons, Woodstock, Ontario, Canada, assignor to Timberland-Ellicott, Limited, Woodstock, Ontario, Canada
Filed Jan. 18, 1962, Ser. No. 167,029
Claims priority, application Canada, Dec. 4, 1961, 837,387
5 Claims. (Cl. 180—51)

3. An articulated-type vehicle comprising
(a) a forward frame and a rearward frame mounted on respective pairs of road wheels and pivotally connected together about a generally vertical axis,
(b) means for steering the vehicle by controlling relative pivoting of said frames about said axis,
(c) a power plant mounted on said forward frame and an associated drive shaft means extending rearwardly from said power plant along the longitudinal centre line of said forward frame,
(d) a casing forming part of the forward frame covering the drive shaft means, said casing including
(i) a horizontal portion over at least a part of said drive shaft means and closely adjacent thereto,
(ii) a side portion extending downwardly from one side of said horizontal portion adjacent to one side of said drive shaft means,
(iii) a foot plate extending horizontally from said side portion in a direction away from said drive shaft means,
(e) a single operator seat mounted on said forward frame and permanently fixed against rotation relative thereto, said operator's seat
(i) having a seat plane substantially adjacent to the horizontal portion of said casing,
(ii) being positioned over said drive shaft means and part of said horizontal portion of said casing,
(iii) extending laterally beyond the side of said side portion opposite said drive means,
(iiii) and being located so that the upright portion



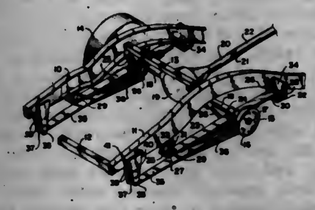
of the body and head of an operator seated thereon is located substantially in a vertical plane along the longitudinal centre line of said forward frame,
(iiiii) the horizontal direction of said seat forming an acute angle with said vertical plane,
(f) said foot plate being located below the level of at least part of said drive shaft means and being located with respect to said seat so that a driver may sit squarely and comfortably on said seat and,
(i) place both feet on said foot plate with both legs comfortably on the side of said side portion remote from said drive shaft means and protected from said drive shaft means by said side portion,
(ii) view with substantially equal facility both sides of the front end of the forward frame,
(iii) and twist his body and turn his eyes comfortably to look back along a continuation of said centre line toward the rearward end of the vehicle,
(g) said seat and foot plate being located with respect to said forward frame and drive shaft means so that a driver seated on said seat with his feet on said foot plate will be as close to the ground as practical while still being seated along the centre line of said forward frame and above said drive shaft means.

3,191,710
CANTILEVERED ENGINE SUPPORT
Donald F. Reynolds, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,575
9 Claims. (Cl. 180—64)



9. In a motor vehicle, a frame, a driving aggregate mounted on said frame, said frame including transversely extending spaced apart frame elements, a first pair of side rails secured to said frame elements and extending therefrom in a first direction, a second pair of side rails secured to said frame elements and extending therefrom in a second direction, said second pair of side rails being secured to said frame elements at transversely spaced locations from said first pair of side rails, said driving aggregate being positioned between said elements and having a first portion supported at each side by said first pair of side rails, a support assembly having leg portions connected to said frame contiguous to said elements and extending in said second direction therefrom, and means supporting a second portion of said driving aggregate upon said leg portions.

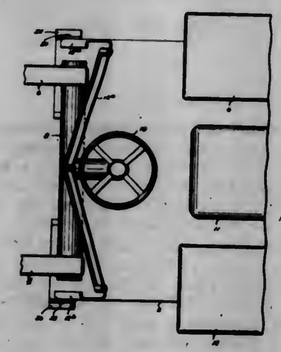
3,191,711
TRACTION SYSTEM FOR AUTOMOTIVE DEVICES UTILIZING REACTION TORQUE TO IMPROVE TRACTION
James L. Conner, 204 Northview Road, Bel Air, Md.
Filed Aug. 16, 1963, Ser. No. 302,616
2 Claims. (Cl. 180—71)



1. The combination in an automotive vehicle having a frame, spaced driving wheels, driving axles connected to said wheels, rigid means rotatably mounting said

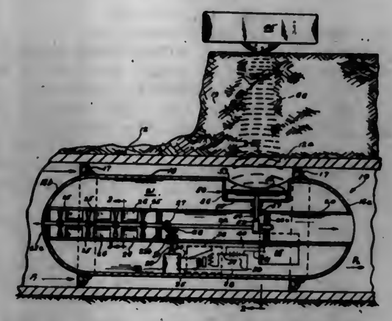
wheels in spaced axial relation to each other, spring suspension means mounted between said rigid wheel mounting means and said frame, an elongated relatively rigid reaction member fixedly attached to said rigid wheel-mounting means adjacent to and extending rearwardly of each of said wheels, each of said elongated reaction members being of a length such that the rear end thereof extends in the proximity of the rear end of said frame, means connecting said rear end of each of said elongated reaction members to fixed pivots on said frame whereby when sudden rotative force is applied to the wheels through said driving axles said rigid reaction members will by the forces then acting on said vehicle frame cause the rear end of the vehicle frame to lower thereby exerting downward levered pressure on the vehicle wheels to provide greater traction between the rear wheels of the vehicle and the roadway.

3,191,712
DEMOUNTABLE CAB CONSTRUCTION FOR A TRACTOR WITH A FRONT-MOUNTED IMPLEMENT OR TOOL
Robert W. Dodge, 40 Pleasant St., Wenham, Mass.
Filed Mar. 21, 1963, Ser. No. 266,881
2 Claims. (Cl. 180—89)



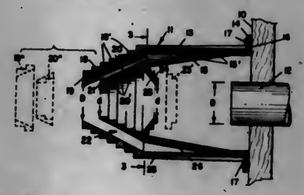
1. In a tractor assembly of the class described having a steering column and a steering wheel therefor, said tractor having mounted thereon at its front end an implement, and including power arms arranged to move forwardly and rearwardly at each side of the tractor together with a connecting shaft member transversely secured between the rear extremities of the power arms, in combination, a cab body for said tractor comprising a front portion, a back portion and a top, together with side enclosure means, said front portion including an upper section and a lower section, said lower section being downwardly and forwardly inclined to extend rearward of said connecting shaft member and being centrally recessed to define depending legs which straddle medial portions of said tractor assembly and constitute front corner braces, said upper section including a pair of forwardly converging and intersecting window panels forming a V-shaped windshield enclosure which projects forwardly above the connecting shaft member and define an enlarged steering wheel area receiving the adjacent portions of the steering wheel, the opposite outer edges of the upper and lower front sections being bent forwardly to form angularly disposed outer walls which occur in spaced relation to respective opposite ends of the connecting shaft member and which are projected forwardly beyond the extremities of said connecting shaft member.

3,191,713
SURVEY APPARATUS
William G. Green, St. Petersburg, Fla., assignor to Aquatron Engineering Corp., St. Petersburg, Fla., a corporation of Florida
Filed Oct. 5, 1962, Ser. No. 228,714
6 Claims. (Cl. 181—.5)



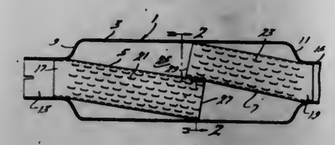
1. A pipeline survey apparatus for traveling through a horizontally extending fluid pipeline, said apparatus comprising:
(a) a hollow body,
(b) instrumentation in said body,
(c) sealing means to support said body in fluid-tight relation with the walls of said pipeline, and
(d) fluid pressure operated means within said body to generate electric power for operation of said instrumentation.

3,191,714
MOTOR BOAT MUFFLER
Donald R. Phillips, 2503 20th St., Santa Monica, Calif.
Filed July 9, 1963, Ser. No. 293,746
5 Claims. (Cl. 181—44)



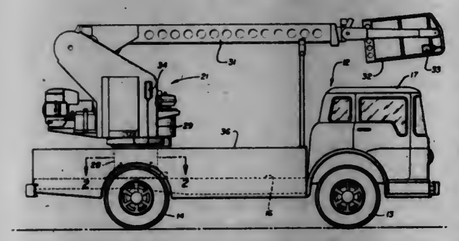
5. A muffler comprising, in combination: an outer casing having a cylindrical body portion for receiving gases in one end, the other end terminating in an outer tapered portion; an inner casing having a truncated conical body portion substantially co-extensive with said cylindrical body portion and decreasing in diameter from said one end of said body portion towards said other end, said truncated conical body portion having one end secured to said one end of said cylindrical body portion and its other end terminating in an inner tapered outlet portion of similar taper angle to said outer tapered outlet portion so that there is defined a venturi section between the walls of said outer and inner casings; and an annular diverter structure secured at one end to the inside wall of said inner casing at the junction point of its truncated conical body portion and its inner tapered outlet portion, said diverter structure tapering towards a reduced diameter opening in a direction opposite to said outer and inner tapered portions, said truncated conical body portion having a plurality of openings therein whereby a portion of the gases received is deflected by said diverter structure to pass through said openings into said venturi section.

3,191,715
MUFFLER
Paul F. Jettinghoff, Jackson, Mich., assignor to Walker Manufacturing Company, a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,265
5 Claims. (Cl. 181—47)



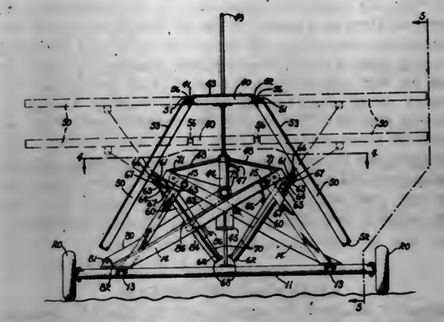
1. A small size tri-flow muffler consisting of only three parts, said three parts being an inlet tube and an outlet tube partially overlapping the inlet tube so that gas flowing from one to the other must reverse its direction of flow twice, the third of said three parts being an outer shell of no more than about 4 inches outer diameter providing a chamber surrounding said inlet and outlet tube, said shell having reduced diameter end portions forming an inlet bushing and an outlet bushing, said bushings being in tight engagement respectively with ends of the inlet and outlet tubes, the inner diameter of the shell being substantially the same as the maximum width of said two tubes at the overlapped portion whereby said tubes contact said shell and said shell furnishes lateral support for the overlapped ends of said tubes.

3,191,716
MOBILE LIFTING EQUIPMENT
Jay M. Ettel, San Carlos, Calif., assignor to Telsta Corp., San Carlos, Calif., a corporation of California
Filed Dec. 10, 1962, Ser. No. 243,275
2 Claims. (Cl. 182—46)



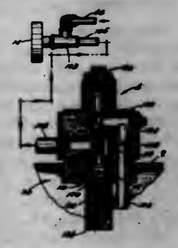
1. In a mobile lifting equipment, a wheeled vehicle having a frame, a base plate, a lift mounted upon the base plate, the lift including a boom structure, insulator means for securing the base plate to the frame and for electrically insulating the base plate from the frame, and resilient means mounted between the frame and the insulator means and between the base plate and the insulator means to minimize the transfer of shock and vibration forces to the insulator means, said means for supporting the base plate includes at least three mounting assemblies for securing the base plate to the frame, each of the mounting assemblies comprising an insulator extending through a hole in the base plate, resilient means mounted upon the insulator for supporting the marginal portion of the base plate and defining the hole and means for placing the insulator and the resilient means under compression.

3,191,717
MOBILE SCAFFOLD
Kazuo Hiyama, 8184 E. Adams, Fowler, Calif.
Filed Aug. 8, 1962, Ser. No. 215,687
5 Claims. (Cl. 182—131)



1. A scaffold comprising an elongated mobile frame of predetermined width; an intermediate platform having laterally opposed, substantially parallel edges spaced at a width less than that of the frame; means mounting the platform on the frame to dispose the respective longitudinal axes thereof substantially parallel to each other, including means to vary the elevation of the platform relative to the frame; a pair of elongated lateral platforms, each having opposed inner and outer edges, each inner edge being in juxtaposition respectively with on of the opposed edges of the intermediate platform; pivot means interconnecting each of the lateral platforms respectively with the intermediate platform adjacent to said edges in juxtaposition; extensible strut means interconnecting the frame and each of said lateral platforms respectively at points spaced outwardly from said inner edges whereby the lateral platforms may be moved to and from a first extended position wherein the platforms are substantially horizontal and in coplanar relationship and a second retracted position wherein the lateral platforms are downwardly angularly related to the intermediate platform and said outer edges are disposed inwardly from their extended position at a distance less than said predetermined width; means to synchronize extension and retraction of said strut means.

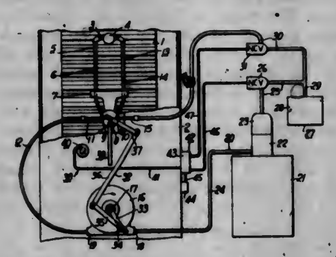
3,191,718
METHOD AND APPARATUS FOR GENERATING OIL MIST
Paul N. Haywood, Evanston, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Continuation of application Ser. No. 65,250, Oct. 21, 1960. This application July 8, 1963, Ser. No. 293,514
12 Claims. (Cl. 184—1)



9. In a method of lubricating with an aerosol of oil having a viscosity in the range of 1,000 to 75,000 SSU at 100° F.; comprising the steps of heating air to a tempera-

ture in the range of about 200° F. to 300° F.; increasing the velocity of said heated air by a restricted air passage; drawing oil from a reservoir to the inlet of an admixing chamber by means of the venturi effect of increasing the velocity of said heated air; raising the temperature of said oil from its reservoir temperature to its temperature of aerosolization as it passes to the oil inlet by means of said heated air; admixing said heated oil with said increased velocity heated air in the admixing chamber to break up the oil into minute particles and create an aerosol; the energy for drawing the oil from the reservoir to the admixing chamber, for raising the temperature of the oil from its reservoir temperature to its aerosolization temperature and for breaking up the oil into minute particles being provided completely by the heat and the velocity of the air; removing the non-suspended oil particles from the aerosol; and returning the particles to the reservoir.

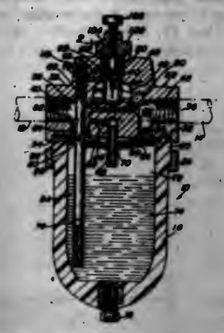
3,191,719
LUBRICATING SYSTEM
Eugene P. Waddell, Brookfield, and Raymond C. Jenness, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 26, 1962, Ser. No. 247,217
4 Claims. (Cl. 184—6)



1. A lubrication system comprising: swivel support means; lubricant spray means connected to said support means; a fluid operated motor having a motive fluid inlet, fluid outlet and a drive shaft connected to said spray means; a crank linkage connected between said drive shaft and said spray means operative to oscillate said spray means about the swivel axis of said support means, said linkage including four links with the first two from the drive shaft being connected by a connector operative to secure said first two links together at two locations to establish a fixed angular relation therebetween; a source of pressurized fluid lubricant connected to said motor inlet to provide fluid to drive said motor; and conduit means connected between said motor outlet and said spray means to deliver the motive fluid lubricant discharged from said motor to said spray means.

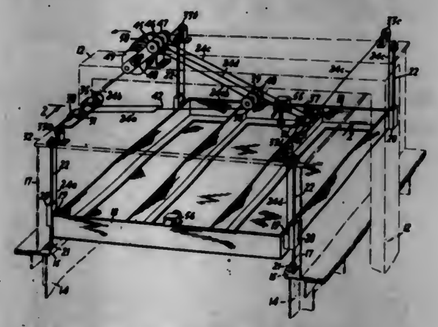
3,191,720
LUBRICATING APPARATUS
Seymour F. Stryker, Evanston, Ill., assignor to Air-Mite Devices, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 27, 1963, Ser. No. 304,882
9 Claims. (Cl. 184—55)

2. A lubricating device adapted to be connected into an air line which comprises a bowl for holding a quantity of oil, a cover member clamped to the bowl and having an inlet and outlet port formed therein, a constricted passageway between inlet and outlet, an oil jet disposed in the passageway, oil feed means connected from the bottom of the bowl to the jet, an air connection between said inlet and bowl to pressurize the bowl and force the oil into said oil feed means, a by-pass passageway above the bowl and connecting the inlet and outlet having a plug of porous metal seated immovably therein blocking the same to constitute a stationary, variable flow-resistance



to air entering the by-pass passageway providing even flow of oil dispensed from said device independent of variations in inlet air pressure.

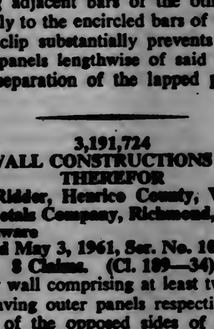
3,191,721
ELEVATOR CAR
Dale E. Conry, Aurora, Colo., assignor to Dover Corporation, Memphis, Tenn., a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,726
6 Claims. (Cl. 187—1)



1. An elevator car adapted to travel in a hoistway between a plurality of floors, comprising a car frame, a passenger carrying enclosure mounted within said frame, a movable ceiling for said enclosure, selectively actuated power operated means including motor means for moving said movable ceiling between different vertically displaced positions to vary the vertical clearance of said enclosure and locking means operably coupled with said motor means for locking said movable ceiling when said motor means is not being operated.

3,191,722
SHOE DRUM BRAKES
Leonard Redmayne, Solihull, England, assignor to Girling Limited, Tyseley, England, a British company
Filed June 29, 1962, Ser. No. 207,173
Claims priority, application Great Britain, July 1, 1961, 23,857/61
11 Claims. (Cl. 188—78)

1. A shoe drum brake comprising a rotatable drum, arcuate shoes carrying friction linings for co-operation with said rotatable drum, each shoe having a radial web, a carrier located on one side of each shoe web, a strut housed within a recess in each carrier and abutting between the inner end of the recess and a projection on the shoe web on which said carrier is located, said projection extending into said recess through an opening in said carrier, and two separate actuating means for urging



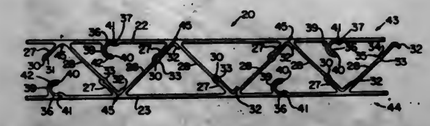
said shoes into engagement with said drum of which one of said actuating means acts directly on said shoes and the other actuating means acts on said carrier.

3,191,723
CORN CRIB STRUCTURE
Victor G. Shoup, Middlebury, Ind., assignor to Pioneer Manufacturing Company, Middlebury, Ind., a corporation of Indiana
Filed July 16, 1962, Ser. No. 209,918
6 Claims. (Cl. 189—3)

1. In combination, a pair of bar mesh panels, each having substantially similarly arranged angularly disposed interconnected sets of metal bars, said panels being arranged in marginally overlapping position with bars extending in one direction substantially registering, and with the bars of said panel extending angularly to said registering bars being arranged out of register, a sheet metal clip of substantially U-shape defining legs encircling registering bars at said overlap, said clip having at least one slot in each leg, said slots being in register and receiving a bar of one panel which extends angularly to the encircled bar of said panel and which slots define at least two fingers in each leg, the outer edges of the two fingers of each leg being interposed between and substantially engaging adjacent bars of the other panel which extend angularly to the encircled bars of the other panel, whereby said clip substantially prevents relative movement of said panels lengthwise of said registering bars and prevents separation of the lapped portions of said panels.

3,191,724
HOLLOW WALL CONSTRUCTIONS AND PARTS THEREFOR
Ernst J. De Ridder, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 3, 1961, Ser. No. 107,395
8 Claims. (Cl. 189—34)

1. A hollow wall comprising at least two wall sections respectively having outer panels respectively forming at least portions of the opposed sides of said wall, each panel having a pair of flanges extending inwardly therefrom, each pair of flanges diverging away from each other as they extend away from their respective panel and having one flange thereof provided with a turned end extending toward its respective panel, said one flange of



one of said wall sections having at least a portion thereof contiguous with the other flange of the other wall section and having the turned end thereof abutting said one flange of said other wall section whereby said one flange of said one wall section spaces said panels of said wall sections relative to each other.

3,191,725
CONNECTING STRUCTURE
Gordon C. Russell, Studio City, Calif., assignor to Lockheed Aircraft Corporation, Los Angeles, Calif.
Filed Oct. 18, 1962, Ser. No. 231,527
7 Claims. (Cl. 189—34)

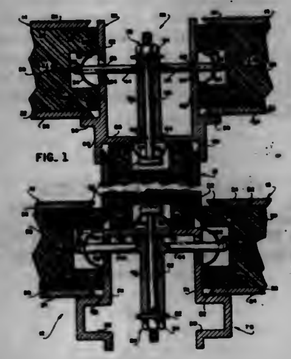
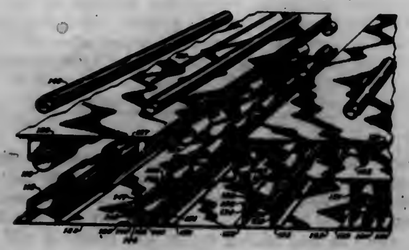


FIG. 1

1. A connecting joint which includes:
(a) connecting channel means, said channel means having two side surfaces connected by a third surface, said surfaces having a plurality of openings formed in the walls thereof;
(b) a wall panel having an edge located against said third surface;
(c) another wall panel having an edge located against one of said side surfaces;
(d) a rigid tube positioned within the interior of said connecting channel means;
(e) means for engaging said other wall panel attached to said tube so as to extend therefrom through an opening in one of said side surfaces, said means for engaging being in contact with said other wall panel so as to hold said other wall panel with respect to said connecting channel means;
(f) bolt means extending through said tube and through an opening in said third surface of said connecting channel means,, said bolt means having a head engaging said first mentioned wall panel so as to hold said first mentioned wall panel against said third surface; and
(g) nut means located on said bolt means so as to secure said bolt means and first mentioned wall panel with respect to said connecting channel and said tube.

3,191,726
PANEL STRUCTURE
John Pavlecka, 8797 Capital St., Oak Park, Mich.
Filed Jan. 7, 1952, Ser. No. 265,316
27 Claims. (Cl. 189—34)



1. In a structure, a panel, a structural member extending in a frontally spaced apart relationship along said panel, a stringer on one face of said panel coextensive with said structural member, said stringer and said structural member having alternate lengthwise portions thereof forming an opening therethrough, faces borne on said stringer and on said structural member along said opening in confronting positions of each other, and a linear key having a free profile larger than said opening and having a tubular wall substantially S-shaped with two opposite lengthwise breaks therein, said key being sprung into said opening slidably and by recoil against said stringer and structural member alternate portions drawing said stringer and structural member into abutment with each other at said faces thereof.

3,191,727
FRAMING STRUCTURES
Andrew H. Schmeltz, Oakmont, and James J. Davis, Monroeville, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 6, 1962, Ser. No. 235,728
6 Claims. (Cl. 189—75)



1. A unitary structural framing assembly comprising spaced elongate metallic elements and an interlockingly connecting elastomeric thermal barrier element therebetween, at least one of said metallic elements carrying a laterally extending web defined in transverse cross-section by parallel spaced exposed root surfaces, parallel spaced exposed terminal free end pilot surfaces, and an intermediate exposed concave surface in contiguous connection with a root and pilot surface on each side of the long transverse axis of the web, the thermal barrier element having a recess extending thereinto adjacent the web, said recess being defined in transverse cross-section by oppositely disposed parallel interior walls and an intermediate convex wall in contiguous connection with two parallel wall surfaces on each side of the long transverse axis of the recess, said interior walls of the recess being substantially complementary in reverse disposition from the entrance thereto along the long transverse axis thereof to the disposition of the exposed root, concave and pilot surfaces of the web from the terminal free end thereof, and said interlocking assembly comprising said web snap inserted within the adjacent recess through resilient flexure of the elastomeric thermal barrier element by contacting engagement of the parallel exposed terminal free end pilot surfaces of said web with the convex wall surfaces of the recess to provide interlocking registry of the oppositely disposed convex interior walls of the recess within the concave exposed surfaces of the web.

3,191,728
METAL PANEL AND ITS APPLICATION IN AN ANTI-BLAST BARRIER IN PARTICULAR FOR AIR-PORTS
Louis Fernand David, 130 Ave. du General Leclerc, Saint-Maur, France
Filed Dec. 27, 1961, Ser. No. 162,433
Claims priority, application France, Dec. 29, 1960, 848,360
1 Claim. (Cl. 189—82)



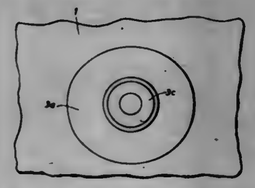
A panel for an air blast barrier comprising a series of elongated strips, each strip having a mean plane and a mean longitudinal axis, the longitudinal axes of said strips being parallel and lying in a common plane which is the median plane of said panel, each strip further having a series of longitudinally extending first portions offset from said mean plane, and a series of longitudinally extending second portions aligned with said first portions transversely of said strip and offset from said mean plane in a direction opposite to that of said first offset portions, said oppositely offset portions constituting offset pairs, said pairs being separated by intermediate plane portions in the longitudinal direction of said strips, each of said offset portions of each pair having an inner edge and an outer edge, the inner edge of each first portion of the pairs defining with the corresponding inner edge of the second portion of said pairs an opening in a plane substantially perpendicular to the plane of said intermediate plane portions, said strips being so disposed in the panel that said intermediate plane portions are parallel with each other and are inclined relative to said median plane, the outer edge of the first portion of each strip being connected, respectively, to the outer edge of the second portion of the adjacent strip, said panel having elongated openings therein between the parallel series of intermediate plane portions, said strips being spaced from each other by said latter openings except at the point of connection, said latter openings partially laterally overlapping the openings between said offset portions of said offset pairs, the deflecting surfaces of said strips, constituted by said offset portions and said intermediate plane portions being substantially greater in area than that of the adjacent openings, the openings between said offset pairs being staggered with relation to the openings between said intermediate plane surfaces, said panel being constructed and arranged to lie with its median plane at an obtuse angle with respect to an air blast, whereby an air blast impinging upon the surfaces of said strips will be deflected directly into the said adjacent openings.

3,191,729
GRILLE OR SCREEN
Lemual G. Brown, P.O. Box 8777, Brittoe, Okla.
Filed June 1, 1964, Ser. No. 371,286
10 Claims. (Cl. 189—82)



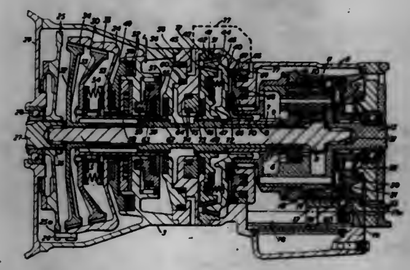
1. A grille for shading a portion of a building comprising:
a plurality of flat, elongated strips each having at least two, off-set, horizontally and vertically spaced, parallel portions interconnected by a portion inclined at an obtuse angle with respect to said parallel portions;
clips positioned between and engaging the parallel portions of pairs of said strips, said clips each being segmented to facilitate assembly of said grille and compactness in shipment of said grille, the segments of each of said clips comprising two opposing end sections each having parallel legs interconnected at their proximal ends by end web portions, the parallel legs of one of said end sections having means at their free ends detachably engaging the free ends of the parallel legs of the other of said end sections to form one of said clips; and
engaging means secured to said clips at the intersection of each of said parallel legs with its respective end web portion and engaging the parallel portions of said flat strips and securing said strips in fixed spatial relation to each other.

3,191,730
SEALING ARRANGEMENT FOR FASTENING MEANS
Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Filed May 10, 1961, Ser. No. 109,111
Claims priority, application Germany, June 21, 1960, F 31,471
7 Claims. (Cl. 189—88)



1. Sealed fastening arrangement for fastening an element to a wall or the like comprising, in combination, elongated fastening means having an end portion extending through and beyond the element and having at the free end thereof a head; sealing means comprising a pair of sealing members each having an opening therethrough, one of said sealing members having an outer annular surface portion and the other of said sealing members having an annular resilient portion surrounding said outer annular surface portion and being in resilient sealing contact therewith, said members being located between said head and the element with said end portion of said elongated fastening means extending through said openings and said members being movable with respect to each other in longitudinal direction of said elongated fastening means while said one member remains in sealing contact with said other member; and resilient means engaging said members and tending to move the same in opposite direction away from each other so as to press one of said sealing members in sealing contact with said head and the other of said members in sealing contact with the element.

3,191,731
CONTROL MEANS FOR EPICYCLIC POWER TRANSMISSION MECHANISMS
Eric Albert Whateley, Coventry, England, assignor to Axel Charles Wickman
Filed Oct. 11, 1961, Ser. No. 144,488
Claims priority, application Great Britain, Oct. 12, 1960, 34,894/60
6 Claims. (Cl. 192—3.6)

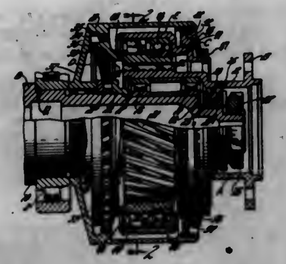


1. In an epicyclic power transmission mechanism comprising an input shaft, an output shaft, first and second epicyclic driving elements which can selectively be coupled to said input shaft to provide alternative epicyclic drive paths through said mechanism between said shafts, and a reaction pinion which can be controlled to provide alternative drive ratios: control means comprising a driving clutch member operatively connected to said input shaft, first and second driven clutch members for alternative frictional clutching engagement with said driving clutch member and adapted to transmit the drive to said first and second driving elements respectively, first and second oppositely acting fluid-operated pistons for imparting opposite axial movements to one of said driven clutch members, a third clutch member associated with said reaction pinion, a fourth clutch member associated with an epicyclic element of the mechanism and arranged for frictional clutching engagement with said third clutch member, third and fourth fluid-operated pistons for actuating said third clutch member, one of the last-mentioned two pistons being permanently connected in the fluid sense with one of said first-mentioned two oppositely acting pistons, and a fifth fluid-operated piston for causing axial movement of said driving clutch member into clutching engagement with the other of said driven clutch members, against spring loading, and wherein the first fluid operated piston, which moves the one driven clutch member towards and into clutching engagement with the driving clutch member, is arranged to exert a force which overcomes the force exerted by said fifth piston, whereby to effect simultaneous disengagement of the driving clutch member from said other driven clutch member.

3,191,732
TORQUE RESPONSIVE CLUTCH WITH LIMITED TORQUE IN ONE DIRECTION AND UNLIMITED TORQUE IN THE OPPOSITE DIRECTION
Charles J. McDowall, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 12, 1960, Ser. No. 55,262
3 Claims. (Cl. 192—48)

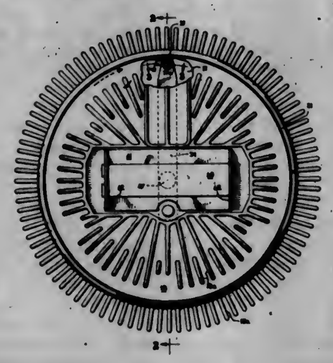
1. A safety coupling comprising, in combination, first and second relatively rotatable members, a third member

having a positive biderectional clutch connection with the second member disengageable by axial movement of the third member, a torque-transmitting connection between the first member and the third member biasing the positive clutch into and out of engagement in response to the direction of torque between the first and third members only, means biasing the third member in both directions



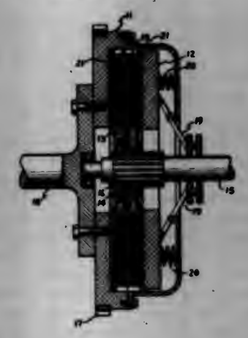
away from an intermediate position between those of engagement and disengagement of the positive clutch, and one-way clutch means coupling the second and third members adapted to transmit torque between the second and third members in the direction to actuate the said connection between the first and third members to engage the positive clutch.

3,191,733
TORQUE TRANSMITTING FLUID COUPLING
Thomas J. Weir, Indianapolis, Ind., assignor to Schwitzer Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Jan. 7, 1963, Ser. No. 249,704
18 Claims. (Cl. 192—58)



18. A torque transmitting device comprising a first element, a second element supported on said first element and rotatable relative thereto, shear surfaces carried by said first and second elements and forming a drive chamber therebetween, a fluid reservoir chamber adjacent said drive chamber, port means in said second element providing fluid communication between said drive and reservoir chambers, pump means for transferring fluid from said drive chamber to said reservoir chamber through said port means during rotation of said device, said pump means comprising a movable abutment member cooperating with said port means, said abutment member being movable between an active position in which it extends into the path of the fluid in the drive chamber and renders said pump means operable to transfer fluid and an inactive position wherein it is withdrawn from said fluid path and renders said pump means inoperable to transfer fluid, and condition responsive means for moving said abutment member between its said positions.

3,191,734
FRICTION MECHANISM WITH FIBER COMPOSITION LINING AND MATING METAL LAYER
Clyde S. Batchelor, Trumbull, and Warren R. Jensen, Stratford, Conn., assignors to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey
Filed Oct. 26, 1962, Ser. No. 233,210
5 Claims. (Cl. 192—68)



1. In a friction mechanism, a friction couple comprising a pair of elements adapted for relative rotational movement on mounting means therefor, a fiber reinforced, hardened organic binder friction composition lining of relatively low heat conductivity secured to and supported on one element of said couple, another element of said couple comprising a metallic mating member carrying on a surface thereof a layer of metal of the group of copper and its high heat conductive alloys having dispersed therein finely divided copper oxide particles positioned for frictional engagement with the surface of said lining.

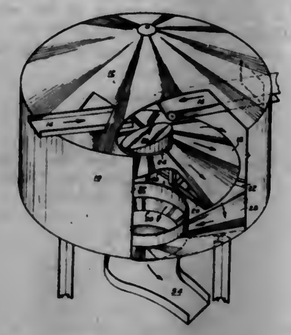
3,191,735
SPLINE LINER
Charles R. Wavak, Villa Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 28, 1963, Ser. No. 261,585
3 Claims. (Cl. 192—110)



1. A unitary spline liner insert for individually covering each of a plurality of individual spline teeth comprising: a plurality of spline teeth caps and integral means effective to connect said caps at the axial terminals thereof at positions beyond the axial terminals of said teeth for maintaining the caps in spaced relation as a unitary assembly.

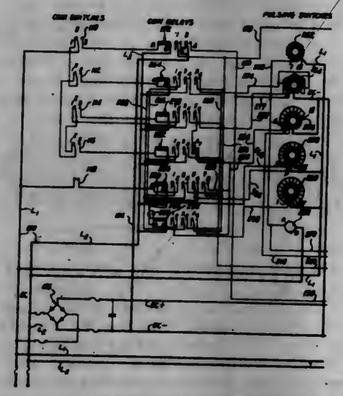
3,191,736
REVOLVING SLIDE AND CONE STORAGE HOPPER
Willard S. Conlon, 332 Leesburg Pike, Apt. 402, Falls Church, Va.
Filed Jan. 9, 1964, Ser. No. 336,821
4 Claims. (Cl. 193—1)

1. Apparatus for the storage and controlled gravity delivery of articles, comprising a cylindrical housing having its central axis vertical, a shallow conical floor defining a downwardly-inclined surface extending from the periphery of said housing to a central exit aperture, vertically adjustable gate means concentric with said axis and intersecting said floor about said exit aperture, a shallow conical slide partition centered on said axis above said floor and forming a downwardly-inclined surface



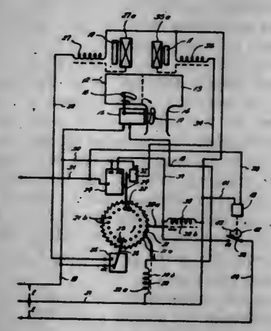
extending from an upper region near said axis toward the inner periphery of said housing to define between its edge and said housing an annular gap for the passage of articles, and rotating article-deflecting means mounted at the upper center of said slide partition to distribute articles falling thereon in paths distributed radially about said axis.

3,191,737
VENDING MACHINE
Frazier N. James, Sr., 4033 Franklin Road, Nashville, Tenn., and Augusta F. Osburn, Nashville, Tenn.; said Osburn assignor to said James
Filed Oct. 31, 1961, Ser. No. 148,900
19 Claims. (Cl. 194—4)



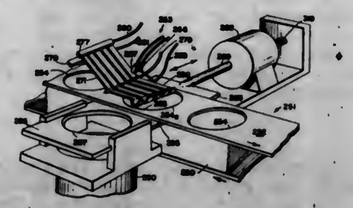
1. A coin controlled apparatus comprising chutes for receiving coins of different multiple denominations, switches in said chutes, a stepping switch and stepping magnet to operate the stepping switch, a pulsing switch having plural contacts connected to the stepping magnet and an arm to successively close with the contacts, a motor to drive the arm, direct connections between the switch in the chute adapted to receive a coin of the lower denomination and the stepping magnet to momentarily energize the same to move the stepping switch one step, connections between a switch in a chute of higher denomination with the arm of the pulsing switch and with the motor to set the motor into operation to cause the pulsing switch to transmit a number of pulses to the stepping magnet for each rotation of the arm, and connections to the motor to limit the movement of the arm to one cycle for each coin of higher denomination deposited in the machine, the connections to the motor including normally closed contacts on each of the coin operated switches and opened when a coin is engaging the switch, with the said contacts on each coin operated switch in series with the said contacts on all of the switches and in series with the motor.

3,191,738
MULTI-DENOMINATION COIN ACCUMULATOR
Russel W. New, Dallas, Tex., assignor to Meter-All Mfg. Co., Inc., Dallas, Tex., a corporation of Texas
Filed Feb. 26, 1963, Ser. No. 261,022
3 Claims. (Cl. 194—9)



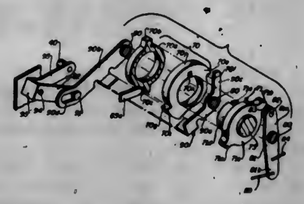
1. A multi-denomination coin accumulator for energizing an electric circuit when coins totaling a given amount have been deposited, comprising, in combination:
- a plurality of coin receiving slots, each slot to receive a different denomination coin;
- a control switch in the circuit to be energized, having a first position for closing the electric circuit and a second position;
- an electromagnetic stepper for moving the control switch to the first position when the stepper has been actuated a predetermined number of times to move it to a first position;
- means for holding the stepper in its first position;
- electromagnetic means for moving the holding means out of holding position;
- a switch for actuating the stepper;
- means for actuating the switch when engaged by a deposited coin, with each denomination of coin deposited engaging the switch actuating means a different number of times;
- means for closing a slot when the total value of the coins deposited is such that an additional coin deposited in the slot will result in an overpayment;
- a timer operable responsive to the control switch closing said electric circuit for controlling the length of time that the circuit is energized; and
- means actuated by the timer just before the timer reaches the end of its cycle to energize the electromagnetic means to release the stepper and allow the control switch to move to its second position and to continue to energize the electric circuit during the remainder of the timed cycle.

3,191,739
COIN TESTER
Roby B. White, Jr., Sharon, Mass., assignor, by mesne assignments, to Electronic Coil Processing Corp., New York, N.Y., a corporation of Delaware
Original application Mar. 9, 1959, Ser. No. 798,264. Divided and this application June 10, 1964, Ser. No. 384,276
4 Claims. (Cl. 194—9)



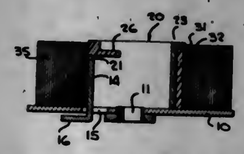
1. Means for separating and detecting abnormally shaped and sized coins from coins of normal size and shape comprising a bed, a belt thinner than coins of normal thickness and driven over said bed, a series of longitudinally aligned circular openings in the belt larger in diameter than a coin of normal diameter, a plurality of spring loaded fingers disposed over the belt and each adapted to run over the upper surface of a coin drawn over the bed by the belt, an additional spring loaded finger disposed above the belt and adapted to engage the edge of a coin in an opening in the belt drawn over the bed, a plate disposed between the bed and the belt, a recess formed in the plate adapted to receive coins from the openings in the belt when the recess is disposed beneath one of the openings, means biasing the plate to a position wherein the recess is removed from beneath the openings, means including an electrical circuit when energized moving the recess under an opening, and normally opened switches in the circuit controlled by the fingers and closed when said fingers move a preselected distance from a normal position determined by the diameter and thickness of a normal coin.

3,191,740
KEYLEVER SIGNAL STORING MECHANISM
Teddy F. Smusz, Bristol, Edgar G. Lizotte, Winsted, and Thomas E. Frechette, Hartford, Conn., assignors to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed July 24, 1962, Ser. No. 212,102
5 Claims. (Cl. 197—16)



1. In a typewriter, the combination of,
a pivotable key bar,
an interposer adapted to be engaged by said key upon depression thereof and moved thereby from normal to active position,
a normally disengaged clutch,
a clutch activator operable to effect engagement of said clutch,
a latch for trapping said interposer in active position and for operating said activator,
a pivotable space bar,
a second normally disengaged clutch,
a second clutch activator adapted to be engaged by said space bar upon depression thereof to effect engagement of said second clutch,
and means responsive to operation of said first activator for delaying engagement of said second clutch signalled by space bar depression for a period of time after depression of said space bar whereby the space bar signal is stored.

3,191,741
ADDING MACHINE SPOOL
Walter D. Landgraf, 4808 W. 96th Place, Oak Lawn, Ill.
Filed July 10, 1963, Ser. No. 294,093
2 Claims. (Cl. 197—175)

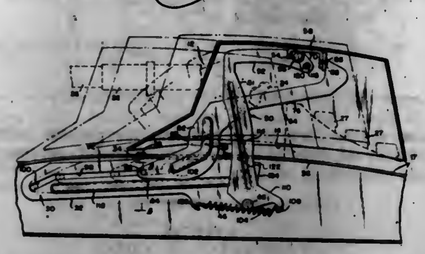


1. A ribbon spool for installation on a rotary cylindrical drive spindle having a flange surface extending from the base and normal to the axis thereof, and having associated therewith a reversing lever pivotally attached to the underside of said flange surface, said lever including an upstanding pin extending through a cutout in said flange surface, said pivotal attachment and said cutout permitting movements of said pin substantially radially of said axis between a biased position exteriorly of said spindle and a ribbon sensing position interiorly of said spindle through an associated gap therein, said spool comprising a hollow cylinder arranged to mate with said spindle and to seat against said flange surface, a slot extending through the wall of said cylinder from the seat end thereof to a point adjacent the other end thereof, a tongue portion projecting inwardly of said cylinder along the terminus of said slot and substantially coextensive with the width of said gap, said tongue portion arranged to mate with said gap to align said slot therewith and to couple said spool to said spindle for rotation therewith, said slot having a length sufficient to permit said pin to travel freely therethrough in the absence of ribbon on said spool, said tongue portion projecting inwardly of said spindle beyond the point of maximum inward travel of said pin when said spool is seated on said spindle, so that said pin and tongue portion interfere to prevent seating of said spool against said flange surface in the event of improper installation of said spool.

3,191,742
TYPEWRITER RIBBON COVERS
James E. Harmon, Groton, N.Y., assignor to SCM Corporation, a corporation of New York
Filed Aug. 11, 1961, Ser. No. 130,959
6 Claims. (Cl. 197—186)

1. In a typewriter having a base and a key actuated, ribbon equipped printing mechanism on said base:
(a) a cover for said mechanism;
(b) means for guiding said cover between closed and open positions comprising a pair of base supported hinge mechanisms, each including:
(c) an elongated cover support member rigid with the typewriter base and having an elongated slot therein;
(d) an elongated arm member rigidly attached to said cover and immovable relative to said cover;

(e) a guide member rigidly attached to the lower end of said arm member and disposed for sliding movement within said slot as said cover is moved between closed and open positions; and
(f) an upwardly extending cover supporting arm pivotally attached at its lower end to said support member



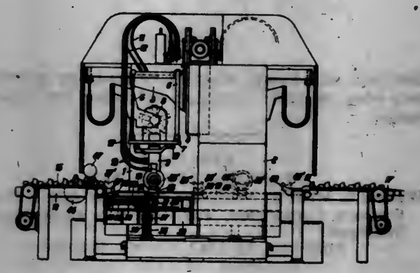
and pivotally fixed at its upper end to said arm member so disposed relative to said elongated slot that, as said guide member moves in said slot, said upper pivotal attachment moves from a position rearward of said lower pivotal attachment to a position forward of said lower pivotal attachment.

3,191,743
MOVING WALK
Lennius R. Rissler, Ho-Ho-Kus, and Clyde M. Mullis, Glen Rock, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 6, 1962, Ser. No. 200,499
27 Claims. (Cl. 198—16)



1. In a conveyor for carrying load, a structure having first and second spaced landings, an articulated belt having a load transporting run and a return run, motive means for moving the belt in a closed path with said load transporting run extending between said landings, said belt comprising an endless series of substantially identical rigid platforms including first and second adjacent platforms having adjacent respective end portions extending between the sides of the associated platform, means mounting said first and second adjacent platforms for independent rotation about a common horizontal axis extending transversely to the direction of movement of said belt, and a pair of rollers each disposed outwardly of a separate side of and mounted for rotation about said axis for common support of said first and second adjacent platforms, said end portion of said first platform being concavely curved about said axis, said end portion of said second platform being convexly curved about said axis, said curved end portion of said first platform overlapping said adjacent curved end portion of said second platform throughout the movement of said first and second platforms between said landings on said load transporting run.

3,191,744
APPARATUS FOR HARDENING BEARINGS ON CRANKSHAFTS
Heinrich Schmid and Adolf Graule, Wasseralfingen, Württemberg, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, Allgemeine Elektricitäts-Gesellschaft, Berlin-Grunewald, Germany, and Maschinenfabrik Alfing Kessler Kommanditgesellschaft, Wasseralfingen, Württemberg, Germany
Filed Apr. 24, 1962, Ser. No. 189,908
Claims priority, application Germany, Apr. 26, 1961, D 35,923
6 Claims. (Cl. 198—19)

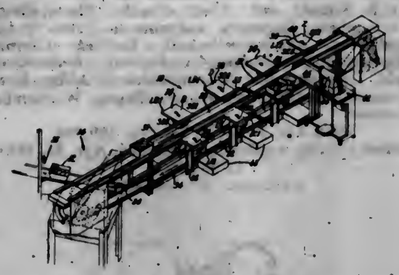


1. In apparatus for inductively heating, incidental to hardening, bearing surfaces of work in the form of crankshafts, comprising at successive stations units each comprising a transformer and at least one inductor adapted only partially to embrace the surface of the work and means for gripping and rotating the work; means for presenting an inductor to the work so that this yieldingly rests on a crank pin and participates in its orbital motion, and means for automatically transporting the work to present it to the said gripping means, the improvement which comprises the provision of successive independent work-transporters for cooperating with the gripping means at each station and means for relatively displacing said transporters to cause a crankshaft that has been treated at one station to be conveyed and transferred to the transporter which conveys the said shaft to the gripping means at the next station, each said transporter being provided with work-supporting means, the said work supporting means of one said transporter being transversely offset relatively to the work-supporting means of the other said transporter and said transporter-displacing means being operative to cause relative displacement of the said transporters out of their normal respective planes to enable the work to be transferred from the work-supporting means of the said one transporter to the work-supporting means of the said other transporter.

3,191,745
CONVEYORS
Ralph E. Karcher, Jr., Magnolia, and Charles J. Kitchener, Beverly, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Apr. 26, 1963, Ser. No. 276,005
3 Claims. (Cl. 198—19)

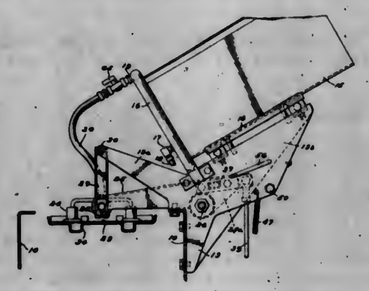
1. A conveyor system, comprising conveying means, a dispatch station and a series of work stations disposed along the conveying means, each work station having a storage position and a first detecting means associated therewith for detecting the presence or absence of an article in the storage position, second detecting means associated with each work station for detecting the presence of an article carried on the conveyor belt, means respon-

sive to the detection by said second means of an article approaching the work station on the conveyor to stop the



conveyor, said second detecting means being activatable only when an article is not detected by said first detecting means.

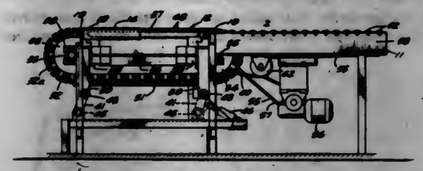
3,191,746
TRANSFER APPARATUS
William R. McBride, Rochester, Mich., assignor to Design Products Corporation, Troy, Mich., a corporation of Michigan
Filed Mar. 14, 1962, Ser. No. 179,728
12 Claims. (Cl. 198—20)



1. Transfer apparatus characterized by a fixed frame, an actuating arm pivotally mounted on said frame for reciprocating travel through a limited arc, a transfer member pivotally mounted on said actuating arm, a transfer engagement surface on said transfer member variable through combined pivotal movements of said actuating arm and transfer member, a control element on said transfer member and a reaction means engageable by said control element establishing the angular position of said transfer member and engagement surface relative to the angular position of said actuating arm, said engagement surface being movable to angularly disposed pickup and discharge positions at respective extremities of said actuating arm's travel.

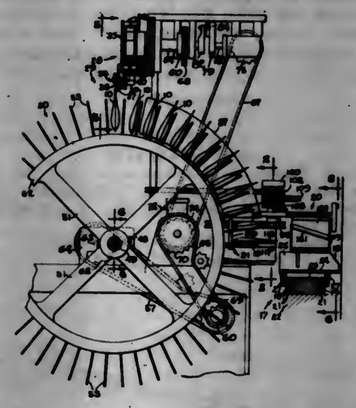
3,191,747
CONVEYOR AND DISPATCH DEVICE
Orray R. Pollard, South San Gabriel, Calif., assignor to A. J. Bayer Company, Los Angeles, Calif., a corporation of California
Filed Apr. 3, 1963, Ser. No. 270,441
17 Claims. (Cl. 198—20)

1. In a package conveyor and lateral dispatch arrangement, the combination of: a conveyor having a narrow lateral space in the continuing conveying surface thereof, lateral dispatching means positioned in said space and selectively movable to positions above and below said conveying surface, and said dispatching means moving laterally relative to said conveyor within said space for engaging a package upon positioning said dispatching means above said conveying surface for providing the



sole applied force for dispatching the package laterally off said conveyor in the direction of lateral movement of said dispatching means.

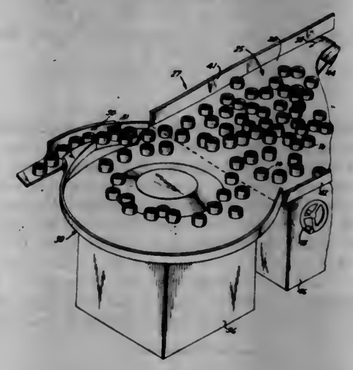
3,191,748
PACKAGING MACHINE
Le Roy L. Martin, Dixon, Ill., assignor to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed July 30, 1963, Ser. No. 298,694
13 Claims. (Cl. 198—25)



1. In a machine for handling flat packages of at least a predetermined width, the combination of, a frame, a carrier on said frame movable along a predetermined path to a transfer station, clips equally spaced along said carrier for gripping the tops of a succession of said packages and releasing the same at said transfer station, mechanism for driving said carrier continuously at a speed varying intermittently between relatively rapid and relatively slow to advance said packages to said transfer station, a rotary transfer wheel journaled on said frame below said transfer station and in a plane perpendicular to said path with the periphery of the wheel adjacent the bottom edges of the packages at the transfer station, a plurality of radially projecting arms narrower than the width of said packages and equally spaced around the periphery of said wheel to define a series of radially and axially opening pockets, said arms projecting upwardly when on top of the wheel to straddle said path, mechanism for rotating said wheel continuously in one direction to swing successive pockets through said transfer station, the steps in the speed of said carrier being correlated with the rotation of said wheel whereby each package is moved at the rapid rate between each pair of arms passing said transfer station and deposited in the pocket with the opposite edge portions of the package projecting beyond the arms, a loading device mounted on said frame approximately ninety degrees in said one direction from said transfer station and including two elements movable

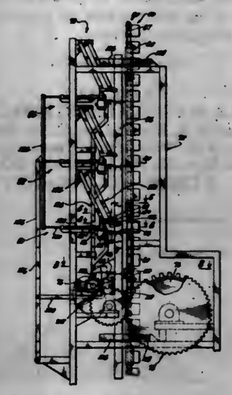
horizontally and radially outwardly closely adjacent the opposite side edges of said arms to engage said projecting edge portions of a predetermined number of adjacent packages and remove the packages radially from the wheel, and mechanism for driving said loading device in timed relation with the rotation of said wheel.

3,191,749
AUTOMATIC ALIGNMENT AND INPUT FEEDING MACHINERY FOR CONFECTIONARY ARTICLES
George F. Hawley, Bogota, N.J., Hugh W. Murphy, Saratoga, Calif., Jean E. Moulder, Shelton, and Joseph H. Miller, Old Greenwich, Conn., and Robert F. Crane, Scarsdale, N.Y., assignors to AEL-Food Machinery Division, Inc., Stamford, Conn., a corporation of Connecticut
Filed Jan. 10, 1963, Ser. No. 250,661
17 Claims. (Cl. 198—30)



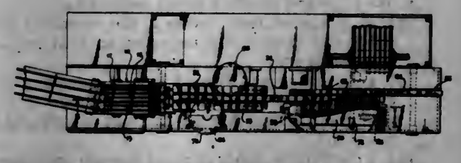
1. In a system for processing confectionary articles, automatic feed mechanism for receiving a large mass of randomly positioned freshly made confections from a previous manufacuring stage and for arranging said confections into a line continuously fed to a subsequent stage in said system comprising conveyor means for receiving a large group of confections thereon randomly arranged, a vibratory platform adjacent to said conveyor means for receiving the confections from said conveyor means, drive means for oscillating said platform with short rotary vibratory reciprocation about a vertical axis, said platform having a generally horizontal surface encircling said axis, said rotary vibratory reciprocation serving to advance the confections along said horizontal surface in a predetermined direction about said axis, said platform having a raised inner area with a downwardly sloping surface extending outwardly and downwardly from said raised inner area to said horizontal surface, said sloping surface curving outwardly with respect to said vibratory axis for urging the confections outwardly as they advance about said axis while avoiding contact with the side surfaces of the confections, said vibratory platform having a generally tangential discharge outlet, said outlet progressing in said direction on one side of said axis, said discharge outlet having a configuration for receiving said confections after they have been guided outwardly by said sloping surface and for passing said confections individually therethrough, a continuously moving slippery conveyor belt for receiving the line of confections passed by said outlet, and controllable release means for restraining the leading confections on said slippery belt while said slipper belt slides beneath the leading confections, thereby closing up any gaps in said line.

3,191,750
CONVEYOR LOADING AND UNLOADING SYSTEM
Dallas B. Lewis, 2015 Whitley Ave., Hollywood, Calif.
Filed Nov. 30, 1962, Ser. No. 241,333
14 Claims. (Cl. 198—31)



1. In a conveyor system, the combination of:
(a) a conveyor movable through an upright run;
(b) container carriers spaced apart along and mounted on said conveyor;
(c) each of said container carriers having a container supporting wall which is substantially horizontal and faces upwardly during movement of said conveyor through said upright run thereof;
(d) an elevator adjacent and movable parallel to said upright run of said conveyor;
(e) said elevator having vertically spaced generally horizontal, container supporting shelves respectively registerable with certain of said container supporting walls during movement of said conveyor through said upright run thereof;
(f) means for loading containers onto said container supporting shelves in one position of said elevator;
(g) means for moving said elevator in synchronism with movement of said conveyor through said upright run thereof, and with said container supporting shelves respectively in register with certain of said container supporting walls; and
(h) means for simultaneously transferring the containers from said container supporting shelves to said container supporting walls respectively in register therewith, during such synchronized movement of said elevator and said conveyor.

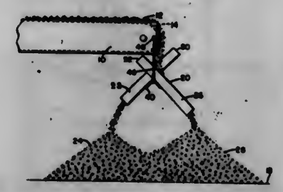
3,191,751
METERING AND STACKING APPARATUS
Arthur J. Griner, Wyckoff, N.J., assignor to National Biscuit Company, a corporation of New Jersey
Filed Mar. 25, 1964, Ser. No. 354,614
19 Claims. (Cl. 198—35)



1. In a machine for assembling sandwich units or the like to be wrapped, chute means, conveyor bucket means aligned with each chute means for receiving said units including central and flanking conveyor bucket means and wrapping conveyor means moving in parallel relation at

substantially like speeds of travel, cross feed means for moving units out of the buckets of the flanking conveyor means and into the buckets of the central conveyor means to form a two-high unit pile in the buckets of said central conveyor means, and means for successively transferring each unit pile from the buckets of the central conveyor means to said wrapping conveyor.

3,191,752
BULK MATERIAL DISTRIBUTOR
Harold B. Biehn, Greenfield, Ohio
(P.O. Box 110, Washington Courthouse, Ohio)
Filed Mar. 28, 1963, Ser. No. 268,819
4 Claims. (Cl. 198—36)



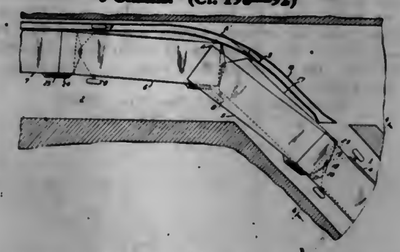
1. In combination, a conveyor having a discharge end for delivering a substantially constant stream of bulk material, a plurality of U-shaped elongate chutes arranged in groups with the chutes of each group aligned, each chute having an open top and a bottom wall, chutes of one group being alternately arranged in side by side relationship with and fixed at an angle to the chutes of a second group, all of said chutes being fixed to adjacent chutes intermediate their ends with their open tops uppermost to receive each a portion of the bulk material fed by the conveyor, the chutes of said one group and second group by reason of their angular disposition serving to discharge material at two opposite spaced apart regions of a supporting surface, and means swingingly suspending the chute assemblage from the discharge end of the conveyor with the discharge ends of the chutes of one group being disposed outwardly of the delivery end of said conveyor and with the receiving ends of the said one group being disposed above the receiving ends of the chutes of the other group.

3,191,753
BUNK FEEDER
Robert E. Kirkpatrick, 506 N. Taft, Humboldt, Iowa
Filed Apr. 2, 1962, Ser. No. 184,104
11 Claims. (Cl. 198—64)



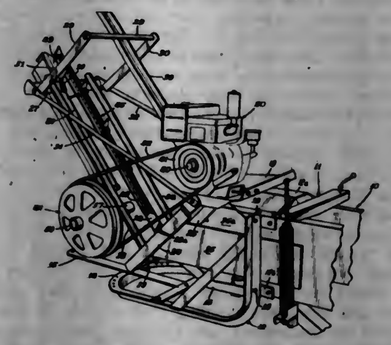
1. An adjustable livestock feeder comprising:
(a) an elongated tube having a slot extending from end-to-end thereof and including an inlet end and an opposite end,
(b) a driven auger disposed in and extending from end-to-end through said tube for rotation in a direction for feeding through said tube toward said opposite end,
(c) a plurality of stands disposed beneath and supporting said tube at longitudinally spaced points,
(d) means rigidly connecting said opposite end of the tube to one of said stands,
(e) each of the other stands having means rotatively supporting the tube, and
(f) means for imparting torque to the tube adjacent its inlet end for twisting the tube for positioning the slot at a selected angle of incline downwardly from the inlet end to the opposite end of the tube.

3,191,754
MINING APPARATUS
John W. Heimaster and Roy L. McNeill, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed May 24, 1961, Ser. No. 112,399
6 Claims. (Cl. 198—92)



1. Mining apparatus comprising, in combination, a bore mining machine; a train of conveyor vehicles each having a running gear section; pivot means each pivotally connecting respective adjacent running gear sections; a longitudinal continuous conveyor section pivotally connected at one end to each respective running gear section; pin means depending at a side of from the other end of each of said conveyor sections; and longitudinal slot means on each conveyor section arranged and disposed thereon to subtend and slideably engage the pin means of each of respective adjacent conveyor sections.

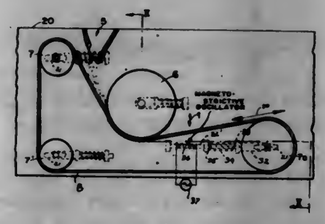
3,191,755
BALE THROWER
John R. Timberlake, Downers Grove, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Nov. 21, 1961, Ser. No. 153,900
7 Claims. (Cl. 198—128)



1. A bale thrower for hay bales being delivered from a bale forming machine, comprising: a supporting structure for attachment on said bale forming machine adjacent the bale discharge thereof, a first rotary member mounted for free-wheeling on one end of said supporting structure, a second rotary member mounted for free-wheeling and above said first rotary member on the other end of said supporting structure, an endless member trained around said first and second rotary members, bale engaging means on said endless member, an inclined ramp mounted on said supporting structure in bale-supporting

relation with a run of said endless member, a bale sensing means mounted along the path of said endless member, drive means connected to one of said free-wheeling rotary members, power supply means for driving said drive means, a first means for connecting said power supply means to said drive means for accelerative movement of said endless member, said first connecting means normally being in a non-connected position, second connecting means between said sensing means and said first connecting means, said second connecting means being actuated by said bale sensing means in response to the presence of a bale of hay in ejecting position on said ramp to operate said first connecting means to connect said drive and power supply means.

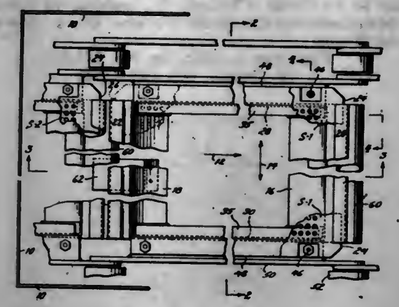
3,191,756
BELT-TYPE CONVEYORS
Friedrich Wilhelm Panrat, Alte Hauxer Str. 45, Friedrichsfeld, Lower Rhine, Germany
Filed Dec. 26, 1962, Ser. No. 246,952
Claims priority, application Germany, Dec. 29, 1961, P 28,510
5 Claims. (Cl. 198—128)



1. In an apparatus for projecting loose solid material, in combination, at least two substantially horizontally spaced supporting rollers including a forward roller and a rearward roller; an endless flexible conveyor belt passing around said rollers and forming an upper reach with an upwardly and forwardly inclined front portion terminating at said forward roller for projecting said material at high velocity from said belt; supply means for depositing said material upon said upper reach of said belt at a location intermediate said rollers; drive means for rotating one of said rollers to displace said belt at high velocity with said upper reach traveling from said supply means in the direction of said forward roller; and oscillating means for transversely vibrating said front portion of said belt in a vertical plane concurrently with the operation of said drive means.

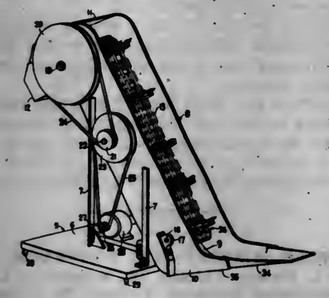
3,191,757
ENDLESS-TYPE CONVEYOR
Ralph C. Parkes, Rydall, and Frederick C. Hoefle, Philadelphia, Pa., assignors to The National Drying Machinery Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 16, 1962, Ser. No. 209,892
5 Claims. (Cl. 198—129)

1. A conveyor including
a number of sections, each having a leading edge,
a trailing edge,
and side edges,
a frame supporting each section, there being a space between the leading edge of each section and the trailing edge of a preceding section,
channels carried by each frame for loosely receiving the leading and trailing edges of the conveyor section carried thereby, there being notches formed near the side edges of each conveyor section,



and studs carried by said frame and freely passing through said notches loosely to engage the sides of said conveyor section.

3,191,758
MODIFIED FLIGHT CONVEYOR FOR OILY METAL CUTTINGS
Arley Adams, R.D. 1, Republic, Ohio
Filed Aug. 5, 1963, Ser. No. 300,025
1 Claim. (Cl. 198—174)



In a transportable conveyor for the movement of small parts and the like comprising a chute, said chute being mounted at an acute angle on a supporting base, a roller chain rotatably mounted on and suspended between idler sprockets and drive sprockets within said chute, each sprocket being secured to a shaft that has each end extending outward through the sides of said chute and supported by a pillow block, a plurality of carriers secured to said roller chain in equal spaced relation to each other and an electric motor mounted on said base and rotating said chain by means of a pair of belts encompassing in part a plurality of pulleys mounted outward of one side of said chute, said carriers thereby moving whatever materials that fall within the lower end of said chute up said chute to a point of discharge at the upper end of the said chute, said chute having a scoop at the lower end thereof, the upper end of said chute adapted to discharge materials being elevated by said carriers, the discharge portion of said chute having a top plate thereon in order to prevent any materials being thrown out of said chute as said carriers pass over said drive sprockets located in the upper end of said chute, the improvement wherein the carriers comprise flexible sweeps having finger-like configurations.

3,191,759
SUSPENSION ASSEMBLIES FOR FLEXIBLE BELT CONVEYORS
Roy F. Lo Presti, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 4, 1962, Ser. No. 185,013
10 Claims. (Cl. 198—192)



1. A conveyor sideframe suspension assembly for suspending a conveyor component from an elevated support location, said conveyor sideframe suspension assembly including

a substantially rigid anchor member,

mounting structure for mounting the anchor member for generally horizontal movement about a vertical axis,

a suspending member depending from the anchor member,

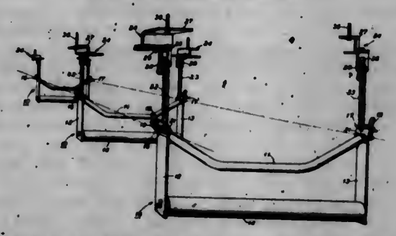
means for moving the suspending member relative to the anchor member to thereby vary the radial distance and angular displacement of the suspending member from the vertical axis,

said anchor member having a bearing surface located a substantial distance from the vertical axis in all relative positions of the suspending member to the anchor member,

said vertical axis being located generally between the bearing surface and the suspending member,

whereby force may be imposed on the anchor member in a direction to counterbalance the force imposed on the anchor member by the suspending member.

3,191,760
OVERHEAD SUPPORT FOR CONVEYOR FRAME
George L. Herzog, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 20, 1963, Ser. No. 303,335
4 Claims. (Cl. 198—192)



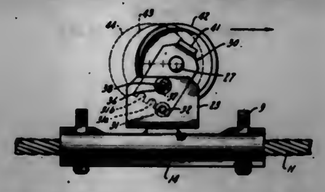
1. Apparatus for supporting a conveyor belt in coplanar and linear alignment with a conveyor course from overhead structure, comprising:

a belt supporting roller rotatable about a shaft extending through said roller along its axis of rotation;

a pair of adjustable length supporting members each connected to a respective end of said roller shaft; and

an attachment device for each supporting member, each attachment device having an upper and a lower bar connected to each other by a pivotable and slideable joint, said upper bar having a first connecting point laterally spaced from said joint adapted for pivotal attachment to said overhead structure, said lower bar having a second connecting point laterally spaced from said joint and vertically spaced from said first connecting point adapted for attachment to one of said supporting members, whereby said second connecting point is adjustable to any position within the perimeter of a circle circumscribed about the first connecting point including a position in vertical alignment with said first connecting point.

3,191,761
TWO DIRECTIONAL BELT TRAINING TROUGHING IDLER ASSEMBLY
Donald C. Reilly, Downers Grove, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed July 26, 1961, Ser. No. 127,048
3 Claims. (Cl. 198—202)



1. A positive belt training roller assembly for a flexible belt conveyor, said roller assembly including, in combination,

a plurality of rollers including an end roller, and

structure for positively canting the end roller into any one of three pre-selected positions independently of canting movement of any other roller in the roller assembly, said structure including, in combination,

first and second bracket members,

the first bracket member being securable to a base structure such as the side-frame of a belt conveyor,

the second bracket member being attached to the outer end portion of the end roller,

a first pin and slot type connector joining the first and second bracket members to one another at a first connecting point,

said first pin and slot type connector enabling the first and second bracket members to move rotationally and linearly with respect to one another,

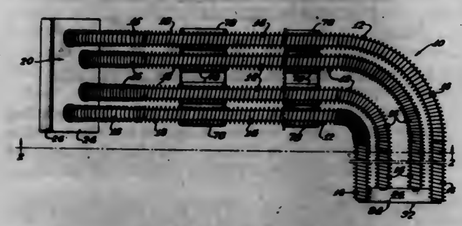
a second pin and slot type connector joining the first and second bracket members to one another at a second connecting point,

said second pin and slot type connector including three seating surfaces, each one of which positively positions the first and second bracket members in fixed engagement with one another,

the distances between the seats and the point of connection of the outer end of the roller to the second bracket member being such that said outer end is maintained at the same horizontal level in any one of the aforesaid three pre-selected positions.

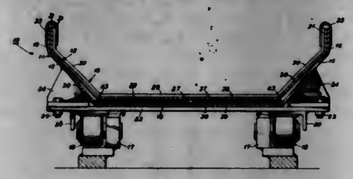
3,191,762
SCREW-TYPE CONVEYOR SYSTEM
Adrian P. Brietzke, La Crosse, Wis., assignor to Northern Engraving and Manufacturing Company, a corporation of Wisconsin
Filed Apr. 11, 1963, Ser. No. 272,473
6 Claims. (Cl. 198—213)

1. An improved conveyor system for transferring objects along a predetermined path of travel, said conveyor system comprising a plurality of spaced, substantially continuous shafts, each of said shafts having both curved portions and substantially straight portions, said curved portions remaining in a fixed position, means for rotating said straight portions, spiral members mounted around each of said shafts and being rotatable with said straight portions, the rotation of said spirals causing longitudinal movement of said objects along the shafts,



means connecting said spiral members to said straight portions for rotation therewith, means for maintaining the helices of said spiral members spaced from the fixed curved portions of said shafts, and said spiral members being constructed to rotate relative to said fixed curved portions so that objects may be readily moved around said fixed curved portions.

3,191,763
HEAT SHIELDED SHAKER CONVEYOR TROUGH LINE
Loy D. Hagenbook, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 16, 1963, Ser. No. 273,436
11 Claims. (Cl. 198—220)

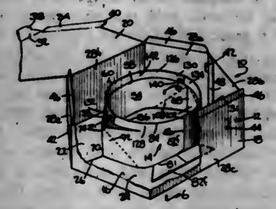


1. In a shaker conveyor trough line, an underlying trough extending for the length of the trough line, a liner trough nested within and having a bottom spaced above the top surface of the bottom of said underlying trough, a heat shield between said liner trough and said underlying trough, said heat shield comprising a layer of thin heat radiating sheet material extending along and spaced between the bottom of said liner trough and the top surface of the bottom of said underlying trough.

3,191,764
BOTTOM CENTER-FOLD ERECTABLE HAT BOX CONTAINING AN OVAL HAT PLATFORM
David Bennett, Valley Stream, N.Y., assignor to Modern Millinery Box Corp., Brooklyn, N.Y., a corporation of New York
Filed Mar. 19, 1964, Ser. No. 353,054
9 Claims. (Cl. 206—8)

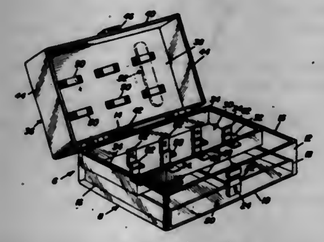
1. In combination, a hexagon hat box including a foldable bottom wall and a ring of side walls, said box being erectable from a flat storage condition in which the bottom wall is folded along a center-fold line and is interposed between the collapsed side walls to an open condition in which the bottom wall is flat and closes the bottom end of the expanded ring of side walls; and

a hat platform for receiving and storing a hat and erectable conjointly with the erection of the hat box, said hat platform comprising a continuous upstanding wall and two opposed pairs of gores formed in diametrically opposed locations in the wall, and means affixing the hat platform within the hat box, said hat platform having a flat storage condition in which its continuous wall is folded flat in only two superimposed sections extending from gore to gore and within the collapsed ring of side walls of the hat box



and in which its pairs of gores are folded to straddle the foldable bottom wall, each section being uncreased between the gores, said platform being erectable to an open condition in which its continuous wall defines a lenticular volume adapted to receive therein the crown of the hat, the volume having both of its faces smoothly curved.

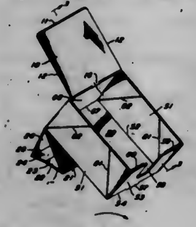
3,191,765
STORAGE AND CARRYING CASE FOR BARBERS' INSTRUMENTS
Robert Dozier, 1658 Montgomery St., Rahway, N.J.
Filed Sept. 22, 1961, Ser. No. 139,963
4 Claims. (Cl. 206—16)



1. For use by and adapted to serve the needs of a barber; a portable tool storing and protecting case for protectively and retentively enclosing a plurality of clipper blades, personal razors and privately owned barbering tools and instruments comprising: a portable box having a bottom wall provided marginally with upstanding interconnected front, back and end walls and defining a receptacle portion, interior surfaces of said end walls being increased in thickness just above the plane of the bottom wall and defining a pair of coplanar spaced parallel ledges, said ledges being disposed in a common plane located at a predetermined distance below the plane of the upper edges of said front, back and end walls, said front wall having a slot therein to accommodate and permit sliding of a cooperating portion of a drawer; a drawer slidable in the lower portion of said receptacle portion with upper edges of its walls in a plane even with the plane of the aforementioned ledges, a readily insertable and removable tray also located in the receptacle portion and having a bottom seated atop the ledges and also cooperating edges of the walls of said drawer, said tray being provided on its interior with a plurality of accessible L-shaped clipper blade positioning clips, said clips being arranged in rows and prescribed distances

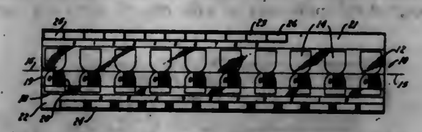
from each other and having horizontal and vertical portions and said vertical portions constituting fixed retainers and assuming upwardly disposed positions in the receptacle portion of the tray and being of a height equal to the height of the walls of the tray, each retainer being distinguishably marked with predetermined readily viewable indicia corresponding with like indicia on the clipper blade which is adapted to be temporarily fitted and removably held thereon, said retainers being distinct and spaced apart a prescribed distance from each other, there being a front row of retainers and, in addition, a back row of retainers arranged and related in such a manner that repetitious application and removal of the clipper blades in respect to the retainers enables the user to acquire habitual and conditioned ability which makes possible the systematic selection and return of a needed clipper blade with facility and certainty, a plurality of readily applicable and removable clipper blades having recessed portions fitted on and over the vertical retainer portions of the respectively intended clips so that the blades are in upstanding ready-to-use position and are systematically arranged, and a transparent cover mounted atop said receptacle portion and provided with key-controlled fastening means whereby the cover is securely locked in a closed position.

3,191,766
DISPLAY CONTAINERS
Edward D. Gillam, Centennial Road, Penn Valley, Pa.
Filed Jan. 4, 1963, Ser. No. 249,420
9 Claims. (Cl. 206—45.22)



1. In a display container,
a tray having forwardly and rearwardly disposed rear wall portions in closely spaced relation with a mounting panel receiving slot therebetween,
the rearwardly disposed rear wall portion having a central cutout with locking projections at each end,
a unitary support and display member for said tray,
said member having a display panel,
a mounting panel having an upper margin from which said display panel extends,
a transversely disposed hinged connection between said display panel and said mounting panel,
hinged panels secured to a rear face of the display panel and extending in over-lapping relation to said mounting panel,
said hinged panels having opposite side margins movable into locked engagement with said locking projections and being positioned at a lower limit position determined by said central cutout, and
a plurality of collapsible support panels carried by said mounting panel,
said support and display member being disposed with said mounting member positioned in said slot,
said display panel being collapsible to a flat position along the top of the tray and said support panels being collapsible to a flat position along the bottom of said tray.

3,191,767
INDEX TAB CARD CONVERTERS
Raymond P. Glowiak, 120 Polk St., Chicago, Ill.
Filed Dec. 4, 1961, Ser. No. 158,932
9 Claims. (Cl. 206—56)



1. A tab forming card, said tab forming card including
backer sheet means, and an elongated tab sheet means,
said tab sheet means having a plurality of discrete tab forming areas formed therein inwardly of the longer side edges thereof,
said backer sheet means and tab sheet means being separably secured to one another by adhesive means,
each of said tab forming areas being peripherally continuous,
said backer sheet means being imperforate over at least those areas underlying the peripheries of the separable tab forming areas,
each of said separable, peripherally continuous tab forming areas being removable from the backer sheet means, and being bounded by a closed cut line,
each of said separable tab areas having a first, transparent portion adapted to be secured to an edge of a receiving structure, and a second, relatively opaque portion capable of presenting identifying indicia.

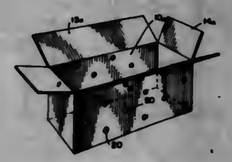
3,191,768
MATERIAL HANDLING DEVICE
Hazel E. Davis, 5901 Rose, Long Beach, Calif.
Filed Apr. 1, 1963, Ser. No. 269,622
3 Claims. (Cl. 206—56)



3. A device for handling a substantially solid stick of material including an elongate tubular body with an open outer end and an elongate inwardly opening tubular head on the inner end thereof, said head having an annular radially inwardly projecting retaining lip at its inner end, a cup with an axial cylindrical side wall and a flat bottom slidable longitudinal in the body and carrying a stick facing the outer end of the body, means adapted to operate the cup longitudinally in the body including a sleeve around the body, a cam liner in the sleeve and around the body and having a camway therein and a cam follower projecting from the cup and operating in the camway, the body having a longitudinal guide slot passing the follower from the cup to the camway, and means adapted to eject material from the cup, including, a substantially flat false bottom in the cup slidably engaged therewith and shiftable longitudinally thereof, the false bottom being flat against and confined to the end of the stick of material, an elongate threaded stem threadedly engaged through the bottom of the cup and shiftable axially relative to the cup and fixed to the false bottom, the stem projecting away from the bottom of the stick of material and from the cup, and means operating the stem including a driven portion on the inner end of the

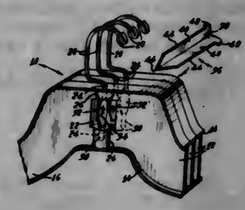
stem, a unitary cylindrical actuator with a central drive portion opposing said driven portion and rotatably engaged in and carried by the head and having a radially outwardly opening groove receiving the retaining lip, one of said portions defining an axially divergent polygonal head, the other portion defining an axially divergent polygonal opening opposing and adapted to cooperatively receive and establish driving engagement with the polygonal head when said stem is shifted axially inwardly into engagement with said actuator by relative rotation of the body and sleeve, said actuator having a finger-engaging portion accessible at the inner end of the construction.

3,191,769
SHIPPING AND DISPLAY CONTAINER FOR CARTONED GOODS
Erwell H. Schroder, Pipestone, Minn., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed May 2, 1963, Ser. No. 277,580
6 Claims. (Cl. 206—65)



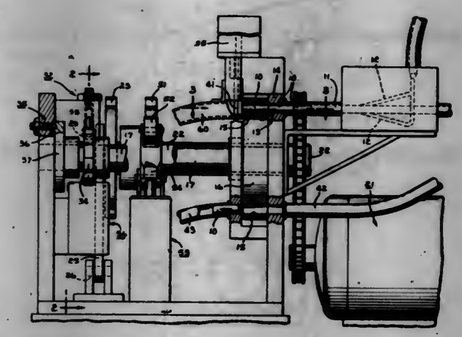
1. A shipping and display package, comprising a generally rectangular case having longitudinal sides provided with small spaced openings adapted to receive indicia-stamping instruments, cartons stacked upon each other in said case with their ends adjacent said apertured sides and with an end of each carton adjacent one of said openings, and a removable pressure line extending centrally and transversely of said case between said vertically-stacked cartons and anchoring the same in rigid alignment with said openings, said liner being removable to free said cartons for removal.

3,191,770
COMBINATION SWIVEL HOOK GARMENT HANGER AND HOOK ALIGNMENT DEVICE THEREFOR
Jack M. Zuckerman, Elmhurst, N.Y., assignor to Yankee Plastics, Inc., New York, N.Y., a corporation of New York
Filed Aug. 27, 1963, Ser. No. 304,836
6 Claims. (Cl. 206—65)



2. The combination of a plurality of garment hangers and an alignment device, said garment hangers each comprising a body having a pair of oppositely directed shoulders, a hook member swivelly mounted on said body between said shoulders and having a hook, an opening defined in said body and through which a portion of said hook member extends, said portion of said hook member extending through said opening being provided with an enlarged surface located in a direction substantially normal to the direction of said hook, said alignment device being engaged in said openings of each of said garment hangers between one side thereof and said enlarged surface, said device having surfaces engaged with said enlarged surface and a defining wall of said opening of each garment hanger.

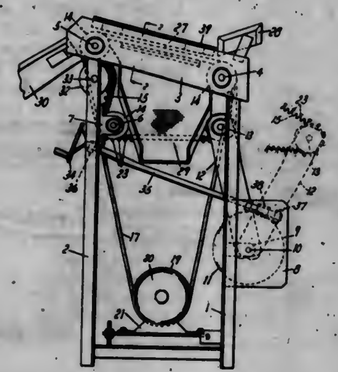
3,191,771
SORTING APPARATUS
Paul E. Oder, Oklahoma City, Okla., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 25, 1963, Ser. No. 297,558
6 Claims. (Cl. 209—80)



1. Apparatus for separating articles having one dimension of desired value from articles whose corresponding dimension is of improper value comprising:
means defining a passage for a single line of such articles with each article having its critical dimension extending longitudinally of the passage,
means for urging a succession of articles along the passage in abutting relationship,
a movable member having a plurality of openings therein, said movable member being arranged closely adjacent the exit end of said passage defining means and being so positioned that different ones of said openings may be brought into alignment with the passage to receive an article therefrom,
retractable stop means positioned in alignment with said passage for limiting the advancement of successive articles from the passage into said openings such that the trailing end of an article of desired dimension lies between said movable member and the exit end of said passage defining means when the article is in engagement with said stop means, whereby an article will extend into both said passage defining means and said movable member when an article of improper dimension abuts said stop means, and
means for indexing said movable member to bring said opening successively into alignment with the passage whereby articles of proper dimension may be re-received in said openings, carried beyond said passage and ejected from said movable member, and each article of improper dimension received in the opening in alignment with said passage may be ejected therefrom upon the retracting of said stop means before said movable member is indexed to the next succeeding operating position,
said indexing means including a yieldable member whereby insertion of an article of improper dimension into one of said openings and the resulting

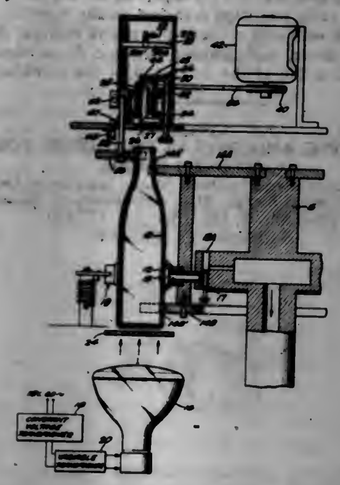
tending of an article into both said passage defining means and said movable member causes said indexing means to yield and interrupts indexing of said movable member.

3,191,772
MACHINE FOR SIZING ARTICLES INCLUDING BLUEBERRIES
Paul F. Jones, Dowagiac, Horace E. McKibben, Grand Junction, Rolland S. Thompson, Coloma, and Evert Carl Graham, Bloomingdale, Mich., assignors to Blueberry Equipment, Incorporated, South Haven, Mich.
Filed Feb. 4, 1963, Ser. No. 256,799
11 Claims. (Cl. 209—102)



1. A machine for sizing articles such as blueberries comprising,
a supporting framework, upper cross shafts journaled in said frame at the front and rear thereof with the front shaft higher than the rear shaft,
drive pulleys on the ends of said shafts,
a third shaft journaled in said frame below said front shaft,
a pair of upright arms pivoted to said frame below said rear shaft and supporting a fourth shaft for swinging adjustment from front to rear of said frame,
pulleys having concave rims mounted in spaced pairs on said shafts,
helically coiled springs arranged in spaced loops and trained around the concave rims on said pulleys,
a plurality of cross rods having notches formed in their ends and secured to selected turns of said springs by cotter pins in spaced parallel relation around said loops on the outer sides thereof,
a motor having a belt drive connection to said drive pulleys on said upper shafts,
means connected to adjust said fourth shaft toward and away from said other shafts to change the length of said spring loops and the spacing between said rods,
an idler roll journaled in said frame and engage the outer sides of said rods below and behind the front of the pulleys on said front top shaft,
a feed chute positioned to deliver articles to the lower end of the belt formed by said rods between said top shafts,
a first collector trough positioned under the top reach of said belt to collect articles falling between said rods,
and a second collector trough positioned to collect articles carried over said front upper cross shaft by said rods.

3,191,773
BOTTLE-CLEANLINESS INSPECTION APPARATUS
James H. Wyman, San Pedro, Calif., assignor, by mesne assignments, to Barry-Wehmiller Machinery Co.
Filed Apr. 11, 1960, Ser. No. 21,164
8 Claims. (Cl. 209—111.7)



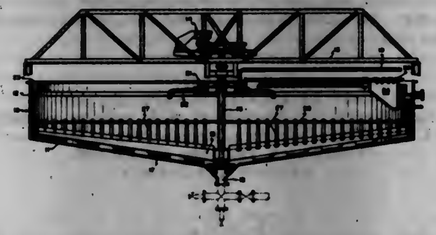
1. Apparatus for inspecting bottles for cleanliness comprising a source of illumination positioned opposite the bottom of a bottle to be inspected to provide an illuminated image thereof, means for collimating the light passing through said bottle positioned opposite the top of said bottle, means for rotating said collimated light, a plurality of photocells arranged in a pattern such that every radial increment of the image to be inspected is covered at least once by one or more of the photocells during one complete rotation of the collimated light about its axis of symmetry, means for focussing said rotated collimated light upon said plurality of photocells for affording scanning of said illuminated image thereby, and means responsive to output from said plurality of photocells in the presence of foreign matter in said bottle to provide an indication thereof.

3,191,774
CLOG FREE SCREENING MECHANISM
Preston H. Schrader, Louisville, Ky., assignor, by mesne assignments, to Rex Chainbelt Inc., a corporation of Wisconsin
Filed June 18, 1957, Ser. No. 666,342
7 Claims. (Cl. 209—329)



1. Screening mechanism comprising, in combination, a plurality of elongated grid members extending in the same general direction and lying along a common plane, a common support for said grid members, a journaled coupling between each grid member and said support, a journal for each coupling located within the grid member and having a given inside diameter, a journaled element for each coupling secured to the common support and fitted into its respective journal and of substantially less outside diameter than the given diameter of its cooperating journal, each cooperating journal being free to rotate with respect to its journaled element to permit the grid member associated therewith to rotate and be freely shiftable transverse of its axis within limits defined by the difference between the inside diameter of said journal and the outside diameter of said journaled element, each journaled element having its axis displaced vertically from the axis of said journal to support said grid member pendulously whereby adjacent sides of said elongated grid members are held yieldably at predetermined separations, and directional throw means for vibrating said elongated grid members with an acceleration having a vertical component opposed to and exceeding the acceleration of gravity during at least one portion of the vibrating cycle to facilitate shifting of said members and prevent blinding as well as to convey material thereover in a direction generally paralleling the longitudinal axis of said members.

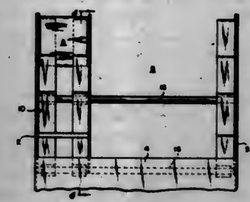
3,191,775
CONCENTRATION OF SUSPENDED SOLIDS
Berne A. Schepman, Salt Lake City, Utah, assignor to The Elmco Corporation, Salt Lake City, Utah, a corporation of Delaware
Continuation of application Ser. No. 121,478, July 3, 1961. This application Mar. 12, 1964, Ser. No. 352,425
5 Claims. (Cl. 210—528)



1. Apparatus for sedimentation concentration of difficultly settleable solids comprising a tank having a bottom and upstanding marginal sidewalls, means for supplying a solids-liquid suspension to said tank, a solids outlet in a lower portion of the tank for withdrawing concentrated solids therefrom, effluent overflow means in an upper portion of the tank, a rake support arm mounted for rotation in a substantially horizontal plane in a lower portion of said tank and having a plurality of depending rake blades for moving settled solids toward said solids outlet; and means for effecting concentration of settled solids prior to discharge, comprising a plurality of elongated flexible members mounted in spaced apart relationship on said rake support arm to extend generally upwardly therefrom, means for rotatably driving said support, and deflecting means fixedly mounted in said tank in the path traced by said flexible members upon rotation of said support to effect periodic deflection and sudden release of said flexible members.

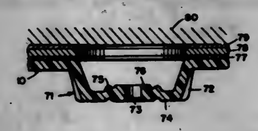
3,191,776
ADJUSTABLE AND EXPANDABLE DISPLAY RACK RISER
Stephen G. Tokash, 9008 Linden St., Munster, Ind.
Filed Apr. 2, 1963, Ser. No. 270,009
6 Claims. (Cl. 211—55)

1. The combination with a display rack for flat packaged merchandise or cards, comprising a rack including spaced parallel sides, a front wall spanning the space between said sides, the side walls extending above the top of the front wall, spaced support bars between said said walls, spaced pairs of risers frictionally and slidably mounted on said support bars and having complementary



terraced pockets therebetween for displaying merchandise therein.

3,191,777
FLEXIBLE, PERFORATED DISPLAY OR STORAGE PANELS
George W. Willits, Jr., 1S-537 Kenilworth, Glen Ellyn, Ill.
Filed Apr. 20, 1964, Ser. No. 361,038
7 Claims. (Cl. 211—87)

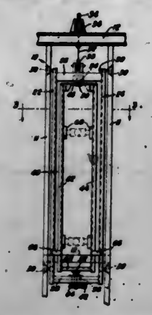


1. A panel adapted to be mounted on a wall for the storage or display of articles and adapted to adjustably receive support elements for supporting the articles, said panel comprising a sheet of material having a plurality of embossments projecting from one surface thereof and adhesive means on the other surface thereof for securing the sheet to an upstanding wall, said adhesive means including a first layer of adhesive on the other surface of the sheet, a sheet of fibrous material on said first layer of adhesive and a second layer of adhesive on said sheet of fibrous material thereby providing a tearable adhesive means permitting removal of the panel from a wall upon which it is mounted, said embossments having outer walls in substantially coplanar relationship and extending substantially parallel to said sheet, a plurality of openings in said outer walls of said embossments spaced apart in a predetermined pattern for coacting with said walls thereof for receiving and mounting support elements on said sheet, and said sheet and adhesive means being of such materials to permit the panel to be easily coiled for shipping and storage and to easily conform to the contour of a wall upon which it is to be mounted.

3,191,778
COKE OVEN DOOR HOLDING APPARATUS
Gilbert C. Nestler, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 302,588
3 Claims. (Cl. 212—4)

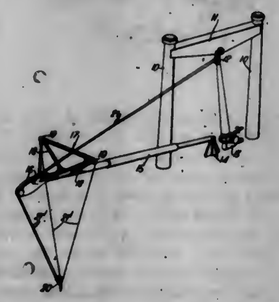
1. Apparatus for handling coke oven doors comprising:
(a) a guide structure having interconnected vertical and horizontal spaced apart side rail members;
(b) a first frame structure having elements cooperative with said rails whereby said frame structure is movable in a path determined by said side rails;
(c) a second frame journaled to said first frame and rotatable about an axis extending lengthwise of said first frame;

(d) means for holding and maintaining a coke oven door against said second frame; and



(e) means to pivot said second frame and thereby a coke oven door about said axis to selected positions.

3,191,779
ANTI-PENDULUM CRANE RIGGING
John S. Thomson, 104 Forsyth St., Greenock, Scotland
Filed July 9, 1963, Ser. No. 293,797
Claims priority, application Great Britain, July 18, 1962, 27,534/62
2 Claims. (Cl. 212—58)



1. A crane including a winch having at least one winding drum, a jib adapted to be pivotally mounted on the deck of a ship for luffing and slewing movements, first pulley means attached to the outer end of said jib, an outrigger mounted on the jib and extending to opposite sides thereof, two second pulleys mounted on the outrigger on opposite sides of the jib, a load supporting rope, a load pulley block supported by said rope, said rope having its free ends wound round the winding drum in the same direction, the rope then passing in parallel reaches from the winding drum and then round the first pulley means, downwardly to the pulley block and therearound and thereafter the reaches diverge upwardly and form a loop passing over the second pulleys.

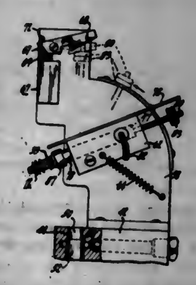
3,191,780
BOOM ROTATING MECHANISM
Walter C. Updegrave, Douglasville, Pa., assignor to Baker Equipment Engineering Company Inc., Richmond, Va., a corporation of Virginia
Filed Aug. 30, 1963, Ser. No. 305,710
8 Claims. (Cl. 212—66)

1. A utility truck boom system and the like comprising a boom arm, a stationary boom pedestal, a pivot tube having a boom head fixed thereon, bearing means journaling said pivot tube in said boom pedestal for rotation about a selected axis, means connecting the boom arm to said boom head for movement with the latter about said axis, drive block means slidably supported immediately adjacent an exterior surface portion of said pivot tube, guide means for confining movement of said drive block to a rectilinear reciprocative path parallel to the axis of said pivot tube, said drive block means and the



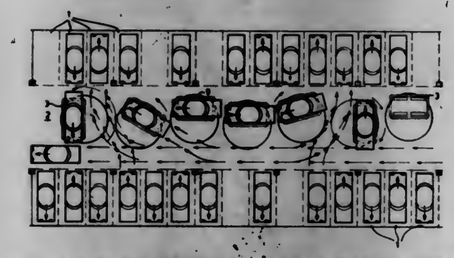
exterior pivot tube surface having interfitting helical teeth and grooves for converting rectilinear reciprocative motion of said drive block into rotary motion of said pivot tube about said axis of rotation for moving said boom arm about said axis of rotation, and power means for driving said drive block along said rectilinear reciprocative path.

3,191,781
ARTICLE HANDLING APPARATUS
Adam Fischer, Jr., Maplewood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 5, 1961, Ser. No. 157,092
4 Claims. (Cl. 214—1)



1. Apparatus for receiving and transferring an electron tube mount blown from a brazing jig along a given path, said apparatus comprising a rotatably mounted housing having a chamber therein and a source of vacuum communicating with said chamber, an open-ended tubular shaft slidably mounted for movement longitudinally of said housing, one end of said shaft being received within said chamber and establishing communication between said chamber and the inside of said shaft, the other end of said shaft extending outwardly of said housing and having a tubular port of resilient material mounted on the end thereof, means latching said housing in an orientation to position said port member in the path of a tube mount, whereby said mount engages and closes the open end of said tubular port and moves said shaft inwardly of said housing, means for unlatching said housing upon inward movement of said shaft, and means for rotating said housing for positioning said port member remote from said path.

3,191,782
GARAGING MEANS
Åke Bertil Persson, Malmo, Sweden, assignor to Kockums Mekaniska Verkstads Aktiebolag, Malmo, Sweden, a corporation of Sweden
Filed Apr. 18, 1962, Ser. No. 188,358
6 Claims. (Cl. 214—16.1)



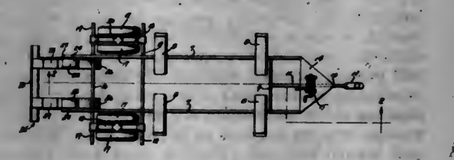
1. In a garage for vehicles having a floor forming at least one row of parking spaces for parking vehicles transversely of said row, an aisleway running along said row and permitting vehicles to be driven to and from said parking spaces, a driveway on one side of said aisleway, a row of spaced parking platforms in said aisleway between the driveway and the row of parking spaces, each platform being adapted to support at least one vehicle parked thereon, and means pivotally mounting each of said platforms on said floor for movement around a substantially vertical axis disposed eccentrically in relation to the platform adjacent one side thereof, so that when the parking platforms are oriented substantially longitudinally of the aisleway, passage of vehicles between the driveway and the parking spaces is prevented, and when a pivoted platform extends substantially transversely of the aisleway, passage of vehicles between the adjacent parking space and driveway is permitted, passage of vehicles is also permitted between the driveway and another adjacent parking space when the same platform is pivoted 180°.

3,191,783
GRANULAR PRODUCT STORAGE
Jesse F. Henderson, Moab, Utah, assignor to Texas Gulf Sulphur Company, New York, N.Y., a corporation of Texas
Filed Sept. 20, 1963, Ser. No. 310,217
1 Claim. (Cl. 214—17)



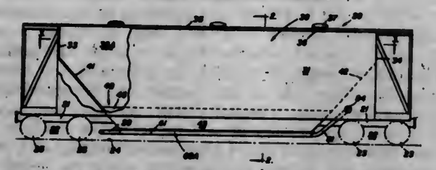
An elongated storage warehouse defining an enclosed storage area for a free-flowing granular product having a predetermined angle of repose comprising an internal elevated endless conveyor belt means disposed lengthwise of said warehouse adjacent the top thereof and along the longitudinal axis thereof, reciprocally traveling belt-tripping means coupled with said conveyor belt means including bifurcated funnel means disposed either side of said conveyor belt means for uniformly spreading said product lengthwise into said storage area below both sides of said conveyor belt means, product reclaiming means longitudinally disposed along the bottom of said storage area in substantial alignment with said elevated conveyor belt means including a longitudinally extending vaulted tunnel member having a plurality of oppositely disposed elongated openings extending along the length in the upper part thereof adapted for communication with the stored product, a pair of opposed shelf members disposed along the inside of said tunnel adjacent the bottom edges of said openings and being of sufficient width in relation to the height of said openings to accommodate said granular product at its said angle of repose, a pair of ramps disposed downwardly at an angle substantially equal to said angle of repose in the bottom of said storage area on either side of said tunnel and communicating with said openings, a second endless conveyor belt means disposed longitudinally of said tunnel below the level of said shelf members, rotary plow means bridging said shelf members and reciprocally movable along the length of said tunnel, funnel means included therewith communicating with said second conveyor belt means, said rotary plow means being adapted for reclaiming the stored product uniformly from said storage area and feeding it from said shelf members to said second conveyor belt means for conveyance externally of said warehouse.

3,191,784
TRAILER FOR TWIN KEEL BOATS
Floyd R. Wade, 6278 Dairy Ave., Newark, Calif.
Filed Jan. 15, 1964, Ser. No. 337,804
2 Claims. (Cl. 214—38)



1. A trailer for twin keel boats comprising, a boat supporting structure consisting of two equally spaced and parallel longitudinal members having their front ends converging to a point of contact, a longitudinal brace member having one end secured to said front ends at said point of contact, a lateral brace member having one end secured to the inside surface of one of the said parallel longitudinal members and the other end likewise secured to the other one of the said parallel longitudinal members, the longitudinal brace member extending rearward to the center of said lateral brace member and secured thereto, a plate having the configuration of an equilateral triangle secured to the top of said converging front ends, means connecting to said front ends for connecting said trailer to the rear of an automobile, a hand operated winch secured to the front end of the said boat supporting structure in order to haul the boat up on the said trailer, a plurality of ground supporting wheels two of which are one at each side of the boat supporting structure, two smaller wheels rotatably secured to the rear end of the boat supporting structure, a pair of equally spaced and parallel ground supporting wheel members each having openings therein, through which passes the said parallel longitudinal members which are at right angles to the said ground supporting wheel members, leaf springs at each side of the boat supporting structure, the ends of said leaf springs secured to corresponding ends of the ground supporting wheel members, a stub axle secured to the center of each leaf spring, a ground supporting wheel rotatably and removably secured to each stub axle, a ramp having inclined portions for each of the smaller wheels whereby the ground supporting wheels can be removed after the trailer has been elevated by backing said smaller wheels up onto said ramp.

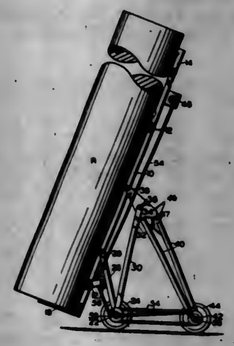
3,191,785
RAILWAY HOPPER CARS
Albert E. Price, Chicago, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Aug. 14, 1963, Ser. No. 302,069
18 Claims. (Cl. 214—83.28)



1. A railway car comprising an elongated longitudinally extending body including bottom structure defining an elongated longitudinally extending communicating hopper and adapted to contain granular material, said hopper having a length commensurate with that of said body between the opposite ends thereof, said hopper having an elongated longitudinally extending bottom discharge outlet, an elongated longitudinally extending casing arranged below said hopper and detachably secured thereto, said casing including means defining an elongated longitudinally extending and downwardly tapered funnel in the upper portion thereof, said funnel having an elongated longitudinally extending top opening communicating with said bottom discharge outlet and an elongated longitudinally extending passage in the lower portion thereof, structure arranged in said casing and having an elongated longitudinally extending bottom slot therein, said passage including two laterally contiguous and communicating sections with a first of said passage sections disposed below said bottom slot and with a second of said passage sections disposed in laterally offset relation with said bottom slot and extending thereabove, said casing also including a pair of laterally extending and longitudinally spaced-apart end walls respectively closing the opposite ends of said funnel and the opposite ends of said passage, whereby granular material in said body proceeds therefrom through said hopper and via said bottom discharge outlet into said funnel and then falls through said bottom slot into said first passage section and piles-up therein into laterally confronting relation with said second passage section in unobstructed condition, said end walls having ports respectively formed therein and communicating with the adjacent ends of said second passage section, whereby an air current passing longitudinally through said second passage section entrains the laterally confronting granular material piled-up in said first passage section and thus transports the same therewith with the consequent pneumatic unloading of the granular material from said hopper, and a conduit system connected to said ports and arranged to effect the passing of an air current longitudinally through said second passage section and the consequent pneumatic unloading of the granular material from said hopper and said body.

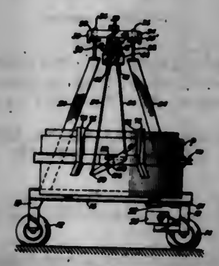
3,191,786
HAND TRUCK
Richard G. Langrell, 2110 Broadway, Baker, Oreg.
Filed Apr. 8, 1963, Ser. No. 271,128
4 Claims. (Cl. 214—370)

1. A hand truck comprising an elongated frame, a foot plate on the lower end of the frame for supporting an elongated article adapted to be placed on said elongated frame, front leg means pivotally connected to said frame, wheel means on said front leg means arranged to serve as pivot means for tilting the truck in article loading and unloading, rear leg means pivotally connected to said frame rearwardly of the pivot connection of said front leg means to said frame, the rear leg means being of greater length than said front leg means whereby the frame is tilted through different angles relative to the horizontal by varying the distance between said front and rear leg means, wheel means on said rear leg means, link means pivotally connected between said front leg means and said rear leg means, said link means being connected to said rear leg means at a point spaced from the point of pivot connec-



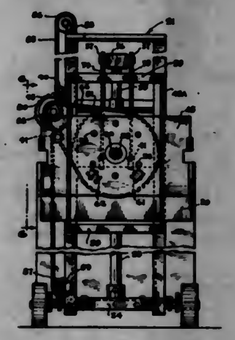
tion of said rear leg means with said frame and being of greater length than the distance between the pivot connections of said front and rear leg means whereby upon rearward pivot movement of said leg means, said front and rear leg means spread apart and both pivot rearwardly relative to the frame, and drive beans interconnected between said front and rear leg means for varying the distance between said leg means.

3,191,787
PIPE GRAPPLE
Richard A. Stearn, Sturgeon Bay, Wis., assignor to Drott Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed July 2, 1962, Ser. No. 206,774
6 Claims. (Cl. 214—394)



4. A mobile device for handling cylindrical articles, comprising grappling means including first and second substantially semi-circular straps having their concave surfaces in opposed face-to-face relationship, a pivotal connection between the first ends of each strap, a latch for removably securing second ends of the straps together, each of said straps being split laterally intermediate its length and forming a gap therein, first and second adjacent ends defining each of said gaps, a toggle pivotally mounted to each of said first ends on a horizontal axis, a linkage arm pivotally connected to said toggle and to said second end, a pair of tension elements connected to opposite ends of each of said toggles, and means simultaneously to shorten one and lengthen the other tension element whereby said toggle and linkage arms will vary the distance between said adjacent ends and whereby the grappling means and a pipe held thereby can be turned about the horizontal axes of the toggles.

3,191,788
LOAD TILTING MECHANISM FOR INDUSTRIAL TRUCK
Fred P. Hopfeld, Elmwood Park, Ill., assignor to Grand Specialties Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 26, 1963, Ser. No. 268,090
2 Claims. (Cl. 214—701)



2. Apparatus for lifting and tilting a drum or the like and comprising, an upright frame affording a vertical guide for a lift plate, a lift plate guidably supported on the frame, means for raising and lowering the lift plate, a vertically oriented turntable carried by said lift plate so as to be movable therewith and including means for securing a drum thereto, gear means associated with the turntable for rotating said turntable to tilt a drum secured thereto, vertically spaced idlers supported by said frame, a vertically oriented gear track in the form of a chain trained around said vertically spaced idlers, said chain being normally freed for idle travel around said idlers, a drive sprocket carried by said lift plate and adapted to drive said gear means, said spocket being meshed with said chain so as to drive the chain on the idlers during vertical movement of the lift plate, means wrapping said drive chain tightly about a portion of said drive gear and maintaining said drive chain in constant tension, an arm pivotally mounted on said upright frame, a toothed gear fixedly mounted on said arm and movable into engagement with said drive chain upon pivoting of said arm, and latch means for latching said arm in a position in which said toothed gear is in engagement with said drive chain, said gear securing the drive chain against movement so that the chain rotates the drive sprocket during vertical movement of the lift plate thereby to drive said gear means and rotate said turntable.

3,191,789
BOTTLE SEALING DEVICE
Emil Davidson, Scarsdale, N.Y., assignor to Guild Molders, Inc., Elmsford, N.Y., a corporation of New York
Original application Nov. 1, 1960, Ser. No. 66,479, now Patent No. 3,092,281, dated June 4, 1963. Divided and this application Apr. 30, 1963, Ser. No. 276,844
3 Claims. (Cl. 215—40)

1. A cap and sealing device for a wide-mouthed bottle having closure threads comprising a complementary circular cap having a depending cylindrical skirt having cooperating closure threads formed therein, said cap having a depending securement ridge formed therein for retaining a sealing device, a first sealing device for forming a seal between said cap and said bottle comprising a first sealing member having a cap-contacting sealing surface, a second sealing member having an annular bottle contacting surface substantially parallel to said cap-contacting surface and facing in the opposite direction, a resilient joining segment integrally formed with said first and second members resiliently supporting same for independent movement to accommodate irregularities in the cap and the bottle, and a cooperating securement shoulder formed integrally with said first member and sized to engage and become secured to said depending securement ridge, said cap having a central opening within said securement ridge



and an upward extension forming a narrow-mouthed pouring spout, an auxiliary cap engageable with said pouring spout extension, and an auxiliary sealing device for forming a seal between said auxiliary cap and said pouring spout, said auxiliary seal having first and second parallel members having substantially parallel cap-contacting and spout-contacting sealing surfaces respectively, and a resilient joining segment for resiliently supporting said first and second members for independent movement to accommodate irregularities in said auxiliary cap and said pouring spout, said cap and sealing devices forming means providing a sealable wide-mouthed opening for a bottle and a sealable narrow-mouthed pouring spout.

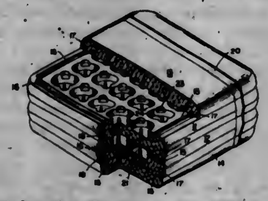
3,191,790
HOOD FOR BOTTLE STOPPER
Monroe J. Coven and Chester C. Moss, Brooklyn, N.Y., assignors to Monarch Wine Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 11, 1963, Ser. No. 250,882
2 Claims. (Cl. 215—43)



1. In combination, a bottle having a neck formed with an outwardly extending annular flange extending outwardly of the neck and spaced below the upper end of said neck, the upper end of the neck dome said flange being of less diameter than the diameter of said flange, a mushroom shaped stopper having a shank inserted into said neck of the bottle, said stopper having a head formed with an outwardly and downwardly extending flange forming an annular under-groove surrounded by said head flange, the upper end of said neck above said neck flange projecting into said under-groove, said head having a central, circular raised portion inwardly of said head flange, a hood for said stopper, made of pliable, blendable sheet metal and having a central top portion contacting the upper surface of the raised portion of said head, and a frusto-conical downwardly divergent portion extending from said top portion and engaging the top of said head flange, and an annular skirted portion extending down from said frusto-conical portion and surrounding and contacting the outer side of said head flange and neck flange, and said skirted portion at its lower end having an inwardly extending flange contacting the underside of said neck flange, said lower end of said skirted portion before being bent inwardly into contact with said underside of said neck flange having a continuous, annular lower end

edge in a plane perpendicular to the axis of said hood, said top wall of said hood having a removable part thereof separable from the remaining part of said top wall to provide a pull tab, and said frusto-conical and skirted portions of said hood being provided with a pair of weakened lines extending from opposite sides of said tab whereby said tab may be pulled to tear said frusto-conical portion and skirted portion along said weakened lines, for removal of the hood from the bottle and stopper.

3,191,791
CONTAINER
Thomas S. Jackson, Hopkinton, Mass., assignor, by mesne assignments, to Expandolite, Inc., Plainfield, Conn., a corporation of Delaware
Filed May 22, 1961, Ser. No. 111,664
6 Claims. (Cl. 217—25.5)



1. A container for elements comprising,
at least one tray,
each tray comprising means defining a plurality of recesses,
each of said recesses surrounded by wall surfaces generally perpendicular to the tray bottom surface plane and the tray top surface plane which are parallel to each other,
the wall surfaces of adjacent recesses being joined by means defining top surfaces in said tray top surface plane,
an outside wall extending between said tray bottom surface plane and said tray top surface plane completely surrounding all said recesses and having means defining a top surface in said tray top surface plane and a bottom surface in said tray bottom surface plane so that each of the latter top and bottom surfaces forms a closed loop in its respective plane,
means defining alternating grooves impressed within and ridges extending outside both said outside wall top surface and said outside wall bottom surface with the depth of each groove corresponding to the height of each ridge and being less than the distance between said tray top and bottom surface planes,
almost the entire bottom surface of the tray coinciding with said tray bottom surface plane,
whereby, with one of said trays resting on the other the outside wall bottom surface grooves and ridges of said one tray mate with the outside wall top surface ridges and grooves of said other tray with said other tray top surface in contact with said one tray bottom surface.

3,191,792
MEMBRANE DOUBLE WALL INTERCONNECTED PRESSURE VESSEL
David A. Hunt, Hawthorne, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 11, 1962, Ser. No. 230,013
2 Claims. (Cl. 220—3)

1. A cylindrical vessel of the type requiring a double wall for internal cooling, in which the expected pressure p_1 between said walls is greater than the expected pressure p_2 within such vessel and the ratio of such pressures is relatively constant, comprising an inner wall, an outer wall, and a multiplicity of radial struts connecting said inner wall and said outer wall at uniform intervals to define a multiplicity of longitudinal coolant channels of identical cross section, said outer wall consisting of a multiplicity of annular segments of radius r_1 equal to the number of said struts, each of said annular segments being joined at its ends to adjacent segments and extending symmetri-



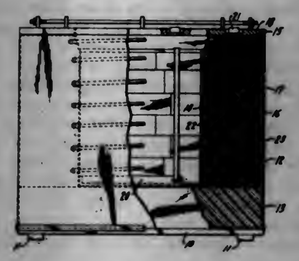
cally between said struts with its concave surface facing inwardly, said inner wall consisting of a like number of annular segments each of radius r_2 and similarly joined to adjacent segments of said inner wall and extending symmetrically between said struts, each said inner wall segment being disposed with its concave wall facing outwardly, said elements being related according to the relationship:

$$p_1 r_1\left[\sqrt{1-\left(\frac{R+d}{r_1}\right)^2 \sin^2\frac{\theta}{2}}-\frac{R+d}{r_1}\cos\frac{\theta}{2}\right]+$$

$$(p_1-p_2)r_2\left[\sqrt{1-\frac{R_2}{r_2^2}\sin^2\frac{\theta}{2}}+\frac{R}{r_2}\cos\frac{\theta}{2}\right]=0$$

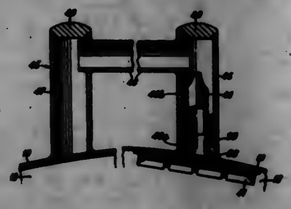
where θ=the angle between adjacent struts, d=the radial length of said struts, and R equals the radius of the pressure vessel to the inner end of the struts.

3,191,793
INSULATED COLLAPSIBLE SHIPPER CONTAINER
Willard L. Morrison, Lake Forest, Ill., assignor to Elmwood Liquid Products, Inc., New York, N.Y., a corporation of New York
Filed Feb. 28, 1963, Ser. No. 261,748
12 Claims. (Cl. 220—9)



1. In an insulated shipper container, a load supporting insulating base, an insulating expandable, contractable wall extending upwardly from the base, encompassing and defining a cold storage zone closed at the bottom by the base, the wall including inner and outer membranes extending upwardly from the base, defining a gas tight insulation chamber, expandable, contractable, insulating material substantially filling the chamber, a valved air duct into the chamber, the wall being free to collapse under atmospheric pressure, laterally away from the contents of the zone and downwardly toward the base, when air is withdrawn from the chamber through the valved air duct and to remain collapsed while the duct is closed.

3,191,794
PROTECTIVE HANDLE FOR THERMALLY INSULATED BULK STORAGE CONTAINER
Warren E. Perkins, Grand Island, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Original application Feb. 1, 1962, Ser. No. 172,852. Divided and this application Oct. 9, 1962, Ser. No. 229,313
4 Claims. (Cl. 220—14)



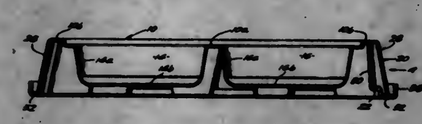
1. In a portable container of the type having a vessel for holding liquefied gas surrounded by an insulating jacket, provided with a vacuum connection and an insulation filling connection, the improvement of a pair of handles for respectively concealing said connections and protecting same from damage, each of said handles comprising a pair of spaced upstanding tubular arms welded to said container, an inwardly facing opening in each of said arms adjacent the upper end thereof in registry with each other, and a horizontal bail member receivable in the openings in said spaced arms, one of said arms from each of said handles being constituted of a pair of complementarily threaded tubes, which in assembly completely conceal one of the connections on the container, respectively.

3,191,795
VACUUM INSULATED VESSELS
William Molnar, London, England, assignor to The British Oxygen Company Limited, a British company
Filed Aug. 20, 1963, Ser. No. 303,380
Claims priority, application Great Britain, Aug. 31, 1962, 33,608/62
3 Claims. (Cl. 220—14)



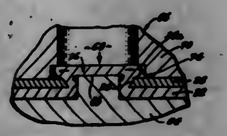
1. In a vacuum insulated storage and transport vessel having an inner container provided with a neck portion for filling with low boiling point liquefied gases, an outer shell surounding and spaced from said container and connected therewith at said neck portion in fluid-tight manner to define therewith a vacuum space between the container and the outer shell, and at least one radiation shield suspended from said neck portion within said vacuum space surrounding and spaced from said container: means for preventing side-sway of the radiation shield within the vacuum space; said means comprising a stud fixed on the bottom external face of the shield extending axially therefrom at its center and spaced axially above the bottom of the outer shell, a cup seated on and housing the stud, a rigid ring concentric with said stud and fixedly attached to the inner face of the outer shell bottom, and at least three flexible threads of low heat conductivity and material other than elastic extending radially in equidistant circumferential spaced relation between the ring and the cup in connection with each and operative to hold said cup and stud against radial displacement.

3,191,796
COMPARTMENTED STACKING AND NESTING CONTAINER
Jacob Louis Schwartz, Covina, and August E. Nomme, Sun Valley, Calif., assignors, by mesne assignments, to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 260,815, Feb. 25, 1963. This application July 21, 1964, Ser. No. 385,828
8 Claims. (Cl. 220—23.6)



1. An integrally formed, compartmented, stacking and nesting container comprising:
a top wall adapted to be horizontally disposed and having a plurality of horizontally separated, downwardly extending depressions formed therein which provide a corresponding plurality of upwardly opening compartments;
a continuous peripheral side wall which extends downwardly from the peripheral edge of said top wall, and at the same time outwardly away from said compartments;
said compartments having walls converging inwardly from their top openings toward their bottoms so as to permit a nest relationship of two or more identical ones of said containers;
said side wall extending downward at least as far as the bottoms of said compartments and having vertical wall sections of which alternate ones are inwardly and outwardly depressed;
said inwardly depressed vertical sections terminating in horizontal shelves at about the elevation of the bottoms of said compartments whereby a plurality of said containers with all the compartments thereof full may be firmly stacked together with said shelves of an upper container engaging said top wall of an underneath container;
said side wall terminating in a continuous horizontal peripheral ledge disposed beneath the level of said shelves and which is adapted to engage a horizontal supporting surface to provide for the lowermost one of a stack of said containers a supporting base which is substantially co-extensive with the maximum horizontal extent of each of said containers.

3,191,797
SHEET METAL JOINT
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio
Filed Mar. 4, 1963, Ser. No. 262,467
2 Claims. (Cl. 220—54)



1. In a container member having a wall fabricated from sheet stock;
tear line means formed in the member and defining a weakened elongate section;
means to accommodate force application to the section to induce fracture of the section from the member comprising a tab with an aperture therein; and

a permanent connection between the tab and the section comprising a generally hollow rivet projecting from and integral with the section, and extending through the aperture in the tab,

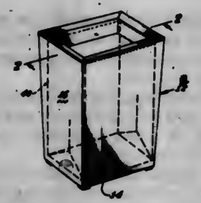
said hollow rivet having a peripheral wall and a transverse end wall, said end wall being thinner than the peripheral wall,

said end wall and the peripheral wall being integrally joined by a circumscribing single-layer bead overlying and clampingly engaging the rim of the aperture,

said bead as measured radially of the hollow rivet being at least as thick as the peripheral wall of the hollow rivet,

said bead being of hollow configuration in cross section and being shaped with an inner radius spacing the transverse end wall of the hollow rivet from the peripheral wall of the hollow rivet.

3,191,798
LINED WASTE CONTAINER
Alan M. White, 236 Tranquillo Road, Pacific Palisades, and Carl Bob Hampton, 1258 N. Beechwood, Hollywood, Calif.
Filed July 31, 1962, Ser. No. 213,663
6 Claims. (Cl. 220—65)



1. A waste container adapted to receive a removable liner in the form of a flexible fabric bag, said container comprising:

(A) an open-topped receptacle having substantially vertical relatively rigid side walls and a transverse bottom wall into which the said bag is so insertable as a liner; and

(B) a capping frame member, said member including:

(i) a first portion, the outer configuration and dimension of which portion being such that when the frame member is lowered coaxially upon the receptacle, said first portion extends at least partly radially into the space defined by the upper rim of said side walls;

(ii) a second portion, said second portion

(a) being integral with the first portion,

(b) being of sufficiently greater peripheral dimension than that of said first portion, to provide a flange adapted to seat upon said rim, and

(c) having a downwardly extending first skirt dimensioned closely to abut the inner wall of said rim; whereby, when said member is disposed upon said rim, said member is fully supported thereby and provides increased rigidity for the upper area of said side walls; and

(iii) a second skirt, said second skirt

(a) also being integral with said first portion;

(b) extending inwardly of said first and second portions, and downwardly into the space defined by said side walls; and

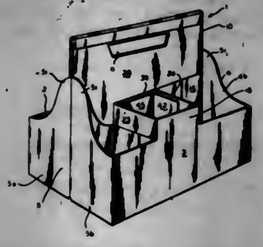
(c) being spaced from said first skirt.

3,191,799
SAFETY FLOAT VALVE
Carroll C. Figge, Batavia, Ill.
Filed Dec. 11, 1961, Ser. No. 158,366
7 Claims. (Cl. 220—90)



5. A float for a paint receptacle having an opening at the top substantially of the same area as the float, the float comprising two similar members semicircular in area, offset hinge means connecting the members along their diameters and having thinner portions at their diameters with less floatation to form a shallow angular space at the diameter and the offset hinge means admitting liquid paint therethrough from below the float to fill said space, the outer edges of the float members substantially fitting the inside of a receptacle into which the float is inserted, the deposit of paint from the receptacle forming a thin film between the inside of the receptacle and the outside of the float adapted to harden and form a seal to protect paint in the receptacle and to prevent loss and contamination thereof.

3,191,800
BOTTLE CARRIERS
Michael H. Kowal, Smoke Rise, Kenvelon Borough, N.J., assignor, by mesne assignments, to The Mead Corporation, Atlanta, Ga., a corporation of Ohio
Continuation of application Ser. No. 41,846, July 11, 1960. This application Apr. 2, 1963, Ser. No. 269,984
3 Claims. (Cl. 220—115)



1. A bottle carrier blank construction for a collapsible bottle carrier made from cardboard, or like paperboard material, and comprising a main carrier blank body sized, cut and scored to form a strap-style bottle carrier which includes a pair of bottom panels having inner edge portions joined together along a central longitudinal fold line, a pair of side wall panels having outer end edge portions and having inner edge portions integrally joined along fold lines to said bottom panels, two pairs of end wall panels each having an inner end edge portion hingedly connected to the said outer end edge portion of one of said side wall panels along a fold line, each of said end wall panels having an outer edge portion, a riser panel hingedly connected to the said outer edge portion of each of the said end wall panels, the said riser panels at each end of the said carrier blank body being adapted to be adhesively secured together in face-to-face relation and to project inwardly to afford hinged connections between the said end wall panels at the ends of the said carrier blank body, each of the said riser panels having an outer edge portion integrally joined thereto and extending substantially beyond the outer edge of the corresponding one of said end wall panels, a handle panel arranged between each pair of the said riser panels and adapted to be rigidly secured to a pair of said riser panels and to each other to afford a weight-transmitting connection through said riser panels between said handle panels and said end wall panels in the erected condition of the said carrier blank body, each of the said side wall panels having an integral median extension panel formed thereon and projecting outwardly therefrom medially of the corresponding one of the said side wall panels, a pair of bottle-separating strap panels arranged at opposite sides of each of the said median side wall extension panels, each of the said bottle-separating strap panels having an inner edge portion hingedly connected along a fold line to a corresponding one of said median extension side wall panels, and means for converting said strap-style main carrier blank body to a full depth style bottle carrier comprising a pair of substantially rectangular-shaped auxiliary blank and converting members each including a center panel and two end panels hingedly connected to the said center panel along fold lines, one of the said end panels of each of said auxiliary blank and converting members being underfolded under the said center panel thereof along a fold line and having only an outer end portion thereof adhesively secured to a first one of said bottle-separating strap panels in a pair thereof and the other end panel of each of said auxiliary blank and converting members having only an outer end portion thereof adhesively secured to the other one of said bottle-separating strap panels in a pair thereof for movement of said end panels of said auxiliary blank and converting members with said bottle-separating strap panels between a flat collapsed condition and a fully erected condition, two of said bottle-separating strap panels cooperating with said end wall panels, said handle panels, and one of said side wall panels, in the erected condition of said main bottle carrier blank, to provide a center bottle compartment and two end bottle compartments disposed on opposite sides of said center bottle compartment, the other two of said bottle-separating strap panels cooperating with said handle panels and with the other of one of said side wall panels and with said end wall panels, in the erected condition of said bottle carrier blank, to provide a second center bottle compartment opposite the said first-named center bottle compartment and two other end bottle compartments disposed on opposite sides of said second-named center bottle compartment, the said auxiliary blank and converting members being secured by the said adhesive connection of the said end panels thereof to the said bottle-separating strap panels, each of the said panels of each of said auxiliary blank and converting members being substantially coextensive in height with the depth of the said side wall panels including the said median upward extensions thereof so as to provide substantially full depth bottle separation between said center bottle compartments and the adjacent end bottle compartments when the said carrier blank is in fully erected condition.

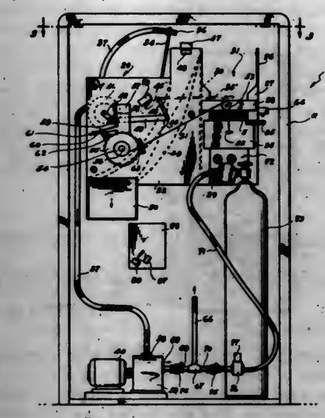
3,191,801
BALLOON VENDING MACHINE
Raymond P. Standish, Fairfield, Conn., assignor to Miner Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,246
8 Claims. (Cl. 221—14)

1. A balloon vending machine comprising:

(A) a cabinet having means therein defining a magazine for receiving a supply of balloons;

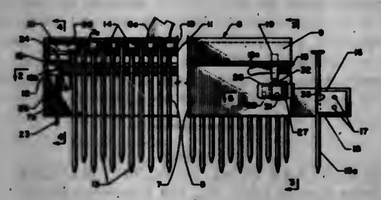
(B) dispensing means operative cyclically to remove a balloon from said magazine and to deliver the removed balloon to the exterior of said cabinet;

(C) inflating means for supplying a gaseous mixture of air and helium under pressure from sources thereof contained in said cabinet to a balloon delivered to the exterior of said cabinet; and



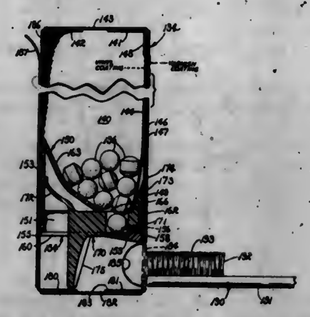
(D) control means for said inflating means including means actuated by said dispensing means and permitting operation of the inflating means only following operation of said dispensing means.

3,191,802
AUTOMATIC NAIL DISPENSER
Walter Lasting, 111—33 116th St., Richmond Hill, N.Y.
Filed May 22, 1963, Ser. No. 282,261
1 Claim. (Cl. 221—191)



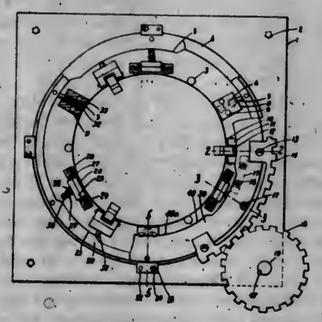
A nail dispenser comprising a nail holder having a common loading and discharge opening at its forward end, the said holder including side walls spaced apart to form a passage for nails in single file, the said side walls having opposing slots providing two longitudinal channels in proximity to each other, each channel slidingly receiving the nails and providing supporting surfaces from which the nails are freely suspended, a follower engaging the rearmost nail in said file and guided for sliding movement in one of said channels, such follower including a depending rod formed with an offset portion intermediate its ends, an elastic strip doubled upon itself with its bend engaging the said rod offset portion and with the free ends of its two folds attached to the outer faces of said side walls in rear of said discharge opening, the inner faces of said side walls also being slotted to receive the folds of said elastic strip, means carried by one of said side walls of the holder for releasing the nails at said discharge opening and automatically restraining all but the foremost nail during each individual release, an arm extending forward from the other of said holder side walls, and a permanent magnet attached to said arm in advance of said discharge opening.

3,191,803
DENTIFRICE DISPENSER IN COMBINATION WITH COOPERATING TOOTHBRUSH
Robert S. Hamilton, 5639 N. Millbrook, Fresno, Calif.
Filed Jan. 6, 1965, Ser. No. 424,461
19 Claims. (Cl. 221—200)



17. A dentifrice dispensing apparatus comprising a support body; a supply magazine having a discharge orifice therein and adapted to hold a supply of individual dentifrice pellets so that the pellets are gravitationally urged toward the orifice; means mounting the magazine on the body; means connected to the magazine and adapted to receive single pellets from said discharge orifice and to dispense a single pellet upon movement of said means to a dispensing position; toothbrush engageable operating means extended from the magazine and connected to the dispensing means to move said means to said dispening position; guide means carried on the body and adapted to support a toothbrush in engagement with said operating means in a receiving position below said dispensing means when in said dispensing position and for reciprocal movement toward and from said position; and a distributor plate carried in fixed position on said body having a surface extended downwardly and away from the dispensing position and adapted to contact and to spread a discharged pellet on a toothbrush when said toothbrush is moved away from said operating means along the path of travel defined by said guide means.

3,191,804
FOIL PLATE DISPENSING MECHANISM
John Joseph Amic, Sr., 318 Brampton Road, Louisville, Ky.
Filed Apr. 24, 1963, Ser. No. 275,264
2 Claims. (Cl. 221—213)



1. A device for dispensing container members in one by one fashion from the bottom of a stack wherein each container member has a vertically disposed flange at its outer periphery and wherein the bases of the individual container members in the stack are not in horizontally parallel relation with each other, which comprises:

(a) a frame containing a magazine having a dispensing opening below the bottom of an operatively positioned stack;

(b) means for holding an operatively positioned stack, including

(i) an annular series of horizontally spaced bottom lifters mounted on the frame for movement between an upper and medial position in which they position the bottom container member to a level horizontal position and support the stack through their engagement with the exterior surface of the bottom container member of the stack and a lower and lateral position in which they are located outside of the downward path of the bottom container member of the stack, and

(ii) an annular series of horizontally spaced side members having resilient inner surfaces and mounted on the frame for movement between an inward position in which they support the stack through slidably releasable frictional engagement with the vertical flange of the container members located at the lower portion of the stack and an onter position in which they release the stack;

(c) means for removing the bottom container member from the bottom of the stack, including

(i) an annular series of horizontally spaced impaling needles mounted on the frame for movement from a retracted starting position inwardly to impale the vertical flange of the bottom container member of the stack, thence downwardly to pull the container member downwardly out of frictional engagement with the side members, thence outwardly to release the bottom container member and thence upwardly back to their starting positions; and

(d) operating means for moving said stack holding means and said container member removing means in predetermined timed relation with each other to remove a container member while the side members engage the stack and the bottom lifters are in a lower and lateral position out of the way of such removal and after each removal to drop the stack upon the bottom lifters in their upper and medial position while the stack is disengaged by the side members and the impaling needles, said operating means including

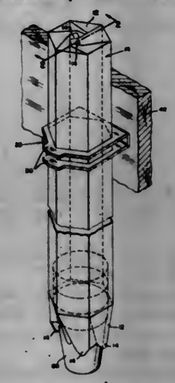
(i) a cam ring assembly and a driving means operatively connected thereto so as to drive said cam ring assembly in timed relation

(a) said cam ring assembly comprising three cam rings, each containing an annular cam profile containing equally spaced horizontal projections and indentations and a series of equally spaced vertical cam members;

(b) said projections of said cam profiles being operative to move said bottom lifters, said side members and said impaling needles inwardly in timed sequence and said indentations of said cam profiles being operative to move said bottom lifters and side members to an outer position and said impaling needles to a retracted position;

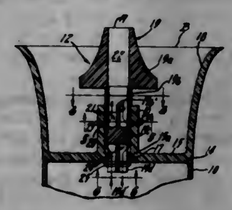
(c) said vertical cam members being operative to move said impaling needles from an upward position downwardly to a lower position and thence upwardly to the original starting position.

3,191,805
COMBINATION WALL BRACKET AND DISPENSING PACKAGE
Lorne R. Stanley, San Francisco, Calif., assignor to Safe-T-Pacific Company, Redwood City, Calif., a corporation of California
Filed Nov. 30, 1962, Ser. No. 241,405
5 Claims. (Cl. 221—283)



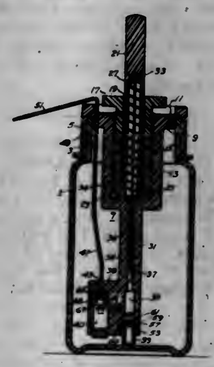
1. A combination wall bracket and dispensing package for ice cream cones, cups and similar articles, comprising, an elongated container of generally polygonal cross-section, a plurality of articles stored in nested relation within the container, dispensing means at one end of said container, a cooperating wall bracket supporting said container in upright position, said wall bracket comprising a pair of extending arms integrally attached to a central bracket portion by scored and bent portions of reduced thickness whereby said bracket assumes a substantially U-shaped configuration, each of said arms being provided with a polygonal opening corresponding in shape and dimension to the polygonal cross-section of said container so as to receive said container, said arms being urged apart and into frictional supporting relationship with said container by a natural resistance to bending of the material of the wall bracket, and attachment means secured to the central portion of said wall bracket whereby the container can be supported in upright dispensing position upon a wall surface.

3,191,806
STAND-UP CONTAINER
Robert Stephen Schultz, Somerville, and Arvid Kjellsen Grimsley, Rockaway, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 30, 1963, Ser. No. 320,021
5 Claims. (Cl. 222—41)



4. A stand-up container having a support pedestal at its discharge end, comprising a tubular body, a headpiece integral with the discharge end of said body, and a dispensing closure mounted in said headpiece, said headpiece including a transversal apertured wall centrally mounting said closure and an axially projecting wall as said pedestal extending from the periphery of said transversal wall and terminating in a planar peripheral edge spaced a predetermined distance from said transversal wall, said closure including a passaged neck positioned wholly within said pedestal and a neck-sealing member normally closing said neck and adapted to be moved relative to said neck to open same for egress of product, said member being movable to a position substantially within said pedestal with the outermost extremity of said member substantially coinciding with the plane of said peripheral edge of said pedestal to ensure positive closure when said container is stood erect and being movable outwardly from said plane when not in fully closed position to cause a tilting of said container as an indicator of an incomplete closure.

3,191,807
DISPENSER ADAPTED FOR ULTRA-MICRO RANGE
John J. Rodrigues, Jr., Berkeley, Calif., assignor to Microchemical Specialties Co., Berkeley, Calif., a corporation of California
Filed Nov. 13, 1961, Ser. No. 151,873
9 Claims. (Cl. 222—49)

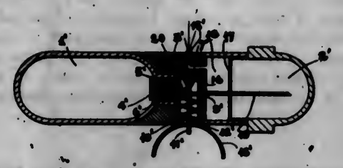


5. In a liquid dispenser having a longitudinal passageway for a piston assembly, and a plunger type piston assembly in said passageway; means for adjustably controlling the stroke of said plunger type piston assembly, said means including a scale carried longitudinally of said plunger type piston assembly and movable therewith, said scale having values increasing toward the upper end of said piston assembly, stop means in said dispenser for limiting downward movement of said plunger type piston assembly to fix the downward limit of each stroke, and a bushing surrounding said plunger type piston assembly, said bushing being adjustably assembled into said dispenser with respect to said fixed stop, to create an adjustable upper stop for said plunger type piston assembly and to alter the upper limit of the stroke thereof, said adjustable bushing in conjunction with said stop means and said scale providing means for predetermining the stroke of said plunger type piston assembly.

3,191,808
AEROSOL APPARATUS USING COMPRESSED AIR OR GASES FOR LIQUID AND POWDER PRODUCTS
Alessandro Spalazzi and Alexander Morgante, Rome, Italy, assignors to Common Market Associates Inc., Springfield, Mass.
Filed Sept. 30, 1963, Ser. No. 312,731
3 Claims. (Cl. 222—82)

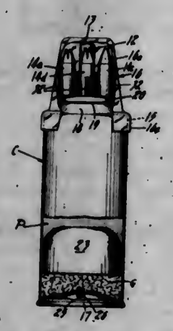
2. Aerosol apparatus using a compressed gas for the dispensing of liquid or powder products characterized

by, a primary container for containing the product to be sprayed, a secondary container for containing the compressed gaseous product, a common joint for the mounting of said primary and secondary containers thereupon and having a discharge nozzle, and control means carried by said common joint, said primary container including a rupturable diaphragm for containing the product to be sprayed therewithin until ready for use, a needle mounted



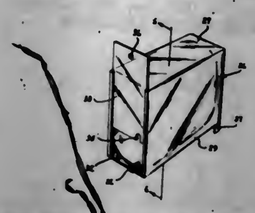
upon said common joint for rupturing the diaphragm of said primary container for effecting the release of the materials from said containers and the admixing thereof preliminarily to discharge from the discharge nozzle of said common joint, said common joint incorporating a double valve activated by a pivotal control for opening and closing in seriatim a conduit leading from said primary container and a conduit leading from said secondary container and said nozzle.

3,191,809
PRESSURIZED CONTAINER HAVING A PLURALITY OF SELECTIVELY ATTACHABLE NOZZLES
Robert Stephen Schultz, Somerville, N.J., and Ross Armstrong Easter, Minneapolis, Minn., assignors, by mesne assignments, of one-half to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Dec. 29, 1961, Ser. No. 163,173
7 Claims. (Cl. 222—182)



1. A device for decorating cakes and the like, comprising a pressurized container, a mounting cup closing one end of said container, valve means including an upstanding nozzle supported by said mounting cup, a central tubular cap member enclosing said valve means and normally engaging the end of said nozzle during storage of said container, and a plurality of tubular nozzle members molded to said cap member and extending radially outwardly therefrom, said nozzle members being separable from said cap member for selective seating upon said valve nozzle after removal of said cap member, and said nozzle members being disposed upon said mounting cup when said cap member is seated upon said valve means and prior to separation from said cap member.

3,191,810
COMPOSITE MILK PACKAGE
Richard A. Johnston, 203 E. Del Rio Drive, Tempe, Ariz.
Filed Sept. 30, 1963, Ser. No. 312,563
10 Claims. (Cl. 222—183)



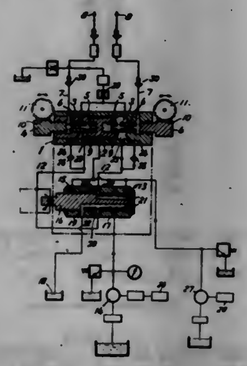
1. A milk package or the like, comprising
(a) a flexible collapsible bag adapted to contain a liquid,
(b) a spout through which liquid may be withdrawn from said flexible bag,
(c) a container support in the form of an outer form retaining package having a single piece generally rectangular container body having five closed sides and one open side,
(d) means forming edge and bottom slots on said container support at said open side, and
(e) a panel slidable in said slots to close said open side,
(f) said panel adapted to engage said spout, and
(g) operative means on said spout outside said container, whereby liquid may be withdrawn from said bag when said container is in a closed condition.

3,191,811
FURNITURE GUARD
Elmer W. McBroom, Range Lane Road, Covington, La.
Filed May 9, 1963, Ser. No. 279,082
2 Claims. (Cl. 222—192)



1. A container comprising
a hollow bottle-type body having a flat bottom and at least one flat side joined at a corner,
a recess provided along the corner for enabling that corner to straddle a molding strip at the junction of a wall and floor when the body lies on the flat side,
an opening for discharging the contents of the bottle-type body,
said opening being noncircular in cross section,
a stopper for said body having a stem with the same cross section as the opening and removably disposed in the opening for sealing the interior of the body, the cross-sectional shape of the stem and opening requiring that the stopper be mounted on the body in a particular orientation with respect to the body,
and a pair of spaced apart arms forming part of the stopper and lying in a plane parallel to the flat side of the body when the stopper is mounted on the body, said arms being adapted to straddle the sides of a furniture leg when the bottle is disposed on its flat side.

3,191,812
HIGH PRESSURE FUEL INJECTION APPARATUS FOR INTERNAL COMBUSTION ENGINES
Urataro Asaka and Kiyoshi Ozaki, Saitama-ken, Japan, assignors to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Saitama-ken, Japan, a corporation of Japan
Filed Oct. 12, 1964, Ser. No. 403,249
Claims priority, application Japan, Feb. 25, 1964, 39/9,357
3 Claims. (Cl. 222—250)



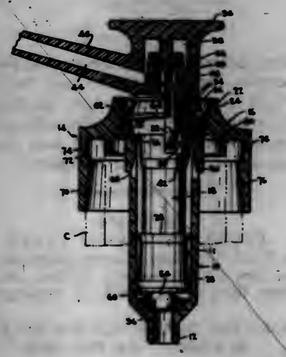
1. In a fuel injection apparatus, a main cylinder, a main piston freely slideable mounted in said main cylinder and having two opposite terminal faces, a pair of subsidiary cylinders respectively excised in the two terminal faces of said main piston, said subsidiary cylinders being of substantially smaller diameter than said main cylinder, a pair of subsidiary pistons mounted for displacement within said subsidiary cylinders respectively, each said subsidiary piston respectively being provided on a lateral face thereof with a valve opening, said main cylinder having two separate chambers formed therein, supply means for alternately supplying oil under pressure to the two chambers of the main cylinder for causing alternately movements in opposite directions of said free main piston, whereby the delivery of oil through said valve opening cylically delivers oil under pressure to each said subsidiary piston for compressing the oil in each said subsidiary cylinder.

3,191,813
LABORATORY APPARATUS
Alan A. Duff, North Springfield, Va., assignor to Cooke Engineering Company, Alexandria, Va., a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,491
21 Claims. (Cl. 222—356)



1. A liquid retaining loop having a longitudinally apertured handle and a hollow head formed of a pair of spirally wound wires for carrying liquid having a surface tension, the apertures between adjacent turns of said spirally wound wires being of a size not greater than that which will retain said liquid in said loop by the said surface tension and the spirally wound wires constituting a hollow cage surrounding and defining a liquid-receiving enclosure, the ends of said wires being disposed in said aperture in spaced side-by-side relationship and said handle being staked between said wires to seal said aperture and secure said head to said handle.

3,191,814
LIQUID DISPENSER
Douglas F. Cornette, Los Angeles, and Rex C. Cooprider, Downey, Calif., assignors to The Drackett Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 23, 1962, Ser. No. 168,068
1 Claim. (Cl. 222—384)



In a liquid dispenser of the hand actuated reciprocal pump type, a tubular pump barrel defining a pump chamber of uniform diameter, a cap including a top extending radially outwardly from the barrel, a cylindrical skirt depending from said top concentrically to and spaced radially from the barrel, means on the skirt for securing the cap on a container, said cap being formed with an internally threaded central circular bore of larger diameter than said pump chamber, said bore being concentric to said skirt and radially inwardly spaced therefrom, the upper end of said pump barrel being directly integrally connected with said cap around the lower end of said bore with its pump chamber communicating and axially aligned with said bore, sealing means integrally connected to the top of the cap in radially spaced concentric relation to said pump barrel in position for sealing engagement with the neck of a container to which said cap is applied, an axially upwardly presented annular shoulder being formed in the barrel between said bore and the pump chamber, a plunger being disposed in said chamber for reciprocation along and rotation about the axis of the chamber, the upper end of said plunger projecting externally of the chamber and bore through the said bore, said upper end having thereon a discharge head of larger diameter than said chamber, said head being formed with external threads for cooperation with said internally threaded bore, and having an axially downwardly directed annular seal for operative sealing engagement with said annular shoulder.

3,191,815
TOPS FOR AEROSOL CONTAINERS
Cecil Robert Montgomery Graham, Lagonda Ave., Killara, and Lambert Ronald Little, 3 Weerang St., Eastwood, both of New South Wales, Australia
Filed May 7, 1962, Ser. No. 192,650
Claims priority, application Australia, May 8, 1961, 4,367/61
5 Claims. (Cl. 222—394)

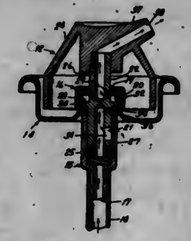
1. In combination, an aerosol container having a valve mechanism for discharging the contents of said container and a top for closing the container positioned around the

valve mechanism, said valve mechanism including a body portion and a discharge tube projecting outwardly from said body portion, said top being cap-like and comprising a disc-like portion, a central aperture in said disc-like portion through which said discharge tube extends, two mutually spaced thin-walled flanges extending outwardly



from the same side of said disc-like portion and concentric to said aperture, the inner one of said flanges sealingly embracing said valve body around said discharge tube, and a resiliently compressible gasket within the space bounded by said flanges and bearing against said container, said gasket being a flowable rubber compound.

3,191,816
FLUID DISPENSING VALVE
William A. Fead, Westfield, George Furutani, Fair Lawn, and Theodore P. Jakubowski, Clifton, N.J., assignors to Shelton, Inc., Clifton, N.J., a corporation of New Jersey
Filed Oct. 28, 1963, Ser. No. 319,171
16 Claims. (Cl. 222—394)



1. A valve for a receptacle containing a fluid to be dispensed therefrom by a gaseous medium under pressure confined within the receptacle, which valve comprises a body having a first inlet for the fluid, an outlet, a valve seat between said inlet and said outlet, and a second inlet for gaseous medium located between said first inlet and said outlet; first valve means for controlling the flow of the fluid through said outlet and being normally on said seat; means for operating said valve means to unseat the same; and second valve means for said second inlet operable to selectively establish fluid flow communication between said second inlet and said outlet upon unseating of said first valve means.

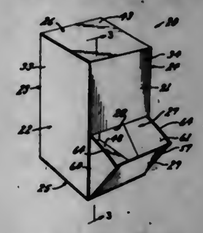
3,191,817
VALVE FOR DISPENSING FLUID
George Furutani, Fair Lawn, N.J., assignor to Shelton, Inc., Clifton, N.J., a corporation of New Jersey
Filed Oct. 28, 1963, Ser. No. 319,172
4 Claims. (Cl. 222—394)

4. A valve for a receptacle containing a fluid to be dispensed therefrom comprising, in a combination manually rotatable head for actuating said valve, a radially extending nozzle carried by and rotatable with said head, a siphon tube having a passageway in fluid flow connection with said nozzle and having a lower curved portion extending radially in the same vertical plane in which said nozzle extends, and means for rigidly securing said siphon tube to said head for rotation with said head, whereby as said head and nozzle are rotated the siphon tube rotates therewith and since the fluid in the receptacle seeks the lowest point in the receptacle the lower curved



portion of the siphon tube follows the positioning of the fluid so as to enable substantially all of said fluid to be dispensed from said receptacle.

3,191,818
CONTAINER WITH DISPENSING HOPPER MEANS AND BLANKS FOR MAKING THE SAME
Melville T. Farquhar, Chesterfield County, Maurice F. Nagle, Henrico County, and Edward T. Bryant, Bon Air, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,549
6 Claims. (Cl. 222—457)

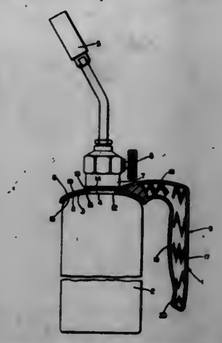


4. A blank for forming a container having a hopper means comprising a plurality of foldably connected walls for forming said container, three of said walls being adapted to be disposed in stacked relation and span the bottom of said container to form the bottom wall means of said container, and a hopper structure foldably connected to one of said three walls, the inner and outermost walls of said three walls having means for interconnecting the same together, the middle wall of said three walls having an opening passing therethrough and through which said interconnecting means can pass.

3,191,819
DETACHABLE HANDLE FOR DISPOSABLE GAS TANK
Robert J. Smith, 1267 Plymouth Ave. NE., Massillon, Ohio
Filed Nov. 1, 1963, Ser. No. 320,888
3 Claims. (Cl. 222—465)

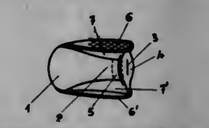
1. A detachable handle for use with a pressurized gas cylinder having a discharge valve at one end and having a detachable nozzle mounted on the discharge valve, the handle including a dome-shaped body member with a central aperture fitting around a discharge valve and clamped between a cylinder end wall and a nozzle, the dome-shaped body member having friction surface means

engageable with the end wall, the handle also having an L-shaped hand-grasping member extending from one side of the body portion and having an axis of a portion of said



L-shaped member substantially parallel to the axis of the cylinder, and the handle being composed of an integral unit of slightly compressible material.

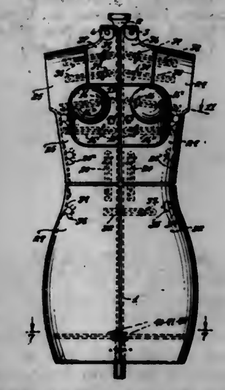
3,191,820
DISPENSERS, PARTICULARLY FOR LIQUIDS OR PASTES
René Kuster, 20 Rue de Heimsbrunn, Reinaigue, France
Filed June 28, 1963, Ser. No. 291,475
Claims priority, application France, July 6, 1962, 7,456, Patent 1,328,647
17 Claims. (Cl. 222—490)



1. In a dispenser, in combination, a pair of wall portions forming part of a container and defining between themselves a passage having a front end, said wall portions having a closed position engaging each other for closing the container, said wall portions also having an open position displaced from each other to open said passage so that material may discharge from the interior of the container; and manually-operable means engaging said wall portions at the exterior thereof and rearwardly of said front end and resiliently pressing them against each other to hold said wall portions in said closed position thereof, said manually-operable means having a pair of manually-engageable portions to be engaged and moved toward each other by the operator for placing said manually-operable means in a non-pressing position where said wall portions are displaced from each other and said passage is open.

3,191,821
DRESS FORM
Herman Levin and Charles Gatto, Brooklyn, N.Y., assignors to Ellanann Adjustable Dress Form Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed May 29, 1963, Ser. No. 284,165
4 Claims. (Cl. 223—68)

1. A dress form having a skirt composed of a plurality of interconnected front and back sections, a torso comprising two side-by-side neck members at the front of the dress form and two side-by-side neck members at the back of the dress form, two primary front sections and two primary back sections, each of said primary front and back sections being generally L-shaped and extending from a shoulder top line of the dress form to the waistline thereof, the outer margins of each primary front section tapering inwardly, said primary front sections and said front neck members encompassing a transversely elongated space, two bust sections in said space, means adjustably holding said bust sections to the primary front sections, means connecting the neck members to the pri-



mary front sections and consisting, for each neck member, of a slotted bar carried by the appropriate primary front section and a threaded stud connected to the appropriate neck member and passed through the slot of said bar, said stud receiving a thumb nut, and means connecting said neck members at their tops and permitting simultaneous bodily movement thereof, independently of the bust sections, upon release of said thumb nuts.

3,191,822
NECKTIE FORM DEVICE
Marie A. Gipperth, 503 E. 3rd St., Duluth, Minn.
Filed Dec. 3, 1962, Ser. No. 241,898
1 Claim. (Cl. 223—82)



A combination necktie device, for use without a heating element, designed to be inserted into the open ends of a necktie having wide and narrow tapered ends, comprised of a light-gauge sheet-metal base 33 inches long with V-shaped ends, a ¼-inch thick nylon sponge pad, constructed of resilient, moisture-resistant material, glued onto only the top surface of said base providing a padded laminate assembly, a permanent muslin sub-cover cut in two sections and stitched together enclosing said padded laminate assembly, the back and front surfaces of said above formed assembly being completely free of seams, lacing and crimping, and a soft, smooth satin cover cut and stitched in accordance with said muslin sub-cover enclosing said laminate assembly and muslin sub-cover to per-

mit easy insertion of said necktie device into a necktie, said necktie device being made up in 2-unit sets, one unit tapered wider than the other for the purpose of insertion into the wide portion of a necktie, and the narrow unit for insertion into the narrow portion of a necktie.

3,191,823
GARMENT HOLDER
John Edwardes, 7648 Sylvan St., Utica, Mich.
Filed Oct. 1, 1962, Ser. No. 227,410
3 Claims. (Cl. 223—96)



1. A garment holder comprising, in combination: an elongate holding member having a base and a pair of integral legs depending from opposite marginal edges of the base in converging relation to each other and terminating at their lower ends in opposed gripping faces to engage a garment therebetween, one of said legs being hinged intermediate its length for freely swingable movement of the lower end thereof toward and away from the corresponding portion of the opposite leg, a resilient clamping member swingably secured to said opposite leg of the holding member at a point intermediate its length and shaped to define a first portion superposing said base and a second portion bearing against said swingable lower end portion of the hinged leg tensioning the same toward the opposite leg to clamp a garment between the opposed gripping faces on the legs, and said clamping member being swingable out of engagement with said lower end portion of the hinged leg to free the latter for swingable movement away from the opposite leg to release said garment, and means secured to one of said members for suspending the garment holder.

3,191,824
CONTACT THIMBLE DEVICE
Bessie Frances Burr, 6958 N. Palafox Highway, Pensacola, Fla.
Filed Nov. 26, 1962, Ser. No. 239,911
2 Claims. (Cl. 223—101)



1. A contact thimble device comprising a rigid circular disk-like member having an outer peripheral flange provided with an annularly grooved upper face, and having a raised central portion within the flange provided with closely spaced indentations, the underside of the number being slightly concave; and an adhesive having inherent adhesive-retaining qualities applied to the underside of the member for retaining the member positioned on a finger or other support.

3,191,825
SCABBARD FITTING
Edwin L. Beckwith, Brookline, Mass., assignor to Beckwith-Arden Inc., Watertown, Mass., a corporation of New Hampshire
Filed July 7, 1964, Ser. No. 380,761
5 Claims. (Cl. 224—2)

1. A scabbard fitting comprising a sleeve of sheet metal merging rearwardly into a top plate having an upstanding shank, merging transversely at both sides into downwardly inclined wings and merging forwardly into an inturned flange, and a plastic bushing contained within



the upper end of the sleeve and having projecting ears at both sides anchoring it beneath the inclined wings of the top plate.

3,191,826
GUN REST
Dolphus Herman Adams, Billy Lee Drive 115, Price, Tex.
Filed July 2, 1964, Ser. No. 380,000
7 Claims. (Cl. 224—5)



1. A gun rest comprising a waist member, a bracer fixed at its lower end to said waist member, said bracer including a pair of relatively adjustable longitudinal members the upper of which terminates in a seat for supporting the barrel portion of a gun, means for releasably securing said waist member to the waist of a marksman, and means releasably fastenable about the shoulders and back of a marksman for supporting the seat of said bracer in a fixed position.

3,191,827
STRINGER HOLDER
Charles F. Tofte, Jr., 6203 Abington Way, Houston, Tex.
Filed Oct. 31, 1963, Ser. No. 320,496
8 Claims. (Cl. 224—7)



1. In a stringer holder, a continuous wire framework bent to form a substantially inverted U-shaped member and again bent to form outwardly inclined clamping members within the U-shaped portion, a rigid bar anchored longitudinally to the framework and extending

between said clamping members to maintain a turn in a stringer engaged by said clamping members and means for retaining the framework on the belt of a user.

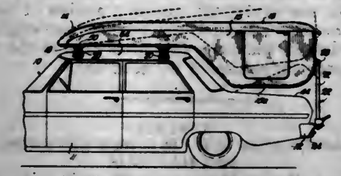
3,191,828
HARNESS FOR GAS-FILLED CYLINDERS
David L. Sense, La Habra, Calif., assignor to W. J. Volt Rubber Corp., a corporation of California
Filed May 14, 1962, Ser. No. 194,589
9 Claims. (Cl. 224—25)



1. In a device for mounting on the back of a wearer the gas supply cylinder of a self-contained underwater breathing apparatus, the combination of
first, second and third load-bearing pad units;
first clamp means for securing said first pad unit to the upper end portion of the cylinder;
a bridge member having its end portions secured each to a different one of said second and third pad units, said bridge member maintaining said second and third pad units spaced from each other;
second clamp means connected to said bridge member between the ends thereof for securing the combination of said bridge member and said second and third pad units to the lower portion of the cylinder, said pad units being interconnected through the cylinder, when secured to the cylinder by said first and second clamp means, with said first pad unit at least generally centered on the longitudinal axis of the cylinder and said second and third pad units spaced apart generally transversely of the cylinder; and
flexible body harness means connected to said pad units for securing the device to the wearer with said first pad unit engaging the central portion of the wearer's upper back and said second and third pad units each engaging the wearer's lower back on a different side thereof.

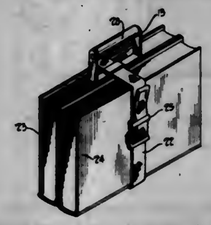
3,191,829
CAR-TOP CAMPER APPARATUS
Glenn B. Davis, 9539 Catalina, Overland Park, Kans.
Filed June 17, 1963, Ser. No. 288,196
11 Claims. (Cl. 224—42.1)

1. For use with an automobile having a frame and a body mounted on the frame, said body having a top and a rear deck, mobile carrier apparatus comprising:
an elongated enclosure adapted for disposition in overlying relationship to said top and said deck with the enclosure extending longitudinally thereof and presenting opposed, leading and trailing ends;
means on said enclosure for mounting the latter on the body for swinging movement about a generally horizontal axis extending transversely of the enclosure adjacent said leading end; and
means coupled with the trailing end of said enclosure



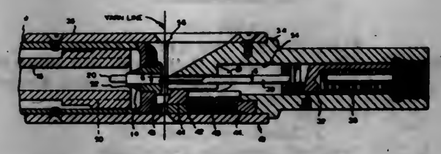
and adapted to be carried by said frame for raising and lowering said trailing end to swing the enclosure about said axis, whereby to provide access to the rear deck when said trailing end is raised.

3,191,830
BOOK CARRIER
Alfred K. Goetz, 3175 W. 115th St., Cleveland, Ohio
Filed Aug. 15, 1962, Ser. No. 217,175
3 Claims. (Cl. 224—45)



1. A book carrier comprising in combination a relatively flat, thin plate, a handle thereon, the plate having a width in the direction extending away from the handle greater than the width of the handle, and a strap passing through the handle and around the plate for securing books to the handle and against the plate on either side of the plate and parallel to the plate, against it, with the plate extending partially between the books.

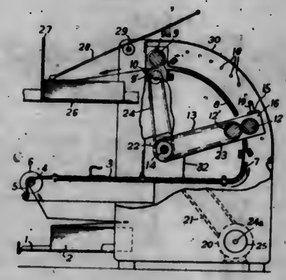
3,191,831
YARN-HANDLING METHOD
William Walker Bunting, Jr., Wilmington, Del., Robert Meagher, Wallingford, Pa., Kenneth Gilbert Swayne, Hockessin, Del., and John Palmer Werk, Horsham, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application Dec. 19, 1960, Ser. No. 76,895. Divided and this application Mar. 22, 1962, Ser. No. 181,652
2 Claims. (Cl. 225—4)



1. An improved method of engaging a running yarn line, severing said yarn line, and applying tension to the incoming end of the severed yarn line, comprising the steps of creating and maintaining in a given zone a moving stream of high velocity air directed substantially along a desired line of movement of the yarn line, supporting a tensioned running yarn line in intersecting relationship to said line of movement in close proximity to said stream,

and substantially simultaneously physically rapidly deflecting said running yarn line into said stream adjacent one end thereof and severing the yarn in the vicinity of the point of deflection in the outgoing portion of the running yarn line so that the incoming portion of said running yarn line is abruptly shifted into and engaged by said air stream without a significant drop in the tension of the incoming portion of the yarn line.

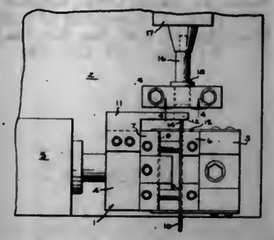
3,191,832
PAPER AND THE LIKE WEB SEVERING MECHANISMS
Roy Dennis Davies, Hillborough, Herne Bay, Kent, England, assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed Mar. 12, 1964, Ser. No. 351,315
Claims priority, application Great Britain, Mar. 13, 1963, 9,941/63
1 Claim. (Cl. 225—100)



A paper or like web-severing machine comprising a supporting frame; means on said frame for feeding, guiding, and severing a web and for delivering sheets severed from said web, said means adapted to receive a web moving in one direction, operate thereon, and deliver the severed sheets in the opposite direction; the points of reception of said web and delivery of said sheets by said means being vertically spaced from each other and upon the same side of said machine, the delivery point being above said receiving point; said means including a web and sheet guide of generally vertically arcuate configuration joining said points of reception and delivery, a pair of outfeed rollers and a pair of infeed rollers, means for supporting said pairs of rollers at spaced points along said guide, means for adjusting the position of at least one of said pairs of rollers along said arcuate guide to space the infeed and outfeed rollers at appropriate distances apart for the selected sheet length; means for driving said outfeed rollers at a greater speed than said infeed rollers, a sheet web support adjacent the receiving point and a sheet pile support adjacent the delivery point and above the web support on the same side of the machine.

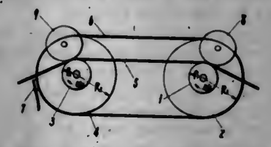
3,191,833
TUBE BREAK-OFF APPARATUS
Frank H. Walker, Kenneth E. McWilliams, and Joseph D. Wise, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed May 21, 1964, Ser. No. 369,138
2 Claims. (Cl. 225—102)

1. Tube break-off apparatus comprising:
clamping means for clamping a portion of a tube with one end of said tube extending beyond a face of said clamping means,
a movable member supported for reciprocal movement relative to said clamping means along a line parallel to the axis of the clamped tube portion between a first position and a second position adjacent to but spaced from said face,
said movable member including a first surface adapted upon movement of said movable member to its second position to offset said tube end at an angle of from about 5 to 15° relative to said clamped portion,
said movable member including a second surface substantially normal to said first surface for engaging said offset tube end,



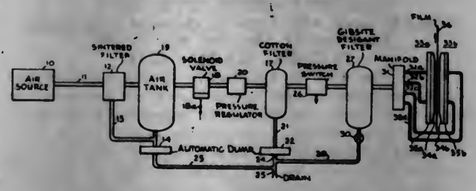
and means for rotating said movable member about the axis of the clamped portion of said tube in a direction such that said second surface engages said tube end for rotation thereof about the axis of said clamped portion for separating said end from said tube.

3,191,834
TAPE DRIVING SYSTEM FOR TAPE RECORDERS
Shunsaku Nakauchi, Tokyo, Japan, assignor to Tohoku Oki Electric Company Limited, Fukushima Prefecture, Japan, a corporation of Japan
Filed Sept. 17, 1962, Ser. No. 224,152
Claims priority, application Japan, Sept. 27, 1961, 36/34,560
2 Claims. (Cl. 226—38)



1. A tape driving device for tape recorders comprising a first pulley, and means for driving said pulley, a first capstan coaxial with said first pulley, a pinch roller in contact with said first capstan, a second pulley a belt trained about said pulleys, a second capstan coaxial with said second pulley and for taking up the tape, a pinch roller in contact with said second capstan, a brake provided on said second pulley for tensioning the belt whereby the peripheral velocity of the second capstan is made lower than that of the first capstan.

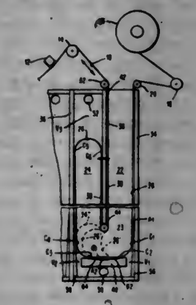
3,191,835
TRANSPORT APPARATUS
George S. Fenn, Rolling Hills, Calif., assignor to FMA, Inc., El Segundo, Calif., a corporation of California
Filed Jan. 11, 1963, Ser. No. 250,805
6 Claims. (Cl. 226—97)



1. In film transport apparatus, a mechanical arrangement for supporting the moving film by means of air

under pressure, said arrangement comprising: a pair of rectangular-shaped plates in face-to-face relationship with the film moving therebetween and respectively including windows that are in registration with each other and through which the film may be projected, said plates respectively including equal numbers of orifices through which air is blown against the sides of the film and being tapered outwardly at their narrow ends to provide a smooth transition for air emerging from between them, said orifices being arranged in columns and rows that extend across the length and breadth of said plates; and a pair of plate support members respectively having cavities on the surfaces thereof and air passages through which air under pressure is fed to said cavities, said pair of plates respectively being mounted on said support members with the cavities thereof air-tightly cupped over said orifices, said support members respectively including windows that are in registration with each other and with the windows of said plates.

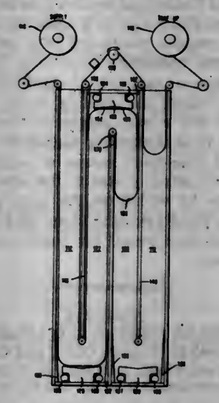
3,191,836
TAPE FEEDING APPARATUS
Trevor Drake Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,703
3 Claims. (Cl. 226—118)



1. Storage means for buffer lengths of tape in a system for feeding tape between reels comprising separate first loop boxes for each reel for receiving through an open end thereof a separate loop of tape extending between each of said tape reels, and an interposed tape drive means, a separate second loop box associated with each of said first loop boxes and communicating with an end opposite said open end of each of said first loop boxes so as to provide a change in the direction of the associated tape loops as they move from said first loop boxes to said second loop boxes, said second loop boxes directly communicating with each other at their other ends, the region of communication between each of said loop boxes including means for exposing said region to a source of reduced air pressure so that each tape loop is maintained taut as long as the ends of the loops are not in the same loop box.

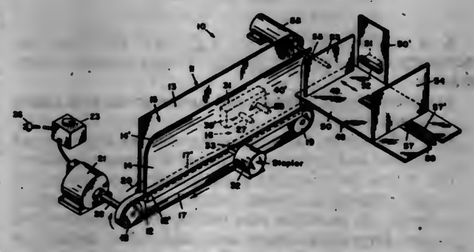
3,191,837
TAPE FEEDING APPARATUS
Neal B. Cohen, Philadelphia, and Trever Drake Reader, Wayne, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 14, 1962, Ser. No. 237,453
4 Claims. (Cl. 226—118)

1. In a tape feeding apparatus utilizing a capstan to transport tape past a transducer head and having a supply reel and a take-up reel, means for storing lengths of tape between each of said reels and said capstan comprising a first loop box associated with each of said reels having an open end for receiving a tape loop, a second loop box in parallel relationship with each of said first loop boxes, said first loop boxes opening into said second loop boxes at the ends of said first loop boxes opposite said open ends, said second loop boxes opening into one another at the ends opposite the ends into which said first loop boxes open whereby there is formed a folded path for said tape loops such that one of said tape loops may occupy one of said first loop boxes and both of said second loop boxes when the other of said tape loops occupies no more than the other of said first loop boxes, the outside walls of said loop boxes which determine the path of the outer portion of said



tape loops as they turn to move from one box into another along the loop path including for each turn of said tape loop from one of said loop boxes into another, a first non-planar wall, a second non-planar wall, said first and second non-planar walls being separated from each other by a first gap; a third non-planar wall said second and third non-planar walls being separated from each other by a second gap; vacuum port means disposed below all of said non-planar walls to provide reduced air pressure near the areas of said first and second gaps, and a substantially frictionless bearing member for guiding the inside portion of said tape loop as it turns from one of said loop boxes into another.

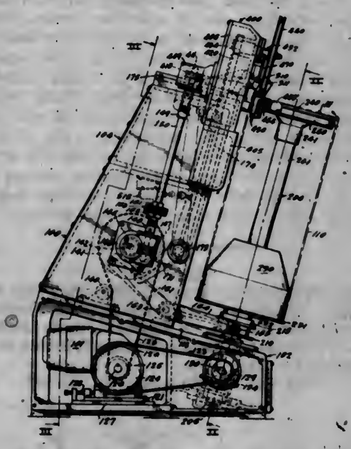
3,191,838
APPARATUS FOR STAPLING SHEETS INTO PADS
Dominick J. De Francis, 413 Eastman Road, Northwood, and James M. Fooks, 31 Paschall Road, Shellbourne, both of Wilmington, Del., and Louis T. Staats, Sr., Rte. 1, Lincoln University, Pa.
Filed Apr. 24, 1963, Ser. No. 275,289
6 Claims. (Cl. 227—7)



1. In an apparatus for stapling sheets into pads, the combination of a holder having a loading station and a stapling station therein, said holder having a pair of horizontally spaced upright guide walls open at their upper

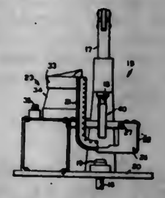
ends to receive a set of juxtapositioned sheets in substantially vertical position therebetween, endless conveyor means provided at the bottom of said holder for supporting the bottom edges of said set of juxtaposed sheets in substantial alignment, and adapted to deliver said set of juxtapositioned sheets inserted in said loading station to said stapling station, movable stop means disposed adjacent the stapling station in said holder and normally positioned across the path of travel of said set of sheets, stop actuator means for withdrawing said stop means from across the path of travel of said set of sheets, said endless conveyor being adapted to frictionally engage the bottom edges of the individual sheets in said set supported thereon and to force the individual sheets in said set against said normally positioned stop means while said endless conveyor continues in motion thereby aligning the leading edges of said set of sheets against said stop means, stapler means for stapling aligned sheets at said stapling station into a pad, time-delay responsive to presence of sheets in said stapling station for actuating said stapler, second time-delay means responsive to presence of sheets in said stapling station for actuating said stop actuator means to withdraw the stop and permit the stapler pad to be discharged from said holder by said conveyor means, and means for continuously driving the conveyor means.

3,191,839
DRUM FORMING MACHINE
Casimir W. Nowicki, Toledo, Ohio, and George M. Lockwood, Monroe, Mich., assignors to Consolidated Packaging Corporation, Monroe, Mich., a corporation of Michigan
Filed Aug. 1, 1962, Ser. No. 214,037
17 Claims. (Cl. 227—64)



1. A machine for applying a pronged strip near the periphery of an end of a flexible tubular container comprising:
(a) means for supporting said container and said end in fastening position,
(b) roller means for overlapping adjacent edges of said end and said container against said supporting means,
(c) means for relatively moving said roller means and said supporting means axially of said supporting means for clamping said overlapping edges between said supporting means and said roller means for fastening said edges together,
(d) means for feeding a pronged strip into said clamping means, and
(e) means for rotating said container and its end for moving said edges relative to said clamping means whereby said roller means presses said prongs on said strip through said overlapping edges around said end of said container.

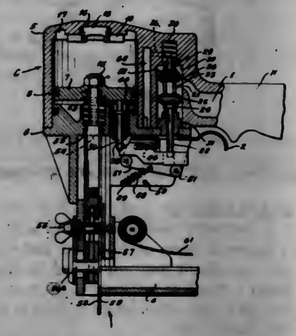
3,191,840
APPARATUS FOR APPLYING NAIL HEADS TO FABRICS AND THE LIKE
Lawrence Italiano, New Hyde Park, N.Y., assignor to National Die and Button Mold Co., Inc., New York, N.Y., a corporation of New York
Filed Oct. 24, 1963, Ser. No. 318,668
4 Claims. (Cl. 227—114)



1. The combination with a press apparatus including a frame and an upright ram mounted on the frame for movement towards and away from a bed fixed on said frame below said ram, of an upright plunger and sleeve assembly extending downwardly from said ram, a horizontally-discharging chute adapted to discharge upright nail heads in succession; said chute being fixed on said frame and having its discharge mouth in an upright plane to one side of said plunger and sleeve assembly so that on downward movement of the ram, a portion of said plunger and sleeve assembly will cover said mouth, a member movably mounted on the frame and biased to a normal rest position where it extends in the path of said plunger and sleeve assembly and is substantially in abutment with the discharge mouth of said chute; said member having a niche in its upper surface into which a nail head discharged from the chute will enter and be in position to be met by said plunger and sleeve assembly; and plunger and sleeve assembly comprising a sleeve slidably mounted on a plunger therein; said sleeve comprising a channel closed by a lengthwise blade spring fixed at its upper end to said channel and bendable away from said channel; said blade spring being the portion of the sleeve which covers the mouth of the chute when the ram is moved downward; said plunger being an upright shank fixed to said ram; in normal rest position, the lower end of said plunger being upward in said sleeve whereby the lower end of said sleeve is vacant and adapted to receive a nail head from said niche for frictional fit therein upon downward movement of said ram; said sleeve being spring-biased to its normal rest position on said plunger; means on said plunger and sleeve assembly to cause said moveable member to be shifted out of the way of said assembly when the ram moves downwardly after said sleeve has received a nail head from out of said niche, an anvil fixed on said bed to cooperate with said plunger when the ram is lowered sufficiently, so that the prongs of a nail head carried by the sleeve will pierce a fabric resting on said anvil and be bent over against the underside of fabric and means to move the nail heads in said chute towards the mouth of said chute.

3,191,841
POWER DRIVEN STAPLING MACHINE
Werner Schafroth, P.O. Box 247, Herrin, Ill.
Filed May 13, 1963, Ser. No. 279,834
3 Claims. (Cl. 227—130)

1. A power driven stapling machine having a stapling mechanism therein, an air cylinder connected to said stapling mechanism, said air cylinder being operatively connected to a source of compressed air, a trigger pivotally mounted on said machine, a piston slidably mounted within said air cylinder, said piston having a rod operatively connected to said stapling mechanism, an air chamber above said piston, said air chamber having downwardly extending members therein adapted to contact and form an upper stop for said piston substantially inwardly of the peripheral edge thereof, said piston being resiliently mounted on said rod, valve means for directing



compressed air above said piston and exhausting air from below said piston, said valve means mounted in said air cylinder casing in a separate opening removed from said air piston, lower stop means for said piston mounted in the bottom of said air cylinder and positioned to contact said piston inwardly of its peripheral edge, said lower stop means having a plunger therein adapted to contact a valve trip lever for moving said valve means to a position for allowing compressed air to enter beneath said piston and exhaust the air from above said piston.

3,191,842
SUTURING INSTRUMENT
Christopher L. Fischer, Belmont, Calif., and Antoni J. Smialowski, Sidney H. G. Connock, and Isaac J. Vogelfanger, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada
Filed Jan. 26, 1962, Ser. No. 168,945
5 Claims. (Cl. 227—155)



1. A suturing instrument comprising a staple-driving assembly, a staple-anvil assembly, each said assembly comprising a pair of swingably connected arms, a spring urging said arms towards each other, a handle on each arm for swinging said arms apart, each said arm having a jaw mating with the jaw of the other arm, a pair of independent tubular bushings each having two part-cylindrical sections, said jaws having a closed position defined by clamping engagement with said bushings and an open position defined by disengagement from said bushings, a first one of said bushings having an outwardly directed annular flange at one end thereof, a wall portion adjoining the other end thereof of greater external diameter than that of the remaining wall portion thereof and forming an annular shoulder in opposed relation to said flange, and a plurality of axially directed circumferentially arranged staple-receiving slots extending from said shoulder to said other end of said bushing, the second one of said bushings having a plurality of pairs of staple-clinching grooves therein, each pair of said grooves being axially aligned with one of said slots, a staple-driving tubular member slidably mounted in said slotted bushing and having a plurality of axially directed circumferentially arranged staple-engageable fingers, each said finger being disposed in one of said slots and in constant engagement with the walls of said slot, means releasably securing said assemblies together with said bushings in axial alignment, and means carried by said staple-driving assembly for effecting a staple-driving stroke of said tubular member.

3,191,843
METHOD AND APPARATUS FOR THE MANUFACTURE OF METAL STRIP
Alan G. Tomkins, Gosforth, Newcastle-upon-Tyne, England, assignor to The British Oxygen Company Limited, a British company
Filed May 23, 1961, Ser. No. 111,997
Claims priority, application Great Britain, May 31, 1960, 19,305/60
2 Claims. (Cl. 228—5)



1. A method of positioning a strip of metal relative to a welding head in a strip welding line comprising gripping the opposite surfaces of the strip between the jaws of a manipulating clamp, traversing the clamp transversely to the true direction of travel of the strip the amount necessary to correctly position the strip end laterally with respect to the welding head, and translating the manipulating clamp parallel to the true direction of travel of the strip until the strip is correctly placed in the welding position.

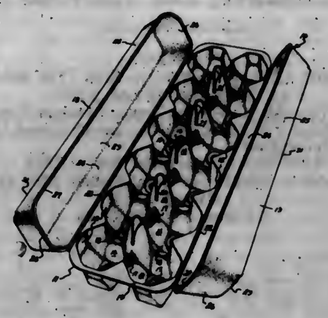
2. A strip welding line for preparing, positioning and welding together the ends of two metal strips which are fed longitudinally to a welding head comprising a welding head adapted to traverse the butted metal strips, two shear units of opposite sense situated on the line of travel of the metal strips on opposite sides of the welding head, two manipulating clamps, each situated on the further side of a shear unit from the welding head and each adapted to grip one of the strips to traverse it transversely to the true direction of travel of the strip and to translate it parallel to the true direction of travel of the strip through a predetermined distance to the welding position, and two strip manipulating units, each situated on the further side respectively of the manipulating clamps from the welding head and each adapted to manipulate one of the strips to provide an excess loop of strip which may deform to allow movement of the strip end by the manipulating clamp.

3,191,844
MOLDED EGG CARTON
Alfred E. Comstock, 9 Los Cerros Drive, Greenbrae, Calif.
Filed Aug. 6, 1964, Ser. No. 387,660
6 Claims. (Cl. 229—2.5)

1. A molded two-by-six egg carton including:
a bottom section having egg supporting means, side and end wall means, and longitudinal and transverse partition means all cooperating together to form two rows of six egg receiving pockets;
a pair of generally tub shaped cover sections having outboard side walls and inboard side walls integrally connected to the opposite side wall means of said bottom section and curved end walls at opposite ends of each cover section between its side walls, said cover section side walls of an open carton being sloped outwardly when the carton is formed in the open position so

that the distance between the outer edges of each cover side wall is greater than one half of the overall width of said bottom section;

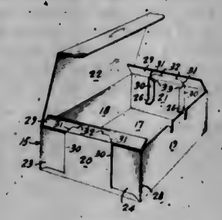
a plurality of integrally upstanding gripping members located at spaced apart intervals on said bottom section and extending above the upper edges of the bottom section, said upstanding members being transversely slotted above the side walls of said bottom



section and along the longitudinal center line thereof, each slot being substantially uniform in width at its lower end and diverging upwardly to form a relatively wide opening at its upper end;

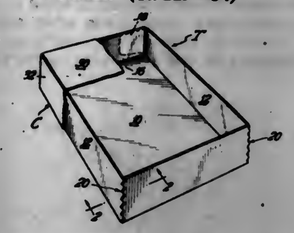
said slots being adapted to receive the outboard sloped side walls of said cover sections, to flex them toward a substantially vertical position and thereby to retain them in frictional engagement when the carton is closed.

3,191,845
CONTAINERS
Daniel Weinberg, 745 Guy St., Montreal, Quebec, Canada
Filed May 13, 1963, Ser. No. 279,824
3 Claims. (Cl. 229—32)



1. In containers, a container formed of a bottom wall and upright walls, certain of said upright walls having locking slits therethrough, locking flaps articulating from the ends of certain of said upright walls, said locking flaps having outer upper corners and slitted and creased portions forming outer lower corners with the accompanying areas of the locking flaps incorporating the outer upper corners and the outer lower corners and having their outer edges in alignment juncture with the outer edges of said outer upper and lower corners, said outer lower corners adapted to be folded at their crease lines to be in back to back positions with said locking flaps for the insertion of said locking flaps into and through the locking slits formed in the adjacent walls and to interlock therewith and to complete the securement of the upright walls to one another.

3,191,846
CARTON WITH TELESCOPING COVER AND TRAY
John D. Desmond, Philadelphia, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,504
4 Claims. (Cl. 229—34)



1. A two-piece, telescoping carton arrangement, comprising:

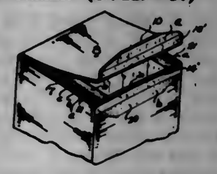
(a) a cover including:
  (i) a generally rectangular top wall, and
  (ii) opposed pairs of side and end walls depending therefrom and connected to each other to form a box-like enclosure, open at the bottom, adapted to telescopically receive a tray of similar shape; and

(b) a tray including:
  (i) a generally rectangular bottom wall; and
  (ii) opposed pairs of side and end walls upstanding therefrom and interconnected to form a box-like enclosure, open at the top, adapted to be telescopically received within said cover;

(c) the end walls of said tray each including an outer end wall panel hinged to and upstanding from an end edge of said bottom wall, and an inner end wall panel hinged to an upper edge of the related end wall outer panel and depending therefrom;

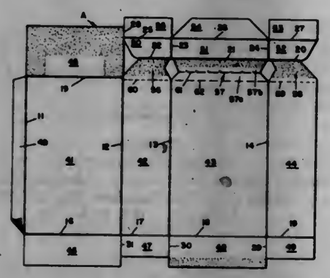
(d) said tray end wall outer panels each having opposed end edges with serrated contours each presenting a plurality of vertically spaced projections extending laterally outward a slight distance beyond the related tray side wall and engaging an inner surface of the related cover side wall to provide a snug friction fit between the tray and cover.

3,191,847
CLOSURE CONSTRUCTION FOR CONTAINERS
George Arlington Moore, New York, N.Y. (910 Lake Shore Drive, Chicago, Ill.)
Filed Oct. 2, 1961, Ser. No. 142,366
9 Claims. (Cl. 229—37)



7. In a container formed of foldable sheet stock coated on one side with a thermoplastic film, said container having four side walls bearing said film on their inner faces, an end closure for said container comprising a reversely folded element integral with each of two opposed side walls of the container, said element being foldable along the upper edge of its respective side wall into a plane transverse to said side wall, the upper face of said element bearing said thermoplastic coating, a cover panel integral with a third side wall of said container between said opposed side walls, said cover panel being foldable along the upper edge of said third side wall into superposed relationship with said elements, the under face of said cover panel bearing said thermoplastic coating, and a coating of non-thermoplastic material between each of said elements and said cover panel, said non-thermoplastic coating being arranged in a pattern such that in a continuous region extending for the full length of each of said elements the thermoplastic film on the upper face of said element is exposed to the thermoplastic film on the under face of said cover panel, whereby upon application of heat and pressure to said superposed cover panel and elements a firm bond is established in said continuous regions and a readily separable cohered seam is established in the regions occupied by said non-thermoplastic coating.

3,191,848
TAMPERPROOF RECLOSABLE CARTON
George L. Meyers, Menasha, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 25, 1964, Ser. No. 347,654
7 Claims. (Cl. 229—51)



1. A tamperproof reclosable carton formed of a suitably cut and secored blank having a receptacle portion and a cover portion which telescopes over the upper edges of said receptacle portion; said receptacle portion having first and second receptacle panels; said cover portion having a top panel and first and second cover panels forming skirt portions parallel and adjacent to the respective underlying first and second receptacle panels; a first locking panel portion hingedly connected to one of said first panels, a second locking panel portion detachably connected to said first locking panel portion and being adhered to the other first panel, said first and second locking panel portions lying between and parallel to the inner surface of said first cover panel and the outer surface of said first receptacle panel.

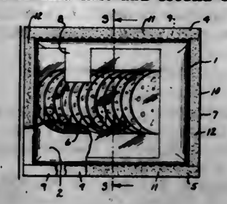
3,191,849
REINFORCED COMMODITY CONTAINER
Thad A. Gutowski, Niles, Ill., and Glenn R. Sontag, Brown Deer, Wis., assignors to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,697
6 Claims. (Cl. 229—55)

1. A commodity container comprising, in combination:

(1) two superposed sheets of flexible packaging material;

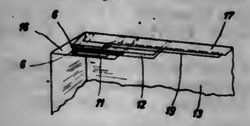
(2) a first semi-rigid support member disposed in a first marginal area between the two sheets, said support member including a first surface in contact with one of the sheets and a second surface in contact with the other sheet, and a second semi-rigid support member disposed in a second marginal area between the two sheets and including a first surface in contact with one of the sheets and a second surface in contact with the other sheet, said sheets and support members being arranged to define a commodity-receiving cavity therebetween; and

(3) seams joining the contacting marginal portions of each sheet to said first and second surfaces of the



support members to provide a container including semi-rigid support members in said first and second marginal areas, and there being at least one other marginal area between the two sheets which is unseamed to provide an opening for introducing commodity into the commodity-receiving cavity.

3,191,850
SACK PRODUCTION
Willy Niemeyer, Natrup Hagen, Germany, assignor to Windmöller & Holscher, Lengerich, Germany, a firm of Germany
Filed Aug. 6, 1962, Ser. No. 214,902
5 Claims. (Cl. 229—625)



1. In a paper or the like bag of the valve type having overlapping end flaps, a filling valve arranged underneath said overlying end flaps, said valve comprising a first sheet of paper which is inserted between said overlapping end flaps, said first sheet including a folded over exterior front edge portion, a second sheet of synthetic resin which is inserted betwen said overlapping end flaps and is arranged adjacent to said first sheet, a first portion of said second sheet extending underneath said folded over front edge portion of said first sheet and a second portion of said second sheet extending interiorly of said bag substantially beyond the innermost edge with respect to said bag of said first sheet, thereby forming sealing means inside said bag.

3,191,851
CENTRIFUGAL FANS
Carl O. Wood, Needham Heights, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 31, 1963, Ser. No. 334,771
10 Claims. (Cl. 230—127)



1. In a centrifugal fan having a scroll-shaped casing, having a rotor supported for rotation within said casing, said casing having an air inlet opening, and having a wall forming an air inlet passage converging from said opening

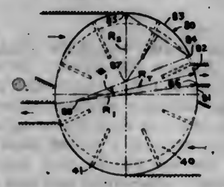
towards said rotor, said rotor having a side plate around an air inlet passage converging towards and terminating adjacent to the inner end of said first mentioned passage, said casing having an outlet passage with a width equal to the combined widths of said inlet passages and of said rotor, the combination therewith of a streamlining fairing extending into said outlet passage behind said inlet passages only.

3,191,852
MECHANICAL CARBON PARTS
Herbert W. Kastz, Elyria, and Leo Tobecman, Cleveland Heights, Ohio, assignors to Randolph Mfg. Co., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 4, 1962, Ser. No. 185,073
12 Claims. (Cl. 230—152)



1. The combination of two carbon elements in sliding contact wherein only one of said elements is impregnated with a substantially non-hygroscopic metallic halide.

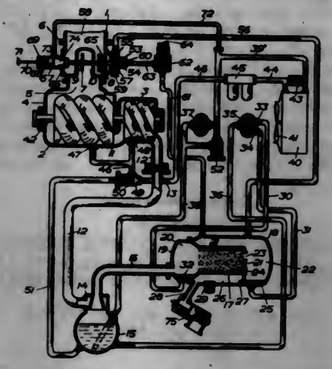
3,191,853
ROTARY COMPRESSOR
Henry H. Krueger, Montclair, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Continuation of application Ser. No. 141,058, Sept. 27, 1961. This application Nov. 16, 1964, Ser. No. 412,883
17 Claims. (Cl. 230—152)



1. The internal casing contour for a rotary compressor including a vaned rotor, said internal casing contour comprising two arcs between 10° and 20° concentric with the vaned rotor and said arcs having a radius of greater dimension than the vaned rotor, a second set of arcs connected to each of the opposite ends of the last mentioned arcs and being between 12° and 30° and said second set of arcs eccentrically disposed relative the vaned rotor, said second set of arcs having a radius passing thru a point lying on the rotor centerline and said point being spaced from the center of said rotor, and connecting arcs for joining said second set of arcs to complete the internal casing contour.

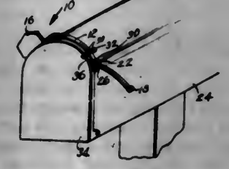
3,191,854
COMPRESSOR UNITS
Erik Lqwler, Stockholm, Sweden, and Iwan Ernst Roland Akerman, Antwerp, Belgium, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Original application June 2, 1960, Ser. No. 33,454, now Patent No. 3,105,630, dated Oct. 1, 1963. Divided and this application Oct. 29, 1962, Ser. No. 245,337
9 Claims. (Cl. 230—205)

1. In a compressor unit, a compressor having a compression chamber, means for injecting cooling liquid in said compression chamber, means for conveying compressed fluid from said compressor to a consumer, means in said conveying means for separating cooling liquid from said compressed fluid, means for returning cooling liquid separated by said separating means to the cooling liquid



injection means, and means in said return means for blocking cooling liquid fed to said injection means when said compressed fluid conveying means is under pressure and said compressor is at rest.

3,191,855
MAILBOX SIGNAL
Aldo Margoni, 1651 4th St., Monongahela, Pa.
Filed Aug. 17, 1962, Ser. No. 217,681
2 Claims. (Cl. 232—35)

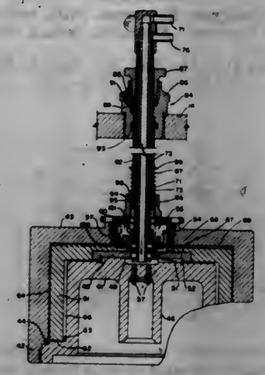


1. A mailbox signal comprising in combination an upstanding bracket attached to the conventional curved top of a mailbox, an elongated strap pivoted on said bracket transversely of said box and having one end arcuately bent to the contour of said curved top, a flag upstanding from said end of said strap and a counterweight, heavier than said flag, at the other end, lying against one side of said box when the flag is in raised position, a cross bar on said strap between said flag and bracket having one end thereof receivable under the flange of the door when it is closed and the counterweight end of said strap projecting outwardly and downwardly from one side of said box when said flag is in lowered position against the opposite side.

3,191,856
CENTRIFUGE ROTOR
Edward G. Pickels, Atherton, and Richard C. Stallman, San Carlos, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Mar. 27, 1962, Ser. No. 182,912
2 Claims. (Cl. 233—3)

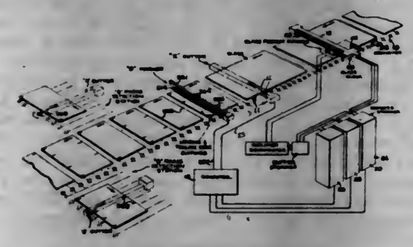
1. In a centrifuge, a rotor having inner and outer bowls secured together to form a cylindrical chamber therebetween, a central bowl disposed in said chamber, means formed to define a self-lubricated bearing interface between said inner and central bowls, said interface extending transversely of the axis of rotation of the rotor and

disposed to support said central bowl upon said inner bowl and to permti relative rotation therebetween, means rotatable with and secured to the outer bowl and formed to be axially movable between advanced and retracted positions to respectively lock and unlock said outer bowl with respect to said central bowl, said central bowl being otherwise free to rotate in said chamber, the last named



means including a nut threadedly engaging said outer bowl and an O-ring disposed to be pinched between said nut and said central bowl when said nut is in its advanced position to frictionally lock said outer and central bowls to provide conjoint rotation of all said bowls during a centrifugation and, when said nut is moved to its retracted position, to permit rotation of said central bowl in said chamber.

3,191,857
GLASS PARTITIONING PROCESS AND APPARATUS
William F. Galey, Saxonburg, and George W. Misson, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania
Filed Nov. 2, 1959, Ser. No. 850,460
25 Claims. (234—3)

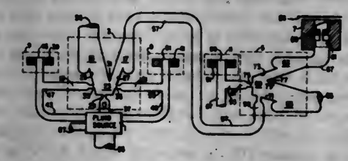


1. In a paper tape record apparatus, a punch section for making perforations in the tape, a read-out section, means for moving said paper tape through said punch section and through said read-out section, and means for stopping the tape in said read-out section at selectively spaced longitudinal positions for interrogation of selected perforation containing portions of said tape including a longitudinal row of sensing fingers mounted to contact the tape and selective individually to stop the tape upon coincidence with a perforation in the tape.

11. In apparatus for partitioning moving sheet material having scattered defective areas therein; a plurality of sources of defect signals representing defective areas of different severity level in the sheet material by their length and width coordinates; and apparatus for recording defect signals received from said sources respectively on separate records to provide both severity level and defect location information.

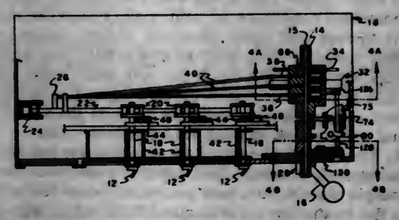
21. A method for preparing a record of defects in sheet material comprising the steps of subdividing said sheet material into a multiplicity of contiguous inspection zones extending longitudinally and transversely of the sheet, determining the presence or absence of any defects in each zone, and preparing a secondary record of defect-containing zones by recording the locations of said zones on said record.

3,191,858
KEYPUNCH INPUT WITH REPEAT READOUT INCORPORATING FLUID AMPLIFYING MEANS
Edwin U. Sowers III, Adelphi, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,760
14 Claims. (Cl. 234—55)



1. In a fluid operated recording device of the type wherein record media are moved successively into a recording station and data recorded thereon, the combination comprising: key means for producing a fluid signal representing a bit of data to be recorded; a bistable fluid amplifier responsive to said fluid signal for storing a manifestation of said data bit and continuously producing a fluid output signal manifesting its value; a further fluid amplifier having a power stream input channel, an output channel, and a control signal input channel for receiving the output signal from said bistable fluid amplifier to deflect the power stream of said further fluid amplifier to its output channel; recording means connected to said output channel of said further fluid amplifier and disposed adjacent said recording station; and means for intermittently applying a power stream to the power stream input channel of said further amplifier to actuate said recording means whereby said bit of data may be recorded a plurality of times in response to a single fluid signal from said key means.

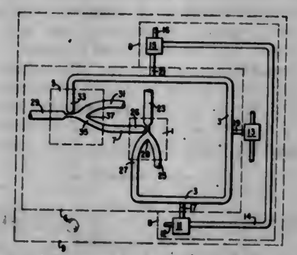
3,191,859
VOTING MACHINE WITH CARD PUNCH MECHANISM
John G. Lord, Swarthmore, Pa., assignor to The Shoup Voting Machine Corporation, a corporation of New York
Filed Oct. 9, 1963, Ser. No. 314,976
11 Claims. (Cl. 235—50)



1. In combination,
a vote registering mechanism including
a shaft 28,
means 16 for rotating said shaft 28,

an abutment member 106 rotatably mounted on said shaft 28 and extending therefrom in radial direction, structure defining a card receptacle 14 and having a transverse slot 86 formed therein,
a sensing element 88 movable in an arcuate path in said slot 86,
means 102 biasing said sensing element 88 into said slot 86 so as to position said element 88 in said card receptacle 14,
a blocking element 104 connected to said sensing element 88 and being movable therewith into and out of the path of said abutment member 106, said blocking element 104 being in the path of said abutment member 106 when said sensing element 88 is in one position in said receptacle 14 and being out of the path of said abutment member 106 when said sensing element 88 is out of said one position,
said sensing element 88 being movable against the bias of said biasing means 102 out of said one position when a card 60 is inserted into said receptacle 14, whereby said vote registering mechanism is rendered operable by the insertion of a card 60 into said receptacle 14 is movable in axial direction away from said about an axis, said structure defining said card receptacle 41 is movable in axial direction away from said sensing element 88 so as to withdraw said sensing element 88 from said slot 86 in axial direction, whereby the resistance of said card 60 to the bias of said biasing means 102 is removed upon withdrawal of said sensing element 88 from said slot 86 and said sensing element 88 is returned to said one position.

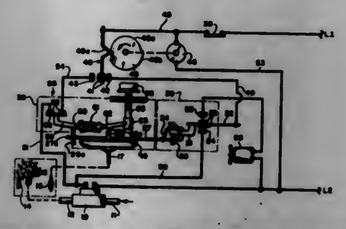
3,191,860
FLUID LOGIC CONTROL
Walter G. Wadey, Bethesda, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 255,052
8 Claims. (Cl. 235—201)



1. The combination comprising: an enclosure, a fluid logic system disposed within said enclosure and a device for generating timing signals for said logic system, said device comprising a feedback signal path disposed about said logic system and within said enclosure to sense environmental conditions of said logic system at diverse parts thereof and signal generator means responsive to signals received from said feedback path for applying further signals to said feedback path and timing signals to said system at a rate dependent upon the effect said sensed environmental conditions have on the velocity of signal propagation through said feedback path.

6. The method of controlling an apparatus having fluid signal generator means, fluid conveying means responsive to output signals from said generator means for controlling the production of subsequent fluid output signals by said generator means, and further means responsive to said output signals, said further means and said fluid conveying means being disposed in close proximity to each other in a changeable environment, said method comprising varying the rate of signal propagation through said fluid conveying means in response to changes in the environment of said further means.

3,191,861
TIMER ADJUSTED OVEN TEMPERATURE CONTROL
John V. S. Dahlgren, Fairhaven, N.J., assignor to The Wilcolator Company, Elizabeth, N.J., a corporation of New Jersey
Filed Dec. 26, 1961, Ser. No. 161,813
4 Claims. (Cl. 236—15)

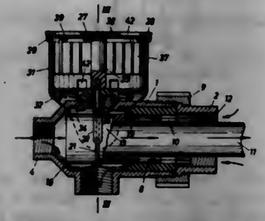


1. Oven temperature conditioning apparatus comprising an electrically actuated heating means, an electrically actuated cooling fan, first and second switch means, a selector switch for alternatively connecting said first and second switch means to an electric current supply, said first switch means having first and second operative positions for controlling current supply to said heating means and having a third operative position for connecting said current supply to said fan, said second switch means having first and second operative positions for controlling current supply to said heating means, an expansible power element responsive to temperature conditions in said oven, connecting means between said power element and said first switch means for actuation thereof between its first and second positions at a first oven temperature and for actuation to its third position at a second oven temperature which is higher than the first, said connecting means comprising a member yieldable to movement of said power element in response to temperatures above said second temperature, said power element being adapted to actuate said second switch means to provide a third oven temperature which is higher than the second, and a timing motor connected to said selector switch means so that said first switch means will control operation of the heating means to provide said first oven temperature for a first time period and said second switch means will control operation of said heating means to provide said third oven temperature for a second time period after which said first switch will energize said fan until the oven is cooled to said second temperature and thereafter will control said heating means to maintain said first oven temperature for the remainder of a third time period.

3,191,862
THREE-WAY VALVE FOR HOT WATER HEATING INSTALLATIONS
Alberto Wobig, Am neuen Felde 19, Luneburg, Germany
Filed Dec. 20, 1962, Ser. No. 246,162
Claims priority, application Germany, Dec. 20, 1961, W 31,314
10 Claims. (Cl. 236—43)

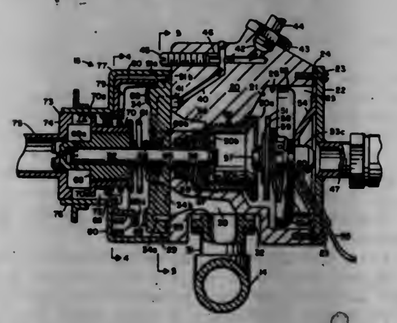
1. A control valve for heat exchanging systems or the like, comprising a valve case having a chamber with a first, a second and a third section, said case being provided with an inlet port, an outlet port and a junction port, said inlet port communicating with said first section, said outlet port communicating with said second section, and said junction port communicating with said third section and adapted to communicate with said heat exchange system,

a valve member having a first and a second peripheral sealing surface and being axially movable with respect to the main axis of said case within said second section, said second section having an inner diameter larger than the outer diameter of said valve member and thus surrounding said valve member with an annular hollow space, said second section being defined by a third and a fourth sealing surface, said third and said fourth sealing surfaces corresponding with said first and second sealing surfaces, respectively, the distance between said third and said fourth sealing surfaces somewhat exceeding the distance between said first and second sealing surfaces, means for varying the position of said valve member parallel to said main



axis of said case between two end positions determined by said third and said fourth sealing surfaces, a tube, said tube secured to one end of said valve member being provided with said second sealing surface and extending through said third section of said case and projecting over the end of said third section provided with said junction port, the outer diameter of said tube being less than the inner diameter of said third section, said valve member having a hollow space and passages at the end remote from the end secured to said tube, one end of the hollow space communicating with said tube and the other end of said hollow space communicating with said passages, said passages communicating with said first section.

3,191,863
THERMOSTATIC FUEL CONTROL AND FLAME HEIGHT REGULATING VALVE
Douglas T. King, Mountainside, and Charles Frendock, Red Bank, N.J., assignors to The Wilcolator Company, Elizabeth, N.J., a corporation of Delaware
Filed Aug. 2, 1963, Ser. No. 299,598
18 Claims. (Cl. 236—99)



6. In a control valve mechanism, a condition responsive valve structure including a rotatable control member having a range of angular movement for adjusting the responsiveness of said valve structure to said condition, a rotatable valve member having a range of angular movement, and manually operable clutch means for selectively drivingly connecting said control member to said valve member substantially at any angle throughout the range of angular movement of said control member.

3,191,864
SPIKE HOLE INSERT
Nelson K. Moses, Ashtabula, Ohio, assignor to Railroad Rubber Products, Inc., Ashtabula, Ohio, a corporation of Florida
Filed July 26, 1961, Ser. No. 127,046
10 Claims. (Cl. 238—371)

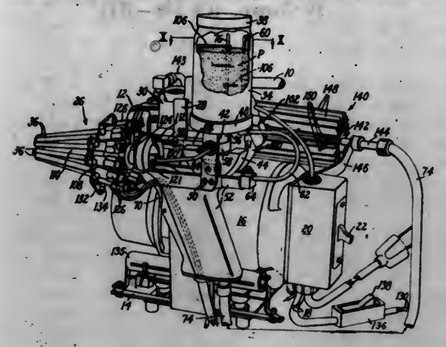


10. An article of manufacture for use in fastening a spike in a closed bottom hole provided in a railway track base structure for supporting a rail comprising: an extruded elongated cylindrical insert plug made from a plasticized polyvinyl chloride resin and having an elastic memory, said insert plug having a thread free, rib free and substantially smooth exterior surface and said plug having a longitudinally extending spike receiving hole therethrough which is substantially square in cross-section but having dimensions about 1/32 inch less than the 9/16 inch square dimensions of a railway spike having a longitudinal axis coincident with the longitudinal axis of said plug, said plug having an external diameter substantially equal to the diameter of the closed bottom hole in which it is insertable so that its exterior surface will be contiguous with the wall of the closed bottom hole, said spike receiving hole dimensions being such that a railway spike is drivable into the spike receiving hole of said plug to uniformly expand the plug laterally into tight pressure sealing engagement with the wall of the closed bottom hole in said base structure while the elastic memory of said plug exerts a uniform holding power on said spike to thereby anchor the rail to said base structure, a tapered bottom portion of said spike being extendable past said plug spike receiving hole into said base structure therebelow, said plug substantially conforming to the wall of said bottom hole to protect the surfaces thereof from the deteriorating effects of weather, water, oil and brine and the spike receiving hole of said plug very closely conforming to the exterior surface of said spike to prevent water and brine from corroding and rusting the spike, and thereby preventing water and brine from entering the closed bottom hole.

3,191,865
APPARATUS FOR SPRAYING HEAT-REACTIVE MATERIAL
Albert E. Newton, Beverly, and Warren A. Cavicchi, Ipswich, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Filed Oct. 12, 1962, Ser. No. 230,143
7 Claims. (Cl. 239—85)

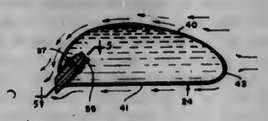
1. In an apparatus for spraying and activating dry powdered heat-reactive material, the combination comprising a container for the spray material, a conduit connected to the container through which the spray material is projected, a connection for conducting air from a compressed air source to the container and through said conduit to propel the spray material, a normally closed valve in said connection, means to vibrate the container to cause con-

trolled quantities of spray material to be supplied from the container to said conduit, means for rendering the vibrating means operative and for simultaneously opening said valve to admit air into the container and into the conduit, and electrically heated means providing a heat



zone in advance of the delivery end of the conduit through which heat zone the particles of spray material are projected, whereby they are partially activated before they reach the surface to be coated to cause them to adhere thereto and thereafter fully melted to permit the bonding of a work piece to the coated surface.

3,191,866
HOLLOW SPRAY ATOMIZING HEAD HAVING A KNIFE EDGE CONSTRUCTION
Charles S. Wilson, P.O. Box 5, Anchorage, Alaska
Filed Mar. 21, 1963, Ser. No. 266,991
6 Claims. (Cl. 239—171)



1. A spray atomizer comprising a hollow atomizing head presenting two merging planar surfaces disposed in acute-angular relation to one another and at their line of juncture producing an exposed knife edge, means for flowing liquid which is to be atomized from the hollow interior of the head to said knife edge over one of said surfaces, and means for delivering a current of atomizing air to the knife edge over the other of said surfaces, the atomizing head presenting a planar exterior face and having said surface over which the current of air passes projecting from one edge thereof as a lip prolongation of the face disposed in obtuse-angular relation to the face, means being provided for suspending said head from an airplane so as to occupy a position below the belly of the latter and placing said planar face at the underside with the lip at the after end.

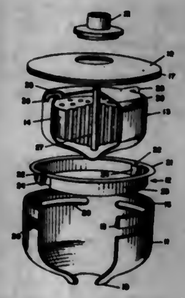
3,191,867
ATOMIZER
W. Lee Helms, Brooklyn, N.Y., assignor to Revlon, Inc.
Filed Oct. 23, 1963, Ser. No. 318,430
3 Claims. (Cl. 239—288)

1. In an actuator for aerosol spray dispensers which comprises an acuator sleeve adapted to receive an aerosol can which has an outwardly projecting discharge needle valve, the sleeve carrying a head formed with a passageway for receiving the needle valve, a shoulder in the passageway and adapted to engage the top rim of the needle valve, and an orifice communicating with said passageway and with the exterior of said head; a cover cap for the actuator sleeve, the cover cap coaxially encircling the actuator sleeve for longitudinal sliding movement thereon, pivot means intermediate the actuator sleeve and cover cap and carried by one of said two members, pivot receiving and guiding means provided for



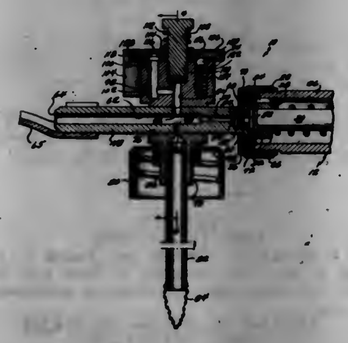
one of said members and having coaction with said pivot means, the cover cap having a cut-away wall area at its normally lower end adapting the cover cap to be swung to about horizontal position on said pivot means when, by sliding movement on the actuator sleeve, the cover cap reaches uppermost position.

3,191,868
FLUORIDATION APPARATUS
Robert M. Brown, 3818 Carmona, Los Angeles, Calif.; Richard Lavine, 6441 Bothwell Road, Reseda, Calif; William Coleman, 349 Euclid St., Santa Monica, Calif.; and Marvin E. Levin, 1054 Glenhaven Drive, Pacific Palisades, Calif.
Filed Oct. 16, 1963, Ser. No. 316,768
10 Claims. (Cl. 239—315)



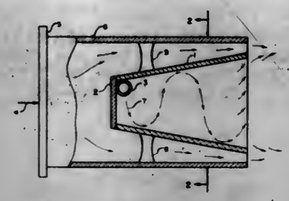
1. A fluoridation apparatus for attachment to a water faucet, said apparatus comprising:
(a) a hollow outer casing having an inlet in its upper portion designed for coupling to said water faucet;
(b) an outlet in the lower portion of said outer casing,
(c) a hollow inner casing disposed within said outer casing;
(d) means supporting said inner casing in spaced relationship from said outer casing, the space between said inner casing and outer casing defining a conduit for water flow;
(e) a chemical releasing substance disposed in said inner casing and having passages therethrough;
(f) at least one outlet and one inlet in said inner casing, said chemical releasing substance being interposed in series between said inlet and outlet of said inner casing cofunctioning therewith such that the water flowing through said inner casing must reverse its direction of flow;
(g) means communicating between said outlet from said inner casing and said conduit, whereby the water flowing through said chemical releasing substance combines with the water flowing through said conduit to pass from the outlet of said outer casing.

3,191,869
SPRAYING DEVICE HAVING RESTRICTED ORIFICE AND EXPANSION CHAMBER CONSTRUCTION
Robert A. Gilmour, % Gilmour Manufacturing Co., Somerset, Pa.
Filed Nov. 7, 1961, Ser. No. 150,731
4 Claims. (Cl. 239—318)



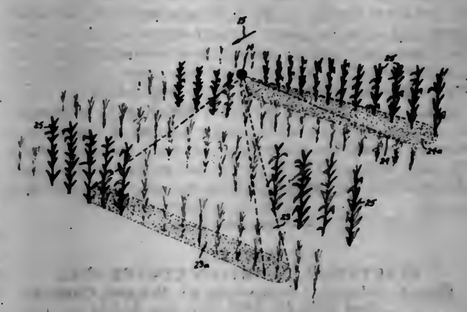
1. A device for mixing a liquid treating chemical into a stream of water under pressure and discharging the mixture as a spray comprising a sprayer body having a discharge end through which the stream of water with said liquid treating chemical mixed therein issues and an inlet end arranged to be communicated with a source of water under pressure, means within said body between said discharge end and said inlet end defining a restricted passage, means within said body defining a mixing chamber of greater cross-sectional area than said restricted passage communicating directly with said restricted passage between the latter and said discharge end for creating a suction in response to the passage of water under pressure from said restricted passage therethrough, means defining a liquid treating chemical passage communicating with said mixing chamber for directing a stream of liquid treating chemical from a source of such liquid treating chemical into said mixing chamber in response to the creation of a suction therein, and means within said body between said restricted passage and said inlet end defining a restricted orifice and an expansion chamber of a cross-sectional configuration greater than said restricted orifice and said restricted passage communicating directly between said restricted orifice and said restricted passage for preventing any substantial increase in the water flow velocity in said restricted passage in response to an increase in the pressure of said water source above a predetermined value sufficient to create said suction within said mixing chamber by preventing any substantial increase in either the velocity energy of the water passing from said orifice through said expansion chamber or in the pressure energy of the water in said expansion chamber in response to such increase in the pressure of said water source.

3,191,870
SPRAY NOZZLE
Howard P. Willett, Darien, Conn., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,567
7 Claims. (Cl. 239—403)



1. A spray nozzle for dispersal of a slurry containing solid particulate matter into a gas stream which comprises an inner conduit, a closure baffle at one end of said inner conduit, said inner conduit being of progressively increasing diameter from the closed end to the open end, a slurry inlet pipe extending tangentially into said inner conduit and adjacent to said closure baffle, whereby slurry is tangentially passed into said inner conduit and is discharged from the open end with an outward whirling motion, a coaxial outer conduit external to said inner conduit, at least one support bracket between said inner conduit and said outer conduit, and means to pass a gas stream into the annular space between said inner conduit and said outer conduit, whereby said gas stream flows parallel to said slurry and contacts said slurry upon discharge from said inner conduit.

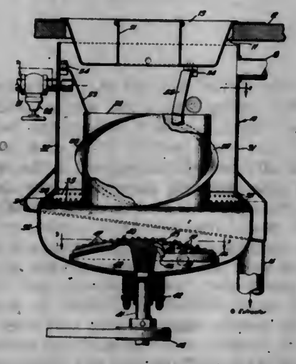
3,191,871
CROP SPRAYERS
John E. Palmer, Calgary, Alberta, Canada, assignor, by mesne assignments, to Golden Arrow Manufacturing Limited, Calgary, Alberta, Canada, a Canadian company
Continuation of application Ser. No. 2,900, Jan. 18, 1960. This application May 16, 1962, Ser. No. 198,396
2 Claims. (Cl. 239—536)



2. In a spraying nozzle, a nozzle body having an upper portion provided with a substantially cylindrical chamber and a lower portion provided with a flat outer face disposed at an acute angle to the axis of said chamber, said face being provided with an open-ended transversely extending groove, a cylindrical orifice extending

at right angles to said face from said chamber into said groove, and an elongated outlet provided at the outer end of said orifice and extending longitudinally in said groove, said outlet having a relatively wide intermediate portion and tapered end portions, said orifice communicating with the wide intermediate portion of the outlet, and said groove being substantially semi-circular in cross-section.

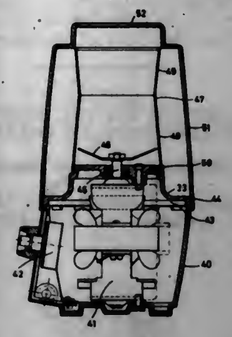
3,191,872
DISINTEGRATING APPARATUS
Howard W. Dyson, 113 Bala Ave., Oreland, Pa.
Filed Mar. 3, 1958, Ser. No. 718,565
11 Claims. (Cl. 241—74)



1. A slurry-forming device comprising; a tank having a smoothly dished bottom, the inner portion of said bottom having slight upward curvature, gradually continued by sharper upward curvature of a major outer portion of said bottom constituting the remainder of the entire bottom area, and said outer portion being continued by an upstanding side wall, said tank being perforated about its periphery above said bottom area; a collecting trough surrounding said perforated portion to receive the slurry passing therethrough; a rotor plate closely overlying said bottom and having an upper surface openly facing the overlying region of the tank, said rotor plate covering substantially all of the area, and substantially only the area of said inner portion of the bottom; a series of combined tooth and vane members on said upper surface of said plate; generally-radially extending vane elements depending downwardly from said plate into close proximity to the underlying bottom of said tank; and means for rotating said plate to propel the slurry centrifugally outwardly in a swirling mass over the outer portion of the smooth bottom, against the upstanding side wall, upwardly along the side wall, across the perforated portion of the tank, through said perforated portion, and into said collecting trough.

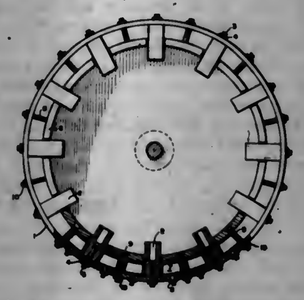
3,191,873
ELECTRICALLY DRIVEN COFFEE MILL
Hans C. Schmidt, Contrescarpe 63, Bremen, Germany
Filed Mar. 10, 1961, Ser. No. 94,731
Claims priority, application Germany, Mar. 16, 1960, Sch 27,596; Jan. 26, 1961, W 29,342
1 Claim. (Cl. 241—74)

An electrically driven coffee mill comprising a housing, a motor in the lower part of the housing, a motor shaft vertically mounted in the housing and having a beater knife mounted on the upper end of the shaft above the motor, a sieve concentrically mounted around the shaft spaced from the beater knife, and a container provided around the sieve to catch the coffee ground by the beater knife after passing through the sieve, the container engages over the sieve from above and is sealed against the



housing below the sieve, is removable in upward direction, and extends above the sieve to form a dome-shaped space for the column of the coffee to be ground in the sieve.

3,191,874
DISINTEGRATORS
Donald J. Drinkwater, Denver, and Joseph R. Grout, Wheat Ridge, Colo., assignors to Mine and Smelter Supply Company, Denver, Colo., a corporation of Colorado
Filed July 30, 1963, Ser. No. 298,702
7 Claims. (Cl. 241—183)

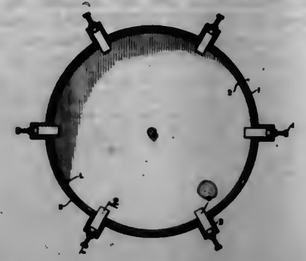


1. A disintegrator comprising a drum; lifter bars disposed in said drum; liner plates disposed between said bars, and means associated with said drum for adjusting the height of said liner plates to secure a predetermined lift of said bars, said lifter bars extending radially a substantial distance into the interior of said drum beyond the limits of said liner plates at all times during normal operation of the disintegrator.

3,191,875
DISINTEGRATORS
Donald J. Drinkwater, Denver, Colo., assignor to Mine and Smelter Supply Company, Denver, Colo., a corporation of Colorado
Filed July 30, 1963, Ser. No. 298,710
14 Claims. (Cl. 241—183)

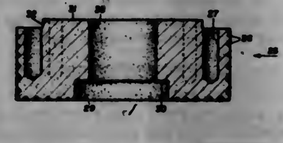
1. In a disintegrator, a revolvable drum provided with

an outer shell, elongated pockets extending lengthwise thereof, lift bars carried in said pockets, extending into the



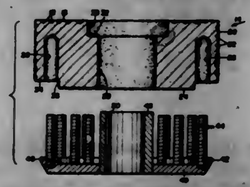
interior of the drum, and means associated with said drum for adjusting the lift of said bars relative to said shell.

3,191,876
APPARATUS FOR TREATING PAPER STOCKS
Howard Bidwell, 56 Aldrich St., Granby, Mass., assignor of fifty percent to Rachel Bidwell, Granby, Mass.
Filed Nov. 1, 1962, Ser. No. 234,645
4 Claims. (Cl. 241—296)



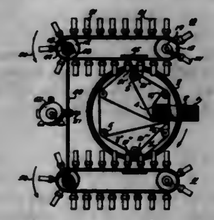
1. A vitrified bonded rotor structure for use in processing waterborne stock consisting of, a porous rotor body of hard-material non-metallic granules permanently bonded together and having an exposed coarse granular stock processing outer surface, and a reenforcing epoxy resin filler incorporated into the voids of the interior bore structure of said rotor body in the region of maximum stresses for resisting fracture.

3,191,877
APPARATUS FOR TREATING PAPER STOCKS
Howard Bidwell, Granby, Mass., assignor of fifty percent to Rachel Bidwell, Granby, Mass.
Filed Mar. 4, 1963, Ser. No. 262,663
5 Claims. (Cl. 241—296)



1. A rotor member for use in the processing of water borne paper stock which comprises, a rotor body formed of granules of hard permanently-bonded-together material allowing coarse granular stock processing surfaces, said rotor body being formed on its underside with a plurality of spaced generally cylindrical inwardly-extending recesses and a cylindrical central opening and a plurality of cavities each interconnecting one of the recesses and the central opening, a driving support, a plurality of reinforcement rods extending from said driving support and each positioned in one of the recesses, a plurality of reinforcement gussets extending from said driving support and each positioned in one of the cavities, said reinforcement rods and gussets being fixed to each other at their points of intersection, a shaft receiving bushing extending from said driving support and positioned in the central opening, and means bonding said reinforcement rods and gussets and bushing to said rotor body within the recesses and cavities and central opening respectively.

3,191,878
APPARATUS FOR WINDING WIRE ON THE CORE OF STATIONARY INDUCTION MEANS
Senjin Kitano, 40 Nishino Rikyu-cho, Yamashina, Higashiyama-ku, Kyoto, Japan
Filed Sept. 21, 1962, Ser. No. 225,199
Claims priority, application Japan, Aug. 4, 1962, 37/33,486
3 Claims. (Cl. 242—4)



1. Apparatus for winding wire on the core of stationary induction means and the like, comprising means for forming a continuous multi-turn loop of wire in linked relation with said core in preparation for winding the same thereon, electromagnetically operable means for turning said loop circumferentially while winding wire therefrom onto said core, said turning means comprising a plurality of loop gripping devices, means operable to carry said devices continuously past the outside of said loop in a direction tangential thereto at at least two circumferentially spaced points, electromagnetic means for actuating said gripping devices to grip the loop at said points when in position to rotate the loop in circumferentially of itself and to release said loop when not in position to rotate the same, whereby to continuously rotate said loop through said core, and wire-contacting guide means operable to draw wire from the inside of said loop and apply said wire under continuous tension to said core during revolution of the loop.

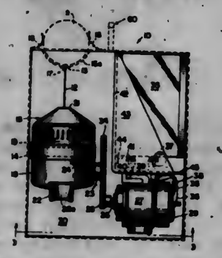
3,191,879
WIRE WRAPPER BIT
Edward L. Allen, Ulster, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 20, 1963, Ser. No. 289,178
5 Claims. (Cl. 242—7)



1. In combination with a wire wrapping tool having a rotatable spindle with a forwardly biased keeper:
(a) a sleeve member connected at its rearward end to the tool and held immovable thereby;
(b) a bit member rotatably disposed in said sleeve member and having a head portion at its rearward end engaged by said keeper to rotate the bit member when the spindle rotates and to urge the head portion axially forwardly into engagement with the rearward end of the sleeve member;

(c) a plug fixedly connected to one of said members extending outwardly therefrom toward the other of said members;
(d) the other of said members having threads at its rearward end engaging the plug to form threads thereon and providing a threaded connection between the two members for moving the bit member rearwardly when said bit member is rotated to wind a wire; and
(e) the other of said members having an axial slot through the threads thereof to permit axial movement of the plug alined therewith when the spindle is stopped from rotating and the keeper urges the bit member forwardly until the head portion engages the sleeve member.

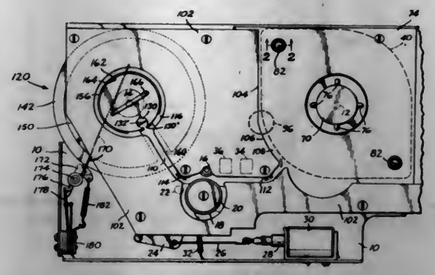
3,191,880
BALL RETRIEVER
Joseph V. Visconti, Medford, Mass., assignor to Marshall M. Schriftman, Newton, Mass.
Filed Apr. 15, 1963, Ser. No. 272,993
2 Claims. (Cl. 242—54)



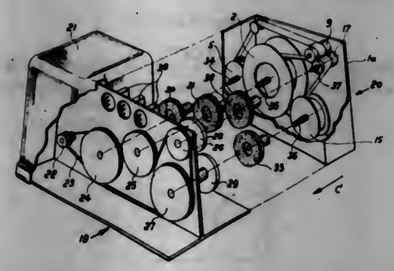
1. A portable, compact, self contained golf ball retrieving apparatus comprising:
an enclosing housing containing a golf ball located outside of said housing,
a line affixed to said ball at a first end of said line with an intermediate portion of said line passing into said housing, at an opening defined by said housing and wound upon a winding and storage bobbin,
said bobbin being mounted about a central axis in said housing,
said bobbin central axis being fixed in position with respect to said housing and aligned with said housing opening,
a windup arm associated with said bobbin,
an electric motor linked to said windup arm by a power increasing meshed set of gears,
an electric power source contained within said housing for activating said motor,
means passing through said housing and operable from the outside thereof by the foot of a user for allowing substantially drag-free unwinding of said line from said bobbin,
second means passing through said housing and operable from the outside thereof by said foot of said user for electrically connecting said motor to said power source whereby said line may be automatically wound on said bobbin.

3,191,881
MAGNETIC TAPE FEED ASSEMBLY FOR TAPE RECORDERS
H Albert Campbell, Jr., Portland, and Harold R. Burt, Beaverton, Oreg., assignors, by mesne assignments, to K.W.F. Industries, Inc., a corporation of Washington
Filed Jan. 18, 1962, Ser. No. 167,096
9 Claims. (Cl. 242—55.13)

1. In a magnetic tape recorder, tape supply means mounted on a first drive shaft, a take-up spool spaced from the supply means and mounted on a second drive shaft means providing a substantially continuous guide slot which terminates at one end adjacent the periphery of the take-up spool and at the other end adjacent the periphery of the supply means, tape connector means having a guide portion receivable in the guide slot and an enlarged finger-engaging portion overlying the guide slot for moving the connector means manually along the slot, means on the connector means for securing a tape end thereto, and coupling means on the take-up spool releasably securing the connector means thereto.



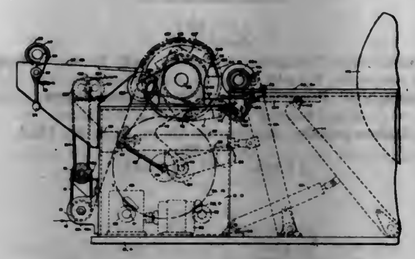
3,191,882
STORAGE MEANS FOR COLLECTING DATA CARRIERS SERVING FOR CONTROLLING BUSINESS TRANSACTIONS
Wolfgang Riedel, Winnenden, Wurttemberg, Germany, assignor to E. Braninger K.G.a.A., Stuttgart, Germany, a corporation of Germany
Filed Jan. 10, 1963, Ser. No. 250,639
Claims priority, application Germany, Oct. 5, 1962, B 69,109
12 Claims. (Cl. 242—55.13)



1. Storage means for collecting and assembling cards or similarly constructed data carriers serving for the control of business transactions, comprising:
a rotatable supply spool and a rotatable winding spool and drive means for driving said spools;
a flexible, elongated element having magnetizable material thereon so that it can serve as an impulse carrier for information, said element being movable between said supply spool and said winding spool for being wound thereon;
means for feeding individual data carrier cards one after the other to said winding spool as said element is wound thereon so that said cards can be wound upon said winding spool together with said element and said cards can be delivered when said element is unwound from said winding spool; and

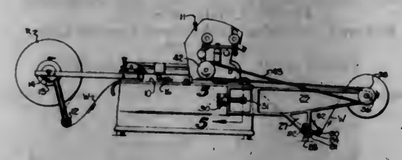
sound head means associated with said element for recording and reproducing information on said element.

3,191,883
WINDER FOR WEB MATERIAL
Edward R. Wells, Green Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 6, 1964, Ser. No. 343,009
11 Claims. (Cl. 242—56)



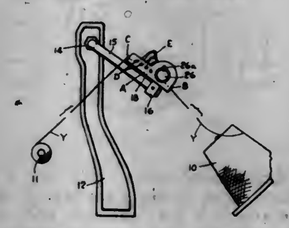
1. A continuous winder and transfer mechanism for web materials comprising a pair of spaced frame elements, a winding drum having trunnion shafts supported in bearings mounted on said frame elements, web transfer means including a pair of enveloping arms mounted on each of said trunnion shafts, means for intermittently rotating said enveloping arms 360° around said trunnion shafts, at least one idler roll mounted for rotation between the extremities of said pair of enveloping arms, web severing means mounted between said enveloping arms, said means for rotating said enveloping arms being actuated so that said idler roll and web severing means are moved and thereafter stationed above the winding drum during web transfer and means for actuating said web severing means and to initiate winding on a new and empty core shaft contacting said winding drum.

3,191,884
WEB REWINDING APPARATUS
John A. West and William R. Epps, Charlotte, N.C., assignors to Ideato Equipment Company, a corporation of North Carolina
Filed July 29, 1963, Ser. No. 298,037
5 Claims. (Cl. 242—67.1)



1. A web take-up apparatus for a driven elongated web, said web take-up apparatus comprising
(a) a frame member adapted to be supported in proximity to the path of travel taken by the web as it is driven forwardly,
(b) a slack let-off assembly carried by said frame member, said slack let-off assembly including
(1) a stationary shaft,
(2) a dancing roll disposed below said shaft,
(3) means loosely supporting said dancing roll for limited floating movement in which said dancing roll is generally constrained in parallel relation to said shaft,
(4) an idler roll disposed forwardly of said dancing roll and below said shaft in parallel relation to said shaft,
(5) means connecting said idler roll to said shaft for arcuate movement of said idler roll about the axis of said shaft, and
(6) resilient means operably connected to said idler roll for biasing said idler roll in a direction toward said dancing roll;
(c) a take-up roll disposed after said slack let-off assembly and constituting the end of the path of travel of the web,
(d) said shaft, said dancing roll, and said idler roll extending transversely to the path of travel of the web, and the web being adapted to engagingly pass beneath said dancing roll, over said shaft, and beneath said idler roll to said take-up roll,
(e) means to drive said take-up roll in response to the delivery of the web thereto, and
(f) said idler roll oscillating in an arc about the axis of said shaft to compensate for any tendency toward variations in tension in the web so that a substantially uniform tension may be maintained in the web as it is delivered to said take-up roll.

3,191,885
TENSION DEVICE
Roy D. Jones and Robert F. Parks, Greenville, and Albert Gorze, Travelers Rest, S.C., assignors to Steel Heddle Manufacturing Company, Paris, S.C., a corporation of Pennsylvania
Filed Sept. 12, 1963, Ser. No. 308,516
3 Claims. (Cl. 242—154)

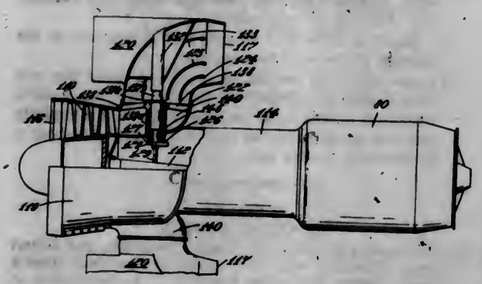


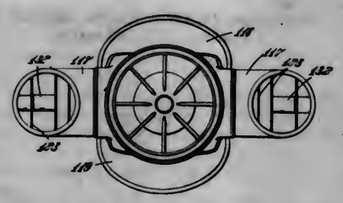
1. A yarn tensioning device including, an elongated threading block defining an open interior portion, a yarn inlet through which the block is threaded positioned at one end of the block, a yarn outlet through which yarn passes from the block positioned in alignment with the yarn inlet at the other end of the block, a plurality of spaced pins carried by the block transversely thereof within the interior portion on one side of the yarn inlet and the yarn outlet, an elongated member disposed longitudinally of and normally within the interior portion of the block, means pivotally mounting said elongated members on the block adjacent the yarn inlet on the said one side thereof, a plurality of looped members carried by the elongated member spaced to fit between the pins and normally disposed in alignment with the yarn inlet and the yarn outlet, and resilient means carried by the mounting means and normally urging the free end of the elongated member away from the pins carried within the block, whereby a yarn hook may be passed through the yarn outlet and the yarn inlet and through the looped members when the force of the resilient means is overcome to catch an end of yarn for threading the device.

3,191,886
GAS TURBINE JET PROPULSION ENGINE UNITS FOR AIRCRAFT AND ALSO JET PROPELLED AIRCRAFT

Gordon Manns Lewis, Bristol, England, and Michel Henri Marie Joseph Wibault, deceased, late of New York, N.Y., by Madeleine Omerine Marie Josephine Wibault, Paris, and Pierre Achille Marie Joseph Wibault, Douai, France, Marie Rose Wibault, Onchy, Switzerland, Helene Madeleine Marie Joseph Chollet, Gonzague Charles Rodolphe Marie Joseph Wibault, Monique Marie Joseph Lecoge, Madeleine Odette Marie Joseph Robine, and Pierre Leon Robine, Paris, France, executors, assignors, by mesne assignments, to Bristol Siddeley Engines Limited, Bristol, England, a British company

Continuation of application Ser. No. 711,350, Jan. 27, 1958. This application Aug. 19, 1963, Ser. No. 304,718
Claims priority, application Great Britain, Jan. 29, 1957, 3,146/57, Patent 881,662
28 Claims. (Cl. 244—23)





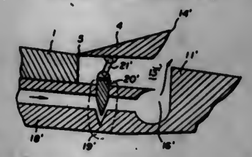
1. An aircraft combination comprising a gas turbine jet propulsion engine having a compressor system which includes an axial flow first compressor and a second compressor, a combustor, and a turbine system adapted to drive said compressors, a forwardly facing air intake and ducting in fluid communication with said air intake for delivery of air to said compressor system, nozzle duct means with at least one jet propulsion air nozzle located adjacent said compressor system, ducting for conveying air compressed by said first compressor to said nozzle duct means, means locating and rotatably supporting said nozzle duct means alongside said engine, enabling said nozzle duct means to be positionable to vary the direction of discharge from said air nozzle at least between a rearward direction and a downward direction, and so that said duct means is forward of the aircraft center of gravity, and the central axis of discharge through said nozzle duct means intersects the axis of rotation of said duct means at a point which lies in a common horizontal plane with the line of the resultant intake momentum drag, whereby in horizontal flight of the aircraft with the nozzle duct means adjusted to discharge rearwardly, the resultant of the intake momentum drag and the resultant of the reaction thrust from said nozzle act in opposition in a common approximately horizontal plane, and means in drive connection with said adjustable duct means to change and maintain its desired adjusted position.

7. A method of performing a vertical take-off followed by transition to horizontal forward flight of an aircraft of the flat-riser kind which includes at least one turbofan jet engine, which method comprises the steps of operating the engine to produce at least one output flow of fan compressed air and at least one output flow of turbine exhaust gas, discharging said flows downwards as propulsive jets from locations on the aircraft which are forward and rearward respectively of the aircraft center of gravity to achieve vertical take-off and thereafter deflecting said jets rearwards until they act in a substantially horizontal common plane.

3,191,887
SPOILER

Minoru Ikai, Nishi-ku, Nagoya, and Kazuo Arashi, Koonji-cho, Kita-ku, Nagoya, Japan, assignors to Shin-Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed Sept. 6, 1963, Ser. No. 307,236
Claims priority, application Japan, Sept. 20, 1962, 37/40,883
1 Claim. (Cl. 244—42)

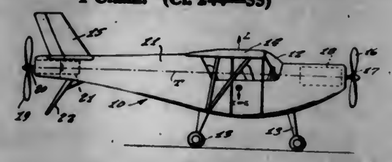


A spoiler for the wing of an airplane, said spoiler comprising a spoiler member, said wing having a recess in the upper surface thereof, means hingeably supporting the spoiler member at the leading edge thereof to the wing at the leading edge of the recess, said spoiler member being movable between a raised operative position and a lowered inoperative position in which the spoiler member is accommodated in the recess, said spoiler member having a trailing edge which is spaced from the wing when the spoiler member is raised to thereby form a gap between the trailing edge of the spoiler member and the wing, and means adapted for connection with a source of high pressure air and including a conduit for introducing high pressure air into said recess and through said gap in a direction substantially normal to the upper surface of the wing, and valve means in said conduit and connected with said spoiler for controlling the quantity of high pressure air conveyed to the recess to supply an amount thereto related to the elevation angle of the spoiler as the same is raised.

3,191,888
AIRCRAFT HAVING FORWARD AND AFT PROPULSION MEANS

Robert C. Sklenka, 12351 Rock Garden Lane, Miami 50, Fla.

Filed Feb. 25, 1963, Ser. No. 260,522
1 Claim. (Cl. 244—55)



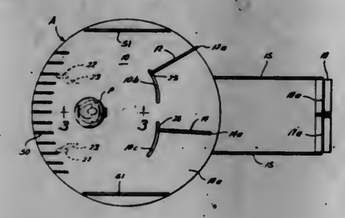
An airplane of the high wing monoplane type having a single wing connected at the top of the fuselage and directly above the cockpit area thereof and a single upper tail fin at the rear of said fuselage comprising:
(a) a forward tractor propeller,

(b) an engine mounted within the fuselage forwardly of the cockpit area for driving said tractor propeller in one direction,
(c) a rear pusher propeller,
(d) an engine mounted within the fuselage rearwardly of the cockpit area and immediately adjacent the rear end of the fuselage for driving said pusher propeller in a direction opposite to that of the tractor propeller,
(e) the thrust axis of both propellers being coaxial and coinciding along the longitudinal axis of the airplane located above the center of gravity thereof, and
(f) a rearwardly inclined drag leg secured at its upper end to the underside of the fuselage at the rear end thereof forwardly of the pusher propeller, operative to prevent said pusher propeller from engaging the ground on landing of the airplane,
(g) each engine and the propeller driven thereby, being operative to provide sufficient thrust under normal operating conditions to maintain the airplane airborne when the other engine is not operating.

3,191,889
WING-BODY AIRCRAFT

Oran M. Roberts, Box 3355, Station A, Tyler, Tex.

Filed June 22, 1964, Ser. No. 376,990
7 Claims. (Cl. 244—62)



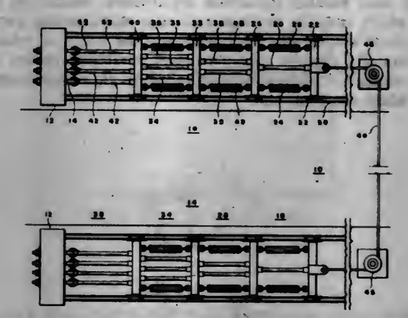
1. A wing-body aircraft, comprising:
(a) a wing-body having an upper external surface,
(b) at least one upright fin having a rear edge which is angled downwardly and forwardly in flight,
(c) said fin also having a lower edge disposed in close proximity to the portion of the external upper surface of the wing-body over which it moves,
(d) pivotal mounting means connected to the forward portion of said fin for laterally swinging said fin across a portion of said upper external surface of said wing-body, and
(e) power means for effecting lateral swinging of said fin about said pivotal mounting means for horizontal propulsion and lifting of the aircraft.

3,191,890
ARRESTING SYSTEMS

Charles Howard Adams, Longmeadow, Mass., assignor to Monsanto Company, a corporation of Delaware

Filed Apr. 12, 1962, Ser. No. 186,910
4 Claims. (Cl. 244—110)

1. An apparatus for arresting the motion of an aircraft travelling along runways comprising, in combination, a pendant line, designed to engage an appurtenance on said aircraft, suspended across an aircraft runway and a pair of energy-absorption means positioned on opposite sides of said aircraft runway, each of said energy-absorption means being attached at one end to said pendant line and at the other end to fixed stanchion means; each of said energy-absorption means comprising a plurality of stages connected in series such that the initial stage connecting said pendant line is provided with at least one cord composed of viscoelastic polymeric material and at least one spring to limit the elongation of said cord and the succeeding stages are provided with an increased number of



cords composed of viscoelastic polymeric material arranged in parallel to provide a series of increasing load-bearing ranges.

3,191,891
STORAGE MEANS FOR AIRCRAFT-ARRESTING NETS

Per Borje Fondén, Hejdegatan 3, and Karl Ove Torpny Wålander, Elsa Brandstrom Gata 5, both of Linkoping, Sweden

Filed Jan. 28, 1964, Ser. No. 340,631
Claims priority, application Sweden, Mar. 16, 1963, 2,886/63
6 Claims. (Cl. 244—110)



1. A storage means for aircraft-arresting nets comprising, means attached to the net for elevating the same to an erected position, a trench located below the net and having a top opening, a plurality of successively-arranged cover members swingable to close the top of the trench when the net is situated within the trench, the cover members having centers of rotation located in the trench below its top opening, whereby the covers will be pushed aside with an arcuate sliding movement by the net when the net is lifted out of the trench.

3,191,892
EJECTION SEAT FOR AIRCRAFT

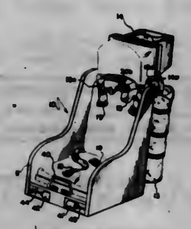
Harold R. Fuller and James L. Greene, Jr., Columbus, Ohio, assignors to North American Aviation, Inc.

Filed June 25, 1964, Ser. No. 377,859
4 Claims. (Cl. 244—122)

1. In an ejection seat system for aircraft and the like, in combination:
(a) aircraft structure,
(b) seat structure supported by said aircraft structure and combined with means for forcibly ejecting said seat structure and the occupant thereof from said aircraft structure into an environmental airstream,
(c) occupant retention harness means releasably connected to said seat structure,
(d) personnel parachute means connected to said harness means,

(e) seat stabilization parachute means releasably connected to said seat structure and also releasably connected to said personnel parachute means in deploying relation,

(f) dual parallel parachute deployment means one of which initially deploys said seat stabilization parachute means when actuated and the other of which initially deploys said personnel parachute means in released relation to said stabilization parachute means when actuated, and



(g) pressure-sensing and pressure-responsive selector means for selectively actuating one of said parallel parachute deployment means,

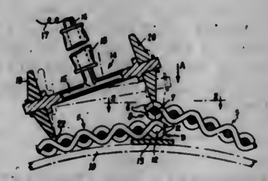
said selector means actuating that one of said dual parallel parachute deployment means which initially deploys said personnel parachute means in released relation to said seat stabilization parachute means when sensing an environmental combined low dynamic pressure and a high static pressure condition exterior to said aircraft structure as said seat structure is forcibly ejected from said aircraft structure.

3,191,893

METHOD AND APPARATUS FOR WELDING THE JOINT IN A WIRE CLOTH

Frederick Charles Ray, Ashton-on-Mersey, Sale, England, assignor to The Johnson Wire Works Limited, Montreal, Quebec, Canada

Filed May 12, 1961, Ser. No. 109,759
3 Claims. (Cl. 245—10)



1. The method of welding the joint in a wire cloth woven of warp and weft strands comprising, cutting a length of woven wire cloth to the desired length, removing one end weft strand from each end of the cut wire cloth leaving a series of projecting substantially closed crimped ends to the warp strands, substituting a strand of welding material for one of the removed weft strands, the said substituted strand of welding material being threaded through and firmly held in the closed crimped ends of the warp strands, bringing the ends of the wire cloth together to form a loop so that the end portions of the wire cloth are located one above the other, and applying heat and pressure to the overlapped ends of the wire cloth to fuse the strand of welding material and bring the ends of the wire cloth into linear alignment with each other.

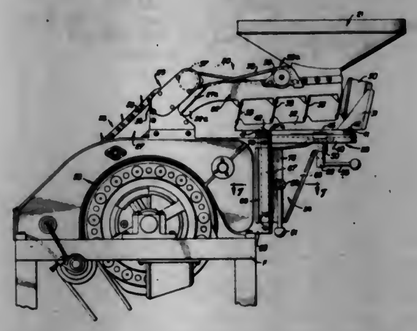
3,191,894

MOUNTING DEVICE FOR VIBRATOR FEEDING MECHANISM

William H. Kagley, Dinuba, Calif., assignor to Lindsay Ripe Olive Company, Lindsay, Calif., a corporation of California

Filed June 8, 1962, Ser. No. 200,985
4 Claims. (Cl. 248—13)

1. In a machine for processing successive food articles having a frame and an article receiving device thereon having an entry portion; elongated article directing means overlying said frame and having an article delivery end arranged in substantially mating relation to said entry portion; a support having guide means thereon for guiding said directing means in substantially rectilinear movement toward and from said article receiving device and maintaining said directing means in a fixed direction of orientation relative to said frame; clamp means for selec-



tively clamping said delivery means to said support in a selected position on said support; said support being a portion of a bracket pivotally mounted on said frame about a vertical axis spaced from said support whereby said delivery means may be rectilinearly retracted from said receiving device then pivoted about said axis laterally to a position outwardly of a side of said frame; and means for locking said bracket against pivoting movement about said axis.

3,191,895

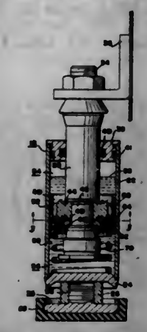
PLATFORM STABILIZER

James E. Whelan, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 6, 1963, Ser. No. 263,219
5 Claims. (Cl. 248—19)

2. A stabilizing leg for leveling a domestic appliance comprising, a cylinder, a piston mounted for reciprocation in said cylinder, a piston rod connected to said piston directed exteriorly of said cylinder, said cylinder and piston forming separate chambers having an incompressible fluid therein, a compression spring in one of said chambers for biasing said piston in a first predetermined direction to move said piston rod exteriorly of said cylinder, passageway means in said piston, one-way valve means for opening said passageway means upon movement of said piston in said first predetermined direction, said valve means operative to close said passageway means upon movement of said piston opposite to said first predetermined direction,

and means in said piston for restricing fluid flow upon said opposite movement whereby said incompressible fluid



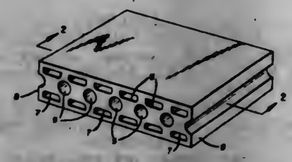
serves as a hydraulic support when said leg is in a predetermined relationship with respect to the domestic appliance.

3,191,896

VIBRATION PAD

Tracy D. Nathan, Cuyahoga Falls, Ohio, assignor to Hamilton Kent Manufacturing Company, Kent, Ohio, a corporation of Ohio

Filed Mar. 5, 1962, Ser. No. 177,599
1 Claim. (Cl. 248—22)



An extruded elastomeric pad of substantially uniform thickness, a row of parallel cylindrical openings intermediate the top and bottom of the pad each separated by blocks of elastomeric material each of which is joined to the next adjacent block both above and below the intervening cylindrical opening by continuous connecting portions of the elastomeric material which extend across the top and bottom of the pad, respectively, and in which between each two cylindrical openings, both above and below said openings there is a horizontally elongated opening which is wider than the space between the cylindrical openings whereby each end of each elongated opening overlaps the edge of the adjacent cylindrical opening, whereby when an increasing load is placed on the pad the spaces between the respective cylindrical openings and the adjacent elongated openings are narrowed and the tops and bottoms of the blocks bulge into the elongated openings before there is any substantial flattening of the cylindrical openings.

3,191,897

MOUNTING FOR REFRIGERATING APPARATUS

Elwyn D. Comerer, Vandalia, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

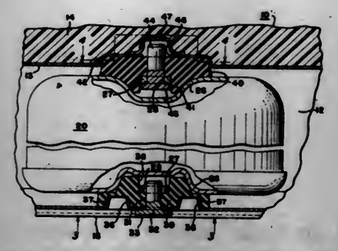
Filed Feb. 4, 1963, Ser. No. 255,851
5 Claims. (Cl. 248—26)

1. In combination,

(a) a metal casing member, opposed supports adjacent opposite surfaces of said casing member,

(b) one of said supports comprising a supporting structure and an elongated member pivotally connected adjacent one end to said supporting structure,

(c) fastening means adjacent the opposite end connecting said elongated member and said supporting structure,



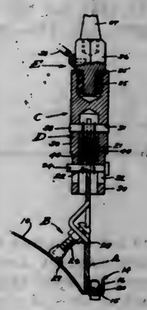
(d) and resilient rubber-like upper and lower pads between said supports and the opposite surfaces of said casing member.

3,191,898

ADJUSTABLE ANTENNA MOUNTING

Richard C. McCullough, Los Angeles, Calif. (5615 Centinella Blvd., Culver City, Calif.)

Filed June 8, 1962, Ser. No. 201,073
1 Claim. (Cl. 248—43)



An adjustable mounting for antennas or the like including:

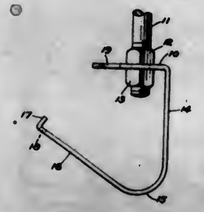
(a) a flat vertically disposed plate with a semi-circular head portion with circumferentially spaced notches,

(b) a shiftable body for carrying said antenna and bifurcated to engage over the head portion of the plate and with a pin at the center of the head portion to form a pivot that permits the body to swing, said body being slotted so as to shift radially on said pin, and with a second pin placed radially from the first mentioned pin so as to engage in and disengage from the said notches upon radial shifting of the body, there being a bore in the body extending between said pins,

(c) and bias means comprising a pair of springs housed in the said bore and at opposite sides of the plate and engaged between the two pins to urge the body radially inward to engage the second mentioned pin in a selected notch,

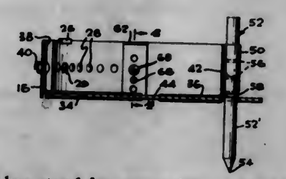
(d) whereby the body carrying said antenna can be selectively positioned relative to the plate.

3,191,899
PIPE HANGER
Orlan C. Kinderf, 500 Mountain Ave., Piedmont, Calif.
Filed Mar. 12, 1962, Ser. No. 179,146
2 Claims. (Cl. 248—62)



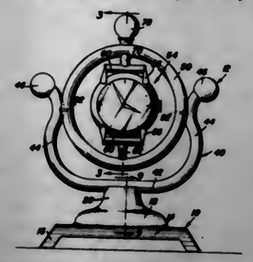
1. A pipe hanger formed of a strap shaped to provide a top bar, a part bent downwardly from one end of the top bar then curved to form a pipe cradle and extending upwardly for connection to the opposite end of the top bar and connecting means comprising a bendable tongue narrower than the strap extending outwardly from said opposite end of the top bar and adapted to extend through a perforation in said upwardly extending portion of the strap, and said upwardly extending portion of the strap having its end bent to overlie and bear upon the top bar.

3,191,900
GOLF BAG STAND
Lynn B. Cayot, Alhambra, Calif., assignor to Commonwealth Company, Alhambra, Calif., a corporation of California
Filed July 23, 1962, Ser. No. 211,604
3 Claims. (Cl. 248—96)



1. A golf bag stand for supporting a golf bag having a bead positioned circumferentially around the lower end thereof, which comprises a split band, adjustable fastening means for attaching the end portions of said band for a selected band circumference, a brace spanning said band to support the bottom of said golf bag, said brace comprising a pair of sleeves extending diametrically across said band, said sleeves each being connected to diametrically opposite side of said band, said sleeves being in alignment with each other, the adjacent inner ends of said sleeves being spaced from each other to permit longitudinal motion of said sleeves toward and away from each other, a bar having its inner end slidably received within said sleeves, the outer end of said bar normally extending exteriorly of said band, said bar being disposed in a plane parallel to the plane of said band and being apertured in the outer end thereof to receive a spike, a spike received in the aperture of said bar and mounted on the exterior of said band for axial movement through said aperture, a guide member mounted on said band for guiding axial motion of said spike in a direction normal to the plane of said bar, a plurality of axially positioned spaced grooves in the outer surface of said spike, a spring detent mounted on said band and adapted to be received in said respective grooves, and a plurality of adjustable clips positioned around the upper circumference of said band, said clips having an inwardly bent portion at their upper ends and adapted to be positioned on said bead of said golf bag.

3,191,901
ORNAMENTAL WATCH, PORTRAIT AND PLAQUE STAND
James W. Green, 125 S. Main St., Roxboro, N.C.
Filed Nov. 5, 1962, Ser. No. 235,206
11 Claims. (Cl. 248—116)



1. An ornamental stand for articles such as watches and the like comprising a base having a top wall with a horizontally extending grooved seat therein, a support means adapted to at least partially embrace a watch and having a lower portion positioned in said seat, means securing said lower portion to said seat and base, vertically spaced, aligned and opposed fastening means carried by said support means and projecting inwardly therefrom for releasably engaging and supporting opposite portions of the periphery of an article and holding said article for display in a vertical position in said support member.

3,191,902
TELESCOPIC CONSTRUCTION
Paul Goller, Munich, Germany, assignor to Maschinenfabrik Karl Goller KG, Munich, Germany, a corporation of Germany
Filed May 6, 1963, Ser. No. 278,142
Claims priority, application Germany, May 9, 1962, G 34,939
13 Claims. (Cl. 248—188.5)



1. A telescopic construction, especially for use as a table or chair leg, comprising:
a pair of tubular members mounted in telescopic relation with respect to each other;
a clamp shaft inside of said tubular members, the lengthwise axis of said clamp shaft being parallel with the lengthwise axes of said tubular members;
means supporting said clamp shaft for rotation about its lengthwise axis with respect to one of said tubular members and holding said clamp shaft against lateral movement with respect thereto;
handle means connected to said clamp shaft whereby said clamp shaft can be rotated;
clamping means on said clamp shaft for rotation therewith, said clamping means having a surface which is eccentric with respect to the other of said tubular members for effecting relative radial movement of said members and thereby releasably clamping together said tubular members in response to rotation of said clamp shaft.

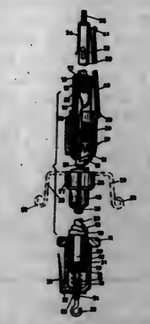
3,191,903
HOSPITAL INVERTED BOTTLE SUPPORT
Josef Wieland, 616 Bayswater St., Burlingame, Calif.
Filed July 27, 1964, Ser. No. 385,292
3 Claims. (Cl. 248—328)



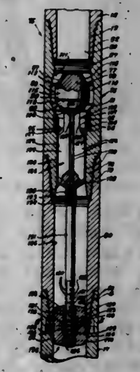
1. In an inverted bottle support for hospital use, the combination of two vertically extending telescoping cylindrical members adapted and arranged to form an extendable closure for a block and fall lift, a support upon which the upper one of said cylindrical members is supported, a pulley block carried by said support, a fall line extending over said pulley block and downawardly within said telescoping cylindrical member, a fall line accommodating pulley normally disposed within the lower cylindrical member, a bottle supporting spider having a ring portion surrounding and movable along the outside of said lower cylindrical member, a tongue carried by said spider extending diametrically into said lower cylindrical member to which said fall line accommodating pulley is connected, a fall line connected at one end to said pulley supporting tongue passing over said pulley block and around said second pulley and extending at the lower end of said cylindrical members, characterized by the fact that said upper and lower cylindrical members have co-extending and aligned slots in which the diametrically projecting tongue carried by said bottle supporting spider operates, whereby said bottle supporting spider may be moved by said block and fall from a position at the extending end of said lower cylindrical member to a position at the upper end of said upper cylindrical member.

3,191,904
PLASMA SUPPORT UNIT
Alexander D. Karapita, % Canadian Research and Development Foundation, 1434 Queen St. W., Toronto 3, Ontario, Canada
Filed Aug. 4, 1961, Ser. No. 129,440
3 Claims. (Cl. 248—333)

1. A plasma support unit including a ceiling support, an outer tubular sheath having means for holding objects, an inner rod slidably mounted within said sheath and pivotally mounted at one end in said ceiling support, means providing a plurality of fingers surrounding said rod, means in said sheath engageable with said fingers and adapted to press the said fingers against said rods, means to urge said finger means and said finger engaging means longitudinally against each other to fasten together said rod and said sheath in their axially adjusted position, means to hold said ceiling fixture in said ceiling support in a variable position inclined from the vertical, said means for holding the said ceiling fixture in an inclined position comprising a sleeve slidably mounted on said sheath, said sleeve having a plurality of fingers and an outer thread, a nut mounted on said thread and engageable with said fingers to press them against said sheath and a link pivoted to said sleeve and hooked to said overhead support.



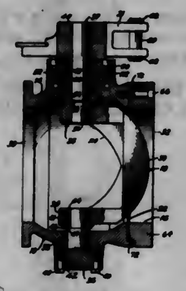
3,191,905
GRAVITY OPERATED KELLY FOOT VALVE
Norman F. Brown, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Oct. 12, 1962, Ser. No. 230,045
10 Claims. (Cl. 251—149.5)



2. A valve including: a housing having means at opposite ends thereof for connecting the housing in a flow conductor to constitute a section thereof, said housing having a flow passage and an annular internal recess intermediate the ends thereof; said housing having removable annular valve seat means disposed in said flow passage below said internal annular recess and providing an upwardly facing annular seat surface extending inwardly of said recess; said seat ring having resilient means providing an upwardly facing resilient seat surface thereon; a valve member having an upper enlarged portion providing a downwardly facing seat surface engageable with said seat surface of said seat means when said valve member is in a lower closed position in said flow passage, said enlarged portion of said valve member having an external coating of resilient means providing said downwardly facing seat surface on said enlarged portion and engageable with said

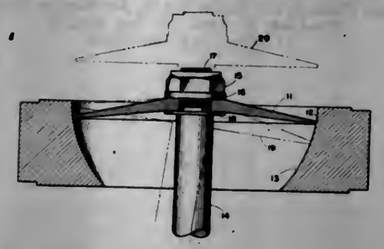
upwardly facing seat surface of said seat ring member to provide resilient sealing closure preventing downward flow through said seat past said valve member, said enlarged portion of said valve member being disposed in substantial axial alignment and centrally located within said recess when said valve member is in an upper open position in said flow passage with said seat surfaces spaced from one another, said valve member having dependent means extending downwardly of said seat means and outwardly of the lower end of said housing, said last mentioned means having guide means engageable with said housing for holding said valve member centrally disposed in said flow passage; and stop means on the lower end of said guide means engageable with the flow conductor below the housing for moving the valve upwardly to said upper open position in said housing when said housing is connected in said flow conductor, said valve element being movable downwardly by gravity when said housing is disconnected from said flow conductor.

3,191,906
FLOW CONTROL VALVE WITH A V-SHAPED OPENING
Ralph W. Zeigler and Hubert J. Grabenbauer, Marshalltown, Iowa, assignors to Fisher Governor Company, Marshalltown, Iowa, a corporation of Iowa
Filed June 18, 1962, Ser. No. 203,188
5 Claims. (Cl. 251—208)



1. A flow control valve for use with fluids containing solids comprising, in combination, a casing having an inlet, an outlet, and a flow passage therethrough, a valve plug for selectively closing said flow passage, means mounting said valve plug in said casing for movement about a generally horizontally disposed axis, means for actuating said valve plug, and annular seal means engaging said valve plus to substantially prevent leakage between the interior of the casing and the surface of the valve plug, said valve plug having a generally spherical outer surface and having an inverted V-shaped opening therethrough extending toward the center of the valve plug from the surface thereof, thereby providing a flow path through the valve plug, such flow path being defined between the V-shaped opening in the valve plug and the seal means, with the apex of said V-shaped opening disposed at the top of said flow path, the sides of said V-shaped opening diverging downwardly so that the shape of the flow path defined between the V-shaped opening in the valve plug and the seal means will be generally triangular over a wide operating range, whereby said valve plug can be moved by said actuating means from a position closing said flow passage through said casing to a position wherein said V-shaped opening is at least partially alined with said flow passage through said casing, thus permitting flow through said valve plug.

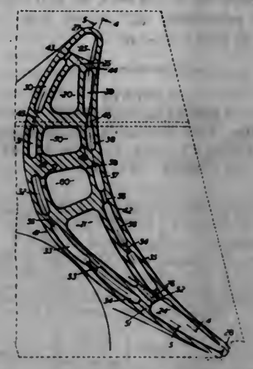
3,191,907
CONICAL VALVE PLUG
Harold W. Schmidt, North Olmsted, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 24, 1962, Ser. No. 212,174
2 Claims. (Cl. 251—333)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a valve assembly, a valve seat comprising a rigid member having a recessed seating face of substantially spherical configuration, and a valve plug cooperating therewith to form a zero leak seal, said valve plug comprising a rigid member shaped in the form of a frustum of a right circular cone having a wall uniformly diminishing in thickness from the top of said frustum to the bottom of said frustum, said right circular cone being generated by a right triangle, the hypotenuse of which forms an angle with the generating leg of the triangle in the range of 8° to 18°, the base of said frustum being dish-shaped, the bottom of said wall terminating in an annular seating surface, said surface being perpendicular to the hypotenuse of a mean generating triangle of the right circular cone, said hypotenuse of said mean triangle of the generating cone being coextensive with a great circle of the spherical seat, said seating surface being adapted to cooperate with said valve seat, said seating surface being adapted to cooperate with said valve seat seating face to form said zero leak seal, said wall uniformly diminishing in thickness so as to uniformly distribute the load throughout the wall during the seating of the valve plug in the valve seat.

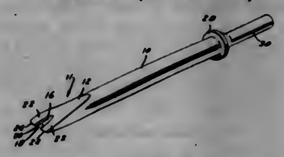
3,191,908
BLADES FOR FLUID FLOW MACHINES
Frederick Bowen Powell, Hathern, near Loughborough, and James Alexander Petrie, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Feb. 14, 1963, Ser. No. 258,445
4 Claims. (Cl. 253—39.15)

1. A blade adapted for use in a fluid flow machine said blade having a root and a tip, two fluid conduits formed in said blade and extending from substantially the root to the tip thereof, an inlet to each said fluid conduit, through which a blade cooling fluid may be introduced into said fluid conduits, two sinuous fluid passageways formed in said blade, each of said sinuous fluid passageways comprising a series of spaced fluid passages which also extend substantially from the root to the tip of the blade, fluid paths which are alternately arranged adjacent to the root and tip of the blade, connecting said fluid passages together, one fluid passage of each sinuous fluid passageway being disposed adjacent the leading and trailing edges of the blade respectively and communicating with their respective fluid conduits by way of drillings disposed adjacent the mid-height of the blade, blade cooling fluid passing through said drillings forming jets which cool the said leading and trailing edges adjacent the mid-heights of the blade, one fluid passage of each sinuous fluid passageway being provided with an outlet through which blade cooling fluid may pass out of the blade, each



sinuous fluid passageway extending substantially completely around the respective fluid conduit.

3,191,909
SPOT WELD SEPARATOR
Norbert M. Reischl, 732 E. Mar Vista, Whittier, Calif.
Filed Mar. 29, 1963, Ser. No. 268,929
3 Claims. (Cl. 254—104)



1. A mechanism for separating the weld spots of spot weld seams and the like, comprising:

(A) a separating tool having
  (a) a shank,
  (b) a head at the forward free end of said shank, said head being wedge shaped with oppositely arranged flat sides, the apex of said head being at the forward leading end, said head also flaring toward said forward leading end, said head having oppositely arranged grooves in the flat sides defining the wedge, said grooves extending rearwardly from the forward leading end and forming a notch at the forward end of said wedge which has a concavely curved closed inner end, said inner end being a sharp cutting edge spaced inwardly from each of said flat sides, said notch dividing the forward end portion of the head into a pair of members, the forward edges of said members forming the apex end of the head being rounded,
  (c) an annular flange at the rear of the shank,
  (d) a stem extending rearwardly from said flange;

(B) and a pneumatic actuator to which said stem is removably secured, said actuator imparting longitudinal vibratory movements to said separator tool.

3,191,910
GUIDING DEVICE
Jay M. Eitel, Los Altos, Calif., assignor to Telsta Corp., San Carlos, Calif., a corporation of California
Filed Sept. 13, 1961, Ser. No. 137,914
1 Claim. (Cl. 254—194)

In a guiding device for guiding an elongate element into a position adjacent to an existing elongate element, a pair of substantially pear-shaped side plates formed of sheet metal and having outwardly flared rounded edges, a pulley rotatably mounted between the pair of side plates, a support member affixed to one of the side plates and spaced from the pulley, the other of the side plates having a hole therein and being movable between open and closed positions with respect to the pulley and said one side plate about an axis coincident with the axis of rotation of the pulley, a pin slidably mounted in the support means for movement in a direction parallel to the axis of rotation of the pulley, means yieldably urging the pin into engagement with the hole in said other side plate when said other side plate is in a closed position to retain said other side plate in a closed position, a knob affixed to the pin to permit retraction of the pin from said other side plate so that said other side plate can be moved to an open position to permit insertion of an intermediate portion of an elongate element onto the pulley, means mounted on the pin and adapted to engage one of said side plates and serving to limit the travel of said pin in a direction towards said other side plate, clamping means adapted to engage the existing elongate element, said clamping means including a pair of clamping members, a goose-necked member having one end secured to one

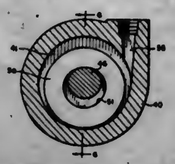


of said clamping members, a swivel member rotatably mounted on the other end of said goose-necked member for rotation about an axis substantially perpendicular to the axis of rotation of the pulley, means pivotally connecting said swivel member to the support member to permit rotation of the support member about an axis perpendicular to the axis of rotation of said pulley and perpendicular to the axis of rotation of said swivel member, the other of said clamping members being movable toward and away from said one clamping member, a threaded pin rotatably mounted in said one clamping member and threadedly engaging said other clamping member, means carried by said clamping member for preventing rotation of said other clamping member with respect to said one clamping member, and spring means disposed between the clamping members for yieldably urging said other clamping member away from said one clamping member, said pulley being movable in at least two directions with respect to said clamping means, one direction of movement being permitted by rotation of said swivel member on said goose-necked member, the other direction of movement being permitted by the pivotal connection between said swivel member and said support member.

3,191,911
FLUID DRIVEN MECHANICAL OSCILLATOR
Albert G. Bodine, Jr., Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed May 26, 1961, Ser. No. 112,897
10 Claims. (Cl. 259—1)

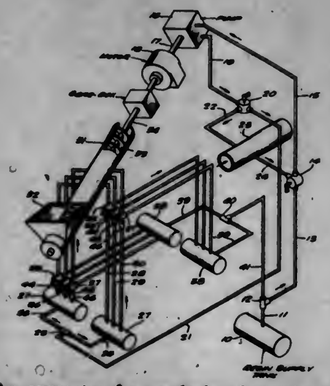
1. In a vibration generator, the combination of: a pin, an inertia ring of larger inside diameter than the diameter of said pin encircling said pin, so that said ring is

capable of rolling on said pin and gyrating thereabout with its center of gravity describing a circle about the longitudinal axis of said pin, and a nozzle oriented to



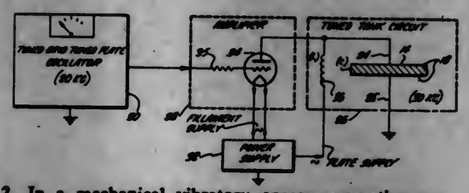
direct a jet of fluid toward said ring with a component of velocity tangential thereto so as to impinge on the ring and cause it to gyrate about said pin.

3,191,912
MIXING APPARATUS FOR PRODUCING OIL WELL FORMATION FRACTURING COMPOSITIONS
James A. Frye, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Dec. 19, 1961, Ser. No. 160,609
3 Claims. (Cl. 259—7)



3. An apparatus for producing fracturing fluid comprising a source of resin, a screw conveyor, said conveyor comprising a screw and a barrel, a conduit connecting said source and said conveyor, a pump disposed in said conduit, a first dividing means disposed between said pump and said conveyor for dividing said conduit into two primary branches, a pair of second dividing means disposed in said primary branches between said first dividing means and said conveyor, said second dividing means dividing each of said primary branches into at least three secondary branches, inlet means connecting each of said secondary branches to said barrel, said inlet means being spaced equidistantly from each other so as to coincide with the lead of said screw, diverting means disposed in each of said secondary branches for diverting at least a portion of said resin from said conveyor, means for connecting said diverting means to the inlet side of said pump, connecting means disposed between said source and said first dividing means for connecting the discharge side of said pump to the intake side of said pump, a manifold disposed in said connecting means, a hopper disposed on said conveyor, said conveyor being inclined, a common drive means for said pump and said conveyor, a discharge means disposed on said conveyor, and a mixing means disposed such that it will receive the discharge from said conveyor, said connecting means being connected to said conduit by a first valve and a second valve, said valves being adapted to operate to permit a first fluid to flow through said conduit without flowing through said connecting means and to permit a second fluid to flow through said manifold, through said first valve, said pump, said second valve and back to said manifold while simultaneously preventing said second fluid from flowing to said source or said conveyor.

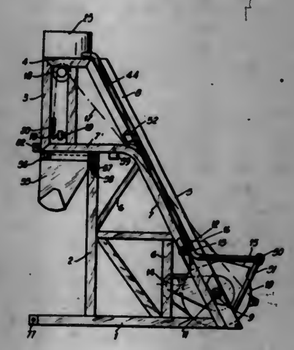
3,191,913
ULTRASONIC UNIT
Hal C. Mettler, 1709 Putney Road, Pasadena, Calif.
Filed May 22, 1961, Ser. No. 111,617
10 Claims. (Cl. 259—72)



2. In a mechanical vibratory energy generating apparatus the combination, comprising:

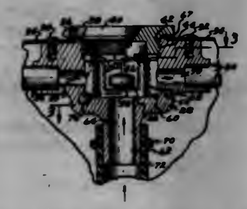
a piezoelectric crystal element having dimensions determinative of at least two harmonically related resonant mechanical vibratory frequencies of the crystal, and means for applying an energizing signal to the crystal element having at least two frequency components substantially equal to said two harmonically related resonant vibratory frequencies, said energizing means being adapted for applying an energizing signal of sufficient power at both of said frequencies for causing the crystal element to form mechanical vibratory power at both said harmonically related resonant vibratory frequencies.

3,191,914
MIXER, PARTICULARLY A CONCRETE MIXER
Pablo August, Directorio 130, Bernal, Buenos Aires, Argentina
Filed May 14, 1962, Ser. No. 194,225
Claims priority, application Germany, Aug. 4, 1961, A 38,062
10 Claims. (Cl. 259—160)



1. In an automatic mixer, particularly a concrete mixer, in combination, a mixing trough; upwardly inclined combined supporting and guide means for supporting and guiding said mixing trough along an upwardly inclined path between a lower charging position and an upper discharge position; a concrete storing receptacle adjacent the upper end of said path for receiving concrete from said mixing trough when the latter is in said discharge position; lifting means operatively connected to said mixing trough for lifting the same from said lower charging to said upper discharge position; and control means controlled by the amount of concrete in said storing receptacle and operatively connected to said lifting means for stopping operation of said lifting means shortly before said mixing trough reaches its discharge position when said storing receptacle is substantially filled and for continuing operation of said lifting means to move said mixing trough to said discharge position when said storing receptacle is substantially empty.

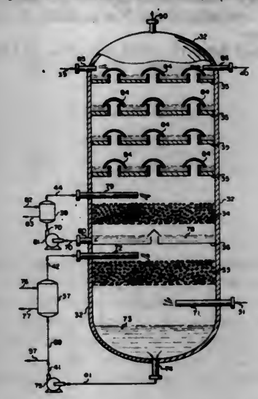
3,191,915
CHEMICALS DISPENSER FOR EVAPORATIVE COOLERS
Gust Goettl, Phoenix, Ariz., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Continuation of application Ser. No. 844,231, Oct. 5, 1959. This application May 15, 1964, Ser. No. 367,851
3 Claims. (Cl. 261—97)



1. In a chemicals dispenser for evaporative cooler pads the combination of: an evaporative cooler housing; evaporative cooler pads within said evaporative cooler housing and supported thereby; conduit means inside said evaporative cooler housing and disposed to deliver water to said evaporative cooler pads; a hollow second housing forming a part of said conduit means and having a filler opening in one side wall thereof; said second housing connected to said evaporative cooler housing; removable closure means extending through a side wall of said evaporative cooler housing and into said filler opening to close the same; said removable closure means disposed at the outside of said evaporative cooler housing, whereby access from the outside of said evaporative cooler housing may be had to the interior of said hollow second housing for depositing chemicals therein to mix with water passing through said conduit means.

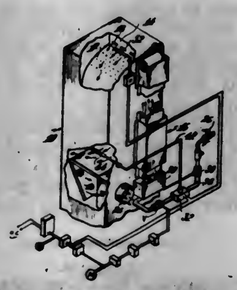
3,191,916
APPARATUS FOR SEPARATING PURE AMMONIA GAS FROM A MIXED OFF-GAS STREAM
Stanley S. Kurpit, Newark, N.J., and Ivo Mavrovic and Stanley J. Saffian, New York, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Original application Feb. 4, 1960, Ser. No. 6,644, now Patent No. 3,155,723, dated Nov. 3, 1964. Divided and this application Jan. 15, 1964, Ser. No. 337,881
10 Claims. (Cl. 261—148)

1. An apparatus for separating a mixed off-gas stream derived from a urea synthesis process and containing ammonia, carbon dioxide and water vapor into pure ammonia gas and aqueous ammonium carbamate solution which comprises, in combination, a vertically oriented separator vessel, at least one bed of packing for gas-liquid contact, said bed being horizontally disposed in the lower portion of said vessel as a lower bed, at least one bubble-cap plate for gas scrubbing, said plate being horizontally disposed within said vessel and above said lower bed, means below said lower bed to pass said mixed off-gas stream into said vessel, whereby said mixed off-gas stream flows vertically upwards through said bed, a pump for circulating liquid external to said vessel, means to pass warmed aqueous ammonium carbamate solution from below said bed in said vessel to said pump, means to separate the solution discharged from said pump into a stream of product aqueous ammonium carbamate solution and a stream of recycle solution, a first cooling means, means to pass said recycle solution through said first cooling means whereby said solution is cooled, means to pass the



resulting cooled solution into said vessel above said bed whereby said cooled solution is dispersed into said bed and flows vertically downwards through said bed, a second cooling means, said second cooling means being disposed on said plate within said vessel, whereby the liquid phase on said plate is cooled, and means above said plate for removal of substantially pure ammonia gas from said vessel.

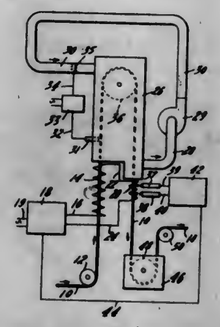
3,191,917
DRYER CONTROL AND DRYER
William W. Pittendreigh, New Bedford, Mass., assignor, by mesne assignments, to McGraw-Edison Company Inc., Elgin, Ill., a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,928
11 Claims. (Cl. 263—10)



1. In a dryer, a drying chamber means for holding a quantity of material to be dried, means for establishing a flow of air through the chamber means including an inlet means through which the air enters the chamber means and an outlet means through which air is exhausted, variable capacity means having an on condition for supplying heated air to the chamber means and an off condition in which no heat is supplied thereto, means operable to change the capacity of said variable capacity means from a predetermined level of said on condition to a predetermined lower level thereof, means for modulating said variable capacity means at each level of said on condition, and other means operable to effect operation

of the variable capacity means when the residual moisture content of the material reaches a predetermined minimum.

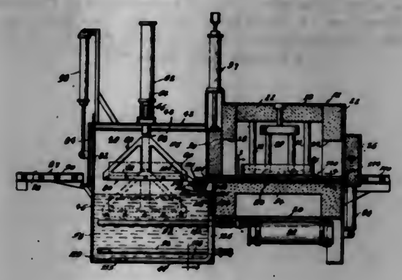
3,191,918
APPARATUS FOR FLOW BRIGHTENING ELECTROLYTIC TINPLATE
Gilbert George Kamm, Barrington, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 15, 1961, Ser. No. 117,466
10 Claims. (Cl. 266—3)



1. An apparatus for flow-brightening electrolytic tin plate in the form of continuous strip comprising in combination, means for conveying said strip along a predetermined path of travel at a constant rate, a first and second induction heater located at spaced points in said path with the longitudinal axis of each substantially coincident with said path whereby the coils of each heater surround a portion of said moving strip, means electrically connected to each heater to supply electric power thereto to increase the temperature of the strip moving therethrough, said first heater increasing the temperature of said strip to between 400–449° F., and said second heater increasing the temperature of said strip to above the melting point of tin, substantially constant temperature oven means situated in said path between said first and second heaters adapted to maintain said moving strip at a temperature of 400–449° F. for a predetermined time, temperature detecting means separate from said oven means situated adjacent said second heater to detect the line at which said tin melts, control means operatively connected to said detecting means and to the power supply means connected to said second heater to adjust automatically the power input to said second heater to maintain said tin melting line in proximity to said second heater, and cooling means situated in said path subsequent to said tin melting line to quench and solidify said molten tin.

3,191,919
TRANSFER MECHANISM FOR HEAT-TREATING APPARATUS
Norman J. Acker, Oconomowoc, Wis., assignor, by mesne assignments, to Sunbeam Equipment Corporation, a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,885
10 Claims. (Cl. 266—4)

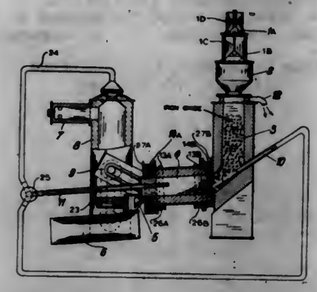
1. In a heat-treating apparatus, in combination, a furnace having a heating chamber beneath which there extends a hearth, a door-controlled entrance opening, and a door-controlled exit opening to permit a work basket to be slid rearwardly along the hearth and out of the exit opening, a quench tank having a treatment chamber adjacent to said furnace and communicating with the heating chamber through said exit opening, an elevator mounted in said treatment chamber to move vertically between a lowered position and an elevated position wherein it is at the level of said hearth, mechanism to move the elevator between its elevated and lowered positions, means defining an elongated guide channel below the level of said hearth and extending between the entrance and exit openings, a rack slidable endwise in said channel, said rack being in the form of a flexible chain length, the end of the channel that is adjacent to the exit opening of the heating chamber being open to permit the flexible chain length to pass outwardly through said open end of the channel and extend into the quench tank during endwise sliding movement of the rack, detent



means carried by said rack and projecting upwardly above the level of the hearth, said detent means being operatively engageable with the trailing end of a work basket disposed on the hearth when the rack moves rearwardly in the channel for sliding the basket toward and out of the exit opening and onto the elevator, and being disengaged from the said trailing end of the said work basket and sliding against the underside of a succeeding basket on the hearth when the rack moves forwardly in the channel, a pinion positioned in the treatment chamber adjacent the exit opening and in driving engagement with said rack, and means for selectively driving said pinion in opposite directions.

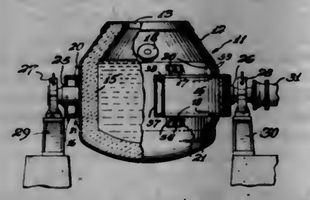
3,191,920
APPARATUS FOR REDUCING METAL OXIDES, ESPECIALLY IRON OXIDES
Walther Dick, Oberhausen, Rhineland, and Ludwig von Bogdandy, Essen-Frintrop, Germany, assignors to Huttenwerk Oberhausen Aktiengesellschaft, Oberhausen, Rhineland, Germany, a corporation of Germany
Filed Aug. 10, 1961, Ser. No. 130,664
Claims priority, application Germany, Aug. 19, 1960, H 40,243
2 Claims. (Cl. 266—25)

1. An apparatus for reducing metal oxides, comprising a prereducing furnace forming a substantially vertical first chamber having an inlet for a charge of iron ore at its upper end and a generally lateral opening at its lower end; a rotary drum-type final-reducing furnace extending laterally of said prereducing furnace and communicating therewith at said outlet whereby a continuous column of charge can pass uninterruptedly from said first chamber into a second chamber defined by said drum-type furnace, said second chamber communicating with said first chamber only through said outlet for admission of a reducing gas from said second chamber to said first chamber, said first chamber terminating in a downwardly sloping surface leading to said second chamber for supporting part of the weight of said column in said first chamber while permitting sliding of the ore of said column along said surface from said first chamber into said second chamber; a source of reducing gas; conduit means connected to said source and extending substantially axially into said rotary furnace for introducing said reducing gas into said second



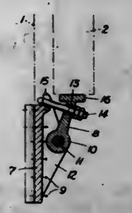
chamber at a location remote from said outlet of said first chamber whereby said gas passes countercurrent through substantially the entire length of said column in both of said chambers; and means for rotating said drum-type furnace.

3,191,921
STEEL-MAKING CONVERTER WITH EXPANSION-ACCOMMODATING VESSEL MOUNTING
Paul R. Johnson, Oak Lawn, Ill., assignor to Chicago Bridge & Iron Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 25, 1962, Ser. No. 168,762
7 Claims. (Cl. 266—36)



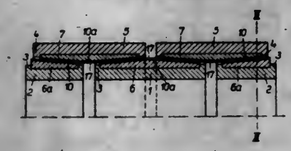
7. In a steel-making converter rotatable between upright and inverted positions;
a vessel;
upper lugs on said vessel;
an annular ring having upper and lower walls spaced radially from said vessel;
means on said annular ring for supporting said upper lugs when the converter is in said upright position;
a plurality of lower lugs fixed on said vessel;
and a plurality of elements mounted on said lower wall of the annular ring against vertical movement relative to said lower wall, each of said elements including means for engaging a respective one of said lower lugs;
each of said elements and each of said lower lugs having respective downwardly and outwardly extending mutually engaging surfaces, when the vessel is upright, extending at substantially the angle of the path followed by said lower lugs as the vessel expands in both vertical and radial directions during the steel-making operation.

3,191,922
BRACKET FOR SUPPORTING TILTABLE CRUCIBLES OR CONVERTERS
Othmar Pilhringer, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Oct. 5, 1962, Ser. No. 228,665
Claims priority, application Austria, Oct. 17, 1961, A 7,812/61
3 Claims. (Cl. 266—36)



1. A bracket for supporting tiltable crucibles or converters on a trunnion ring, comprising a plate member rigidly secured to the crucible shell, a flap member which is hingeably mounted on said plate member, for engaging the trunnion ring, and means for adjustably securing the flap member in a predetermined position in engagement with the trunnion ring to provide a load bearing connection.

3,191,923
ANNULAR SPRING WITH CLOSED INNER AND OUTER RINGS
Oskar E. Peter, Stuttgarter Strasse 34, Brackenheim, Germany, and Lothar Peter, See Strasse 31, Guglingen, Germany
Filed May 15, 1963, Ser. No. 280,572
5 Claims. (Cl. 267—9)

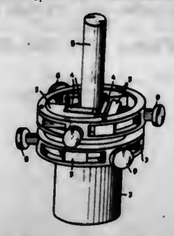


1. An annular spring comprising closed concentric inner and outer metal rings radially spaced from each other so as to form an intermediate annular space and having cylindrical surfaces facing each other, and a plurality of separate profile strips within and substantially filling out said annular space, said profiled strips forming two superimposed annular rows of strips extending around said space inverted relative to each other and having corresponding tapered surfaces engaging with each other, said rows of strips each directly engaging one of the said metal rings.

3,191,924
DEVICE FOR MOUNTING SEMICONDUCTOR RODS IN APPARATUS FOR CRUCIBLE-FREE ZONE MELTING
Joachim Hans, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed Dec. 28, 1960, Ser. No. 78,904
Claims priority, application Germany, Dec. 31, 1959, S 66,491
8 Claims. (Cl. 269—156)

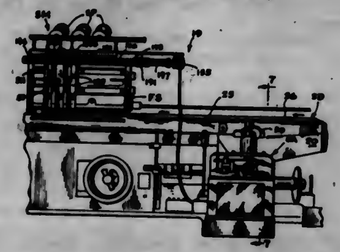
1. A holder device for securing a semiconductor rod in a fixed position during floating zone melting thereof, said holder device comprising a hollow carrier structure having an axis, two groups of three pins of refractory metal pivotally mounted individually on said structure so as to

be displaceable toward said axis, the pins of each of said groups respectively being uniformly distributed about said axis in one of two respective axially spaced planes perpendicular to said axis, the pins of one group being angularly spaced from the pins of the other group about said axis, and adjusting means on said carrier structure for



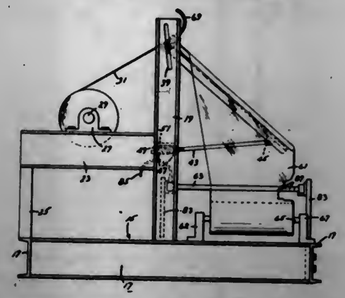
separately adjusting the pins of each of said groups of pins respectively so that a rod at the portion held by each said group of pins may be displaced laterally with respect to said axis whereby a semiconductor rod inserted in said holder device so that the axis of the rod is substantially coincident with the axis of said carrier structure is clamped between said pins.

3,191,925
SIGNATURE MACHINES
William B. McCain, Hinsdale, and James F. Cosgrove, Western Springs, Ill., assignors to Chicago Machinery Laboratory, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 17, 1962, Ser. No. 245,322
11 Claims. (Cl. 270—56)



11. In a signature machine of the kind described wherein a predetermined number of signatures, gathered one atop another in a group, are to be moved along a conveyor path to a stitching station where the signature group is to be joined into a book, caliper apparatus for measuring each such signature group passing through the machine to determine if the thickness thereof departs on either the too thick or too thin side of that predetermined as corresponding to a book of correct thickness and comprising: a pair of aligned rollers between which a signature group is to be moved prior to being joined; one of said rollers having a fixed axis of rotation, means yieldably urging the other of said rollers into a position close to said one roller to contact opposite sides of a signature group passing therebetween during calipering, whereby said other roller will occupy a position spaced from said one roller during calipering by a distance determined by the thickness of the signature group thus contacted; said means including an oscillatable shaft, an arm secured thereto and which supports said other roller, another arm secured to the shaft for movement therewith to different positions depending upon the thickness of the signature group being calipered, spring means acting on said other arm tending to turn said oscillatable shaft; a timing cam acting on a follower carried by said other arm and having a dwell whereat said spring means is effective and a high part whereat said spring means is ineffective to turn said oscillatable shaft; and means operated by said other arm in its different positions to control subsequent operations on the calipered signature group.

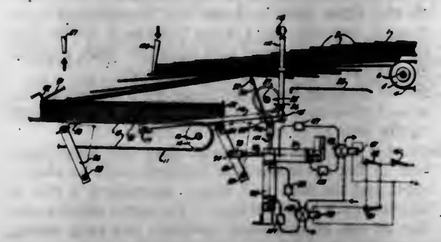
3,191,926
WEB FOLDING APPARATUS
Lawrence T. Ramalka, Media, Pa., assignor to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 6, 1963, Ser. No. 256,589
4 Claims. (Cl. 270—86)



1. A web folding apparatus including a V-shaped frame having a pair of arms connected to each other at one end to form a corner of said frame, said frame being adapted to fold a web longitudinally upon itself as such web is advanced over said arms and across said corner, means for directing and maintaining a web registered with said frame as it is advanced thereover, said arms being formed of tubing, openings spaced along the length of each of said arms and extending substantially perpendicular to the respective axis thereof, openings provided at spaced intervals along said corner, means for delivering compressed gas into said arms whereby a web passing over said arms and across the corner of said frame is maintained spaced therefrom by the gas as it is discharged through said openings, said frame being open in the area between said arms to permit the discharged gas to pass easily into the ambient atmosphere, means for collecting the folded web and means for directing the folded web from said frame and to said collecting means.

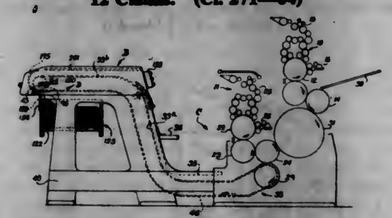
3,191,927
STACKING APPARATUS AND METHOD
Ellsworth A. Harthauser, Concord, and Lawrence E. Weinert, Antioch, Calif., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed June 20, 1963, Ser. No. 289,273
10 Claims. (Cl. 271—57)

1. Article stacking apparatus comprising means for feeding a series of generally flat articles to be stacked from a source of supply, said feeding means including motion-imparting structure for engagement with each such article to positively advance the same, releasable stop means against which successive articles are fed by said feed means, movable means for supporting a plurality of articles as such articles are formed into a stack against said stop means, take-off conveyor means for receiving and carrying away a stack of said articles when said supporting means is moved and when said stop means is released, height-measuring control means for sensing when a stack of articles of predetermined height has been formed against said stop means and for thereupon effecting release of said stop means and movement of said supporting means, such movement of said supporting means effecting placement of such stack of articles on said conveyor means for movement of said stack thereby from said apparatus, and means for displacing articles from said motion-imparting structure so as to positively interrupt feeding of successive articles toward



said stop means while said supporting means is placing a previously formed stack of articles on said conveyor means.

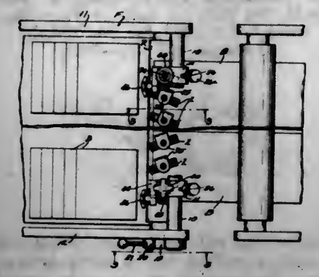
3,191,928
PRINTING PRESS AND DELIVERY WITH SHEET INSPECTION STATION
Richard P. Nelden, Parma, and Jerome D. Solgos, Cleveland, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 18, 1962, Ser. No. 166,995
12 Claims. (Cl. 271—64)



1. A printing press and delivery mechanism therefor comprising a printing unit, delivery means for receiving a sheet from said unit and delivering it over a pile position, and an operator's station between said position and said unit and from which an operator can make adjustments to said unit, said delivery means including a delivery conveyor having sheet-gripping mechanism for taking printed sheets from said unit and a delivery run through which said sheet-gripping mechanism moves to deliver a sheet from said printing unit to said position and a return run moving in a direction opposite to said delivery run for returning said gripper mechanism to said unit, said return run passing adjacent said operator's station, first sheet-release means for effecting a release of a sheet from said conveyor at said pile position, means for selectively rendering said first sheet-release means ineffective, a second delivery station adjacent the return run of said conveyor at said operator's station and accessible to an operator at said operator's station, and second sheet-release means for effecting operation of said gripping mechanism independent of said first sheet release means to release a sheet gripped thereby at said second delivery station as said gripping mechanism moves thereby.

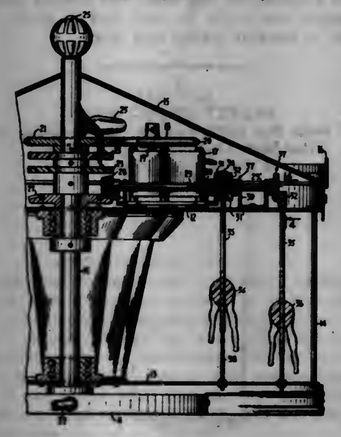
3,191,929
ASKEW ROLL MECHANISM FOR CARTON BLANK APPARATUS
Peter Zernov, Wauwatosa, and Ralph A. Maas, Milwaukee, Wis., assignors to Zorand Corporation, Menomonee Falls, Wis., a corporation of Wisconsin
Filed Feb. 4, 1963, Ser. No. 256,021
4 Claims. (Cl. 271—71)

1. In a carton blank forming apparatus for handling multiple blanks cut from a section of a web of stock, a support frame, a lower power driven roll mounted in said frame and over which said blanks pass, a plurality of upper relatively narrow rollers cooperating with said lower roll and driven by the periphery thereof to advance said blanks therebetween, a support bar mounted in said frame above said roll and in parallelism therewith, a housing for each upper roller and having an opening therethrough by means of which it is slidably mounted on and along said bar, means for preventing rotation of said housing about a horizontal axis relative to said bar,



second means for clamping said housing to said bar, a post extending generally vertically through said housing and having a lower end in which said roller is mounted, means for vertically adjusting said post in said housing, a pinion gear slidably mounted on said post, said pinion gear and post being rotatable together as a unit in said housing, and an adjustable member rotatably mounted in said housing and including a worm gear portion in constant engagement with said pinion gear for rotating the latter and consequently changing the angle of said roller in respect to the direction of travel of said blanks.

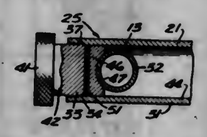
3,191,930
CAROUSEL MECHANISM
Warren C. Cottrell, 1569 S. Jefferson Ave., and Frederick H. P. Schaack, 806 Pinellas St., both of Clearwater, Fla.
Filed July 10, 1962, Ser. No. 208,728
4 Claims. (Cl. 272—31)



4. In a carousel mechanism, the combination of a fixed vertical shaft, a plate member having upper and lower surfaces and mounted for rotation about the vertical shaft, drive means mounted on the upper surface of the plate member, means coupling said drive means to the vertical shaft for rotating the plate member about the vertical shaft, a plurality of figurines disposed below the plate

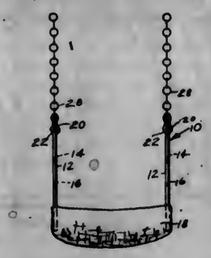
member, means mounted on the upper surface of the plate member and coupled to the vertical shaft and coupled through the plate member to the figurines for imparting movement to the figurines, and means defining a cover for the plate member for obscuring from view the first and second drive means.

3,191,931
ADJUSTABLE STILT CONSTRUCTION
Robert S. Christensen, 513 Merchant St., and Leo C. Pierscinski, 341 Neil St., both of Vacaville, Calif.
Filed July 2, 1962, Ser. No. 206,621
2 Claims. (Cl. 272—70.1)



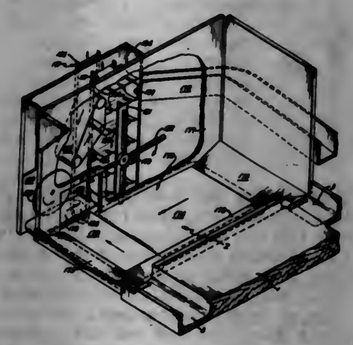
1. An adjustable stilt construction comprising:
(a) a pair of vertical hollow tubes having resilient cupped tips mounted on the ends thereof;
(b) a pair of horizontal foot supports adjustably mounted on said tubes adjacent the bottom ends thereof for selective location at equal heights above said bottom ends; and,
(c) a pair of horizontal hand supports adjustably mounted on said tubes adjacent the upper ends thereof for selective location at equal distances from said upper ends, said foot supports and said hand supports each comprising an elongated horizontal member having a vertical opening to receive said tube, there being a cylindrical axial bore extending from one end of said member to said tube, the end portion of said member being interiorly threaded, a threaded locking knob adapted to engage the interior threads of said member and to extend through said bore in a direction toward said tube, and a cylindrical locking slug slidably disposed within said bore, said slug having an arcuate recess formed therein to encompass a portion of said tube, said locking slug being engaged and urged by said locking knob as said knob is screwed toward said tube.

3,191,932
SAFETY SWING SEAT
Ralph J. Britz, Box 1899, Estevan, Saskatchewan, Canada
Filed Mar. 12, 1962, Ser. No. 178,897
1 Claim. (Cl. 272—85)



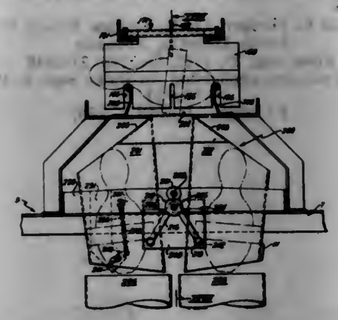
A swing device comprising
an arcuate substantially symmetrically shaped flexible seat member of substantially uniform width throughout its length and being normally oriented in substantially horizontal relation,
a pair of substantially identical vertically disposed circular hoop members arranged in laterally spaced-apart substantially parallel relation, each hoop member being secured along the lower arcuate portion thereof to said seat member throughout the length of the latter and adjacent one longitudinal edge thereof, whereby said hoop members define side frames, the diameter of said hoop members approximating the length of said seat member,
a pair of elongate handle members each traversing one of said hoop members and each having opposite ends rigidly secured to said hoop members,
means for connecting and suspending said hoop members to flexible suspension elements such as chains, ropes and the like, said means comprising a pair of brackets each being secured to the upper arcuate portion of one of said hoop members and each having a coupling element thereon for connection to a chain, cable or the like.

3,191,933
BOWLING PIN AND BALL CONVEYING AND SEPARATING APPARATUS
Adolphe W. Kalbfleisch, Jeannette, Pa., assignor, by mesne assignments, to Robert E. Weber and Adolphe W. Kalbfleisch, trustees
Original application Jan. 9, 1959, Ser. No. 785,844, now Patent No. 3,048,398, dated Aug. 7, 1962. Divided and this application May 23, 1962, Ser. No. 203,424
5 Claims. (Cl. 273—43)



5. Pin handling apparatus comprising a vertically extending frame at the rear of the pit, endless chain means supported for upward movement by the frame, a series of spaced bucket plates mounted on the chain means for upward movement therewith, each plate extending outwardly from the chain means with one side of the plate slightly lower than the other, whereby a ball supported thereon will tend to roll off the low side thereof, feeding means for feeding pins and balls one at a time to successive bucket plates as they move upward with the chain means, pin nudging means for engaging a pin that is supported solely on a bucket plate but not axially centered thereon and for urging said pin axially in the same direction as said feeding means to a more central position on said plate, said pin nudging means including an endless belt conveyor having an upwardly inclined portion moving upwardly adjacent to the path transversed by the edges of said bucket plates, pin restraining means for preventing a pin from rolling off a bucket plate, and ball restraining means for preventing a ball from rolling off the low side of a plate, the ball restraining means being operative only to a predetermined height above the pit, whereby balls will be discharged from the plates and separated from the pins when the plates are raised above that height.

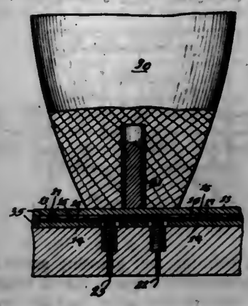
3,191,934
BOWLING PIN STORAGE AND DISTRIBUTING APPARATUS
Adolphe W. Kalbfleisch, Jeannette, Pa., assignor, by mesne assignments, to Robert E. Weber and Adolphe W. Kalbfleisch, trustees
Original application Jan. 9, 1959, Ser. No. 785,844, now Patent No. 3,048,398, dated Aug. 7, 1962. Divided and this application May 23, 1962, Ser. No. 203,425
11 Claims. (Cl. 273—43)



1. Bowling pin handling apparatus comprising conveying means for moving pins horizontally in a line with the axes of the pins substantially normal to a given vertical plane, a plurality of pin storage units disposed in a line below the conveying means, each unit including a pair of conjoined pin pockets disposed on either side of said vertical plane and pivotally supported on an axis lying in that plane and parallel to the line of movement of the pin conveying means, tilting means associated with each storage unit and operative when that unit is empty of pins to tilt the unit initially to one side about said axis to raise the first pocket of the unit and position it directly below the pin conveying means for receiving a first pin therefrom, the unit tilting in the opposite direction about said axis from the weight of a pin received in the first pocket while the second pocket is empty to position the latter directly below the pin conveying means for receiving a second pin therefrom, pin support means extending parallel to said axis between the upper ends of the pockets in each unit, each storage unit when filled with a complement of two pins being substantially balanced about said axis and assuming a centered position that is substantially symmetrical with respect to said vertical plane to position the pin support means below the pin conveying means for supporting other pins moved by the conveying means across the top of the unit and preventing a third pin from entering a pocket of that unit, and releasable latching means for holding pins in and discharging pins from the pockets of the storage units.

3,191,935
PIN DETECTION MEANS INCLUDING ELECTRICALLY CONDUCTIVE AND MAGNETICALLY RESPONSIVE CIRCUIT CLOSING PARTICLES
Donald F. Uecker, Spring Lake, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,713
8 Claims. (Cl. 273—52)

6. A bowling pin detecting device for detecting the presence of a standing bowling pin in a predetermined detection area larger than the base of said bowling pin, comprising: an upper plate member of a size and shape fitting the detection area; means underlying substantially the desired area and forming chambers distributed throughout said area, contact means having exposed portions extending across the upper ends of said chambers, and electrically conductive and magnetically responsive particles in said chambers normally out of contact with said exposed portions and movable to bridge said portions in response to a magnetic field from a pin thereabove.

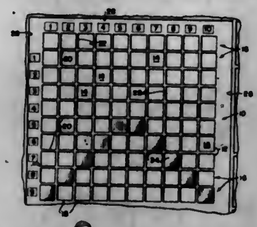


3,191,936
GOLF CLUB INCLUDING SOFT METAL TO LOCK GROOVED SHAFT END TO HEAD
William Guier, 3100 E. 71st St., Tulsa, Okla.
Filed Apr. 11, 1962, Ser. No. 186,732
4 Claims. (Cl. 273—80.2)



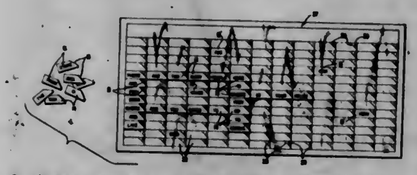
3. A golf club construction, including;
an elongated blade of unitary structure having,
a first hole extending vertically down into the body blade at a point intermediate its ends,
and a second hole in the blade extending transverse the first hole and connecting with the first hole;
a shaft having an elongated neck portion attached to one end of the shaft with the free end of the neck portion sized to extend down into the first hole of the blade;
a groove in the neck end extending down into the first hole;
and a body of metal which is soft relative to the metal of the neck portion and which is positioned in the second hole with a portion of the soft metal forced into the groove of the neck in order to anchor the neck portion of the shaft to the blade.

3,191,937
MOSAIC MAKING AND GUESSING GAME
John J. Kropinski, 45—36 39th Place, Long Island City, N.Y.
Filed Aug. 15, 1961, Ser. No. 131,637
6 Claims. (Cl. 273—130)



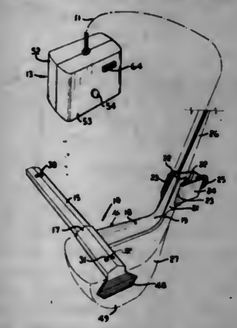
1. A mosaic forming and guessing game device comprising, in combination, a game board constituted of a multiplicity of holders defined as recesses formed in said board and forming a playing field or area, said holders being arranged in a plurality of rows and a plurality of columns whereby selectively designated holders may be representative of composite figures or patterns; means for distinctly identifying each of said recesses and a multiplicity of playing pieces of different shapes, adapted to be mounted on said holders either singly or else in groups in a manner to prohibit shifting of the piece or pieces therein, whereby a selective disposition of said pieces on the holders at different locations on the board will form the said composite figures as conceived by one player and randomly guessed by another player.

3,191,938
GAME APPARATUS COMPRISING MASTER PLAYING BOARD, MULTIPLE PLAYER PIECES AND INDIVIDUAL PLAYER WORK BOARDS HAVING SCORING INDICIA
James A. Smith, Casablanca, Morocco (500 N. Wilson St., Metairie 20, La.)
Filed July 24, 1963, Ser. No. 297,337
5 Claims. (Cl. 273—135)



1. A game apparatus comprising a master playing board having a multiplicity of spaces to receive player pieces, said spaces arranged in numbered columns and the total number of columns representing the maximum number of game players, a multiplicity of player pieces each having a word on one face thereof and adapted to be shuffled and arranged face down on the master board and corresponding in number to the total number of spaces on the master board and filling the spaces in the numbered columns after shuffling and arranging of the player pieces, chance control means separate from the master board and operable so that individual players may select and be assigned the player pieces on the master board in one of said columns, a work board for each player of the game and having a multiplicity of player piece receiving spaces arranged in horizontal and vertical rows, each said space of each work board having a scoring numeral adjacent a corresponding corner thereof, whereby each player may then construct on the work board sentences along selected horizontal rows and vertical columns of spaces during a predetermined time with the word bearing faces of the player pieces facing upwardly, said scoring numerals adjacent the player pieces utilized on the work board being visible after the sentences are constructed, each player piece having a cut away corner portion to facilitate visibly exposing the scoring numerals of the utilized spaces on the work board.

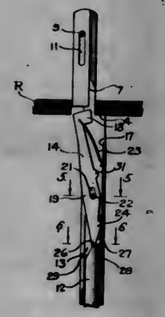
3,191,939
SWING INDICATOR ATTACHMENT FOR GOLF CLUBS INCLUDING SPACED ELECTRIC LIGHT BULBS
Frederick G. Hooper, 114 E. Terrace, Henley Beach, South Australia, Australia
Filed Aug. 27, 1962, Ser. No. 219,548
Claims priority, application Australia, Sept. 1, 1961, 8,759/61
3 Claims. (Cl. 273—186)



1. A sporting device comprising a support member and a boom secured thereto, horizontal flanges on said boom directed towards each other, said horizontal flanges having edges defining a parallel-sided slot beneath the boom, a globe-retaining member of constant cross-section and including upwardly converging side walls having lower terminal edges provided with longitudinally extending flange-engaging grooves, said flange-engaging grooves releasably engaging said edges of the horizontal flanges, said globe-retaining member having an upper surface provided with a central globe-retaining groove extending therealong, and a pair of conductor grooves disposed one on each side of the globe-retaining groove, a pair of spaced globes in the globe-retaining groove, the globes being disposed one behind the other lengthwise of the globe-retaining groove, said boom having an upper surface and a pair of illumination apertures in said upper surface aligned with the globes whereby the latter are visible through said apertures, a pair of conductors one in each conductor groove electrically connected to said globes, and a twin flexible power cable connected to said conductors.

3,191,940
RECORD CHANGER SPINDLE
James E. Vlstnin, Jr., Skokie, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 218,493, Mar. 30, 1951. This application June 26, 1960, Ser. No. 50,989
3 Claims. (Cl. 274—10)

1. A record changer assembly for use with disk records having central openings therethrough, comprising: a post having a record supporting shoulder and a longitudinally extending passageway therein below said shoulder, an ejector lever located within said passageway, pivot means including a pivot pin fixed to said post and extending across said passageway for pivotally supporting said ejector lever for pivotal movement about said pin and for limited longitudinal movement within said passageway, said ejector lever having a first cam surface extending below said pivot pin, an operator element located in said passageway and adapted for longitudinal movement therein and having a second cam surface engaging said first cam surface, one of said cam surfaces effecting pivotal movement of said ejector lever upon relative longitudinal movement of said operator with respect to said lever, spring means independent of and out of contact with said operator affixed to said ejector lever at a point above said pivot pin and operably engaging said lever and the inner



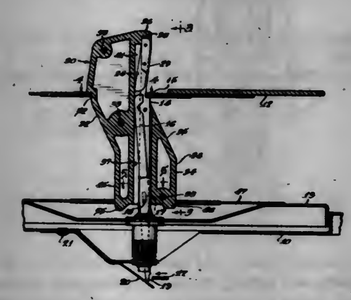
wall of said passage for applying a biasing pivotal force to said ejector lever about said pin in the direction opposite to the pivotal force on said lever due to the action of said cam surfaces, said lever being moved to the limit of its upper movement by said operator element and the force of said spring means being sufficient to prevent pivotal movement of said lever about said pin until said lever has reached the limit of its upper longitudinal movement.

3,191,941
SPINDLE ADAPTER
Fred Krahulec, Skokie, Ill., assignor to Warwick Electronics Inc., a Delaware corporation
Filed June 11, 1962, Ser. No. 203,686
6 Claims. (Cl. 274—10)



1. A spindle adapter for use with a rotatable phonograph turntable and a spindle of relatively small diameter for records having center holes of correspondingly small diameter, said spindle having a shiftable lever for laterally shifting a record relative to said spindle, in combination, an adapter body for supporting and centering a stack of records with large diameter center holes, said body having a passage extending for the length thereof for placement on said spindle and a cap at the top of said body engageable with the upper end of the spindle to position said body on the spindle, a shoulder on said body for supporting a stack of records, said passage being exposed immediately above and below said shoulder, means on said body at the side opposite said shoulder sloped to lead the record stack down onto said shoulder and terminating at a level a record thickness above the shoulder whereby actuation of the shiftable lever projects the lever through the exposed opening and shifts a record off the shoulder and beneath the sloped means, said sloped means being fixed against movement in a plane generally parallel with said shoulder to hold a succeeding record against movement while a record is shifted off said shoulder, and a part of said body beneath the shoulder guiding a record onto the turntable while the sloped means guides the succeeding record at the bottom of the record stack onto said shoulder.

3,191,942
SPINDLE ADAPTER
Ernest O. P. Tatter, Addison, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Aug. 30, 1962, Ser. No. 220,360
3 Claims. (Cl. 274—10)

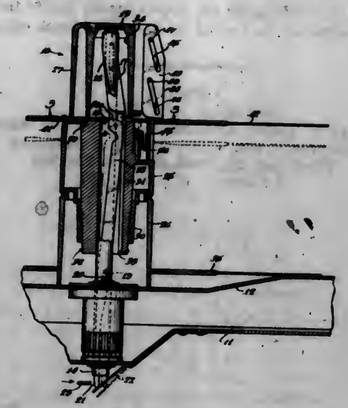


1. A spindle adapter for use with a record changer having a rotatable turntable and a stationary spindle for records having center holes of small diameter, said spindle having a shiftable ejector member, in combination, an adapter body for supporting and centering a stack of records with large diameter center holes, said body having and axially directed passage for placement on said spindle, means on the adapter body engageable with the spindle to lock the adapter to the spindle and against rotation with the turntable, means defining a support position for large hole records intermediate the top and bottom of the adapter to hold records at a support level, means at the upper part of said body for guiding the lowermost record of a large hole record stack to said support level, said adapter having a generally rectangular shape from top to bottom of a size to fit within the center hole of a large hole record, the lower end adapted to fit within the center hole of a record on the turntable, opposite convexly shaped first and second surfaces at said lower end extending arcuately for a minor part of the record hole periphery to obtain guiding of the record on the turntable with minimal frictional retardation of the record, and opposite generally straight third and fourth surfaces between said first and second surfaces and a distance apart equal to a minor part of the hole diameter of the large hole record to avoid contact with a record hole periphery and thereby avoid frictional contact with a record on the turntable.

3,191,943
SPINDLE ADAPTER
Martin C. Reed, Roselle, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,805
5 Claims. (Cl. 274—10)

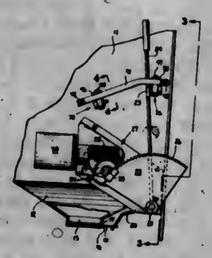
3. A spindle adapter for supporting a stack of large hole records relative to a turntable comprising: a body having a central part and an upper part with said upper part having a portion of its periphery sloping inwardly and downwardly to define a shelf at one side of the upper face of said central part, a plate slidably mounted

on said central part and movable from an inner rest position to an outward exposed position over said shelf to



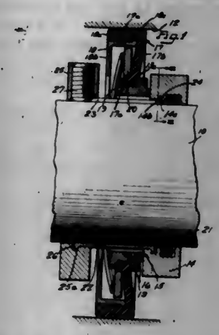
move a record from said shelf, a downturned flange on said plate, and spring means between said central part and said flange urging the plate to said rest position.

3,191,944
REMOTE CONTROLLED SEED SPREADER
Guy A. Watts, R.R. 2, Farmersburg, Ind.
Filed May 27, 1964, Ser. No. 370,614
5 Claims. (Cl. 275—8)



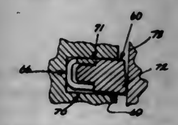
1. Seed spreader apparatus comprising a hopper having a lower opening, a plate mounted on said hopper and reciprocal to open and close said opening, a hand lever swingably mounted on said hopper and coupled to said plate to open and close said opening, a reversible electrical motor fixed to said hopper, means operatively connecting said motor and said plate for blocking and unblocking of said opening, a pair of limit switches fixed to said hopper on opposite sides of said hand lever with the actuating arms of the limit switches facing toward said hand lever for engagement by said hand lever at the opposite ends of its travel, a circuit for operating said electric motor, a double throw single pole switch in said circuit, spring means normally maintaining said switch between said throws, a pair of lines connecting said reversible motor and said switch whereby said switch may be closed against one throw or the other to operate said reversible motor in one direction or the other, said limit switches each controlling a respective one of said lines to limit travel of said plate to a desired closed or open position.

3,191,945
ROTARY SEAL WITH SUPPORTING SLEEVE
Raymond H. Andresen, Barrington, Ill., assignor to Gits Bros. Mfg. Co., Chicago, Ill., a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,852
8 Claims. (Cl. 277—65)



1. In a rotary seal assembly, the combination comprising,
a non-rotatable sealing ring having an annular radial sealing face,
a rotatable mating ring having an annular radial sealing surface for sealing engagement with said face,
means for urging said sealing ring axially into sealing engagement with said mating ring,
a supporting sleeve extending coaxially within said sealing ring with axial ends extending in both directions axially beyond the sealing ring,
said sleeve being split axially with an axially extending gap therein said being flexible for conforming to the outer surface of a shaft,
shaft engaging torque means at one end of the sleeve for positively connecting the sleeve to a shaft,
and mating ring engaging means at the other end of the sleeve for connecting the sleeve to the mating ring for fixing the position of the mating ring.

3,191,946
PISTON RINGS
Douglas W. Hamm, Norton Township, Muskegon County, Mich., assignor to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan
Filed July 25, 1962, Ser. No. 212,297
3 Claims. (Cl. 277—138)



1. A piston ring having a cylinder wall contacting member with an open part and an expander with a closed part, said expander being radially inward of said member; said member having recesses in the radially inner portion of both its upper and lower sides; the radially outer ends of said recesses being defined by radially inwardly facing walls; said expander circumferentially being a zig-zag spring and being U-shaped in cross section and having a pair of radially outwardly extending legs axially spaced by a plurality of struts; said legs telescoping about the radially inner portion of said member and received in said recesses; upon closing of said parts in said member and said rails, said expander being compressed circumferentially and exerting radial pressure on said member; the inner face of said member being radially spaced from said struts; the radially outer face of said member being upwardly and inwardly inclined so that the lower marginal corner of said member has the greatest dimension thereof; the radial distance between the lower one of said walls and radially inner portion of said expander is greater than the radial distance between the upper one of said walls and the radially inner portion of said expander for tilting said member into an upwardly and inwardly inclined attitude about said lower marginal corner thereof when said piston ring is confined in a cylinder.

3,191,947
PISTON RING
Douglas W. Hamm, Muskegon, Mich., assignor to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan
Filed May 14, 1962, Ser. No. 194,462
4 Claims. (Cl. 277—139)



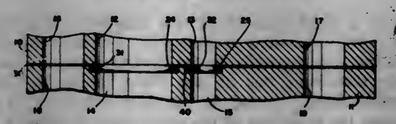
1. A piston ring comprising: a radially extending flat circular land portion forming the lower outer radial corner of said ring; said land portion being subdivided into a plurality of short segments and collectively providing a continuous scraper member; a plurality of fingers; said fingers at one end being bifurcated to form axially extending legs arranged in pairs, one leg of each pair being integral with a different land segment; said legs at the ends remote from said land segments being integrally joined and forming the only connection between adjacent land segments; portions of said fingers forming the axially extending inner bight portion of said ring and other portions of alternate pairs of said fingers forming the upper side of said ring; a portion of said upper side of said alternate pairs of said fingers being offset toward said land segments and forming rail seats; the remaining of said pairs of said fingers extending generally axially and forming stops for engaging the inner radial edge of a rail segment; the ends of said alternate pairs of said fingers radially outwardly of said rail seats extending parallel to said bight portion and substantially closing the outer radial face of said ring.

3,191,948
PISTON RING
Douglas W. Hamm, Muskegon, Mich., assignor to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan
Filed May 14, 1962, Ser. No. 194,597
5 Claims. (Cl. 277—139)



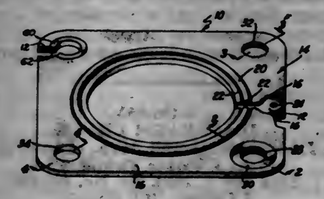
1. A piston ring comprising: a radially extending flat circular land portion forming one side and an outer radial edge of said ring; said land portion being subdivided into a plurality of short segments; a plurality of circumferentially spaced fingers; said fingers being arranged in pairs, one leg of each pair being integral with a different land segment; said legs at the ends remote from said land segments being integrally joined and forming the only connection between adjacent land segments; portions of said fingers forming the axially extending radially inner bight portion of said ring and other portions forming the other side of said ring; a portion of said other side being offset toward said land segments and forming a rail seat; said fingers at said offset extending generally axially and forming stops for engaging the inner radial edge of a rail segment, said stops being radially spaced from said inner bight portion of said ring; the ends of said fingers radially outwardly of said rail seat extending parallel to said bight portion and substantially closing the outer radial face of said ring.

3,191,949
SEALED JOINT AND GASKET THEREFOR
Zdenek J. Lansky, Winnetka, and Kurt W. Lollbritz, Norridge, Ill., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 26, 1961, Ser. No. 147,897
1 Claim. (Cl. 277—168)



An integral gasket comprising a member of resilient deformable rubber-like material having an opening therethrough, a rib of substantial thickness surrounding said opening, a thin web of approximately .015" thickness and of approximately 70 durometer so as to be substantially resistant to cold flow when clamped between flat surfaces surrounding said rib and integrally connected thereto at one end thereof with an end surface of the rib being coplanar with said one end of the rib, the other end of the rib being rounded for making initial line contact with a surface to be sealed.

3,191,950
REINFORCED GASKET
Luther G. Hitner, Los Angeles, Calif., assignor, by mesne assignments, to The Electrada Corporation, Los Angeles, Calif., a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,417
3 Claims. (Cl. 277—189)

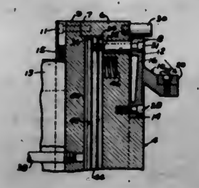


1. A reinforced gasket, including:
(a) a reinforcing element;
(b) a jacket of elastomeric material at least substantially encasing said reinforcing element and providing two elastomeric layers respectively disposed on opposite sides of said reinforcing element;
(c) two opposed, raised sealing ribs integrally formed in said elastomeric layers, respectively, and projecting outwardly beyond the outer surfaces thereof;
(d) each of said elastomeric layers having at least one channel therein inwardly of the outer surface thereof and located alongside of and paralleling the corresponding one of said sealing ribs;
(e) said sealing ribs being resiliently deformable into said channels;

(f) said gasket being provided with a mounting hole therethrough; and

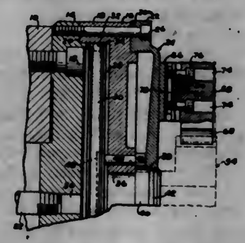
(g) at least one annular spacer encircling said mounting hole and encircled by said elastomeric layers.

3,191,951
DIAPHRAGM CHUCK
John J. Parker, Detroit, Mich., assignor of one-half to London T. Morawski, Detroit, Mich.
Filed July 5, 1963, Ser. No. 293,059
2 Claims. (Cl. 279—4)



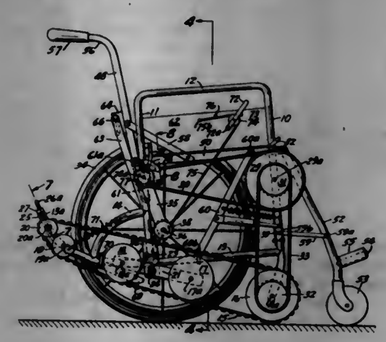
1. In a diaphragm chuck the combination comprising a radially extending backing plate, a radially extending mounting plate coaxial with the backing plate and spaced axially therefrom, one of said plates having an axially extending flange around its periphery extending to and engaging the periphery of the other plate to define a piston chamber in the space between the two plates, means spaced around the periphery of and rigidly secured to said two plates together at said flange, piston movable axially in said chamber, a diaphragm coaxial with said plates and having a central portion rigidly secured to said backing plate on the face thereof opposite the piston chamber, a plurality of circumferentially spaced rigid members extending axially through the backing plate adjacent its outer periphery, each of said members having one end anchored to the periphery of the diaphragm and its opposite end anchored to the piston so as to form a rigid connection between the piston and the outer periphery of the diaphragm which causes the outer periphery of the diaphragm to shift as a unit with the piston, a plurality of circumferentially spaced jaws fixedly mounted on the diaphragm and adapted to open and close in response to flexing of the diaphragm in opposite directions as controlled by reciprocation of said piston, means for directing pressure fluid to the piston chamber on one side of the piston for flexing the diaphragm in the jaw-opening direction and a plurality of compression springs acting between one of said plates and the piston for flexing the diaphragm in the jaw-closing direction.

3,191,952
DIAPHRAGM CHUCK
London T. Morawski, Detroit, Mich., assignor of one-half to John J. Parker, Detroit, Mich.
Filed July 5, 1963, Ser. No. 293,060
2 Claims. (Cl. 279—1)



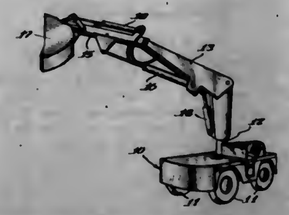
1. In a diaphragm chuck of the type having a flexible diaphragm rigidly secured to a fixed backing member, that improvement which comprises a plurality of radially extending jaw assemblies mounted on the diaphragm in circumferentially spaced relation, each jaw assembly comprising a jaw base and a jaw on said base, each jaw base having the axially inner face thereof fusion-bonded to the axially outer face of the diaphragm so as to prevent even minute displacement of the jaw base relative to the diaphragm when the diaphragm flexes to close said jaw assemblies, the axially outer face of each jaw base having a dovetail slot therein extending lengthwise thereof and terminating at the said axially outer face of the jaw base in a radially extending groove, the side faces of said groove lying in planes parallel to an axial plane extending centrally through the dovetail slot, said axially outer face of the jaw base having a plurality of serrations thereon on opposite sides of said groove, said serration extending normal to the groove, each jaw having similar serrations on its axially inner face extending in a direction normal to its length and in mating engagement with the serrations on the jaw base to prevent relative movement of each jaw and its base in a radial direction, each jaw also having on the axially inner face thereof a generally rectangularly shaped key projecting into said groove, said key having straight sides which have a close fit with the side faces of said groove to prevent relative movement of the jaw base and jaw in a direction normal to the groove, an anchor member in said dovetail slot, said anchor member having converging side faces in coplanar engagement with the inclined side faces of the dovetail slot and threaded members extending through each jaw and into threaded engagement with the anchor member in its respective jaw base for tightly clamping the anchor member against the inclined faces of the dovetail slot and the serrated faces of the jaw against the serrated faces of the jaw base.

3,191,953
STAIR CLIMBING WHEEL CHAIR
Edward M. Ayata, 124 6th St. S., Virginia, Minn.
Filed Dec. 28, 1962, Ser. No. 246,107
10 Claims. (Cl. 280—5.22)



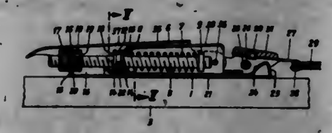
2. A vehicle comprising a frame, endless track means mounted on said frame structure in fixed position relative thereto, traction wheels mounted on said frame structure for swinging movement relative thereto between a lowered ground engaging position and a raised position, said tracks being in engagement with the vehicle supporting surface when said wheels are in said raised position, first drive means drivingly connected to said track means for driving same, and second drive means for driving said first drive means, said second drive means being driven by said wheels and swingable therewith between said raised and lowered positions, said second drive means when in said raised position being drivingly engaged with said first drive means whereby said tracks can be driven by said wheels, said second drive means being moved out of driving engagement with said first drive means by the lowering of said wheels to said lowered position.

3,191,954
LEVELING AND SUSPENSION SYSTEM FOR WHEELED VEHICLE
John R. Schmetz, Wausau, Wis., assignor to Drott Manufacturing Corporation
Filed Sept. 30, 1963, Ser. No. 312,643
3 Claims. (Cl. 280—6)



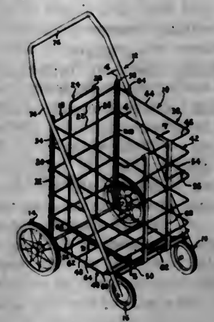
1. A leveling and suspension system for a wheeled vehicle having a frame, wheels on which the frame is mounted, and linkage individually connecting the wheels to the frame for vertical movement relative thereto, the suspension system comprising a fluid motor connected to each of the wheels to move it vertically relative to the frame, a fluid pump to supply operating fluid to the motors, and valves individually connecting the fluid motors to the pump and individually operable to move the wheels individually relative to the frame, each valve having a first position in which it supplies operating fluid to its corresponding motor in a direction to lower the corresponding wheel relative to the frame, a second position in which it supplies operating fluid to its corresponding motor in a direction to raise the corresponding wheel relative to the chassis, a third position in which it blocks flow of fluid to or from its corresponding motor to lock the motor, and a fourth position in which it interconnects opposite sides of the motor to permit free movement of the motor.

3,191,955
SAFETY DEVICE FOR SKI-ATTACHMENTS
Emil Preisig, 29 Langwiestrasse, Zumikon, near Zurich, Switzerland
Filed Apr. 1, 1963, Ser. No. 269,457
Claims priority, application Switzerland, Apr. 12, 1962, 4,476/62
4 Claims. (Cl. 280—11.35)



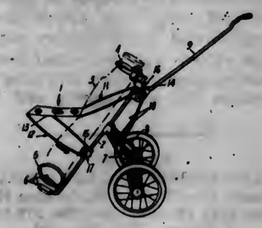
1. A safety device for ski-attachments adapted to automatically detach itself upon a predetermined overload, comprising in combination: a base plate attached to the ski having longitudinal guides, a sleeve having an integral guide shoe slidably mounted in said guides, a toggle lever arrangement including a forward buckle lever pivotally mounted on said sleeve and a cable clamp member pivotally connected to said buckle lever, a threaded bolt extending into said sleeve having one end adjustably connected to said base plate, an adjustable nut on the other end of said bolt forming a non-rotatable abutment member, a spring on said bolt enclosed within said sleeve having one end abutting said sleeve and the other end engaging said nut, the loading of said spring being determined by the adjustment of said nut along said bolt, said sleeve being provided with a longitudinal aperture on the edge of which is a scale with which said nut is adapted to register to indicate the position of the latter relative to the sleeve, a ramp connected with said bolt for longitudinal movement relative to said sleeve, an actuating collar on said bolt adapted to be rotated therewith to adjust the loading of said spring and the adjustment of said ramp, and a clamp engaging release member connected with said clamp member in operative juxtaposition with said ramp, said release member being adapted to release said clamp member when the pull exerted thereon exceeds a predetermined loading of said spring and moving upwardly along said ramp after a predetermined release path and opening said toggle lever arrangement.

3,191,956
WHEELED SHOPPING CART OR BASKET
Anthony Rizzuto, 37—07 92nd St., Jackson Heights, N.Y.
Filed May 10, 1963, Ser. No. 279,530
7 Claims. (Cl. 280—36)



1. A shopping cart comprising a receptacle body having a back and a construction joined to and lying forwardly of the back and including a bottom, a transverse rear axle forming a bottom part of said back, rear wheels on said axle, said back including transversely spaced members forming corner verticals of the receptacle, an elongate inverted substantially U-shaped handle having side bars and an upper end cross bar, said handle straddling the construction and extending at an inclination from the top part of said back downwardly and forwardly, means coupling the handle side bars to said construction at the top rear portion of the latter, other means coupling the handle side bars to said construction at the bottom forward part of the latter, and front wheels of materially smaller diameter than said rear wheels and operatively attached to said construction at the said bottom forward part thereof, the said construction comprising a plurality of vertically spaced substantially U-shaped individual, one piece ribs each having side rails and a cross connecting front rail, said side rails of said ribs being pivotally connected at their rear ends to said corner verticals of the back for vertical swinging, the bottom forming one of said ribs having an article supporting middle portion connected with the front and side rails thereof, the first said coupling means being pivotal and being between the handlebars and the side rails of the uppermost one of said ribs and the other said coupling means being a sliding means movable along the handlebars for facilitating pivotally swinging the U-shaped ribs relative to said corner verticals into a substantially flat folded overlapping relationship.

3,191,957
HAND-PROPELLED WHEELED CARRIERS
Ian G. Melklejohn, Fife, Scotland, assignor to I. G. Melklejohn & Company Limited, Fife, Scotland, a British company
Filed July 18, 1963, Ser. No. 296,127
Claims priority, application Great Britain, July 20, 1962, 27,949/62
7 Claims. (Cl. 280—36)



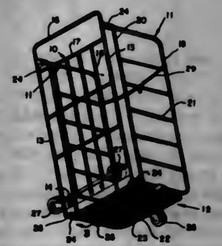
1. A hand-propelled wheeled carrier having an elongated sloped spinal member adapted to support the load, for example a golf bag, and a pair of ground-engaging wheels having mounted thereon the sloped spinal member which has its lower end engageable with the ground to co-operate with the wheels in forming a stable ground support for the carrier when the latter is stationary, said carrier embodying a collapsible seating device comprising a pair of cross members connected to the sloped spinal member at spaced locations along same, the lower cross member being spaced upwardly from the lower end of the spinal member, a substantially horizontal seat portion including a flexible sheeet located over the sloped spinal member, a pair of laterally spaced suspension members connected at their lower ends to the rear of the seat portion and pivotally connected at their upper ends to the ends of the upper cross member so as to lie one on each side of the load, and a pair of laterally spaced strut members connected at their upper ends to the front of the seat portion and pivotally connected at their lower ends to the ends of the lower cross member so as to extend to each side of the load, the suspension and strut members being capable of pivoting to cause collapse of the seating device to a stowed position adjacent to the spinal member.

3,191,958
ADJUSTABLE AND REMOVABLE CANOPY FOR BABY CARRIAGE
Donald B. Smith, Orillia, Ontario, Canada, assignor to Heywood-Wakefield Company of Canada, Limited, Orillia, Ontario, Canada, a corporation of Ontario, Canada
Filed Aug. 9, 1963, Ser. No. 301,067
5 Claims. (Cl. 280—36)



1. In combination with a baby carriage having a frame structure including chair side arms pivotally attached to upwardly disposed pusher arms, said chair side arms spaced from said pusher arms at the points of pivotal connection therebetween by tubular spacer bushings, a removable vertically adjustable canopy assembly comprising: inverted channel shaped mounting brackets having downwardly disposed inner and outer side walls, means for positioning and locking said brackets on said chair side arms at said points of pivotal connection; a horizontally disposed canopy member overlying said frame structure and movably mounted by pivotal means on said supporting brackets; and means for vertically adjusting the position of said canopy with respect to said frame structure while constantly maintaining its horizontal disposition.

3,191,959
COLLAPSIBLE HAND CART
Howard W. Heimbruch and Maurice L. Keenan, Pasadena, Calif., assignors to Foremost Dairies, Inc., San Francisco, Calif., a corporation of New York
Filed Jan. 23, 1964, Ser. No. 339,781
5 Claims. (Cl. 280—36)



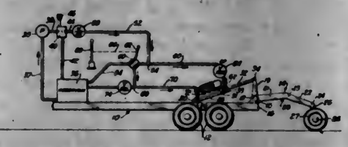
1. In a hand cart, a generally rectangular main frame, a pair of side structures hingedly connected to parallel side portions of the frame for independent swinging movement relative to the frame, a bottom structure hingedly connected to a horizontal lower portion of the frame for independent swinging movement, said side and bottom structures together with the frames serving to define a vertically extending carrying space that is open at its front, when the side and bottom structures extend in planes at right angles to the general plane of the frame, wheel means mounted on the lower end of the cart, and means for detachably securing the lower edges of the side structures to the bottom structure, said means being detached by swinging the side structures in directions away from the bottom structure and about the axes of the pivotal connections between the side structures and the main frame, said side and bottom structures when said last means is disengaged being collapsible upon each other adjacent the front side of the frame.

3,191,960
GARBAGE CAN HAND TRUCK
Lance H. Turner, 38 N. Grant St., Midvale, Utah
Filed Nov. 6, 1961, Ser. No. 150,457
4 Claims. (Cl. 280—47.19)



1. A garbage can truck including, in combination, a front panel, a rear panel, and a side panel fixedly secured together to form a three-sided panel construction, the remaining side of said panel construction being open, slide rail means communicating with said remaining side and fixedly disposed with respect to said panel construction at the lowermost extremity of the latter, top member means disposed over said panel construction for sealingly contacting uncovered tops of garbage cans disposed within said truck, floating hinge means pivotally securing said top member means to the panel construction, and rotatable wheel means disposed beneath and secured to said panel construction, and wherein said slide rail means are transversely disposed with respect to said truck and are downwardly angulated in a direction into said panel construction, and wherein said truck is provided with concave outwardly, garbage can centering means disposed nominally horizontally within said panel construction and above said slide rail means.

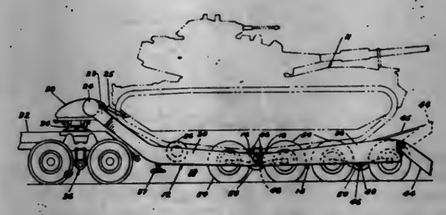
3,191,961
HYDRAULIC POWER SYSTEM
George A. Brennan, La Mirada, and Evan S. Prichard, Newport Beach, Calif., assignors to Challenge-Cook Bros., Incorporated, Los Angeles, Calif., a corporation of California
Filed Feb. 20, 1963, Ser. No. 259,950
9 Claims. (Cl. 280—81)



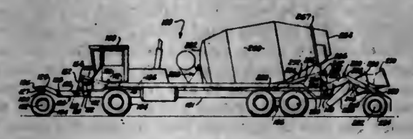
1. In combination with a vehicle, a hydraulic fluid pressure system for a vehicular weight-load distributing device which comprises: a hydraulic fluid reservoir mounted on a vehicle body frame; a pump connected to the reservoir; an unloading valve connected to the pump and to the reservoir; adjustable control means mounted on the unloading valve; a directional control valve; a hydraulic cylinder pivotally mounted at one end thereof to the vehicle body frame; a piston slidably disposed in the cylinder for reciprocal movement therein; a piston rod connected to the piston and protruding from the cylinder, the free end of the piston rod being pivotally mounted on a trailing vehicle pivotally mounted on the vehicle body frame so that movement of the piston and the piston rod in one direction will exert downward pressure on the trailing vehicle, and movement of the piston and the piston rod in the other direction will elevate the trailing vehicle clear of the ground; a first conduit leading from the directional control valve to one end of the cylinder; a second conduit leading from the directional control valve to the other end of the cylinder; adjustable control means mounted on the control valve for alternately directing effective fluid flow into either end of the cylinder to move the piston; means for relieving hydraulic pressure in the control valve; means for returning fluid in the second conduit to the reservoir; and a third conduit leading from the unloading valve to the first conduit.

3,191,962
ARTICULATING HEAVY EQUIPMENT TRANSPORTER
John E. Coordes, Birmingham, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 1, 1963, Ser. No. 320,972
6 Claims. (Cl. 280—81)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A gooseneck type trailer comprising articulated frame sections pivotally connected together substantially midway between the ends of the trailer on a transverse axis, a plurality of axles extending transversely of said frame, wheels on said axles, and walking beams connected at both the pivotal connection and near the aft end of said trailer for movement about transverse axes, said walking beams interconnecting said axles and said frame and arranged to substantially equalize the load on said axles, said walking beams being guided by said frame for movement substantially in a vertical plane only, said frame sections being supported within the vertical limits of said wheels.

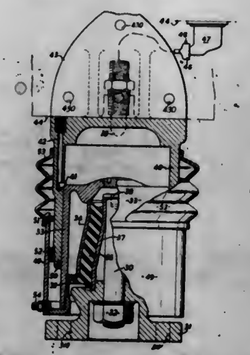


3,191,963
RETRACTABLE AXLE FOR VEHICLE LOAD DISTRIBUTION
Evan S. Prichard, Newport Beach, Calif., assignor to Challenge-Cook Bros., Incorporated, Los Angeles, Calif., a corporation of California
Filed Jan. 13, 1964, Ser. No. 337,283
4 Claims. (Cl. 280—81)



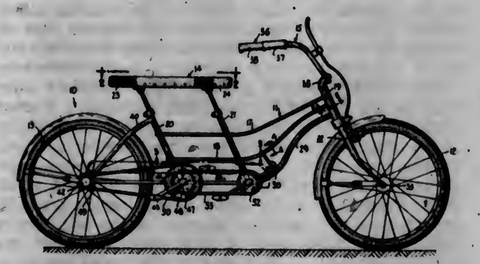
1. A vehicle which comprises: a body frame; forward steering wheels mounted on the body frame; rear ground-contacting wheels mounted on the body frame; a body frame extension having side frame members, the forward ends of the side frame members converging and the rear ends of the side frame members being pivotally connected to the body frame on opposite sides of the body frame adjacent the front end of the body frame; a first transverse member interconnecting the forward ends of the side frame members; ground-contacting wheels mounted on the first transverse member; a second transverse member interconnecting the side frame members adjacent the rear ends of the side frame members; a bracket mounted on the second transverse member substantially at the center of the second transverse member and protruding upwardly therefrom; a transverse member mounted on the body frame rearwardly of the front end of the body frame; and reciprocating power means pivotally mounted on the transverse member of the body frame substantially at the center of the transverse member, and pivotally mounted on the bracket on the second transverse member of the body frame extension, said power means being disposed to bear forwardly and downwardly on the body frame extension so as to distribute a portion of the weight carried by the body frame to said body frame extension and so as to maintain the wheels on the body frame extension in contact with the ground, and alternately so as to pivotally elevate the body frame extension and elevate the wheels on the body frame extension clear of the ground.

3,191,964
VEHICLE SUSPENSION SYSTEMS
Harry Donald Chambers, Cuddington, near Northwich, England, assignor to Eaton Axles Limited, Warrington, England, a British company
Filed Mar. 22, 1962, Ser. No. 181,670
Claims priority, application Great Britain, Mar. 27, 1961, 11,192/61
10 Claims. (Cl. 280—124)



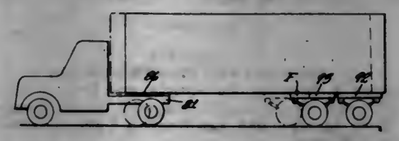
1. A cylinder unit for a hydropneumatic vehicle suspension system, comprising a mounting member, a bolt extending from said mounting member, a piston surrounding said bolt, an elastic connection between said bolt and said piston and comprising a conical rubbery bushing, inner and outer sleeves clamped endwise between abutments on the extending end of the bolt and on said mounting member and between fixed abutments in said piston respectively, said bushing being bonded between said inner and outer sleeves, and a cylinder within which piston is slidable, said cylinder having a port therein for the admission of hydraulic fluid to and release from the space between the end of the piston and the closed end of said cylinder, the flow of hydraulic fluid through the space between said piston and said cylinder being controlled in part by obstruction by said piston of the port in said cylinder.

3,191,965
BICYCLE CONSTRUCTION
Samuel Wilkens, 4 Leonard Drive, East Rockaway, N.Y.
Filed Mar. 3, 1964, Ser. No. 349,099
4 Claims. (Cl. 280—231)



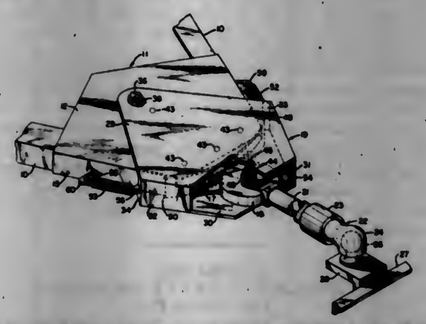
1. A bicycle construction comprising a frame, a depending fork journaled at the front of said frame, a rear-wheel support at the rear of said frame, front and rear wheels respectively rotatably carried by said fork and rear-wheel support, a single seat mounted on the upper rear region of said frame and having front and rear portions for accommodating a plurality of occupants, a single laterally extending handle bar at the upper front region of said frame and fixed to said fork for turning the latter, a pair of rearwardly extending handgrips at opposite ends of said handlebar each having front and rear gripping portions for respective occupants of said seat, drive means connected between a lower region of said frame and said rear wheel, and forwardly and rearwardly spaced pairs of rotary pedals carried by a lower region of said frame and connected to said drive means for operation by respective occupants.

3,191,966
SEMI-TRAILER WITH SHIFTABLE BOGIES AND FIFTH WHEEL
John Phil Felburn, 4160 W. Broad St., Columbus, Ohio
Filed Aug. 2, 1962, Ser. No. 214,703
14 Claims. (Cl. 280—407)



1. A wheeled vehicle construction, comprising a pair of frames, one for the bed of the vehicle and the other for the wheels of the latter, said frames being connected for relative sliding movement in a direction longitudinally of said vehicle so that said wheels may be disposed at selected positions longitudinally of said vehicle bed, a toothed rack fixed to one of said frames and disposed in said direction longitudinally of said vehicle, a toothed locking member carried by the other of said frames with its teeth directed toward the teeth of said rack, said locking member being held to vertical sliding movement toward and away from the teeth of said rack, wedge means for moving and holding said locking member in meshing interengagement with said rack to thereby lock said frames against sliding movement, and means for moving said wedge means to a position wherein said locking member may be moved from said meshing interengagement and thereby provide for relative sliding movement of said frames.

3,191,967
DIRECTION CONTROL TRAILER HITCH
Conrad J. Penk, 506 Arapahoe Ave., Boulder, Colo.
Filed Feb. 7, 1963, Ser. No. 256,969
7 Claims. (Cl. 280—448)



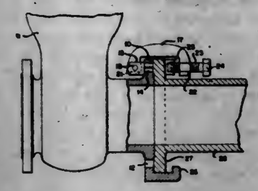
1. A drawbar mechanism which comprises a coupling means for attaching a draft vehicle to a drawn vehicle, said coupling means being constructed for mounting on a draft vehicle and providing a pivotal connection at least in a horizontal plane, a member adapted to be pivotally mounted on a drawn vehicle, a first gear means fixedly connected to said coupling means for movement therewith and rotatably mounted on said member, and a second gear means in meshed relationship with said first gear means and adapted to be attached to a drawn vehicle, said member being adapted to pivot and said first gear means being adapted to rotate and transmit a force through said second gear means in a direction transverse of the longitudinal axis of said coupling means upon pivotal movement of said coupling means whereby the drawn vehicle, during a backing operation, moves in substantially the same direction as the draft vehicle.

3,191,968
CONTINUOUS TAB CARDS AND VOUCHERS
George E. Sornberger, Niagara Falls, N.Y., assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,477
1 Claim. (Cl. 281—2)



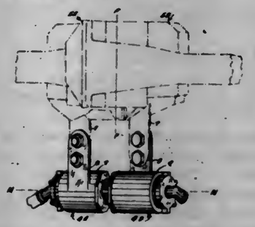
A web of continuous form stationery of card stock formed with lines of slits and perforations outlining a longitudinal series of pairs of interior break-out tabulating cards, the cards of each pair arranged side by side and extending transversely across the web, each pair completely surrounded by side and end strips, said side strips being continuous along the web and provided with longitudinally spaced pin-feed perforations, the left-hand side strip associated with the left side of the left-hand tabular card being separated therefrom by a series of aligned cut-out vertical slits but detachably connected at intervals therealong by tear perforations inset into the margin of the tab card and disposed between adjacent slits; the right-hand side strip associated with the right side of the right-hand card being separated therefrom by a similar series of aligned vertical slits but joined by similar inset tear perforations between the slits, whereby straight-edge outer margins will be provided at the opposite remote ends of the pairs of cards for proper tabular card machining, said end strips extending across the upper and lower ends of the respective cards of the pairs, and separated therefrom by a series of slits and intervening inset tear perforations for straight-edge separation of the cards, the web itself comprising a pair of longitudinally extending halves which are substantially "mirror images" of each other, each including respectively the right-hand and left-hand cards of the pairs, and their adjoining side and end strips, the end strips adjacent the respective right-hand and left-hand cards of each pair having ends abutting along the center line of the web, voucher sheets adapted to receive indicia relating to the indicia to be carried by the respective adjacent tabulating cards; each voucher sheet being of a width not greater than the total width of the respective adjacent abutting end strips, having one transverse edge portion adhesively secured to said end strips, and having a portion overlying the adjacent pair of cards upon one side of the intervening end strips; severance perforations in each voucher sheet along the longitudinal line between the unattached rows of cards and end strips, said voucher sheets being the sole means connecting the two half portions of the web, and the adjoining edges of the cards of each pair being unconnected and straight-edged for tabulating card machining.

3,191,969
FLANGE COUPLING
Edward N. Wrenshall, Pittsburgh, Pa., assignor to Miller Printing Machinery Company, a corporation of Pennsylvania
Filed May 10, 1960, Ser. No. 28,129
2 Claims. (Cl. 285—24)



1. A flange coupling for pipes comprising in combination a pair of flanges at least one having spaced holes therein, a yoke member at each of said spaced holes having a conical neck adapted to enter said holes, an expansible annular toothed ring surrounding the conical neck and having a diameter slightly smaller than the bolt hole, means on the neck for urging the annular ring onto the conical neck to expand the ring into engagement with the interior of the bolt hole, a C-clamp member pivoted at one leg in each yoke adapted to pivot over the flanges with a leg on each opposite side of the pair of flanges and screw means in the other leg of the C-clamp member movable on the axis of the bolt hole to exert pressure between the legs of the C-clamp on the two flanges to urge them together.

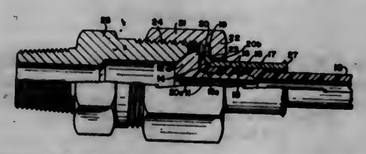
3,191,970
RAILWAY CAR CONDUIT CONNECTORS
William J. Metzger, East Cleveland, Ohio, assignor to National Castings Company, a corporation of Ohio
Filed Dec. 29, 1960, Ser. No. 79,225
8 Claims. (Cl. 285—27)



1. A connector for a fluid transmission line adapted for fixed connection with a railway car coupler comprising: an outer housing; an intermediate sleeve longer than the housing and extending therethrough in generally concentric relation therewith; a rigid, hollow cylinder disposed within the sleeve with portions of its exterior surface in concentric snugly-fitting relation with the interior surface of the sleeve; said housing, sleeve, and cylinder having front ends facing, in the normal use of the connector, toward a similar connector coupled therewith, and being disposed generally rearwardly of respective front ends; said housing having a rear opening, and a shoulder portion etxending radially inwardly from a longitudinal wall thereof to define the front opening thereof; annular sealing means located in the front end of said cylinder for engaging the corresponding sealing means of an opposed cylinder; the sleeve having a flange projecting radially outwardly from a longitudinal wall thereof; said flange having a diameter substantially less than the interior diameter of said housing wall and greater than that of the inner periphery of said front shoulder portion, the diameter of said inner periphery being substantially greater

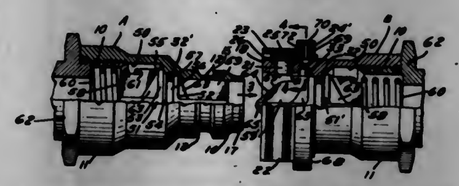
than the exterior diameter of said sleeve wall to provide desired ranges of angling and radial movement of the sleeve relative to the housing; resilient means reacting between spaced confronting portions of the housing and the sleeve to urge the sleeve forwardly within the housing to seat said flange against said front shoulder portion when free of an opposed connector; said sleeve having shoulder means adjacent its front end etxending inwardly from its longitudinal wall; a front portion of the cylinder resting against said shoulder means with the rear portion of the cylinder etxending rearwardly beyond the sleeve; said interior sleeve surface and said exterior surface portions of the cylinder being complementarily arranged for movement of the cylinder into the sleeve and into position against said shoulder means, and outwardly therefrom through the rear end of the sleeve; and fastening means cooperating with a rear end portion of the sleeve rearwardly of the housing for engaging and confining the cylinder in a longitudinal direction between the fastening means and said shoulder means; said cylinder being thereby removable from the sleeve without disengaging the front end surface of said sleeve from the corresponding surface of another opposed connector engaged therewith.

3,191,971
HOSE FITTING
John D. Somers, Middlebury, Conn., assignor to Anaconda American Brass Company, a corporation of Connecticut
Filed Sept. 7, 1961, Ser. No. 136,650
2 Claims. (Cl. 285—55)



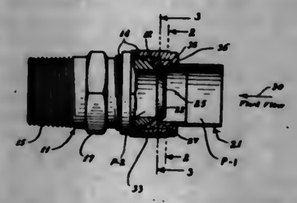
1. An end fitting assembly for use with a flexible hose, comprising a stem member having an axial bore extending completely therethrough, a shoulder portion formed on one end portion of the stem member by an increase in diameter thereof and annular projections of equal diameter formed along the opposite end portions thereof and annular grooves defined between the annular projections, a curved substantially concave interplanar annular surface between the shoulder portion and the adjacent annular raised portion, the diameter of said annular projections being larger than the inside diameter of said hose so that insertion of the end portion of the stem member having the annular projections thereon into an end portion of the hose radially expands the hose end portion, a substantially cylindrical collar having a larger inside diameter than the diameter of the annular projections to define an annular cavity therebetween which is smaller in thickness than the cross-sectional thickness of said hose, said collar in its assembled position being mounted substantially concentrically about the projections of said stem member to compress the hose radially and axially therebetween with said collar and stem member being free from radial deformation, said collar having an outwardly flanged annular portion at one of its ends which is positioned opposite said shoulder in the assembled position and a curved substantially convex interplanar annular surface between the cylindrical collar and said flanged outer end, an endmost portion of said hose being caused to cold flow between said shoulder and collar to thereby form an outwardly extending flare, said flare being axially compressed between the respective curved interplanar surfaces of the collar and stem member, and means for retaining said collar in an axially fixed position relative to said stem member, whereby in assembly the endmost portion of the hose will be guided to its outwardly flared position by said curved concave interplanar annular surfaces and there is cold flow of the hose into the annular grooves and the endmost portion of the flared end of the hose compressed between the flanged annular end of the hose and the shoulder is of a smaller cross-sectional thickness than the hose portion compressed between the respective curved interplanar surfaces.

3,191,972
QUICK CONNECT TUBE COUPLING HAVING LOCKING MEANS WITH VISUAL INDICATOR
Rolland W. Collar, Sun Valley, Calif., assignor, by mesne assignments, to Lear Siegler, Inc., a corporation of Delaware
Filed May 9, 1960, Ser. No. 27,679
2 Claims. (Cl. 285—93)



1. In a coupling: a pair of telescoping members connectable in end-to-end relation; cam actuated means for locking said members in said connected relation, including an external rotatably mounted actuator ring carried by one of said members, said ring being rotatable to locking and nonlocking positions, a pin carried by said ring and mounted thereon for axial movements radially of said ring to an extended position with one end projecting beyond an adjacent outer surface of the ring, and to a retracted position with said one end flush with said adjacent outer ring surface, and first and second pin moving means for axially moving said pin to said extended and retracted positions respectively in response to rotational movements of said actuator ring to said nonlocking and locking positions.

3,191,973
PIPE COUPLING WITH FLEXIBLE SEALING LIP
Stephen Guarnaschelli, Garden City, Long Island, N.Y.
Substituted for abandoned application Ser. No. 475,486, Dec. 15, 1954. This application Feb. 1, 1963, Ser. No. 256,289
1 Claim. (Cl. 285—110)

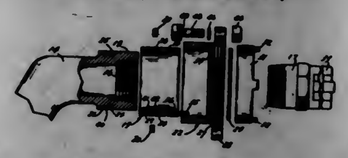


A tube joint for fluid pressure sealing when fluid flows in one direction through the joint comprising,

a first fitting element having an inwardly extending conical face, a second fitting element having an inwardly extending reentrantly bent yieldable resilient conical flange, said flange having a complementary face contacting that of said first fitting element, an annular pocket formed at the apex of said reentrant bend and opening on the upstream side of said flange, the upstream surface of said flange being exposed via said annular pocket to the fluid pressure caused by fluid flow on the upstream side thereof, whereby

said flange is yieldably responsive to fluid flow pressure, said second fitting having a larger inside cross section exposed to the fluid flow on the upstream side of the flange than on the downstream side, the conical face of said first fitting sloping inwardly toward the adjacent end of said first fitting element, the confronting face on said second fitting element being sloped at an angle of taper so as to bear on said first fitting element, and fastening means for holding said fitting elements together.

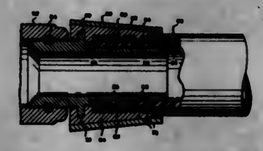
3,191,974
HOSE SWIVEL ATTACHMENT FOR ROLLING FLUID TRANSPORTERS
John P. Mann, Bryan Wright, and Clifford C. Larson, Clintonville, Wis., assignors to FWD Corporation, Clintonville, Wis., a corporation of Wisconsin
Filed Mar. 10, 1961, Ser. No. 94,910
2 Claims. (Cl. 285—158)



1. A rotatable fluid carrier having an axis of rotation and a fluid enclosing wall provided with an opening to receive a hose swivel, said hose swivel comprising a soft metal pipe elbow, the centers of said opening and said hose swivel being displaced radially from said axis of rotation, and concentric inner and outer hard metal bearing sleeves rotatably supporting said elbow on said wall, said elbow having a first portion aligned with said bearing sleeves, the inner said bearing sleeve being in fluid tight non-rotatable connection with said first portion of said elbow, the outer said bearing sleeve being in fluid tight non-rotatable connection with said wall, and said bearing sleeves being in rotatable fluid tight circumferential bearing engagement with each other, said elbow having a second portion disposed at an angle to said first portion and to said bearing sleeves, said latter portion of said elbow being provided with an extension duct extending a substantial distance within said fluid carrier, one said bearing sleeve being provided with a circumferential groove, a snap-ring in said groove, the other said bearing sleeve being provided with a shoulder abutting said snap-ring on the inner side with respect to said wall and with a removably attached retainer abutting said snap-ring on the outer side with respect to said wall, whereby relative axial displacement of said inner and outer bearing sleeves is prevented by said snap-ring, said retainer being adapted to be removable from the side of said wall through which the portion of said inner bearing sleeve remote from the second portion of said elbow projects, to free said inner bearing sleeve and said elbow for unitary removal from said outer bearing sleeve.

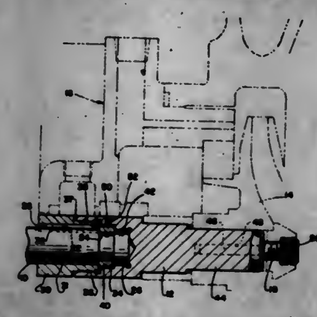
3,191,975
HOSE FITTING
Roger R. La Marre and Hans H. van der Velden, Jackson, Mich., assignors to Aeroquip Corporation, Jackson, Mich., a corporation of Michigan
Filed Apr. 20, 1960, Ser. No. 23,564
1 Claim. (Cl. 285—243)

In combination with a tubular reinforced hose, a reusable end fitting comprising a tubular nipple extending into the bore of one end of the hose, a plurality of deformable sleeve members arranged on opposite sides of said end of said hose engaging the outer surface thereof, each of said sleeve members having an inner surface of substantially cylindrical configuration and a conical outer surface, radially, inwardly extending ribs defined on said sleeve members inner surface adapted to engage the hose, a longitudinal groove defined in each of said sleeve members in the outer conical surface thereof extending the axial length of the sleeve members and located substantially at the midpoint of the arc subscribed by each sleeve member, an annular rib concentrically defined on said nipple radially extending outwardly and defining transversely disposed abutment shoulders on opposite sides thereof, a recess defined in each of said sleeve members adapted to receive said annular rib and defined by transverse radial surfaces adapted to engage said abutment shoulders to prevent relative axial movement in either axial direction between said sleeve members and nipple and permitting radial movement of said sleeve members relative to said nipple, and a tubular socket encompassing



said sleeve members and hose and forcing and maintaining said sleeve members in intimate engagement with said hose, said socket having a conical inner bore of an angle substantially equal to that of said conical surface of said sleeve members, said conical socket bore having a minimum diameter less than the minimum undeformed diameter of said sleeve members and a maximum diameter greater than the minimum undeformed diameter of said sleeve members whereupon axially forcing said socket over said sleeve members radially deforms said sleeve members about the midpoint of the arc thereof, thereby causing said sleeve members to intimately grip the hose outer surface, the inner surface of said socket having a plurality of integral radially inwardly extending key members positioned within the longitudinal slots of said sleeve members to thereby position said sleeve members relative to said socket and said nipple.

3,191,976
ATTACHMENT FOR CONNECTING A STUB SHAFT TO A DRIVE SHAFT
Robert W. Arndt, Easton, Pa., and Alexander Brkich, Phillipsburg, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 18, 1962, Ser. No. 245,532
2 Claims. (Cl. 287—52.05)



1. A joint for connecting a drive shaft and a stub shaft together for transmitting rotation to high speed machinery such as pumps or the like, comprising:

(a) a drive shaft having an annular groove near its end and an end portion located between the annular groove and the end of the drive shaft;

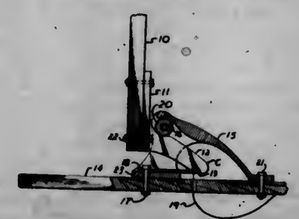
(b) a threaded coupling sleeve keyed on said drive shaft on the other side of said annular groove from said end portion;
(c) a split ring mounted in said annular groove to abut said coupling sleeve and prevent it from being moved axially over said annular groove and said end portion; and
(d) a one piece stub shaft mounted on said drive shaft in axial alignment;
(e) said stub shaft having an axial bore snugly receiving said end portion of said drive shaft and a shoulder surface abutting said split ring so that said split ring is clamped between said coupling sleeve and said stub shaft;
(f) said stub shaft further having a tubular threaded end portion projecting beyond the other side of said annular groove and threaded to said coupling sleeve to hold said stub shaft in place on said drive shaft.

3,191,977
ROD END CLIP DEVICE
Bruno A. Serafinas, Saugus, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,847
3 Claims. (Cl. 287—90)



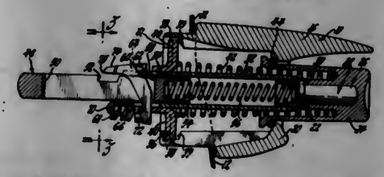
1. A one piece rod end clip for swivel joints comprising a thin-walled springy tubular sleeve member having a keyhole shaped ball receiving aperture in a face thereof, said sleeve having a passage therein to receive an end of a rod-like member and a ball engaging locking means provided exclusively as a part of said sleeve and laterally offset relative to an entering portion of the keyhole shaped aperture on a face opposite said ball receiving aperture and a slot in said sleeve adjacent to said ball-engaging locking means to permit flexing of said sleeve adjacent to said locking means.

3,191,978
SAG-PREVENTING LATCH FOR OVERHEAD SWINGING DOORS
Arthur W. Scraggs, P.O. Box 43, Bloomington, Calif.
Filed June 3, 1963, Ser. No. 285,131
3 Claims. (Cl. 292—84)



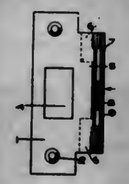
1. In an overhead swinging door pivotally hung from either side to swing from a vertical closed condition to an overhead open condition, a frame forming a doorway, a combination housing-handle mounted at both ends of the door, said housing-handle comprising an arch-like handle adapted for manually raising said door and an open end tunnel like housing, said housing comprising a top, two side walls and a base, an anti-friction roller disposed cross-wise in said housing, said roller adapted to lift said door from an overhead sag position to an overhead no-sag condition, a flat base mounted on said frame immediately above the door, an elongated cam bracket extending outwardly and downwardly from said base and adapted to engage and support the central weight of the door thru said anti-friction roller, a spring steel safety lock means bolted on top of said housing base, a safety lock notch cut into the bottom periphery of said cam bracket adapted to receive said safety lock means in safety locked engagement, and a safety lock release means extending thru the door.

3,191,979
LATCH ACTUATING HANDLE ASSEMBLY
Edgar G. Trudeau, Taylor, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 25, 1963, Ser. No. 275,542
4 Claims. (Cl. 292—336.3)



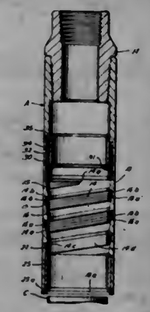
1. In a vehicle body including a door latch, door latch actuating means, comprising, a handle member mounted on said body, an operating member slidably mounted on said handle member, an actuating member slidably received in said operating member and engageable with said door latch to actuate said door latch, and a coupling member arranged on said operating member and said actuating member to be responsive to movement of said operating member relative to said handle member, said coupling means being engageable with said actuating member upon movement of said operating member in a latch actuating direction to couple said operating member and said actuating member for simultaneous movement thereof in said latch actuating direction, said handle member and said operating member being movable in said latch actuating direction independently of engagement of said coupling member with said actuating member to thereby permit movement of said handle member and said operating member in said direction independently of movement of said actuating member.

3,191,980
STRIKE PLATE FOR DOOR LATCH
Burnell Thomas Whalen, 1210 Kilburn Ave., Saskatoon, Saskatchewan, Canada
Filed Mar. 8, 1963, Ser. No. 263,845
1 Claim. (Cl. 292—341.11)



A strike plate for a door lock, the door lock having a spring urged latch mounted on the door and said latch having an inclined working face, and the strike plate having a latch engaging opening and a latch engaging portion in advance of said opening, and including a bearing plate on each side of said latch engaging portion, the bearing plates having a pin mounted therein and a roller on the pin, the forward edge portions of the latch engaging portion of the strike plate being cut away complementary to the curve of the roller; in which the roller is mounted projecting outward of the strike plate latch engaging portion sufficient for the latch to be retracted by the roller outwardly of the plane of the outer face of said latch engaging portion before the latch contacts the outer face of said latch engaging portion, the strike plate latch engaging portion having a flat outer face by which the latch may pass from the roller to said latch engaging portion held against moving inwardly of the plane of the outer face of said latch engaging portion.

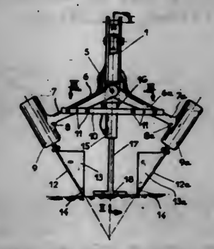
3,191,981
OVERSHOT-GRAPPLING TOOL
Dean W. Osmun, Houston, Tex., assignor to Bowen Tools, Inc., a corporation of Texas
Filed June 27, 1963, Ser. No. 290,961
5 Claims. (Cl. 294—86.31)



1. A well tool adapted to be used as an overshot-grapple or a casing patch, comprising:
(a) a tool bowl adapted to have its upper end connected to a pipe string,
(b) said bowl having a longitudinal bore with an internal helical groove formed therein,
(c) a helical grapple element disposed in said helical groove,
(d) co-acting downwardly and inwardly tapered surfaces on said grapple element and on said helical groove for causing said grapple element to move inwardly as it moves longitudinally downwardly relative to said bowl so as to effect an increasing gripping action on a pipe engaged by the grapple element,
(e) a weld connection attaching the lower end of said grapple element to said bowl,
(f) a lower section of the inner surface of said grapple element extending upwardly from the attaching means being substantially smooth for about one revolution thereof to enable a pipe to pass therethrough, and
(g) an upper section of the inner surface of said grapple element disposed upwardly from said lower section and having pipe-engaging teeth for gripping a pipe disposed within said grapple element.

3,191,982
APPARATUS FOR TRANSPLANTING PLANTS OR TREES
Robert Goalard, 42 Rue de la Dauphine, Gauderan, Gironde, France
Filed Jan. 23, 1962, Ser. No. 168,155
Claims priority, application France, Jan. 31, 1961, 851,280
1 Claim. (Cl. 294—70)

Apparatus for uprooting and transplanting plants comprising support means, arms projecting from said support means in generally opposite lateral directions, means pivotally connecting said arms to said support means, first and second independent power-driven means mounted on said arms and positioned in offset relation to said support means whereby to enable power driving operations free of interference with the support means, said power-driven means being adapted to exert thrust and retraction forces along mutually intersecting lines which are approximately perpendicular to said arms, means to fix said arms relative to each other and to said support means whereby the angle at which said lines intersect can be selected, cutting blades coupled to and driven by said power-driven means and being adapted for being driven



along said lines by the power-driven means to abutting relationship whereat said blades cooperatively form a downwardly tapering and upwardly open cup, each said blade having generatrices parallel to the corresponding one of said lines and being driven in the direction of said generatrices, a further power-driven means on said support means adapted to exert thrust and retract forces in a vertical direction, and a heel means coupled to and driven by said further means independently of the first said power-driven means, said heel means being adapted to straddle a plant having its roots in earth in said cup and to be driven downwardly against said earth.

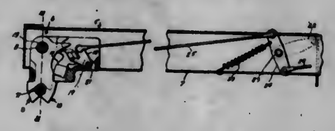
3,191,983
SELF-LEVELING CARGO CONTAINER SPREADER
Alfonso T. Gaglione, Twinsburg, Ohio, assignor to National Castings Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 6, 1963, Ser. No. 321,891
8 Claims. (Cl. 294—81)



1. A spreader for lifting cargo containers comprising:
(A) a frame disposed, during operation, primarily in a horizontal plane and having a plurality of horizontally spaced means for connecting it in substantially fixed relation to the top portion of a cargo container;
(B) a plurality of guides mounted in said frame disposed on opposite sides of, and in spaced relation with, a vertical plane extending in central transverse relation with the frame;
(C) a lifting shackle normally suspended over the frame;
(D) flexible, substantially non-elastic tension means secured to the shackle and extending therefrom around each of said guides toward said vertical plane;
(E) level-adjusting means for the frame carried thereby and connected with the tension means, said adjusting means being movable to pull a portion of said tension means over respective guides at one side of said plane toward the plane and to discharge other of said tension means away from said plane over

respective guides at the other side of said plane; and (F) said tension means being of an arrangement and of sufficient length to dispose said shackle during operation in central and upwardly spaced relation with the frame when said level adjusting means is in an intermediate condition of adjustment.

3,191,984
LOAD GRIPPING DEVICE FOR HOIST
Richard M. Hamula, Cleveland, Ohio, assignor to National Castings Company, Cleveland, Ohio, a corporation of Ohio
Filed July 6, 1961, Ser. No. 122,247
13 Claims. (Cl. 294—83)



1. A lifting device comprising; as normally oriented for use: a pair of jaws and means connecting the jaws for relative movement about a horizontal axis, said jaws extending in their longitudinal direction downwardly away from the axis to provide substantially opposed load-gripping portions adjacent the lower load-receiving end of the device; means for urging the load gripping portions apart; one of said jaws extending transversely of its length and said axis and then parallel to said axis to circumscribe a lock-transversing region between an outer surface of said other jaw facing away from the axis and an abutment wall of said one jaw, said abutment wall terminating upwardly in a shoulder surface substantially below the axis; cam means on said other jaw projecting horizontally away from said axis in overhanging relation with said lock-traversing region; a lock having a body portion adapted to fit between said abutment wall and said outer surface at the closed position of the jaws, and a head portion providing cam-following means adapted to cooperate with said cam means; means for lifting the lock to a position placing the body portion on said shoulder and the cam-following means suprajacent the upper side of said cam means.

3,191,985
MEAT RAIL SUPPORT BEAM FOR REFRIGERATED TRUCKS
George Chleger, Birmingham, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 9, 1963, Ser. No. 315,067
2 Claims. (Cl. 296—28)



1. In a refrigerated truck, trailer or the like having laterally spaced vertical side walls with inner and outer faces, respectively the improvement comprising
laterally inwardly extending roof beam support plates at the upper edges of said side walls having horizontal longitudinally extending apertures therein between the inner and outer faces of said side walls, respectively,
a transverse load supporting roof beam extending between said support plates, and
a pair of horizontal longitudinally extending pins at opposite ends of said beam extending through the apertures in said plates and through opposite ends of said beam, respectively, said pins being the sole connections between said beam and said side walls so as to pivotally secure said beam to said support plates whereby said beam is free to flex about said pins relative to said side walls without transferring a bending moment thereto.

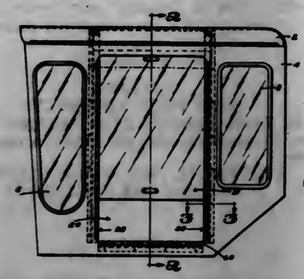
3,191,986
MOTOR VEHICLE SUN VISOR
Roserna F. Simon, 1820 Via Norte, Palm Springs, Calif.
Filed Mar. 19, 1962, Ser. No. 180,517
1 Claim. (Cl. 296—97)



A dual motor vehicle sun visor, comprising:
a mounting bracket having a visor rod clamp pivoted for movement thereon, said bracket adapted to be fastened to the upper inside corner of the passenger-carrying body;
a substantially horizontally directed rod having its inner end supported in said clamp for rotative frictional engagement therewith;
a first front sun visor attached to said rod, said first visor being cut away about said bracket and clamp for rotative movement thereabout and having a wing extension spanning the windshield and extending into the upper inside corner of the vehicle body;
a second sun visor conforming in overall shape to said first sun visor and being cut away about said bracket and clamp and having a similar windshield spanning corner wing extension; and
a hinged connection at the ends of said wing extensions of said first and second visors, whereby front and side positions may be easily manipulated by a driver to any desired degree of universal adjustment.

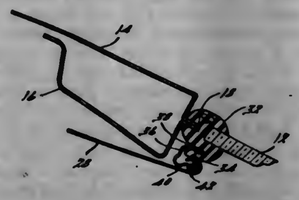
3,191,987
REINFORCED CAB CONSTRUCTION WITH ADJUSTABLE CLOSURE PANEL ARRANGEMENT
Robert W. Dodge, 40 Pleasant St., Wenham, Mass.
Filed Mar. 18, 1964, Ser. No. 352,775
2 Claims. (Cl. 296—102)

1. A demountable cab body for tractors and the like, said cab body comprising a relatively thin unitary sheet metal sidwall section and a relatively thin sheet metal top section secured to the upper portion of the sidewall section to form a flexible cab body of extremely lightweight, said sidewall section being recessed to form two opposite access openings, a pair of arched channeled framing members secured to the inner surface of the top section in spaced apart relation to one another to constitute roof frames for imparting rigidity to the said top section and solidly joining the top section to the said sidewall section, said channeled framing members extending vertically downwardly over the edges of the access apertures in snugly fitted relationship therewith and presenting outer U-shaped frame portions which overlap the outer surfaces of the access openings to provide external sidewall section stiffening, said channeled framing members also extending internally along the inside of the sidewall section members for an appreciable distance to provide relatively wide inner wall stiffening areas, said channeled framing means being still further formed with anchoring flanges and fastenings driven through the anchoring flanges and adjacent sidewall sections to solidly lock these parts together and said channeled framing members being recessed to present two parallel guideways extending all the way



around the interior side walls and top of the cab body, a pair of flexible closure members slidably supported in the guideways for closing the said door apertures in a fully lowered position and movable into the arched portions of the channeled framing members to uncover the said access openings.

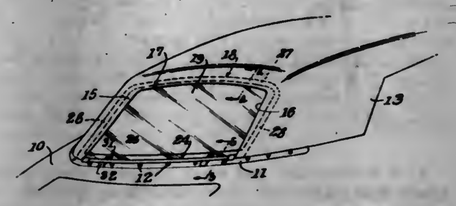
3,191,988
VEHICLE HEADLINING RETAINER
Mark J. Sturtevant, Grosse Pointe, and Robert G. Wellbaum, Taylor, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Mar. 23, 1962, Ser. No. 181,921
11 Claims. (Cl. 296—137)



1. In an automobile body having a roof and structure defining an opening, a strip of resilient weatherstrip extending around the periphery of such opening and having an inner surface facing the interior of said body, said strip having an aperture in said inner surface, headlining material carried on the underside of said roof, and a flexible spring steel headlining retainer anchored in the above mentioned aperture and having an arm thereon in close proximity to said weatherstrip inner surface, an edge portion of said headlining material being retained between said arm and said weatherstrip inner surface for support and trimming of said headlining material adjacent the periphery of the above mentioned opening and to conceal said retainer beneath said headlining material.

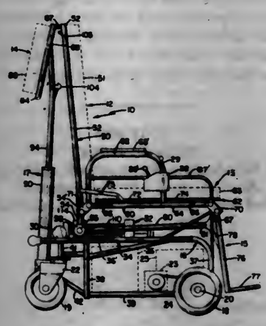
3,191,989
CONVERTIBLE-TOP WINDOW STRUCTURE
Clark W. McCormack, 5413 Muscatel Ave., San Gabriel, Calif.
Filed Feb. 4, 1963, Ser. No. 255,999
1 Claim. (Cl. 296—145)

A window structure for the opening in the rear wall of the top of a convertible automobile having a support bow, the deck of the automobile being provided with a molding along the forward edge thereof, said structure comprising:
(a) a flexible rectangular unitary frame with a transparent window panel secured thereto and larger in both the height and width dimensions than the comparable dimensions of the opening in the top, and
(b) means connected to the upper and lower portions of the frame and engaged with the mentioned bow and



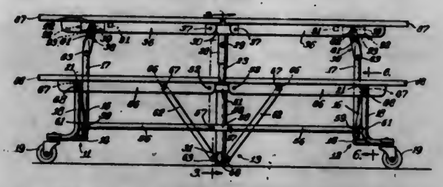
deck molding to hold the frame and its window panel in position against the inner side of the rear of said top,
(c) said means comprising adjustably-mounted clamps on the upper portion of said frame whereby said clamps may be adjusted to the position of the bow, said clamps being screw engaged with the bow, and spring clips on the lower portion of the frame and in hold-down engagement with the deck molding.

3,191,990
RECLINING MECHANISM FOR WHEELCHAIRS AND THE LIKE
Donald Edwin Rugg, 1452 S. Birch, and William R. Orr, 1245 S. Fairfax, both of Denver, Colo.
Filed May 31, 1962, Ser. No. 199,089
12 Claims. (Cl. 297—83)



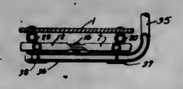
1. In a reclining chair having a back member and a seat member, means supporting said back member for angular movement between a forward substantially upright position and a rearward substantially reclined position, means supporting said seat member for horizontal sliding movement thereon, and pivotal connecting means between said back and seat members being defined by at least one connecting strap inclining rearwardly from said seat member to said back member and having opposite ends pivotally connected to said seat member and back member, respectively, to provide for independent horizontal sliding movement of said seat in following the angular movement of said back member between the upright and reclined positions.

3,191,991
TABLE AND BENCH ASSEMBLY
Arne H. Anderson, Manitowoc, and Joseph E. Wachtel, Two Rivers, Wis., assignors to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin
Filed Sept. 11, 1963, Ser. No. 308,215
7 Claims. (Cl. 297—159)



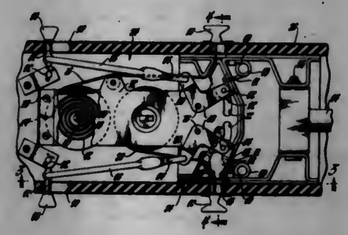
1. A folding table and bench assembly operable between open and closed positions, comprising a pair of table top sections positioned in horizontal end-to-end relation when the assembly is in open position, two pairs of bench sections, the sections of each pair of bench sections being positioned in horizontal end-to-end relation below and at one side of said table top sections when the assembly is in open position, a pair of end leg supports, means pivotally connecting each end leg support to one bench section of each pair, a center leg support, pivotally connected to each of said table top sections at their adjacent ends, means connecting said center leg support to each of said bench sections and adapted to raise the adjacent ends of said bench sections relative to the adjacent ends of said table top sections when the assembly is moved to its closed position, and a pair of means each connecting one of said end leg supports to one of said table top sections and adapted to lower the remote ends of said table top sections relative to the remote ends of said bench sections when the assembly is moved to its closed position, said pair of means each comprising a rail pivotally connected to a table top section and pivotally connected to an end leg support, each of said rails rotating between different positions upon opening and closing movements of said assembly, each of said rails slanting upwardly and toward the center of the assembly from its associated end leg support when the assembly is in the open position.

3,191,992
CHAIR DESK
Robert A. McMasters, Birmingham, Ala., assignor to Southeastern Metals Company
Filed Mar. 12, 1964, Ser. No. 351,290
1 Claim. (Cl. 297—160)



A desk chair comprising a pair of similar inverted one-piece U-shaped tubular leg members each having a base with a flat medial portion, said base medial portions having corresponding openings and being positioned superimposed with said openings in line, means extending through said base medial portion openings connecting said leg members together with said bases crossing one another, two pairs of tubes with each pair thereof fixedly mounted on and extending diagonally of one of said leg member bases on a side thereof opposite to the legs of said member bases with each tube on an opposite side of the medial portion of its leg member base, one tube of each pair thereof being in line with a tube of the other pair thereof, a chair back having a pair of supporting legs each extending through two of said tubes which are in line, a chair seat mounted on said tubes for being supported thereby and fixedly connected to said chair back legs, a desk top having a pair of legs and a further two pairs of tubes fixedly mounted on an opposite side of said leg member bases to said first two pair of tubes and extending normal to said first two pair of tubes, and one tube of each pair of said second mentioned tubes being in line with a tube of the other pair thereof with said in line tubes having a leg of said desk top extending therethrough.

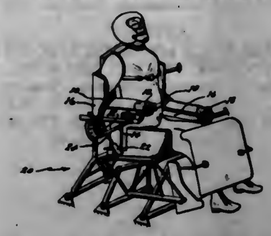
3,191,993
SEAT BELT ASSEMBLY
Robert R. Parks, Ferndale, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 31, 1962, Ser. No. 213,798
3 Claims. (Cl. 297—388)



1. In a motor vehicle having a seat mounted therein, said vehicle provided with an arm rest, support means connected to said vehicle and supporting said arm rest, reel means rotatably mounted in said support means, said seat belt secured at one end to said reel means and adapted to be wound thereon and unwound therefrom, spring means connected between said reel means and said support means and normally, yieldingly, urging said reel means in a winding direction, locking means movably mounted in said support means, said support means comprising guide means providing a guide for said seat belt and a stop for said locking means, said locking means normally biased to a locked position with said seat belt extending between said guide means and said locking means, said locking means including a toothed wedge engaging said seat belt when said locking means is in said locked position whereby attempted extension of said belt causes said locking means to be drawn more positively into engagement with said belt, actuator means coupled to said locking means and adapted to actuate said locking means to an unlocked position to permit said seat belt to be unwound from said reel means.

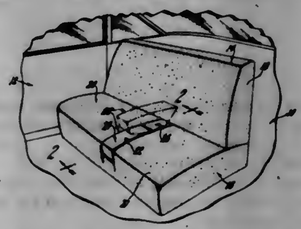
3,191,994
ARM RESTRAINT
William C. Boyce, Dallas, Tex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 27, 1964, Ser. No. 347,977
2 Claims. (Cl. 297—411)

1. An arm retraint for the protection of astronauts comprising a contoured arm rest having one portion substantially vertical for the upper arm of an astronaut and a second portion substantially horizontal for the lower part of an astronaut's arm, a strap secured at one end to the upper arm portion of said arm rest at the side thereof which would be adjacent to an astronaut's body, means located adjacent the lower portion of said arm rest for guiding said strap such that when said strap is in restraint position it extends from the inner part of the upper arm of the astronaut across the crook of the elbow over a portion of the lower arm, said means for guiding comprising a quick-disconnect buckle, and means for tensioning said strap to apply restraint, said means for tensioning comprising an arm secured to said buckle and said horizontal



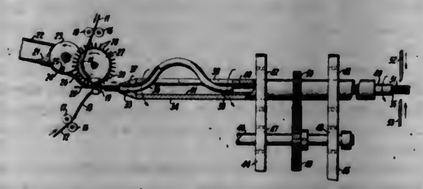
portion of said arm rest for movement of said buckle from a position above said arm rest to one below said arm rest.

3,191,995
FOLDING ARM REST
Alan J. Shelton, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,389
5 Claims. (Cl. 297—417)



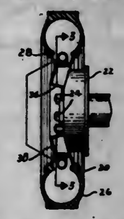
1. In a vehicle body, the combination comprising, a seat cushion assembly, an arm rest adapted to be moved between a first position flush with said seat cushion assembly and a second operative position disposed over said seat cushion assembly, said arm rest being of box-like structure and including a closed end wall and an open wall adjacent said closed end wall, a first member interconnecting said body and said arm rest and extending through said open wall in said arm rest second position, and a second member interconnecting said body and said arm rest and including means covering said first member and said open wall from view in said arm rest second position and providing a continuation of said closed end wall.

3,191,996
TWISTING MECHANISM
Joseph T. Gelardi, Yonkers, N.Y., assignor to American Technical Machinery Corp., Mount Vernon, N.Y., a corporation of New York
Filed Nov. 16, 1962, Ser. No. 238,247
2 Claims. (Cl. 300—2)



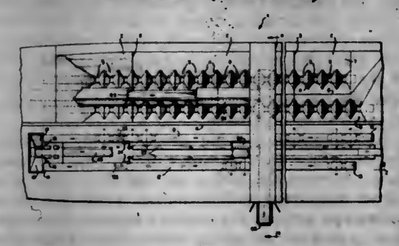
1. A continuous brush wire twisting apparatus comprising a plurality of wire sources each containing a continuous strand of wire, means for continuously driving said strands of wire through guide means to a bristle feeding station, a source of bristles, bristle feeder means operable to deposit bristles between said strands of wire, a wire twisting means adjacent said bristle feed means operable to apply a rotary twisting force to said strands and comprising a rotatably mounted tubular member adapted to receive and permit passage therethrough of said strands of wire with the bristles deposited therebetween, said tubular member having a longitudinal passageway characterized by a portion which is offset laterally from the axis of said tubular member and returns to said axis, means for rotating said tubular member about said axis thereby to apply a twisting force to said strands prior to entering the tubular member, and twist reacting means cooperably associated with said tubular member and acting against said wires to oppose said twisting force.

3,191,997
MEANS AND METHODS FOR BALANCING WHEELS
Randal J. Colvert, 5545 Sandpiper Drive, St. Louis County, Mo.
Filed Mar. 23, 1964, Ser. No. 353,687
8 Claims. (Cl. 301—5)



2. For use with a wheel including a hub and an annular rim secured to the hub and adapted for receiving a tubeless tire, wheel balancing means comprising a tubular ring mounted on said rim and defining a circular path within the ring about the axis of the wheel, a mass of lead containing material mounted within the tubular path and being normally solid and adapted for turning to liquid when substantial quantities of heat are applied thereto, said ring being mounted in the air chamber between the rim and the tire and being thermally insulated from said rim and said tire, means for selectively heating the material and the ring while the wheel is being rotated at operational angular velocities, and means for selectively removing the heat from the ring and material and cooling the ring and the material without stopping the rotation of the wheel.

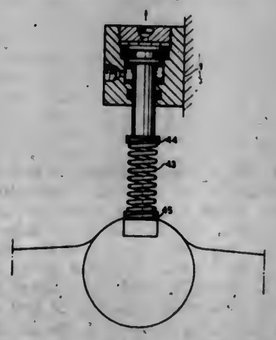
3,191,998
DUAL CARGO SHIP
Charles L. Howlett, Alpena, Mich., assignor to Huron Portland Cement Company
Filed Apr. 29, 1963, Ser. No. 276,338
24 Claims. (Cl. 302—52)



1. In an apparatus for storage and discharge of bulk as well as pulverulent material comprising a receptacle for

material having a discharge outlet in the bottom thereof, a supporting means positioned adjacent said discharge outlet, a gate member mounted on said supporting means for selective reciprocal movement between a position beneath the discharge outlet to close the outlet and a position to one side of the outlet to permit discharge of material therethrough, said gate member adapted to discharge material from said outlet, a fluid-activated gravity-conveying unit, at least one supporting member positioned immediately adjacent said discharge outlet, means mounting said fluid-activated gravity-conveying unit from said supporting member for selective reciprocal movement to a position beneath said discharge outlet to receive material therefrom and to convey received material from therebeneath to a position to one side of said discharge outlet to permit said gate member to be moved to a position beneath said discharge outlet and means for moving said gate member and said fluid-activated gravity-conveying unit.

3,191,999
HYDRAULIC BRAKING SYSTEM FOR VEHICLES
Ettore Cordiano, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Sept. 9, 1963, Ser. No. 307,485
Claims priority, application Italy, Oct. 26, 1962, 21,167/62
6 Claims. (Cl. 303—22)

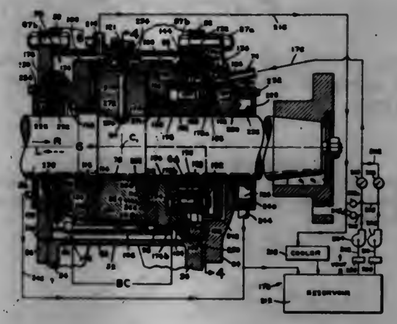


1. Device for use on vehicles equipped with hydraulic brakes and a hydraulic braking circuit, the device adapted to vary the braking force on the vehicle wheels depending upon the vehicle load, characterized by the following combination:

(a) a pressure varying device secured to one of at least two vehicle masses separated by a suspension system, the pressure varying device comprising a cylinder and a piston movable therein which subdivides the cylinder inside into two chambers towards which it exposes faces differing in area, spring means biasing the piston in the cylinder, a normally open valve controlling intercommunication of the said two chambers which are connected to the master cylinder and braking circuit of at least one vehicle wheel, respectively, and said valve intercepting the said intercommunication upon a predetermined value of the pressure transmitted by the master cylinder after the piston which is biased by the spring means has started its movement,

(b) each pressure varying device having associated therewith means comprising a resilient member interposed between the piston and the other one of the above mentioned vehicle masses separated by the suspension system, the resilient member forming at least a part of the spring means biasing the piston of the pressure varying device, so that the effect of the pressure varying device is at least partially controlled by the position of the two vehicle masses separated by the suspension and hence by the vehicle load.

3,192,000
FORCE BALANCE HYDROSTATIC-HYDRODYNAMIC THRUST BEARING
John G. Williams, Warren Township, Somerset County, N.J. (Lindberg Ave., Plainfield, N.J.)
Filed May 10, 1963, Ser. No. 279,383
21 Claims. (Cl. 308—9)



1. A thrust bearing effective for balancing axial forces exerted along a shaft under static and dynamic operating conditions of said shaft comprising,

(a) a housing about the shaft,

(b) a thrust collar having at least one bearing face disposed in said housing and mounted on and rotatable with the shaft,

(c) a stator assembly in said housing having at least one bearing face disposed in predetermined spaced relation to and coacting with the bearing face of the thrust collar,

(d) passage means in said housing connected at one end to a source of pressure fluid and disposed to deliver said pressure fluid between the coacting thrust collar bearing face and stator assembly bearing face,

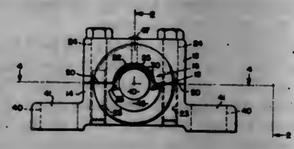
(e) means on at least one bearing face and operatively engaging the other bearing face to force pressure fluid therebetween to exert an axial force against the bearing face of the thrust collar equal and opposite to the axial force exerted along the shaft and against the bearing face of the stator assembly equal and in the same direction as the axial force exerted along the shaft,

(f) means in said housing forming a substantially fluid tight chamber having one side of predetermined area formed on the side of the stator assembly remote from the bearing face side, and having at least one side in communication with the wall of the housing,

(g) said chamber having pressure fluid therein at all times and in continuous communication with said passage means to permit the equivalent forces acting in said pressure fluid at the face of the thrust collar and the face of the stator assembly to be distributed uniformly to balance the forces across the stator assembly and to simultaneously transmit and expend said forces against the wall of the housing,

(h) and means in operative engagement with the thrust collar and the stator assembly to permit slight axial displacement and swivelable movement of said stator assembly responsive to thrust collar movement and run-out.

3,192,001
BEARING ASSEMBLY
Maxwell R. Karge, Jr., Brockport, N.Y., assignor of twelve and one-half percent to Winslow E. Thomson and twelve and one-half percent to John R. Schovee
Filed Oct. 24, 1962, Ser. No. 232,801
3 Claims. (Cl. 308—185)



1. A radial bearing assembly comprising,

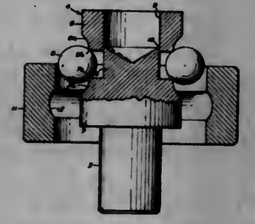
(a) an inner member having a cylindrical portion,

(b) a plurality of cooperative outer members rotatably embracing said cylindrical portion,

(c) radial substantially coaxial recirculating anti-friction bearing means mounted on each of said outer members intermediate said inner and said outer members, and

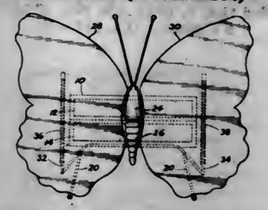
(d) means intermediate said outer members for radial adjustment of said outer members relative to each other.

3,192,002
SPLIT CONE BALL BEARING
Roger C. Carter, Jr., East Hartford, Conn., assignor to Hartford Steel Ball Company Division of Virginia Industries, Inc., West Hartford, Conn., a corporation of Delaware
Filed Sept. 6, 1963, Ser. No. 307,098
5 Claims. (Cl. 308—193)



1. For use in forming a bearing assembly comprising an annular outer race member having a grooved raceway therein, a set of balls, and a complementary inner raceway; a prefabricated inner race structure consisting of integral, first and second concentric raceway halves respectively provided at adjacent ends with annular peripheral grooves of radii complementary to those of said balls and said outer raceway when the inner race structure is mounted within the annular outer race member, said first raceway half having a concentric axial bore at one end, said raceway halves being axially spaced by an integral, concentric, radially reduced stud of a diameter slightly greater than that of said bore, said stud being connected at one end to said second raceway half with its opposite end projecting slightly within the confines of the lower end of the bore in said first raceway half, the periphery of the projecting end of said stud being connected to the wall of the bore in said first raceway half by a relatively thin, annular breakaway section, said breakaway section being adapted to break easily between the adjacent peripheries of said stud and bore as said first raceway half is forced inwardly onto said stud into abutment with said second raceway half to jointly form therewith the inner raceway of said assembly.

3,192,003
SCREENED CABINET ASSEMBLY
Earl L. Marcoux, 4001 East G St., Tacoma, Wash.
Filed Sept. 24, 1962, Ser. No. 225,727
6 Claims. (Cl. 312—284)



1. A screened cabinet assembly comprising:

(a) a cabinet having a front face and laterally spaced side walls,

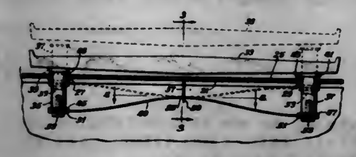
(b) a drawer mounted slidably in the cabinet for retractable extension forwardly of the front face of the cabinet,

(c) a pull member fastened to and projecting from the front face of the drawer,

(d) a pair of pivot means mounted on the cabinet and each having a pivot axis disposed laterally outward from opposite sides of the cabinet, and

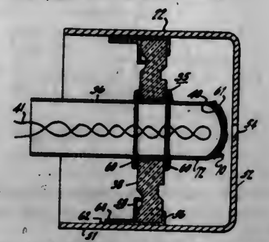
(e) a pair of screen members one mounted on each pivot means intermediate the lateral sides of the screen member for pivotal movement about the axis of the pivot means between an open position wherein the screen members are disposed laterally outward from the cabinet permitting extension of the drawer, and a closed position wherein the screen members are disposed side by side across the front face of the cabinet and retracted drawer, with the inward margins of the screen members spaced apart laterally and disposed closely adjacent the lateral sides of the pull member and in substantially the same plane thereof to expose the pull member to view between the closed screen members, whereby to form a composite screen across the front of the cabinet.

3,192,004
HANDLING APPARATUS
George P. Whitney, Villa Park, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 16, 1963, Ser. No. 273,414
4 Claims. (Cl. 312—244)



1. A handle assembly to facilitate the portability of a housing having an opening therein, including in combination, a handle having a gripping portion and further having rigid support means attached to said gripping portion, said support means extending into the interior of the housing through the opening therein and being movable therein to permit variance of the distance between said gripping portion and the housing, and a bowed flat spring in the interior of the housing, said flat spring having a pair of end portions and a center portion therebetween, said flat spring being fixed to said housing with said pair of end portions being displaceable relative to said center portion, said support means being secured to at least one of said portions to be displaced thereby with respect to the housing, whereby said gripping portion is movable to two stable positions of differing distances from the housing.

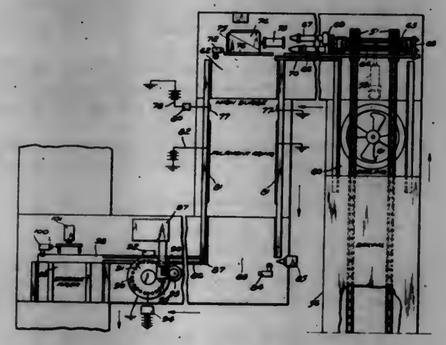
3,192,005
METHOD OF FABRICATING A CATHODE RAY TUBE
Donald Max Linn, Marion, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,272
5 Claims. (Cl. 316—1)



1. The method of fabricating a cathode ray tube having an electron gun cathode-grid assembly of the close-spaced variety in which an electron emissive coating is applied to the cathode by a process which often results in an irregular coating thickness that increases the likelihood of electrical leakage between the cathode and grid, said method comprising the steps of:
(a) outwardly doming a transverse end wall of a tubular cathode sleeve whereby to reduce in the peripheral areas of said end wall the likelihood of electrical cathode-grid leakage due to a subsequently applied electron emissive coating thereto which may possible have thickness irregularities, and then
(b) coating the domed wall of said cathode sleeve on the outer convex side thereof with electron emissive material by said process,
(c) positioning said cathode sleeve very close to a centrally apertured grid cup, and
(d) fixing said cathode sleeve and said grid cup relative to each other.

3,192,006
APPARATUS FOR FINISHING LAMPS
George E. Algatt, Allentown, and Willard G. Otto, Schnecksville, Pa., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed June 2, 1961, Ser. No. 114,438
8 Claims. (Cl. 316—27)

1. Apparatus for finishing lamps each of which includes a bulb having a filament therein having ends extending to external opposing sides of the bulbs, and wherein the bulbs are supported by elongated bars having a plurality of pairs of resilient members for engaging the bulbs comprising:
a plurality of spaced operating positions,
a track extending adjacent the spaced operating positions,
means for successively feeding the bars laterally into axial alignment with the track,
means for intermittently moving the bars longitudinally along the track to the spaced operating positions,
means at first and second operating positions for mounting terminals on opposing sides of the bulb in electrical contact with the ends of the filament, the outer surface of the terminals being in engagement with the resilient members,



further means at the first and second operating positions for supplying conductive cement onto the inner surface of the terminals,
means at a third operating position for applying dielectric cement on the upper end of the bulb to interconnect the upper end of the bulb with the terminals,
a conveyor mounted adjacent the exit end of the track for receiving the bars and extending a given distance therefrom and substantially perpendicular thereto, and
means responsive to the receipt of a bar on the conveyor for advancing the conveyor a distance equal to at least the width of the bar to provide sufficient space thereon for receiving a succeeding bar.

CHEMICAL

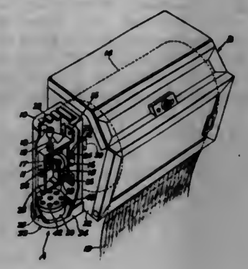
3,192,007
BLENDING OF POLYPROPYLENE WITH UNMETALLIZED CHELATING AGENT TO IMPROVE DYEABILITY
Albin F. Turbak, New Providence, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,372
8 Claims. (Cl. 8—55)

1. A process for dyeing a poly alpha olefin fiber with a metallized dye comprising the steps of:
(a) blending an alpha olefin polymer with an unmetallized chelating agent having a chelate formation constant of at least 1×10^4 with the metal used,
(b) forming said blended polymer into fibers,
(c) immersing said fibers in an aqueous solution of a metallized dye containing no more than one sulfonic acid group, said dye being selected from the class consisting of dyes containing at least one salicylic acid function, and dyes containing at least one o,o'-dihydroxy azo function, said metal being selected from the groups consisting of nickel, copper, aluminum, iron, cobalt, and chromium.

3,192,008
DEODORIZER FAN FOR ROLLER TOWEL CABINET
Maurice J. Dwyer, 530 Patton Ave., San Jose 28, Calif.
Filed Dec. 10, 1962, Ser. No. 243,290
3 Claims. (Cl. 21—77)

1. A deodorizer mechanism for mounting on a towel cabinet of the type having a roll of toweling mounted therein, which cabinet has a shaft thereof rotatively driven by each withdrawal of a length of toweling therefrom; said deodorizing mechanism comprising
(a) an auxiliary housing having air openings at opposite ends thereof,

(b) means for mounting the auxiliary housing on such towel cabinet with an end of the towel-driven shaft exposed within the housing,
(c) air propelling means mounted in the auxiliary housing and positioned to direct an air stream created thereby through the auxiliary housing and the air openings therein,
(d) drive means in the auxiliary housing operatively



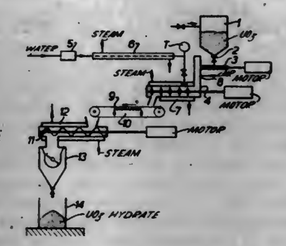
interconnecting the towel-driven shaft and the air propelling means for driving the latter upon each withdrawal of a length of toweling from the cabinet, and
(e) a supply of vaporizable, deodorant material in the housing and positioned in the path of the air propelled therethrough by each actuation of the air propelling means.

3,192,009
PROCESS FOR REMOVING NITRIC OXIDE FROM GASES CONTAINING UNSATURATED HYDROCARBONS
Horst Grosspietsch and Herbert Kaltenhäuser, Frankfurt am Main, and Otto Heuse, Kronberg, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Jan. 31, 1962, Ser. No. 170,237
Claims priority, application Germany, Feb. 15, 1961, F 33,205
10 Claims. (Cl. 23—3)

1. A process for the removal of nitric oxide from cracked gases which contain 0.001 to 0.2 percent by volume of nitric oxide and more than 10 percent by volume of unsaturated hydrocarbons, which comprises compressing the cracked gases in the presence of at least 0.5 percent by volume of molecular oxygen to about 2 to 50 atmospheres and washing, at a temperature between 0 and 50° C., the nitrogen dioxide formed from the gases with an alkaline to neutral aqueous medium.

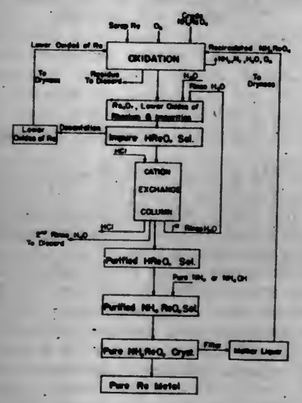
3,192,010
PRODUCTION OF URANIUM DIOXIDE
James Elgie Lloyd and Lionel Hepworth Brooks, Preston, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed June 1, 1962, Ser. No. 199,505
Claims priority, application Great Britain, June 13, 1961, 21,378/61
3 Claims. (Cl. 23—14.5)

1. A method of producing uranium dioxide in suitable form for fluidized bed hydrofluorination and having a high reactivity towards hydrogen fluoride, comprising subjecting uranium trioxide to hydration by mixing the uranium trioxide in powder form with water at about 80° C. to form a paste, the amount of water being slightly in excess of the stoichiometric amount required for forming uranium trioxide dihydrate, maintaining said



paste at about 80° C. until a dry granular solid of uranium trioxide hydrate is produced, whereby formation of a hard mass is avoided, and dehydrating and reducing the hydrated uranium trioxide to give uranium dioxide, the uranium trioxide hydrate being in suitable form for dehydration and reduction by fluidized bed means.

3,192,011
PROCESS FOR PRODUCING HIGH PURITY RHENIUM COMPOUNDS
James Cooper, Jr., Oreland, Pa., and Joseph J. Aldrich, Meriden, Conn., assignors to Chase Brass & Copper Co. Incorporated, Waterbury, Conn., a corporation of Connecticut
Filed Aug. 7, 1963, Ser. No. 303,714
9 Claims. (Cl. 23—22)



1. The process of treating impure perrhenic acid solution to remove residual extraneous metal cation contaminants and especially alkali metal ion contaminants, which comprises contacting a solution consisting essentially of impure perrhenic acid containing from about 20 to 200 grams of rhenium per liter and having a solution pH of less than 1.0, with cationic exchange resin to effect adsorbtion thereon of said contaminants, and withdrawing purified perrhenic acid solution as the effluent from said exchange resin.

3,192,012
PROCESS FOR SEPARATING THE RARE EARTH ELEMENTS BY MEANS OF SOLVENT EXTRACTION
Andrew C. Rice, Reno, Nev., assignor to the United States of America as represented by the Secretary of the Interior
Filed Aug. 9, 1962, Ser. No. 216,005
12 Claims. (Cl. 23—23)
(Granted under Title 35, U.S. Code (1952), sec. 266)

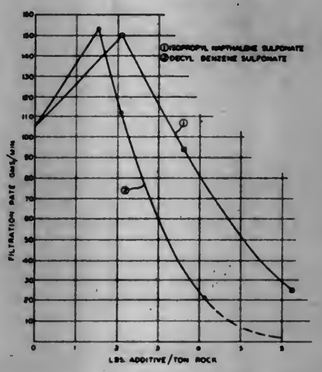
1. A method for the separation of at least one rare earth element from at least one other rare earth element in an aqueous sulfate solution containing the rare earths in a concentration of about 0.005 to 0.05 mole per liter which comprises (1) adding to said solution about 2 to 10 grams per liter of the solution of a complexing agent selected from the group consisting of ethylenediamine tetraacetic acid, diethylenetriamine pentaacetic acid, nitrilotriacetic acid, 1, 2-diaminocyclohexane tetraacetic acid, N-hydroxyethylenediamine triacetic acid and α-isobutyrate, and (2) contacting said aqueous solution with an amine from the group consisting of a mixture of primary amines from t-$C_{12}H_{25}NH_2$ to t-$C_{14}H_{29}NH_2$ having a molecular weight of from about 185 to about 213, a mixture of primary amines from t-$C_{18}H_{37}NH_2$ to t-$C_{21}H_{43}NH_2$ having a molecular weight of about 269 to about 311 and N-benzylheptadecylamine, said amine being dissolved in an organic, water-immiscible inert solvent in a concentration of about 0.1 to 0.5 mole per liter, to form an organic extract phase and an aqueous raffinate phase, whereby at least one rare earth element is selectively transferred at least in part to the extract phase, separating the extract and raffinate phases, and recovering rare earths from said phases.

3,192,013
ANHYDROUS LIQUID PHOSPHORIC ACID
Donald C. Young, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Aug. 22, 1960, Ser. No. 51,047
11 Claims. (Cl. 23—165)

1. A substantially anhydrous liquid phosphoric acid derived from dilute wet-process phosphoric acid which contains incidental metallic impurities comprising iron and aluminum; said anhydrous liquid phosphoric acid
(1) containing between about 1 and about 10 weight percent of said metallic impurities (expressed as oxides);
(2) containing between about 69 and about 79 weight percent phosphorus (expressed as P_2O_5 on a impurity free basis), said phosphorus being present as an equilibrated mixture of orthophosphoric and acyclic polyphosphoric acid;
(3) containing said acyclic polyphosphoric acid in an effective amount sufficient to prevent the formation of insoluble salts of said impurities so that said acid when neutralized with ammonia to a pH between about 5.5 and 10.0 and diluted with water will form a clear aqueous solution of ammonium phosphate free of precipitates of said metallic impurities; and
(4) said phosphoric acid being free of insoluble metaphosphate salts of said metallic impurities.

3. The method of treating wet process phosphoric acid containing normally incident impurities comprising iron, aluminum and magnesium that comprises:
(1) heating said acid at atmospheric pressure to a temperature above about 120° C. while removing the gaseous products volatilized therefrom to thereby concentrate said acid;
(2) continuing said heating and concentrating of said acid until the bulk concentration of said acid is at least 65 percent P_2O_5 and until said acid when neutralized with ammonia to a pH value between about 5.5 and about 10.0 and diluted with water will form a clear, aqueous solution of ammonium phosphate free of precipitates of said impurities; and
(3) thereafter discontinuing said heating and recovering an improved wet process phosphoric acid of high concentration.

3,192,014
MANUFACTURE OF PHOSPHORIC ACID
David W. Leyshon, Westport, William A. Lutz, Weston, Robert H. Oliver, Fairfield, and Hans H. Oltmann, Westport, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 189,206
Claims priority, application Great Britain, Apr. 26, 1961, 15,039/61
3 Claims. (Cl. 23—165)



1. In a process for the manufacture of phosphoric acid which comprises reacting sulfuric acid with phosphate rock so as to form a reaction slurry of gypsum and aqueous phosphoric acid, and separating said aqueous phosphoric acid from said gypsum by filtration, the improvement which comprises supplying to the reaction slurry at least while said reaction is in progress and while gypsum crystals are being formed a filterability improving additive selected from the group consisting of alkyl benzene sulphonic acids, having an alkyl group from nine to twelve carbon atoms, isopropyl naphthalene sulphonic acid and the alkali metal salts of said acids in a proportion ranging from about 0.1 to 2.0 pounds of said alkyl benzene sulphonic acid per ton of phosphate rock and about 0.1 to 3.2 pounds of said isopropyl naphthalene sulfonic acid per ton of phosphate rock.

3,192,015
GROWTH OF LARGE CUBIC FORM OF BORON NITRIDE CRYSTALS
Robert H. Wentorf, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,410
5 Claims. (Cl. 23—191)

1. A method of growing a large composite cubic boron nitride crystal which comprises:
(a) placing a cubic boron nitride seed surrounded by a mixture of high purity hexagonal boron nitride and high purity catalyst selected from the class consisting of alkali metals, alkaline earth metals, lead, antimony, tin and nitrides of the foregoing metals in a metallic shield means,
(b) simultaneously subjecting these materials to pressure in the range of from about 40 to about 60 kilobars and to temperature in the range of from about 1400° C. to about 2100° C., and
(c) reducing the temperature and pressure and recovering a cubic boron nitride crystal consisting essentially of the cubic boron nitride seed completely enveloped by an aftergrown layer of cubic boron nitride distinguishable from said seed and securely bonded thereto.

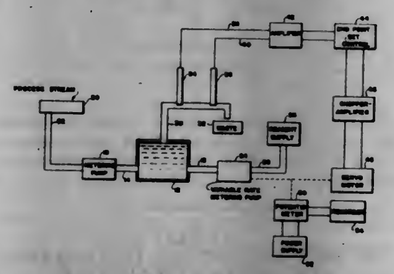
3. As an article of manufacture, a composite cubic boron nitride crystal consisting essentially of a preformed cubic boron nitride crystal core and at least one aftergrown layer of cubic boron nitride distinguishable from said core, completely enveloping said core and securely bonded thereto.

3,192,016
XENON HEXAFLUORIDE AND METHOD OF MAKING
John G. Malm, Naperville, Irving Sheft, Oak Park, Howard H. Claassen, Wheaton, and Cedric L. Chernick, River Forest, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Dec. 18, 1962, Ser. No. 245,951
7 Claims. (Cl. 23—205)

1. A process of preparing xenon hexafluoride, comprising heating xenon gas and at least 10 moles of fluorine gas per one mole of xenon in a closed system to between 200 and 400° C., whereby pressure builds up and the xenon reacts with the fluorine, forming xenon hexafluoride; and cooling the xenon hexafluoride formed to room temperature for solidification.

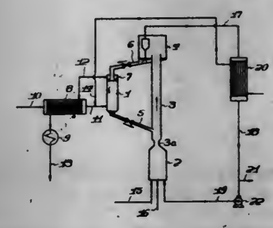
5. As a new composition of matter, xenon hexafluoride, $XeFe_6$.

3,192,017
CONTINUOUS RECORDING TITRATOR
Harold O. Kruger, San Marino, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed July 3, 1962, Ser. No. 207,346
3 Claims. (Cl. 23—253)



1. Apparatus for continuously titrating a sample stream with a reagent to monitor a characteristic of the stream, comprising in combination;
a titration chamber;
first cyclical pump means for introducing pulses of sample of one phase and one period into said titration chamber;
second cyclical pump means for introducing pulses of reagent of a phase different from said one phase and a period the same as said one period into said tritration chamber having a variable output;
flow means for discharging fluid from said chamber;
sensing means for producing a second output indicative of the characteristic of the solution formed by the mixing and chemical reacting of the sample and the reagent;
means for comparing said second output with a preselected reference and producing an error signal corresponding to the difference between said output and said reference; and
means coupled to said comparing means and responsive to said error signal, said means being operative to vary the output of said second cyclical pump means and thereby reduce the net difference between said output and said reference to zero.

3,192,018
APPARATUS FOR THERMAL CRACKING OF HYDROCARBONS
Shosuke Minami, Hiro-machi, Kure-shi, Hiroshima-ken, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Nov. 5, 1962, Ser. No. 235,372
Claims priority, application Japan, Nov. 8, 1961, 36/39,749
4 Claims. (Cl. 23—262)

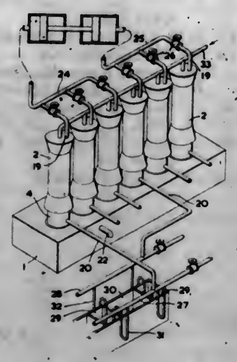


1. A device for the pyrolysis of hydrocarbons comprising, in combination, a vertical reaction furnace; an inlet for hydrocarbons near the lower end of said furnace; an outlet for pyrolyzed hydrocarbons near the upper end of said furnace; heat exchange means connected to said inlet and said outlet; a separator for molten metal connected to the top of said furnace and provided with means to disperse said metal into fine particles; a return pipe for said molten metal at the bottom of said furnace; a heating chamber for said metal connected to said return pipe and to said separator; a combustion chamber disposed below said heating chamber and connected thereto; an air supply for said combustion chamber; supply means for fuel to be burned into combustion gases in said combustion chamber, said gases escaping into and through said heating chamber and into said separator, carrying with them said molten metal from said furnace back into said sepaartor by gas lift while reheating it; outlet means for said combustion gases from said separator; a superheated steam supply pipe connected to said hydrocarbon inlet, said steam carrying said hydrocarbons into said furnace without any mechanical pressure means; said finely dispersed molten metal countercurrently contacting said hydrocarbons in said furnace thus effecting pyrolysis.

3,192,019
LIQUID-LIQUID CONTACTING APPARATUS
Donald Hebden and Kenneth Hartley, Thurso, Caithness, Scotland, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Oct. 26, 1960, Ser. No. 65,210
Claims priority, application Great Britain, Nov. 2, 1959, 37,180/59
2 Claims. (Cl. 23—270.5)

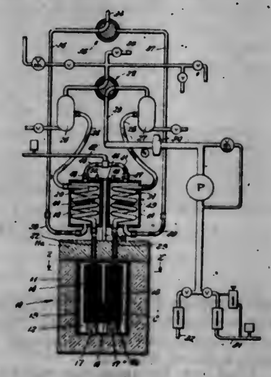
1. Apparatus for mixing liquid phases comprising in combination:
(a) means defining a mixing compartment
(b) a pair of mixer tubes one end of each dipping into the mixing compartment
(c) a pair of packed columns having connection adjacent their bottom ends respectively to the other ends of the mixer tubes
(d) means adjacent the top end of each column for spraying liquid on to the packing thereof

(e) feed means to supply liquid continuously in common to the spray means of both columns
(f) a sump in communication with the bottom ends of the columns for collecting drained liquid
(g) separate pipe means opening into the columns adjacent the top ends of said columns, and



(h) a pulsing generation system connected to the separate pipe means to increase and decrease alternately the pressure in the separate pipe means in opposite phase relationship, whereby the pressure increases and decreases are transmitted to the mixer tubes through the respective columns and are operative to impose oscillating movement on the liquid sprayed therein.

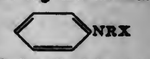
3,192,020
ENDOTHERMIC GAS GENERATOR
George W. Wardwell, Jr., Trumbull, Conn., assignor to Rolock Incorporated, Fairfield, Conn., a corporation of Connecticut
Filed May 4, 1962, Ser. No. 192,369
5 Claims. (Cl. 23—281)



1. In an endothermic gas generator comprising a heating chamber, a gas generating unit enclosed in and separate from said heating chamber for generating a special gaseous atmosphere, means for supplying a gas mixture to said generating means, and reversing valve means for reversing the flow of gas in said generating means, the improvement wherein the gas generating means comprises a U-shaped catalytic chamber of substantially uniform cross section supported by the bottom of the U and having the free ends of the sides of the U connected to said valve means whereby a substantially uniform flow of gas through the chamber in either direction is obtained.

3,192,021
ANTI-STALLING MOTOR FUEL COMPOSITION
George W. Eckert, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 15, 1962, Ser. No. 202,698
7 Claims. (Cl. 44—63)

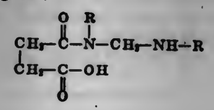
1. A gasoline having a Reid vapor pressure above 9 and containing 0.001 to 0.1 weight percent of an alkyl pyridinium halide having the formula:



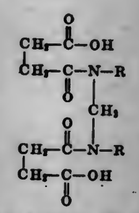
in which R is an alkyl radical having from 6 to 28 carbon atoms and X is a halogen atom.

3,192,022
DISTILLATE FUELS
Paul Y. C. Gee, Woodbury, and Harry J. Andress, Jr., Pitman, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed Sept. 8, 1961, Ser. No. 136,725
5 Claims. (Cl. 44—71)

1. A non-lubricating normally liquid petroleum distillate containing a small amount, based on the weight of the distillate and sufficient to inhibit said distillate against screen clogging, of a succinamic acid selected from the group consisting of

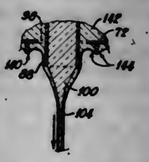


and



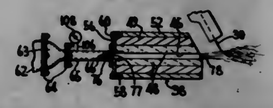
wherein R is a tertiary aliphatic hydrocarbon group containing from about 10 to about 30 carbon atoms and having a tertiary carbon atom attached directly to the nitrogen atom.

3,192,023
METHOD FOR UNITING TWO MOLTEN STREAMS BY ATTENUATING
Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,460
5 Claims. (Cl. 65—3)



1. In a method for producing attenuated heat-softenable materials, the steps of discharging a first molten material through an elongated nozzle as a stream, discharging a second molten material onto the exterior surface of said nozzle, flowing said second molten material over a substantial portion of said exterior surface in exposed relation to the ambient atmosphere to circumferentially spread said second material on said surface, further flowing said second molten material onto said first molten material to cover said first molten material, and then simultaneously attenuating the combined streams.

3,192,024
METHOD AND APPARATUS FOR FORMING GLASS FIBERS
Donald W. Dennistou, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1961, Ser. No. 153,952
6 Claims. (Cl. 65—7)



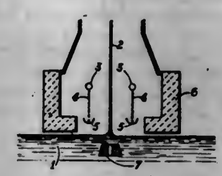
1. A method of producing a high temperature, high velocity, highly turbulent, gaseous blast which comprises:
(A) flowing a combustible mixture of gases into an elongated chamber at a high rate of flow and at substantially uniform velocity and turbulence,
(B) interrupting the flow of the gases by a bluff body mounted in the chamber so as to create additional turbulence in the gases passing downstream of the bluff body and produce eddy currents of unburned gases immediately downstream of and behind the bluff body,
(C) burning the eddy of unburned gases adjacent the downstream side of the bluff body to anchor a stable, self-sustaining flame to said bluff body and propagating the flame to the combustible mixture flowing past the burning eddy,
(D) directly cooling the walls of the chamber downstream of the bluff body to maintain them at a temperature below the ignition temperature of the combustible mixture of gases, and
(E) issuing the burned gases into an atmosphere of air without reducing the cross-sectional area of the gases.

2. Apparatus for producing a high temperature, high velocity, highly turbulent, gaseous blast which comprises:
(A) an elongated rectangular chamber of uniform cross-section in which a combustible mixture of materials is burned,
(B) supply means for introducing combustible materials into the chamber at a high rate of flow, and at substantially uniform velocity and turbulence,
(C) a rod mounted within the chamber across the flow path of the unburned materials and
(D) means for directly cooling the walls of the chamber downstream of the rod to a temperature below the ignition temperature of the combustible mixture of materials.

3,192,025
COOLING PROCESS AND DEVICE FOR THE DRAWING OF GLASS
Emile Plumat, Gilly, Belgium, assignor to Glaverbel Societe Anonyme, Brussels, Belgium, a company of Belgium
Filed Mar. 17, 1961, Ser. No. 96,495
9 Claims. (Cl. 65—83)

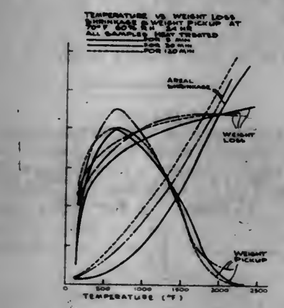
1. The process of cooling a sheet of glass as it is being vertically drawn from a body of molten glass in the drawing kiln of a glass furnace, which comprises exposing at least one surface of the glass sheet to the direct cooling action of a liquid curtain which extends downwardly from a point above the surface level of the molten glass body for a substantial distance to a point short of such surface level, and which has one side thereof disposed in directly opposed, spaced relation across the portion of said glass sheet surface located adjacently to said molten glass body.

3. Apparatus for cooling a sheet of glass as it is being vertically drawn from a body of molten glass in the drawing kiln of a glass furnace, comprising liquid distributing means for forming a liquid curtain located a substantial distance above the surface level of the molten glass body and extending in given spaced relation across one side of the portion of the glass sheet located adja-



cently to the molten glass body, means for feeding to said distributing means liquid in sufficient quantity to form a liquid curtain having one side thereof disposed in directly opposed relation to said side of said glass sheet portion so that the latter is subjected to the direct cooling action of such liquid curtain, a liquid collector located a substantial distance below said distributing means and positioned above said level of the molten glass for collecting the liquid forming such liquid curtain, and means for removing the liquid collected by said liquid collector.

3,192,026
METHOD OF TREATING SILICA FIBERS
Robert C. Nordberg, 14730 Gardenhill, La Mirada, Calif., and Forrest J. Lunn, 630 W. Burnett, Long Beach, Calif.
Filed Oct. 19, 1959, Ser. No. 15,249
(Filed under Rule 47(a) and 35 U.S.C. 116)
5 Claims. (Cl. 65—111)



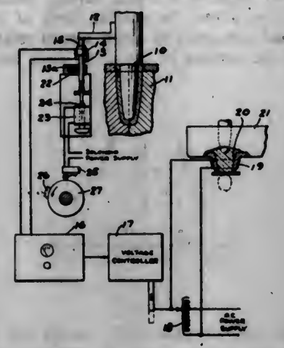
1. The method of producing a mass of fired vitreous siliceous fibers having adequate strength for further processing and controlled moisture absorption characteristics, which method includes the step of firing a mass of hydrated silica fibers at a temperature within the range of from about 600° F. to about 2100° F., excluding temperatures within the range of in excess of about 650° F. and below about 1800° F. and below the devitrification point of said fibers for at least about five minutes, that is, until the difference between the percentage areal shrinkage of said fibers during said firing and the percentage weight pickup of said fibers after said firing is maximized.

3,192,027

APPARATUS FOR MEASURING PLUNGER PENETRATION IN GLASS FORMING MACHINES

Donald F. Wilhelm, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed July 3, 1961, Ser. No. 121,417
2 Claims. (Cl. 65—158)



1. In the manufacture of glass articles by pressing a plunger into a gob of plastic material, the combination comprising a plunger movable successively into and out of a mold to press gobs of plastic material, a member, means for operatively connecting said member to said plunger for movement with the plunger toward and away from pressing position, a movable element, means for mounting said element adjacent to said member in position to be engaged by said member during its movement toward pressing position and forming a part of an electrical position sensing device, means for mounting said element so that when the plunger is moved away from pressing position the element is retained in the position to which it is moved by engagement with the member when the plunger is being moved to pressing position, and means operatively connected to and operated in synchronism with said plunger to apply a force to said element in a direction opposite to the direction of movement of said plunger into a mold to urge said element into contact with said member when the plunger is in pressing position in the event that the plunger does not move into the mold in one pressing movement as far as it is moved into the mold in the prior pressing position.

3,192,028

APPARATUS FOR FORMING GLASS

George C. Chapman, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Feb. 13, 1963, Ser. No. 258,258
4 Claims. (Cl. 65—199)



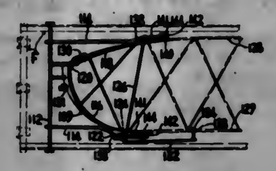
1. Apparatus for precision forming of glass members comprising a carbon die having a vertical, glass shape defining opening formed therethrough, plural chambers formed in said die extending throughout a substantial portion of its height but completely enclosed in said die, a vertical slit connecting each chamber with the shape defining opening in the die, means connected to said chambers for applying a vacuum thereto, means surrounding said die for cooling the glass in the upper portion of said die to a solid state, and means positioned above said die for engaging and drawing the solid glass from said die.

3,192,029

APPARATUS FOR BENDING GLASS SHEETS WITH INTERMEDIATE FINGER SUPPORT

Lloyd V. Black, Murphy, N.C., assignor to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania

Filed Jan. 24, 1958, Ser. No. 710,964
3 Claims. (Cl. 65—289)



1. Apparatus for bending glass sheets to curved shapes comprising a support frame, a plurality of mold sections having upper shaping surfaces, said mold sections including a central mold section rigidly supported on said support frame and end mold sections movable into a spread mold position to support an unbent glass sheet and into a closed mold position where their upper shaping surfaces form a substantially continuous outline corresponding to the shape desired for the bent sheet, and flat sheet supporting means movable in synchronism with the movement of said end mold sections to a position in a plane defined by the mold extremities intermediate and spaced from the latter a minimum distance equal to the length of one of said end mold sections when the mold sections move into the spread mold position and to a position below a plane defined by the mold extremities intermediate the latter when the mold sections move into the closed mold position.

3,192,030

FERTILIZER EMULSIONS

Ivor W. Mills, Glenolden, and John J. Melchiore, Wallingford, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Oct. 4, 1962, Ser. No. 228,260
6 Claims. (Cl. 71—11)

1. An emulsion composition comprising (1) water as the continuous phase, (2) a volatile organic solvent substantially immiscible with water as the dispersed phase, and (3) an emulsifying agent capable of stabilizing a dispersion of said organic solvent in water, said water having dissolved therein a solid fertilizer compound, said solvent having dissolved therein a wex, and the ratio of said wax to said fertilizer being in the range of 0.2:1 to 1.5:1.

3,192,031

COATED FERTILIZER COMPOSITIONS

Ralph Zaayenga, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed June 21, 1962, Ser. No. 204,065
4 Claims. (Cl. 71—28)

1. A fertilizer composition comprising solid, water-soluble fertilizer particles coated with a thin film of an essentially dry finely divided inert material having a particle size of 98–100% through 120 mesh, substantially all of said coated fertilizer particles being surrounded by and encased in a wax, said solid fertilizer being selected from the group consisting of ammonium nitrate, urea, ammonium sulfate, calcium cyanamide, sodium nitrate, potassium nitrate, ammonium phosphate, potash, and mixtures thereof, the proportions of the ingredients being as follows: fertilizer, a major proportion; wax, 5–49%; essentially dry finely divided inert material, 0.1 to 5.0% by weight based on the fertilizer component.

3,192,032

METHOD OF MAKING SLOW RELEASE UREA FERTILIZERS

Charles L. Thomas, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,510
5 Claims. (Cl. 71—28)

1. Method of forming a slow release fertilizer comprising a dispersion of solid urea in a solid paraffin wax which when in molten state normally reacts with solid urea to form an adduct which comprises (1) heating said paraffin wax to above its melting point, (2) adding to and dissolving in the resulting molten paraffin wax an adduct inhibitor selected from the group consisting of naphthenic acids having a molecular weight of 200–800 and metal salts thereof, the amount of said adduct inhibitor being at least 0.5% by weight of said molten paraffin wax, (3) dispersing solid urea in the molten paraffin wax containing said inhibitor, and (4) cooling the resulting dispersion to below the melting point of the wax whereby a slow release fertilizer comprising a dispersion of solid urea in solid paraffin wax is obtained.

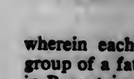
3,192,033

METHOD OF PREPARING A SLOW RELEASE UREA FERTILIZER

Wilmer E. McCorquodale, Jr., Havertown, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,119
6 Claims. (Cl. 71—28)

1. Method of forming a slow release fertilizer comprising a dispersion of solid urea in a solid paraffin wax which when in molten state normally reacts with solid urea to form a urea-paraffin wax adduct which comprises (1) heating said paraffin wax to above its melting point whereby molten paraffin wax normally susceptible to adduction is obtained, (2) dissolving in said molten paraffin wax an adduct inhibitor consisting essentially of a material selected from the group consisting of fatty acid triglycerides having the formula



wherein each RCOO— group represents the RCOO— group of a fatty acid having the formula RCOOH wherein R contains 9–29 carbon atoms in a straight chain and in which the COOH group is attached to an end of such chain, the amount of said fatty acid triglyceride being 0.25–10.0% by weight of said molten paraffin wax, (3) dispersing solid urea in the molten paraffin wax containing said adduct inhibitor dissolved therein, and (4) cooling the resulting dispersion to below the melting point of said paraffin wax, whereby a slow release fertilizer comprising a dispersion of solid urea in solid paraffin wax is obtained.

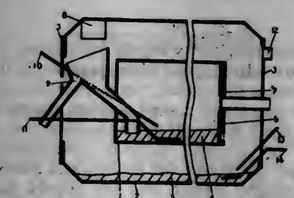
3,192,034

MANUFACTURE OF GRANULAR FERTILIZERS

John William Baynham and Frederick John Harris, Leith, Edinburgh, Scotland, assignors to Scottish Agricultural Industries Limited, Edinburgh, Scotland, a corporation of Great Britain

Filed July 2, 1962, Ser. No. 206,622
Claims priority, application Great Britain, July 14, 1961, 25,585/61
4 Claims. (Cl. 71—64)

1. A continuous process for the production of a multi-layered granular ammonium phosphate fertilizer of an N:P ratio between 1.4 and 2.2, which comprises providing quantities of phosphoric acid and ammonia, reacting said quantities of phosphoric acid and ammonia on granules of ammonium phosphate in a first region of a reaction chamber while maintaining the partial pressure of the ammonia therein at a level higher than the ammonia pressure generated by any decomposition of said ammonium phosphate granules, passing said granules to a second region in said reaction chamber and treating same therein with a current of air of a volume sufficient to remove any water vaporized and carried over from said first region and insufficient to remove any significant quantity of ammonia thereby maintaining the moisture content of said granules at a level below about 1% and forming a layer of ammonium phosphate on each of said granules, withdrawing said granules from said second region of said reaction chamber, removing a portion of said granules from said second region and in an amount substantially equivalent to the acid and ammonia being aded to said chamber, recirculating the remainder of said granules to said first region inside the chamber while maintaining the moisture content of the same at a level below 1%, the ratio of the rate of recirculation to the rate of removal being at least



20:1, reacting an additional quantity of phosphoric acid and ammonia on said recirculated granules while continuing to maintain the partial pressure of the ammonia therein higher than the ammonia pressure generated by any decomposition of said recirculated ammonium phosphate granules, effecting conditions favorable to the maintenance of said partial pressure by sealing said first region with said recirculated granules as they enter said first region, passing said recirculated granules to said second region in said reaction chamber and treating same with a current of air of a volume sufficient to remove any water vaporized and carried over from said first region and insufficient to remove any significant quantity of ammonia thereby maintaining the moisture content of said recirculated granules at a level below 1% and forming a further layer of ammonium phosphate thereon, and repeating said removal and recirculation cycle to thereby obtain a multi-layer granular ammonium phosphate fertilizer as the end product.

3,192,035

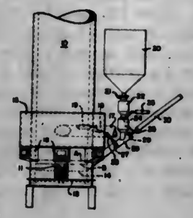
METHOD FOR DAMMING THE MOUTH OF TILTING FURNACES

Nils Harald Jonsson, Oxelosund, Sweden, assignor, by mesne assignments, to Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden, a corporation of Sweden

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,780
Claims priority, application Sweden, Apr. 26, 1962, 4,687/62
2 Claims. (Cl. 75—28)

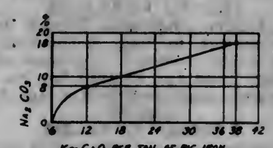
1. In the tapping of molten steel from a tilting furnace in which the molten steel is associated with slag, which molten steel is tapped over the lip of the furnace, the improvement which consists in retarding discharge of the slag with the molten steel by prefacing the tapping operation by adding an earth metal carbonate material selected from the group consisting of limestone and dolomite, onto the molten material contained in the furnace, then adding, above the resulting stiffened slag cover, an agent selected from the group consisting of burnt lime, burnt dolomite and steel furnace slag, whereby to strengthen the stiffened slag cover and to fix the latter to the furnace walls, and tapping the molten steel from beneath said stiffened slag cover.

3,192,036
CUPOLA FEEDING MECHANISMS AND METHOD
Harry B. Laudenslager, Jr., Jamestown, and Everett W. Hale, Falconer, N.Y., assignors to Blackstone Corporation, a corporation of New York
Filed Dec. 18, 1961, Ser. No. 160,142
8 Claims. (Cl. 75—43)



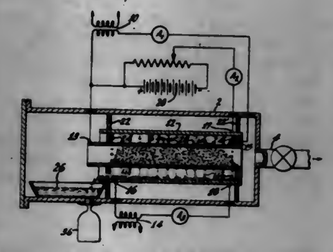
1. In combination with a cupola for melting metal having a wind box delivering air under pressure to the cupola sufficient to cause the molten metal level to drop from a first position to a lower second position spaced from the first position and a source of air to the wind box, a feeding mechanism for additive materials comprising hopper means adjacent the cupola for holding said additive material, feeder means passing into the cupola receiving a charge of additive and delivering it into the molten metal in the cupola at a point beneath the surface of the molten metal when the molten metal in the cupola is in the first position substantially free of air pressure, cyclic actuator means sequentially acting (1) on the source of air halting the flow of air to the wind box, (2) on the feeder delivering a charge into the cupola from a receiving position remote from the cupola, (3) returning the feeder to the receiving position and (4) reopening the air flow to the wind box.

3,192,037
DESULFURIZATION METHOD
Manfred Haucke, Dortmund, Ludwig Bahrke, Massen, and Hermann Josef Kopineck and Hubert Hoff, Dortmund, Germany, assignors to Hoesch Aktiengesellschaft, Dortmund, Germany
Filed Oct. 3, 1963, Ser. No. 321,713
Claims priority, application Germany, Dec. 19, 1959, H 38,184
14 Claims. (Cl. 75—55)



1. In a method of desulfurizing pig iron, the steps of blowing into a bath of molten sulfur-containing pig iron a carrier gas of such type and in such amount as to be substantially without metallurgical effect with respect to said pig iron, said carrier gas having suspended therein as the only desulfurizing agent a pulverulent mixture of calcium oxide and sodium carbonate, said mixture consisting of between 5% and 15% sodium carbonate and between 95% and 85% calcium oxide, the concentration of said suspended mixture in said carrier gas being such that 1 kilogram of said mixture is suspended in between about 3 and 7 liters of said carrier gas.

3,192,038
METHOD OF EXTRACTING ALKALI METALS
Fred M. Johnson, Princeton, N.J.
(213 S. Madison Ave., Monrovia, Calif.)
Filed Jan. 23, 1963, Ser. No. 253,435
7 Claims. (Cl. 75—66)



1. A method of extracting alkali metals from an ore having the general formula $R_2O.Al_2O_3.nSiO_2$ where R is at least one alkali metal and n is an even number from 2 to 8, comprising heating a quantity of the ore in vacuo and in electrical contact with a first electrode, to a high temperature below the melting point of said ore, and applying a negative potential to a collecting electrode with respect to said first electrode such as to extract alkali metal ions from said ore and attract said ions to said collecting electrode.

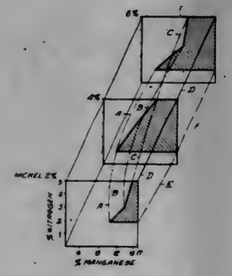
3,192,039
FREE MACHINING ALLOY
Kermit J. Goda, Jr., Leesport, and John J. Gross, Reading, Pa., assignors to The Carpenter Steel Company, Reading, Pa., a corporation of New Jersey
No Drawing. Filed Aug. 5, 1963; Ser. No. 300,071
5 Claims. (Cl. 75—128)

1. A stainless steel alloy characterized in its heat treated condition by good free machinability consisting essentially of up to about 1.5% carbon, up to about 2% manganese, up to about 3% silicon, from about 10% to 30% chromium, from about .05% to 1% boron mononitride, up to about 3% nickel, up to about 1.5% molybdenum, up to about 1.5% copper, up to about .5% sulfur, up to about .5% phosphorus, up to about .5% selenium, and the remainder consisting essentially of iron, said boron mononitride being dispersed throughout the matrix of the alloy.

3,192,040
FREE MACHINING ALLOY
Kermit J. Goda, Jr., Leesport, and John J. Gross, Reading, Pa., assignors to The Carpenter Steel Company, Reading, Pa., a corporation of New Jersey
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,072
5 Claims. (Cl. 75—128)

1. An austenitic stainless steel alloy characterized in its heat treated condition by good free machinability consisting essentially of up to about .2% carbon, up to about 8% manganese, up to about 2% silicon, from about 16% to 21% chromium, from about 5% to 12% nickel, from about .05% to 1% boron mononitride, said boron mononitride being dispersed throughout the matrix of the alloy, up to about 1% columbium, up to about 1% titanium, up to about 3.5% molybdenum, up to about 3.5% copper, up to about .5% phosphorus, up to about .5% sulfur, up to about .5% selenium, and the remainder consisting essentially of iron.

3,192,041
CORROSION RESISTANT STEELS
Jerome J. Kanter, Palos Park, Ill., Alvin F. Lahr, Kokomo, Ind., and Karl Haefner, Palos Hills, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 13, 1962, Ser. No. 244,343
9 Claims. (Cl. 75—130.5)



9. In a process for manufacturing shaped metal casting the steps which comprise: preparing an austenitic ferrous base metal alloy steel melt consisting essentially of from about 18% to about 21% by weight of chromium, 6% to about 12% by weight of manganese, from about 2% to about 8% by weight nickel, from about 0.02% to about 0.5% by weight of nitrogen, with the maximum nitrogen and the balance essentially iron is less than approximately the following in the range of combined percentages by weight of manganese plus nickel from about 4% to about 18%:

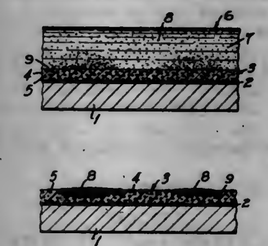
percent N=0.021 (percent Mn+percent Ni—1)

in which percent N is the percentage by weight of nitrogen, in which percent Mn is the percentage by weight of manganese, and percent Ni is the percentage by weight of nickel, in which the relative amounts of nickel, manganese, and nitrogen are approximately within the volume described by lines A through F in FIGURE 2 of the accompanying drawings, said alloy steel ranging from being fully austenitic to being largely austenitic and slightly ferritic; introducing said melt into a shaped mold having the same general configuration of the final product of ultimate use; and allowing the melt to cool directly into a casting shaped to the general configuration of the final product of ultimate use.

3,192,042
METHOD OF FORMING A CERMET
Henry S. Spacil, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 1, 1961, Ser. No. 128,376
6 Claims. (Cl. 75—206)

1. A method of forming a cermet powder which comprises providing at least one metallic halide in which the metal is selected from the group consisting of iron, nickel, cobalt, chromium and copper dissolving said metallic halide in a non-aqueous organic solvent having a high solubility for said metallic halide, mixing a refractory oxide powder in the formed solution, evaporating said solvent to result in a powder, placing said powder in a reducing atmosphere, and reducing said metallic halide to the metal thereof.

3,192,043
METHOD FOR DEVELOPING AND FIXING ELECTROSTATIC IMAGES IN INITIALLY PARTIALLY CURED BASE ELEMENTS
Kenneth Archibald Metcalfe, Fulham, South Australia, and Robert John Wright, Hectorville, South Australia, Australia, assignors to The Commonwealth of Australia, Melbourne, Victoria, Australia
Filed Oct. 3, 1961, Ser. No. 142,621
Claims priority, application Australia, Oct. 7, 1960, 65,385/60
9 Claims. (Cl. 96—1)



1. An improved method of developing and simultaneously fixing electrostatic images involving the use of a volatile liquid comprising producing an electrostatic image on a photoconductor embedded in a fusible polymeric bonding material on a base, said bonding material being partially cured to the degree that it is soluble to a limited extent in said liquid, then developing said electrostatic image by applying to the surface of the bonding material a developer which comprises a pigment suspended in said volatile liquid, said liquid being of an electrical resistivity sufficiently high to prevent destruction of the electrostatic image during development, the bonding material being softened due to its solubility in said liquid to enable the pigment to penetrate the bonding material upon deposition thereon, at least some of the pigment being totally embedded in said bonding material, and then evaporating the carrier liquid of the developer to harden the bonding medium to hold the pigment.

3,192,044
MULTICOLOR DIFFUSION TRANSFER METHOD AND ELEMENT
Howard G. Rogers, Weston, Mass., and Harriet W. Lates, Cape Elizabeth, Maine, assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Aug. 22, 1960, Ser. No. 50,850
17 Claims. (Cl. 96—3)

1. A process of forming multicolor diffusion transfer images comprising the steps of photoexposing a photosensitive element comprising a support bearing, in turn, on one surface thereof

(a) an alkali-permeable layer containing a cyan dye developer,
(b) an alkali-permeable layer containing a red-sensitive silver halide emulsion,
(c) an alkali-permeable layer containing a magenta dye developer,
(d) an alkali-permeable layer containing a green-sensitive silver halide emulsion,
(e) an alkali-permeable layer containing a yellow dye developer,
(f) an alkali-permeable layer containing a blue-sensitive silver halide emulsion, and
(g) an alkali-permeable layer free of dye developer and containing at least one alkali-soluble and alkali-diffusible silver halide developing agent selected from the group consisting of (i) a 3-pyrazolidone silver halide developing agent, and (ii) a benzenoid silver halide developing agent, said benzenoid silver halide

developing agent containing an aryl nucleus substituted by at least two substituents selected from the group consisting of hydroxyl and amino groups, one of said substituents being substituted in one of the ortho and para positions with respect to the other of said substituents,

permeating said exposed photosensitive element with an aqueous alkaline processing solution, developing each of said exposed blue-sensitive, green-sensitive and red-sensitive silver halide emulsions, forming in undeveloped areas of said blue-sensitive silver halide emulsion an imagewise distribution of diffusible yellow dye developer, forming in undeveloped areas of said green-sensitive silver halide emulsion an imagewise distribution of diffusible magenta dye developer, forming in undeveloped areas of said red-sensitive silver halide emulsion an imagewise distribution of cyan dye developer, and transferring, by imbibition, at least a portion of each of said imagewise distributions of diffusible dye developers to a superposed image-receiving layer to impart a multicolor diffusion transfer image thereto.

3,192,045
NON-SILVER COLOR LIGHT SENSITIVE PHOTOGRAPHIC ELEMENTS AND METHOD OF USING SAME

Charles R. Barr, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,689
19 Claims. (Cl. 96—48)

18. A photographic process for producing a direct positive dye image and a direct negative dye image comprising the steps of:

(1) soaking in water a color photographic element comprising a support having coated thereon a light-sensitive layer comprising:

(a) a hydrophilic colloid,

(b) a semiconductor selected from the class consisting of zinc oxide, titanium dioxide, cadmium sulfide, gallium nitride and cadmium selenide, and

(c) an open chain α-diketone dye that is non-diffusible in said hydrophilic colloid;

(2) exposing said water soaked element to activating light from an original image;

(3) contacting said exposed water soaked element with a receiving sheet containing a cationic mordant to transfer the diffusible dye image to the receiving sheet; and then

(4) separating the said receiving sheet with its dye negative image from the said element with its dye positive image.

3,192,046
PHOTOGRAPHIC SILVER HALIDE EMULSIONS SENSITIZED WITH THIOETHER AND DEVELOPER COMBINATIONS

Kenneth C. Kennard and Frederick J. Russell, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 17, 1961, Ser. No. 132,011
15 Claims. (Cl. 96—95)

1. A photographic silver halide emulsion containing a sensitizing amount of a sensitizer combination comprising:

(a) a thioether silver halide chemical sensitizer,

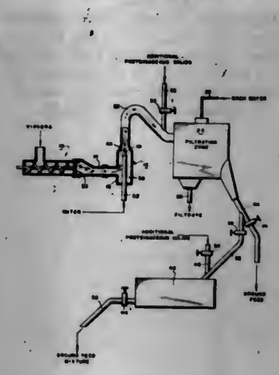
(b) a 3-pyrazolidone silver halide developing agent, and

(c) a hydroquinone silver halide developing agent and a compound capable of forming a bisulfite ion.

3,192,047
METHOD FOR FEED PREPARATION

Rodney H. Moyle and Rex A. Moyle, both of Rte. 1, Eagle, Idaho

Filed Feb. 21, 1962, Ser. No. 175,872
7 Claims. (Cl. 99—7)



1. A method for preparing a food for carnivorous animals which comprises the steps of comminuting animal viscera, passing the comminuted viscera into an expanding zone in the presence of water, expanding the comminuted viscera by reducing the pressure of said water, feeding the expanded viscera into a flowing stream of water to provide a slurry, and filtering said slurry to provide a substantially feces-free solid filtered fraction as said feed.

3,192,048
POWDERED EXTRACTS OF TEA LEAVES

Edwin Andrew Guthrie Liddiard, Stoke Poges, England, assignor to Fulmer Research Institute Limited

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,574
Claims priority, application Great Britain, Oct. 18, 1961, 37,375/61
5 Claims. (Cl. 99—77)

1. A soluble solid tea extract which includes ash resulting from the calcination of the residual spent tea leaf made available after extraction of the soluble matter thereform, said ash being in a weight ratio of 0.1 to 3% of the extract.

3,192,049
PROCESS FOR PRODUCING A QUICK-COOKING PASTA-TYPE PRODUCT

Samuel E. Kinsley, New City, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

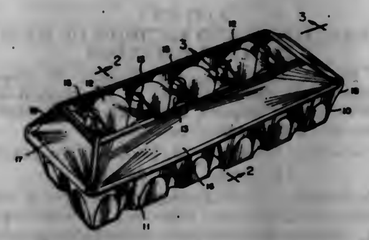
No Drawing. Continuation of application Ser. No. 110,867, May 18, 1961. This application July 25, 1963, Ser. No. 297,699
6 Claims. (Cl. 99—85)

1. A process for preparing a quick-cooking pasta-type product which comprises blending a hard wheat flour and a proteinaceous material with sufficient water to form a dough having a moisture content of 27 to 36%, extruding said dough into grain form, substantially completely gelatinizing said extruded dough at a temperature above 170° F., tempering said gelatinized extruded dough for at least 15 minutes, and then drying said extruded dough at a temperature and rate sufficient to remove moisture from its surfaces sufficiently faster than it can diffuse thereto from its interior so as to prevent shrinkage and produce a porous structure therein.

3,192,050
EGG PACKAGING

Vernon C. Almquist, Western Springs, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed Feb. 20, 1963, Ser. No. 259,854
10 Claims. (Cl. 99—177)



1. In a method of packaging eggs in a container having egg cells, an open top and a hinged border frame overlapping a portion of the cells, the steps of opening said border frame, filling said cells with eggs, drawing a heat-shrinkable plastic film about said container and border frame, securing said film in said enclosing relation, and applying heat to shrink said film for tightening said border frame about said eggs.

3,192,051
METHOD OF PREPARING A BONELESS FOWL ROAST WITH FILLED CAVITY

Harold J. Wendt, Omaha, and Verne W. Jones, Nebraska City, Nebr., assignors to Ocoma Foods Company, a corporation of Nebraska

Filed Aug. 30, 1962, Ser. No. 220,421
5 Claims. (Cl. 99—107)

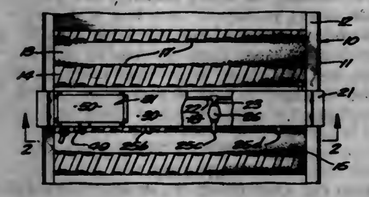


1. A method of preparing a unitary boneless fowl roast which comprises removing from a fowl carcass a portion of the flesh thereon while maintaining on said flesh its normally adhering skin and maintaining attached to and integral with said adhering skin at least one skin flap comprising free skin, maintaining on said skin flap substantially all of the subcutaneous membraneous tissue normally adjacent thereto, and shaping said portion of flesh to form a cavity therein; removing from a fowl carcass a second portion of flesh while maintaining on said flesh its normally adhering skin and maintaining attached to and integral with said adhering skin at least one skin flap comprising free skin adjacent thereto, maintaining on said second-named skin flap substantially all of the subcutaneous membraneous tissue normally adjacent thereto, wrapping said second-named skin flap over said second portion with the inner portion of said skin flap and said subcutaneous tissue in contact therewith and thereby enveloping said second portion in skin, placing the thus enveloped second portion within the cavity of said first-named portion of flesh, wrapping said skin flap of said first-named portion over said first-named portion with the inner portion of said skin flap and said subcutaneous tissue in contact therewith and thereby enveloping said first-named portion in skin and maintaining said skin flap of said first-named portion compressed against said first-named portion.

3,192,052
METHOD FOR SPRAY COATING FRUIT AND VEGETABLES

Thomas George Cunning, Ontario, and James M. Caulkins, Santa Paula, Calif., assignors to T. George Cunning, Ontario, Calif., and Gladys H. Cunning, Ontario, Calif., jointly

Filed July 6, 1962, Ser. No. 208,144
2 Claims. (Cl. 99—168)



1. The method of spray coating agricultural products comprising the steps of:

moving said agricultural products along a horizontal path of travel; and

directing a plurality of intermittent and non-synchronous sprays of coating material from a position above the moving agricultural products onto said agricultural products, thereby forming a spray pattern of coating material which changes substantially continuously as a function of time.

3,192,053
PROCESS FOR CANNED MEAT

Darwin R. Kueck, Waterloo, and Alonzo T. Adams and Lyle L. Froning, Cedar Falls, Iowa, assignors to The Rath Packing Company, a corporation of Iowa

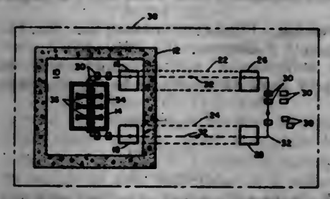
Filed Nov. 20, 1961, Ser. No. 153,307
12 Claims. (Cl. 99—187)

1. A continuous process for producing a canned stable meat product of a commercially sterile type which can be stored without refrigeration, wherein the meat product has been cured and placed in a vacuum sealed can, said process comprising the steps of initially heating the canned meat product to a temperature of about 150°–175° F. sufficient for destroying substantially all of the microbial vegetative cells and some of the spores in the meat product while yielding purge juices of less than about 20%, and thereafter flash-heating said canned meat product for less than about 20 minutes in order to provide a meat surface temperature of about 205–225° F. so as to destroy the majority of microbial spores on the surface of said meat product.

3,192,054
FOOD IRRADIATOR AND METHOD

Otto A. Kuhl, Northport, and Adolph B. Oltmann, Bayport, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 19, 1962, Ser. No. 224,879
12 Claims. (Cl. 99—214)



1. A method for the controlled, sequential irradiation of a plurality of packages comprising the steps of forming said packages into a row, carrying said packages into a

zone of irradiation by moving said packages along said row, stopping successive packages in said zone at spaced stop positions, inserting a flat plaque having at least one surface coated with a radioactive isotope emitting gamma rays between two successive stopped packages with one face of said plaque facing one of the aforesaid stopped packages and the opposite face of said plaque facing the other of the aforesaid stopped packages, said plaque thereby irradiating the facing packages and packages behind said facing packages,, retracting said plaque after a predetermined period of time and continuing the movement of said packages along the axis of said row until the packages in said zone reach other positions, stopping successive packages on said stop positions, and reinserting said plaque for a predetermined period of irradiation.

3,192,055

METHOD OF ASSURING HOMOGENEITY OF DRY FOOD ADDITIVE MIXTURES

Ray F. Beerend, Vermilion, and Haskell C. Needle, Lorain, Ohio, assignors, by mesne assignments, to Basic Food Materials, Inc., a corporation of Delaware

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,843
1 Claim. (Cl. 99—222)

A method of mixing a multiple component batch of curing compound, which method comprises the steps of making a first pre-mix batch by commingling dry crystalline sodium nitrite with dry cochineal and dry mixing until the pre-mix batch is of uniform red color, making a second pre-mix batch by commingling dry sodium nitrite with dry turmeric powder and dry mixing until the second pre-mix batch is of uniform yellow color, and making a final batch by commingling the dry first pre-mix batch and the dry second pre-mix batch with crystalline common salt and mixing said salt and said pre-mix batches dry until the whole resulting multiple component batch is of uniform color.

3,192,056

DIATHERMAL TREATMENT IN THE CURING AND SMOKING OF MEATS

Beverly E. Williams, La Grange Park, Ill., assignor to Hodges Research and Development Company, New York, N.Y., a corporation of California

No Drawing. Filed Dec. 13, 1962, Ser. No. 244,287
3 Claims. (Cl. 99—229)

1. In a process for curing and smoking meats, the steps of curing the meat and then raising the internal temperature of the meat uniformly and rapidly without external cooking of the meat before smoking to approximately 140° F. in from 1 to 5 minutes by radio microwaves of from approximately 450 to approximately 900 megacycles and thereafter completing the smoking process in approximately 4 hours at a temperature of approximately 140° F.

3,192,057

ANTIBACTERIAL COATING COMPOSITIONS

Leonard Russell Hines, Ridgewood, and Richard Jay Shirk, Hamilton Square, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Oct. 6, 1961, Ser. No. 143,318
7 Claims. (Cl. 106—15)

1. An antibacterial coating composition consisting essentially of acylated glycerides having the general formula:



wherein R_1 is the acyl radical of a fatty acid of from 12 to 22 carbon atoms, R_2 is selected from the group consisting of hydrogen, the acyl radical of a fatty acid of from 2 to 5 carbon atoms and the acyl radical of a fatty acid of from 12 to 22 carbon atoms, and R_3 is selected from the group consisting of hydrogen and the acyl radical of a fatty acid of from 2 to 5 carbon atoms, said acylated glycerides having dispersed therein from about 0.0001% to about 0.0025% by weight of a tetracycline antibiotic.

3,192,058

REFRACTORIES AND METHODS OF MANUFACTURE THEREFOR

Ben Davies, Pittsburgh, and Thomas W. Smoot, Bethel Park, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed May 23, 1962, Ser. No. 196,887
11 Claims. (Cl. 106—57)

9. A formed refractory shape, made from a mixture consisting essentially of, refractory brickmaking, size graded, substantially nonplastic, refractory aggregate selected from the group consisting of:

(a) chrome ore
(b) zirconia
(c) magnesia
(d) alumina, and
(e) mixtures of magnesia and chrome ore;

and from about 1 to 15%, by weight, of a water-insoluble, finely divided, high-purity Cr_2O_3 of at least about 97%, by weight, Cr_2O_3 content on an oxide basis, substantially all of the discrete particles of said high-purity Cr_2O_3 being of substantially uniform size and averaging less than about 1 micron in diameter, said refractory aggregate being size graded from about —3 mesh to fines.

3,192,059

VOLUME STABLE REFRACTORY AND METHOD OF MAKING SAME

William R. Good, Homestead, and Ben Davies, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 28, 1963, Ser. No. 291,442
3 Claims. (Cl. 106—57)

1. A fired, volume-stable, refractory shape suitable for use in glass tank regenerator checker construction made from a refractory batch mixture consisting essentially of: coarser dead burned magnesite grain, and finely divided zircon; the batch, by weight and on the basis of an oxide analysis, being 60 to 90% MgO and 40 to 10% $ZrO_2 \cdot SiO_2$ supplied by the dead burned magnesite and zircon, respectively; there being no more than 5%, by weight on the basis of an oxide analysis, of CaO, Al_2O_3, and Fe_2O_3 in said dead burned magnesite, and no more than 2%, by weight on the basis of an oxide analysis, of CaO in the total batch; the zircon all passing a 65 mesh screen and there being a sufficient quantity of dead burned magnesite passing a 65 mesh screen to provide at least two moles of MgO for each mole of $ZrO_2 \cdot SiO_2$, and sufficient additional moles of MgO passing a 65 mesh screen to cause stabilization of the ZrO_2; substantially all of the remaining magnesite resting on a 100 mesh screen, at least about 50% of the total magnesite content of the batch resting on a 28 mesh screen, said magnesite having a bulk specific gravity on the order of at least 3.00 gms./cc.; the shape having an apparent porosity of no more than about 16%; petrographically, said fired shape characterized by coarser textured periclase grains bonded together by a forsterite matrix which is a reaction product of an in situ solid-state reaction between MgO of the dead burned magnesite and SiO_2 of the zircon during firing, and there being spaced deposits of stabilized zirconia distributed through the forsterite matrix.

3,192,060

LIGHTWEIGHT AGGREGATE AND METHOD OF PRODUCING SAME

Benjamin L. Tilsen, 1943 Wagon Wheel Trail, St. Paul, Minn.

No Drawing. Filed May 24, 1961, Ser. No. 112,202
12 Claims. (Cl. 106—97)

1. A method of rendering raw fly ash useful as a lightweight aggregate for use in the making of concrete, said method comprising mixing eighty to ninety-five parts of fly ash with five to twenty parts by weight of a lime reactant, adding sufficient water to permit agglomeration, agglomerating into pellets and storing the pellets under humid conditions until reaction is substantially complete.

3,192,061

COATING VEHICLE

Samuel G. Wilson, Minnetonka Village, and Morris R. Olson and David E. Tweet, Minneapolis, Minn., assignors to Cargill, Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,804
8 Claims. (Cl. 106—252)

1. An improved vehicle for coating comprising, a mixture of from about 30 to 40 percent by weight of said vehicle of an unsaturated drying oil, from about 50 percent to 60 percent by weight of said vehicle of a member selected from the group consisting of the reaction product of 2-hydroxymethyl-5-norborene with maleic acid, the reaction product of 2-hydroxymethyl-5-norborene with maleic anhydride and the reaction product of 2-hydroxymethyl-5-norborene with fumaric acid, and from about 10 percent to about 20 percent by weight of said vehicle of an adduct of 2-hydroxymethyl-5-norborene with an unsaturated drying oil fatty acid.

3,192,062

WAX COMPOSITION AND SHEET MATERIALS COATED THEREWITH

Karekin G. Arabian and John C. Muyres, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 31, 1962, Ser. No. 198,857
6 Claims. (Cl. 106—270)

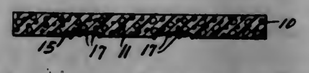
1. As a new composition of matter, (*a*) a major proportion of heavy distillate petroleum wax fraction having a melting point of 145–155° F. containing less than 20% normal paraffin waxes having in excess of 31 carbon atoms per molecule said fraction having been prepared by splitting of a deoiled heavy distillate petroleum wax fraction to remove relatively high-boiling normal paraffin hydrocarbons, and less than 5% normal paraffin hydrocarbons having in excess of 36 carbon atoms per molecule, and (*b*) 0.1–20% by weight of a polyethylene having an average molecular weight of 2000–50,000.

3,192,063

METHOD OF FORMING DECORATIVE OBJECTS FROM FOAMED THERMOPLASTIC RESINS

Alfonso M. Donofrio, Toledo, Ohio, assignor to International Assemblix Corporation, Toledo, Ohio, a corporation of Illinois

Filed Dec. 16, 1963, Ser. No. 330,932
3 Claims. (Cl. 117—8.5)



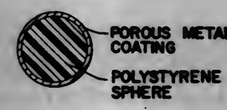
1. A method for producing decorative effects in the surface of a body of cellular plastic material which material can be dissolved by a solvent, said method comprising the steps of: (1) applying a pigment-containing evaporable solvent for said plastic to a defined area of such surface at a predetermined and substantially uniform volume per unit of surface area to dissolve the plastic material constituting the walls of the cells of said material adjacent the surface of said area and to form a depression in such surface corresponding to said defined area, whereby a solution of said solvent and said plastic wall-forming material flows as a liquid surface layer for such depression and for the irregularities in the surface thereof resulting from the collapse of the cells; (2) heterogeneously scattering plate-like particles of material that is insoluble in said solvent and said solution and that has highly light reflective surfaces onto said liquid surface layer while said liquid surface layer is in a tacky condition to bond and partially to embed said particles therein at random angles relative to the general surface of said depression and (3) evaporating said solvent thereby solidifying said liquid surface layer and adhering said particles to the depressed area of the cellular plastic material.

3,192,064

COATING

John Z. Cerych, Methuen, and Allen L. Klibanoff, Boston, Mass., assignors, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 22, 1961, Ser. No. 154,139
5 Claims. (Cl. 117—100)



1. An electroprinting ink comprising polystyrene particles with a porous coating of a conductive metal over the particles and wherein the metal coating is sufficiently porous to absorb incident light and appear black.

3,192,065

METHOD OF FORMING MOLYBDENUM SILICIDE COATING ON MOLYBDENUM

John P. Page, Thousand Oaks, Roger D. Moeller, Simi, and George V. Sneesby, Pacoima, Calif., assignors to North American Aviation, Inc.

No Drawing. Filed June 1, 1962, Ser. No. 199,267
8 Claims. (Cl. 117—114)

1. A method of forming a molybdenum silicide coating of improved uniformity and adherence on molybdenum which comprises providing a molten alkali metal bath under an inert gas atmosphere, dissolving effective amounts of silicon and at least one additive selected from the class consisting of tin and carbon in said bath, placing said molybdenum in said bath, and maintaining said molybdenum in said bath until said coating of molybdenum silicide is obtained.

3,192,066

PROCESS FOR PREPARING MOISTUREPROOF FILM

Maurice C. Rees, Branford, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed June 12, 1961, Ser. No. 116,254
3 Claims. (Cl. 117—145)

1. A process for preparing a flexible, transparent and moistureproof sheet material which comprises forming a lacquer solution of a vinylidene chloride copolymer and 1–10% by weight of said copolymer of a self-anchoring agent in a tetrahydrofuran-toluene solvent, said copolymer being formed by the polymerization of vinylidene chloride with a compound selected from the class consisting of acrylonitrile, acrylic acid and the alkyl esters of acrylic and methacrylic acids, said self-anchoring agent being the

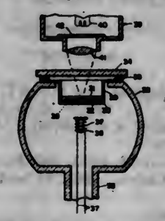
product formed by the reaction of a primary aliphatic amine having 8–18 carbon atoms with about 0.5–15% of the carboxy groups in a styrene-maleic anhydride copolymer, coating a base sheet of regenerated cellulose with said lacquer solution, and heating said coated sheet to evaporate said solvent and to provide sheet material having said coating firmly anchored to said regenerated cellulose base sheet.

3,192,067

VIDICON TARGET HAVING AREAS OF DIFFERENT CONDUCTANCE

Harold O. W. Jordan, Stamford, Conn., and Henry C. Rosenfeld, New York, N.Y., assignors to The Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut

Filed Feb. 24, 1961, Ser. No. 91,530
3 Claims. (Cl. 117—212)



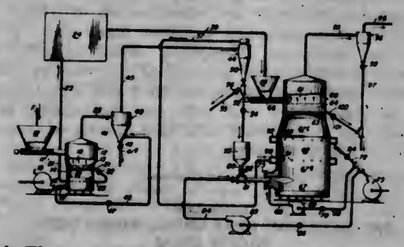
1. The method of making a photoconductive target for electron tubes comprising evaporating onto an electrically conductive transparent support a layer of photoconductive material and simultaneously therewith exposing different areas of the photoconductive material to relatively bright illumination through a transparency bearing a relatively opaque pattern to produce in said areas different electrical conductance characteristics corresponding to said pattern.

3,192,068

METHOD AND APPARATUS SYSTEM FOR CONTINUOUSLY WASHING AND DRYING SOLID COMBUSTIBLE MATERIAL

Mahlon W. Brandt, South Salem, N.Y., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Aug. 2, 1961, Ser. No. 128,851
9 Claims. (Cl. 134—25)



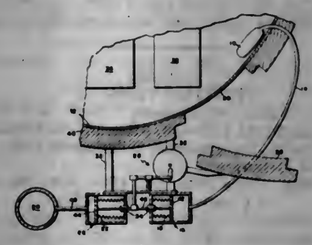
1. The method of cleaning and drying coal which comprises, continuously classifying raw crushed coal into a coarse coal fraction and a fine coal fraction in a first fluidized bed by the use of an uprising stream of fluidizing air which entrains and carrys away the fine coal fraction along with dust; continuously recovering a fine coal product by separating said fine coal fraction from the air stream carrying away the dust fraction; continuously washing said coarse coal fraction to separate impurities therefrom; continuously drying the washed coarse coal fraction in a second fluidized bed by the use of an uprising stream of hot fluidizing gas produced by the combustion of said separated dust fraction.

3,192,069

RADIOACTIVE ISOTOPE POWERED THERMOELECTRIC GENERATOR SYSTEM

Joseph H. Vogt, Manchester, Conn., and Charles N. Young and Willard C. Reed, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed July 9, 1963, Ser. No. 293,916
2 Claims. (Cl. 136—4)



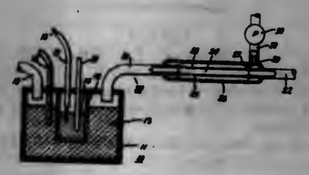
1. A radioactive isotope powered thermoelectric generator system having a metal shell, a radioactive isotope source, and a thermoelectric element, said source and said element disposed within said metal shell, a temperature sensing reservoir within said shell connected to an active pressure cylinder outside said shell, a piston disposed within said cylinder, mechanical means of restraining movement of said piston, a second cylinder opposed to the active pressure cylinder, a piston disposed in said second cylinder, mechanical means of restraining movement of said piston in said second cylinder, said pistons interconnected by a common shaft, a constant pressure gas reservoir connected to said second cylinder, mechanical linkage means attached to said shaft between said cylinders and attached to and activating thermal shutters, whereby a change in temperature affecting said temperature sensing reservoir actuates said thermal shutters.

3,192,070

FUEL CELL

William E. Tragert, Scotia, and Henry S. Spacil and Robert L. Fullman, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Oct. 4, 1962, Ser. No. 228,390
6 Claims. (Cl. 136—86)



1. A method of recovering hydrogen from a fuel cell which comprises providing a heated gaseous effluent stream containing hydrogen at a temperature in the temperature range of 790° C. to 990° C., contacting said stream with a hydrogen permeable member selected from the group consisting of iron and iron alloys, and diffusing hydrogen from said stream through said member.

3,192,071

DRY CELL ELECTRODES CONTAINING FIBROUS GRAPHITE AND PROCESS OF MAKING SAME

Albert F. Vinal, Shaker Heights, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Dec. 27, 1960, Ser. No. 78,734
7 Claims. (Cl. 136—121)

1. A cell electrode comprising from about 20 to about 40 parts by weight of comminuted carbonaceous particles, from about 60 to about 80 parts by weight of finely divided depolarizing particles and from about 1 to about 5 percent by weight of graphite fibers based on the weight of the depolarizer and carbonaceous particles, the filaments of said fibers having a diameter in the range of about 5 to about 25 microns, a tensile strength in excess of 40,000 pounds per square inch and a specific resistance ranging from about 1800 to about 5500 micro-ohm-centimeters, said fibers constituting a substantially continuous matrix for said depolarizing and carbonaceous particles.

7. A method for manufacturing electrodes comprising forming a dry mix containing from 60 to 80 parts by weight of a depolarizer, from about 20 to about 40 parts by weight of conductive carbon particles and from about 1 to about 5 percent by weight of graphite fibers based on the depolarizer-carbon mixture, compressing said mix onto a support, moistening the resulting flat plate and re-compressing said moistened plate.

3,192,072

METHOD OF PULLING A DENDRITIC CRYSTAL FROM A VAPOR ATMOSPHERE

Günther Ziegler, Erlangen, and Erhard Sirtl, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Dec. 1, 1961, Ser. No. 156,278
Claims priority, application Germany, Dec. 8, 1960, S 71,578
4 Claims. (Cl. 148—1.6)



1. A method of producing thin monocrystalline semiconductor bodies by thermal decomposition of a gaseous compound of the semiconductor substance and precipitation onto a carrier, which comprises placing a thin plate-shaped seed crystal, said seed crystal having a narrow edge, a broad surface and at least one twin plane extending parallel to its broad surface, into an atmosphere of a reaction mixture of the semiconductor substance, heating the narrow edge of said seed crystal to dissociation temperature of the reaction mixture while simultaneously cooling the reaction mixture in line with the twin plane of said narrow edge of said seed crystal between the heat source and said narrow edge, thereby producing a reaction zone at the narrow edge of said seed crystal causing semiconductor substance to precipitate on the narrow edge of said seed crystal, said seed being oriented so that said broad surface extends in the direction of the 111-plane and said narrow edge perpendicular to said broad surface extends in the 211-plane causing the rate of growth in the direction of the broad surface to be considerably greater than in the direction of said narrow edge, and pulling said seed out of said reaction zone at a rate corresponding to the semiconductor growth rate on the narrow edge.

3,192,073

METHOD OF MAKING OXIDATION RESISTANT AND DUCTILE IRON BASE ALUMINUM ALLOYS

Walter E. Jominy, Detroit, and Amedee Roy, Ferndale, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

No Drawing. Original application Apr. 26, 1957, Ser. No. 655,191, now Patent No. 3,059,326, dated Oct. 23, 1962. Divided and this application Apr. 17, 1961, Ser. No. 103,257
12 Claims. (Cl. 148—3)

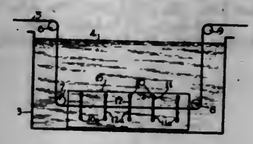
1. A process for producing ferrous base products capable of substantial resistance to oxidation and scaling upon exposure to high temperatures in the order of 1600° F. to 2400° F. comprising casting a metal body consisting essentially of iron and aluminum in solid solution, said body having a substantially uniform aluminum concentration throughout between 3% to 12% by weight of said body and said body being cold workable at room temperature, coating the surface of said body with metal consisting essentially of aluminum and heating said aluminum coated body to increase the aluminum concentration of the iron-aluminum at such surface.

3,192,074

METHOD OF APPLYING A CHEMICAL CONVERSION COATING SOLUTION TO A METAL SURFACE

Nelson J. Newhard, Jr., Oreland, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corportion of Delaware

Filed Sept. 4, 1962, Ser. No. 221,111
5 Claims. (Cl. 148—6.14)



1. In the art of applying a chemical conversion coating solution to the surface of metal; the method which comprises submerging a spraying means in a bath of the conversion coating solution, submerging the metal in the bath adjacent said submerged spraying means, and spraying solution through said spraying means against the surface of the metal while it is submerged.

3,192,075

PHOSPHATE TREATMENT COMPOSITION FOR IRON AND STEEL PRODUCTS

Albert L. Kimmel, Leawood, Kans., assignor to Marsh Steel & Aluminum Co., North Kansas City, Mo., a corporation of Missouri

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,685
4 Claims. (Cl. 148—6.16)

1. A composition for treating the surface of a ferrous product consisting essentially of the combination of, calculated as percent by weight, from about 40% to approximately 42% phosphoric acid (85% grade), from about 0.2% to approximately 0.3% manganese phosphate, from about 0.24% to approximately 0.3% of a sodium alkyl aryl sulfonate compound wherein the alkyl group has a side chain containing from 1 to 10 carbon atoms and the aryl group is selected from benzene and naphthalene radicals, about 0.02% of red chromic acid and sufficient water to bring the total amount of ingredients to 100%.

3,192,076
WELDING FLUX
John T. Ballass and Bernard J. Freedman, Groton, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 28, 1961, Ser. No. 127,485
4 Claims. (Cl. 148—26)

1. A welding flux consisting essentially of, by weight, about 2 to 24% lithium fluoride, 5 to 20% calcium fluoride, up to 30% aluminum oxide, up to 20% manganese oxide, up to 10% magnesium oxide, and the balance being essentially silicon dioxide and calcium oxide in the approximate weight ratio of silicon dioxide to calcium oxide within the range of about 4:1 to about 1:1.

3,192,077
WELDING FLUX
John T. Ballass and Bernard J. Freedman, Groton, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 23, 1962, Ser. No. 196,875
3 Claims. (Cl. 148—26)

1. A welding flux consisting essentially of, by weight from 17 to 40% sodium fluoride, 5 to 20% aluminum oxide, 5 to 15% manganese oxide, and the balance being essentially silicon dioxide and calcium oxide in the approximate weight ratio of silicon dioxide to calcium oxide of 2:1.

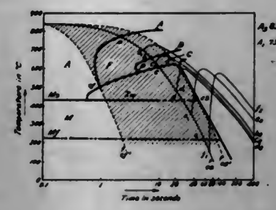
3,192,078
METHOD OF MAKING MAGNETIC CORES HAVING RECTANGULAR HYSTERESIS LOOPS BY BOMBARDMENT WITH ELECTRONS
Daniel I. Gordon, Chevy Chase, and Robert S. Sery, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 30, 1963, Ser. No. 334,675
3 Claims. (Cl. 148—100)
(Granted under Title 35, U.S. Code (1952), sec. 266)



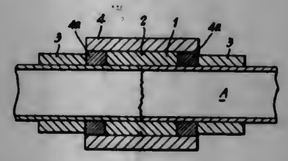
1. A method of treating an alloy having high magnetic permeability consisting of
continuously bombarding said alloy with a beam of electrons of at least 0.5 mev. to an integrated electron flux in an amount sufficient to cause the alloy to exhibit a substantially rectangular hysteresis loop, and
cooling the alloy during the bombardment to maintain the temperature of the alloy below its ordering temperature.

3,192,079
ARC WELDING METHOD
Otomaro Takagi, Nishinomiya, and Shigeru Nishi and Kazuhisa Suzuki, Kobe, Japan, assignors to Shin-Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Apr. 3, 1962, Ser. No. 184,783
Claims priority, application Japan, Dec. 30, 1961, 36/48,344
8 Claims. (Cl. 148—127)

1. In an arc welding method in which a preceding ferrous base metal deposit is welded in a welding groove and thereafter has a succeeding ferrous base deposit metal welded thereon, the steps of cooling the preceding ferrous base deposit metal at a cooling rate within normalizing conditions for the preceding ferrous base deposit metal, and performing the step of welding the succeeding ferrous base deposit metal on said preceding ferrous base deposit metal at a point in time when the preceding ferrous base deposit metal has cooled to a temperature between the temperature at which martensite begins to form in said preceding ferrous base deposit metal and the temperature at which martensite stops forming in said preceding ferrous base deposit metal, to temper said preceding ferrous base deposit metal, whereby a ferrous base deposit metal is formed which is controlled in a metallurgical quality.



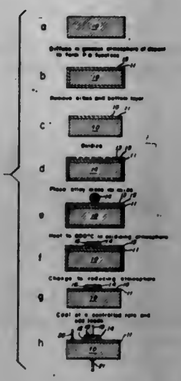
3,192,080
HEAT TREATMENT OF WELDS
Christopher N. Cooper, Nechells, Birmingham, England, assignor to Kemwell A.G., Zug, Switzerland, a Swiss company
Filed Apr. 30, 1963, Ser. No. 276,914
Claims priority, application Great Britain, May 3, 1962, 17,061
10 Claims. (Cl. 148—127)



1. A method of heat-treating a weld joining two lengths of metal pipe which comprises locating, as a first sleeve round the weld area of the pipes, a body of an exothermic composition, locating at the ends of said sleeve sleeves of heat-insulating material which surround the pipe, locating at the outer ends of said heat-insulating sleeves secondary sleeves of an exothermic composition, igniting the first said sleeve and, by conduction of heat from the burning first sleeve igniting the secondary sleeves, and allowing the whole assembly of sleeves to remain in situ until cooled down.

3,192,081
METHOD OF FUSING MATERIAL AND THE LIKE
Theodore F. Cocca, Everett, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed July 20, 1961, Ser. No. 125,393
2 Claims. (Cl. 148—177)

1. The method of producing a P–N junction on a germanium semiconductive body which comprises the steps of oxidizing a germanium semiconductive body, placing a mass composed of 25 atomic percent germanium and 75 atomic percent indium on said oxidized body, heating to 600° C. in an oxidizing atmosphere, maintaining said temperature for at least 15 minutes, changing said atmosphere to a reducing one, maintaining said reducing atmosphere at a predetermined time and temperature to remove the oxide on said body and lowering the semiconductive surface temperature below 350° C. at a rate of 100° C. per hour, to form a substantially planar nonpenetrating P–N junction on said germanium semiconductor body.



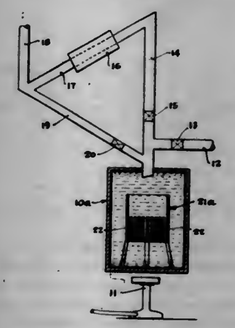
3,192,082
PROCESS FOR THE PRODUCTION OF npn OR pnp JUNCTION
Masami Tomono, Kitatama-gun, Tokyo-to, Shoji Tauchi, Fujisawa-shi, Kanagawa-ken, Hiroshi Kodera, Ota-ku, Tokyo-to, and Kogo Sato, Kitatama-gun, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Oct. 23, 1962, Ser. No. 232,504
1 Claim. (Cl. 148—172)

The method of making npn or pnp junctions, said method comprising:
preparing a melt of a semiconductive material, said melt containing a donor impurity and an acceptor impurity, one of said impurities having a greater diffusion constant than the other of said impurities, said donor impurity and said acceptor impurity being present in said melt in relative proportions such that one of said impurities determines the conductivity of a single crystal produced from the melt;
immersing the lowermost portion of a single crystal of the semiconductive material having an electrical conductivity of the type which corresponds to the conductivity determining type in said melt;
maintaining said melt at a temperature such that thermal equilibrium is established between said melt and said single crystal;
thereafter raising the temperature of said melt by 3 to 10° C. during an interval of not more than 20 seconds during which interval between about 0.2 and 0.5 millimeters of the single crystal is melted;
maintaining said melt and said crystal in thermal equilibrium with one another for about 20 to 30 seconds during which interval said donor impurity and said acceptor impurity diffuse from said melt into the freshly melted portion of said crystal;
and then cooling the furnace containing the melt at a rate of approximately 100° C. per minute, while concurrently resolidifying said freshly melted portion of said melt by pulling the single crystal from said melt so as to form an additional portion below said resolidified portion pulled from said melt on the emerging lower end of said crystal, said additional portion and said resolidified portion having opposite electrical conductivities from one another.

3,192,083
METHOD FOR CONTROLLING DONOR AND ACCEPTOR IMPURITIES ON GASEOUS VAPOR THROUGH THE USE OF HYDROGEN HALIDE GAS
Erhard Sirtl, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed May 15, 1962, Ser. No. 194,829
Claims priority, application Germany, May 16, 1961, S 73,980
6 Claims. (Cl. 148—175)

1. In the method of producing an electronic semiconductor crystal by pyrolytically precipitating and doping the semiconductor substance onto a heated carrier body from a reaction gas containing hydrogen, and a gaseous compound of the semiconductor substance, the steps of adding gaseous compounds of doping agents to the reaction gas, one of said doping agents having acceptor action and the other of said doping agents having donor action, maintaining the quantity of doping agents in the reaction gas substantially constant, adding a hydrogen-halide to said reaction gas containing doping agents for controlling the amount of deposition of the doping materials, the ratio of the quantity of doping agents with donor action to semiconductor substance precipitating in the same interval of time being considerably less dependent than the ratio of the quantity of doping agent with acceptor action upon the proportion of the hydrogen-halide to the reaction gas, and changing the conductance of the growing semiconductor crystal by varying the proportion of the reaction gas.

3,192,084
METHOD OF REMOVING MALLEABLE CORES FROM METALLIC TUBULAR MEMBERS
John V. Vaughen, Volusia County, Fla., and Albert H. Wilson, Jr., New Haven County, Conn., assignors, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 160,027
9 Claims. (Cl. 156—3)



1. In a process of making elongated metal cannulae including the steps of providing a length of metal tubing formed about a small diameter malleable metal core having an exposed surface area substantially less than said tubing within which said core is disposed and having different chemical properties from that of the said tubing, and removing said metal core from said tubing by chemically treating said tubing and core with a corrosive solution causing a gaseous reaction product having limited solubility in said solution to be formed within said tubing with said gaseous reaction product tending to remain within said tubing and to block further chemical reaction between said corrosive solution and said metal core, the improvement comprising; immersing a plurality of said elongated metal cannulae each having a malleable metal

core in a corrosive solution for said metal core within a pressure chamber and heating said corrosive solution in said chamber, effecting within said chamber periodic variations in pressure by closing said chamber against contact with the surrounding atmosphere, connecting the interior of said chamber with a source of super-atmospheric pressure through a pressure regulating means to provide within the interior of said chamber a predetermined super-atmospheric pressure and maintaining said predetermined super-atmospheric pressure within said chamber for a predetermined period, disconnecting the interior of said chamber from said source of super-atmospheric pressure whereupon the pressure in said chamber returns to normal atmospheric pressure and remains at normal atmospheric pressure until a super-atmospheric pressure is again applied, and periodically conveying from said chamber while said chamber remains at normal atmospheric pressure an accumulation of gases formed therein, and successively repeating said variations in pressure with intermittent removal of accumulation of said gases; thereby effecting removal of the metal core from an elongated length of metal tubing at an accelerated rate to provide a small diameter passage through said elongated metal tubing.

3,192,085
PROCESS OF MANUFACTURING IMITATION PERSIAN LAMB CLOTH AND MACHINE FOR PRODUCING THE SAME

Piotr Filippovich Sapilevsky, Moscow, U.S.S.R., assignor to Moscovsky Experimentalny Zavod iskoosstvennoi Kozhi e mekha, Moscow, U.S.S.R.

Filed Apr. 4, 1960, Ser. No. 23,874
17 Claims. (Cl. 156—72)



1. A method of producing imitation Persian lamb cloth comprising the steps of applying an adhesive to a fabric backing, untwisting the core threads of curled chenille, intermittently feeding separate lengths of said chenille, doffing coils from the core threads of said chenille, depositing and distributing said coils on said fabric backing and setting said adhesive and pressing said coils to said backing by heat and pressure applied to said backing and coils.

2. An apparatus for producing imitation Persian lamb cloth, said apparatus comprising a heated rotated cylinder, a pair of super-imposed conveyor belts engaging a portion of the periphery of said cylinder, means for feeding a fabric backing having an adhesive applied thereto between said belts and a chenille feeding conveyor for depositing chenille on said fabric backing, said pair of belts and said cylinder serving to apply heat and pressure to said chenille and adhesive to set said adhesive and secure said chenille to said fabric backing.

3,192,086
METHODS FOR MANUFACTURING MULTI-LAYERED MONOLITHIC CERAMIC BODIES

Warren J. Gyurk, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 16, 1960, Ser. No. 36,670
8 Claims. (Cl. 156—89)

1. A method for manufacturing a multilayer monolithic ceramic body which includes producing a plurality of individual dry thin films, each film comprising a mixture of finely divided solid substances which upon heating react to produce ceramic particles, and a heat volatile binder therefor,

depositing a thin coating comprising finely divided metal particles and a heat volatile binder therefor upon a predetermined portion of the surface less than the entire surface of at least two of said films,



stacking said plurality of said films upon one another with said coated portions of said films in registry with one above another,

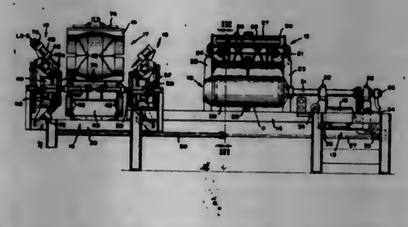
bonding said stacked films and said coatings into a laminate by the action of heat and pressure,

and then heating said laminate at a temperature sufficient to react said substances into ceramic particles and to sinter said ceramic particles and said metal particles into a monolithic ceramic body.

3,192,087
SEMIAUTOMATIC LINER INSERTING MACHINE AND METHOD

Myron James Close and John Vincent Vold, Eau Claire, Wis., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 9, 1961, Ser. No. 143,796
4 Claims. (Cl. 156—126)



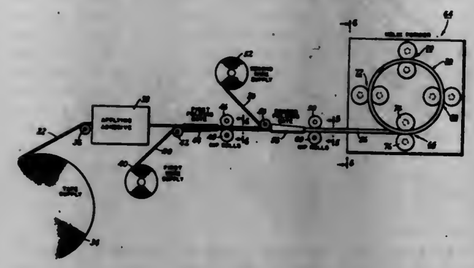
1. Apparatus for applying a liner to a tire carcass comprising an inflatable substantially cylindrical drum over which the liner and the carcass are adapted to be placed with the carcass surrounding the liner, means spaced radially from said drum for supporting the carcass, means including said drum for forcing the liner radially outwardly against the carcass to adhere the liner to the carcass, and means disposed adjacent an end of said drum and movable generally axially thereof and having an annular cutting edge movable over the liner to surround the liner, said drum being inflatable in the region of said cutting edge to force the liner against said cutting edge to cut the excess portion of the liner.

4. The method of applying a liner to a tire carcass comprising applying a liner over an inflatable drum, inflating the drum to press the liner against the inner wall of a tire carcass and against a cutting member to trim the excess portion of the liner and to adhere the excess portion of the liner to the cutting member, removing the cutting member with the excess portion of the liner adherent thereto, and further inflating the drum to press the liner against the bead portion of the tire carcass.

3,192,088
METHOD AND APPARATUS FOR CONTINUOUSLY FORMING REINFORCED FLEXIBLE HOSE

Romeo G. Lariviere, Amesbury, Mass., assignor to Callahan Mining Corporation, New York, N.Y., a corporation of Arizona

Filed May 6, 1963, Ser. No. 278,370
13 Claims. (Cl. 156—143)



1. The method of continuously forming flexible hose comprising the steps of:

(A) folding the leading and trailing lateral edges of a moving flexible tape about moving elongated stiffening members; and

(B) helically winding the tape with the leading folded edge of one tape helix overlapping the trailing folded edge of the next adjacent tape helix and with the stiffening members interlocking adjacent tape helixes together.

3,192,089
COMPOSITIONS FOR SIZING SILICEOUS FIBERS AND PROCESS

Harold A. Clark, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,839
6 Claims. (Cl. 156—166)

1. A homogeneous solution for sizing siliceous fibers to form strands suitable for application to the fibers before they are gathered into a strand, said solution being produced by mixing

(1) methoxysilanes of the general formula

$$(CH_3)_n(C_6H_5)_mSi(OCH_3)_{4-m-n}$$

where n has an average value of from 0.2 to 1.0, m has an average value of from 0.65 to 1.05 and the average value of $m+n$ is from 1.25 to 1.65, said methoxysilanes containing

(A) no more than 75 mol percent phenyltrimethoxysilane,

(B) no more than 15 mol percent dimethyldimethoxysilane,

(C) no more than 35 mol percent methyltrimethoxysilane, and

(D) from 25 to 65 mol percent methoxysilanes of the general formula $(C_6H_5)RSi(OCH_3)_2$, wherein R is selected from the group consisting of phenyl and methyl radicals, there being no more than 10 mol percent diphenydimethoxysilane with

(2) sufficient water to obtain an organosilicon solids concentration of from 2 to 10 percent by weight based upon the total weight of the solution.

3,192,090
METHOD OF MAKING NOZZLE STRUCTURES

Bruno A. Serafinas, Saugus, and John E. Searle, Jr., Marblehead, Mass., assignors to United-Carr Incorporated, a corporation of Delaware

Original application Jan. 2, 1962, Ser. No. 163,600. Divided and this application Sept. 24, 1962, Ser. No. 225,680
2 Claims. (Cl. 156—217)

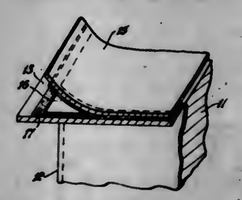


1. A method of making a nozzle structure including the steps of molding a head section having a central aperture and a base portion having a central aperture, each of said portions joined by an integral narrow connection and being in substantially spaced apart relation, forcing the head portion toward the base portion by utilizing the connection as a hinge, thereby placing the axis of the aperture of the head portion in angular relationship with the aperture of the base portion.

3,192,091
METHOD OF SEALING A CONTAINER

Arie Hey, Etten, Johannes Brouwer, Pijnacker, and Alexander Benjamin Ottow, Rotterdam, Netherlands, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Aug. 1, 1960, Ser. No. 46,421
Claims priority, application Great Britain, Aug. 13, 1959, 27,715/59
3 Claims. (Cl. 156—247)



1. The method of making a hermetically-sealed container from two complementary container parts of thermoplastic material said container parts having opposed faces to be bonded together, which comprises applying to at least one of said opposed faces a layer of bonding material comprising a mixture of a thermoplastic adhesive and a particulate filler selected from the group consisting of chalk, asbestos, silica, diatomaceous earth, mica, kaolin, bentonite and precipitated calcium carbonate coated with a calcium salt of a fatty acid, said filler being present in an amount of about 0.2 to 1.0 part by weight for each part of thermoplastic adhesive, and heating and pressing said faces against said layer to weld said faces to said layer, said filler weakening said layer to cause said layer to cleave within itself when forces are applied to said parts to pull them apart with one portion of the layer being on one opened part and with the remaining portion of the layer being on the other opened part, the bonding layer and complementary container parts being compatible so that the layer is integrally welded to the parts when heat and pressure is applied thereto.

3,192,092
BONDING TECHNIQUE
Harold Schonborn, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 9, 1962, Ser. No. 208,537
6 Claims. (Cl. 156—308)



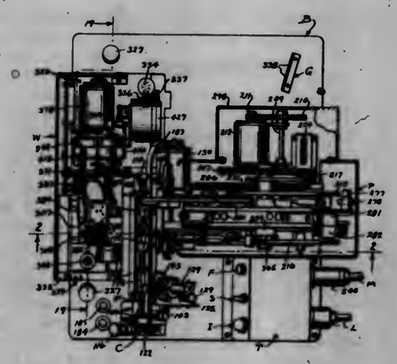
1. The method of forming a seal between a metal body and a polyolefin which comprises the steps of dipping said metal body through the surface of an oriented compressed layer of monomolecular thickness consisting essentially of an amphipathic material selected from the group consisting of:

(a) compounds represented by the general formula $x(CH_2)_{12-22}COOY$ wherein x is selected from the group consisting of CH_3 and COOR radicals, R represents an alkyl group and wherein Y is selected from the group consisting of metals and hydrogen, and

(b) compounds represented by the general formula $CH_3(CH_2)_{12-25}—X$ wherein Z is selected from the group consisting of amine, sulfate, phosphate and phosphonate radicals,

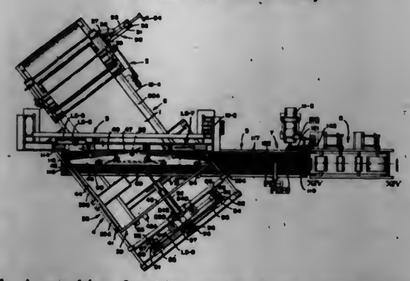
withdrawing said metal body, placing said polyolefin thereon and heating the resultant assembly at a temperature within the range of 125–205° C. for a time period within the range of 1–20 minutes, thereby forming a seal between said metal body and said polyolefin.

3,192,093
AUTOMATIC LABELING MACHINE
Frederic S. Tobey, Walpole, Mass., assignor to W. H. Brady Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 21, 1959, Ser. No. 847,739
11 Claims. (Cl. 156—350)



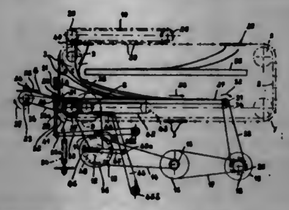
5. A wrapping device for applying an adherable label to the peripheral surface of an object, and comprising a support member for said object; and a wiping blade having a label-contacting wiping surface and being positioned transversely relative to said object, said object and said blade being arranged for relative rotational wiping contact with one another; and rotational drive means operatively arranged to provide said rotative relative motion.

3,192,094
AUTOMATIC BIAS CUTTING AND SPLICING MACHINE
Philip A. Phillips and Clarence M. Parshall, Detroit, Lester M. Symons, Southfield, and Norman T. Kehoe, Detroit, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 20, 1960, Ser. No. 23,500
22 Claims. (Cl. 156—353)



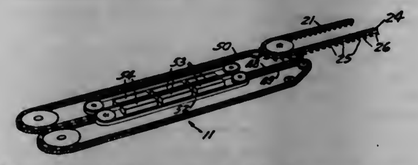
1. A machine for bias cutting a tire fabric comprising: fabric feeding means including a fabric let-off unit adapted to receive and unwind the fabric to be cut, and a fabric pull-out unit carried by said fabric feeding means and constructed and arranged to intermittently withdraw predetermined lengths of fabric from said fabric let-off unit; fabric cutting means having its cutting axis disposed at an angle to the longitudinal axis of said feeding means for cutting said fabric at a bias angle; pivotal means pivotally locating said fabric feeding means with respect to said fabric cutting means such that pivotal movement of said fabric feeding means effects a change in the angle of the bias-cut; and cutting angle adjusting means operatively connected to said fabric feeding means for pivoting said fabric feeding means with respect to said cutting means to vary the angle of the cut.

3,192,095
MACHINE FOR PRODUCING BAGS OF PLASTIC MATERIAL
Léon Doyen and Louis Doyen, both of 79 Rue de Bourgogne, Lyon, France
Filed Aug. 6, 1962, Ser. No. 214,951
Claims priority, application France, Aug. 9, 1961, 41,798, Patent 1,290,056
5 Claims. (Cl. 156—510)



1. An automatic machine for producing a succession of bags out of a continuous elongated sheath of plastic material, said machine comprising a support, a mechanism driving the sheath intermittently with forward movement by successive lengths equal each to one bag length to lay said successive lengths over a section of said support extending beyond a predetermined stationary location, an endless main chain adapted to move over a path passing through said predetermined location, a succession of jaws carried by said main chain and equally spaced therealong, common means driving the sheath-driving mechanism and the main chain in timed relationship such that the passages of the successive jaws in registry with said predetermined location coincides with the intervals between the intermittent forward movements of said sheath-driving mechanism, means adapted to open transiently the successive jaws as they pass through said predetermined location and through a further point of the path of the chain respectively to ensure a clamping of the rear end of the sheath at said predetermined point and its release at said further location, a stationary cutter facing a point of the sheath lying just ahead of said predetermined location between the sheath-driving mechanism and the last-mentioned point, a reciprocatory counter blade controlled by said common means and urging the sheath during the intervals between its forward movements and after it has been clamped by a jaw on the chain into engagement with the cutter to cut off the forward section of the sheath clamped by said jaw and lying beyond the predetermined location, an auxiliary endless moving chain extending along a path part of which registers with a part of the path of the main chain extending between the predetermined location and said further point, means constraining the two chains to progress at the same speed along the registering parts of their paths, a plurality of heating means carried by the second chain with a spacing equal to that of the jaws on the main chain and adapted to register with corresponding jaws during their travel over said part of the path of the auxiliary chain to close through welding the rear ends of the cut sheath sections projecting beyond said corresponding jaws, and means collecting the bags formed by said closing of the cut sheath sections.

3,192,096
CONVEYING AND SEALING APPARATUS
Wallace R. Rhine, New Richmond, Wis., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed July 16, 1962, Ser. No. 209,937
10 Claims. (Cl. 156—583)



9. Apparatus for receiving and conveying film-type material,

comprising a supporting structure,

a plurality of sprockets on the supporting structure,

an elongate endless carrier chain trained around said sprockets in a continuous path, said path having a linear portion defining a linear run in the chain,

a plurality of substantially rigid film-impaling and conveying needles each secured to a respective link of the chain and having tapered and pointed outer ends projecting from the chain and outwardly of the continuous path,

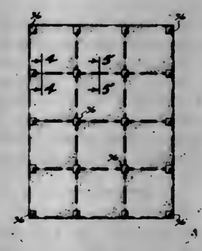
means producing impaling of the film by the needles of the chain and thereby mounting the film on the chain for movement along said run,

a pair of elongate and endless chain conveyors in continuous paths and having linear runs disposed in closely spaced and confronting film-gripping relation with each other and defining a film passage therebetween, one of said chain conveyors being disposed in overlapping juxtaposed relation with said one end of the run of said carrier chain, and said passage extending along and in substantial alignment with said one end of the run in said carreir chain,

means moving said carrier chain and said chain conveyors in predetermined and identical speeds and directions along said runs to thereby cause gripping by the chain conveyors of the film supplied into the passage by the carrier chain and continued linear movement of the film and removal of the film from the needles as the needles are withdrawn and moved with said carrier chain around the sprocket at said one end of the carrier chain run,

and heat-sealing means in juxtaposed relation with the passage and in endwise alignment with the carrier chain run to produce sealing of the film material conveyed and thermal-plasticizing closure of the needle-produced apertures in the film.

3,192,097
CERAMIC WALL TILE ASSEMBLY
Ira A. Abernethy, Canton, Ohio, assignor to United States Ceramic Tile Company, Canton, Ohio, a corporation of Delaware
Filed June 3, 1960, Ser. No. 33,664
2 Claims. (Cl. 161—38)



1. A tile assembly comprising a plurality of ceramic tiles positioned in contacting edge-to-edge relationship, each of said tiles having a back surface, a front surface and edge surfaces, the front surfaces of said tiles positioned within said assembly to face in a common direction, a thin coating of a cured contact-type adhesive material cured in situ upon the back and edge surfaces of each said tile proximate to the intersection of adjacent edge surfaces of the tile; the remainder of said back and edge surfaces of each tile being substantially uncoated with said contact-type adhesive, said contact-type adhesive coating consisting of an adhesive material which will adhere only to a surface coated with a similar contact-type adhesive material and being of a thickness to permit the adjacent uncoated edge surfaces of adjoining ceramic tiles within the tile assembly to be maintained substantially co-extensive with one another, and a common strip of flexible material connecting each of said ceramic tiles to each adjacent tile solely through the adhesion of said cured contact-type adhesive on the back surfaces of said tiles to said common strip of flexible material, said flexible material being relatively small compared to the total back surface area of any one of said tiles and extending over and adhering to only the portions of the back surfaces of said tiles which are coated with said contact-type adhesive; the flexible material being coated at least on one side with a contact-type adhesive which will adhere only to said contact-type adhesive which is coated and cured on the back and edge surfaces of said tiles.

3,192,098
ROUGH-COAT PLASTER PANEL
James T. Phillips, 500 Park Ave., Kenilworth, Ill.
Filed Dec. 8, 1958, Ser. No. 778,898
1 Claim. (Cl. 161—41)

A factory-produced, dehydrated, exposed, rough-coat plaster panel ready for transport to a building site for anchoring to building studding to form an interior wall

subject to a later on-the-job application of the finish plaster coating, comprising

(a) a foundation component of stable material approximately three-eighths of an inch thickness and not less than four feet square in planar dimension, mounting

(b) a layer of a mixture of gypsum and an aggregate in proportions conventional for rough-coat plaster



of a thickness approximating that of the foundation component overlaid on one face of the foundation component, and dehydrated to a condition possessing a hardness unalterable by the application of moisture, and exposing a rough surface comparable to that of conventional "brown" coat plaster applied to lath, and such as will permit anchoring thereto an on-the-job overlay of conventional finish plaster.

3,192,099

FURNITURE PANEL

Ronald Beckman, New York, and Frederick J. Foyster, Brooklyn, N.Y., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan

Filed Jan. 3, 1963, Ser. No. 249,230
7 Claims. (Cl. 161—43)



1. A rigid furniture panel comprising: a rigid core formed of a series of recurrent elongated folds of a sandwich laminated from a pair of bendable enclosing sheets and an intermediate rigid plastic foam bent on spaced creases; and an enclosing envelope of reinforced sheet material enveloping said core and bonded to said core at the ends of said folds, integrating the assembly into a rigid panel.

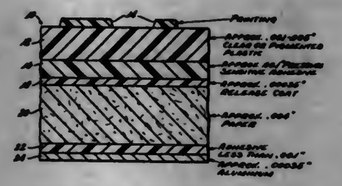
3,192,100

FLEXIBLE CURL-FREE LAMINATE WITH PRESSURE SENSITIVE ADHESIVE BACKING

Burton D. Morgan, Hudson, Ohio, assignor to Morgan Adhesives Company, Stow, Ohio, a corporation of Ohio

Filed Nov. 1, 1960, Ser. No. 66,486
3 Claims. (Cl. 161—165)

3. In a laminate having a surface material compatible to receive silk-screen printing on the outer surface and a pressure sensitive adhesive layer on the inner surface the combination of a layer of release material, incompatible with the adhesive layer, applied to the underside of the adhesive layer, a layer of paper between about .002" and about .005" thick applied to the underside of the release material, a layer of adhesive applied to the underside of the paper, a layer of metal foil applied to the underside of the last-named layer of adhesive, said foil being less than about one-fourth the thickness of the paper, said layer of foil preventing the passage of moisture to the paper of thereby prevent curling of the paper before the



paper is removed, and said layer of metal foil greatly increasing the deadening properties of the laminate so that it will lay flat during printing.

3,192,101

SAFETY GLASS

Jack Leonard Koenig, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,764
8 Claims. (Cl. 161—199)

5. A thermochromic safety glass laminate comprising two panes of glass separated from each other by means of a plasticized polyvinyl butyral interlayer, said interlayer containing a cobalt amine complex selected from the class of complexes having the formula $Co(R^1)_6X_2$ and $Co(R^2)_3X_3$, where R^1 is a unidentate amine ligand selected from the class consisting of pyridine, quinoline, chloropyridine, isoquinoline, piperidine, and piperazine; R^2 is a bidentate amine ligand selected from the class consisting of hexamethylene tetramine, 2,2-bipyridine, and quinoline diethylcyclohexyl amine; and X is an anion of the class consisting of chloride, bromide, iodide, nitrate, sulfate, and perchlorate.

6. The thermochromic safety glass laminate of claim 5 in which the plasticized polyvinyl butyral interlayer contains 20 to 50 parts plasticizer per 100 parts by weight of interlayer.

3,192,102

PULPING PROCESS

William J. Nolan, 1029 NE. 23rd Blvd., Gainesville, Fla.

No Drawing. Filed Aug. 15, 1962, Ser. No. 216,969
The portion of the term of the patent subsequent to Sept. 15, 1976, has been disclaimed
19 Claims. (Cl. 162—24)

1. A process for converting chips of a cellulose fiber-bearing material, such as wood, into a pulp product, which consists of the steps:

subdividing green chips of fiber-bearing materials having a moisture content of from about 20% to about 50% by shredding the chips along the grain to produce a shredded product consisting of particles of which (1) a substantial proportion have at least one transverse dimension in excess of about 1.65 mm. and no transverse dimension greater than about 6.7 mm., (2) not more than about 5% have no transverse dimensions in excess of about 1.65 mm., and (3) at least 25% have at least one transverse dimension in excess of about 6.7 mm., the lengthwise dimensions of the chips being substantially the same as the original chips;

digesting the shredded product by applying thereto a digesting liquor and heating the particles and the digesting liquor to the digesting temperature as quickly as possible and holding the mixture at the digesting temperature for the period of time required to produce a pulp of the desired characteristics.

3,192,103

METHOD OF COMBATING NEMATODES

Anthony A. Sousa, Raleigh, N.C., and Henry C. Chitwood and John A. Durden, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 17, 1962, Ser. No. 188,232
32 Claims. (Cl. 167—33)

1. The method of combating nematodes which comprises applying to the soil a composition which contains, as an active nematocidal ingredient in quantities toxic to said nematodes a member of the group consisting of, di-substituted 1,2,4-oxadiazole and di-substituted 1,3,4-oxadiazole having each organic substituent monovalently bonded to a carbon atom of the oxadiazole nucleus through a carbon atom of the substituent, and wherein both substituents monovalently bonded to the oxadiazole nucleus are selected from the group consisting of alkyl containing up to 18 carbon atoms, aryl, alkaryl containing up to 12 carbon atoms, aralkyl containing up to 18 carbon atoms, cycloalkyl containing from 3 to 7 ring carbon atoms, heterocyclic containing up to 18 carbon atoms and from 5 to 6 atoms in the heterocyclic nucleus and alkenyl containing up to 18 carbon atoms; and at least one of said substituents is halogen substituted.

3,192,104

FUNGICIDAL COMPOSITIONS COMPRISING CHLOROPHENOL MERCURY COMPOUNDS AND TETRAALKYLTHIURAM SULFIDE COMPOUNDS STABILIZED WITH AMINES

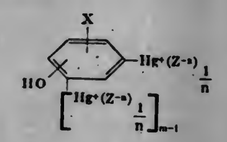
Harris M. Baker, Glen Farms, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 1, 1960, Ser. No. 33,081
3 Claims. (Cl. 167—42)

1. A fungicidal composition comprising, in admixture,

(A) a tetraalkylthiuram sulfide selected from the group consisting of tetramethylthiuram monosulfide, tetramethylthiuram disulfide, tetraethylthiuram monosulfide, and tetraethylthiuram disulfide,

(B) a water-insoluble phenol mercury compound having the formula



where

X is selected from the group consisting of hydrogen, chlorine, bromine, hydroxyl, and lower alkyl having 1–3 carbons;

m is a whole number of less than 3;

n is a whole number of less than 4; and

Z is a negative radical selected from the group consisting of hydroxyl, halide, acetate, carbonate, sulfate, phosphate, propionate and lactate;

(C) a compound selected from the group consisting of hexamethylenetetramine, cyanamide and trilower alkanolamines; and

(D) a solid water-soluble inorganic base selected from the group consisting of sodium hydroxide, calcium hydroxide, calcium oxide, potassium hydroxide, sodium carbonate, and potassium carbonate;

said tetraalkylthiuram sulfide compound being present in a proportion of from 1:1 to 30:1 to the phenol mercury compound, the compound of (C) being present in the composition in a proportion of from 0.05:1 to 10:1 to the phenol mercury compound, and the compound of (D) being present in the composition in an amount of at least a molar equivalency of said phenol mercury compound, said composition having no more than 5% water present.

3,192,105

ALPHA-CHLOROACETOPHENONE COMPOSITIONS, THEIR PREPARATION AND USE

Austin M. Wortley, Jr., Devon, and Barry Rothman, Malvern, Pa., assignors to Penguin Associates, Inc., Malvern, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,115
3 Claims. (Cl. 167—47)

1. A mixture useful as a lachrymator in cartridges, grenades, and the like, said mixture being in the form of a free-flowing mass of fine particles capable of being poured into a tear gas device in measured quantities and comprising alkaline colloidal silica, 2-CN impregnated in said alkaline colloidal silica to give a mixture thereof, said mixture comprising agglomerates having a particle size substantially in the range of 1 to 10 microns, said mixture being alkaline to counteract the acidity of the 2-CN and thereby inhibit acid attack on said cartridges, grenades, and the like, said alkaline colloidal silica and said 2-CN forming a reaction product during storage because of the acidity of the 2-CN and the alkalinity of said alkaline colloidal silica, said reaction product being such that it does not enlarge the particle size and does not affect the anti-caking properties of said mixture, thus giving said mixture a prolonged shelf life.

3,192,106

GAS MIXTURES CONTAINING NITROUS OXIDE

Arthur Bracken and Colin C. Wilton-Davies, London, England, assignors to The British Oxygen Company Limited, a company of Great Britain

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,301
Claims priority, application Great Britain, Aug. 15, 1961, 29,417/61
15 Claims. (Cl. 167—52)

12. As an article of manufacture, a pressurized dispensing container within which is a homogeneous gaseous medium comprising up to 75% by volume of nitrous oxide in admixture with oxygen, the partial pressure of nitrous oxide being greater than 50 ats.

3,192,107

FEED COMPOSITIONS CONTAINING PARA-AMINO-METHYL-BENZENE-SULFONAMIDE AND METHOD OF USING SAME

Clarence Walter Whitmoyer, James Ross Wiley, and Timothy Scott Chang, Myerstown, Pa., assignors, by mesne assignments, to Whitmoyer Laboratories, Inc., a corporation of Delaware

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,030
Claims priority, application Great Britain, Dec. 12, 1961, 44,394/61
12 Claims. (Cl. 167—53)

1. A feed composition for promoting the growth of swine which comprises a mixture of a feed nutritionally adequate per se for normal growth of the swine and 0.005% to 0.5% of a compound selected from the class consisting of para-amino-methyl-benzene-sulfonamide and the salts thereof.

3,192,108

ANTHELMINTIC COMPOSITIONS AND METHOD OF USING SAME

Horace D. Brown, Plainfield, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application July 27, 1961, Ser. No. 127,146. Divided and this application Aug. 24, 1962, Ser. No. 219,109
6 Claims. (Cl. 167—53)

1. An anthelmintic composition comprising an animal feed having distributed therein as an active anthelmintic agent 2-(o-halophenyl)benzimidazole in a concentration sufficient to provide a daily intake of from about 5 mg. to about 70 mg. of said benzimidazole per kilogram of

animal body weight, the halo radical of said benzimidazole having an atomic weight of between 19 and 35.5 inclusive.

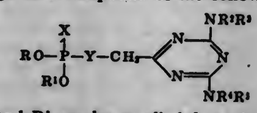
3,192,109

METHOD FOR CONTROLLING INSECTS AND HELMINTHS WITH TRIAZINYL COMPOUNDS

Robert L. Goulding, Jr., Corvallis, Oreg., and Carl R. Tanner, Lafayette, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,217
10 Claims. (Cl. 167—53)

2. A method for controlling insects and helminths attacking domestic warm-blooded animals, which comprises introducing into the body of the animal a chemotherapeutic dosage of a compound of the following formula:



wherein R and R^1 are lower alkyl from 1 to 6 carbons, R^2, R^3, R^4 and R^5 are selected from the group consisting of hydrogen and lower alkyl of from 1 to 6 carbons, and X and Y are chalcogen of atomic number of 8 to 16.

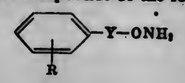
3,192,110

THERAPEUTIC ARYL AND THIENYL HYDROXYLAMINES

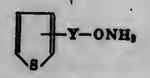
John H. Biel and Jerry E. Robertson, both of Milwaukee, Wis., assignors to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed Apr. 24, 1962, Ser. No. 189,722
8 Claims. (Cl. 167—65)

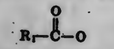
1. A pharmaceutical composition in unit dosage form comprising from 25 to 1000 mgm. of a member of the group consisting of compounds of the formula



and



wherein R is at least one member of the group consisting of hydrogen, hydroxy, halogen, trifluoromethyl, lower alkoxy, lower alkylenedioxy, nitro and



wherein R_1 is a member of the group consisting of lower alkyl, phenyl and phenyl-lower alkyl, and Y is lower alkylene having at least two carbons, and a pharmaceutical diluent.

3,192,111

METHOD OF INDUCING THERAPEUTIC TRANQUILIZATION WITH PSILOCYBIN AND PSILOCIN

Albert Hofmann, Bottmingen, Basel-Land, Arthur Brack, Riehen, near Basel, and Hans Kobel, Basel, Switzerland, and Roger Heim, Paris, and Roger Cailleux, Pavillons-sous-Bois, France, assignors to Sandoz Ltd. (a/k/a Sandoz A.G.), Basel, Switzerland

No Drawing. Original application Feb. 16, 1959, Ser. No. 793,234. Divided and this application May 14, 1962, Ser. No. 194,707
Claims priority, application Switzerland, Feb. 21, 1958, 56,143; July 30, 1958, 62,393
2 Claims. (Cl. 167—65)

2. The method of inducing therapeutic tranquilization, which comprises administering to a patient a therapeutically effective amount of crystalline psilocybin.

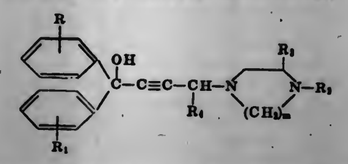
3,192,112

ANTISECRETORY, ANALGETIC, MUSCLE RELAXANT DIARYL PIPERAZINE DERIVATIVES

John H. Biel, Milwaukee, Wis., assignor to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed Nov. 14, 1962, Ser. No. 237,723
13 Claims. (Cl. 167—65)

1. The method of treating an animal to induce antisecretory, analgetic and muscle relaxant effects which comprises administering to the animal a pharmaceutically effective nontoxic amount of a member selected from the group consisting of a compound of the formula



and pharmaceutically acceptable acid addition salts thereof, wherein R and R_1 are members of the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and halo-lower alkyl, R_2 is a member of the group consisting of hydrogen, lower alkyl, phenyl-lower alkyl and trityl, R_3 is a member of the group consisting of hydrogen and lower alkyl, R_4 is a member of the group consisting of hydrogen and lower alkyl, and *m* is an integer from 2 to 3.

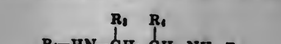
3,192,113

N,N'-DIALKYLENEDIAMINES AS ANTITUBERCULAR AGENTS

John Pusbegy Thomas, Westwood, and Raymond George Wilkinson, Montvale, N.J., Gunnar Sigurd Redin, New City, N.Y., and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,052
6 Claims. (Cl. 167—65)

1. The method of treating *Mycobacterium tuberculosis* infections in animals which consists in administering orally in dosage unit form from 10 mg. to 750 mg. per kgm. of body weight per day of an ethylenediamine selected from the group consisting of a compound of the formula:



wherein R_1 and R_2 are each lower alkyl of from 3 to 8 carbon atoms, and R_3 and R_4 are selected from the group consisting of hydrogen and methyl, and its non-toxic acid-addition salts.

3,192,114

PREPARATIONS WITH PROTRACTED ACTH-EFFECT

Knut Bertil Hogberg and Ove Birger Ferno, Halsingborg, Sweden, assignors to Aktiebolaget Leo, Halsingborg, Sweden

Claims priority, application Denmark, June 21, 1952, 1,963/52
No Drawing. Filed June 17, 1953, Ser. No. 362,402
13 Claims. (Cl. 167—74)

1. A preparation with protracted ACTH-effect, consisting of a reaction product of a substance selected from the group consisting of ACTH and ACTH-peptides, with a high-molecular, organic condensation product, said condensation product containing polyhydric acid radicals selected from the group consisting of phosphoric acid, thiophosphoric acid, and sulphuric acid, interconnected through polyvalent atoms of reactive groups of aromatic compounds selected from the class consisting of

(1) mono-, di-, and polynuclear aromatic compounds carrying at least two reactive groups in meta-position at the same nucleus,

(2) mono-, di-, and polynuclear aromatic compounds carrying at least two reactive groups in para-position at the same nucleus, and

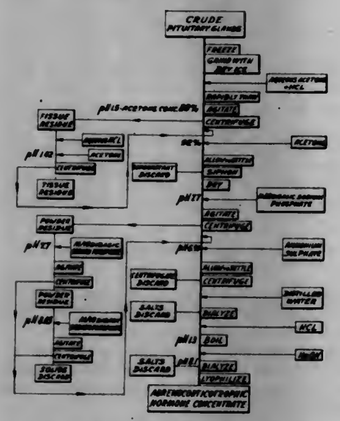
(3) di- and polynuclear aromatic compounds carrying at least two reactive groups at different nuclei, said reactive groups, being members of the class consisting of —OH, —SH and —NH_2 groups, and the linkings to said polyhydric acid being through the polyvalent atoms of said reactive groups, the said condensation product being soluble in water at alkaline pH, and having a molecular weight of at least 2,000, said reaction product showing in aqueous solution an ACTH-active component, the migration of which during electro-phoresis differs from that of ACTH and ACTH-peptides.

3,192,115

PROCESS FOR PREPARING ADRENAL GLAND STIMULATING SUBSTANCE

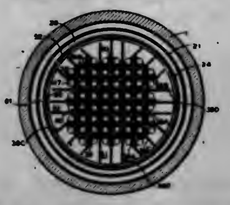
Joseph D. Fisher, Chicago Heights, Ill., assignor, by mesne assignments, to Armour Pharmaceutical Company, a corporation of Delaware

Filed Jan. 30, 1957, Ser. No. 637,168
12 Claims. (Cl. 167—74)


CRUDE PITUITARY GLANDS
EXTRACT
ADJUST TO pH 1.5 WITH HCl
CENTRIFUGE
ADJUST
CENTRIFUGE
ADJUST
CENTRIFUGE
ADJUST

through said second member to the gripping jaws, whereby a component is withdrawn from a nuclear reactor into said casing.

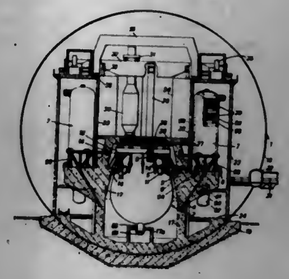
3,192,120
NUCLEAR REACTOR CORE CONSTRUCTION
John W. Campbell, London, England, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain
Filed Mar. 29, 1961, Ser. No. 99,205
1 Claim. (Cl. 176—50)



A nuclear reactor of the heterogeneous liquid-moderated type comprising a number of rows of vertically extending spaced fuel element chambers forming a core, a number of rows of vertically extending control rods of cruciform shape positioned between said fuel chambers, each of said rods having a plurality of longitudinal ribs extending radially outward from a common center into the spaces between said fuel element chambers, a horizontally extending upper support disposed above said core and a horizontally extending lower support disposed below said core to support and space said fuel element chambers, said upper and lower supports each comprising two sets of parallel grid members extending transversely of said control rods, the grid members of each of said sets arranged in the same equally spaced relationship to one another and extending perpendicular to and interconnected with the grid members of the other said set, the grid members of each of said sets disposed at substantially a 45 degree angle with the ribs of said control rods, the grid members of each of said sets dividing said upper and lower supports into a number of compartments each having the same substantially uniform cross-sectional area and shape and the diagonals of which are substantilly parallel to the ribs of said control rods, and vertically extending tubes connected to and in axial alignment with the vertical axes of said grid members, said tubes being substantially co-axial with said fuel element chambers for conducting coolant into and out of said fuel element chambers.

3,192,121
NUCLEAR REACTOR SYSTEMS
Ronald Scott Challender, Warrington, John Michael Laithwaite, Wilmslow, William Thexton Lawton, Sale, and Jack Jones Griffiths, St. Anns, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Nov. 1, 1961, Ser. No. 149,451
Claims priority, application Great Britain, Nov. 2, 1960, 37,741/60
10 Claims. (Cl. 176—60)

1. A reactor system comprising, in combination: a spheroidal-shaped pressure vessel, a reactor core support structure contained within the pressure vessel, a reactor core carried by the core support structure, a heat exchanger external the pressure vessel, co-axial ducts disposed in a horizontal plane and inter-connecting the upper region of pressure vessel and heat exchanger to define inner and outer paths for coolant flow therebetween, support means for the heat exchanger allowing movement of the heat exchanger along the horizontal plane of the ducts, means for circulating a pressurised coolant in closed circuit through the reactor core and heat exchanger by way of said inner and outer paths, a base support structure disposed about the exterior of the pressure vessel, a series of struts disposed about the pressure vessel and extending upwards from the base support structure, a pressure vessel support member carried by the upper ends of the struts, a first series of hangers depending from connection points on the pressure vessel support member to connect with the pressure vessel in the horizontal plane of the ducts, the struts and the first series of hangers being thermally matched so as to maintain the plane of the ducts constant in relation to the base support structure with temperature changes in the system, a second series of hangers disposed within the pressure vessel and depending from connection points also within the plane of the ducts, and means connecting the lower ends of the second series of hangers with the core support structure.

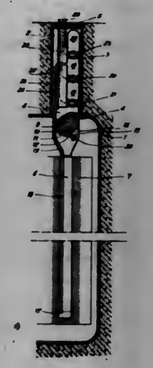


3,192,122
FUEL ELEMENT FOR A NUCLEAR REACTOR HAVING STACK OF THIN FUEL WAFERS SUBMERGED IN LIQUID METAL
Le Roy R. Kelman, Naperville, and Owen L. Krueger, Westmont, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 9, 1964, Ser. No. 350,623
3 Claims. (Cl. 176—72)



1. A fuel element for a liquid-metal-cooled nuclear reactor consisting of a stack of contiguous thin wafers of a material fissionable by neutrons of thermal energy wherein the wafers are less than six mils in thickness and thin enough to permit diffusion of fission gases to free surfaces in the element, a metal jacket having a hole in the top thereof surrounding the stack of wafers, and a liquid metal bonding agent in said jacket.

3,192,123
NUCLEAR REACTOR CONTROL DEVICE
Didier Costes, Paris, and Jacques Lebey, Viroflay, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed July 25, 1963, Ser. No. 297,572
Claims priority, application France, July 27, 1962, 905,340; June 25, 1963, 939,216
12 Claims. (Cl. 176—86)



1. Nuclear reactor control device comprising a vertical channel in the reactor core subjected to a pressure equal to the pressure in the fuel channels, a reservoir located at a level above the level of the vertical channel adapted to receive neutron-absorbing material in divided form, valve means between the reservoir and the channel comprising a stationary seat, a closure member, means responsive to the difference between the pressure in the vertical channel and an adjustable pressure in the reservoir for holding said closure member on said seat and a system for returning the divided material from the channel to the reservoir, said system comprising a vertical tube which dips down as far as the base of the vertical channel and which is connected at its top end to a chamber disposed above the reservoir, such chamber being connected thereto by way of a lock having two valves, first means being provided to control that of the last-mentioned two valves which is disposed between such chamber and such lock, second means being provided to control that of the last-mentioned two valves which is disposed between the lock and the reservoir, and third means being provided to adjust the air pressure in such chamber to an appropriate value below the value in the vertical channel.

3,192,124
METHOD OF MAKING PHAGE RESISTANT BACTERIAL CULTURE MEDIUM
Saeed Kheshgi, Glenview, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,743
5 Claims. (Cl. 195—102)

1. A method of making an improved phage-resistant bacterial culture medium, which method comprises reducing the calcium ion content of skim milk to not more than about 30 parts per million parts of skim milk by ion exchange, and substantially uniformly distributing potassium and magnesium ions in the milk at the following levels, expressed as percent by weight of decalcified skim milk:

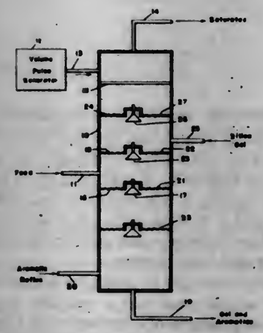
	Percent
Potassium	0.0017–1.73
Magnesium	0.0001–0.039

3,192,125
APPARATUS FOR DEOILING WAX
Robert E. Sparks and Stephen F. Perry, both of Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 1, 1961, Ser. No. 128,522
8 Claims. (Cl. 196—14.5)



1. Apparatus for removing oil from waxy oil droplets which comprises in combination: (a) a vertical cylindrical vessel, (b) means for introducing waxy oil into said vessel, (c) means for introducing solvent into said vessel, (d) a plurality of spaced baffles on alternate sides of said vessel throughout its height, said baffles extending less than all the way across said vessel, (f) a plurality of paddles connected to a central shaft and located between each set of two baffles, said paddles having three blades, the blades being spaced approximately equidistant apart, the outer edge of said blades being in constant contact with the interior walls of said vessel and the lower edge of each blade being located so as to make continuous contact with the baffle immediately below it.

3,192,126
PULSED ADSORBER
James Van Dyck Fear, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Oct. 23, 1961, Ser. No. 146,861
1 Claim. (Cl. 196—46)

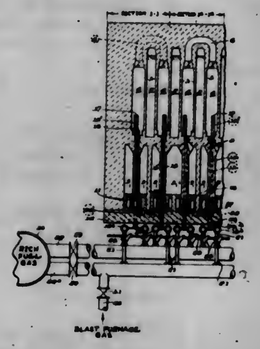


An apparatus for contacting liquids and granular solids which comprises a vertical column in combination with (a) solid inlet means near the top;

(b) solid-liquid outlet means near the bottom;
(c) liquid feed inlet means to at least one hereinafter specified contacting zone at a locust intermeidate the solid inlet and solid-liquid outlet means;
(d) liquid outlet means at the uppermost locus; and
(e) means for alternately reverising the direction of liquid flow within the column so that liquid flows alternately up and down the column

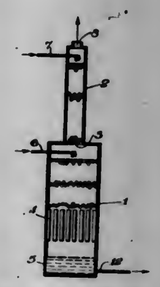
said column additionally having internally positioned intermediate the solid inlet and solid-liquid outlet means a plurality of vertically spaced perforate baffles defining a series of contacting zones, each of said zones being totally enclosed by a pair of adjacent baffles and the wall of said column; baffles comprising substantially horizontally foraminous trays each of which contains an approximately centrally disposed check valve; said tray being adapted to permit upward passage of solely liquid therethrough, to permit downward passage of liquid therethrough, and to permit downward passage of solid therethrough only through said check valve and only when said direction reversing means causes liquid flow down the column.

3,192,127
COKING RETORT OVEN FIRING METHOD
Joseph van Ackeren and Edward J. Helm, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Apr. 13, 1961, Ser. No. 102,808
7 Claims. (Cl. 202—12)



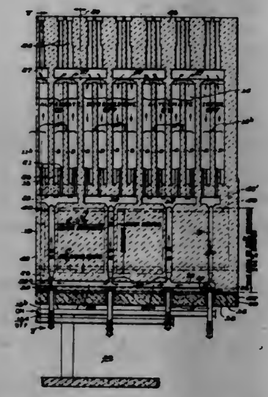
1. A method for underfiring a regenerative coke oven battery by means of high and low burners in vertical flues alongside coking chambers, comprising the steps of:
(a) mixing externally of said coke oven battery a lean fuel gas having a low heating value with a rich fuel gas having a heating value of at least 500 B.t.u. per cubic foot to form a first portion of a final gas mixture for said high burners;
(b) mixing internally of said coke oven battery a quantity of said first gas with a quantity of gas including the waste products of combustion of said battery and forming said final gas mixture having a heating value within the range of 170 to 350 B.t.u. per cubic foot of said final gas mixture; and
(c) delivering said final gas mixture to said high burners while concurrently and separately delivering a fuel gas to said low burners.

3,192,128
PROCESS FOR PURIFYING AQUEOUS HYDROCHLORIC ACID
Franz Brandmair and Ernst Kolbe, Frankfurt am Main, and Werner Kunzer, Ludwigshafen-Friesenheim, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed July 3, 1962, Ser. No. 207,227
Claims priority, application Germany, July 11, 1961, F 34,398
4 Claims. (Cl. 202—46)



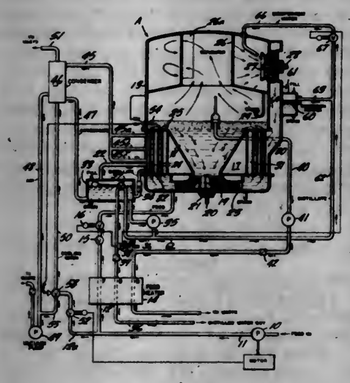
1. A process for purifying contaminated aqueous hydrochloric acid, said acid being of at least 30 percent concentration and containing dissolved or suspended volatile contamination, said purifying being conducted without substantial loss of acid concentration comprising:
(a) introducing the contaminated aqueous hydrochloric acid in a distributed state into a first purification zone at the top thereof and conducting said contaminated aqueous hydrochloric acid downwardly through said first zone,
(b) heating said acid as it is conducted downwardly toward the base of said first purification zone to evaporate the contamination and a portion of the hydrochloric acid, whereby the hydrogen chloride vapors and the evaporated contamination rise through said first purification zone,
(c) collecting the remaining purified hydrochloric acid which is conducted completely through said first purification zone at the base thereof,
(d) passing the hydrogen chloride vapors and the evaporated contamination upwardly from said first purification zone into the base of a second purification zone located directly over and in communication with said first purification zone, whereby the hydrogen chloride vapors and the evaporated contamination pass upwardly through said second purification zone,
(e) introducing a stream of hot water into the top of the second purification zone and passing the stream of water countercurrently to the upwardly rising hydrogen chloride vapors and the evaporated contamination, whereby the stream of water partially evaporates to form steam which picks up the evaporated contamination while the hydrogen chloride vapors are absorbed by the remaining water,
(f) passing the steam and the contamination out of said second purification zone, and
(g) returning the water containing the absorbed hydrogen chloride vapors to the top of the first purification zone and combining therein with the acid to be purified.

3,192,129
RECIRCULATION UNDERJET COKING RETORT OVEN
Joseph Becker, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 149,156
3 Claims. (Cl. 202—143)



1. A regeneratively heated underjet coke oven battery comprising:
(a) an upper silica masonry mass mounted on a lower concrete pad supported by subjacent means and forming an accessible basement undereneath said pad for access in regulation of said battery;
(b) a series of alternate and intermediate horizontal coking chambers, and alternate and intermediate heating walls in the upper portion of the silica masonry mass, each of said heating walls being constituted of heating flues of the double hairpin flue type with the flues disposed in successive alternate and intermediate groups of four flues each, of which the flow is in the same direction in all flues of a group, and in which the flues of one adjoining pair of two adjacent groups are on while the flues of the other adjoining pair of adjacent groups are off, all of the on flues in a wall forming one set, the off flues forming a second set;
(c) a series of alternate and intermediate regenerators separated by pillar walls arranged in the lower portion of the silica masonry mass below the coking chambers and heating walls and above the aforesaid concrete pad, the alternate regenerators forming one set, the intermediate regenerators forming a second set, each set of regenerators being communicably connected at their tops with the flues of one of the two sets thereof;
(d) a set of horizontal distribution channels for each of the two sets of heating flues, each channel being connected solely to the flues of one of said groups of flues alongside the different regions of the coking chambers with each channel being located below the bottom of the flame flues in the brickwork at the tops of the regenerator walls;
(e) individual riser ducts extending from the horizontal channels upward to the base of each of the flame flues;
(f) two sets of riser brick conduits extending from the top of the concrete pad on which the regenerators rest upward to the horizontal channels through the regenerator walls, with each riser brick conduit of each set connected to and constituting sole means of supply for non-regeneratively preheated fuel gas to a separate one of the horizontal distribution channels;
(g) a single continuous recirculation duct located in the base of the silica brick regenerator pillar walls interconnecting all of the riser conduits for all the groups in a single heating wall;
(h) a metal riser pipe extending through a passageway in the concrete mat in axial alignment with each one of said riser brick conduits and interconnected with the silica brickwork for axially aligned movement in unison with their brick riser conduits as the brickwork expands;
(i) each of the metal riser pipes having an adjustable nozzle therein accessible from the basement space and at the region of juncture of the waste gas recirculation duct with the rich gas riser brick conduits, for discharge of rich gas in calibrated amounts in the form of a jet to induce a flow of waste gas through the recirculation ducts to the riser brick conduits; and
(j) two sets of rich fuel gas branch conduits in the basement space with feed connections to the rich gas riser metal pipes of the two sets thereof respectively, with the adjacent pairs of adjoining groups of four flues each in each heating wall which are served by different horizontal distribution channels and riser conduits being interconnected at their tops by bus flues to form the two limbs of the double hairpin flues.

3,192,130
FORCED CIRCULATION EVAPORATOR
John E. Pottharst, Jr., New Orleans, La. (408 Northline, Metairie, La.)
Filed Feb. 8, 1960, Ser. No. 7,374
5 Claims. (Cl. 202—160)



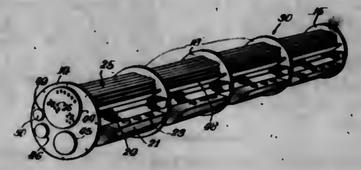
1. A distillation apparatus comprising a housing defining a vaporization chamber therein, said vaporization chamber including an upper vapor region and a lower liquid region, means defining a downtake passage in the liquid region of the vaporization chamber, a plurality of liquid passages defined by heat exchange surfaces surrounding the downtake passage, means circulating the liquid downwardly through the downtake passage and upwardly through passages defined by the heat exchange surfaces, a vapor chest surrounding the downtake passage and in communication with the heat exchange surfaces defining the liquid passages, a duct for introducing the evolved vapor into the vapor chest, whereby the vapor travels around the downtake passage in either direction, and a port for withdrawing the condensate from the vapor chest, said port being located substantially diametrically opposite the discharge end of the duct which introduces the vapor into the vapor chest, the downtake passage being offset from the center of the housing toward the port which removes the distillate from the vapor chest and

away from the discharge end of the duct which introduces vapor into the vapor chest, and having walls which together with the walls of the housing, define the vapor chest to have an effective vertical cross-sectional area which gradually diminishes on both sides of the downtake passage from said duct to said port whereby the effective cross-sectional area of both of the passages through the vapor chest around the downtake passage gradually diminishes.

3,192,131
MULTI-STAGE FLASH EVAPORATOR WITH REMOVABLE STAGES

Frederick A. Loebel and Gordon F. Leitner, Milwaukee, Wis., assignors to Aqua-Chem, Inc., a corporation of Wisconsin

Filed June 20, 1960, Ser. No. 37,115
12 Claims. (Cl. 202—173)

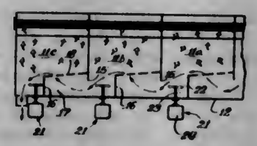


1. In a multi-stage evaporator provided with an elongated tubular shell having an open end, an assembly arranged to be removably installed in said shell, said assembly comprising an end wall arranged to extend across the open end of the shell, a partition wall arranged to extend across the interior of the shell intermediate the ends of the shell to define a pair of longitudinally related flash chambers in the shell, means for conducting fluid to be flashed successively through said flash chambers, a tube bundle extending successively through said walls for conducting coolant therein through said flash chambers, means for conducting distillate successively from said flash chambers, means for sealingly, readily removably supporting said partition wall in the shell, and means for sealingly, readily removably supporting said end wall on the open end of the shell.

3,192,132
APPARATUS FOR CONDUCTING FEED THROUGH FLASH EVAPORATORS

Frederick A. Loebel, Milwaukee, Wis., assignor to Aqua-Chem, Inc., a corporation of Wisconsin

Filed June 20, 1960, Ser. No. 37,116
3 Claims. (Cl. 202—173)

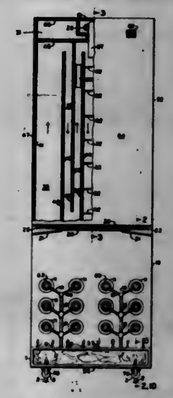


1. In a multi-stage evaporator, flash chamber structure comprising: means defining a first flash chamber; means defining a second flash chamber adjacent said first flash chamber; means defining a passage for conducting liquid from a bottom portion of the first flash chamber to a bottom portion of the second flash chamber; and means for effectively maximizing the amount of the liquid exposed at the upper surface thereof in said chambers and concurrently urging the liquid positively through said passage from said first flash chamber to said second flash chamber, said last-named means including a fluid impeller disposed closely adjacent said passage.

3,192,133
DEVICES FOR SOLAR DISTILLATION

Oswald T. Adamec, Mount Vernon, N.Y.
(32 Union Square, New York 3, N.Y.)

Filed Aug. 27, 1958, Ser. No. 757,595
12 Claims. (Cl. 202—234)

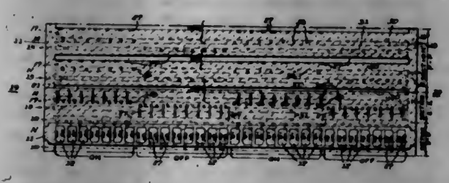


1. A structural slab for transmitting solar energy therethrough comprising a cored slab, a thin layer of asphalt with a high mineral content to increase the thermal conductivity of said asphalt, said layer of asphalt being spread on top of said slab for absorbing solar energy and transmitting heat to said cored slab, the coring of said slab providing interconnected substantially parallel passages and a plurality of rib portions in the slab, the passages being connected at their ends to provide a continuously downwardly sloping surface extending back and forth through the slab, and the slab having areas of reduced thickness between the rib portions, the rib portions being formed below the asphalt layer and extending downwardly from walls of the passages and into the passages.

3,192,134
HIGH AND LOW BURNER GUN FLUE COKE OVEN WITH WASTE GAS RECIRCULATION AND DECARBONIZING AIR

Daniel W. Bennett, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Oct. 19, 1961, Ser. No. 146,229
4 Claims. (Cl. 202—241)



2. In a coking retort oven, a horizontal heating wall constituted of two sets of vertical combustion flues each operable in alternation with the other for upflow combustion and downflow of combustion products, said flues each having a regenerator air inlet port at its bottom for inflow of regeneratively preheated air thereto from a regenerator and for outflow of waste gases of combustion from the flue to said regenerator, a pair of horizontal rich fuel gas gun flues operable in alternation with each other for inflow of rich fuel gas, said gun flues extending lengthwise of the heating wall at the bottom of said flues, with rich fuel gas riser ducts leading from one of the two gun flues to the bottoms of the flues of one set, and with rich fuel gas riser ducts leading from the other of the two gun flues to the bottoms of the flues of the other set, a waste gas recirculation duct at each of the opposite ends of the horizontal heating walls, said waste gas recirculation ducts connecting each one of the gun flues with a regenerator, one flue with a regenerator operable for inflow of air and outflow of waste gas in alternation with the off and on operation of the gun flue, and the other flue with a different regenerator operable for outflow of waste gas and air inflow in alternation with the on and off operation of the other gun flue.

3,192,135
METHOD OF MAKING A CONDUCTING PLUG TARGET

Charles D. Robbins, Stamford, Conn., assignor to Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut

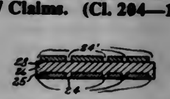
Filed Jan. 26, 1962, Ser. No. 169,020
3 Claims. (Cl. 204—11)

1. The method of making a conducting plug target comprising coating one side of a conductive metal mesh with an aluminum film, anodizing said film to render it dielectric, mounting a continuous metal backing on the opposite surface of the mesh, electrodepositing conductive metal into the openings in the film and mesh, and thereafter removing the metal backing and mesh.

3,192,136
METHOD OF PREPARING PRECISION SCREENS

Gilbert R. Reid, Camden, N.J., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 14, 1962, Ser. No. 223,701
7 Claims. (Cl. 204—11)



1. The method of preparing precision screens and masks which comprises:
(a) coating a substrate having an electrically conductive surface with a first layer of photo resist material,
(b) developing a first image on said photo resist material and removing unexposed portions of said photo resist material from said substrate,
(c) electrodepositing a first layer of selectively etch-resistant first material on said substrate where said selected portions of said photo resist material have been removed,
(d) removing the remaining portion of said first layer of photo resist material,
(e) electroplating a selectively etchable second material on said etch-resistant material to completely cover said etch-resistant first material and that space previously occupied by said remaining portion of photo resist material removed hereinabove, said second material being selectively etchable with respect to said first material and to the third material mentioned hereinbelow,
(f) coating said etchable second material with a second layer of photo resist material,
(g) developing on said second layer of photo resist material in alignment with said first image, a second image corresponding to and coextensive in design and area with respect to said first image and removing the unexposed portions of photo resist material,
(h) electroplating as a second layer selectively etch-resistant third material on said etchable second material where said unexposed portions of photo resist material have been removed from said second layer of photo resist material,
(i) removing the remaining exposed portion of said second layer of photo resist, and
(j) etching said etchable second material with etching fluid to conjoin said first and second images.

3,192,137
METHOD OF MANUFACTURING EXTERNAL, ELECTRICALLY CONDUCTIVE NOBLE-METAL LAYERS ON NON-METALLIC, ELECTRICALLY NON-CONDUCTIVE SUPPORTS

Cornelis Johannes Dippel and Hendrik Jonker, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

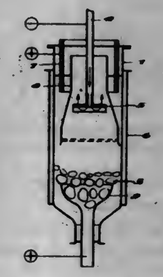
No Drawing. Filed July 11, 1960, Ser. No. 41,740
Claims priority, application Netherlands, July 27, 1959, 241,689
14 Claims. (Cl. 204—38)

1. A method of manufacturing external, electrically conductive noble-metal layers on non-metallic, electrically non-conductive, at least superficially hydrophilized supports, comprising the steps of activating the support surface by applying to this surface an aqueous solution of a compound capable of liberating mercury metal from a mercurous compound in the presence of moisture, said compound, capable of liberating mercury metal, being selected from the group consisting of compounds that reduce mercurous compounds to form free mercury metal and compounds that form free mercury metal from mercurous compounds by a disproportionating reaction, and an aqueous solution of a mercurous compound and a silver compound to thereby form a barely visible silver-amalgam layer on said non-metallic support, and then applying to this activated surface a solution of a noble-metal compound, and a reducing agent for the noble-metal compound, whereby a noble metal layer is formed on the support surface.

3,192,138
PROCESS FOR THE PRODUCTION OF HYDRIDES AND/OR HALOGENATED HYDRIDES OF THE ELEMENTS BORON AND SILICON

Eduard Eak and Julius Nickl, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany

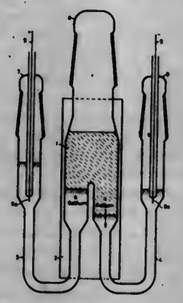
Filed July 5, 1960, Ser. No. 40,871
Claims priority, application Germany, July 7, 1959, W 25,962
6 Claims. (Cl. 204—61)



1. A process for the production of a hydrogen containing compound of an element selected from the group consisting of silicon and boron which comprises passing a current between an anode selected from the group consisting of elemental boron and silicon anodes and a cathod through a fused salt bath having a melting point of

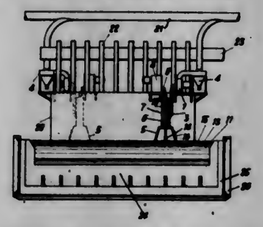
up to 400° C. containing alkali metal halides and supplying hydrogen to the face of at least one of the electrodes during the passage of such current.

3,192,139
METHOD FOR PRODUCING HYPERPURE GALLIUM
Hans Merkel, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed Apr. 19, 1961, Ser. No. 116,214
Claims priority, application Germany, Apr. 21, 1960, S 68,144
6 Claims. (Cl. 204—64)



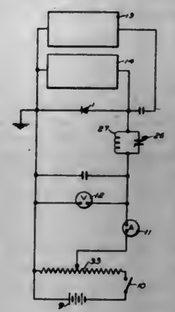
1. The method of producing hyperpure gallium by electrolysis of a fused bath of electrolyte which comprises using gallium(II)-halides of the group consisting of chlorine, bromine and iodine as said electrolyte, said gallium(II)-halide being pre-purified by zone-pulling and using liquid gallium metal as electrodes.

3,192,140
REMOVAL, BY SUCTION, OF ANODIC GASES FORMED IN ELECTROLYTIC CELLS EMPLOYED FOR ALUMINUM PRODUCTION
Guglielmo Zorzenoni, Mori, Trento, Italy, assignor to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy
Filed June 26, 1961, Ser. No. 119,461
Claims priority, application Italy, June 27, 1960, 11,388/60
2 Claims. (Cl. 204—67)



1. In a process of making aluminum by electrolytic reduction of aluminum oxide in a molten salt bath, in which a carbon anode surface is immersed, gas comprising an oxide of carbon forming in said process, and also a crust of solidified bath forming above the bath, the gas collecting in a space under the crust; the improvement comprising oscillatingly drilling a hole in said crust and applying suction directly through said hole to said space sufficiently to lower the pressure at said hole to below atmospheric pressure so as to prevent formation of a cushion of said gas against and beneath the surface of said anode, while the electrolysis is going on.

3,192,141
SIMULTANEOUS ETCHING AND MONITORING OF SEMICONDUCTOR BODIES
John J. Fry, Bethlehem, and Carl C. Gingrich, Jr., Emmaus, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 24, 1959, Ser. No. 861,795
3 Claims. (Cl. 204—143)

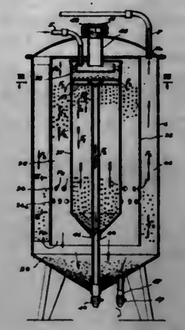


1. The method of etching a semiconductor body having a PN junction to remove shorting material from said junction and simultaneously monitoring the effect of the etching on said body, which method comprises the steps of immersing and maintaining the body in an etching bath in such a manner that the junction is in contact with the etchant, applying a D.C. voltage of a magnitude substantially equal to the reverse breakdown voltage of the junction across said junction in the reverse direction to etch the body in the region of said junction, simultaneously applying a substantially lower voltage, high frequency A.C. signal across the junction, the frequency of said signal being of a value such that the ionic carriers in the etchant do not respond thereto whereas the carriers in the semiconductor body do respond thereto, recording the high frequency response to the junction on an indicating means, and discontinuing the etching on occurrence of a indication of a sharp voltage breakdown in the reverse direction.

3,192,142
PROCESS AND DEVICE FOR PREPARING DRINKING WATER FROM INSALUBRIOUS CRUDE WATER
Jean Léon Justin Vellas and Lorenzo Casanovas Puig, Toulouse, Haute-Garonne, France, assignors to Societe d'Etude et de Diffusion de Procedes et Brevets S.A., Geneva, Switzerland, a company of Switzerland
Filed June 14, 1960, Ser. No. 36,069
Claims priority, application France June 16, 1959, 797,647, Patent 1,230,728
5 Claims. (Cl. 204—149)

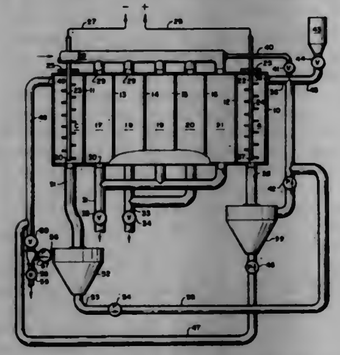
1. The method of purifying crude water in a circulating system to produce water suitable for drinking, comprising the successive steps of
passing the circulating crude water in contact with electrode means supplied with a pulsating low-voltage direct current to initiate coagulation of the impurities contained therein;
continuously circulating the electrically-treated water in a closed precipitating tank full of water and having a capacity at least equal to the hourly delivery rate of the crude water to effect flocculation and separation of the impurities contained in the water, filtering the water;
charging the filtered water with a small amount of silver ions by means of a low voltage pulsating current acting on at least one silver anode; and

introducing the ionized water into a settling tank having a capacity at least equal to one fourth of the hourly delivery rate of the crude water and causing



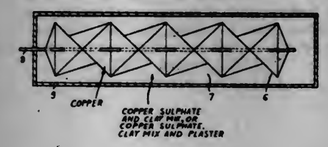
the water to remain in the tank for a period sufficient to effect complete sterilization by said silver ions.

3,192,143
ELECTRODIALYTIC DEMINERALIZATION OF WATER
David K. Roe, Albany, and Justin C. Dygert, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 28, 1962, Ser. No. 206,068
12 Claims. (Cl. 204—151)



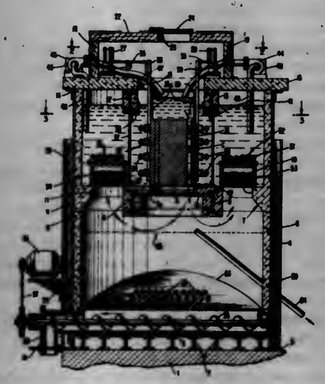
1. The electrodialytic process for demineralizing water which comprises the steps of:
(a) flowing a current of water containing ionized mineral salt through an electrodialysis cell bounded by pervious ion-exchange membranes,
(b) establishing an electric potential between an anode and a cathode which are situated in separate, respectively anodic and cathodic flow zones having electrolytic contact with said membranes and thereby causing electro-migration of ions of said mineral salt through the membranes and into said flow zones,
(c) flowing through the anodic flow zone in contact with said anode an anolyte containing a liquid in which ionization of inorganic salts occurs and a subdivided substance which is electro-chemically oxidizable to form an intermediary salt with the anion of said mineral salt and therein forming said intermediary salt by electro-chemical oxidation of said substance,
(d) transferring the said intermediary salt to and flowing it through the cathodic flow zone together with a liquid in which ionization of inorganic salts occurs and in contact with said cathode, therein reforming the said ionized mineral salt and the said substance by electro-chemical reduction of the said substance, and discharging the reformed materials from the cathodic flow zone, and
(e) discharging water of reduced mineral content from said cell.

3,192,144
REFERENCE ELECTRODES FOR USE IN CATHODIC PROTECTION SYSTEMS
Bernard Marie Louis Heuze, Paris, France, assignor to Societe d'Etudes Contre la Corrosion (S.E.C.C.O.), Paris, France, a corporation of France
Filed June 4, 1964, Ser. No. 372,555
Claims priority, application France, Apr. 8, 1960, 824,099
11 Claims. (Cl. 204—195)



1. A constant-potential reference electrode for use in cathodic protection systems, comprising a copper core embedded in a solid electrolytic mixture, said mixture consisting of 30 to 70% by volume of powdered copper sulphate and 70 to 30% by volume of clay.

3,192,145
APPARATUS FOR THE ELECTROLYTIC PRODUCTION OF HIGH-PURITY IRON
Frank E. Smith, 2016 Belle Ave., Lakewood, Ohio
Original application Sept. 17, 1959, Ser. No. 840,712, now Patent No. 3,118,826, dated Jan. 21, 1964. Divided and this application July 17, 1961, Ser. No. 124,722
22 Claims. (Cl. 204—234)



2. In an electrolytic cell for the production of high-purity iron, a tank, partition means in said tank dividing the same into an upper and a lower compartment, means in said upper compartment defining first and second chambers, means supporting a pair of electrodes in closely-spaced relation within said first chamber, and means operable to positively and uniformly circulate elec-

trolyte between the spaced faces of the electrodes, to said lower compartment and said second chamber in succession.

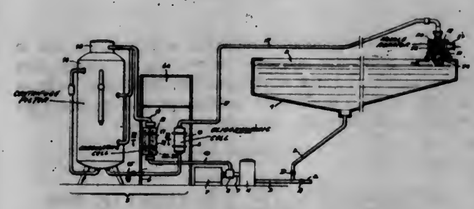
5. An electrolytic cell for the production of high-purity iron comprising a tank, a partition dividing said tank into upper and lower compartments, a pair of spaced parallel generally-vertical panels positioned in said upper compartment and dividing the same into a central section and two side sections, there being apertures in said partition into each said section, pump means operable to continuously and controllably circulate electrolyte from said lower compartment, upwardly into each said side section thence into said central section and downwardly to said lower compartment.

3,192,146

EQUIPMENT FOR PURIFICATION AND STERILIZATION OF SWIMMING POOL WATERS

Jean Léon Justin Vellas and Lorenzo Casanovas Puig, Toulouse, Haute-Garonne, France, assignors to Societe d'Etude et de Diffusion de Procedes et Brevets S.A., Geneva, Switzerland, a company of Switzerland

Filed June 14, 1960, Ser. No. 36,060
Claims priority, application France, June 17, 1959, 797,765, Patent 1,227,164
4 Claims. (Cl. 204—240)



1. Apparatus for purifying, sterilizing and oxygenating water in a continuously circulating swimming pool system, comprising in series

coagulating means for coagulating impurities contained in the water, said coagulating means including a container having an inlet and an outlet connected with said system, a plurality of flat electrodes arranged in said container parallel with the flow of water between said inlet and outlet, and means supplying a low-voltage pulsating direct current to said electrodes;

centrifuging means for separating from the water the flocculate produced by said coagulating means, said centrifuging means including top, bottom and cylindrical side walls cooperating to define a chamber, said cylindrical wall having a vertical axis, and means connected with said coagulating means for introducing the electrically treated water tangentially into said chamber, said bottom wall containing a central outlet;

filter means arranged below and in communication with the outlet of said centrifuging means for filtering impurities from the water;

sterilizing means connected to receive the filtered water from said filter means and operable to add silver ions thereto, said sterilizing means including at least one silver anode, and means for supplying low-voltage pulsating direct current to said silver anode;

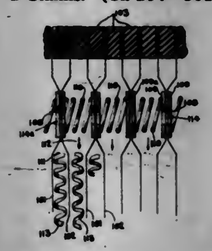
and static air mixing means connected with said sterilizing means for oxidizing the ionized filtered water and for discharging the same into said swimming pool.

3,192,147

MULTI-CELL ELECTRODIALYZING APPARATUS

Bernard Lucien Falet and Arend Hubregt de Haas van Dorsser, The Hague, and Gerrit Floris van der Stoep, Rijswijk, Netherlands, assignors to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten Behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands

Filed Aug. 23, 1956, Ser. No. 605,813
Claims priority, application Great Britain, Aug. 25, 1955, 24,473/55
2 Claims. (Cl. 204—301)



1. A multi-cell electrodialyzing apparatus comprising a plurality of alternately arranged anion permeable and cation permeable membranes, gaskets of deformable material around the edge of each membrane, forming a membrane and gasket stack, four conduits, two for dialysate and two for rinse liquids formed within the membranes of said membrane and gasket stack by a series of four registering holes in said membranes in cooperation with ring members and resilient spaces between alternate series of membranes and around said holes to separate the membrane stack into alternate concentrating and diluting cells interconnected alternately with said two dialysate and said two rinse liquid conduits, a rigid end plate at each end of said membrane stack, dialysate and rinse liquid connections to said dialysate and rinse liquid conduits in said membrane stack, a plurality of rigid frame-like intermediate plates positioned between two of said deformable gaskets and interposed between each set of between about 20 and 50 membranes, said intermediate plates extending outside the membrane and gasket stack, rigid tracks outside said membrane and gasket stack and outside said rigid intermediate plates, means on said rigid intermediate plates to cooperate with the slide along said rigid tracks whereby said rigid intermediate plates are kept in alignment and said membrane and gasket stack can be compressed by moving said end plates toward each other without bowing of said membrane and gasket stack, means to prevent passage of electric current from said rigid intermediate plates to said rigid tracks, some of said rigid intermediate plates having means to bar the passage of liquid through at least two of said conduits to adjacent anion permeable and cation permeable membranes, said liquid-impermeable rigid intermediate plates dividing said membrane stack into at least two cell units having dialysate and rinse liquid connections to each of said cell units, an anode electrode at one end of said apparatus, a cathode electrode at the other end of said apparatus and means to pass a dialyzing electric current through such apparatus between said electrodes.

3,192,148

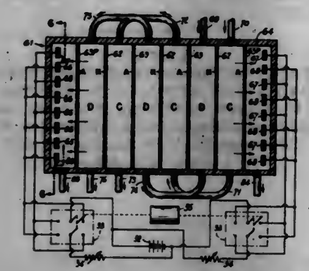
ELECTRODIALYSIS APPARATUS FOR FLUID TREATMENT

William Kwo-Wei Chen, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Continuation of application Ser. No. 93,572, Mar. 6, 1961. This application Oct. 23, 1962, Ser. No. 233,200
20 Claims. (Cl. 204—301)

1. An electrochemical fluid treatment device comprising at least one membrane which defines fluid paths in a

container between electrodes, first, second and third electrodes, the second and third electrodes being in proximity to one another and spaced from the first electrode, means for supplying current to the electrodes so that the second and third electrodes are of opposite polarities,



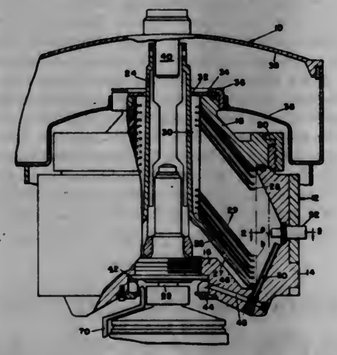
means for reversing the polarities of the second and third electrodes while maintaining the first electrode fixed in polarity, and means for maintaining that one of the second and third electrodes which at any time is of the same polarity as the first electrode weaker in polarity than the other of said second and third electrodes.

3,192,149

SEPARATION OF COMPONENTS OF LIQUID-SOLIDS MIXTURES

Frederick W. Keith, Jr., Gladwyne, Pa., assignor to Pennsalt Chemicals Corporation, a corporation of Pennsylvania

Filed Oct. 19, 1961, Ser. No. 146,268
11 Claims. (Cl. 208—28)



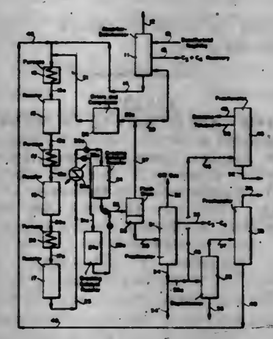
1. In the dewaxing of hydrocarbon oil, the process comprising the steps of introducing the oil in mixture with the wax solids and a second liquid heavier than the mixture and not miscible therewith to a zone of centrifugation whereby the heavier liquid forms a layer and displaces inwardly the oil and wax solids and the oil is displaced inwardly by a layer of the wax solids, causing a rapid shallow localized flow of the heavier liquid immediately radially outward of the layer of wax solids and in a direction substantially tangential to the layer of wax solids, causing an outward spilling of the heavier liquid within the zone immediately adjacent the localized flow to agitate the wax solids in the layer of wax solids adjacent the area of the spilling to cause the wax solids to release a portion of their retained oil, and permitting discharge separately of the oil and the heavier liquid, the latter including entrained wax solids.

3,192,150

HYDROFORMING PROCESS WITH THE HYDROCRACKING OF THE PRODUCTS TO PRODUCE A HIGH OCTANE GASOLINE

William F. Taylor, Scotch Plains, and Louis Dauber, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,842
5 Claims. (Cl. 208—62)



1. A process for increasing the isopentane and benzene contents of hydroformed gasoline and for producing maximum L.P.G., which comprises introducing a naphtha into a catalytic hydroforming zone maintained under hydroforming conditions, passing the total effluent containing hydrogen from said hydroforming zone into a catalytic hydrocracking zone containing a dehydrogenation activity-free acid type cracking catalyst under hydrocracking conditions to produce a hydrocracked product containing a maximum of benzene, isopentane and L.P.G., passing the hydrocracked product to a flash zone to separate hydrogen-rich gases from hydrocracked liquid, recycling said gases to said hydroforming zone, fractionating said hydrocracked liquid into separate streams of gas, propane and butane, and C_5+ hydrocarbons, passing the C_5+ hydrocarbons into a depentanizing zone whereby a C_6+ hydrocarbon fraction and a C_5 hydrocarbon fraction are separated, passing the said C_5 fraction into a second fractionation zone whereby separate streams of iso C_5 and normal C_5 hydrocarbons are recovered, recycling said normal C_5 hydrocarbons to said hydroforming zone and adding the said iso C_5 fraction to the C_6+ fraction to produce a high octane gasoline.

3,192,151

REMOVAL OF METALLIC IMPURITIES FROM CRACKING CATALYSTS

James E. Connor, Jr., Wynnewood, and Joseph A. Cahill, Philadelphia, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,220
16 Claims. (Cl. 208—120)

1. A method for improving the product distribution resulting from a hydrocarbon catalytic cracking process in which is employed a silica-alumina cracking catalyst, which catalyst has become contaminated with coke-forming and gas-forming metallic impurities during use, which comprises

(a) separating at least a portion of the total catalyst from the process,

(b) contacting the contaminated catalyst at a temperature ranging from 900° F. to 1400° F. with a non-oxidizing gas containing free hydrogen whereby at least a portion of the metallic impurities are reduced to the metallic state,

(c) contacting the hydrogen treated catalyst with a gas containing free oxygen at a temperature below about 750° F.
(d) contacting the oxygen treated catalyst with a cation exchange resin in the hydrogen cycle in an aqueous medium at a pH such that the coke-forming and gas-forming metal contaminants are removed from the catalyst while the stability of the catalyst is substantially maintained,
(e) separating the contacted catalyst from the resin, and
(f) returning the contacted catalyst to the hydrocarbon cracking process.

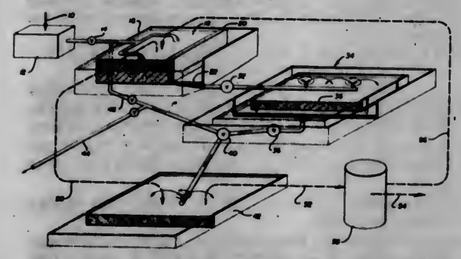
3,192,152
PROCESS FOR THE REMOVAL OF MERCAPTANS FROM HYDROCARBON OILS
Herve Maze, Jacques Mauborgne, and Rene Reinbold, Paris, France, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 18, 1962, Ser. No. 210,825
Claims priority, application France, July 21, 1961, 868,646
4 Claims. (Cl. 208—191)

2. A process for sweetening mercaptan-containing hydrocarbon oils which comprises contacting the oil in the presence of oxygen with an active-carbon-supported cupric complex of a member of the group consisting of alkyl amines, alkanol amines, alkanoic acids, and amino acids, and recovering a hydrocarbon oil substantially free from mercaptans and copper.

3,192,153
PREPARATION OF TRANSFORMER OILS
Michael T. Smilski, Mantua Township, Gloucester County, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed Nov. 6, 1962, Ser. No. 235,847
4 Claims. (Cl. 208—264)

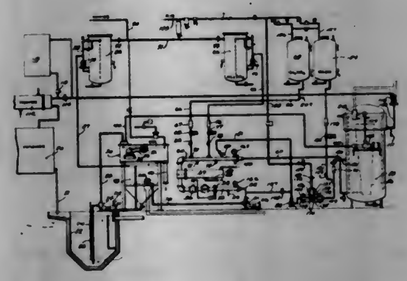
1. A method for producing a transformer oil of superior oxidation resistance and sludge forming characteristics which comprises employing as a hydrocarbon feed, a straight-run naphthenic hyrocarbon oil distillate fraction having a sulfur content below about 1 weight percent and a pour point below about —50° F., and subjecting said naphthenic feed to relatively severe catalytic hpdrogenating conditions including a pressure above about 2000 p.s.i.g. and a temperature in the range of from about 600 to about 750° F. to produce said transformer oil.

3,192,154
SEPARATION OF COLLOIDAL SOLIDS FROM LIQUIDS
Robert E. Burton, 475 San Francisco Ave., Willits, Calif.
Filed Sept. 12, 1962, Ser. No. 223,136
11 Claims. (Cl. 210—3)



1. In a method for separating colloidal solids from liquid systems, the steps of dispersing a profusion of substantially individualized bark fibers in a substantially larger body of aqueous liquid wherein said fibers are distributed throughout said body as freely dispersed fibers, introducing fresh liquid containing suspended colloidal solids into said body of liquid to effect intermixing of the liquids, said colloidal solids being attracted to and caused to adhere to said freely dispersed fibers, and separating the intermixed liquids from the fibers and attached colloidal solids.

3,192,155
SYSTEM AND METHOD FOR THE RECTIFICATION AND CLARIFICATION OF WASTE WATER
John W. Bready and William M. Bready, both of 5318 W. Washington Blvd., Milwaukee, Wis.
Filed Mar. 23, 1959, Ser. No. 801,333
20 Claims. (Cl. 210—44)



16. A method of salvaging water and combustible portions of water containing oil and oxidizable fibers, said method consisting in separating physically removable waste including such fibers from the water by passing the waste over a screen through which the water flows, discharging such waste from the screen, collecting the laundry water which flows through the screen and acidifying such water, alkalizing and aerating a previously clarified portion of the water, mixing the alkaline water with the acidified water and delivering the mixture into a clarifier-reactor tank for chemical reaction and flocculation, the air in the water developing bubbles causing the floc to rise to the surface in said tank, the floc including entrained oils, withdrawing the floc from the surface of the water and mixing it with waste collected by said screen.

3,192,156
REMOVAL OF HYDROGEN SULFIDE FROM WATER
Ronald S. Joyce, Pittsburgh, Pa., assignor to Pittsburgh Activated Carbon Company, a corporation of Pennsylvania
No Drawing. Filed Apr. 26, 1962, Ser. No. 190,265
7 Claims. (Cl. 210—63)

1. A process of removing hydrogen sulfide from water containing the same comprising passing the water through activated carbon particles impregnated with manganese dioxide which has been formed in situ.

3,192,157
STABILIZED GREASE COMPOSITION
William G. Gowdy, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Feb. 1, 1963, Ser. No. 255,674
4 Claims. (Cl. 252—28)

1. A grease comprising
(1) 100 parts by weight of a polysiloxane fluid which

has a viscosity of from 2,000 to 100,000 cs. at 25° C., in which essentially all the units have the formula

$$RCH_2CH_2\overset{R'}{\underset{|}{S}}iO$$

in which each R is a perfluoroalkyl radical and each R' is an aliphatic monovalent hydrocarbon radical of less than three carbon atoms,
(2) from 4 to 8 parts inclusive by weight of a silica filler having a surface area of at least 50 square meters per gram, and
(3) from 1 to 5 parts inclusive by weight of a hydroxylated polysiloxane fluid of from 0.5 to 5.0 weight percent hydroxyl content in which siloxane essentially all of the units are of the formula

$$RCH_2CH_2\overset{R'}{\underset{|}{S}}iO$$

wherein R and R' have the above defined meanings.

3,192,158
LUBRICATING COMPOSITIONS CONTAINING A DETERGENT COPOLYMER AND AN ALKALINE EARTH PETROLEUM SULFONATE-TRIALKYL AMINE COMPLEX
Roland F. Bergstrom, Martinez, and Richard C. Nelson, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 18, 1962, Ser. No. 188,535
10 Claims. (Cl. 252—33.4)

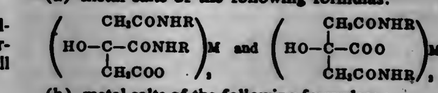
1. A lubricating oil composition comprising a major amount of lubricating oil and from about 0.5 to 10% by weight of (A) an oil-soluble nitrogen-containing detergent polymer selected from the group consisting of (1) a copolymer of vinyl pyridine and a long-chain alkyl acrylate and (2) a copolymer of vinyl pyrrolidone and a long-chain alkyl acrylate said copolymers having a molecular weight range of from 100,000 to 1,000,000 and from about 0.1% to about 10% by weight of (B) an oil-soluble basic alkaline earth petroleum sulfonate-trialkylamine complex having the formula $(R)_3N\cdot HO—MO_2SX$ where the R's are alkyl radicals, one of which contains from 6 to 20 carbon atoms and the remaining R radicals having from 1 to 4 carbon atoms, X is the petroleum residue of the sulfonate compound and M is an alkaline earth metal, said basic alkaline earth petroleum sulfonate containing 180 to 800% of alkaline earth over that theoretically required to neutralize the petroleum sulfonic acid.

3,192,159
WATER-IN-OIL EMULSION LUBRICANT AND HYDRAULIC FLUID
Charles E. Francis, Martinez, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 17, 1961, Ser. No. 145,766
11 Claims. (Cl. 252—33.6)

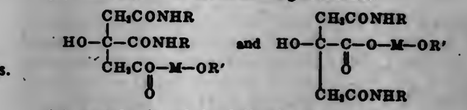
1. A water-in-oil emulsion lubricant and hydraulic fluid which is from about 20% to about 45% water phase and from about 55% to 80% oil phase, the oil phase being essentially a 80–100 VI mineral oil having a viscosity in the range of from 75 to 250 SUS at 100° F. containing (1) from about 1% to about 4% of a monoester of a long chain fatty acid having from 8 to 18 carbon atoms and an inner ether of an aliphatic polyhydric alcohol having 1–2 ether and 4–6 hydroxyl groups, (2) from about 0.5% to about 3% of an oil-soluble C_{4-20} alkyl phenoxy$(C_{2-3}$ alkoxy$)_{4-6}$ C_{2-3} alkanol, and (3) from about 0.01% to about 1% of a material selected from the group consisting of alkali metal C_{1-12} alkyl substituted dithiocarbamate and a mixture of 10–90% of an alkali metal C_{1-12} alkyl substituted dithiocarbamate and 90–10% alkali metal mercaptobenzothiazole.

3,192,160
MINERAL OIL COMPOSITIONS CONTAINING METAL SALTS OF CITRAMIC ACIDS
Paul Y. C. Gee, Woodbury, and Harry J. Andress, Jr., Pitman, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed June 1, 1962, Ser. No. 199,280
10 Claims. (Cl. 252—33.6)

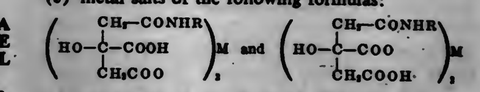
1. As a new composition, a liquid mineral oil containing from about one to about 200 pounds per thousand barrels of said oil of a compound from the group consisting of:
(a) metal salts of the following formulas:



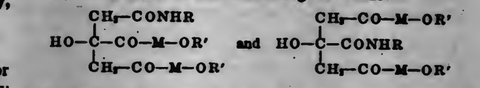
(b) metal salts of the following formulas:



(c) metal salts of the following formulas:



(d) metal salts of the following formulas:



and mixtures thereof, wherein M is a Group II metal, R is an alkyl group of from four to about thirty carbon atoms and has a tertiary carbon atom attached to the nitrogen atom, and R' is a saturated aliphatic hydrocarbon group.

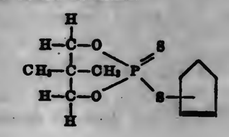
3. A composition, as defined in claim 1, wherein the mineral oil is a lubricating oil.

3,192,161
GREASE COMPOSITION
Max J. Wisotsky, University Park, Pa., and Norman R. Odell, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,568
13 Claims. (Cl. 252—42.7)

1. A grease composition comprising a lubricating base oil having a viscosity in the lubricating oil viscosity range containing a compound selected from the group consisting of the copper and nickel chelates of N-salicylideneamino-o-hydroxybenzene and the nickel chelates of N-salicylideneamino-p-nitrobenzene in an amount sufficient to thicken said base oil to a grease consistency.

3,192,162
CYCLO-ORGANO COMPOUNDS OF PHOSPHORUS
Jeffrey H. Bartlett, Westfield, Samuel B. Lippincott, Springfield, and Louis A. Mikeska, Dunedin, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 12, 1955, Ser. No. 528,112
4 Claims. (Cl. 252—46.6)

1. A lubricant comprising a major proportion of a lubricating oil and a minor, corrosion inhibiting amount of a compound of the formula:

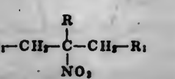


3,192,163
PROCESS FOR THE STABILIZATION OF PETROLEUM LUBRICANTS

Edward B. Hodge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Mar. 20, 1961, Ser. No. 96,676
10 Claims. (Cl. 252—49.5)

1. A liquid petroleum lubricant composition consisting essentially of a liquid petroleum lubricant and a sufficient amount of a nitroamine to stabilize said lubricant against metabolizing bacteria, said nitroamine having the structural formula:



wherein R is lower alkyl and hydrogen and wherein R_1 is selected from the group consisting of the radical $-N(R_2)_2$, the morpholino radical and the piperidyl radical and R_2 is selected from the group consisting of lower alkyl, lower hydroxyl alkyl, and hydrogen.

3,192,164
SILICON-CONTAINING LUBRICANT ADDITIVES

Edwin L. De Young, Milwaukee, Wis., and Roger W. Watson, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Jan. 16, 1962, Ser. No. 167,220
2 Claims. (Cl. 252—49.6)

1. A hydrocarbon lubricant composition normally tending to cause excessive silver wear and containing, in a minor amount sufficient to inhibit such wear, the oil soluble reaction product of silicon disulfide with a dialkyl ketone wherein each alkyl group contains from 1 to about 20 carbon atoms said reaction being carried out under anhydrous conditions at a temperature in the range of about 50 to about 150° C.

3,192,165
MINERAL OIL COMPOSITION

Joseph E. Fields and Edward H. Mottus, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Dec. 30, 1960, Ser. No. 79,500. Divided and this application Dec. 31, 1962, Ser. No. 248,263
9 Claims. (Cl. 252—56)

1. A mineral oil composition having dispersant properties comprising a major amount of mineral oil and a minor amount of an oil-soluble polymer, said polymer comprising a major amount of an alkyl methacrylate having not less than 6 and not more than about 20 carbon atoms in the alkyl group and a minor amount of vinyloxyethanol in the range of 2 to 20% by weight.

3,192,166
LIQUID DETERGENT COMPOSITION

Norman R. Smith, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

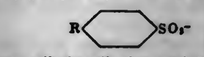
No Drawing. Filed Nov. 14, 1960, Ser. No. 68,652
5 Claims. (Cl. 252—137)

1. An opaque viscous liquid detergent composition consisting essentially of:

(a) from about 4% to about 10% of an alkali metal borate selected from the group consisting of sodium tetraborate decahydrate and potassium pentaborate;

(b) from about 3% to about 10% of an aliphatic tertiary amine oxide having the general formula $R_1R_2R_3N\rightarrow O$ where R_1 an alkyl radical containing from about 10 to about 16 carbon atoms and R_2 and R_3 are each selected from the group consisting of methyl and ethyl radicals, at least 50% of said amine oxide having an R_1 alkyl radical containing 12 carbon atoms;

(c) from about 3% to about 15% of non-soap detergent selected from the water-soluble salts of the group of detergent anions consisting of RSO_4^-, $R(OC_2H_4)_xSO_4^-$ where x is an integer from 1 to 5,



R being an alkyl radical containing about 9 to about 6 carbon atoms, and mixtures thereof;

(d) from about 3% to about 10% of a salt of a hydrotrope anion of the group consisting of toluene sulfonate, benzene sulfonate, and xylene sulfonate;

(e) from about 3.5% to about 6% silicate solids having an SiO_2/M_2O ratio of from about 16:1 to about 2.6:1 where M is selected from the group consisting of sodium and potassium;

(f) from about 10% to about 30% of a salt of pyrophosphate anion; and the balance substantially

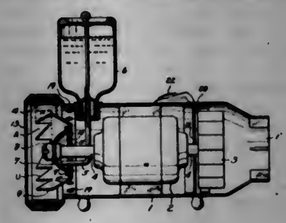
(g) water;

the cations of the salts of the said detergent anions, of the salts of the said hydrotrope anions, and of the salts of the said pyrophosphate anion being selected from the group consisting of potassium, sodium, ethanolammonium, diethanolammonium, and triethanolammonium, the mole ratio of the total of potassium and alkanolammonium cations to sodium cations being greater than about 3:1.

3,192,167
LOW PRESSURE LIQUID VAPORIZER WHICH IS ELECTRICALLY HEATED

Akiko Ogawa, 24 3-chome, Tamagawa-Todoroki-cho, Setagaya-ku; and Yasuro Kuratomi, 958 4-chome, Kashiwagi, Shinjuku-ku, both of Tokyo, Japan

Filed Sept. 20, 1962, Ser. No. 224,948
10 Claims. (Cl. 252—359)



1. A liquid vaporizer comprising a substantially cylindrical horizontal casing, liquid supply means supported on said casing, atomizing means within said casing operatively coupled to the liquid supply means for atomizing particles of liquid and directing the particles radially outwards by centrifugal force along a circumferential path within said casing, heater means within said casing surrounding the atomizing means for receiving the divided atomized particles to vaporize the same, a motor supported within said casing and coupled to the atomizing means to drive the same, said casing being provided with an air inlet and an air outlet, said casing having opposite ends at one of which said air outlet is located, and means in said casing driven by said motor for drawing air into the casing through said inlet for entraining vaporized particles in the ar and discharging the air together with said particles through said outlet, said air inlet being axially spaced from the outlet such that axial flow of air through the casing is obtained, said axial flow of air being isolated from the heating means to minimize heat exchange therewith while creating a suction within the casing to draw atomized particles therewith through the outlet.

3,192,168
PALLADIUM-TIN CATALYSTS

Jean Baptiste Grenet, Bron, France, assignor to Societe des Usines Chimiques Rhone-Poulenc, Paris, France, a body corporate of France

No Drawing. Filed Jan. 29, 1960, Ser. No. 5,338
Claims priority, application France, Feb. 2, 1959, 785,544
5 Claims. (Cl. 252—473)

1. A selective hydrogenation catalyst consisting essentially of a support material impregnated with palladium and a stannous salt selected from the group consisting of stannous acetate and stannous chloride.

5. A process for the preparation of a selective hydrogenation catalyst which comprises reducing a palladium salt to palladium on a support material and impregnating the supported palladium with an aqueous solution of an inorganic stannous salt.

3,192,169
METHOD OF MAKING EXPANDABLE POLYMERIC STYRENE PARTICLES

Kenneth W. Doak, 465 Fairfield Road, Wyckoff, N.J.

No Drawing. Filed Jan. 7, 1965, Ser. No. 424,113
5 Claims. (Cl. 260—2.5)

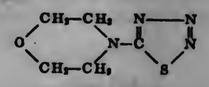
1. A method of making expandable polymeric styrene particles comprising polymerizing a styrene monomer in aqueous suspension by heating said monomer in the presence of a catalyst, consisting essentially of at least one low temperature peroxidic initiator and at least one high temperature peroxidic initiator, to a temperature at which said low temperature initiator serves as the principal initiator, continuing polymerization at least until the particle identity point is reached, thereafter adding a normally liquid hydrocarbon blowing agent, raising the temperature to that at which said high temperature initiator serves as the principal initiator, and continuing heating until polymerization is substantially complete as evidenced by the presence of less than 0.5% by weight residual monomer in the polymer particles.

3,192,170
BLOWING AGENT AND FOAMABLE RESINOUS COMPOSITION CONTAINING SAME

Karl-Ludwig Schmidt, Erwin Müller, and Hans Scheurlen, Leverkusen, and Friedrich Lober, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 10, 1959, Ser. No. 792,255
2 Claims. (Cl. 260—2.5)

1. A composition capable of forming a foamed plastic on heating comprising a resin selected from the group consisting of synthetic and natural rubber having incorporated therein 0.1 to 30% by weight of a blowing agent having the formula:



3,192,171
PROCESS FOR THE PREPARATION OF EPOXIDE MODIFIED ADHESIVE COMPOSITIONS

Alan L. Lambuth, Bellevue, Wash., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 13, 1960, Ser. No. 35,395
10 Claims. (Cl. 260—7)

1. A process for preparing an epoxide-modified aqueous alkaline adhesive composition which comprises combining an aliphatic halohydrin ether with an aqueous alkaline adhesive composition selected from the group consisting of aqueous alkaline phenolic adhesive compositions, aqueous alkaline protein adhesive compositions, and mixtures thereof, in proportions of from 1 to 150 parts by weight of the aliphatic halohydrin ether for every 100 parts by weight of phenolic and proteinaceous solids in the aqueous alkaline adhesive composition, and subsequently maintaining the mixture at a temperature of from about 50 to 100° F. for at least 10 minutes; said aliphatic halohydrin ether comprising the Lewis acid catalyzed reaction product of a liquid polyhydric aliphatic alcohol and a halohydrin selected from the group consisting of monohalohydrins, dihalohydrins, epihalohydrins, and mixtures thereof, in proportions of from 0.65 to 1.1 mols of the halohydrin for every molar hydroxyl equivalent of the liquid polyhydric aliphatic alcohol; said aqueous alkaline phenolic adhesive composition containing from 12 to 50% phenolic solids by weight which comprise the reaction product of (a) a phenol having a distillation range of from about 180 to 220° C. and containing less than about 15% of at least one phenol selected from the group consisting of orthocresol, xylenol, and mixtures thereof, (b) formaldehyde and (c) an alkali metal hydroxide in proportions of from 1.0 to 3.5 mols of formaldehyde and from 0.1 to 2.5 mols of alkali metal hydroxide for every one mol of the phenol, the alkali metal hydroxide initially being at least partially present; said aqueous alkaline protein adhesive composition having a pH of from about 10.5 to 14 derived from the dissociation of a water-soluble alkali metal compound and containing from 10 to 35% by weight of proteinaceous solids selected from the group consisting of animal and vegetable proteins and mixtures thereof.

3,192,172
WAX-POLYETHYLENE PAPER COATING EMULSIONS CONTAINING SOLUBILIZED PROTEINS

John M. Behnke, Newark, N.J., assignor to Nopko Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 17, 1961, Ser. No. 96,359
15 Claims. (Cl. 260—8)

1. An emulsified coating composition for application to paper and paperboard products, comprising (1) a wax-polyethylene blend comprising (a) a refined paraffin wax having a melting point ranging from about 122° F. to about 165° F. and present in amounts of from about 20% to about 52% by weight based upon the weight of said wax-polyethylene blend, (b) a synthetic hard paraffin wax having a melting point ranging from about 212° F. to about 225° F. and present in amounts of from about 35% to about 75% by weight, based upon the weight of said wax-polyethylene blend and (c) a polyethylene resin having an average molecular weight ranging from about 5,000 to about 12,000 and present in amounts of from about 6% to about 20% by weight based upon the weight of said wax-polyethylene blend and (2) an emulsification base comprising (a) a primary emulsifier selected from the group consisting of saponified oxygenated synthetic hard paraffin waxes having a solidification point ranging from about 185° F. to about 212° F. and saponified oxygenated natural hard paraffin waxes having a solidification point ranging from about 185° F. to about 200° F. and present in amounts of from about 0.1% to about 7% by weight based upon the weight of said wax-polyethylene blend, (b) a secondary emulsifier which is a water solubilized protein present in amounts of from about 1.5% to about 15% by weight, based upon the weight of said wax-polyethylene blend and (c) water present in amounts of from about 80% to about 98% by weight based upon the weight of said wax-polyethylene blend.

11. A process of preparing emulsified coating compositions for application to paper and paperboard products

which comprises slowly adding the homogeneous mixture of the wax-polyethylene blend of claim 1 at a temperature ranging from 212° F. to about 225° F. to the emulsification base of claim 1 which is maintained at a temperature ranging from about 200° F. to about 212° F., agitating the resulting mixture of said blend and emulsification base to obtain an emulsion and thereafter stabilizing said emulsion by reducing the particle size of the particles contained therein to below 0.002 millimeter.

3,192,173

ARTICLE OF POLYALKYLENE OXIDE, CELLULOSE AND TALC

Granville Thorpe Merrall, Altrincham, and Donald Caiger, Davyhulme, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 25, 1961, Ser. No. 126,519
Claims priority, application Great Britain, Aug. 8, 1960, 27,392/60
2 Claims. (Cl. 260—9)

1. As an article of manufacture, a sheet of a dry composition consisting essentially of from about 10 to about 30 percent by weight of polyethylene oxide of molecular weight of about 300,000, about 4 to 12 percent of cellulose and about 58 to 86 percent of talc.

2. As an article of manufacture, a sheet of a dry composition consisting essentially of from about 10 to about 30 percent by weight of a poly(alkylene oxide) of a molecular weight of at least 10,000 selected from the group consisting of polyethylene oxide and the polymer of 1,2 propylene oxide, about 4 to 12 percent cellulose and about 58 to 86 percent of talc.

3,192,174

RESINS CONTAINING POLYCONDENSATION PRODUCTS WHICH HAVE BEEN MODIFIED BY AN ACIDIC COMPOUND TO IMPROVE AIR DRYING PROPERTIES

Gus Nichols, Whiting, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,869
7 Claims. (Cl. 260—22)

1. A resin suitable for the formation of an air-drying surface coating film which resin comprises the reaction product of (1) a polycondensation reaction product of (a) a compound affording at least 2 hydroxyl groups and derived from a polyhydric alcohol having 3 hydroxyl groups and an unsaturated fatty acid containing 16–24 carbon atoms, and (b) a benzene polycarboxylic acid having from 2 to 3 carboxyl groups, and when said acid has 3 carboxyl groups, (c) an ether containing monohydric alcohol selected from the class consisting of monohydroxyalkylene tetrahydrofuran having from 1 to about 4 carbon atoms in said alkylene groups, and polyalkylene glycol monoalkyl ether having from 2 to 8 ether groups, from 2 to 3 carbon atoms in each alkylene group, and from 1 to 8 carbon atoms in said alkyl group, the hydroxyl groups of said compound and any alcohol being present in a mole ratio to the carboxyl groups of said acid of about 1–1.2, and (2) an acidic member selected from the class consisting of maleic anhydride, succinic anhydride, phthalic anhydride, hexahydrophthalic anhydride, tetrachlorophthalic anhydride, t-butyl phthalic anhydride, trimellitic anhydride, and pyromellitic anhydride, said acidic member being present in an amount from about 1% to about 10% by weight based on the weight of said polycondensation reaction product, said reaction product being characterized by better air-drying properties than the air-drying properties of said polycondensation reaction product.

3,192,175

SEALANT COMPOSITION OF 3,3,3-TRIFLUOROPROPYLMETHYLSILOXANE GUMS

James R. Russell, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,731
5 Claims. (Cl. 260—29.1)

2. A sealant composition having a plasticity number of 240 to 320 which consists essentially of 100 parts by weight of a gum, said gum consisting essentially of 99.5 mol percent of 3,3,3-trifluoropropylmethylsiloxane and 0.5 mol percent vinylmethylsiloxane, 90 to 160 parts by weight of a 3,3,3-trifluoropropylmethylsiloxane fluid having a viscosity from 30,000 to 60,000 cs., 10 to 30 parts by weight of a finely divided silica having a surface area of at least 100 square meters per gram and 5 to 20 parts by weight of a polytetrafluoroethylene resin having an average particle size of less than one micron.

3,192,176

MIXTURE OF DIENE COPOLYMER AND ACRYLONITRILE COPOLYMER

Karl-Heinz Mielke, Cologne-Stammheim, Heino Logemann, Leverkusen, Gustav Pieper, Cologne Stammheim, Willi Dünwald, Leverkusen, and Wilhelm Becker, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 2, 1962, Ser. No. 207,030
Claims priority, application Germany, July 3, 1961, F 34,322
7 Claims. (Cl. 260—29.7)

1. An aqueous latex coating composition comprising a mixture of

(A) an aqeous dispersion of a coplymer of
- (a) 55 to 65 percent of acrylonitrile
- (b) 25 to 35 percent of styrene
- (c) 1 to 7 percent of a member selected from the group consisting of acrylamide and methacrylamide,
- (d) 1 to 7 percent of a member selected from the group consisting of acrylic acid and methacrylic acid, and

(B) an aqueous dispersion of a coplymer of
- (a) 20 to 45 percent of an aliphatic conjugated diolefine of from 4 to 6 carbon atoms
- (b) 40 to 60 percent of acrylonitrile
- (c) 5 to 20 percent of a member selected from the group consisting of styrene and an ester of methacrylic acid with an aliphatic saturated alcohol of from 1 to 4 carbon atoms, and
- (d) 1 to 7 percent of methacrylic acid; said latices A and B being mixed in a ratio which corresponds to a ratio of solid polymer A to solid polymer B between 2:1 and 1:2.

3,192,177

VINYL ALCOHOL POLYMER COMPOSITIONS PLASTICIZED WITH CERTAIN TRIALKYL PHOSPHATES

Joseph G. Martins, Ludlow, Mass., assignor to Shawinigan Resins Corporation, Springfield, Mass., a corporation of Massachusetts

No Drawing. Filed Aug. 1, 1960, Ser. No. 46,340
4 Claims. (Cl. 260—30.6)

1. A plasticized water dispersible resin composition comprising a mixture of 95–75 parts of a partially hydrolyzed polyvinyl acetate having 26–45% residual acetate groups and a viscosity in the range 4–60 centipoises

for a 4% aqueous solution at 20° C., with 5–25 parts of a plasticizer having the general formula

$$(RO)_3PO$$

wherein R is a radical selected from the class consisting of aliphatic hydrocarbons containing between 2–8 carbon atoms and halogen substituted products thereof.

3,192,178

BLENDS OF RUBBERY DIENE POLYMERS, RESINOUS STYRENE-ACRYLONITRILE POLYMERS, AND A SULFONE

Costas H. Basdekis, Longmeadow, Mass., Erhard J. Prill, St. Louis, Mo., and George E. Walker, East Longmeadow, Mass.

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,152
2 Claims. (Cl. 260—30.8)

1. A composition comprising an intimate mixture of (1) a blend of a resinous styrene-acrylonitrile copolymer containing 65–90% by weight of combined styrene and 35–10% by weight of combined acrylonitrile and a graft copolymer prepared by polymerizing 15–90 parts by weight of a monomer mixture consisting of 65–90% by weight of styrene and 35–10% by weight of acrylonitrile in an aqueous dispersion containing 100 parts by weight of a rubbery butadiene-styrene copolymer containing about 90% by weight of combined butadiene, about 10% by weight of combined styrene, and up to about 1.5% by weight of a cross-linking agent in the absence of any emulsifying agent other than that employed in the preparation of the rubbery butadiene-styrene copolymer and (2) 1–6%, based on the weight of the blend, of di-(hydroxyethyl) sulfone.

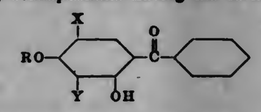
3,192,179

RESINOUS COMPOSITIONS CONTAINING 4-ALKOXY-5 HALO-2-HYDROXY BENZOPHENONES RESISTANT TO ULTRAVIOLET LIGHT

Sydney M. Spatz, Buffalo, and Russell I. Steiner, Williamsville, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 3, 1961, Ser. No. 99,980
11 Claims. (Cl. 260—45.95)

1. A resinous material which is normally subject to deterioration by ultraviolet light and as a stabilizer therehibitor of the deleterious action of ultraviolet light, 0.01% a 2-hydroxy-benzophenone having the formula:



wherein
R is selected from the group consisting of hydrogen and alkyl,
X is selected from the group consisting of bromine and chlorine, and
Y is selected from the group consisting of hydrogen, bromine and chlorine.

3,192,180

BACTERIOSTATIC COMPOSITIONS OF ACRYLONITRILE POLYMERS AND 2,4-DIHYDROXYBENZOPHENONE

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,305
5 Claims. (Cl. 260—45.95)

1. Bacteriostatic compositions of matter, the essential constituents of which are (1) a fiber-forming acrylonitrile polymer, which polymer contains in the polymer molecule at least 85 weight percent of acrylonitrile, any balance being another monoethylenically unsaturated monomeric material that is copolymerizable with acrylonitrile, and (2) dispersed therein between about 0.5 and 20 weight percent, based on the weight of said fiber-forming acrylonitrile polymer of 2,4-dihydroxybenzophenone.

3,192,181

HEAT ACTIVATED CURING SYSTEM FOR ORGANOSILICON COMPOUNDS

Ronald F. Moore, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed June 18, 1962, Ser. No. 202,974
25 Claims. (Cl. 260—46.5)

11. The method which comprises

(A) mixing
- (1) an organosilicon polymer having an average of from one to three groups per silicon atom selected from the group consisting of monovalent hydrocarbon radicals, aliphatic-unsaturation-free monovalent halohydrocarbon radicals, and cyanoalkyl radicals, there being an average per molecule of (1) at least two monovalent hydrocarbon radicals containing aliphatic unsaturation, the remaining valences of the silicon atoms of the said organosilicon polymer being satisfied by selection from the group consisting of divalent oxygen atoms, divalent hydrocarbon radicals, divalent hydrocarbon ether radicals and divalent haloarylene radicals, said divalent radicals linking silicon atoms,
- (2) an organosilicon compound containing silicon-bonded hydrogen atoms, there being in addition an average of up to two groups per silicon atom selected from the group consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation, monovalent halohydrocarbon radicals free of aliphatic unsaturation and cyanoalkyl radicals, the remaining valences of the silicon atoms being satisfied by groups selected from the group consisting of divalent oxygen atoms, divalent hydrocarbon radicals free of aliphatic unsaturation, divalent hydrocarbon ether radicals free of aliphatic unsaturation and divalent haloarylene radicals, said divalent radicals linking silicon atoms,

there being an average at least two silicon-bonded hydrogen atoms per molecule of (2), the sum of the average number of aliphatic unsaturated monovalent radicals per molceule of (1) and the average number of silicon-bonded hydrogen atoms per molecule of (2) being greater than 4,
- (3) a platinum catalyst in an amount of at least 0.1 part per million Pt based on the combined weights of (1) and (2), and
- (4) sufficient benzotriazole to reduce the activity toward curing,

(B) and heating the mixture to cure the product to a coherent solid.

3,192,182

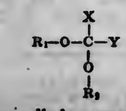
STABILIZATION OF POLYOXYMETHYLENE

Northrop Brown and William Earle Grigsby, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 6, 1959, Ser. No. 785,136
13 Claims. (Cl. 260—67)

1. A process for the preparation of a polyoxymethylene ether which comprises reacting at a temperature from 0° C. to 200° C. in a mildly acidic reaction medium substantially all hydroxyl groups in 1 part by weight of a polyoxymethylene starting material having a number average molecular weight of at least 10,000 and having a hydroxyl group for at least one of the two terminal portions of the

polymer chain of said starting material with 0.25 to 1000 parts by weight of a compound having the general formula:



where R_1 and R_2 are alkyl groups of 1–4 carbon atoms and Y is selected from the class consisting of hydrogen, alkyl groups of 1–4 carbon atoms, and alkoxy groups of 1–4 carbon atoms and X is an alkoxy group of 1–4 carbon atoms when Y is hydrogen and X is selected from the class consisting of alkyl groups of 1–4 carbon atoms and alkoxy groups of 1–4 carbon atoms when Y is selected from the class consisting of alkyl groups of 1–4 carbon atoms and alkoxy groups of 1–4 carbon atoms, and recovering a polyoxymethylene ether having a number average molecular weight of at least 10,000 and having an ether group for at least one of the two terminal portions of the polymer chain of said polyoxymethylene ether.

3,192,183
POLYMERIZATION OF FORMALDEHYDE

Helmuth Kritzler, Cologne-Flittard, and Kuno Wagner and Erwin Müller, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 9, 1960, Ser. No. 27,534
Claims priority, application Germany, May 22, 1959, F 28,493
7 Claims. (Cl. 260—67)

1. A process for the production of high molecular weight polyoxymethylenes, which comprises polymerizing monomeric formaldehyde in a substantially anhydrous inert organic solvent in the presence of a catalytic amount of an organic nitrogen compound having the formula



wherein R is selected from the group consisting of hydrogen, a C_1 to C_{10} alkyl, a C_1 to C_{10} alkoxide, a C_1 to C_{10} aminoalkyl, a C_5 to C_7 cycloalkyl, a C_5 to C_7 cycloalkyl ether, a C_5 to C_7 aminocycloalkyl, a phenyl, a phenoxy, an aminophenyl, a tolyl, a tolyloxy, an aminotolyl, a chlorophenyl, a chlorophenoxy, and an amino-chlorophenyl radical; the open valence of the nitrogen atom is attached to a member selected from the group consisting of hydrogen, a C_1 to C_{10} alkyl, a phenyl, a benzyl, a C_1 to C_{10} aminoalkyl, an aminophenyl, and a C_1 to C_{10} iminoalkyl radical; and the open valence of the carbon atom is attached to a member selected from the group consisting of hydrogen, amino, a C_1 to C_{10} alkyl, phenyl, a C_5 to C_7 cycloalkyl, a C_1 to C_{10} aminoalkyl, an aminophenyl, and a C_5 to C_7 aminocycloalkyl radical; and the two said valences of the nitrogen and carbon atom may also be attached together to form a melamine ring, said polymerization being conducted at a temperature from −120° C. to +100° C., and then separating the high molecular weight polyoxymethylene from the inert organic solvent.

3,192,184
PREPOLYMERIZATION PROCESS

John Lewis Brill, Newark, Del., and Emmette Farr Izard, Buffalo, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 19, 1959, Ser. No. 800,475
5 Claims. (Cl. 260—75)

1. A process for continuously producing a prepolymer of bis-2-hydroxy ethyl terephthalate which comprises continuously flowing a polymerizable liquid from the group consisting of bis-2-hydroxy ethyl terephthalate and low molecular weight polymers thereof having an intrinsic viscosity not greater than 0.25, downwardly and solely by force of gravity over a substantially vertical stationary surface provided with protuberances defining symmetrically patterned channels effective to promote distribution of the liquid as a film over substantially the entire area of



said surface, maintaining the film under an elevated temperature and reduced pressure effective to promote polymerization as the film flows down said surface and to form a liquid polymer having an intrinsic viscosity not greater than 0.4, continuously removing evolved vaporous by-product in a stream counter-current to the direction of flow of said film, and continously removing prepolymer from said surface at the lower extremity thereof.

3,192,185
HOMOGENIZED CROSSLINKED POLYURETHANES

Marvin Achterhof, Willoughby, Miles Q. Fetterman, Painesville, Nelson L. Havens, Wickliffe, and John F. McWhorter, Shaker Heights, Ohio, assignors to The Eagle-Picher Company, Cincinnati, Ohio, a corporation of Ohio

Filed May 19, 1959, Ser. No. 814,302
7 Claims. (Cl. 260—75)

1. A method of shaping a polyurethane comprising interreacting at a temperature from about room temperature to about 300° F. a substantially linear organic compound having at least two terminal active hydrogen atoms as determined by a positive Zerewitinoff test selected from the group consisting of glycols, polyesters, polyoxyalkylene glycols, and polyesteramides; an organic polyisocyanate; and a cross-linking agent consisting essentially of a compound having from two to eight carbon atoms and having at least two terminal active hydroxy groups; said compound, polyisocyanate, and agent being so reacted within the range of molar ratios from about 1:1.6:0.38 to about 1:8:6.8, respectively, wherein such polyisocyanate is used in molar excess with respect to the additive molar amounts of both said compound and agent to form a cross-linked hardened polyurethane elastomer; whereby due to the speed of the reaction and resulting lack of uniform heat distribution, some portions of the polyurethane undergo more advanced polymerization than other portions; heating the resulting cross-linked elastomer sufficiently above 300° F. and within the range of about 300° F. to about 500° F. to convert the elastomer to a moldable melt; homogenizing the moldable melt to blend together the more polymerized portions with such other portion; and then shaping the homogenized melt to a desired form.

3,192,186
CHAIN EXTENDED POLYETHER PREPOLYMER POLYURETHANE CASTINGS

Erwin Müller and Karl-Ludwig Schmidt, Leverkusen, and Heinz Schulthels, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 6, 1960, Ser. No. 20,240
Claims priority, application Germany, Apr. 10, 1959, F 28,170
8 Claims. (Cl. 260—77.5)

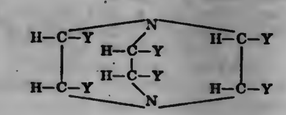
1. A method of making a liquid polyurethane casting composition which comprises reacting a polyalkylene ether glycol, the alkylene portion of which contains from two to four carbon atoms, said polyalkylene ether glycol having a molecular weight of at least about 750 and a hydroxyl number of from about 40 to about 150 with an organic diisocyanate, the molar ratio of said polyalkylene ether glycol to organic diisocyanate being from about 1/1.5 to about 1/2 to prepare an NCO terminated polyether urethane, reacting said polyether urethane with a quantity of a glycol having a molecular weight less than about 500 such that from about 1.8 to 2 equivalents of glycol are present for each NCO group to provide an intermediate having terminal hydroxyl groups, a molecular weight greater than about 1600 and a hydroxyl number of from about 35 to about 120, reacting this intermediate with an excess of from about 20 mol percent to about 300 mol percent of an organic diisocyanate and mixing the NCO terminated polymer thus formed with a chain extending agent containing active hydrogen containing groups in the molecule as determined by the Zerewitinoff test, which groups are reactive with NCO groups, said chain extending agent being present in an amount such that from about 0.2% to about 1% NCO groups are present.

3,192,187
PREPARATION OF STRETCHABLE POLYURETHANE CASTINGS USING A COCATALYST SYSTEM OF AN EPOXY ALKANE AND A BICYCLIC AMINE

Burton D. Beitchman, Springfield Township, Pa., and William E. Erner, Wilmington, Del., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,966
6 Claims. (Cl. 260—77.5)

1. The method of preparing a nonporous, solid, stretchable article which consists essentially of the steps of: preparing a reactive mixture consisting essentially of at least one polyalkyleneetherglycol having a molecular weight within the range from 400 to 4000, an organic diisocyanate, and a cocatalyst consisting of epoxy alkane having from 2 to 5 carbon atoms, together with an amine compound of the formula



3 Y's of those present being selected from the group consisting of methyl and hydrogen, all other Y's being hydrogen, said epoxy alkane being present in a molar concentration at least twice the molar concentration of the amine compound; pouring said reaction mixture into a mold in which the reaction mixture is transformed into an article; curing the article at a temperature within range from about 40° C. to about 200° C. for from about 40 to about 120 minutes; removing the article from the mold; and stabilizing the article by heating it to a temperature within the range from about 40 to about 200° C. for from about 0.25 to 21 hours and cooling the stabilized article.

3,192,188
VARNISH RESINS CONSISTING OF CHLORINATED POLYPROPYLENE OR CHLORINATED COPOLYMERS OF ETHYLENE AND PROPYLENE AND PROCESS FOR THEIR MANUFACTURE

Ludwig Orthner, Frankfurt am Main, and Helmut Klug and Hans Georg Kolm, Gersthofen, near Augsburg, and Horst Herzberg, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 21, 1959, Ser. No. 835,196
Claims priority, application Germany, Aug. 23, 1958, F 26,474
1 Claim. (Cl. 260—88.2)

A process for the production of soluble chlorinated polymers from insoluble polymers which comprises the step of prechlorinating with gaseous chlorine a member selected from the group of isotactic polypropylene and copolymers of propylene and ethylene consisting of at least 10% of propylene in a suspended form in a member selected from the group consisting of water, hydrogen chloride solution, and calcium chloride solution at a temperature within the range of 20° to 160° C. until a chlorine content of at least 20% by weight is reached, separating the prechlorinated polyolefin from said suspending media, and continuing the chlorination at a temperature within the range of 40° to 115° C., the separated prechlorinated products being suspended in a halogenated, aliphatic hydrocarbon having up to two carbon atoms.

3,192,189
METHOD FOR RECOVERING MONOMERIC MATERIALS BY A STRIPPING OPERATION IN THE PRESENCE OF A CHLOROXY SALT

Akira Nakajima and Yuji Kajitani, Saidaiji, Japan, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,938
Claims priority, application Japan, Sept. 21, 1961, 36/34,178
6 Claims. (Cl. 260—88.7)

1. In a method of recovering monomeric material comprising acrylonitrile by a stripping operation from a polymer slurry containing said monomeric material, the improvement comprising adding to the polymer slurry at least one alkali metal salt of a chloroxy acid and stripping said monomeric material from said slurry.

3,192,190
OCTAFLUOROVINYLPHENYL ETHER AND ITS POLYMERS

Leo A. Wall, Washington, D.C., and Walter J. Pummer, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed July 31, 1962, Ser. No. 213,832
8 Claims. (Cl. 260—91.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

6. The process of polymerizing octafluorovinylphenyl ether comprising the steps of subjecting said olefin to actinic radiation under suitable conditions of temperature and high pressure and separating the resultant polymer.

3,192,191
HOMOPOLYMERS AND PROCESS OF PREPARING THE SAME

Joseph R. Leto, Stamford, and Lila M. Olsen, Greenwich, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 21, 1961, Ser. No. 97,165
8 Claims. (Cl. 260—93.1)

1. A process for preparing a homopolymer of bicyclo-(2,2,1)-hepta-(2,5)-diene which does not melt at temperatures up to about 350° C. at atmospheric pressure, comprising polymerizing bicyclo(2,21)-hepta(2,5)-diene

in the presence of a catalyst selected from the group consisting of bicycloheptadiene molybdenum tetracarbonyl, bicycloheptadiene tungsten tetracarbonyl, cycloheptatriene molybdenum tricarbonyl and cycloheptatriene tungsten tricarbonyl at a temperature between about 25° C. and reflux for a period of time of at least 4 hours.

3,192,192

RECOVERY OF POLYOLEFINS USING A MIXTURE OF ALCOHOL AND STANNIC CHLORIDE

Robert L. Hartnett, Texas City, Tex., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 20, 1962, Ser. No. 211,443
7 Claims. (Cl. 260—93.7)

1. In a process for he producion of polyolefins by polymerization of an olefin in the presence of a catalytic amount of a catalyst comprising a titanium halide and an organoaluminum compound, said catalyst being suspended in an inert hydrocarbon diluent, the improvement providing for recovery of a polyolefin having reduced catalyst residues which comprises quenching the catalyst after polymerization has taken place and before any subsequent removal of the polyolefin from the reaction mixture by adding to said reaction mixture an alkyl alcohol containing from 1 to 8 carbon atoms and a minor amount of stannic chloride and recovering the polyolefin from the resulting mixture.

3,192,193

TALL OIL DIESTERS

Siegfried Altscher, Union, and Thomas F. Groll, Jr., Elizabeth, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Original application Nov. 18, 1957, Ser. No. 696,969, now Patent No. 3,071,550, dated Jan. 1, 1963. Divided and this application Dec. 26, 1961, Ser. No. 163,960
11 Claims. (Cl. 260—97.5)

1. An aliphatic diester of tall oil, the tall oil containing from less than about 2% to about 55% by weight thereof of rosin, and ethoxylated glycerine having from about 15 to about 27 moles of ethylene oxide.

3,192,194

DIAZOTHIOETHER HETEROCYCLIC COMPOUNDS

Marion Burg, Metuchen, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,530
2 Claims. (Cl. 260—141)

1. An diazothioether heterocyclic compound of the formula:

$$Y—N{=}N—S—Y'$$

wherein Y is a heterocyclic ring radical containing nitrogen selected from the group consisting of 3-pyridyl, thiazolyl, oxazolyl, selenazolyl and pyrryl, said radical being fused to the nucleus of an aryl compound selected from the group consisting of unsubstituted and substituted benzene and naphthalene, said substituents being selected from the group consisting of alkyl of 1 to 4 carbon atoms, alkoxy of 1 to 4 carbon atoms, carbalkoxy wherein the alkoxy group is of 1 to 4 carbon atoms, halogen and phenyl, and Y' is a radical selected from the group consisting of a 5- and 6-member heterocyclic ring containing up to 2 heteroatoms selected from the group consisting of nitrogen, oxygen, sulfur and selenium and said heterocyclic ring being fused to the nucleus of an aryl compound selected from the group consisting of unsubstituted and substituted benzene and nathalene, said substituents being selected from the group consisting of alkyl of 1 to 4 carbon atoms, alkoxy of 1 to 4 carbon atoms, carbalkoxy wherein the alkoxy group is of 1 to 4 carbon atoms, halogen and phenyl.

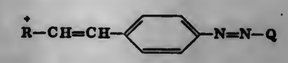
3,192,195

AZOSTYRYL CATIONIC DYES

David Gordon Coe, Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,312
4 Claims. (Cl. 260—156)

1. A cation of the formula



where Q is the radical of a monocyclic phenol selected from the group consisting of phenol, o-, m-, and p-cresols, 2,3-dimethyl phenol, 3,4-dimethyl phenol, 3,5-dimethyl phenol, 2,6-dimethyl phenol, 2,4-dimethyl phenol, 2,5-dimethyl phenol, 3-chlorophenol, 4-chlorophenol, 2-chlorophenol and methyl salicylate, R is the cationic radical of a quaternized heterocyclic compound selected from the group consisting of 1-methyl-2-pyridinium, 1-methyl-4-pyridinium and 5-ethyl-2-pyridinium.

3,192,196

OXIDATION OF ALIPHATIC HYDRAZO COMPOUNDS TO THE CORRESPONDING ALIPHATIC AZO COMPOUNDS

Frederick D. Vidal, East Orange, and Vincent G. Sarli, Pompton Plains, N.J., assignors to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,418
14 Claims. (Cl. 260—192)

1. A method of oxidizing an aliphatic hydrazo compound to the corresponding aliphatic azo compound which comprises contacting said hydrazo compound at a temperature in the range 0–150° C. with a gaseous mixture containing elemental oxygen and nitrogen dioxide to effect oxidation of the hydrazo compound to said corresponding azo compound, said elemental oxygen being supplied in at least a stoichiometric amount relative to the amount of said hydrazo compound to be oxidized.

3,192,197

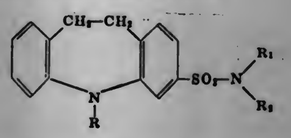
3 - (SUBSTITUTED)SULPHONYL - 5 - ALKANOYL-IMINODIBENZYLS USEFUL IN THE PREPARATION OF DERIVATIVES OF DIBENZ[b,f]AZEPINES

Henri Dietrich and Werner Küng, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 6, 1962, Ser. No. 185,519
Claims priority, application Switzerland, Apr. 8, 1961, 4,159/61, 4,160/61
6 Claims. (Cl. 260—239)

1. 3-(4'-morpholinyl)-sulphonyl-iminodibenzyl.

2. An iminodibenzyl of the formula

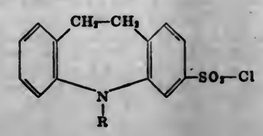


in which

R_1 and R_2 are independently lower alkyl and R_1 and R_2 when taken together with the adjacent nitrogen is a member selected from the group consisting of piperidino and 4-morpholinyl, and

R is lower alkanoyl.

5. An iminodibenzyl of the formula



3,192,198

PENICILLINS

John Herbert Charles Nayler, Coombelea, Cliftonville, Dorking, Surrey, England, and Harry Smith, Horselands Bungalow, Old Barn Lane, Newdigate, Surrey, England

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,538
Claims priority, application Great Britain, Nov. 2, 1962, 41,541/62
3 Claims. (Cl. 260—239.1)

3. A member selected from the group consisting of 6-(p - hydroxy - α - aminophenylacetamido)penicillanic acid and 6-(m-hydroxy-α-aminophenylacetamido)penicillanic acid and their sodium, potassium, calcium, aluminium and ammonium salts and their non-toxic substituted ammonium salts with amines selected from the group consisting of tri(lower)-alkylamines, procaine, dibenzylamine, N - benzyl - beta - phenethylamine, 1-ephenamine, N,N' - dibenzylethylenediamine, dehydroabietylamine, N,N'-bis-dehydroabietylethylenediamine and N-(lower)-alkylpiperidines.

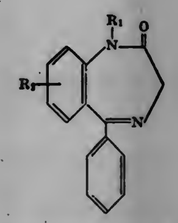
3,192,199

PROCESS FOR THE PRODUCTION OF 1-CYCLOALKYL DERIVATIVES OF 1,4-BENZODIAZEPINE

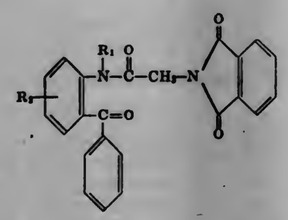
Freeman H. McMillan, Dover, and Ian Pattison, Denville, N.J.

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,221
1 Claim. (Cl. 260—239.3)

Process for the production of a compound of the formula:



in which R_1 is cycloalkylmethyl and R_2 is a member of the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy which comprises reacting a compound of the formula:



with hydrazine hydrate.

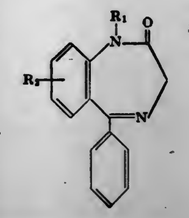
3,192,200

1-CYCLOALKYL METHYL DERIVATIVES OF 1,4-BENZODIAZEPINE

Heinz M. Wuest, Upper Montclair, N.J.

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,846
2 Claims. (Cl. 260—239.3)

1. A compound of the formula:



in which R_1 is a member selected from the group consisting of cyclopropylmethyl, cyclobutylmethyl and cyclopentylmethyl and R_2 is a member selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy.

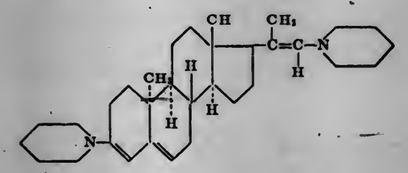
3,192,201

STEROID ENAMINES

Pieter Westerhof, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1959, Ser. No. 805,436
Claims priority, application Netherlands, Apr. 12, 1958, 226,774; Mar. 13, 1959, 237,103
1 Claim. (Cl. 260—239.5)

A compound of the formula



with a melting point of 194–195° C., ε (λ max. 265 mμ) 16.600 and in the infrared part of the absorption spectrum bands at 1717, 1640 and 1609 cm.$^{-1}$.

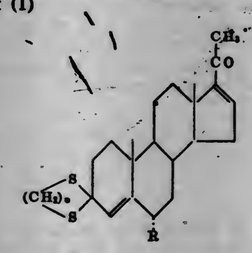
3,192,202

3-THIOKETALS OF PREGNADIENE AND METHOD OF PREPARATION THEREOF

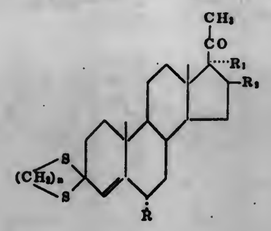
George Karmas, Bound Brook, and Irving Scheer, Somerville, N.J., assignors to Ortho Pharmaceutical Corporation, a corporation of New Jersey

No Drawing. Filed Mar. 12, 1964, Ser. No. 351,515
18 Claims. (Cl. 260—239.5)

1. A compound of the formula selected from the group consisting of (I)



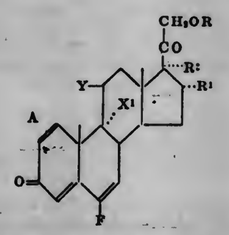
wherein
R is selected from the group consisting of hydrogen and methyl, and
n is an integer from 2 to 3, and (II)



wherein
R is selected from the group consisting of hydrogen and methyl,
R_1 is hydroxyl,
R_2 is selected from the group consisting of bromine, chlorine and iodine,
R_1 and R_2, taken together, are oxygen and
n is an integer from 2 to 3.

3,192,203
6-HALO-6-DEHYDRO STEROIDS
Howard J. Ringold, Shrewsbury, Mass., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed May 9, 1963, Ser. No. 279,311
Claims priority, application Mexico, Sept. 24, 1958, 52,203
24 Claims. (Cl. 260—239.55)

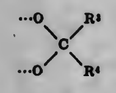
1. A compound of the following formula:



wherein A is selected from the group consisting of a double bond and a single bond; X^1 is selected from the group consisting of hydrogen, fluorine and chlorine, Y is selected from the group consisting of =O and



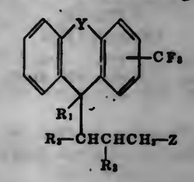
R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms, R^1 is selected from the group consisting of hydroxy and hydrocarbon carboxylic acyloxy containing less than 12 carbon atoms; R^2 represents hydroxy and R^1 and R^2 together represent the grouping



in which R^3 is selected from the group consisting of hydrogen and lower alkyl and R^4 is lower alkyl.

3,192,204
TRIFLUOROMETHYLTHIAXANTHENE AND -XANTHENE DERIVATIVES
Paul N. Craig, Roslyn, and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 7, 1960, Ser. No. 12,966
14 Claims. (Cl. 260—240)

1. A chemical compound of the class consisting of a free base and its nontoxic, pharmaceutically acceptable, acid addition salts the free base having the formula:

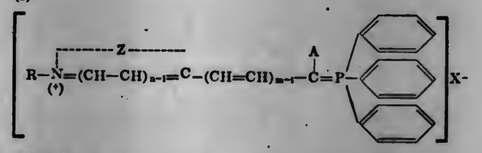


in which Y is a member selected from the group consisting of sulfur and oxygen; R_1 and R_2 are members selected from the group consisting of hydrogen and, when taken together, a single bond; R_3 is a member selected from the group consisting of hydrogen and methyl; and Z is a member selected from the group consisting of di-lower alkylamino, N-pyrrolidinyl, N-piperidyl and N'-lower alkyl-N-piperazinyl.

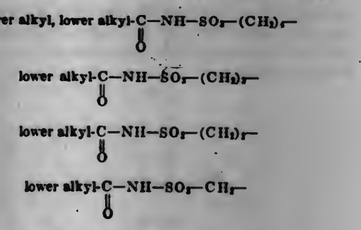
3,192,205
METHINE DYES CONTAINING AN AUXOCHROMOPHORIC SYSTEM
Henri Depoorter and Jean Marie Nys, Mortsel-Antwerp, and André Emile van Dormael, Heverlee-Leuven, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Jan. 10, 1962, Ser. No. 166,454
Claims priority, application Great Britain, Jan. 16, 1961, 1,795/61
6 Claims. (Cl. 260—240)

1. A methine dye having a formula which is a member of the group consisting of

(I)



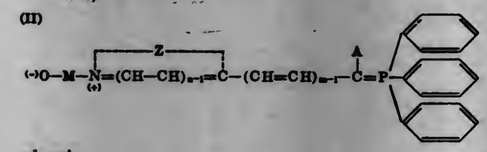
wherein:
A is a member selected from the group consisting of carbethoxy, nitrile and benzoyl,
R is a member selected from the group consisting of



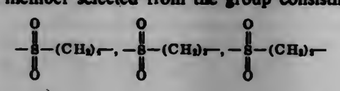
$HO_3S-(CH_2)_4-$, $HO_3S-(CH_2)_3-$, $HO_3S-(CH_2)_2-$, and HO_3S-CH_2-,

Z is the non-metallic atoms necessary to complete a heterocyclic nucleus selected from the group consisting of the thiazole series, benzothiazole series, naphthothiazole series, thionaphtheno[7',6'-d]thiazole series, oxazole series, benzoxazole series, naphthoxazole series, selenazole series, benzoselenazole series, naphthoselenazole series, thiazoline series, thiazolidine series, oxazoline series, oxazolidine series, selenazoline series, 2-quinoline series, 4-quinoline series, 1-isoquinoline series, 3-isoquinoline series, pyridine series, and benzimidazole series,
n is a positive integer selected from the group consisting of 1 and 2,
m is a positive integer selected from the group consisting of 1 and 2, and
X is an acid radical of the type used in methine dye salts,

(II)



wherein:
M is a member selected from the group consisting of

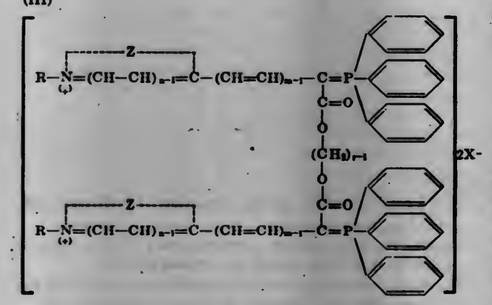


and



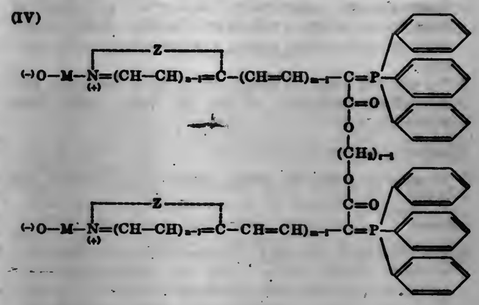
and
A, Z, *n* and *m* have the same significance as described for Formula I,

(III)



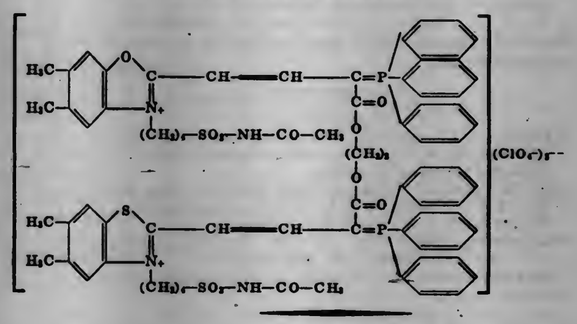
wherein:
r is a positive integer which is a member of the group consisting of 2, 3, 4 and 5, and
R, Z, X, *n* and *m* have the same significance as described for Formula I,

(IV)



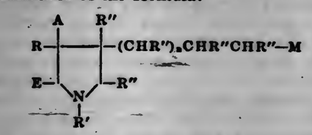
wherein
r is a positive integer which is a member of the group consisting of 2, 3, 4 and 5, and
M, Z, *n* and *m* have the same significance as described for Formula II.

2. A methine dye having the formula:



3,192,206
4-(OMEGA-AMINOALKYL)-3,3-DISUBSTITUTED-N-HYDROCARBON-2-PYRROLIDINONES AND CORRESPONDING-2-THIONPYRROLIDINONES
Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia
No Drawing. Original application Dec. 4, 1961, Ser. No. 156,945. Divided and this application Nov. 13, 1962, Ser. No. 237,283
30 Claims. (Cl. 260—243)

7. A compound selected from the group consisting of 4-(omega-morpholino-alkyl)-2-pyrrolidinones and -2-thionpyrrolidinones of the formula:



wherein
M is selected from the group consisting of morpholino, (lower-alkyl)-morpholino, poly-(lower-alkyl)-morpholino, (lower-alkoxy)-morpholino, thiomorpholino, (lower-alkyl)-thiomorpholino, poly-(lower-alkyl)-thiomorpholino, and (lower-alkoxy)-thiomorpholino,
A is selected from the group consisting of lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, monocarbocyclic aralkyl,
R is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of

nine carbon atoms, monocarbocyclic aryl, monocarbocyclic aralkyl, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of one R'' being other than hydrogen,

wherein

E is selected from the group consisting of oxygen and sulfur,

wherein

monocarbocyclic aryl and monocarbocyclic aralkyl have at most fifteen carbon atoms and wherein the aryl group in each such monocarbocyclic radical is selected from the group consisting of phenyl, nitrophenyl, lower - alkoxyphenyl, lower - alkylmercaptophenyl, lower-alkylphenyl, and halophenyl, and wherein "alkyl" in "aralkyl" is lower-alkyl, and

wherein

n is selected from zero and one, and acid addition and quaternary ammonium salts thereof.

18. A 1 - lower-alkyl-3,3-diphenyl-4-(β-thiomorpholino-ethyl)-2-pyrrolidinone pharmacologically acceptable acid addition salt.

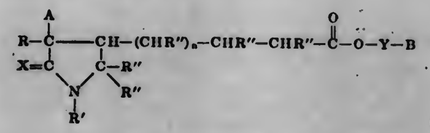
3,192,207

AMINOALKYL ESTERS OF 4-CARBOXYALKYL-2-PYRROLIDINONES AND 4-CARBOXYALKYL-2-THIONPYRROLIDINONES

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,051
9 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of (a) heterocyclic esters having the formula:



(I)

wherein

A is monocarbocyclic aryl having six ring carbon atoms,

X is selected from the group consisting of oxygen and sulfur,

R is selected from the group consisting of monocarbocyclic aryl having six ring carbon atoms, monocarbocyclic aralkyl having six ring carbon atoms, lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl having six ring carbon atoms,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of two R'' being other than hydrogen,

wherein monocarbocyclic aryl and monocarbocyclic aralkyl have at most fifteen carbon atoms and wherein the aryl group in each such monocarbocyclic radical is substituted by a member selected from the group consisting of hydrogen, nitro, lower-alkoxy, lower - alkylmercapto, lower - alkyl, dilower-alkylamino, trifluoromethyl, and halogen, and wherein "alkyl" in "aralkyl" is lower-alkyl,

n is selected from zero and one,

Y is a lower-alkylene radical having a maximum of eight carbon atoms,

B is an amino radical selected from the group consisting of amino (—NH_2); lower-alkyl-amino; di-lower-alkyl-amino; lower-alkenyl-amino; di-lower-alkenyl-amino; phenylamino; (hydroxy-lower-alkyl)-amino; di-(hydroxy-lower-alkyl)-amino; lower-alkyl- (hydroxy-lower-alkyl)-amine; basic saturated monocyclic heterocyclic radicals of less than twelve carbon atoms selected from the group consisting of piperidino, lower - alkyl-piperidino; di-lower-alkyl-piperidino; lower-alkoxy-piperidino; pyrrolidino; lower-alkyl-pyrrolidino; di-lower-alkyl-pyrrolidino; lower-alkoxy-pyrrolidino; morpholino; lower-alkyl-mopholino; di-lower-alkyl morpholino; lower-alkoxymorpholino; thiomorpholino; lower - alkyl-thiomorpholino; di-lower - alkyl-thiomorpholino; lower-alkoxy-thiomorpholino; piperazino; lower-alkyl-piperazino; di-C-(lower-alkyl)-piperazino; N^4-(lower-alkyl)-C-(lower-alkyl) - piperazino; N-(hydroxy-lower-alkyl)-piperazino; N - (lower-alkanoyloxy lower-alkyl)-piperazino; lower - alkoxy-piperazinio; N'-lower-alkoxy-lower-alkylpiperazino; and lower carbalkoxy-piperazino, and wherein Y and B taken together additionally are selected from the group consisting of N - (lower-alkyl-3-pyrrolidyl, N - (lower-alkyl-3-piperidyl, and N - (lower-alkyl)-4-piperidyl, and C-lower-alkyl derivatives of the last three named groups, and (b) quaternary ammonium salts thereof and (c) acid addition salts thereof.

2. An aminolower-alkyl 1-lower-alkyl-3,3-diphenyl-2-pyrrolidinone-4-propionate, wherein the amino radical of the aminolower-alkyl group is a saturated monocyclic heterocyclic radical of less than twelve carbon atoms having up to a maximum of two hetero atoms in the heterocyclic ring.

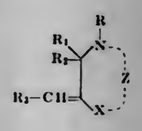
3,192,208

NOVEL SUBSTITUTED MORPHOLINES AND PIPERAZINES AND PROCESSES FOR THEIR SYNTHESIS

Nelson R. Easton and Robert D. Dillard, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed July 31, 1962, Ser. No. 213,614
2 Claims. (Cl. 260—247)

1. A compound selected from the group consisting of the amine bases of the formula:



wherein

R is a member of the group consisting of hydrogen and C_1–C_{12} hydrocarbyl;

R_1 and R_2, when taken separately, are C_1–C_{12} hydrocarbyl, free from acetylenic unsaturation;

R_1 and R_2, when taken together with the carbon atom to which they are attached, form cyclic hydrocarbyl;

R_3 is a member of the group consisting of hydrogen and halo;

Z is a two-carbon linking group; and

X is a member of the group consisting of —O— and



and acid addition salts thereof.

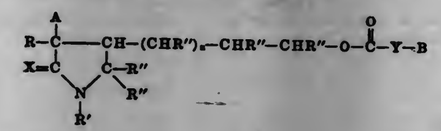
3,192,209

AMINO ACID ESTERS OF 4-HYDROXYALKYL-2-PYRROLIDINONES AND 4-HYDROXYALKYL-2-THIONPYRROLIDINONES

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,050
13 Claims. (Cl. 260—247.1)

1. A compound selected from the group consisting of heterocyclic esters having the formula:



(I)

wherein

A is monocarbocyclic aryl having six ring carbon atoms,

X is selected from the group consisting of oxygen and sulfur,

R is selected from the group consisting of monocarbocyclic aryl having six ring carbon atoms, monocarbocyclic aralkyl having six ring carbon atoms, lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl having six ring carbon atoms,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of two R'' being other than hydrogen,

wherein monocarbocyclic aryl and monocarbocyclic aralkyl have at most fifteen carbon atoms and wherein the aryl group in each such monocarbocyclic radical is substituted by a member selected from the group consisting of hydrogen, nitro, lower-alkoxy, lower-alkylmercapto, lower-alkyl, dilower-alkylamino, trifluoromethyl, and halogen, and wherein "alkyl" in "aralkyl" is lower-alkyl,

n is selected from zero and one,

Y is a lower-alkylene radical having a maximum of six carbon atoms,

B is an amino radical selected from the group consisting of lower-alkyl-amino; di-lower-alkyl-amino; lower-alkenyl-amino; di-lower-alkenyl-amino; phenylamino; (hydroxy-loweralkyl)-amino; di-(hydroxy-lower-alkyl)-amino; lower-alkyl-(hydroxy-lower-alkyl)-amino; basic saturated monocyclic heterocyclic radicals of less than twelve carbon atoms selected from the group consisting of piperidino, lower-alkyl-piperidino; di-lower-alkyl-piperidino; lower - alkoxy-piperidino; pyrrolidino; lower-alkyl-pyrrolidino; di-lower-alkyl-pyrrolidino; lower-alkoxy-pyrrolidino; morpholino; lower-alkyl-morpholino; di-lower-alkyl-morpholino; lower-alkoxy-morpholino; thiomorpholino; lower-alkyl-thiomorpholino; di-lower-alkyl-thiomorpholino; lower-alkoxy-thiomorpholino; piperazino; lower-alkyl-piperazino; di-C-(lower-alkyl)-piperazino; N^4-(lower-alkyl)-C-(lower-alkyl)-piperazino; N - (hydroxy-lower-alkyl)-piperazino; N - (lower-alkanoyloxy lower-alkyl)-piperazino; lower-alkoxy-piperazino; N'-lower-alkoxy-lower-alkylpiperazino; and lower-carbalkoxy-piperazino;

and acid-addition salts thereof.

9. A 4-[2-(α-morpholinoacetoxy)-ethyl]-1-isopropyl-3,3-diphenyl-2-pyrrolidinone non-toxic acid addition salt.

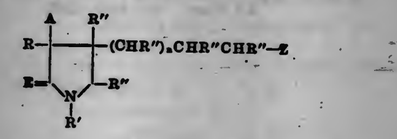
3,192,210

4-(OMEGA - SUBSTITUTED ALKYL)-3,3-DISUBSTITUTED-1-SUBSTITUTED - 2 - PYRROLIDINONES AND 4-(OMEGA-SUBSTITUTED ALKYL)-3,3-DISUBSTITUTED - 1 - SUBSTITUTED-2-THIONPYRROLIDINONES

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Original application Dec. 4, 1961, Ser. No. 156,945. Divided and this application Nov. 13, 1962, Ser. No. 237,286
20 Claims. (Cl. 260—247.2)

1. A compound selected from the group consisting of 4-(omega-substituted alkyl)-2-pyrrolidinones and -2-thionpyrrolidinones of the formula:



wherein

Z is selected from the group consisting of cyano, carboxy, carb-lower-alkoxy, carbonyl halide, lower alkanoyl, and aminocarbonyl wherein "amino" is selected from the group consisting of primary amino, N,N - (lower - alkyl)amino, N,N-di-(lower-alkyl) amino, N-di-(monocyclic alkyl)amino wherein each monocyclic alkyl has up to a maximum of nine carbon atoms, and saturated heterocyclic amino radicals having less than 12 carbon atoms and having up to a maximum of two hetero atoms in the heterocyclic ring,

A is selected from the group consisting of lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl having six ring carbon atoms, and monocarbocyclic aralkyl having six ring carbon atoms,

R is selected from the group consisting of lower-alkyl, lower alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl having six ring carbon atoms, monocarbocyclic aralkyl having six ring carbon atoms, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl having six ring carbon atoms,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of one R'' being other than hydrogen,

wherein E is selected from the group consisting of oxygen and sulfur,

wherein monocarbocyclic aryl and monocarbocyclic aralkyl have at most fifteen carbon atoms and wherein the aryl group in each such monocarbocyclic radical is substituted by a member selected from the group consisting of hydrogen, nitro, lower-alkoxy, lower-alkylmercapto, lower-alkyl, and halogen, and wherein "alkyl" in "aralkyl" is lower-alkyl, and wherein

n is selected from zero and one.

15. 4 - (β - morpholinocarbonylethyl)-3,3-diphenyl-1-isopropyl-2-pyrrolidinone.

3,192,211
5-PHENYL-5-(2-PYRAZYL)-HYDANTOIN

Antony M. Akkerman, Hendrik Kofman, and Josephus F. Michels, Amsterdam, and George de Vries, Haarlem, all of the Netherlands, assignors to N.V. Nederlandsche Combinatie voor Chemische Industrie, Amsterdam, Netherlands, a limited-liability company of the Netherlands

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,035
Claims priority, application Netherlands, May 3, 1962, 278,016
6 Claims. (Cl. 260—250)

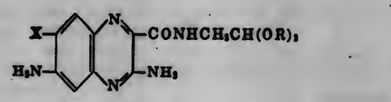
1. A compound selected from the group consisting of 5-phenyl-5-(2-pyrazyl)-hydantoin and its physiologically acceptable salts.

3,192,212
3,6-DIAMINO-N-(2,2-DIALKOXYETHYL)-2-QUINOXALINECARBOXAMIDES

Arthur A. Santilli, Ardmore, and Thomas S. Osdene, Berwyn, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 27, 1963, Ser. No. 283,576
2 Claims. (Cl. 260—250)

1. A compound of the formula:



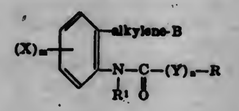
wherein X is selected from the group consisting of hydrogen and lower alkyl and R is a lower alkyl group.

3,192,213
AMINOALKYL ANILIDES

John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

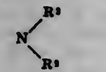
No Drawing. Filed Oct. 12, 1962, Ser. No. 230,270
6 Claims. (Cl. 260—253)

1. A compound of the group consisting of a base of the formula



wherein

the alkylene group has up to 14 carbon atoms, R represents a member of the group consisting of hydrogen, lower alkyl, cycloalkyl of 3 to 7 carbon atoms, $(X)_m$-phenyl, furyl, thienyl, pyridyl and piperonyl, R^1 represents a member of the group consisting of hydrogen, lower alkyl, lower alkenyl, $(X)_m$-phenyl-lower alkylene and $(X)_m$-phenyl-lower alkenylene, X represents a member of the group consisting of hydrogen, halo, lower alkyl, lower alkoxy, hydroxy, lower alkanoyl, trihalomethyl, nitro, amino and di-lower alkylamino, Y represents a member of the group consisting of the group of lower alkenylene, lower alkynylene and lower alkadienylene, B represents a basic, nitrogen containing radical of the group consisting of



and N-hetero-$(X)_p$, wherein R^2 is a member of the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, phenyl-lower alkyl and N-(lower alkyl)phenyl(lower alkyl), hetero is a divalent radical of the group consisting of tetramethylene, pentamethylene, hexamethylene, oxapentamethylene, oxatetramethylene, azahexamethylene, azatetramethylene, azapentamethylene, thiapentamethylene and thiatetramethylene, X has the same meaning as previously defined and p is an integer from 0 to 2, m represents an integer from 1 to 3, and n represents 1,

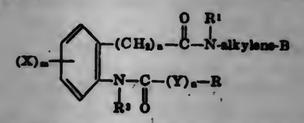
and physiologically acceptable acid addition salts and quaternary ammonium salts of said base.

3,192,214
BASIC ANILIDE DERIVATIVES

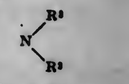
John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 12, 1962, Ser. No. 230,276
7 Claims. (Cl. 260—253)

1. A compound of the group consisting of a base of the formula



wherein the alkylene group has up to about 14 carbon atoms, R represents a member of the group consisting of hydrogen, lower alkyl, cycloalkyl of 3 to 7 carbon atoms, $(X)_m$-phenyl, furyl, thienyl, pyridyl and piperomyl, R^1 and R^2 each represent a member of the group consisting of hydrogen, lower alkyl, lower alkenyl and aralkyl up to 12 carbon atoms, X represents a member of the group consisting of hydrogen, halo, lower alkyl, lower alkoxy, lower alkanoyl, trihalomethyl, hydroxy and nitro, Y represents a member of the group consisting of lower alkylene, lower alkenylene, lower alkynylene and lower alkadienylene, B represents a basic, nitrogen containing radical of the group consisting of



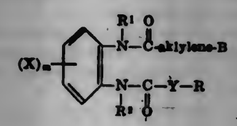
and N-hetero-$(X)_n$ wherein R^2 is a member of the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, phenyl-lower alkyl and N-(lower alkyl)phenyl (lower alkyl), hetero is a divalent radical of the group consisting of tetramethylene, pentamethylene, hexamethylene, oxapentamethylene, oxatetramethylene, azahexamethylene, azatetramethylene, azapentamethylene, thiapentamethylene and thiatetramethylene, and X has the meaning previously defined, m represents an integer from 1 to 3 and n represents an integer for 0 to 2, and physiologically acceptable acid addition salts and quaternary ammonium salts of said base.

3,192,215
O-DIAMIDOBENZENE DERIVATIVES

John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 30, 1963, Ser. No. 255,112
7 Claims. (Cl. 260—253)

1. A compound of the group consisting of a base of the formula



wherein

R represents a member of the group consisting of hydrogen, lower alkyl, cycloalkyl of 3 to 7 carbon atoms, $(X)_m$-phenyl, furyl, thienyl, pyridyl and piperonyl, R^1 and R^2 each represents a member of the group consisting of hydrogen and lower alkyl, X represents a member of the group consisting of hydrogen, halo, lower alkyl, lower alkoxy, lower alkanoyl, trihalomethyl, hydroxy and nitro, Y represents a member of the group consisting of lower alkylene, lower alkenylene, lower alkynylene and lower alkadienylene, B represents a basic nitrogen containing radical of the group consisting of amino, lower alkylamino, di(lower alkyl)amino, (hydroxy-lower alkyl)amino, di(hydroxy-lower alkyl) amino, phenyl(lower alkyl)amino, N-(lower alkyl)phenyl (lower alkyl)amino, piperidino, (lower alkyl)piperidino, di(lower alkyl)piperidino, (lower alkoxy)piperidino, piperidyl, (lower alkylpiperidyl), pyrrolidino, (lower alkyl)pyrrolidino, di(lower alkyl)pyrrolidino, (lower alkoxy)pyrrolidino, pyrrolidyl, (N-lower alkylpyrrolidyl), morpholino, (lower alkyl)morpholino, di(lower alkyl)morpholino, (lower alkoxy) morpholino, thiamorpholino, (lower alkyl)thiamorpholino, di(lower alkyl)thiamorpholino, (lower alkoxy) thiamorpholino, piperazino, (lower alkyl) piperazino, di(lower alkyl)piperazino, hexamethyleneimino and homopiperazino, and m represents an integer from 1 to 3,

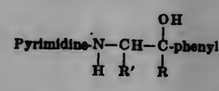
and physiologically acceptable acid addition salts and quaternary ammonium salts of said base.

3,192,216
PHENYLHYDROXYALKYLPYRIMIDINE COMPOUNDS

Allan Poe Gray and Donald Elmer Heitmeier, Decatur, Ill., assignors to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,716
6 Claims. (Cl. 260—256.4)

1. A chemical compound having the formula



wherein Pyrimidine is the pyrimidine ring, the substituents on the pyrimidine and phenyl rings being selected from the group consisting of hydrogen, halo, lower-alkyl, lower-alkoxy, methylenedioxy, amino, nitro, trihalomethyl, hydroxy, mercapto, lower-alkylthio and carboxy, R is selected from the group consisting of hydrogen, lower-alkyl, benzyl and phenyl and R′ is selected from the group consisting of hydrogen and methyl.

3,192,217
PREPARATION OF AMINE-BORANES

Mervin D. Marshall, Fombell, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 7, 1960, Ser. No. 12,972
6 Claims. (Cl. 260—290)

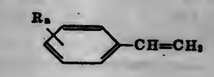
1. A method of producing an amine-borane, $X{:}BH_3$ where X is an amine, which comprises reacting an amine, X, consisting solely of carbon, hydrogen, and amine nitrogen with a dialkoxyborane, $HB(OR)_2$ where R is a monovalent lower-alkyl radical, and recovering the amine-borane thus formed.

3,192,218
DIMERIZATION OF STYRENE AND VINYL PYRIDINES IN THE PRESENCE OF ATOMIC HYDROGEN

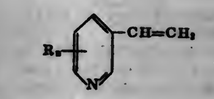
Paul W. Solomon, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 1, 1960, Ser. No. 66,424
4 Claims. (Cl. 260—290)

1. A process of selectively dimerizing vinyl compounds which comprises reacting in liquid phase at a temperature in the range of about −60° C. to about +60° C. with atomic hydrogen a liquid compound selected from the group consisting of



and



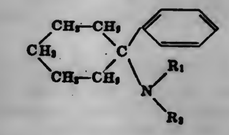
where R is lower alkyl and n is an integer selected from the group consisting of 0 and 1.

3,192,219
PROCESS FOR PRODUCING CERTAIN NEW 1-PHENYLCYCLOHEXYLAMINE COMPOUNDS

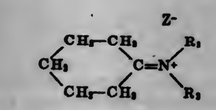
V Harold Maddox, Huntington Woods, and Erik F. Godefrol, Detroit, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Apr. 4, 1960, Ser. No. 19,476
6 Claims. (Cl. 260—293)

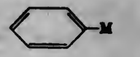
1. Process for the production of a 1-phenylcyclohexylamine compound having in the free base form the formula,



which comprises reacting a quaternary ammonium compound of formula,



with a compound of formula,



under substantially anhydrous conditions in a non-hydroxylic organic solvent and decomposing the resulting product by treatment with an aqueous medium; where R_1 and R_2 are members of the class consisting of alkyl radicals which together contain a total of not more than five carbon atoms and further members wherein R_1 and R_2 together with —N< represent pyrrolidino, piperidino and hexamethyleneimino and lower alkyl derivatives thereof, Z represents one equivalent of an anion of an acid and M is a member of the class consisting of alakil metals and the radical —Mg-halogen.

3,192,220

REDUCTION OF ISONICOTINIC ACID ESTERS

John A. Pianfetti, Baltimore, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 13, 1962, Ser. No. 202,068
4 Claims. (Cl. 260—293.2)

1. The method of reducing a lower alkyl ester of isonicotinic acid to the corresponding piperidine derivative which comprises reacting the ester with hydrogen at a temperature from 35 to 150° C., at a pressure from just above atmospheric to 500 p.s.i.g., in the presence of sufficient supported palladium catalyst to provide 0.005 to 2 grams of palladium per mol of the ester, and continuing the reaction until the theoretical quantity of hydrogen has been absorbed.

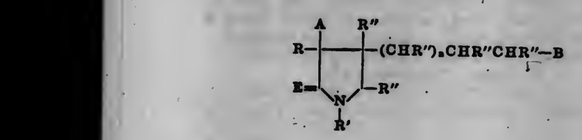
3,192,221

4-(OMEGA - SUBSTITUTED ALKYL)-3,3-DISUBSTITUTED-1-SUBSTITUTED - 2 - PYRROLIDINONES AND 4-(OMEGA-SUBSTITUTED ALKYL)-3,3-DISUBSTITUTED - 1 - SUBSTITUTED-2-THIONPYRROLIDINONES AND PRODUCTION THEREOF

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,945
29 Claims. (Cl. 260—295)

9. A compound selected from the group consisting of 4 - (omega-substituted alkyl) - 2 - pyrrolidinones and -2-thionpyrrolidinones of the formula:



wherein

B is selected from the group consisting of halogen, hydroxy, mercapto, lower-alkyl mercapto, lower-alkoxy, phenoxy, benzyloxy, benzoyloxy, hydroxybenzoyloxy, nicotinoyloxy, and lower-alkanoyloxy,

A is selected from the group consisting of lower-alkyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, and monocarbocyclic aralkyl,

R is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, monocarbocyclic aryl, monocarbocyclic aralkyl, pyridyl, thienyl, and thenyl,

R' is selected from the group consisting of lower-alkyl, lower-alkenyl, cycloalkyl having up to a maximum of nine carbon atoms, cycloalkenyl having up to a maximum of nine carbon atoms, and monocarbocyclic aralkyl,

R'' is selected from the group consisting of hydrogen and methyl, a maximum of one R'' being other than hydrogen,

wherein E is selected from the group consisting of oxygen and sulfur,

wherein any monocarbocyclic aryl and monocarbocyclic aralkyl group has at most fifteen carbon atoms and has a radical which is selected from the group consisting of phenyl, nitrophenyl, lower-alkoxyphenyl, lower-alkylmercaptophenyl, lower-alkylphenyl, and halophenyl, and wherein "alkyl" in any aralkyl group is lower-alkyl, and wherein

n is selected from zero to one.

23. 1-lower-alkyl-3-phenyl - 3 - pyridyl - 4 - (β - haloethyl)-2-pyrrolidinone.

3,192,222

N'-[1-PHENYL-PROPYL-(2)]-N''-[PHENYL-PYRIDYL-(2)]-ETHYLENE DIAMINE

Albert Gross, Frankfurt am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,665
Claims priority, application Germany, Dec. 14, 1961, D 37,673
1 Claim. (Cl. 260—296)

N'-[1-phenyl-propyl-(2)]-N'' - [phenyl - pyridyl - (2)]-ethylene diamine.

3,192,223

PREPARATION OF 1-METHYL-2-PYRIDINIUMALDOXIME CHLORIDE

Sylvan E. Forman, Lawrence Township, Mercer County, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 7, 1962, Ser. No. 242,912
4 Claims. (Cl. 260—296)

1. A method for the production of 1-methyl-2-pyridiniumoxime chloride which comprises the reaction of 2-pyridinealdoxime with methyl chloride in the presence of methanol as solvent.

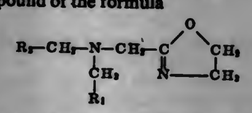
3,192,224

AMINOMETHYL OXAZOLINES AND PROCESS OF PREPARING SAME

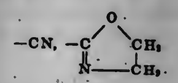
Charles Kaper, Brooklyn, N.Y., assignor to Coastal Interchemical Company, Brooklyn, N.Y.

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,049
4 Claims. (Cl. 260—307)

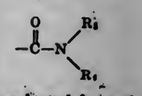
1. A compound of the formula



wherein R_1 is a radical selected from the group consisting of



and



wherein R_3 and R_4 are selected from the group consisting of hydrogen, saturated aliphatic hydrocarbon of 1 to 18 carbon atoms, hydroxymethyl, hydroxyethyl, and poly (oxyethylene) of less than 18 carbon atoms, and R_2 is selected from the group consisting of R_1 and $—CH_2NH_2$.

4. A process for the production of 2-oxazolines comprising reacting nitrilotriaceto nitrile with ethylene oxide at a temperature in the range of from about 0° C. to about 150° C.

3,192,225

2-SUBSTITUTED AMINOTHIAZOLES

John D. Spivack, Spring Valley, and Martin Dexter, White Plains, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Apr. 24, 1961, Ser. No. 104,805. Divided and this application Dec. 28, 1962, Ser. No. 253,017
5 Claims. (Cl. 260—306.8)

1. 2,2'-imino-bis-(4-p-t-butylphenylthiazole).

2. 2-(α-naphthylamino)-4-p-t-butylphenylthiazole.

3. 2,2-'-imino-bis-(4-hendecylthiazole).

4. 2-(α-naphthylamino) - 5,6,7,8-tetrahydro-benzothiazole.

5. 2-(α-naphthylamino)-4-n-hendecylthiazole.

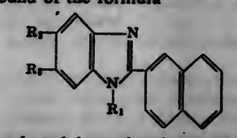
3,192,226

CERTAIN 1-ACYL-2-(2'-NAPHTHYL)-BENZIMIDAZOLE COMPOUNDS

Lewis H. Sarett, Princeton, and Horace D. Brown, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 25, 1961, Ser. No. 112,545
3 Claims. (Cl. 260—309.2)

1. A compound of the formula



wherein R_1 is selected from the class consisting of lower alkanoyl and benzoyl, and R_2 and R_3 are selected from the class consisting of hydrogen, lower alkyl and lower alkoxy groups, at least one of R_2 and R_3 being hydrogen.

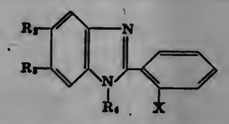
3,192,227

N-ACYL-2-HALOPHENYL BENZIMIDAZOLES

Horace D. Brown, Plainfield, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

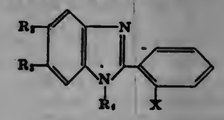
No Drawing. Filed July 27, 1961, Ser. No. 127,146
7 Claims. (Cl. 260—309.2)

1. A compound having the formula



wherein R_2 and R_3 are selected from the class consisting of hydrogen, lower alkyl and lower alkoxy, R_4 is selected from the class consisting of benzoyl and lower alkanoyl, and X is halogen having an atomic weight of between 19 and 35.5 inclusive.

6. The process for preparing a 2-(o-halophenyl) N-acyl benzimidazole having the structure



3,192,228

N-(AMINOALKYL)-ENDO-PERHYDRO-4,7-METHANOISOINDOLES

James W. Bolger, Canoga Park, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed July 27, 1962, Ser. No. 213,048
2 Claims. (Cl. 260—319)

2. N-(amino-lower alkyl)-7a-phenyl-endo-perhydro-4,7-methanoisoindole.

3,192,229

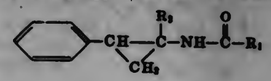
PHENYLCYCLOPROPYL AMIDES

John H. Biel, Milwaukee, Wis., assignor to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed July 3, 1962, Ser. No. 207,424
4 Claims. (Cl. 260—326.3)

1. 2-phenylcyclopropyl-5-pyrrolidone-2-carboxamide.

4. A phenylcyclopropyl amide of the formula



wherein R_1 is a member of the group consisting of pyridyl and 5-keto-2-pyrrolidyl and R_2 is a member of the group consisting of hydrogen and lower alkyl.

3,192,230

PROCESS FOR PRODUCING 1,3,3-TRISUBSTITUTED-4-(β-HALOETHYL) - 2 - PYRROLIDINONE

Carl D. Lunsford, Richmond, and Albert D. Cale, Jr., Bon Air, Va., assignors to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Feb. 9, 1961, Ser. No. 88,036
13 Claims. (Cl. 260—326.5)

1. A process for the production of a 1,3,3-trisubstituted-4-(beta-halo ethyl)-2-pyrrolidinone which comprises mixing and reacting together an alpha,alpha-disubstituted-alpha (N-substituted-3-pyrrolidyl)-acetic acid, wherein the substituents at the alpha carbon of the acetic acid and the N-position of the pyrrolidyl ring are free of interfering groups and individually contain at most fifteen carbon atoms inclusive, with a compound selected from the group consisting of thionyl halides and phosphorus halides, to produce the desired 1,3,3-trisubstituted-4-(beta-halo ethyl)-2-pyrrolidinone wherein the substituent in the 1 position corresponds to that in the N-position of the starting acetic acid, the two substituents in the 3-position correspond to those in the alpha position of the starting acetic acid, and the halogen in the beta position of the 4-ethyl group corresponds to the halogen of the halide employed.

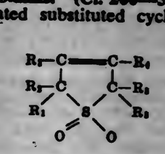
3,192,231

UNSATURATED SUBSTITUTED CYCLIC SULFONES AND PROCESS FOR PREPARING THE SAME

Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,859
11 Claims. (Cl. 260—332.1)

1. An unsaturated substituted cyclic sulfone of the formula:



in which R_1,R_2, R_5 and R_6 are each selected from the group consisting of hydrogen, lower alkyl, phenyl and cyanoethyl with the proviso that at least one of the R_1, R_2, R_5 and R_6 substituents is cyanoethyl and R_3 and R_4 are each selected from the group consisting of hydrogen, lower alkyl and phenyl.

3,192,232

WARFARIN ALKALI METAL DERIVATIVE PROCESS

Collin H. Schroeder and Karl Paul Link, Madison, Wis., assignors to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin

No Drawing. Filed Feb. 21, 1961, Ser. No. 90,613
5 Claims. (Cl. 260—343.2)

1. In the process of preparing an alkali metal derivative of warfarin selected from the group consisting of warfarin sodium and warfarin potassium, by reacting an aqueous alkali metal hydroxide solution with an aqueous slurry of warfarin containing excess warfarin, the improvement which consists in slowly adding an aqueous alkali metal hydroxide solution, selected from the group consisting of sodium hydroxide and potassium hydroxide solutions, with agitation to a slurry of warfarin containing excess warfarin in water containing about 10% by volume of acetone.

3,192,233
SELECTIVE OXIDATION OF ACROLEIN DIMER
William G. Skelly, Northbrook, Ill., assignor to International Minerals & Chemical Corporation, a corporation of New York
No Drawing. Filed Oct. 20, 1961, Ser. No. 146,421
6 Claims. (Cl. 260—343.5)

1. A process for the selective oxidation of acrolein dimer to alpha-hydroxyglutarate which comprises reacting molecular oxygen and ozone with acrolein dimer in an aqueous medium in the presence of a catalyst selected from the group consisting of (a) metallic silver and (b) silver oxide supported on a base metal oxide, said reaction being carried out at a pH above about 7.

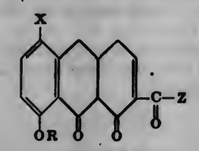
3. The process of claim 1 wherein the hydroxy-glutarate is acidified to a pH below about 7 to form hydroxy-glutaric acid lactone.

3,192,234
SYNTHESIS OF FLUORO-ANALOGUES OF GRISEOFULVIN
Chun-hwa Kuo and David Taub, Metuchen, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 6, 1961, Ser. No. 150,145
5 Claims. (Cl. 260—346.2)

1. The process for producing 7-fluoro-6-hydroxy-4-methoxy - 4' - loweralkoxy - 6' - methyl - gris - 3' - ene-3,2'-dione that comprises reacting 7-chloro-6-hydroxy-4-methoxy - 4' - loweralkoxy - 6' - methyl - gris - 3' - ene-3,2'-dione with perchloryl fluoride in a basic reaction medium, thereby producing a mixture comprising 7-chloro-7 - fluoro - 4 - methoxy - 4' - loweralkoxy - 6,7 - dihydro-6' - methyl - gris - 3' - ene - 3,6,2' - trione and 3a-fluoro-7 - chloro - 4 - methoxy - 4' - loweralkoxy - 3a,6 - dihydro - 6' - methyl - gris - 3' - ene - 3,6,2' - trione, and contacting said mixture with a member of the group consisting of chromus chloride, chromous acetate, and zinc.

3,192,235
SUBSTITUTED 1,4,4a,9,9a,10-HEXAHYDRO-4,10-DIOXOANTHRACENES
Raymond George Wilkinson, Montvale, N.J., and Thomas Lynn Fields, Pearl River, and Andrew Steven Kende, Hartsdale, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Nov. 28, 1961, Ser. No. 155,484
6 Claims. (Cl. 260—351)

1. A compound of the formula:



wherein X is selected from the group consisting of chlorine and bromine; R is selected from the group consisting of hydrogen and lower alkyl; and Z is selected from the group consisting of lower alkoxy and phenyl lower alkoxy.

3,192,236
POLYMERIC CHELATES OF HYDROXY-SUBSTITUTED ANTHRAQUINONES AND THE PROCESS FOR THEIR PREPARATION
John J. O'Connell, Waltham, Mass., assignor, by mesne assignments, to Monsanto Research Corporation, Everett, Mass., a corporation of Delaware
No Drawing. Filed July 15, 1960, Ser. No. 42,993
3 Claims. (Cl. 260—366)

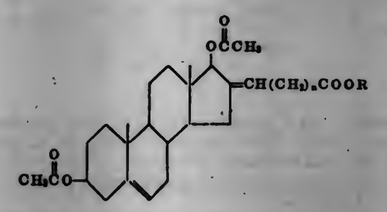
1. The process which comprises (1) treating an anthraquinone derivative of the group consisting of anthrarufin, quinizarin and a β-hydroxy derivative thereof containing 1–2 hydroxy groups with a member of the group consisting of an alkali metal ethoxide, an alkali metal methoxide and an alkali metal hydride in a substantially inert hydroxy-free organic solvent to form a doubly ionized ligand of said anthraquinone derivative, (2) adding to the resulting solution a soluble, substantially anhydrous hydroxy-free metal salt wherein the cation is a metal having a principal valence of 2 and a coordination number of 4, and (3) heating the resulting mixture to give a high-molecular weight chelate condensation polymer.

2. The process which comprises treating 1,3,5,7-tetrahydroxyanthraquinone with alkali metal methoxide in N,N-dimethylformamide to form a doubly ionized ligand of said anthraquinone compound, and heating the resulting reaction mixture with zinc chloride to give a high molecular weight chelate condensation polymer which precipitates from water.

3. The polymer produced by the process defined in claim 2.

3,192,237
HYDROGENATION OF 5-UNSATURATED STEROIDAL 16-YLIDENALKYLCARBOXYLIC ACIDS
Morris Freifelder and Paul Kurath, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
No Drawing. Filed May 13, 1963, Ser. No. 280,120
3 Claims. (Cl. 260—397.1)

1. The process of hydrogenating a steroid of the formula



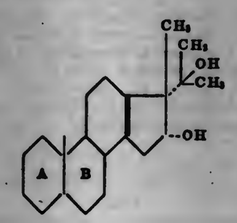
wherein R is selected from the group consisting of hydrogen and lower alkyl and wherein *n* is selected from the integers 0, 1 and 2, comprising

suspending 1–5 parts by weight of said steroid in 100 parts by volume of an alkanol having 1–3 carbon atoms and 5 parts by volume of water, and

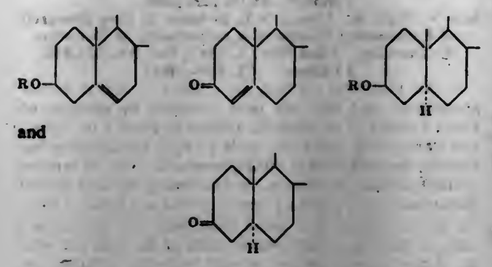
hydrogenating said mixture in the presence of 1–5% of a platinum catalyst based on the amount of steroid, at superatmospheric hydrogen pressure until hydrogen uptake ceases.

3,192,238
17,20-DIMETHYL-18-NORPREGNENES
Leslie A. Freiberg, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,323
9 Claims. (Cl. 260—397.45)

1. A compound of the formula



wherein the A/B rings have a partial structure selected from the group consisting of



and

wherein R is selected from the group consisting of hydrogen and acetyl.

3,192,239
PROCESS FOR ADDITION OF ARYLTHIOLS, PHENOLS AND PHENYL ETHERS TO UNSATURATED FATTY ACIDS
Waldo C. Ault and Abner Eisner, Glenside, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Apr. 2, 1962, Ser. No. 184,698
14 Claims. (Cl. 260—399)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for preparing addition products comprising reacting an olefinically unsaturated compound selected from the group consisting of an olefinically unsaturated fatty acid and an alkyl ester thereof, with an aromatic compound selected from the group consisting of a phenol, a phenyl ether, and an arylthiol in an amount at least in excess of a molar equivalent for each double bond in said olefinically unsaturated compound, in a reaction medium comprising methanesulfonic acid, and separating the resulting addition product from the reaction mixture.

3,192,240
PROCESS FOR MANUFACTURE OF TETRAMETHYLLEAD
Paul Kobetz and Francis M. Beaird, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,881
25 Claims. (Cl. 260—437)

1. The process of manufacture of tetramethyllead comprising reacting as essentially the sole reactants a sodium lead alloy and methyl chloride in the presence of a catalyst system formed by adding an aluminum catalyst and at least one co-catalyst which is an organic compound consisting of carbon, hydrogen and oxygen, the aluminum catalyst being selected from the group consisting of

aluminum,
aluminum trichloride,
aluminum tribromide,
aluminum triiodide, and
a hydrocarbon aluminum compound having at least one hydrocarbon group bonded to aluminum by a carbon-aluminum linkage and selected from the group consisting of
trihydrocarbon aluminum compounds,
hydrocarbon aluminum chlorides,
hydrocarbon aluminum hydrides, and
hydrocarbon aluminum alkoxides, wherein the said hydrocarbon groups bonded to aluminum are hydrocarbon groups selected from the group consisting of alkyl, phenyl, and mixtures thereof,

each co-catalyst being a compound having at least one glycol diether type group and being selected from the group consisting of

dihydrocarbon ethers of lower polyethylene glycols having from two to seven glycol groups,
dihydrocarbon ethers of ethylene glycol,
lower alkyl ethers of 1,4-dioxane,
1,4-dioxane,
dioxolane,
lower alkyl dioxolane, and
hydrocarbon ethers of methyl tetrahydrofuran,

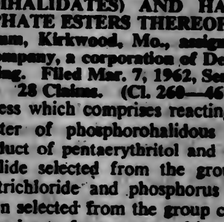
the hydrocarbon radicals of the said co-catalysts being radicals selected from the group consisting of alkyl, phenyl, cyclohexyl and mixtures thereof.

3,192,241
TRANSESTERIFICATION REACTION OF ORTHOSILICATES WITH POLYHYDRIC PHENOLS
David Samuel Petrie Roebuck, Newport, England, assignor to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Filed Mar. 13, 1958, Ser. No. 721,090
Claims priority, application Great Britain, Mar. 15, 1957, 8,651/57
20 Claims. (Cl. 260—448.8)

1. The product obtained by heating a dihydroxyphenol with a molar excess of tetraphenyl orthosilicate until the reaction is substantially complete.

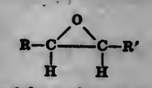
3,192,242
2,2-BIS(HALOMETHYL)-1,3-PROPYLENEBIS(PHOSPHORODIHALIDATES) AND HALOGENATED DIPHOSPHATE ESTERS THEREOF
Gail H. Birum, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Mar. 7, 1962, Ser. No. 177,964
28 Claims. (Cl. 260—461)

1. A process which comprises reacting (a) the pentaerythritol ester of phosphorohalidous acid containing reaction product of pentaerythritol and a trivalent phosphorus trihalide selected from the group consisting of phosphorus trichloride and phosphorus tribromide with (b) a halogen selected from the group consisting of bromine and chlorine to form as a resulting reaction product a compound of the formula



wherein each X denotes a halogen selected from the group consisting of bromine and chlorine.

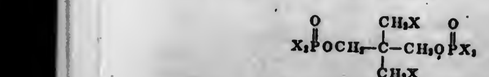
4. A process for preparing organophosphorus compounds which comprises reacting (a) the pentaerythritol ester of phosphorohalidous acid containing reaction product of pentaerythritol and a phosphorus trihalide selected from the group consisting of phosphorus tribromide and phosphorus trichloride with (b) a halogen selected from the group consisting of chlorine and bromine to form a 2,2 - bis(halomethyl) - 1,3 - propylenebis(phosphorodihalidate) reaction product (c), and reacting the reaction product (c) with at least one epoxide compound of the formula



wherein R is selected from the group consisting of hydrogen, hydrocarbyl, chlorohydrocarbyl, bromohydrocarbyl, hydrocarbyloxyalkyl, and -hydrocarbyl-C(O)O-alkyl and R' is selected from the group consisting of hydrogen, lower alkyl, and lower haloalkyl radicals and is hydrogen when R is hydrocarbyloxyalkyl and when R is hydrocarbyl-C(O)O-alkyl in an amount sufficient to react with at least some of the halogen atoms selected from the group consisting of bromine and chlorine bonded to the phosphorus atoms of the reaction product (c), the epox-

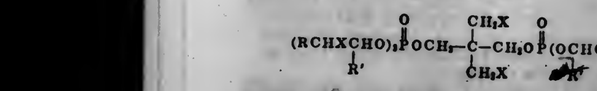
ides used being selected so that the ester moieties bonded to the phosphorus atoms of the resulting product have an average of from 2 to about 12 carbon atoms therein, with no R moiety having over 20 carbon atoms therein.

12. A compound of the formula



wherein each X is selected from the group consisting of bromine and chlorine.

15. The compound of the formula



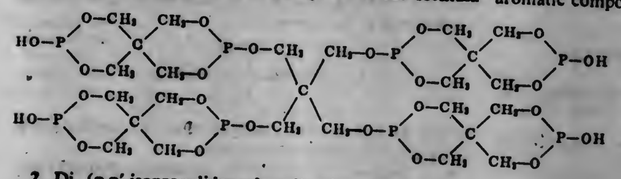
wherein each X is selected from the group consisting of bromine and chlorine, each R is selected from the group consisting of hydrogen, hydrocarbyl, chlorohydrocarbyl, bromohydrocarbyl, hydrocarbyloxyalkyl and hydrocarbyl-C(O)O-alkyl and each R' is selected from the group consisting of hydrogen, lower alkyl, and lower haloalkyl, and is hydrogen when R is hydrocarbyloxyalkyl and when R is hydrocarbyl-C(O)O-alkyl R and R' being selected so that the ester moieties bonded to the phosphorus atoms have an average of from 2 to about 12 carbon atoms, with no R having over 20 carbon atoms therein.

3,192,243
PHOSPHOROUS DERIVATIVES OF PENTAERYTHRITOL

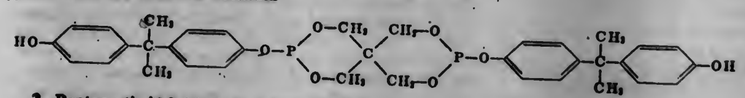
John Gagliani, Wilmington, Del., assignor to Delaware Chemicals, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 10, 1962, Ser. No. 186,361
9 Claims. (Cl. 260—461)

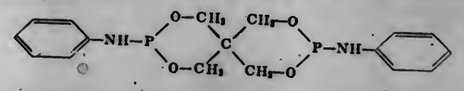
1. Pentaerythritol tetra acid phosphite of the formula



2. Di (p,p'-isopropylidenephenol) phenyl pentaerythritol diphosphite of the formula



3. Pentaerythritol bisphosphorous-phenylamide of the formula



4. In a method of producing organic phosphorus compounds consisting of pentaerythritol poly acid phosphites and derivatives thereof, the steps comprising reacting pentaerythritol and phosphorous trihalide in an inert solvent with the formation of hydrogen halide, removing said hydrogen halide during the said formation thereof and recovering the resulting pentaerythritol poly acid phosphite as a crystalline solid with a melting point of over 200° C. and a chlorine content of less than 2%.

3,192,244
PROCESS FOR PURIFICATION OF THIOPHOSPHORIC ACID ESTERS

Roy V. High, Jr., Union, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 1, 1962, Ser. No. 234,850
3 Claims. (Cl. 260—461)

1. An improved method for refining a dialkyl dithiophosphoric acid that has been obtained by reaction of about 4 moles of an aliphatic alcohol of from 3 to 20 carbon atoms with about one mole of P_2S_5 which comprises treating the said dialkyl dithiophosphoric acid, to remove unstable sulfides therefrom, by converting the said dialkyl dithiophosphoric acid to a water-soluble salt selected from the group consisting of alkali metal salts and ammonium salts, contacting an aqueous solution of the said salt with an aliphatic hydrocarbon solvent whereby unstable sulfides are extracted therefrom, separating the extracted aqueous solution from the hydrocarbon solvent containing said sulfides, thereafter treating the extracted aqueous solution with dilute mineral acid to regenerate dialkyl dithiophosphoric acid, thereafter extracting the resulting aqueous solution of regenerated dialkyl dithiophosphoric acid with a hydrocarbon solvent and recovering regenerated dialkyl dithiophosphoric acid from said last named solvent.

3,192,245
PREPARATION OF DIARYLACETONITRILES AND THEIR RING SUBSTITUTED DERIVATIVES

George Kesslin, Teaneck, N.J., and Alvin C. Fleik and Robert Bradshaw, Stony Point, N.Y., assignors to Kay-Fries Chemicals, Inc., West Haverstraw, N.Y., a corporation of New York

No Drawing. Filed May 25, 1962, Ser. No. 197,570
14 Claims. (Cl. 260—465)

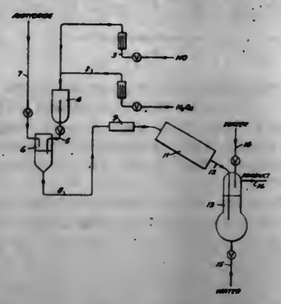
1. Method for the preparation of a diarylacetonitrile which comprises reacting an aryl cyanohydrin selected from the group consisting of phenyl and naphthyl cyanohydrins and said cyanohydrins monosubstituted by a halogen, a lower alkyl and a lower alkoxy substituent with an aromatic compound selected from the group consisting of benzene and benzene at most twice substituted by a halogen, a lower alkyl and a lower alkoxy substituent in the presence of a condensing agent consisting essentially of at least one sulfuryl compound of the formula $SO_2(OH)X$, wherein X is a halogen, at a temperature between about 5 and 20° C.

3,192,246
CHEMICAL PROCESS FOR MAKING HALOGENATED COMPOUNDS

George H. Crawford, Jr., White Bear Lake, David E. Rice, Minneapolis, and Dean R. Yarian, Lake Elmo, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 2, 1962, Ser. No. 227,839
16 Claims. (Cl. 260—466)

1. A process for preparing an aliphatic halogen-containing acyl nitrite which comprises reacting an aliphatic anhydride containing at least one halogen substitution on each of the apha carbon atoms and which anhydride



contains only halogen substitution with nitrogen sesquioxide.

3,192,247
ALIPHATIC HALOGEN-CONTAINING OMEGA NITROSO ACYL NITRITES

George H. Crawford, Jr., White Bear Lake, David E. Rice, Minneapolis, and Dean R. Yarian, Lake Elmo, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application Oct. 2, 1962, Ser. No. 227,839. Divided and this application July 21, 1964, Ser. No. 389,815
3 Claims. (Cl. 260—466)

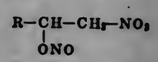
1. An aliphatic halogen-containing omega nitroso acyl nitrite.

3,192,248
METHOD FOR PREPARING NITRONITRITES AND DINITROPARAFFINS FROM ALPHA-OLEFINS

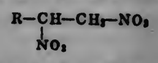
Giovanni A. Eonetti, Wilmington, Del., Chester B. de Savigny, Rancho Cordova, Calif., and Conrad Michalski, Media, and Rudolph Rosenthal, Broomall, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,398
17 Claims. (Cl. 260—467)

1. A method for preparing nitronitrites having the formula



and dinitroparaffins having the formula



wherein R is a normal alkyl radical containing from 1 to 22 carbon atoms which comprises contacting a normal alpha-olefin having from 3 to 24 carbon atoms in the molecule and dissolved in a paraffinic hydrocarbon solvent having from 6 to 24 carbon atoms in the molecule with a nitrating agent consisting of an equilibrium mixture of NO_2 and N_2O_4 at a temperature in the range from 50° C. to 150° C. and thereafter recovering the nitronitrite and dinitroparaffin product.

3,192,249
METHYL 3β,5β-DIHYDROXY-B-NORPREGNAN-20-ONE-6β-CARBOXYLATE

Harold Ross Nace, Barrington, R.I., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,939
1 Claim. (Cl. 260—468)

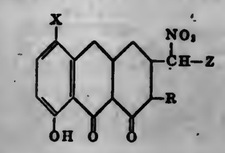
Methyl 3β,5β-dihydroxy-B-norpregnan-20-one-6β-carboxylate.

3,192,250
SUBSTITUTED 2-NITROMETHYL - 4,10 - DIOXO-5-HYDROXY - 1,2,3,4,4a,9,9a,10 - OCTAHYDROANTHRACENES

Thomas Lynn Fields, Pearl River, N.Y., Raymond George Wilkinson, Montvale, N.J., and Andrew Steven Kende, Hartsdale, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,308
6 Claims. (Cl. 260—471)

1. A compound selected from the group consisting of those of the formula:



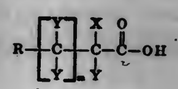
wherein X is selected from the group consisting of hydrogen, chlorine and bromine, R is selected from the group consisting of hydrogen, carboxy, lower carbalkoxy and phenyl lower carbalkoxy, and Z is selected from the group consisting of hydrogen, lower carbalkoxy and lower alkanoyl, and tautomers thereof.

3,192,251
PREPARATION OF ESTERS OF CYCLOTRIENE HYDROCARBONS

Roy A. Gray, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 18, 1961, Ser. No. 138,593
14 Claims. (Cl. 260—487)

1. A process for the preparation of a monoester derivative of a cyclotriene hydrocarbon, said monoester compound containing only one carbon to carbon double bond in the ester group thereof, which process comprises: reacting a cyclotriene hydrocarbon selected from the group consisting of monocyclictriene hydrocarbons having 12 carbon atoms in the ring and carbon to carbon double bonds in the 1, 5, and 9 positions in said ring and trimethyl derivatives thereof with a halogen-containing acid in a reaction zone, said acid being characterized by the following structural formula



wherein: *m* is an integer of from 0 to 4; X is selected from the group consisting of fluorine and chlorine; R is selected from the group consisting of hydrogen, fluorine, chlorine, and



and Y is selected from the group consisting of hydrogen, fluorine, chlorine,



and



wherein Z is selected from the group consisting of hydrogen, fluorine, and chlorine; said acid and said cyclododeca-

triene being contacted in said reaction zone in an acid to cyclododecatriene mol ratio within the range of from 0.25:1 to 4:1 to 2:1, at a temperature within the range of from about 0 to 150° C., under sufficient pressure to maintain said reactants in liquid phase, and for a period of time within the range of from about 0.5 to about 24 hours; and recovering said monoester compound from the resulting mixture.

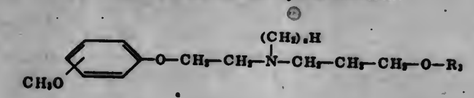
3,192,252
PREPARATION OF SODIUM CYCLOHEXYL-SULPHAMATE
George Hall Donaldson, South Wellfield, Whitley Bay, Northumberland, England, assignor, by mesne assignments, to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
No Drawing. Filed Sept. 18, 1961, Ser. No. 138,583
2 Claims. (Cl. 260—500)

1. The process of preparing sodium cyclohexylsulphamate comprising

adding to a solution of cyclohexylammonium-N-cyclohexylsulphamate in cyclohexylamine at a temperature above 100° C. a substantially equimolar amount of metallic sodium in solid form and heating the mixture until evolution of ammonia has substantially ceased.

3,192,253
N-SUBSTITUTED METHOXYPHENOXY-ETHYLAMINES
Ronald J. Boscott, Deal, Kent, Joachim Augstein, Temple Ewell, near Dover, Kent, William C. Austin, Hatfield Heath, Bishops Stortford, and Charles A. Bartram, Deal, Kent, England, assignors to Chas Pfizer & Co., Inc., New York N.Y., a corporation of Delaware
No Drawing. Filed Apr. 7, 1961, Ser. No. 101,326
Claims priority, application Great Britain, Apr. 22, 1959, 13,683/59; Jan. 29, 1960, 3,238/60; Apr. 7, 1960, 12,333/60; July 14, 1960, 24,506/60
14 Claims. (Cl. 260—501)

1. The compound represented by the formula:



wherein R_3 is alkenyl containing up to 8 carbon atoms and z is a whole number from 0 to 1.

5. N-(3-allyloxypropyl) - N - (2-(2'-methoxyphenoxy) ethyl)amine acid maleate.

3,192,254
STABILIZATION OF PERACIDS WITH PICOLINIC ACID
Ernest R. Hayes, Shawinigan South, Quebec, Canada, assignor to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada
No Drawing. Filed Oct. 19, 1959, Ser. No. 847,080
8 Claims. (Cl. 260—502)

1. A composition of matter comprising peracetic acid, in at least one solvent for peracetic acid selected from the group consisting of acetic acid, methyl acetate, and ethyl acetate, and a stabilizing amount of picolinic acid.

3,192,255
STABILIZATION OF PERACETIC ACID WITH QUINALDIC ACID
Allan Brooks Cann, Shawinigan South, Quebec, Canada, assignor to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada
No Drawing. Filed Jan. 18, 1960, Ser. No. 2,842
3 Claims. (Cl. 260—502)

1. A composition of matter comprising peracetic acid in at least one solvent selected from the group consisting of acetic acid, methyl acetate, ethyl acetate and water, and a stabilizing amount of quinaldic acid.

3,192,256
PROCESS FOR MAKING PERACIDS BY THE OXIDATION OF ALDEHYDES
Alexander F. MacLean and Adin L. Stautzenberger, Corpus Christi, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 4, 1960, Ser. No. 6,636
9 Claims. (Cl. 260—502)

1. In the process for the production of peracetic acid by the vapor phase reaction of oxygen and acetaldehyde, the improvement which comprises effecting said reaction in a reactor having internal surfaces consisting essentially of an inert material whose inertness is defined by the failure of said material to reduce the ratio of peracetic acid to acetic acid by more than 50% when tested by the insertion of a strip of said material into an aluminum reactor maintained under acetaldehyde-oxygen vapor phase reaction conditions which would, in the absence of said strip, produce a peracetic acid to acetic acid mole ratio in excess of 10, said strip of material being tested having a surface area equal to that of the interior of said aluminum test reactor.

3,192,257
RING D-SECO-19-NOR-ANDROSTANE DERIVATIVES
John A. Zderic, Palo Alto, Calif., assignor, by mesne assignments, to Syntex Corporation, a corporation of Panama
No Drawing. Filed Dec. 11, 1961, Ser. No. 158,538
2 Claims. (Cl. 260—514.5)

1. 16,17-seco-19-nor-Δ^4-androsten-3-one-17-oic acid.

2. 17-methyl - 16,17 - seco-19-nor-Δ^4-androstene-3,17-dione.

3,192,258
PROCESS FOR OXIDIZING A PRIMARY ALCOHOL
Kunio Nakagawa, Nishinomiya-shi, Hyogo, and Takamori Konaka, Nanlwa, Amagasaki-shi, Hyogo, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed Aug. 23, 1962, Ser. No. 218,824
Claims priority, application Japan, Aug. 25, 1961, 36/30,818
6 Claims. (Cl. 260—523)

3. A process for oxidizing aromatic primary alcohol to corresponding aromatic carboxylic acid which comprises treating the said aromatic primary alcohol with nickel peroxide in aqueous alkaline medium at a temperature between about 0° C. and about 60° C., said medium containing sufficient alkali to neutralize the produced aromatic carboxylic acid, and recovering the latter in free form from the reaction mixture, the said nickel peroxide being the product of the treatment of a salt of nickel selected from the group consisting of nickel chloride, nickel sulfate, nickel carbonate and nickel nitrate with an oxidizing agent selected from the group consisting of alkali hypohalite and alkali persulfate in aqueous alkaline medium at a temperature between 10 and 25° C., followed by the steps of collecting, washing with water, and drying the resultant nickel peroxide precipitate, the starting aromatic primary alcohol being selected from the group consisting of benzyl alcohol, phenethyl alcohol, 3-phenyl-1-propanol, 2-methyl-benzyl alcohol, 3-methyl-benzyl alcohol and 4-methyl-benzyl alcohol.

3,192,259
PRODUCTION OF ALPHA,BETA-UNSATURATED OXYGEN-CONTAINING COMPOUNDS
Lloyd C. Fetterly, Oakland, Kenneth F. Koetitz, Concord, and George W. Conklin, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 6, 1961, Ser. No. 143,449
6 Claims. (Cl. 260—533)

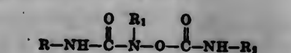
1. The process for the conversion of an alpha monoolefinic hydrocarbon having from three to four carbon atoms to the molecule to a reaction mixture comprising a substantial amount of alpha,beta-unsaturated aliphatic mono-carboxylic acid corresponding to said olefinic hydrocarbons, which comprises reacting said olefinic hydrocarbon in the vapor phase with oxygen at a temperature of from about 350 to about 575° C., in a bed of catalyst consisting essentially of phosphomolybdic acid in combination with an oxide of tellurium, said catalyst containing the tellurium component in the range of from about 0.1 to about 10% by weight of said catalyst.

3,192,260
ALIPHATIC HALOGEN-CONTAINING OMEGA NITROSO CARBOXYLIC ACIDS
George H. Crawford, Jr., White Bear Lake, David E. Rice, Minneapolis, and Dean R. Yarian, Lake Elmo, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application Oct. 2, 1962, Ser. No. 227,839. Divided and this application July 21, 1964, Ser. No. 389,816
3 Claims. (Cl. 260—539)

1. An aliphatic halogen-containing omega nitroso carboxylic acid.

3,192,261
N,O-DICARBAMOYLHYDROXYLAMINES
Kathryn Alice Losee and Jack Bernstein, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed July 29, 1963, Ser. No. 298,466
12 Claims. (Cl. 260—545)

1. A compound of the formula



wherein R, R_1 and R_3 is each a member of the group consisting of hydrogen and lower alkyl.

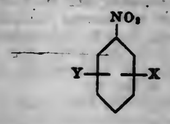
3,192,262
TRANS - 1,2 - BIS(AMINO-METHYL)CYCLOBUTANE AND ITS PREPARATION BY HYDROGENATION OF 1,2-DICYANOCYCLOBUTANE
Ralph Courtenay Schreyer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 22, 1961, Ser. No. 97,454
2 Claims. (Cl. 260—563)

1. The compound trans-1,2-bis(aminomethyl)cyclobutane.

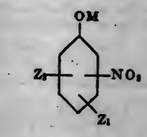
2. A process for the preparation of trans-1,2-bis-(aminomethyl)cyclobutane which comprises isomerizing cis-1,2-dicyanocyclobutane to trans-1,2-dicyanocyclobutane by passing a mixture comprising cis-1,2-dicyanocyclobutane in the vapor phase over a hydrogenation catalyst in an inert atmosphere free of molecular hydrogen at a temperature in the range of 250° to 350° C., said hydrogenation catalyst being selected from the group consisting of cobalt metal and nickel metal, supported cobalt metal and supported nickel metal, and cobalt molybdite and nickel molybdite, subjecting the effluent from the vapor-phase isomerization reaction to fractional distillation to separate the higher-boiling, unchanged cis-1,2-dicyanocyclobutane from the lower-boiling trans-1,2-dicyanocyclobutane, and recycling the cis-1,2-dicyanocyclobutane to the isomerization step, and mixing said trans-1,2-dicyanocyclobutane with anhydrous ammonia and passing said mixture, in the liquid phase, under a pressure of hydrogen in the range of 400 to 1000 atmospheres, over a hydrogenation catalyst at a temperature in the range of 75° to 150° C., said hydrogenation catalyst being selected from the group consisting of an unsupported transition metal of Group VIII of the Periodic Table of Elements, a supported transition metal of said Group VIII, and a molybdite salt of a transition metal of said Group VIII.

3,192,263
PRODUCTION OF DINITROPHENYL AND DIAMINOPHENYL ETHERS
Louis Spiegler, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 18, 1960, Ser. No. 50,339
9 Claims. (Cl. 260—571)

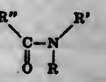
1. A process of producing a diamino-diphenyl ether, which comprises reacting a halogeno-mononitrobenzene of the formula



with an alkali-metal nitrophenate of the formula



to produce the corresponding diphenyl ether, the reaction being effected by heating said reactants in an organic liquid of the group consisting of water-miscible aliphatic amides of the formula



and water-miscible, saturated, heterocyclic compounds of the formula



wherein R, R' and R'' are alkyl radicals of 1 to 4 C-atoms, while R''' is a saturated alkylene radical of which not less than 2 and not more than 5 C-atoms in a straight chain constitute part of the heterocyclic ring, the quantity of said liquid being sufficient to form a fluid melt with the reactants at reaction temperature, adding to said mass a hydrogenation catalyst and reacting the resulting mass with hydrogen under a pressure ranging from 1 to 50 atmospheres whereby to produce the corresponding diamino-diphenyl ether, the symbols M, X, Y, Z_1 and Z_2 in the aforegoing formulas having the following meaning: M is an alkali metal, X stands for a halogen of the group consisting of Cl and Br and being located in a non-meta position with respect to the NO_2 group, while Y, Z_1 and Z_2 are members of the group consisting of hydrogen, alkyl, O-alkyl, and halogen, said alkyls being radicals of 1 to 4 C-atoms, and said halogen being a member of the group consisting of Cl and Br and being located in a position meta with respect to the NO_2 group in the same benzene ring.

3,192,264
SULPHONYL ORGANIC PEROXIDES
Klaus Weissermel, Michael Lederer, and Johannes Heyna, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Jan. 16, 1962, Ser. No. 166,695
Claims priority, application Germany, Jan. 21, 1961, F 33,029
2 Claims. (Cl. 260—576)

1. A peroxide of the formula

$$A—SO_2—CH_2—CH_2—OOR$$

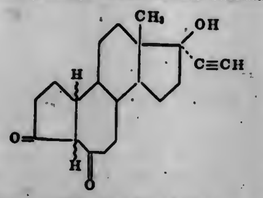
wherein A is a member selected from the group consisting of phenyl, naphthyl, and these members substituted with at least one member of the group consisting of hydroxy, amino, alkoxy, and alkylamino, and R is a member selected from the group consisting of aliphatic and cycloaliphatic hydrocarbon having 1 to 15 carbon atoms.

3,192,265
PROCESS FOR THE MANUFACTURE OF CYCLODECANOL-(1)-ONE(6)
Walter Zehnder and Kaspar Ryffel, both of Domat-Ems, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland
No Drawing. Filed July 20, 1961, Ser. No. 125,341
Claims priority, application Switzerland, July 23, 1960, 8,380/60
2 Claims. (Cl. 260—586)

1. A process for the manufacture of cyclodecanol-(1)-one(6), which comprises refluxing decahydronaphthalene peroxide in an excess of aqueous acetic acid, cooling, evaporating to dryness in a vacuum, and extracting the residue with water thus obtaining crude cyclodecanol-(1)-one(6).

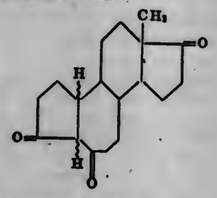
3,192,266
17α - ETHYNYL - 17β - HYDROXY-A-NOR-B-HOMO-ESTRANES AND THEIR PROCESS OF PREPARATION
Georges Muller, Nogent-sur-Marne, and André Poittevin, Les Lilas, France, assignors, by mesne assignments, to Roussel-UCLAF, S.A., Paris, France, a corporation of France
No Drawing. Filed Nov. 1, 1961, Ser. No. 149,222
Claims priority, application France, June 16, 1961, 865,200
5 Claims. (Cl. 260—586)

1. The enolic form of 17α-ethynyl-A-nor-B-homo-5ξ,10ξ-estrane-17β-ol-3,6-dione of the formula



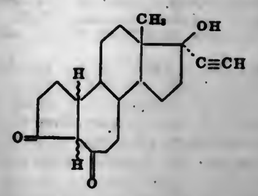
having a melting point of 152–154° C.

2. The enolic form of A-nor-B-homo-5ξ,10ξ-estrane-3,6,17-trione of the formula

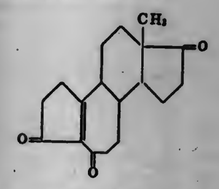


having a melting point of 114° C.

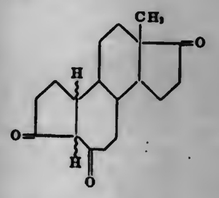
3. A process of producing the enolic form of 17α-ethynyl-A-nor-B-homo - 5ξ,10ξ - estrane-17β-ol-3,6-dione of the formula



having a melting point of 152–154° C. which comprises the steps of subjecting an A-nor-B-homo-$\Delta^{5(10)}$-estrene-3,16,17-trione having the formula



to a selective reduction by the action of an alkali metal borohydride in the presence of a lower alkanol, in a lower alkanoic acid medium, subjecting the resulting A-nor-B-homo-5ξ-estrane-3,6,17-trione in the form of its enolic form of the formula



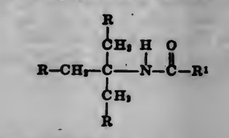
having a melting point of 114° C. to a selective ethynylation by the action of acetylene in the presence of an alkali metal lower alkanolate in a lower alkanol solvent and recovering said enolic form of 17α-ethynyl-A-nor-B-homo-5ξ,10ξ-estrane-17β-ol-3,6-dione having a melting point of 152°–154° C.

3,192,267
PREPARATION OF PROPYLATED DERIVATIVE OF PHENANTHRENE
Gérard Nomine, Noisy-le-Sec, and Robert Bucourt, Villiers-le-Bel, France, assignors, by mesne assignments, to Roussel-UCLAF, S.A., Paris, France, a corporation of France
No Drawing. Filed Dec. 7, 1961, Ser. No. 157,847
Claims priority, application France, Dec. 28, 1960, 848,181
4 Claims. (Cl. 260—586)

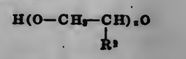
1. The process of producing 2-methyl-3-oxo-7-methoxy-10a - n - propyl - 1,2,3,9,10,10a - hexahydrophenanthrene which comprises the steps of condensing an n-propyl halide with 2-hydroxy methylene-6-methoxy-tetralone-1 in the presence of an alkaline condensation agent, alkalizing the resulting compound with an aqueous alkali metal hydroxide solution, recovering 2 - n - propyl-6-methoxy-tetralone-1, condensing said 2 - n - propyl - 6 - methoxy-tetralone-1 with methyl isopropenyl ketone in a lower alkanol and in the presence of a hydroxide of a quaternary ammonium compound, and recovering 2-methyl-3-oxo - 7 - methoxy - 10a - n - propyl - 1,2,3,9,10,10a-hexahydrophenanthrene.

3,192,268
STABILIZED FORMALDEHYDE SOLUTIONS
George N. Butter, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Aug. 7, 1961, Ser. No. 129,519
7 Claims. (Cl. 260—606)

1. An aqueous formaldehyde solution comprising aqueous formaldehyde and a sufficient amount of a compound having the following general formula:



wherein R is the radical:



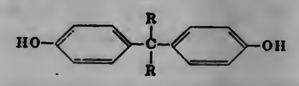
wherein R^1 is a member selected from the group consisting of alkyl and alkenyl, wherein R^2 is a member selected from the group consisting of lower alkyl and hydrogen, and x is an integer ranging from 1 to 20 to stabilize said solution against deposition of solid material from the solution.

3,192,269
PREPARATION OF LIQUID ORGANOBORON FUEL
Gerard F. Judd, Austin, Tex., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 13, 1959, Ser. No. 786,651
5 Claims. (Cl. 260—606.5)

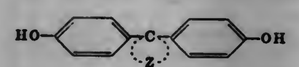
1. A method of preparing a liquid organoboron fuel which comprises the steps of reacting a mixture of pentaborane-9 and a lower alkyldiborane with diborane at a temperature between about 50° C. and 120° C., and recovering the liquid organoboron product.

3,192,270
PROCESS FOR THE MANUFACTURE OF PURE 4,4'-DI-(HYDROXY-PHENYL)-ALKANES
Karl-Heinrich Meyer, Krefeld-Bockum, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Feb. 21, 1962, Ser. No. 174,712
Claims priority, application Germany, Dec. 10, 1955, F 19,036
3 Claims. (Cl. 260—619)

1. A process for the production of a substantially pure bis(4-hydroxyphenyl)alkane of the group consisting of compounds having the formulae



and



in which

each R is a radical of the group consisting of hydrogen, branched and unbranched monovalent saturated aliphatic hydrocarbon radicals containing up to 10 carbon atoms, monovalent saturated cycloaliphatic radicals, monovalent aryl-substituted saturated aliphatic hydrdocarbon radicals whose side chains contain up to 4 carbon atoms, phenyl and furyl radicals, and

Z represents the carbon and hydrogen atoms required to complete a saturated cycloaliphatic hydrocarbon ring, which comprises

(a) reacting together a mixture consisting essentially of a carbonyl compound of the group consisting of aldheydes and ketones having the formula R—CO—R and ZC═O in which the radicals R and Z have the foregoing significance with a stoichiometric excess of phenol and an acid catalyst,

(b) melting the resulting reaction mixture containing phenol and the adduct of phenol and the bis(4-hydroxyphenyl)-alkane and adding thereto an amount of a concentrated aqueous solution of an alkali sufficient to neutralize the same,

(c) separating the resulting aqueous phase from the liquid organic phase,

(d) adding to the separated liquid organic phase with stirring an amount of hot water that is at least sufficient to product with the phenol contained in the organic phase an aqueous solution of phenol which contains enough water to saturate all the phenol contained therein at room temperature,

(e) allowing the mixture to stratify into two liquid phases, and separating the liquid organic phase from the aqueous phase,

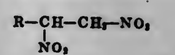
(f) cooling the separated liquid organic phase to room temperature, thereby precipitating crystals of the adduct of phenol and the bis(4-hydroxyphenyl)alkane,

(g) separating the adduct of phenol and the bis(4-hydroxyphenly)alkane from the aqueous mother liquid containing phenol saturated with water, and

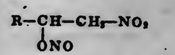
(h) decomposing the separated adduct to liberate the phenol combined therein and expelling the phenol, leaving the substantially pure bis(4-hydroxyphenyl)alkane.

3,192,271
METHOD FOR CONVERSION OF 1,2-DINITRO-PARAFFINS TO 1-NITROOLEFINS
Giovanni A. Bonetti, Wilmington, Del., and Rudolph Rosenthal, Broomall, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 20, 1964, Ser. No. 353,599
15 Claims. (Cl. 260—644)

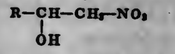
1. A method for the conversion of dinitroparaffins having the formula



wherein R is a straight chain alkyl radical having from 1 to 22 carbon atoms to their corresponding nitroolefins, said dinitroparaffin being admixed with a nitrogen-containing derivative of a straight chain alpha-olefin said derivative being selected from the group consisting of nitronitrites having the formula



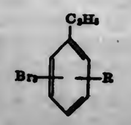
wherein R is a straight chain alkyl radical having from 1 to 22 carbon atoms and nitroalcohols having the formula



wherein R is a straight chain alkyl radical having from 1 to 22 carbon atoms, which comprises contacting said dinitroparaffin-containing mixture with from 0.9 to 1.1 equivalent weights of base per mole of said dinitroparaffin and thereafter recovering the nitroolefin.

3,192,272
TRIBROMINATED DIALKYL BENZENES
Arthur A. Anderson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 27, 1960, Ser. No. 78,278
3 Claims. (Cl. 260—650)

1. A normally liquid mixture of compounds having the general formula



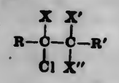
wherein R is predominantly meta to the ethyl radical and is an alkyl radical containing 1 to 2 carbon atoms, said mixture being characterized by having a specific gravity at 25°/25° C. in the range 1.87–2.02 and a freezing point below about —20° C.

3,192,273
STABILIZATION OF METHYLCHLOROFORM
William E. Bissinger, Akron, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 14, 1961, Ser. No. 131,071
10 Claims. (Cl. 260—652.5)

1. Methylchloroform containing in stabilizing concentration 2-methyl-3-butyn-2-ol, a 1 to 8 carbon atom alkanol and 1,4-dioxane, the individual concentration of said 1,4-dioxane being below that at which it alone stabilizes effectively the methylchloroform.

3,192,274
PROCESS FOR REMOVING NON-TERMINAL HALOGENS FROM SATURATED PERHALOCARBONS
Charles F. Baranauckas, Niagara Falls, and Russell L. K. Carr, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 4, 1960, Ser. No. 26,732
5 Claims. (Cl. 260—653.5)

1. The process for introducing a non-terminal double bond in a saturated perchlorofluorocarbon starting material of the formula:



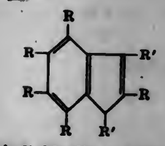
where X, X' and X'' are selected from the group consisting of chlorine and fluorine and R and R' are lower perhaloalkyl groups, which comprises introducing material consisting essentially of the starting material into a reaction zone containing a carbon catalyst and maintained at a temperature between about 275 degrees centigrade and about 450 degrees centigrade, and withdrawing the product from said zone.

3,192,275
PROCESS FOR MAKING FULVENES
Werner Freiesleben, Munich, Bavaria, Germany, assignor to Consortium für Elektrochemische Industrie G.m.b.H., Munich, Bavaria, Germany, a corporation of Germany
No Drawing. Filed Aug. 7, 1962, Ser. No. 215,299
Claims priority, application Germany, Sept. 1, 1961, C 24,985
16 Claims. (Cl. 260—666)

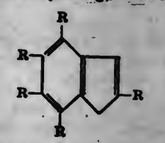
1. Process for producing fulvenes which comprises reacting a substance selected from the group consisting of aldehydes and ketones with a polyene having at least one CH_2-group allyl to two double bonds, in the presence of a condensing agent selected from the group consisting of primary and secondary amines.

3,192,276
ALKYLATION OF INDENE
Henry E. Fritz, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 10, 1962, Ser. No. 222,689
14 Claims. (Cl. 260—668)

1. A process for producing 1,3-alkylindenes represented by the general formula



wherein each R is individually a radical selected from the group consisting of hydrogen and hydrocarbon radicals free of aliphatic unsaturation having from 1 to 15 carbon atoms, and R' is a radical selected from the group consisting of primary and secondary alkyl having from 1 to 20 carbon atoms, which comprises reacting an indene compound represented by the general formula

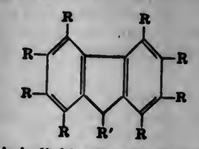


wherein each R is as above defined, with an alcohol represented by the general formula R'OH wherein R' is as above defined, in contact with a highly alkaline metal hydroxide.

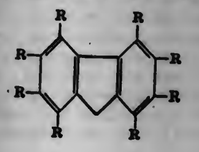
13. 1,3-bis(2-ethylhexyl)indene.

3,192,277
PROCESS FOR THE PRODUCTION OF 9-ALKYLFLUORENES
James V. Murray, Jr., South Charleston, and Henry E. Fritz, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 10, 1962, Ser. No. 222,696
16 Claims. (Cl. 260—668)

1. A process for producing 9-alkylfluorenes represented by the general formula

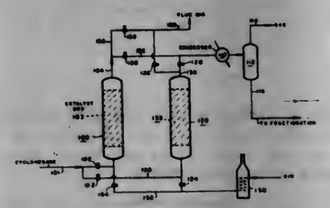


wherein each R is individually a radical selected from the group consisting of hydrogen and hydrocarbon radicals free of aliphatic unsaturation having from 1 to 20 carbon atoms, and R' is an alkyl radical selected from the group consisting of primary and secondary alkyl having from 1 to 30 carbon atoms, which comprises reacting a fluorene compound represented by the general formula



wherein each R is as above defined, with an alcohol represented by the general formula R'OH wherein R' is as above defined, in contact with a catalytic amount of a highly alkaline metal hydroxide.

3,192,278
METHOD OF METHYLATING AND AROMATIZING CYCLOHEXENES
Sam H. Hastings and Prentiss S. Viles, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Sept. 19, 1962, Ser. No. 224,759
11 Claims. (Cl. 260—668)



1. A method of methylating and aromatizing which comprises reacting a cyclohexene with a synthesis gas in the presence of a zinc oxide catalyst, said synthesis gas comprising hydrogen and carbon monoxide in a mol ratio from about 1:1 to about 9:1, whereby an aromatic compound having at least one carbon atom in excess of that possessed by the cyclohexene feed stock is obtained.

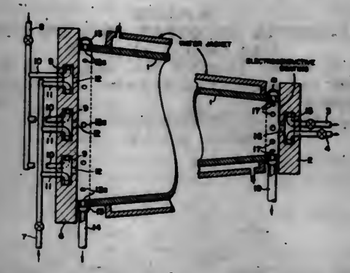
3,192,279
PRODUCTION OF LIQUID COPOLYMERS OF DIOLEFINS AND OTHER UNSATURATED MONOMERS
Wayne Hoover and George Rodney Rippel, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 5, 1962, Ser. No. 200,072
3 Claims. (Cl. 260—669)

1. A batch polymerization process which comprises mixing at room temperature 75 to 85 parts by weight of a conjugated diolefin of four to six carbon atoms and 25 to 15 parts of a vinyl aromatic hydrocarbon, 100 to 500 parts of an inert hydrocarbon diluent boiling between —15 and 200° C., 10 to 45 parts of a co-diluent selected from the group consisting of open chain ethers having 4 to 8 carton atoms and cyclic diethers having 4 to 8 carbon atoms, heating the mixture batch-wise to a temperature between 40 and 95° C., adding 0.5 to 5 parts of alkali metal catalyst and continuing the heating until substantially 100% conversion of the monomers is reached.

3,192,280
PREFERRED METHOD FOR SUPPLYING REACTANTS TO A RESONATING SHOCK TUBE MACHINE
Clarence R. Landgren, Morristown, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 27, 1960, Ser. No. 78,645
11 Claims. (Cl. 260—679)

1. Apparatus for reacting at least one organic material at high pressures and temperatures for a very short reaction time which comprises a truncated conical shock wave reactor, means by which a thin layer of flowing explosive mixture serving to develop a shock wave is introduced at the larger end of the truncated cone, means located at the small end of said cone for igniting the thin layer of flowing explosive mixture to thus initiate generation of shock waves, means for introducing a reactant mixture from the center of the small end of the truncated cone in a whirling motion having a low perpendicular velocity and a high tangential velocity and means for withdrawing reaction products at the wall of the reactor adjacent the said smaller end of the reactor.

8. The process for reacting at least one organic material at high temperatures and pressures for very short reaction times which comprises continuously flowing a



thin layer of organic material radially outwardly from a central point of the small end of a truncated conical reactor, applying a shock wave originating from the large end of said reactor periodically over the entire area of said thin layer thereby focusing shock wave energy at said small end, and withdrawing reaction products from the outer periphery of the thin layer at a position adjacent said small end.

3,192,281
TEMPERATURE CONTROL IN HYDRODEALKYLATION
Hampton G. Cornell, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Mar. 23, 1961, Ser. No. 97,820
8 Claims. (Cl. 260—672)



1. A method for minimizing fluctuations in temperature during the non-catalytic thermal hydrodealkylation of a hydrocarbon stream containing an alkylated aromatic hydrocarbon which comprises

admixing said alkylated aromatic hydrocarbon-containing stream with a first hydrogen-rich stream to form a reactor charge stream,

passing said reactor charge stream through an elongated reaction zone provided with at least one bed of inert solids,

said reaction zone being maintained under hydrodealkylation conditions,

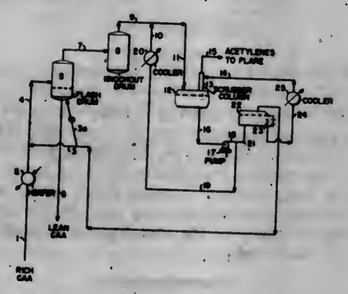
and introducing a second hydrogen-rich stream into said reaction zone upstream of said bed of inert solids,

said second stream of hydrogen being at a temperature lower than the temperature of said reaction zone at the point of introduction thereof, and being introduced in amounts sufficient to offset the heat of reaction generated by the hydrodealkylation reaction.

3,192,282
AMMONIA RECOVERY PROCESS FOR CAA PRETREAT UNITS

Carter E. Porter, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Apr. 24, 1961, Ser. No. 104,859
7 Claims. (Cl. 260—681.5)



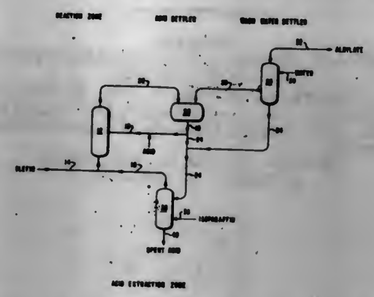
1. In a cuprous ammonium acetate pretreat process for the removal of acetylenes from butadiene wherein the acetylenes are selectively absorbed in the cuprous ammonium acetate solution, and the said solution containing absorbed acetylenes is regenerated by heating to desorb the acetylenes and minor amounts of ammonia overhead, the improvement which comprises scrubbing the said gases desorbed overhead with water containing more than 3 mol percent ammonia in an ammonia scrubber to selectively recover ammonia, passing ammonia rich water from the bottom of the scrubber to a single stage flash vaporization operated at a temperature in the range of 200 to 300° F., recycling concentrated ammonia vapors flashed overhead back to the acetylene desorption heating step and passing the liquid water having a reduced ammonia concentration to the ammonia scrubber.

3,192,283
RECOVERY OF HALOGENATED CARBOXYLIC ACID CATALYST

Robert B. Mosely, Walnut Creek, Calif., and George Holzman, Godfrey, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,290
4 Claims. (Cl. 260—683.47)

2. In a process for alkylating isoparaffin with olefin in the presence of an acid catalyst comprising a mixture of concentrated sulfuric acid and trifluoroacetic acid, in which process hydrocarbon effluent containing trifluoroacetic acid is separated from the acid catalyst and spent acid containing trifluoroacetic acid is rejected from the process, the improvement which comprises washing the hydrocarbon effluent containing trifluoroacetic acid with water to remove the acid, combining at least a portion of the wash water containing trifluoroacetic acid with the rejected spent acid containing trifluoroacetic acid such that the acid contains from about 5% to about 40% w. water, basis sulfuric acid, contacting the combined wash water and rejected acid in an extraction zone with liquid isoparaffin, withdrawing from the extraction zone water and rejected catalyst substantially reduced in concentration of trifluoroacetic acid and isoparaffin enriched in trifluoroacetic acid and alkylating the enriched isoparaffin with olefin under alkylation conditions in the presence of the acid catalyst.



3,192,284
ISOMERIZATION PROCESS

Dirk Kanbier, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,827
1 Claim. (Cl. 260—683.73)

A process for the isomerization of a normal paraffinic hydrocarbon having 4 to 5 carbon atoms per molecule with a molten salt catalyst comprising aluminum chloride and antimony trichloride, which process comprises:

fractionally distilling a straight-run gasoline with a stream consisting of the higher boiling fraction of the reactor effluent described below to produce (A) a normal paraffin fraction having 4 to 5 carbon atoms per molecule and containing at least 15% by weight isoparaffin, and (B) a heavier residual fraction;

introducing fraction (A) in the liquid phase into the lower portion of a column of the catalyst at least 6 meters deep at a temperature from about 68 to about 95° C. and a pressure of about 8.5 to about 35 atmospheres and at a rate such that the fraction passes through the column at a superficial velocity of from about 0.3 to about 3 meters per minute;

withdrawing reactor effluent containing at least 60% by weight isoparaffin;

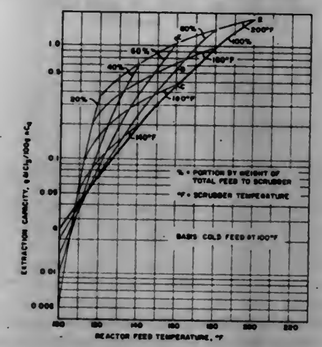
separating the effluent into an isoparaffin fraction and a higher-boiling fraction; and

returning at least part of the higher-boiling fraction to the fractional distillation step above to be fractionated with the straight-run gasoline.

3,192,285
ISOMERIZATION PROCESS

Janice K. Martin, Huntington Beach, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 17, 1963, Ser. No. 296,160
6 Claims. (Cl. 260—683.73)

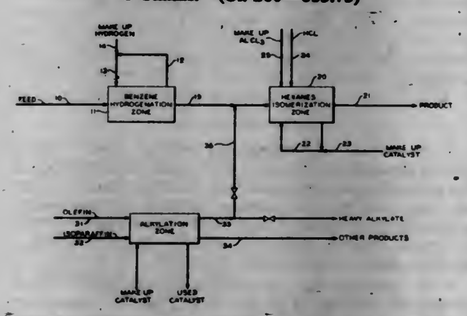


1. In the isomerization of a normal paraffin hydrocarbon to an isoparaffin wherein said hydrocarbon is contacted in a reaction zone at an elevated temperature with a molten salt catalyst comprising aluminium chloride, thereby deactivating a portion of the catalyst to a catalyst sludge, the improvement which comprises separating the hydrocarbon feed, which is at a temperature at least 15° F. below the reaction zone inlet temperature, into a first portion and a second portion, heating the first portion to a temperature which is at least above the reaction zone inlet temperature and such that the weighted average temperature of the two portions is the reaction zone inlet temperature, scrubbing at least a portion of the sludge-containing catalyst with the heated first portion in a scrubbing zone, separating the first portion enriched in catalyst from insoluble catalyst sludge, and passing the two portions to the reaction zone for conversion of the normal paraffin into isoparaffin.

3,192,286
PROCESS FOR ISOMERIZATION OF HEXANES

William L. Houston, Jr., and John B. Anderson, Sweeny, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 8, 1961, Ser. No. 157,980
6 Claims. (Cl. 260—683.73)



1. In a process for the production of cyclohexane and isohexane in which the starting materials are methylcyclopentane, benzene, and normal hexane and in which the benzene is hydrogenated to form cyclohexane in a hydrogenation zone, and in which methylcyclopentane and hexane are isomerized in the presence of an aluminum chloride-hydrocarbon complex catalyst promoted by anhydrous hydrogen chloride in an isomerization zone to yield cyclohexane and isohexane, respectively, and in which the inventory of the aluminum chloride-hydrocarbon complex formed in and maintained within the said isomerization zone may be reduced through operational upsets or other causes, the improvement which comprises introducing make up aluminum chloride to said isomerization zone and adding to the feed to the isomerization zone from about 0.1 percent to about 1.5 percent by volume of the feed of a heavy alkylate to increase the rate of formation of said complex in said isomerization zone wherein said heavy alkylate is a product of the alkylation of an olefin and an isoparaffin.

3,192,287
POLYESTER URETHANE MATERIAL SUITABLE AS A VEHICLE FOR PRINTING INKS FOR REGENERATED CELLULOSE SUBSTRATES

Victor J. Pelzek, Milwaukee, and Adolph Miller, Fox Point, Wis., assignors to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware

No Drawing. Filed Aug. 2, 1961, Ser. No. 128,661
3 Claims. (Cl. 260—858)

1. A composition of matter suitable for use as a vehicle for printing inks for application to regenerated cellulose substrates, comprising a solvent solution of (1) a saturated linear polyester having a ratio of hydroxyl groups to methylene groups of not more than about 0.20; said polyester comprising the reaction product of (i) a polyhydric alcohol selected from the group consisting of ethylene glycol, glycerol and pentaerythritol, with (ii) a saturated dibasic acid selected from the group consisting of adipic acid, azelaic acid, sebacic acid, phthalic acid, and anhydrides of the foregoing acids; and (2) a urethane having at least one available isocyanate group per molecule, said urethane comprising the reaction product of (i) a saturated diisocyanate selected from the group consisting of tolylene diisocyanate and diphenyl 4,4'-disocyanate, with (ii) trimethylol propane;

the amount of polyester in said composition comprising, on a weight basis, at least twice the amount of urethane therein;

said composition further characterized in that when applied as a thin layer to a regenerated cellulose substrate some of said available isocyanate groups will form chemical linkages with the substrate upon the evaporation of the solvent.

3,192,288
HIGH IMPACT STRENGTH BLEND OF ISOTACTIC POLYPROPYLENE, POLYETHYLENE AND POLYISOBUTYLENE

Andrew F. Sayko and James P. Formaro, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,604
4 Claims. (Cl. 260—897)

4. A composition of matter comprising a blend of 70 to 90 percent by weight of crystalline polypropylene, 2 to 5 percent by weight of polyethylene and 9.5 to 25 percent by weight of rubbery polyisobutylene.

3,192,289
METHOD OF CASTING SOLID PROPELLANT ROCKET MOTORS

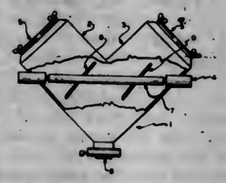
Leonard T. Jaglello, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 30, 1963, Ser. No. 305,888
3 Claims. (Cl. 264—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An improved process for casting composite propellant grains which comprises

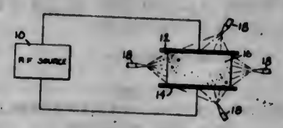
(a) blending an inorganic oxidizer with a metal powder to form a dry oxidizer-metal mixture;
(b) mixing said dry mixture into a binder-fuel and curing agent until a mixture forms;
(c) pouring said viscous mixture at an elevated temperature into a rocket motor having a centrally positioned mandrel;
(d) spinning said motor about its long axis until a substantial part of the metal in said mixture migrates away from the center of the motor due to centrifugal force;
(e) curing said motor for a predetermined time at an elevated temperature.

3,192,290
METHOD FOR PRODUCING ROUNDED CLAY GRANULES
James A. Polon, East Brunswick, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
Filed Aug. 6, 1962, Ser. No. 215,027
17 Claims. (Cl. 264—15)



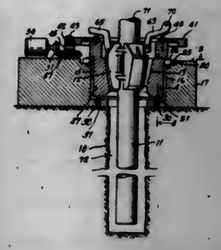
1. A method for producing hard small uniformly sized spheres from clay which comprises:
uniformly moistening powdered clay containing colloidal clay particles with water while restricting the amount of water to a quantity which forms a multiplicity of discrete free-flowing hand-friable aggregates of clay particles,
subjecting said clay thus moistened to a continuous tumbling action in a rotating vessel simultaneously while impinging at least a major quantity of said clay during its downflow against a face of at least one smooth surfaced disc free from peripheral projections and rotating in a plane oblique to its axis of rotation at a speed such that impinging particles of said clay are ejected outwardly off said disc until moist small spheres of the desired particle size have formed,
and drying the resultant spheres to effect their hardening.

3,192,291
METHOD OF CURING CEMENTITIOUS MATERIAL BY RADIO FREQUENCY ENERGY
Anthony D'Onofrio, West Hartford, Conn., assignor to Pratt & Whitney Inc., a corporation of Delaware
Filed May 15, 1962, Ser. No. 194,821
6 Claims. (Cl. 264—26)



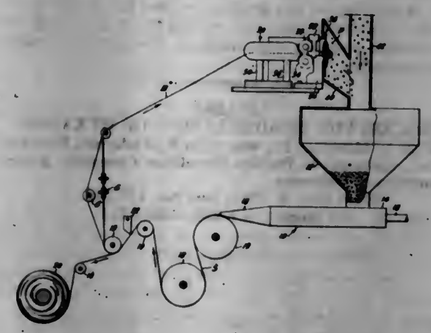
1. A method for facilitating hydration of calcarious cement which consists of a mixture of cement, sand and water in the form of a slurry or a green block, comprising the steps of supplying water to the surface of the aggregate while subjecting the aggregate to a high frequency field.

3,192,292
METHOD OF FORMING HOLLOW CONCRETE BODIES
Joseph E. Banks, Miami, Fla.
(1411 Marion Ave., Tallahassee, Fla.)
Filed Dec. 7, 1961, Ser. No. 157,734
13 Claims. (Cl. 264—32)



1. The method of setting a hollow cylindrical metal tube in concrete within an earth borehole or the like which consists in supplying cement grout around the exterior of the tube and rotating the tube at a speed not to exceed one revolution per minute while the cement is being introduced into the borehole around the tube, but is not rotated with the tube, and until the cement is completely set.

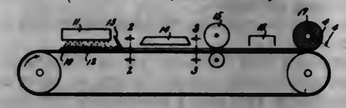
3,192,293
METHOD AND APPARATUS FOR REPROCESSING PLASTIC WASTE MATERIAL
Abram H. Van Riper, R.D. 1, Oley, Pa.
Filed June 19, 1962, Ser. No. 203,617
13 Claims. (Cl. 264—37)



1. A method of reprocessing selvage bands formed during the making of plastic sheet material consisting of the steps of gathering a plurality of selvage bands to form an integrated strip of closely bunched selvage bands, crimping the strip to form a unitary corrugated ribbon and cutting the ribbon into a plurality of small segments of substantially uniform size and shape.

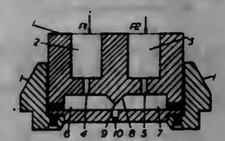
4. In apparatus for reprocessing selvage bands formed during the making of plastic sheet material, means for gathering a plurality of selvage bands to form an integrated strip of closely bunched selvage bands, crimping means for compacting the strip into a unitary corrugated ribbon and operable to advance the ribbon along a predetermined path and a cutter along said path for cutting the ribbon into a plurality of small segments of substantially uniform size and shape.

3,192,294
METHOD OF MOLDING VINYL RESIN SHEET MATERIAL HAVING AN EMBOSSED SURFACE
David D. M. Streed, South Bend, Ind., and Stanton Glover, Naugatuck, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed June 21, 1962, Ser. No. 204,102
8 Claims. (Cl. 264—54)



1. A method of making a vinyl sheet comprising dry blending vinyl resin with a particulate blowing agent, spreading the blend into a thin layer on a temporary supporting surface, sintering the blend at a temperature sufficiently elevated to fuse the vinyl resin and decompose the blowing agent, embossing the surface of the sheet deeply to provide a pile fabric effect, and removing the sheet from the supporting surface, the said embossing being done by an embossing roll maintained at a temperature below the softening range of the resin, said roll having surface openings from 0.06 to 0.1 inch deep and from 1/32 to 1/8 inch wide to form said pile.

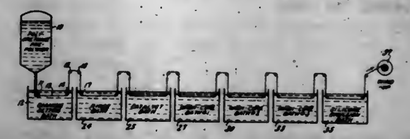
3,192,295
PROCESS FOR THE MANUFACTURE OF SPONTANEOUSLY CRIMPING COMPOSITE FILAMENTS
Walter G. Settele, Lucerne, Switzerland, assignor to Societe de la Viscose Suisse, Emmenbrucke, Switzerland, a Swiss body corporate
Filed Feb. 19, 1962, Ser. No. 173,894
Claims priority, application Germany, Feb. 22, 1961, S 72,671
4 Claims. (Cl. 264—171)



1. Process for the production of spontaneously crimping filaments, which comprises stretching filaments composed of two different mutually adherent fibre-forming polymers side by side along the length of the filaments one constituent being a polyamide and the other a different polymer selected from the group consisting of polyamides and polyesters, the stretching being carried out at a temperature below but at most 60° C. below the melting point of the lower melting constituents.

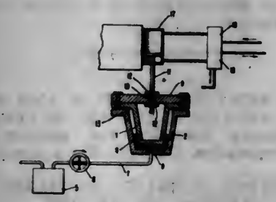
3,192,296
METHOD OF MAKING ELASTIC POLYURETHANE FILAMENTARY MATERIAL USING TERTIARY NITROGEN-CONTAINING CATALYST
Charles V. Tallman and Gus D. Kerrigan, Gastonia, N.C., and Robert A. Gregg, Kinnelon, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 21, 1963, Ser. No. 266,992
7 Claims. (Cl. 264—184)

1. In a method of making a filamentary material comprising the steps of providing a liquid polyurethane prepolymer having terminal isocyanate groups, extruding a fine stream of said liquid prepolymer into an aqueous aliphatic diprimary diamine setting bath to effect an initial setting of the extruded material in the form of a thread, and thereafter curing the thread by the action of water, the improvement comprising sensitizing said thread, subsequent to said initial setting but prior to said water cure, by contacting the thread with a catalytic material that is soluble in water and soluble in the said prepolymer, and washing the catalyst out of the thread prior to completion of said cure, the said catalytic material comprising an



organic compound containing a tertiary nitrogen atom selected from the group consisting of alkyl tertiary amines, pyridine, alkyl-pyridines, halogeno-pyridines, amino-pyridines, quinoline, alkyl-morpholines, alkyl-imidazoles, alkyl-pyrroles, alkyl-pyrrolidines, pyrazine, and alkyl-pyrazines, the said alkyl groups being lower alkyl groups.

3,192,297
METHOD OF AND APPARATUS FOR MOLDING REINFORCED PLASTICS
Michel Gringras, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed June 19, 1962, Ser. No. 203,525
Claims priority, application France, June 20, 1961, 865,465
17 Claims. (Cl. 264—257)



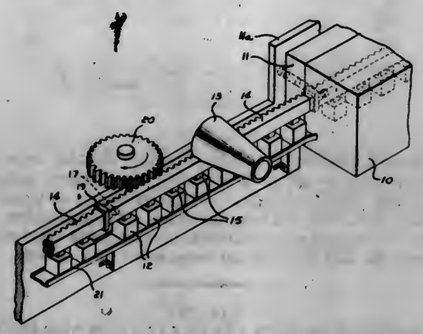
1. A method of injection molding objects of plastic material reinforced with fibrous material, comprising placing the requisite amount of fibrous reinforcing material in a multi-part mold divided to permit movement of the mold parts toward and from each other, moving the parts of the mold together into substantially their closed position wherein they conjointly define a mold cavity having the dimensions of the finished molded article to be made, injecting liquid resin into the mold in small successive portions while allowing the mold to open under the pressure of the injected resin during each said resin-injecting step, thrusting the parts of the mold together into substantially said closed position after each said resin-injecting step while stopping injection of resin into the mold, and sequentially and cyclically repeating said resin-injecting and mold-closing steps until the mold is substantially filled to the desired extent.

3,192,298
METHOD OF MOLDING
Everett H. Fisher, Shirley, Ind., assignor to Western Electric Company, Incorporated, a corporation of New York
Filed July 24, 1961, Ser. No. 126,029
2 Claims. (Cl. 264—294)

1. The method of molding an article of indefinite length which comprises:
repeatedly molding successive portions of the article within a mold having an access opening along the

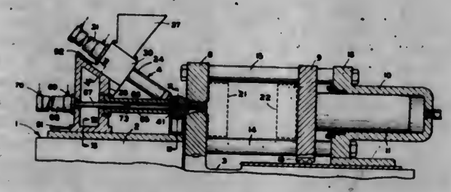
parting plane thereof, the article as molded being provided with alternate protrusions and recesses spaced uniformly along the length of the article for convenient engagement by article advancing means so as to facilitate advancement of the article in desired synchronism and phase relationship with respect to the mold and its operation;

opening the mold;



moving the last molded portion of the article to a position wherein it fills the access opening with a lesser part thereof extending into the cavity of the mold, whereby each newly molded portion of the article is made to be substantially integral with the last molded portion thereof.

3,192,299
INJECTION MOLDING MACHINE AND PROCESS FOR PLASTICIZING PLASTIC MATERIAL
James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 28, 1961, Ser. No. 120,268
10 Claims. (Cl. 264—329)



1. In a process for molding synthetic organic plastic materials, the steps comprising:

placing a quantity of material in a first zone and continuously imposing a superatmospheric pressure by a reciprocating ram on said quantity to move it through said first zone and thence through an orifice into a plasticizing zone, the superatmospheric pressure being of a value sufficient to feed said material into and through said plasticizing zone;

immediately upon entry of material into said plasticizing zone subjecting it to an intensive simultaneous frictional heating, agitation and compression by a rotating screw in said plasticizing zone and, at the same time, progressively moving the material at a high rate of speed through passages of small cross sectional area around said screw and out of said plasticizing zone by said superatmospheric pressure, continuing the heating, agitation and compression of the material at a high level of intensity throughout the entire length of the plasticizing zone for progressively and quickly raising the temperature and reducing the viscosity of the material so that the material leaving the plasticizing zone has a uniform viscosity and temperature suitable for molding; and

expelling the material from said plasticizing zone into a shaping apparatus.

4. An injection molding machine, comprising in combination:

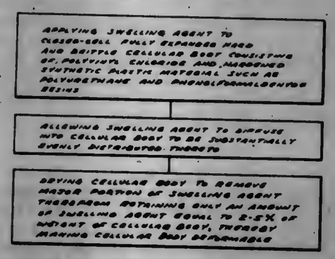
a plasticizing unit including means defining an elongated plasticizing chamber having an input end and a discharge end and a passageway communicating with the discharge end of said chamber;

a plasticizing screw within said chamber forming passages of small cross sectional area within said chamber and means for rotating said screw to plasticize the material flowing through said chamber by an intensive simultaneous frictional heating, agitation and compression;

a feeding device for introducing substantially unplasticized plastic material under superatmospheric pressure into said plasticizing chamber at a point adjacent the input end of said chamber, said feeding device comprising an elongated reciprocable ram and power means for reciprocating said ram and capable of exerting sufficient pressure on said ram so that said ram imposes a superatmospheric pressure of a sufficiently great value to feed the material into and through said plasticizing zone; and

means defining an elongated injection chamber connected to said passageway and a pressure applying means for driving material from within said injection cylinder into a mold, the longitudinal axes of both said ram and said injection chamber lying in substantially parallel planes, both of which are substantially perpendicular to the axis of said plasticizing screw.

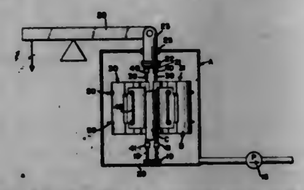
3,192,300
METHOD OF IMPROVING DEFORMABILITY OF CELLULAR BODIES
Walter Pehn, Traunkirchen (Traunsee), Austria, assignor to Lonza Ltd., Basel, Switzerland, a corporation of Switzerland
Filed Mar. 11, 1963, Ser. No. 264,083
Claims priority, application Switzerland, Mar. 14, 1962, 3,037/62
10 Claims. (Cl. 264—340)



1. A method of making a closed cell, hard and brittle cellular body deformable, said body consisting essentially of polyvinylchloride containing a hardened synthetic plastic material, comprising the step of applying to at least the major portion of the surface of said body a swelling agent for polyvinylchloride at a temperature sufficiently low so as not to affect the cell structure of said cellular body; allowing said swelling agent to diffuse into the interior of said body so as to be substantially evenly distributed therethrough; and removing the major portion of said swelling agent from said body.

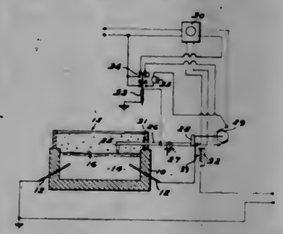
ELECTRICAL

3,192,301
CATHODIC HOUSING STRUCTURE
Carl F. Sterzl, Alamo, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed Apr. 6, 1962, Ser. No. 185,638
10 Claims. (Cl. 13—1)



1. An electron beam gun for heating an elongate anodic member within a vacuum chamber comprising: a cylindrical cathodic housing enclosed by end plates on opposite ends of the cylindrical housing means connected to said anodic member and said cathodic housing to supply electrical potential to said member and housing, said cylindrical cathodic housing being bisected to form two half sections, means pivotally mounting each half section to allow the half sections to rotate to a first position forming a complete cylinder and to a second position to define a large open space between the two half sections to allow installation of the anodic member, means to align the anodic member in axially aligned relationship with said cathodic member when said half sections are in the first position, the two plates being apertured in sufficient dimension to space the anodic member in electrical insulation from the cathodic member and electron emission means mounted on the inside of each of said sections.

3,192,302
POWER CONTROL FOR ELECTRIC GLASS MELTING FURNACE
George E. Keefer, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Mar. 29, 1961, Ser. No. 99,272
9 Claims. (Cl. 13—6)



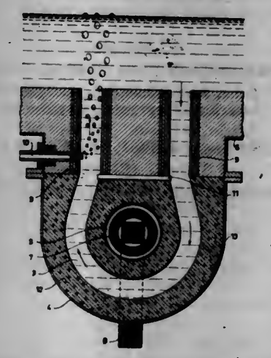
1. In the melting of glass by feeding batch materials to a furnace, simultaneously applying electrical power to electrodes within the glass and removing molten glass from the furnace, thereby creating a batch blanket and a fusion layer at the interface between the batch blanket and the body of molten glass, there being a substantial temperature change at said interface, the method of controlling the position of the fusion layer which comprises

positioning a temperature responsive element at the interface between the batch blanket and the body of molten glass,

comparing the temperature sensed by said element with the temperature which said element should sense when the batch blanket is of the desired thickness so that the position of the interface is at a predetermined point,

creating a signal when said temperatures differ, and causing said signal to vary the power to the electrodes.

3,192,303
METHOD OF REDUCING OVERHEATING IN MELTING TROUGHS AND SIMILAR DEVICES IN MELTING AND HOLDING FURNACES
Erik Allan Olsson, Zurichstrasse 66, Kusnacht, Switzerland
Filed Aug. 3, 1962, Ser. No. 215,224
Claims priority, application Sweden, Aug. 3, 1961, 7,929/61
3 Claims. (Cl. 13—34)

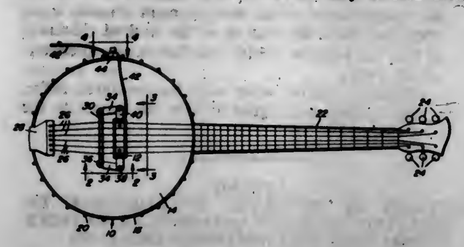


1. The process of treating metals which comprises the steps of enclosing a bath of molten metal in a furnace provided with a melting and holding chamber and an auxiliary heating trough having a molten metal circulating passage communicating with said holding chamber, electrically heating the metal contained in said melting trough, and directing a stream of gaseous material into said circulating passage of the auxiliary heating trough to cause asymmetric flow of the molten metal in said passage toward said holding chamber whereby to remove the overheated melt and reduce overheating in said auxiliary heating trough.

3,192,304
SOUND PRODUCING BANJO
Vincent Rizzutti, 17 Boyer Ave., Walla Walla, Wash.
Filed Mar. 8, 1962, Ser. No. 178,454
2 Claims. (Cl. 84—1.16)

1. A new sound producing musical instrument comprising the combination of a stringed musical instrument including a parchment head tautly secured thereon, a fretted neck extending from said instrument, a plurality of music strings adjustably secured to said fretted neck at its outer extending end, said strings extending over said parchment head and secured at their other ends to a string anchor on the side of said instrument opposite from said fretted neck side, a bridge interposed between said plurality of strings and said parchment head, said strings when adjusted providing the sole means holding said bridge taut against said parchment head, said bridge being slidably positioned between said parchment head

and said plurality of strings, and a magnetic pickup means for simultaneously translating the blended vibrations of both the strings and said parchment head into electrical energy, said pickup means secured solely to said bridge



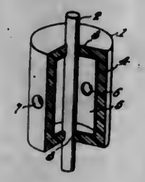
and held in contact against said parchment head directly under the strings between said bridge and said fretted neck, and electroacoustic translating means for converting said electrical energy into sound.

3,192,305

FLUID COOLING OF ELECTRICAL CONDUCTORS

William W. Erbe, Annandale, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 18, 1961, Ser. No. 139,013
5 Claims. (Cl. 174—15)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In combination, an electrical conductor having an electrode end and a power source end, a cooling jacket means having a cylindrical body and first and second disc-shaped end means, first aperture means centrally located in each of said first and second end means in sealed relationship with said conductor, said first disc-shaped end means located nearer said electrode end than is said second disc-shaped means, each of said end means having fluid tight connection to said cylindrical body, said cylindrical body being spaced from said conductor, said jacket means having a pair of second aperture means and enclosing said conductor, a cooling fluid source, means conducting said cooling fluid into one of said second aperture means and out of the other of said second aperture means whereby said conductor is cooled by direct contact with said fluid and means for securing said first disc-shaped end to a support.

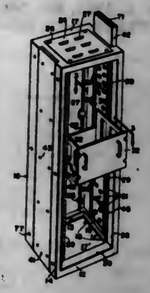
3,192,306

COOLING WALL STRUCTURE FOR ELECTRONIC EQUIPMENT CABINET

Leland D. Stonecord, Sunnyvale, Calif., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 26, 1962, Ser. No. 226,227
4 Claims. (Cl. 174—16)

1. In a cabinet for housing electronic equipment, wall structure for effecting flow of cooling air within the cabinet comprising a pair of generally vertical rectangular walls defining opposite sides of the cabinet, each wall having an inwardly directed outwardly facing recessed portion extending the entire height of the wall and having a rectangular vertically elongated opening which occupies a major area of the wall, and a pair of generally vertical rectangular ducts, one duct being seated and removably secured within the recessed portion of one wall and having



a surface element overlying the opening in said one wall, the other duct being removably secured within the recessed portion of the other wall and having a surface element overlying the opening in said other wall, both aforesaid surface elements having means establishing air flow communication between the ducts and the interior of the cabinet, at least one of said ducts being open at one end portion for connection with an air circulating system.

3,192,307

CONNECTOR FOR COMPONENT AND PRINTED CIRCUIT BOARD

Michael Lazar, White Plains, N.Y., assignor to Burndy Corporation, a corporation of New York

Filed Sept. 21, 1962, Ser. No. 225,232
2 Claims. (Cl. 174—68.5)



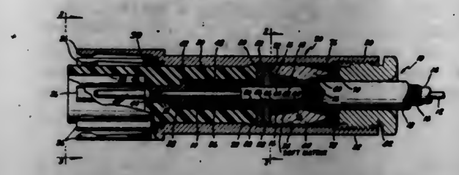
1. In combination, a printed circuit board having an opening therein and a conductive element adjacent said opening, a circuit component disposed within said opening having a conductive lead connected thereto, a connector element formed of an insulating material having an adhesive coating on one side thereof and further including a conductive portion on said one side, said connector element being positioned over said circuit component and an adjacent area of said circuit board, with said conductive portion disposed over both said component lead and said conductive element, said connector element electrically joining said lead and said element and mechanically fastening said component in said opening to said board.

3,192,308

ELECTRICAL CONNECTOR FOR BRAIDED COAXIAL CABLE

Arden D. Van Horsen and Ottomar H. Vetter, Minneapolis, Minn., assignors to Nu-Line Industries, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed May 22, 1963, Ser. No. 282,357
6 Claims. (Cl. 174—89)



1. An electrical connector for attachment to a shielded cable having an inner conductor, a braided outer conductor, and an intermediate layer of dielectric material, the connector comprising:

(a) a hollow body member receiving an end portion of said cable;

(b) a frusto-conical sleeve member disposed within said hollow body member and a bore encircling said dielectric material and a tapered outer surface forming a reduced diameter end disposed between said dielectric layer and said braided conductors;

(c) a metallic matrix which is soft relative to the material of said outer conductor disposed on a substantial portion of the tapered outer surface of said sleeve member;

(d) a compression sleeve member disposed between said hollow body member and said frusto-conical sleeve member encircling the received end of said cable, said compression sleeve member having a tapered bore complementing the general taper of the outer surface of said frusto-conical sleeve member and generally coextensive therewith, and

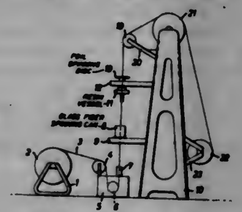
(e) means forcing said compression sleeve member axially within said body forcing a portion of said braided conductor into said matrix.

3,192,309

INSULATION FOR WINDING WIRE AND METHOD OF AND DEVICE FOR PRODUCING THE SAME

Fritz Zoder, House No. 45½, Ruhstorf (Rott), Germany, and Hans Kallas, Angererweg 1a, Burghausen, Upper Bavaria, Germany

Filed Nov. 5, 1959, Ser. No. 851,145
Claims priority, application Germany, Nov. 8, 1958, L 31,675; Apr. 13, 1959, L 32,965
6 Claims. (Cl. 174—121)



1. An insulated electrical conductor comprising an electrical conductor, a thin layer of glass fibers wrapped about said conductor, said layer being impregnated with a thermoplastic insulating resin composition comprising at least 20 percent of a silicone resin selected from the group consisting of methyl-silicone resin and methyl-phenyl-silicone resin, and an outer layer of foil wrapped about said impregnated layer and bonded thereto, said foil being a resin selected from the class consisting of terephthalic polyester and isoterephthalic polyester.

3,192,310

EHV TRANSMISSION LINE AND SHIELD ASSEMBLY

James J. La Forest, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Sept. 18, 1963, Ser. No. 309,832
5 Claims. (Cl. 174—127)



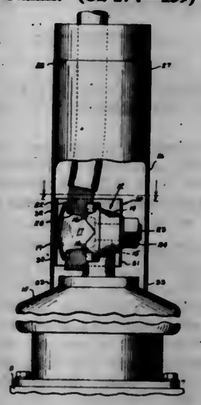
1. A high voltage transmission line cable assembly comprising an elongated main current carrying conductor of high conductivity electric conducting material having a cross-sectional area of a magnitude designed primarily to conduct a predetermined desired load current without excessive heating, a hollow tubular shielding member suspended from said conductor in parallel closely spaced non-concentric relation throughout at least a portion of the length of said conductor and having a conductivity of the order of $1/10^4$ to $1/10^8$ times that of said conductor, said shielding member having an outer cross-sectional area at least as large as that of said conductor and a hollow interior free of high conductivity material over at least a major portion of its interior cross-sectional area, and means electrically connecting said conductor and shielding member together at a plurality of points throughout their contiguous lengths thereby to maintain said conductor and shielding member at substantially equal potentials at adjacent points throughout said lengths, whereby said shielding member reduces the electrostatic field gradient in the region of said conductor while said conductor serves primarily to conduct load current.

3,192,311

CONDUCTIVELY COATED BUSHING TERMINAL GUARD

William J. Weinfurt, Elm Grove, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed June 14, 1963, Ser. No. 287,873
3 Claims. (Cl. 174—139)



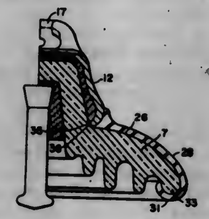
1. In combination with an elongate electrical bushing having an insulating body and a conductive clamp on

one end thereof for releasably engaging an electrical conductor, a tubular insulating member having a lower edge engaging said insulating body and extending upwardly therefrom in spaced-apart surrounding relation to said conductive clamp, said tubular member having a conductive coating disposed on the outer surface thereof at a point adjacent said conductive clamp and electrically insulated therefrom, said clamp and said conductive coating forming a capacitor whereby the flow of current through said conductive clamp will cause a charge to accumulate on said coating, the capacitive coupling between said clamp and said conductive coating being the sole means of electrical coupling therebetween.

3,192,312
CERAMIC SUSPENSION INSULATOR WITH AN ELASTOMERIC BOOT

Louis E. Sauer, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 7, 1961, Ser. No. 115,549
4 Claims. (Cl. 174—209)



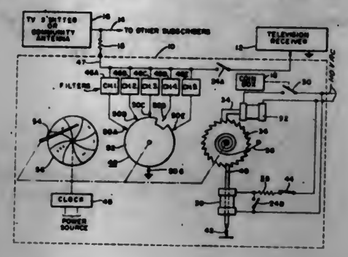
1. In combination, a suspension-type ceramic insulator having a ceramic body portion with an outwardly and downwardly flared skirt portion extending laterally therefrom, a plurality of circumferential ribs on the lower surface of said body portion, said body portion having an upwardly extending head portion, a metallic cap secured over said head portion, an annularly-shaped removable boot of an elastomeric resinous material covering entirely the upper weather-exposed portion of said skirt portion, said removable boot closely adhering to all of said upper weather-exposed skirt portion and having a curled lip extending peripherally around the outer edge thereof and frictionally curling over the outer edge of said skirt portion, said boot having a central opening through which said metallic cap protrudes.

3,192,313
PAY-TELEVISION RECEIVER HAVING PROGRAM SELECTION ACCORDING TO AMOUNT OF PREPAYMENT

William C. Rubinstein, Van Nuys, and George Brownstein, Pacoima, Calif., assignors to Paramount Pictures Corporation, New York, N.Y., a corporation of New York

Filed Oct. 10, 1961, Ser. No. 144,091
7 Claims. (Cl. 178—5.1)

1. In a subscription-television system of the type wherein each of a plurality of television programs are distributed to subscriber receivers over cable, each of said television programs costing a different price which price must be paid before said program is presented on a subscriber's receiver, an attachment connected between said cable and the antenna terminals of a subscriber's receiver, said attachment including means for receiving coinage equivalent to the price of a predetermined one of said television programs and for providing an output indicative thereof, selecting means operated responsive to the output of said means for receiving coinage for selecting for application to said subscriber's receiver antenna terminals only the program the price of which has been paid, and

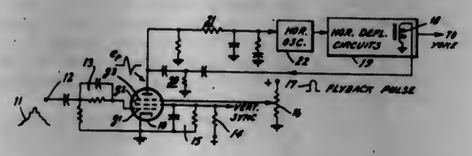


means for resetting said means for receiving coinage and said selecting means to prevent application of any program to said subscriber's receiver antenna terminals to enable payment for another program.

3,192,314
SYNCHRONIZING SIGNAL SEPARATOR MAKING USE OF FORWARD AND REVERSE SPACE CHARGE CURRENTS

Donald R. Taylor, Jr., Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 25, 1962, Ser. No. 190,114
18 Claims. (Cl. 178—5.8)



1. In a television receiver in which horizontal synchronizing pulses serve to control a horizontal deflection system in which pulses are produced that are indicative of the timing of the horizontal deflection cycles, a horizontal phase comparator comprising: an electron tube having a cathode, a grid, and at least two other electrodes in succession; means for supplying said horizontal synchronizing pulses to said grid; means for utilizing said timing-indicative pulses to supply to said two electrodes voltages which cause normal and reverse space currents to flow in said tube according to the timing of said deflection cycles in relation to said horizontal synchronizing pulses, the average normal and reverse currents being equal and cancelling one another when the horizontal deflection system is synchronized with said horizontal synchronizing pulses; and means for deriving a control voltage according to unbalance of the average normal and reverse currents due to non-synchronization of the horizontal deflection system with the horizontal synchronizing pulses.

3,192,315
TWO DIMENSIONAL BANDWIDTH REDUCTION APPARATUS FOR RASTER SCANNING SYSTEMS

Winslow R. Remley, Bethesda, Md., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

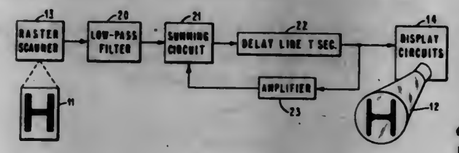
Filed Oct. 31, 1962, Ser. No. 234,321
4 Claims. (Cl. 178—7.2)

1. A system for reducing the bandwidth of a signal

generated by a raster scanning device making line by line scans, comprising:

filter means for accepting the signal and suppressing certain frequency components therein to smooth the signal transitions in each line scan; and

a signal circulating loop circuit having a loop gain of less than unity for blending signals from the line scans, said loop including a series connected delay line element having a time delay equal to an integral multiple of the time for a single line scan, and a summing means for combining the output signal of said filter means with signals circulating in said loop

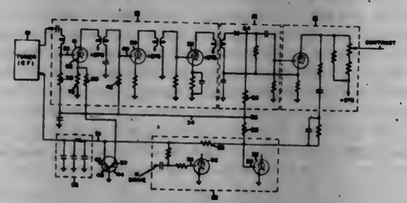


to smooth signal transitions between corresponding points on scan lines following in integral succession from each other, whereby said loop circuit acts in series with said filter means to smooth the signal transitions both along the scan lines and between the scan lines.

3,192,316
AUTOMATIC GAIN CONTROL CIRCUIT WITH OPTIMUM DELAYED AND AMPLIFIED A.G.C. FOR R.F. STAGE

John G. Humphrey, Mattydale, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 19, 1960, Ser. No. 63,648
13 Claims. (Cl. 178—7.3)

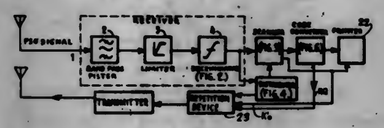


13. In an electrical receiving apparatus, an automatic gain control circuit arrangement comprising: a radio frequency amplifier; an intermediate frequency amplifier; each of said amplifiers including an amplifying device having a gain control electrode; a direct-current amplifier including an amplifying device having input and output electrodes; means providing a direct-current voltage having an amplitude which is a function of the intensity of a signal being received by the television receiver; means direct-current coupling said output electrode to said radio frequency amplifier gain control electrode; means direct-current coupling said automatic gain control voltage to said intermediate frequency amplifier gain control electrode, means including said intermediate frequency amplifier for coupling said automatic gain control voltage to said input electrode; and means biasing said direct-current amplifier for providing a substantially constant output voltage over a range of amplitudes of said automatic gain control voltage.

3,192,317
TELEGRAPH SYSTEM WITH SIGNAL TESTING AND ERROR CORRECTION

Hendrik Cornelis Anthony van Duuren, Wassenaar, and Wilhelm Fredrik Brok, Voorburg, Netherlands, assignors to De Staat der Nederlanden, ten deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed June 7, 1961, Ser. No. 115,521
Claims priority, application Netherlands, June 9, 1960, 252,437
30 Claims. (Cl. 178—23)



1. A telecommunication system for mark/space multi-element signals between two stations, said system comprising at each station:

(A) receiving means for said signals,

(B) detecting means connected to said receiving means for discriminating between the mark elements and the space elements in each signal and for forming them into potentials of correspondingly different polarities,

(C) pulse generating means connected to said discriminating means for generating controlling pulses for each element of each signal,

(D) scanning means connected to said discriminating means and to said pulse generating means for scanning each element of each signal, said scanning means comprising:

(1) separate potential storing means for each said element of each signal,

(2) measuring means connected to each said storing means for measuring the potential level of each stored element, and

(3) a blocking means connected to said measuring means for preventing the removal of the potentials in said storing means when at least one stored element has been measured to be incomplete,

(E) means connected to said storing means for passing stored signal elements which have been measured to be complete to an output circuit,

(F) means connected to said blocking means to request repetition of signals which contain at least one stored element which has been measured to be incomplete, and

(G) means at the other and remote station responsive to said repetition requesting means to repeat the signal incompletely stored to said storing means to supplement the potential therein until it is measured to be complete.

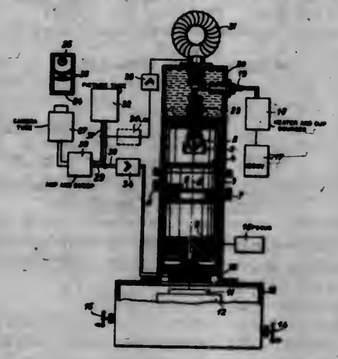
3,192,318
METHOD AND APPARATUS FOR THE MACHINING OF MATERIAL BY MEANS OF A BEAM OF CHARGE CARRIERS

Fritz Schleich, Unterkochen, Wurttemberg, Dietrich Hoffmeister, Oberkochen, Wurttemberg, and Justus Steinkecht and Karl Heinz Steigerwald, Heidenheim (Brenz), Wurttemberg, Germany, assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Sept. 6, 1960, Ser. No. 53,939
Claims priority, application Germany, Sept. 4, 1959, Z 7,524; June 1, 1960, Z 8,043
23 Claims. (Cl. 178—6.8)

1. In combination, a charge carrier beam apparatus for machining material, said apparatus having a beam gen-

erator and means to focus the generated beam on said material in impinging beam of small cross section dimension and high energy density, a master picture, a television scanner to scan said master picture and to generate a video signal responsive to the content of the picture



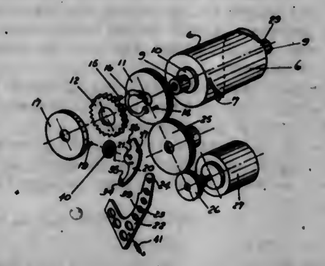
on each position throughout the scan, means to deflect the beam of said apparatus synchronously with said scan, and means responsive to said video signal to modulate the beam intensity in accordance with the content of the scanned picture.

3,192,319

FACSIMILE PHASING MECHANISM

Gerald G. Murphy, Clifton, N.J., assignor to Hogan Faximile Corporation, New York, N.Y.

Filed May 31, 1962, Ser. No. 199,109
6 Claims. (Cl. 178—69.5)



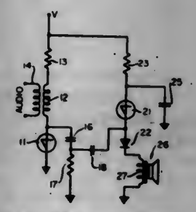
1. A facsimile phasing mechanism comprising a frame, a shaft carried by the frame, a helix drum fixed to the shaft for rotation therewith, a helix electrode positioned on the helix drum, the helix having a backstroke portion defined by an angular space between the ends of the helix electrode, a linear electrode carried by the frame and cooperating with the helix electrode, a driving gear carried by the shaft and rotatable thereon, a ratchet wheel supported by the shaft and rotatable with respect thereto, means driving the ratchet wheel by the driving gear, the ratchet wheel having a plurality of teeth thereon, a pawl supporting member fixed to the shaft for rotation therewith, a pawl pivot pin carried by the pawl supporting member and positioned about ninety degrees behind the backstroke portion, a pawl pivotably mounted on the pawl pivot pin engaging the ratchet teeth, a cam surface for the pawl on its side opposite to its teeth, an actuating shoe pivotably supported on the frame in juxtaposition to the pawl, the actuating shoe having a cam engaging surface for contact with the cam surface of the pawl, a solenoid, an operating plunger for the solenoid, means operatively connecting the plunger to the actuating shoe, whereby upon energization of the solenoid the actuating shoe cam engaging surface contacts the pawl cam for pivotable movement of the pawl thereby effecting a step by step change in the relative angular position of the helix drum with respect to the angular position of the driving gear.

3,192,320

AUDIO AMPLIFIER WITH MODULATED SWITCHING INPUT FOR STORED CHARGE PULSE GENERATOR

James F. Gibbons, Palo Alto, Calif., assignor to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 6, 1961, Ser. No. 93,384
5 Claims. (Cl. 179—1)



1. An audio amplifier comprising a semiconductor switching device having at least two terminals, said device being of the type having a first stable state in which a high impedance is present between said terminals and a second stable state in which a low impedance is present between said terminals, said device being switched from its first state to its second state in response to a predetermined switching voltage applied between the terminals and switched from its second state to its first state in response to a current below a predetermined holding current, a resistance connected in series with said device, means for applying a voltage across said series combination which is greater than the switching voltage, said resistance having a value such that when the device is in its second state the current flowing therethrough is below said predetermined holding current, a capacitor connected in shunt with said device, said resistor, switching device and capacitor forming an oscillating circuit which operates at a predetermined frequency, means for applying a signal voltage to be amplified to said circuit to modulate the voltage across the device in accordance therewith to form a pulse train of varying frequency, pulse generator means forming pulses to be triggered by said train of pulses to provide output pulses having a frequency dependent upon the output frequency of said oscillator, and means for receiving said pulses and averaging the same to recover the amplified signal voltage.

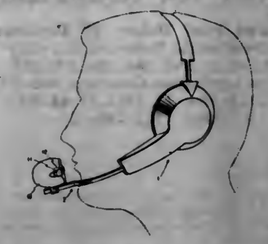
3,192,321

ELECTRONIC LIP READER

Ernie G. Nassimbene, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 14, 1961, Ser. No. 159,377
4 Claims. (Cl. 179—1)

1. In a voice recogniiton system, the combination comprising a microphone of conventional type, a case enclosing said microphone, illuminating means mounted in said case so as to irradiate the wearer of said case supporting said microphone, a detecting means also mounted in said case, and positioned so as to receive radiation reflected from the mouth of said wearer, output leads from said microphone and said detecting means leading and conveying the signals therefrom to a voice reading system and



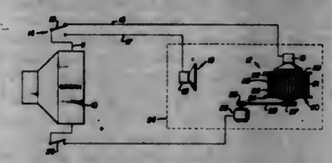
input leads for supplying a source of energy to said microphone, said detecting means, and said illuminating means.

3,192,322

CONTINUOUSLY ROTATING SELECTIVELY OPERABLE APPARATUS FOR PRODUCING VIBRATO AND TREMOLO

Donald J. Leslie, % Electro Music, 56 W. Del Mar Blvd., P.O. Box 2267D, Pasadena, Calif.

Filed Sept. 24, 1962, Ser. No. 225,583
7 Claims. (Cl. 179—1)



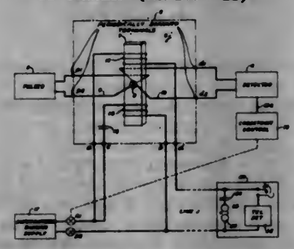
1. In a system for acoustically adding vibrato or tremolo to sound: means forming a sound channel; a transducer for operating the sound channel forming means; means for supporting the sound channel for cyclic movement; motive means for causing the sound channel to move cyclically for imparting tremolo or vibrato to the sound of said channel forming means; companion speaker means; switching means cooperable with the speaker means and the transducer for determining the production of sound either by said transducer or the companion speaker means; and sound absorbent material supported exteriorly of the said channel forming means for cyclic movement therewith whereby fluttering is minimized upon operation of the switching means to determine sound production by said companion speaker means.

3,192,323

TELEPHONE SYSTEM DETECTION CIRCUIT

Ralph E. Hersey, Denville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 6, 1960, Ser. No. 34,179
12 Claims. (Cl. 179—18)



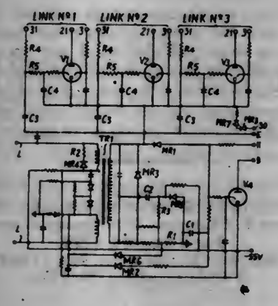
9. In a telephone system, a telephoning set, a magnetizable member associated with said set and having an aperture therein, interrogation and detection means inductively coupled through said aperture, a source of ringing current, means including a first winding on said member direct-current coupling said source to said telephone set, and direct-current blocking means coupled to said source and including a second winding on said member for applying to said member currents balanced with and opposite in phase to the currents in said first winding from said source whereby the fluxes in said member due to ringing currents in said first and second windings substantially cancel each other, said member being magnetically saturated on closure of a direct-current path to said telephone set through said first winding.

3,192,324

AUTOMATIC TELEPHONE SYSTEMS

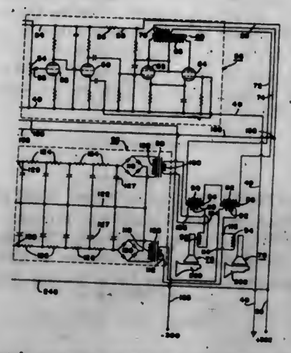
Donald Brian Delanoy, Cambridge, England, assignor to Pye Limited, Cambridge, England, a British company

Filed May 22, 1961, Ser. No. 111,758
Claims priority, application Great Britain, May 25, 1960, 18,470/60
3 Claims. (Cl. 179—18)



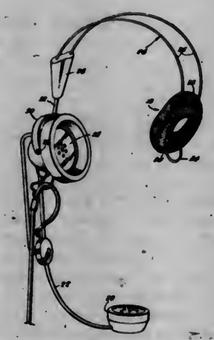
1. An automatic telephone exchange system comprising a plurality of subscribers' telephones and a plurality of links to each of which any two subscribers' telephones can be selectively connected to provide a communication channel between them over that link, wherein a separate cold cathode gas discharge tube is provided for connecting the speech circuit for each subscribers' telephone to each of the links, and including circuit means so that upon any subscriber commencing to call another subscriber, for example by the calling subscriber lifting his telephone hand set, the tube connecting the speech circuit of the calling subscriber's telephone to one of the links strikes and upon the called subscriber's telephone number or other identifying code being dialled, the tube connecting the speech circuits of the called subscriber's telephone to the same link strikes thereby completing the speech circuits between the subscribers through the two struck tubes when the called subscriber answers the call, for example by lifting his hand set, each of said cold cathode gas discharge tubes which is connected between a subscriber's telephone and the links having two trigger electrodes, an allotting circuit provided to prime one of the trigger electrodes of each tube at intervals and means for causing an alteration of potential across the tubes connected to the links when one subscriber lifts his hand set to call another subscriber, so that the first tube which is primed by the allotting circuit after the calling subscriber has lifted his hand set will then strike to connect the calling subscriber to one of the links and means connecting the other trigger electrode of each tube to the links and for applying a potential which is sufficient to strike that tube when the subscriber connected thereto is being called by another subscriber.

3,192,325
HORN PROJECTOR TESTER
Lawrence E. Smith, Jr., Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 15, 1961, Ser. No. 109,961
12 Claims. (Cl. 179—175.1)



9. An electric system comprising, a source of electrical oscillations, first and second speaker means each having a voice coil, the voice coil of each of said speaker means being connected with said source of electrical oscillations, and means connected with the voice coils of said speaker means for developing a direct current error voltage when the loading of said speaker means is not equal.

3,192,326
CUSHIONED SUPPORT FOR HEADSET
Zeph S. Chapman, 1106 Orange Grove, San Fernando, Calif.
Filed May 26, 1961, Ser. No. 113,027
3 Claims. (Cl. 179—178)



2. A cushion for mounting on a switchboard operator's headset wherein a spring-like holder curved to fit over an operator's head carries an earphone on one of its ends to be held thereby against one of the operator's ears, said cushion comprising:

a soft, resilient, foamed plastic body of ring-shaped configuration in plan with two diametrically aligned radial passages therethrough to receive and slidingly grip the other end of the holder for sliding adjustment along the holder to suit the operator's comfort, the entire surface of the body including the inner surfaces of the two radial passages being covered with an integral skin closing the outer cells of the foamed plastic to discourage the accumulation of dust and other foreign material on the body.

3,192,327
PUSH-BUTTON OR KEY ACTUATED SWITCH, PARTICULARLY FOR CONTROLLING TOOL MACHINES
Walter Karl Josef Holzer, 19 Droste weg, Meersburg-on-the-Bodensee, Germany
Filed Feb. 5, 1962, Ser. No. 171,055
Claims priority, application Germany, Feb. 14, 1961, H 41,728; Dec. 27, 1961, H 44,483
9 Claims. (Cl. 200—5)



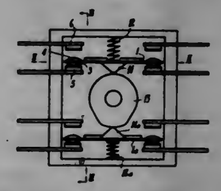
1. Push button switching arrangement comprising: a plurality of flat and elongated contact slides arranged so that their respective flat extensions are disposed in spaced parallel planes, there being a plurality of recesses in each contact slide, with each recess in each contact slide being aligned with one recess in each of all other contact slides; contact means actuated by each of said slides upon shifting thereof in the direction of elongated extension of said latter slide; a plurality of key slides respectively traversing said aligned recesses, one recess of each contact slide, and in a direction transversely to said flat extension; springs for biasing said key slides; and a unique and distinguishing combination of cams arranged longitudinally along each key slide, each cam having an actuating surface for engaging at least one of said contact slides at the recess thereof as traversed by the key slide to which said latter cam pertains, whereby upon actuation of said latter key slide at least one contact slide is shifted in said direction of elongated extension for selectively actuating said contact means.

3,192,328
MOVABLE SWITCH CONTACT ASSEMBLY WITH SELF-ALIGNING BRIDGING PLATE MEMBERS
Gordon A. Wilson, Jr., Washington, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,615
9 Claims. (Cl. 200—11)



1. In combination, a plurality of stationary contacts uniformly spaced in an arc about an axis, an operating shaft extending along said axis, a driving arm extending radially from said shaft and having an aperture therethrough, a pair of conductive, inner bridging plates on opposite sides of the medial plane of said stationary contacts and of said arm, a pair of conductive, outer bridging plates on opposite sides of said arm and superposed over said inner bridging plates, each bridging plate having a width greater than the space between adjacent stationary contacts to bridge said adjacent stationary contacts, each bridging plate having a portion extending into said aperture in said driving arm and said portions on said inner plates being in engagement and said portions on said outer plates being in engagement, whereby current can transfer from one of a pair of bridging plates to the other if a high resistance exists between said one bridging plate and a stationary contact, means for providing a driving connection between said arm and said inner bridging plates and for resiliently urging said inner bridging plates toward each other and into engagement with said stationary contacts and permitting rocking movement of said inner plates independently of said arm, means for providing a driving connection between said arm and said outer bridging plates and for resiliently urging said outer bridging plates toward each other and into engagement with said stationary contacts and permitting rocking movement of said outer bridging plates independently of said arm and of said inner plates, each bridging plate being self-aligning and having three point support on said adjacent stationary contacts and on said portion extending into said aperture in said driving arm.

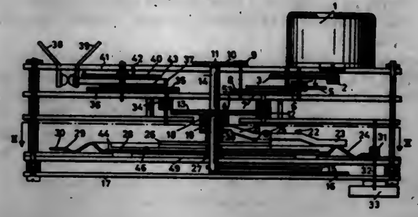
3,192,329
DOUBLE POLE, DOUBLE THROW SWITCHING DEVICE WITH OSCILLATING CONTACT STRUCTURE AND CAMMING MEANS
Pierre Murrlé, Beausoleil, France, assignor to Europe Manufacturing Trust Reg., Vaduz, Liechtenstein
Filed Dec. 20, 1962, Ser. No. 246,042
Claims priority, application France, Dec. 21, 1961, 882,764, Patent 1,320,762; May 28, 1962, 898,954, Patent 1,332,034; Sept. 21, 1962, 910,108, Patent 82,364; Sept. 27, 1962, 910,597, Patent 82,382
11 Claims. (Cl. 200—16)



1. In a switch assembly, stationary contact means, a movable contact member in the form of a generally flat plate having movable contact means attached to at least one side thereof, means mounting said plate for bodily sideways rocking movement about an axis essentially contained in the general plane of said plate, for engagement and disengagement of said movable contact means with said stationary contact means, said mounting means comprising surfaces defining linear areas of engagement on opposite faces of said plate substantially along said rocking axis and clearance areas above and below each of said linear areas of engagement, whereby said plate is not subjected to any constraint in flexion from said mounting means over essentially the entire angular extent of rocking movement thereof between the engaged and disengaged conditions of said contact means, and means for rocking said plate.

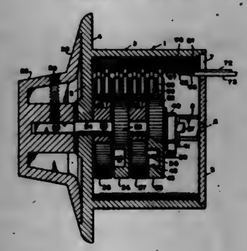
3,192,330
ELECTRICALLY DRIVEN TIME SWITCH MECHANISM
Walter Holzer, Droste weg 19, Meersburg (Bodensee), Germany
Filed Nov. 21, 1962, Ser. No. 239,195
Claims priority, application Germany, Nov. 30, 1961, H 44,265
6 Claims. (Cl. 200—38)

1. An electrically driven time switch mechanism comprising a hollow shaft carrying a minute hand; an electric motor driving said shaft and including a slidably mounted gear on said shaft driven by said motor; said mechanism including a cam operated switch, a second gear driving said cam; said first gear being spring actuated to slide from non-meshing position to meshing position with said second gear; lever means, secured to said hollow shaft



and rotating therewith, controlling the position of said first gear with respect to the second gear, and means operating the lever at predetermined intervals and for predetermined duration whereby the switch may be closed at a predetermined time and for a predetermined duration.

3,192,331
PERMUTATION SWITCH WITH A PAIR OF BUS BARS EACH HAVING SPACED APART INTEGRAL SPRING FINGERS
Raymond W. Davidson, Portland, Oreg., assignor, by direct and mesne assignments, to Electronic Security Corporation, McMinnville, Oreg., a corporation of Oregon
Filed Sept. 27, 1961, Ser. No. 141,091
2 Claims. (Cl. 200—43)



1. In a permutation switch including a hollow cylindrical casing closed at both of its ends having a plurality of cylindrical tumblers rotatably mounted therein which have conducting and non-conducting surface portions, electrical conductors extending to the interior of the housing, and a semi-cylindrical mounting plate supported within the casing and having a relatively thick chordal inner face, the improvement comprising.

a pair of bus bars of flat formation throughout their length secured to and spaced from each other by a dielectric bonding material throughout the major portion of their length and divided outwardly beyond one end of said bond into two conductive terminals electrically connected to said conductors;

both bus bars being bonded as a unit throughout their said major portion to said chordal inner face of said mounting plate;

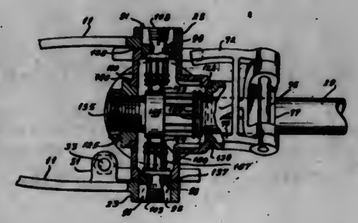
each of said bus bars having laterally, outwardly extending, spaced apart integral spring contact fingers curved downwardly, the fingers of one of said bars straddling those of the other of said bars to provide a series of pairs, each finger of said pair being connected to a separate bar;

the fingers of one of said bars having a common radius of curvature unlike the common radius of curvature of the fingers of the other of said bars, said fingers all terminating in tip ends of angular formation lying in a common plane;

each pair of adjacent fingers from said respective bars being in frictional contact in said common plane with the cylindrical periphery of one of said rotatable tumblers;

whereby a multiple switch circuit may be provided by the use of only two integral conductive elements and whereby stresses applied to said elongated spring fingers by the rotation of said tumblers will be absorbed by the resiliency of the spring fingers within the length thereof with minimal transfer to the bus bars and to their bonding components.

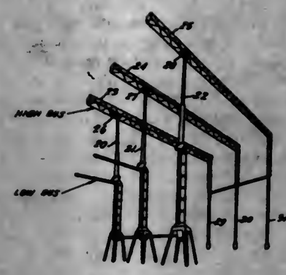
3,192,332
DISCONNECT TYPE OF ELECTRIC SWITCH
Joseph Bernatt, Elmhurst, and Oscar B. Alsaker, Bellwood, Ill., assignors to James R. Kearney Corporation, St. Louis, Mo., a corporation of Delaware
Filed Apr. 16, 1962, Ser. No. 187,549
10 Claims. (Cl. 200—48)



1. In a disconnect type of electric switch having in combination, (1) a fixed contact, (2) a switch blade, and (3) a housing enclosing one end of said switch blade and rotatably mounted on a fixed bearing part on said switch which projects into said housing to form a hinge upon which said housing and blade are free to swing to move the other end of said switch blade into and out of contact with said fixed contact and in which said blade is journalled for rotation about its axis, the improvement in said combination comprising,

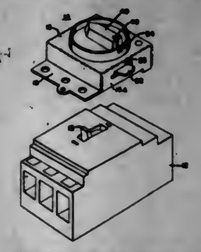
(a) an electrical shunt connection between said blade and said fixed bearing part within said housing including electric conductor means, one of which has a plurality of cylindrically arranged spring biased fingers and the other of which is a pin gripped in said fingers and axially and rotatably movable in said fingers, said means being substantially coaxial with said hinge and in said housing and one of said means being separately and slidably connected with said blade for relative rotary movement with said blade as said blade swings and relative axial movement on said blade to obtain a self-centering action between said pin and said fingers as said blade swings on said hinge.

3,192,333
STATIONARY TRUSS BUS WITH STATIONARY JAW CONTACT FOR VERTICAL REACH HIGH TENSION DISCONNECTING SWITCH
Joseph A. Turgeon, Toronto, Ontario, Canada, assignor to I-T-E Circuit Breaker (Canada) Ltd., Port Credit, Ontario, Canada, a limited-liability company of Canada
Filed May 21, 1962, Ser. No. 197,192
7 Claims. (Cl. 200—48)



1. A support structure for the stationary contact of a vertical reach switch; said support structure comprising a conductive truss; said stationary contact being mechanically and electrically secured to said conductive truss, depending from within said conductive truss.

3,192,334
ENCLOSED ELECTRIC SWITCH WITH COVER-INTERLOCKING AND HANDLE-OPERATING INTERLOCKS
Herbert M. Dimond, West Hartford, and George E. Gauthier, Plainville, Conn., assignors to General Electric Company, a corporation of New York
Filed Sept. 15, 1961, Ser. No. 138,526
5 Claims. (Cl. 200—50)



1. An enclosed electric control device comprising:

(a) an electric switch,

(b) an enclosure for said electric switch including an openable cover having a handle-opening therein,

(c) a manually operable handle, means mounting said manually operable handle on said switch for movement between "on" and "off" positions,

(d) means supporting said switch in said enclosure with said manually operable handle projecting through said opening,

(e) an interlocking lever carried by said switch,

(f) a cover catch carried by said openable cover,

(g) means supporting said interlocking lever for movement to a first position when said manually operable handle is moved to said "on" position, in which it interlocks with said cover catch and for movement to a second position when said handle is moved to said "off" position, in which it is out of engagement with said cover catch,

(h) a wall member carried by said electric switch and having an opening therein elongated in a direction parallel to the plane of said openable cover, said interlocking lever moving in reciprocating fashion within said elongated opening between said first and second positions,

(i) means biasing said interlocking lever toward said openable cover and against an upper edge portion of said opening,

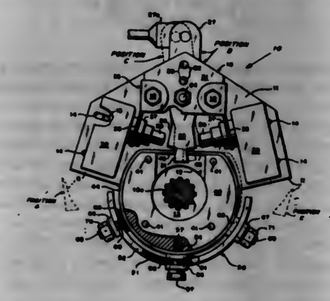
(j) means carried by said cover engaging said interlocking lever when said cover is closed and holding said interlocking lever away from said upper edge portion,

(k) the upper wall of said opening having a stepped portion defining a narrow portion of said opening and a wider portion thereof, said interlocking lever when in said first position being in said narrow portion of said opening and when in said second position being in said wider portion of said opening,

(l) said lever when in said wider portion of said opening being moved upwardly by said biasing means upon opening of said cover and against said upper edge portion and being blocked by said stepped portion from movement toward said narrow portion,

(m) and means interconnecting said interlocking lever and said manually operable handle and preventing movement of said handle from said "off" to said "on" positions while said interlocking lever is in said second position.

3,192,335
TORQUE SENSING SWITCH
Eugene M. Todd, Doylestown, Theodore C. Herring, New Hope, and Francis X. Doyle, Warrington, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 30, 1963, Ser. No. 255,135
4 Claims. (Cl. 200—61.39)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A torque sensing device for a rotatable shaft comprising:

a base member having means thereon and adapted to be rigidly attached to the rotatable shaft for rotation therewith,

a plurality of longitudinally spaced apertures formed in said member,

a lever arm having a plurality of holes intermediate the ends thereof in registration with said apertures and including means passing through one set of aligned apertures to pivotally connect said arm to said member,

means formed at one end of said lever arm for receiving a load,

a spring member secured to said base having means associated therewith for adjusting the force of said spring member and positioned for engagement by the other end of said lever arm,

and sensing means adjacent said lever arm; whereby when the load exceeds the force of said spring said sensing means will be actuated.

3,192,336
WALKING BEAM SAFETY SWITCH
Charley Lowery, Box 13, Briartown, Okla.
Filed Apr. 22, 1963, Ser. No. 274,616
2 Claims. (Cl. 200—61.48)

1. A safety switch for an oscillatory walking beam, comprising: an elongated base; a pair of rod-like inertia members pivotally mounted on said base in longitudinally aligned unbalanced relation; stop means including a cylinder mounted on said base between said inertia members and opposing radial lugs on said cylinder contacting the adjacent end portion of each said member and normally maintaining the latter parallel with respect to said base; and cooperating electrical contacts formed on said base and the end portion of each said inertia member opposite said stop means.



3,192,337
BALL SHAPED FLOAT SWITCH ADAPTED TO BE MOUNTED ON A FLAT SURFACE
Frederick L. Doty, 803 Terrace Place, Peekskill, N.Y., and Gordon G. Fletcher, P.O. Box 535, Sebring, Fla.
Filed Oct. 12, 1962, Ser. No. 230,301
5 Claims. (Cl. 200—84)
(Granted under Title 35, U.S. Code (1952), sec. 266)



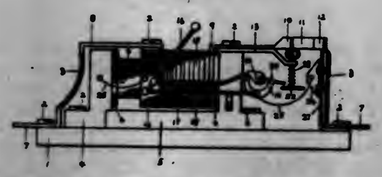
4. A switch for inclusion in an electric circuit with means to indicate the presence of a substantial depth of water in an enclosure having an approximately horizontal surface, which comprises:

(a) a free body of a material which readily floats in water and has means for seating the body stably upright on said horizontal surface in said enclosure, and

(b) a switch fixed to said body for automatically closing in one orientation and for automatically opening in a different orientation, circuit wires leading from said switch and body for inclusion in a utilization indicating circuit, said switch being in one of said orientations when said body is upright,

(c) said body and switch, having their combined center of gravity located relative to said seating means for turning the body and switch from said one orientation to the other orientation when the body and switch are floated by water of sufficient depth around them.

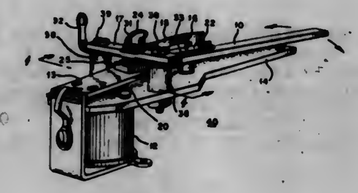
3,192,338
MAXIMUM FAULT CURRENT LIMITING ELECTRICAL CIRCUIT-BREAKER
Robert E. Haynes, 1925 Mill Road, South Pasadena, Calif.
Filed July 24, 1962, Ser. No. 212,081
8 Claims. (Cl. 200—87)



2. In a maximum fault current limiting electrical circuit-breaker, the combination of breaker contact points attached to and in series with one end of a flexible coil spring, lever means for compressing the flexible coil spring and holding said breaker contact points closed, means for opening the breaker contact points under overload, said

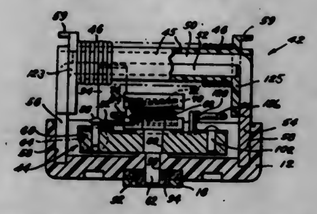
means releasing the levers holding said compressed flexible coil spring, whereby the instant release and expansion of the flexible coil spring causes a high impedance path to the flow of electrical current in the flexible coil spring, thereby instantly limiting the maximum fault current at the breaker contact points.

3,192,339
COMBINATION SWITCH AND RELAY
Reuben C. Carlson, Bensenville, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 18, 1962, Ser. No. 231,460
8 Claims. (Cl. 200—87)



1. A combination switch and relay comprising; base means; a movable member movably mounted on said base means and having a rest position and an alternate position; urging means coupled to said movable member, said movable member when out of its rest position being urged towards said rest position by said urging means; a coil secured to said base means; an armature having an unactuated and an actuated position; and means restraining said movable member only when said armature is in its unactuated position; whereby when said armature is in its actuated position, responsive to energizing of said coil, said urging means urges said movable member into said rest position.

3,192,340
CENTER PIVOTED ARMATURE ELECTROMAGNETIC SWITCHING MECHANISM
Aime J. Grenier, North Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 15, 1963, Ser. No. 265,408
11 Claims. (Cl. 200—87)



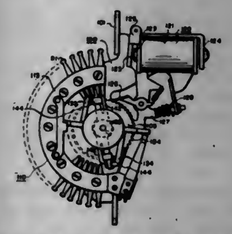
1. A switch comprising a housing; an armature in said housing; means mounting said armature for rotary movement in each of two opposite directions; said means comprising a post mounted in said housing and having a portion thereof disposed in an aperture in said armature; said switch including magnetic means associated with said armature for causing movement of the latter in one of said directions; a pair of electrical contacts mounted in said housing, one of said contacts being movable into and out of engagement with the other of said contacts in response to movement of said armature; resilient means comprising a spring, one end of which is connected to said post and the other end of which abuts a portion of said armature for biasing said armature for movement in the other of said directions; said post being movable relative to said other end of said spring to an adjusted position for adjustably varying the bias exerted against said armature; and means for maintaining said post in said adjusted position.

3,192,341
MAGNETIC VIBRATORY CHOPPER
Harry Reifel, Waltham, Mass., assignor to Stevens-Arnold Inc., South Boston, Mass., a corporation of Massachusetts
Filed June 18, 1963, Ser. No. 288,646
12 Claims. (Cl. 200—90)



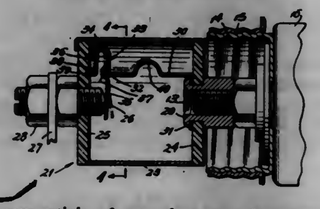
1. An electromagnetic switch comprising a pair of reeds of magnetic spring metal, said reeds having corresponding sides spaced apart in a common plane, means for cantilever supporting said reeds at corresponding ends thereof, a first contact on the free end of one of said reeds, a second contact on the free end of the other one of said reeds, a third, fixed contact opposite said first contact at one side thereof, a fourth, fixed contact opposite said second contact at the corresponding side thereof, means for biasing said free ends of said reeds towards said fixed contacts, an electromagnetic coil around said reeds, and permanent magnet means for oppositely polarizing said reeds magnetically.

3,192,342
ROTARY STEPPING SWITCH
Richard M. Rovnyak, Hanover Park, and Artemus W. Pulford, Jr., Bellwood, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,311
3 Claims. (Cl. 200—105)



3. In combination, a frame, a shaft rotatably mounted on said frame, a stepping mechanism mounted on said frame to rotate said shaft in a step by step manner, a contact bank assembly including at least one row of normally open contacts and one row of normally closed contacts arranged between arcuate-shaped insulators and concentrically about said shaft, said contacts being angularly spaced apart to correspond to the steps of said shaft, a first wiper assembly including a pair of wipers having a hub portion and arms extending therefrom rotatably mounted on said shaft for bridging said normally open contacts, and a second wiper assembly including a substantially flat hub rotatably mounted on said shaft, a first means connected to said hub for passing between and opening said normally closed contacts, and a second means also connected to said hub and constructed and arranged to pass between said contacts one step behind said first means to clean said contacts.

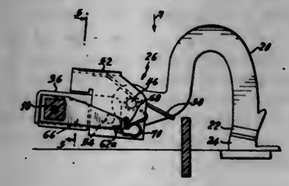
3,192,343
QUICK-ACTING SWITCH HAVING MOVABLE CONTACT MEANS PIVOTALLY MOUNTED ADJACENT THE INPUT CONTACT
Laurence G. Horwitt, New Haven, and Vincent Gerald Krenke, Bridgeport, Conn., assignors to The Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed May 1, 1962, Ser. No. 191,473
6 Claims. (Cl. 200—113)



1. As a new article of manufacture, a heat-responsive quick-acting switch having a hollow housing having end closures; an input terminal having a contact in one end of the housing; an output terminal on the other end of the housing; an elongate current conducting bimetallic driver extending lengthwise in the housing with one end fixed to the output terminal and a free end movable laterally when heated and cooled; a U-shaped current conducting spring located in the housing to extend substantially at right angles to the free end of the driver, said spring having a reverse bend, a long leg having a socket engaging the free end of the driver and the short leg having with the end of the housing on which the input contact is located, a pivotal connection on which the U-shaped spring may oscillate, the spring being biased to cause the legs thereof to continuously press outwardly, the short leg against said pivotal connection and the long leg against the free end of the driver, the free end portion of the long leg engaging the input contact when the driver is cool to complete a circuit from said input contact to said output terminal through the spring and the driver, the long leg of the spring being substantially perpendicular to the free end of the driver and the short leg of the spring being substantially aligned with the free end of the driver whereby said free end portion of the long leg makes sliding wiping engagement against said input contact with increasing pressure as the driver when heated moves laterally away from the input contact until the driver is stressed sufficiently to cause the free end of the driver to compress the free end portion of the long leg of the spring and pass over the pivotal connection thereof, whereupon the driver causes the spring to oscillate with a snap action and carry the free end of the long leg away from the input contact to open the energizing circuit.

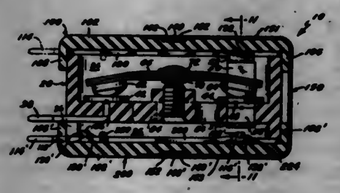
3,192,344
HIGH INTERRUPTING CAPACITY CIRCUIT BREAKERS WITH ELECTRODYNAMIC LATCH RELEASE
Thomas M. Cole, Harrison, N.Y., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Aug. 28, 1961, Ser. No. 134,199
2 Claims. (Cl. 200—116)

1. A multipole circuit breaker having a common operating mechanism, plural contact arm carriers in respective poles operable in unison by said operating mechanism for opening and closing all the poles of the circuit breaker concurrently, plural overload release devices in said poles, respectively, arranged to cause automatic opening operation of said operating mechanism in response to an overload in one or more of the poles, contact arms in each of said poles, interposed members in each pole pivotally supporting one of said contact arms and pivotally carried by one of said contact arm carriers, releasable latching means including normally engaged parts on each contact arm and on the related interposed member, respectively, for holding each said arm against contact-opening movement relative to its interposed member in the latched condition of said latching means, individual resilient biasing means acting on each contact arm in the contact-opening direction and effective to move such contact arm in that direction upon release of said latching means, a pair



of contacts in each pole including a first contact of each pair on said contact arm and a companion contact of each pair disposed for engagement by the corresponding first contact, individual resilient biasing means acting on each said interposed member for biasing the related contact arm in the contact-closing direction when the interposed member and the contact arm are latched to each other, means providing a current path through the circuit breaker when closed, the latter means including said contacts and the contact arm and having a configuration effective to produce a force tending to drive said contact arm in the opening direction and effective to move the contact arm only when the contact-closing resilient bias is overcome, and a latching-means releasing member interposed in the path of movement of the latched contact arm and its interposed member for releasing said releasable means of that contact arm upon blow-off motion of that contact arm.

3,192,345
PLURAL HEATER UNIT THERMALLY RESPONSIVE MOTOR PROTECTOR
Henry David Epstein, Cambridge, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Apr. 18, 1961, Ser. No. 103,945
3 Claims. (Cl. 200—122)



1. A thermally responsive electrical switch for protection of a motor having at least two windings; said switch

comprising first, second and third assembly units; said first unit including a base formed of electrically insulating material; said first unit including a pair of electrical contacts; a thermally responsive snap-acting element carried by said base and operatively associated with said contacts for actuation thereof to control an electrical circuit for said winding at predetermined conditions; said second and third units each including a cover member formed of electrically insulated material; each of said cover members carrying an electrical heater formed of wire-like material having a substantial electrical resistance; means detachably securing said first, second and third units together with said first unit intermediate said second and third units; spring means resiliently electrically connecting each of said heaters with one of said contacts and each of said heaters being disposed in heat-transfer relation to said thermally responsive snap-acting element, when said first, second and third units are detachably secured together; one of said heaters being electrically connectable in series with one of said windings and the other of said heaters being electrically connectable in series with the other of said windings; each of said heaters having a wire size selected according to the size of the wire used in the respective motor winding to which said heater unit is electrically connectable to provide a predetermined size relationship therebetween.

3,192,346
CURRENT AND TEMPERATURE SNAP ACTING DEVICES
John L. Slonneger, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed June 3, 1963, Ser. No. 286,128
4 Claims. (Cl. 200—138)



1. A current and temperature responsive snap acting device comprising: a bimetallic element having a pair of arcuate arms joined at one end and spaced at the other ends to provide a gap therebetween, means for maintaining the gap between the ends of the arcuate arms of said bimetallic element to stress said bimetallic element in a dished formation thereby to provide a predetermined temperature differential between the temperature at which said bimetallic element is actuated and the temperature at which said bimetallic element is reset, a current sensing member attached to said bimetallic element at a location opposite to the gapped ends thereof, and having a restricted cross-section to thereby cause heat to be generated therein when the current through said restricted section reaches a predetermined level, the attachment between the current sensing member and the bimetallic element causing said heat to be transferred by conduction to said bimetallic element for actuation thereof, said restricted cross-section of said current sensing member retarding the transfer of heat by conduction away from said bimetallic element after said bimetallic element is actuated to delay the resetting of said bimetallic element, and a contact button carried by said bimetallic element so that a physical displacement is imparted thereto when said bimetallic element is actuated.

3,192,347
CIRCUIT INTERRUPTER HAVING TRACK RESISTANT COATING THEREON
Allen E. Stringfellow, Haddonfield, N.J., and David H. Reighter, Roslyn, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 10, 1962, Ser. No. 165,366
7 Claims. (Cl. 200—144)



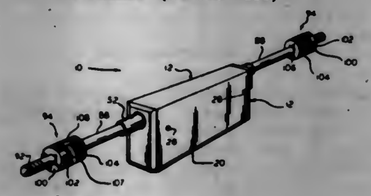
1. In an electrical circuit interrupter, molded plastic insulation subject to tracking, having deposited thereon a track-resistant coating comprising at least 45% by weight of hydrous magnesium silicate containing less than 0.2% by weight calcium, and a cured epoxy resin polymer.

3,192,348
ARC EXTINGUISHING SWITCH STRUCTURE
Karl-Ludwig Gessner, Darmstadt, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Feb. 15, 1962, Ser. No. 173,400
Claims priority, application Germany, Feb. 20, 1961, L 38,244
12 Claims. (Cl. 200—144)



1. An arc extinguishing device for electric switchgear having contacts or other arc generating elements, comprising a plurality of electrically conducting arc extinguishing baffles arranged at right angles to arcs which are generated, at least some of the ends of the baffles facing the place where the arc is generated bearing perforated by at least one opening, with an opening area provided thereby being available to the arc for passage therealong, and decreasing in the direction of motion of the arc.

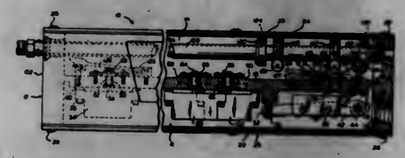
3,192,349
LINEAR ELECTRICAL SWITCHING CONTROL UNIT
Charles Horberg, Jr., Chicago, Ill., assignor to Paramount Textile Machinery Co., Kankakee, Ill., a corporation of Illinois
Filed Dec. 6, 1961, Ser. No. 157,521
10 Claims. (Cl. 200—153)



1. A linear control unit which comprises, in combination, a hollow casing, control switch means within said

casing and having a member movable to operate the switch means, an actuator independent of said switch means and linearly movable in said casing, plural means associated with said actuator in said casing for moving said movable member in response to movement of said actuator, means selectively interengaging said actuator and said plural means for movement together to move said movable member, said actuator moving relative to one of said plural means while engaging another, a connector mounted for linear movement in the same direction as said actuator and independently thereof, and means interengaging said actuator and said connector at a selected relative location of said connector for movement of said actuator with said connector to thereby operate said switch means.

3,192,350
SEALED ELECTRICAL SWITCHING CONTROL UNIT USING LINEAR CAM ACTUATOR
Charles Horberg, Jr., Chicago, Ill., assignor to Paramount Textile Machinery Co., Kankakee, Ill., a corporation of Illinois
Filed Dec. 6, 1961, Ser. No. 157,523
4 Claims. (Cl. 200—153)



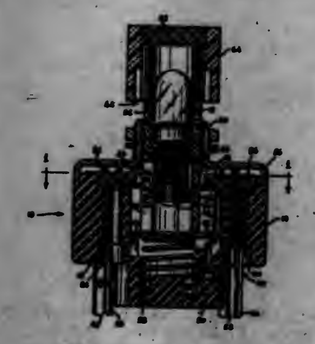
1. A linear electrical switching control unit which comprises, in combination, a hollow casing, a switch compartment in said casing, means for sealing said switch compartment from the surrounding atmosphere, an actuator compartment in said casing adjacent to said switch compartment, a partition in said casing separating said compartments, an actuator in said actuator compartment extending through a wall thereof and projecting externally therefrom, means mounting said actuator on said casing for reciprocal movement along a linear movement path, means for sealing said actuator compartment from the surrounding atmosphere including sealing means interposed between said actuator and said compartment wall, a plurality of cams on said actuator in said actuator compartment and spaced apart in the direction of said movement path, means mounting said cams for movement with said actuator, means providing a plurality of openings extending through said partition between said compartments and being spaced apart along said movement path, a plurality of discrete switches each having a member movable to operate the switch, means mounting said switches in said switch compartment with the movable members of the several switches registering respectively with said partition openings, a plurality of plungers in respective partition openings and extending into said actuator compartment, means mounting said plungers for reciprocal movement in said openings to and from said switch movable members for moving the latter in response to said plunger movement towards them to thereby operate said switches, sealing means interposed between said plungers and said partition to thereby isolate said compartments from each other, and cam follower means for interengaging said cams and said plungers to thereby move said plungers and operate said switches in response to said actuator movement.

3,192,351
ELECTRICAL CONTACT DISC
John R. Lash, Zion, Ill., assignor to Fansteel Metallurgical Corporation, a corporation of New York
Filed May 8, 1961, Ser. No. 108,518
1 Claim. (Cl. 200—166)



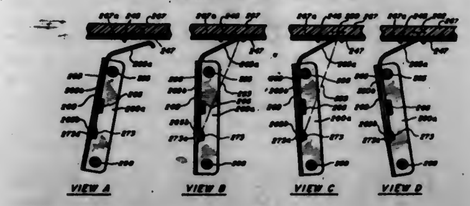
A generally disc-shaped electrical contact element comprising a generally cylindrical body portion, a front contact face for making electrical contact to close an electrical circuit, said front face being of generally conical configuration with the apex of the cone and the juncture of the body portion of the disc and the front face being rounded and the surface of the cone intermediate the apex and the generally cylindrical body portion being rectilinear and merging at the marginal portions thereof into the adjacent margins of the aforesaid rounded portions.

3,192,352
ILLUMINATED PUSHBUTTON SWITCH
Earl T. Piber, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Dec. 2, 1960, Ser. No. 73,414
2 Claims. (Cl. 200—167)



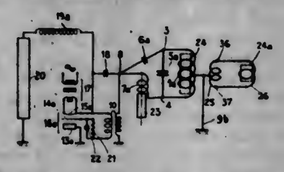
1. In an illuminated pushbutton switch, an insulating base having a central cavity and a plurality of openings therethrough, a hollow pushbutton slidably supported on said base, a pair of lamp contact clips mounted on said base, said lamp contact clips having terminal portions extending through openings in said base exteriorly of said base, a lamp mounted inside said pushbutton and supported by said lamp contact clips, means for electrically connecting said lamp to said lamp contact clips, a pair of switch contact clips mounted on said base and having terminal portions extending through openings in said base exteriorly of said base, said switch clips having spring arm contact portions extending into said central cavity, said base having a pair of abutments adapted to engage said spring arm portions and prestress them, a contactor movable in one direction by said pushbutton, said contactor being movable in reverse directions into and out of sliding engagement with said spring arm portions to open and close the switch, and a return spring biasing said pushbutton and contactor for movement in the direction opposite said one direction.

3,192,353
WIPING CONTACT TYPE SWITCHING APPARATUS
Pentti V. Sariund, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 30, 1962, Ser. No. 169,806
5 Claims. (Cl. 200—164)



1. Switching apparatus comprising:
a first stationary contact assembly having a flat contact surface;
a second contact assembly including a support and an elongated resilient member having one end fixed to said support, having an intermediate portion normally lying against a surface of said support, and having a free end displaced in a given direction from said intermediate portion and presenting a second contact surface;
and means including a shaft for pivotally supporting said second assembly for movement about a fulcrum point defined by said shaft in a direction generally the same as said given direction from a first position in which said contact surfaces are out of engagement, through a second position in which said contact surfaces are engaged to a third position, said intermediate portion of said resilient member flexing away from said surface and toward said fulcrum point to effect wiping of said second contact surface on said flat contact surface in said given direction, and thence to a fourth and final position;
said shaft arresting the flexing of said intermediate portion and the movement of said free end when said second assembly reaches said third position, and said free end winding around said shaft as said second assembly moves from said third to said fourth position to effect wiping of said second contact surface on said flat contact surface in a direction opposite from said given direction.

3,192,354
OSCILLATION GENERATING SYSTEM
Charles Alphonse Emile Beurtheret, St. Germain en Laye, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France
Filed Mar. 23, 1962, Ser. No. 182,058
Claims priority, application France, Mar. 28, 1961, 857,025, Patent 1,296,598
10 Claims. (Cl. 219—10.77)



1. An electrical heating system for applying high-frequency electrical energy to work to be heated, which comprises an oscillator having a pair of output terminals and an output circuit connected thereto, which output circuit comprises a first resonant circuit portion comprising a first inductive impedance and a first capacitive impedance in series therewith; a second resonant circuit portion comprising a second inductive impedance and a second capacitive impedance in parallel therewith; one of said second impedances constituting a load impedance arranged in energy-transferring relation with said work; means coupling said output circuit portions beyond their critical coupling point; a first one of said oscillator output terminals being connected to a first point of said output circuit between said series-connected first impedances; the second output terminal being connected to another point of said output circuit; whereby the output energy from said output circuit exhibits a pair of resonance humps for two different frequencies; means providing a positive feedback coupling from said output circuit to said oscillator whereby the natural oscillatory frequency of the oscillator will be determined by the frequency value of one of said humps; and means for adjusting one of said impedances whereby to vary the tuned frequencies of said circuit portions and the peak amplitude of said one hump and hence the amount of energy transferred to the work.

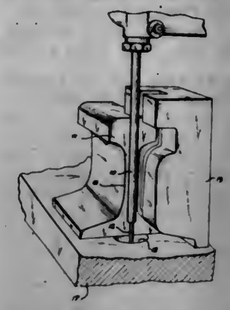
3,192,355
BUTT WELDING OF ANNULAR SURFACES OR PIPES END-TO-END WITH SCANNING WELD CURRENT
Julius E. Foster, 9 Mountain Way, Rutherford, N.J.
Filed Aug. 29, 1961, Ser. No. 135,108
25 Claims. (Cl. 219—67)



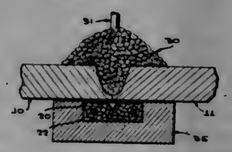
1. The method of butt-welding two pipes, end to end, over their annular end surfaces, which comprises the steps of
placing the two annular ends in butting engagement to define an annular seam between the two pipe ends;
passing a welding current from one pipe to the other between the two pipe ends and through the annular seam to pass through the annular seam surfaces;
and controlling the weld current stream to cause the stream section to scan the two annular seam surfaces with movement having motion components in co-ordinate directions, circularly, and radially from edge to edge, and to heat those two seam surfaces to establish a welding action between them.

3,192,356
WELDING OF RAILROAD RAILS
Harry I. Shrubsall, Scotch Plains, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Sept. 24, 1962, Ser. No. 225,811
6 Claims. (Cl. 219—73)

1. Method for welding railroad rails including base, web and head sections which comprises positioning the rails to be welded with their faces in parallel spaced relation, supporting said rails on a base member having an opening therein to provide a starting reservoir for the weld to be made, centering said rails on said reservoir, positioning a current-carrying member in the space between said rail faces, placing weld shaping members contoured to fit the rail sections on such sections to form a cavity enclosing said current-carrying member and to define the shape of said weld to be made, passing a consumable wire through one end of said current-carrying member until it emerges from the other end thereof, placing a measured amount of a first welding composition in said starting reservoir to cover the end of said wire, initially striking an arc in said starting reservoir, maintaining the arc current at a preselected starting value until a quiescent condition is achieved in such reservoir, increasing said current to a preselected welding value, progressively consuming said wire, adding a second different welding composition during the progression of said weld to maintain said quiescent condition, commencing oscillation of said wire parallel to the rail faces when the weld puddle has risen to a point at the junction of the rail web section to the rail head section, reducing said welding current to a preselected weld-finishing value when the weld puddle reaches the top of the head section and continuing at this level until the weld puddle forms a riser on the rail head.

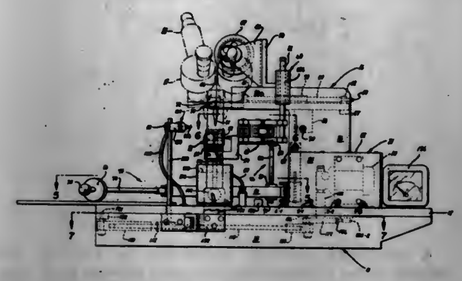


3,192,357
METHOD AND APPARATUS FOR ELECTRIC WELDING
Francis D. Duffey, Hampton, and Richard P. Flannagan, Newport News, Va., assignors to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed Oct. 23, 1962, Ser. No. 232,464
1 Claim. (Cl. 219—73)



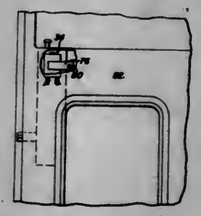
The method of butt welding a pair of workpieces comprising providing a metallic block with a groove extending longitudinally thereof and providing a back-up body means retained within said block, said back-up body means comprising a rigid monolithic self-supporting structure formed of particles of flux and an inorganic binder, said particles being in the range of 92% to 98% by volume of the body means, and the binder being in the range of 2% to 8% by volume of the body means, elongated rigid support means positioned within said body means and extending longitudinally thereof, a V-shaped groove being provided in the upper surface of said body means and extending longitudinally thereof, further providing a woven fiberglass tape of a width comparable to that of the body means and extending the length thereof, positioning said strip over the surface of said body means which contains said V-shaped groove, positioning a pair of workpieces over said strip with the abutting edges above said groove in said body means, providing a blanket of loose particles of flux over the edges of said workpieces to be welded and then submerging an electrode into said burden adjacent the edges of said workpieces and striking a welding arc between said electrode and said workpieces and passing the electrode along the said edges.

3,192,358
MULTIPLE POINT BONDING APPARATUS
Cecil A. Lasch, Jr., Redwood City, Boris J. Spremsky, Menlo Park, and Jerry J. Whitman, Palo Alto, Calif., assignors to Electrogias, Inc., Redwood City, Calif., a corporation of California
Filed Mar. 27, 1962, Ser. No. 182,884
14 Claims. (Cl. 219—85)



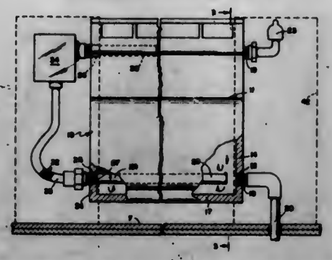
12. A bonding apparatus for bonding leads to an element, a bonding tool, a support arm carrying the bonding tool, means for supporting the bonding arm, means for applying a predetermined weight to the support arm, an element holder adapted to carry an element and means for causing relative movement between the bonding tool and the element carried by the element holder to move the bonding tool and the lead into engagement with each other and the lead and the element into engagement with each other, said means for causing relative movement between the element and the bonding tool including a pantograph-like arrangement having an operating lever in which the element carried by the element holder follows the motion of the operating lever on a reduced scale.

3,192,359
HEATER FOR FROZEN AUTOMOBILE LOCKS
William H. Swindall, Rte. 1, % R. J. Rushing, Jackson, Tenn.
Filed Mar. 29, 1963, Ser. No. 268,868
6 Claims. (Cl. 219—201)



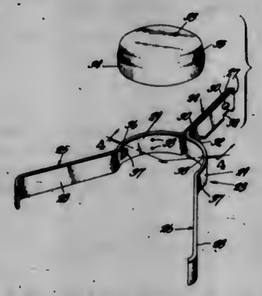
1. In combination, a vehicle body having a door, a door lock housed within the framework of said door, a door handle secured to said door by a fastener adjacent said door lock, a heater assembly housed within the framework of said door, said heater assembly being adjacent to but separate from and independent of said door lock and in good heat exchange relation with the latter, means for energizing said heater assembly and applying heat from the latter to said door lock and thereby thawing a frozen door lock, said heater assembly including a casing and a heater element housed within and mounted in said casing, support means comprising an arm rigidly connected to and projecting from said casing and engaged by and secured by said door handle fastener.

3,192,360
ELECTRIC BASEBOARD RADIATOR
Herald J. Williams, Jr., Austin, Minn., assignor to Aqua-Lectric, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 17, 1962, Ser. No. 166,876
1 Claim. (Cl. 219—341)



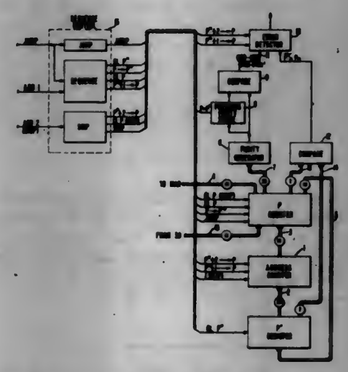
A baseboard radiator, comprising an elongate, and entirely closed hollow liquid-confining housing to lie along the wall of a room adjacent the floor and having a bottom wall and opposite upright end walls, each of said end walls having an opening therein spaced above the bottom wall, a pipe fitting in the opening of one upright end wall and providing direct and unobstructed communication with the interior of the housing, said fitting being adapted for connection to a liquid supply, an elongate electric resistance heating element having an outer end secured in the opening of the other end wall and having an inner end spaced above the bottom wall and extending endwise through the interior of said housing into spaced relation with said one end wall, and the element having electrical terminal means on said outer end at the exterior of the housing.

3,192,361
ELECTRIC HEATER ASSEMBLY
Richard L. Post, Glenshaw, and Thomas A. Oravetz, Level Green, Pa., assignors to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Aug. 8, 1962, Ser. No. 215,645
8 Claims. (Cl. 219—458)



1. A heater assembly comprising a sheathed electric resistance heating element having a heat-generating portion providing an apertured, generally plane heating surface for underlying and supporting a vessel to be heated, a support member underlying and supporting the heat-generating portion of said element and partially margining the element heating surface aperture, means carried by that part of said support member which margins said element heating surface aperture and comprising a generally vertically disposed tongue having a lower portion affixed to said support member margining part and an upper, free end portion spaced radially inwardly of said support member margining part, and a body aligned with the element heating surface aperture and having a portion interposed between said support member margining part and the free end portion of said tongue.

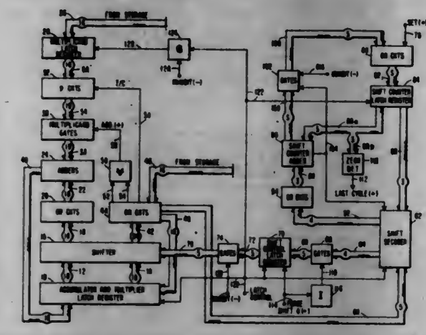
3,192,362
INSTRUCTION COUNTER WITH SEQUENTIAL ADDRESS CHECKING MEANS
Adelbert W. Cheney, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1961, Ser. No. 133,168
27 Claims. (Cl. 235—153)



5. In a binary counter of the type having first and second number storage registers and an arithmetic element operative in each of a plurality of cycles to add one to the content of said first register and enter the result in said second register, the improvement comprising: means for generating the parity of the number in said second register; means for transferring the number in said second register to said first register; means for storing the parity of the number transferred to said first register; means for comparing the parity of the number in said first register with the parity of the next number entered into said second register by said arithmetic element; means for comparing the next number in said second register with the number in said first register; and means responsive to said parity comparing means and said number comparing means for indicating that the number in said second register is not greater than the number in said first register by a value of one.

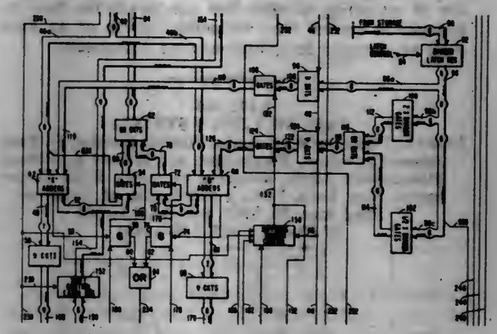
3,192,363
BINARY MULTIPLIER FOR SKIPPING A STRING OF ZEROES OR ONES
Olin L. MacSorley, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 24, 1961, Ser. No. 112,455
3 Claims. (Cl. 235—164)

1. A binary multiplier device for skipping a string of zeros or a string of ones in a multiplier proceeding from the highest to the lowest orders, said binary multiplier including first register means for storing signals representative of a multiplicand, second register means for storing signals representative of a multiplier, third register means for storing signals representative of a partial product, a shifter connected to the second and third register means for shifting signals stored in the second and third register means a variable number of positions, an adder, said third register means being connected to the adder for conveying signals representative of a partial product to said adder, said first register means being connected to said adder for supplying means representative of a multiplicand to said adder, said adder having an output connected to said third register means, said third register means storing output signals from said adder which output signals represent a partial product, control means coupled to said first register means, said second register means, said third register means, said shifter and said adder, said control means including first, second and third means, said first means sensing a plurality of orders of the multiplier in said second register means progressing from the highest to the lowest orders and operating said shifter to shift the content of said second register means and said third register means a plurality of positions depending on the number of zeros or the number of ones in a string in the multiplier, said second means adding the multiplicand to the partial product or subtracting the multiplicand from the partial product depending on the distribution of binary ones and zeros following the multiplier positions skipped, said third means keeping track of the number of multiplier shifts made and terminating the multiply operation after a given number of multiplier shifts, said control means including further circuits for operating said shifter; (1) to shift across high order multiplier bits in the second register means which are zeros, to stop shifting at the last zero, and to add the multiplicand in the first register means to the partial product in the third register means and shift across the following ones if the first one following the zeros is followed immediately by a second one, or to stop shifting at the first one and to add the multiplicand in the first register means to the partial product in the third register means and shift across the following zeros if the first one following the zeros is followed immediately by another zero; (2) to shift across high order multiplier bits in the second register means which are ones, to stop shifting at the last one, and to subtract the multiplicand in the first register means from the partial product in the third register means and shift across the following zeros if the first zero following said ones is followed immediately by a second zero, or to stop shifting at the first zero, and to subtract the multiplicand and shift across the following ones if the first zero following said ones is followed immediately by a second one.

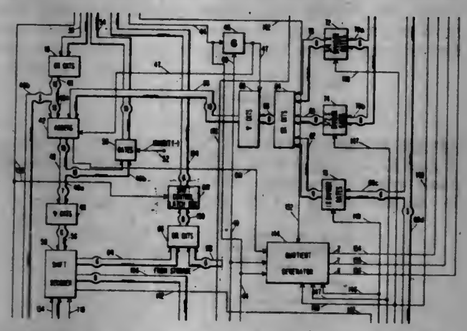


3,192,364
BINARY DIVIDER
Olin L. MacSorley, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 13, 1961, Ser. No. 117,259
18 Claims. (Cl. 235—164)

14. A binary divider circuit including a dividend storage register, an arithmetic device, means coupling the dividend storage register to said arithmetic device, first means responsive to signals representative of a divisor which provides signals representative of one-half times the divisor, one times the divisor, and two times the divisor, second means selectively supplying one of the quantities of one-half times the divisor, one times the divisor, and two times the divisor from said first means to said arithmetic device for thereby providing the next partial dividend, said binary divider circuit having further means coupled thereto for determining N quotient bits for each series of N zeros or N ones disposed in the highest successive orders of any partial dividend, where N is any integer equal to or greater than two.



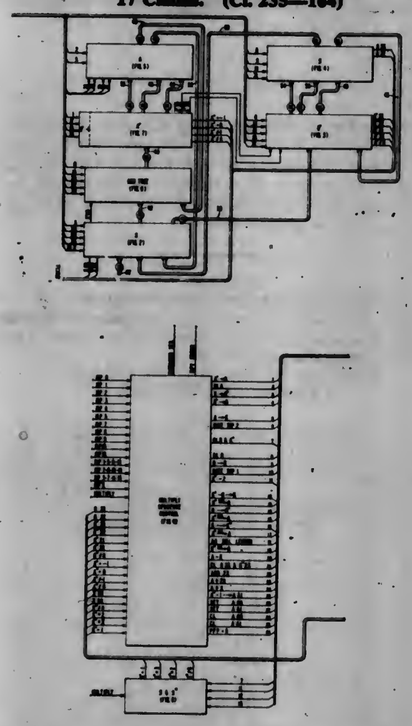
3,192,365
HIGH SPEED BINARY DIVIDER
Joseph R. Stewart, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 13, 1961, Ser. No. 125,323
6 Claims. (Cl. 235—164)



1. A binary divider circuit including a dividend storage register, an arithmetic device, means coupling the dividend storage register to said arithmetic device, first means responsive to signals representative of a divisor which provides signals representative of three-fourths times the divisor, one times the divisor, and three-halves times the divisor, second means selectively coupling one of the quantities three-fourths time the divisior, one times the divisor, and three-halves times the divisor from said first means to said arithmetic device, said arithmetic device being operated in successive cycles to provide the next partial dividend, second means coupled at least to the dividend storage register for shifting the conten thereof in N places each cycle and for determining N quotient bits, where N is any integer, third means for indicating intially the number of quotient bits to be developed, and thereafter indicating in each cycle the remaining number of quotient bits to be developed, fourth means responsive to the remaining number of quotient

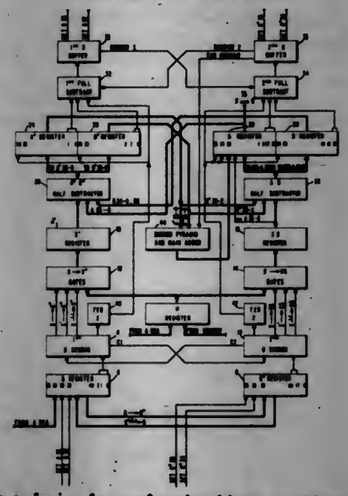
bits of the third means and the number of shifts N for each cycle of said second means for indicating when the last cycle of operation is ready to take place, and fifth means coupled to the fourth means which is operated in the last cycle of operation to develop the correct number of remaining quotient bits and to put the final remainder in correct form including the use of an extra cycle of operation for complementing if necessary.

3,192,366
FAST MULTIPLY SYSTEM
Leslie L. Cochran, Minneapolis, William Weigler, St. Paul, James C. Nelson, Rosemount, and Harold L. Ridout, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 134,945
17 Claims. (Cl. 235—164)



1. A binary device for performing the multiplication of a multiplicand by an N-digit multiplier in a plurality of iterative cycles, said device comprising: an iteration counter; means for initially setting said counter to a count of $N-1$; means for reducing said count by two on each iterative cycle; multiplier, multiplicand and product storage means; means responsive to said iteration counter for sensing the two low order digits of said multiplier on each iterative cycle when said counter contains a count greater than one and sensing the low order digit of said multiplier when said counter contains a count of one; arithmetic means responsive to said multiplicand storage means and said partial product storage means for entering partial products into said partial product storage means; control means responsive to said sensing means for controlling said arithmetic means to add zero, one, two, or minus one, times said multiplicand to said product storage means; means responsive to said iteration counter for shifting said multiplier and the content of said product storage means two positions toward the order of least significance on each iterative cycle when said counter contains a count greater than one and only one position when said counter contains a count of one; and means responsive to said iteration counter for injecting a correction digit into any order of said product storage means which receives no input during said shift.

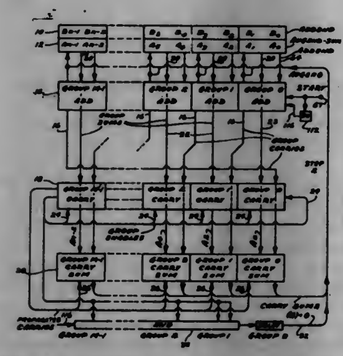
3,192,367
FAST MULTIPLY SYSTEM
Richard M. Oman, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,472
33 Claims. (Cl. 235—164)



1. In a device for performing binary multiplication in a sequence of iterative cycles, the combination comprising: multiplier storage means; multiplicand storage means; first gating means connected to said multiplicand storage means for producing a first partial product on each of said iterative cycles; second gating means connected to said multiplicand storage means for producing a second partial product on each of said iterative cycles; first sensing means for sensing alternate pairs of digits of said multiplier, said first sensing means including a first gating control circuit and a first carry circuit; second sensing means for sensing the pairs of multiplier digits not sensed by said first sensing means, said second sensing means including a second gating control circuit and a second carry circuit; said first and second gating control circuits being connected to said first and second gating means, respectively, to control the production of said first and second partial products; means for connecting said first carry circuit to said second carry and gating control circuits; and means for connecting said second carry circuit to said first carry and gating control circuits.

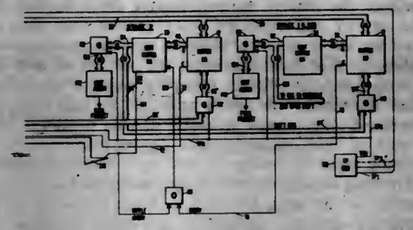
3,192,368
ARITHMETIC SYSTEM UTILIZING FERROMAGNETIC ELEMENTS HAVING SINGLE DOMAIN PROPERTIES
Abraham Franck and George F. Marette, Richfield, and Berc I. Paregyan, St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1960, Ser. No. 61,534
16 Claims. (Cl. 235—175)

6. An arithmetic system of the digital signal parallel group type having a plurality of ferromagnetic elements with cores exhibiting uniaxial anisotropy, comprising M groups of addend and augend digital signal input means, each group with K digital signal positions respectively indicative of numeric values, M group add means respectively connected to both input means in the respective groups, each add means including a plurality of the said elements and bias means for magnetically biasing the add elements to one of two magnetic saturation states along their respective hard axes, separate winding means for coupling both input means respective digit positions to predetermined ones of the add elements along their hard axes for changing the magnetic saturation states for one input indicated binary value from the one to the other state, current impulse means having winding means magnetically associated with selected one add elements for magnetically urging same into a high permeability portion of their respective hysteresis characteristics when they are in a predetermined one of the two saturation states, a plurality of sensing winding means associated with predetermined elements of the add means to transfer a group carry signal and group sum signals within a modulus of K digits, magnetic element array carry means having M rows and M groups of K columns of the elements with no elements at the intersection of the mth row and the mth group of columns, $M-1$ carry sensing windings in each array row with the different windings in each row beginning at the mth—mth row-column intersection winding and coupling the hard magnetization axes



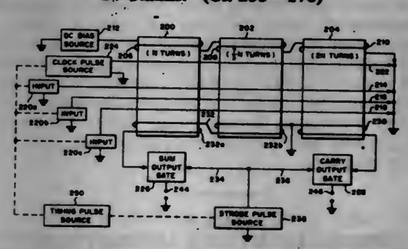
of cores in different columns and extending in the direction of carry propagation, each array element in the respective array rows having residual magnetization in the same relative directions along their respective easy magnetization axes, magnetic bias means in the carry means for rotating the residual magnetizations away from the easy axes in like relative directions, sum means connected to the add means for receiving the group sums and having separate winding means associated with every element in the array columns corresponding to the group sum digit positions for opposing the bias to rotate the magnetizations back to the respective easy axes for a predetermined binary value in the sum digit positions, the add means respective group carry sensing windings having amplifying means with separate winding means respectively magnetically linked to the easy axis of every element in the respective array rows of said magnetic element array carry means for momentarily partially rotating the rotated magnetizations, M intrinsic carry forming means each connected to a sensing winding in every row of the array carry means except the row receiving its carry signal from the $M-1$ group add means, the add means carry signal and the signals from the array sensing winding combining to form the respective group intrinsic carries, and carry adding means connected to the sum means and the intrinsic carry means for forming the total sum of the augend addend in the sum means.

3,192,369
PARALLEL ADDER WITH FAST CARRY NETWORK
William Francis Schmitt, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 17, 1961, Ser. No. 132,827
11 Claims. (Cl. 235—175)



10. An adder stage comprising a matrix half-adder for deriving sum and carry outputs in response to input signals, a unit matrix half-adder for deriving partial products and ripple carry outputs, means coupling the sum outputs of said matrix half-adder to the input of said unit matrix half-adder, means to transfer the carry outputs of said matrix half-adder to another higher similar adder stage, gating means coupled to said matrix half-adder for receiving partial products from the other higher similar adder stage, means to transfer the partial products derived from said unit matrix half-adder to another lower similar adder stage, a logical OR circuit for receiving the ripple carry output from said unit matrix half-adder and a carry signal from the other lower similar adder stage, the output of said logical OR circuit coupled to an input of said unit matrix half-adder, a signal generator coupled to said matrix half-adder for generating signals representative of digits to be added, and timing means coupled to said signal generator to permit application of the signals from said signal generator when the partial products from the other higher similar adder stages are presented to said matrix half-adder.

3,192,370
ADDING CIRCUIT USING THIN MAGNETIC FILMS
Thomas J. Matcovich, Willow Grove, Pa., and Joseph J. Chang, West Lafayette, Ind., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 21, 1960, Ser. No. 44,349
14 Claims. (Cl. 235—176)



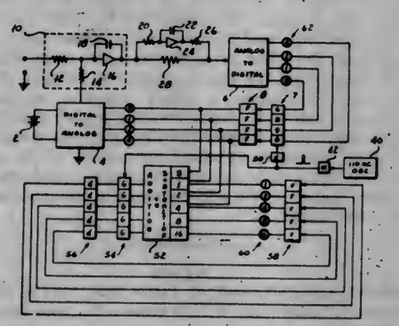
12. A magnetic switching circuit comprising a plurality of magnetic elements, a plurality of input windings linked to all of said elements, all of said input windings on the same elements having a sense of linkage such as to produce magnetomotive forces of the same polarity, separate means for applying energizing currents of substantially the same magnitude to said input windings, means including bias windings linked to said elements for applying thereto magnetomotive forces of the same polarity and of different magnitudes such as to bias said elements

to different levels of substantial saturation, the biasing magnetomotive force applied to a first one of said elements being greater than that produced by the energizing current applied to one of said input windings, the biasing magnetomotive force applied to a second one of said elements being greater than that produced by the energizing currents applied simultaneously to two of said input windings, the biasing magnetomotive force applied to a third one of said elements being greater than that produced by the energizing currents applied simultaneously to three of said input windings, the polarity of said biasing magnetomotive forces being opposite to the polarity of the magnetomotive forces produced by said energizing currents, driving means including driving windings linked to each of said elements, said driving windings having the same sense of linkage as said input windings whereby said driving means produces magnetomotive forces in said elements in the same direction as those produced by said energizing currents applied to said input windings, and output means including first output winding linked to said first and second elements and a second output winding linked to said third element.

3,192,371
FEEDBACK INTEGRATING SYSTEM

Charles B. Brahm, Ellington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Sept. 14, 1961, Ser. No. 138,008
9 Claims. (Cl. 235—183)



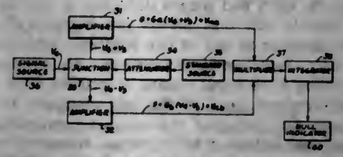
7. A feedback integrating system including in combination a source of an analog quantity, an analog integrator, a weighted-bit analog-to-digital converter providing an output, means for sampling the output, means for storing the sampled output, means coupling the analog integrator to the analog-to-digital converter, a weighted-bit digital-to-analog converter, means coupling the storing means to the digital-to-analog converter, and means coupling the analog source and the digital-to-analog converter to the analog integrator.

3,192,372
SIGNAL-LEVEL COMPARING SYSTEM

Charles M. Allred, Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce

Filed Apr. 19, 1962, Ser. No. 188,912
7 Claims. (Cl. 235—193)

1. In a system for comparing the level of a first signal with that of a second signal, means for combining said first and second signal in such a manner as to obtain a third and fourth signal, the third signal having a magnitude substantially equal to the sum and the fourth signal a magnitude substantially equal to the difference of the levels of said first and second signal, means for multiplying said third and fourth signal together to obtain a product signal, means for averaging said product signal over

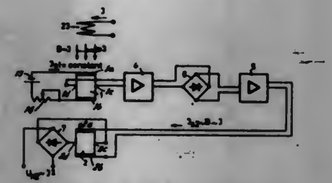


a selected time interval whereby its noncorrelated components are substantially zero, and an indicator connected to said last-mentioned means.

3,192,373
ELECTRIC DEVICE FOR FORMING A VOLTAGE PROPORTIONAL TO THE SQUARE OF A CURRENT

Walter Engel, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany and Erlangen, Germany, a corporation of Germany

Filed Mar. 7, 1960, Ser. No. 17,723
Claims priority, application Germany, Mar. 12, 1959, S 62,111
4 Claims. (Cl. 235—194)

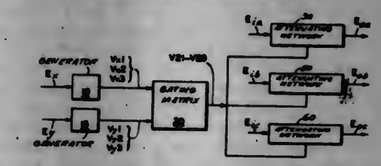


1. An electric measuring device for forming a measuring voltage proportional to the square of a current, comprising magnetic field means having a field responsive to the current and substantially proportional thereto, two Hall plates disposed in said field, each of said Hall plates having a pair of terminals and a pair of Hall-voltage electrodes, constant-current supply means connected to supply a substantially constant current to the terminals of one of said Hall plates, circuit means including rectifier means connecting the electrodes of said one of said Hall plates to the terminals of the other of said Hall plates to supply to said last-mentioned terminals a current proportional to the absolute value of the current to be squared, and output leads connected with the electrodes of the other of said Hall plates to provide said measuring voltage.

3,192,374
CARRIER SIGNAL ATTENUATION

William Henn, Hasbrouck Heights, N.J., and Menashe Teitelbaum, Brooklyn, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Sept. 30, 1960, Ser. No. 59,718
13 Claims. (Cl. 235—197)

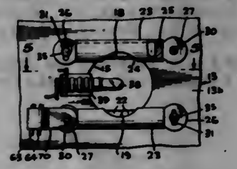


1. A solid state device for attenuating at least one carrier signal according to a predetermined transfer characteristic as a discrete step function of variables, comprising network means for deriving individual electric control signals for each discrete step function of the variables, and attenuating means for each carrier signal connected to the network means and responsive to one of the control signals for attenuating the associated carrier signal according to the transfer characteristic as a discrete step function of the variables.

3,192,375
ILLUMINATED LEVEL

Enok P. Olsen, Oroville, Calif.
(P.O. Box 51, Big Pine Inyoco, Calif.)

Filed May 14, 1964, Ser. No. 367,324
1 Claim. (Cl. 240—6.44)



An illuminated level comprising:
a support member; an opening in said support member;
a pair of liquid columns located at opposite edges of said opening, each column having centering marks thereon;
a bubble in each of said columns for leveling said support member by locating same at said centering marks;
lamp means located between said columns for illuminating said mark and bubbles in dark locations;
a socket for said lamp means attached to the edge of said opening and extending substantially parallel to said liquid columns;
said support member comprising an I beam structure having side flanges and a web in between, said socket and said liquid columns being located on one surface of said web and being confined within the flanges on the opposite sides of said web;
said socket for said illuminating means being adjustably connected to the edge of said opening means for positioning transversely and longitudinally with respect to said liquid columns;
said socket being secured to the edge of said opening by means of a spring clip gripping the edge of said opening.

3,192,376
ANCHOR AND BOW LIGHT

Harry Najjmian, Jr., Lake Bluff, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Sept. 18, 1962, Ser. No. 224,291
10 Claims. (Cl. 240—7.5)



1. The combination of a boat having a windshield frame and a combined anchor and bow light comprising a base mounted on said windshield frame at the fore and aft center line of the boat, a lens mounted on said base including a relatively elevated, rearwardly disposed, translucent portion viewable horizontally from 360 degrees, and a forwardly projecting, relatively depressed translucent portion, and opaque means extending from between said lens portions to said base to define a forward chamber and a rearward chamber and to limit light transmission through said depressed portion to an included angle of about 112½ degrees measured on each side of the center line of the boat from the intersection of said line with the forwardmost part of said depressed portion.

3,192,377
HARNESS FOR TRAILER CLEARANCE LIGHTS

Andrew Abolins, Penndel, Pa., assignor to Strick Trailers, a division of Fruehauf Trailer Co., Philadelphia, Pa., a corporation of Michigan

Filed Feb. 18, 1963, Ser. No. 259,314
3 Claims. (Cl. 240—8.2)

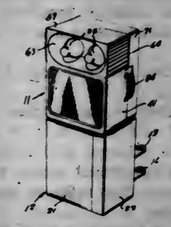


3. In a trailer body having sides and longitudinal rails at the top thereof each including a longitudinal groove, lights mounted on said body adjacent the top thereof at predetermined locations, a pair of wires one of which branches and is connected to said lights, and a harness for said wires made of a flexible plastic and comprising a tubular conduit loosely receiving said pair of wires and being disposed in said top rail groove, said conduit being discontinued at said light locations to provide spaced confronting conduit openings thereat, and substantially T-shaped members each having a tubular arm through which said one wire extends in looped form to provide one of said branches and a cross arm embracing said pair of wires at said discontinued portion of said conduit, said cross arm including ends extending into said confronting conduit openings.

3,192,378
RECHARGEABLE LIGHT UNIT

Samuel C. Oldenburger, New York, N.Y., assignor, by mesne assignments, to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

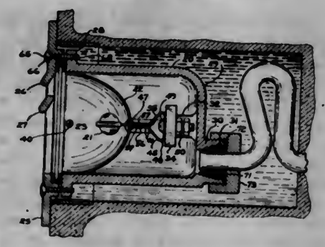
Filed Feb. 27, 1963, Ser. No. 261,359
8 Claims. (Cl. 240—10.66)



2. A portable flashlight comprising a main housing segment having a front wall, a top and bottom wall and a pair of side walls, an upstanding projection formed integrally with said top wall and being offset rearwardly from said front wall, a rear cover member secured to said housing segment and upstanding projection, said upstanding projection being formed with a bore extending substantially parallel to said side walls, a flash-light bulb frictionally secured in said bore, said bulb having a head portion overlying the forward portion of said top wall, a shell portion extending over said main housing segment, and a rear contact projecting into said cover member, an auxiliary housing member of transparent material, means

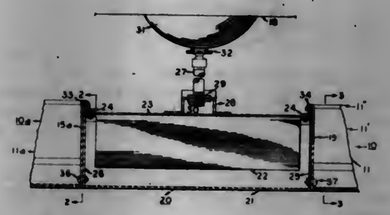
lockingly securing said auxiliary housing member on said upstanding projection around the bulb head portion, a rechargeable battery in said housing segment, said battery having respective terminals comprising two casing segments insulated from each other, means connecting one casing segment to the lamp shell portion, a slide switch mounted between the main housing segment and cover member, means including said slide switch connecting the other battery casing segment to the lamp rear contact, said bottom wall being formed with an aperture, an insulating support element secured over said aperture, a pair of spaced depending contact prongs secured on said insulating support element and projecting into said aperture, and respective conductors connecting said prongs to said casing segments.

3,192,379
SWIMMING POOL LIGHTING FIXTURE
Ralph G. M. De Garmo, San Francisco, Calif., assignor to Casella Lighting Co., San Francisco, Calif., a corporation of California
Filed June 12, 1962, Ser. No. 201,972
2 Claims. (Cl. 240—26)



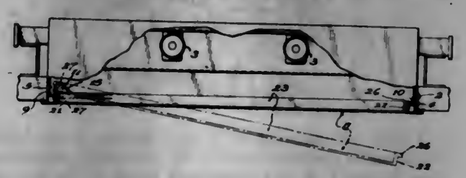
1. An underwater lighting fixture adapted for installation in a cavity formed in the wall of a swimming pool and supplied with electrical power by means of a conduit extending into the cavity, said fixture comprising:
an integral housing member having an open front surrounded by a flange and a rear opening for receiving said electrical conduit;
a socket plate fixed to the rear inside wall of said housing;
a first reflector member fixed to said socket plate;
a pair of second reflector members attached to the side walls of said housing and to said first reflector member;
a light bulb adapted to produce a high intensity light at low voltage;
clip means attached to said socket plate for removably retaining said light bulb in a fixed predetermined position adjacent said reflector means, said light bulb having contact means extending through openings in said first reflector member to engage said clip means;
said clip means including contact means within said housing adapted to connect with wires of said electrical conduit;
means in said rear opening for providing a fluid tight seal around the electrical supply conduit extending into said housing;
a transparent lens member covering the open side of said housing;
a cover frame member having an opening, and horizontal light deflecting louvers across said opening adapted to obscure the light bulb filament from view from a position above the water level of the pool;
means for securing said cover member to said housing and
gasket means for sealing said lens member to said housing around its edges, thereby making the housing fluid tight;
and means for attaching said cover frame member to opposite sides of the cavity in the swimming pool wall located below its normal water line so that it supports said housing within said cavity, said cover frame member having a series of spaced apart ports for circulating cooling water from the swimming pool through said cavity and completely around said housing.

3,192,380
PENDANT-MOUNTED FLUORESCENT-LIGHTING SYSTEM AND FIXTURE THEREFOR
Nathan H. Eglowstein, Newark, N.J., assignor to General Lighting Products Co., Kearny, N.J., a corporation of New Jersey
Filed Apr. 8, 1963, Ser. No. 271,207
5 Claims. (Cl. 240—51.11)



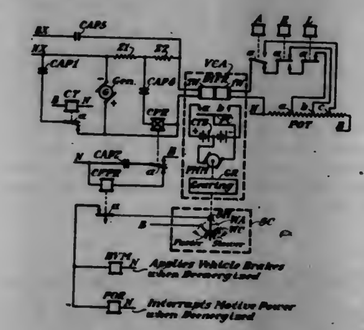
1. A fluorescent-lighting system pendant-mounted from a ceiling and including a fluorescent-light fixture and a power-supply unit disposed in inline relation with respect to each other, said fixture comprising a fluorescent-lamp housing open at the top thereof from end-to-end of the same and having vertically disposed side walls spaced with respect ot each other to contain a light source in the form of a fluorescent lamp, the respective upper parts of said walls from end-to-end of the same being flared outwardly and away from each other to result in a relatively large angle of light-distribution from said light source toward the ceiling, the pendant-mounting means for said system including a hanger fixed at its upper end to the ceiling and at its lower end fixed with respect to said unit, the end extreme of said housing adjacent to said unit being in the form of a socket-mounting plate flush against the adjacent side of said unit and along its top edge interlocked with the top edge of said adjacent side of said unit thus to support said end of said housing entirely from said power-supply unit.

3,192,381
LIGHTING FIXTURE
Edward F. Zurawski and Frank P. Schram, Chicago, Ill., assignors to Garcy Corporation, a corporation of Illinois
Filed Sept. 14, 1962, Ser. No. 223,611
5 Claims. (Cl. 240—147)



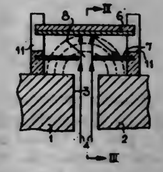
1. A lighting fixture comprising a rectangular frame having an open bottom and a diffuser panel mounted in said frame, said frame comprising two longitudinal walls each provided with an internal shoulder and two end walls each provided with an outward embossment adjacent one of said longitudinal walls, said diffuser panel having two longitudinal side walls and two ends, at lateral flange extending outwardly from each side wall of said diffuser panel, the total width of said diffuser panel and both of said flanges being greater than the internal distance between the shoulders of said frame, the width of said diffuser panel exclusive of said flanges being less than the internal distance between the shoulders of said frame, said diffuser panel being adapted to fit within the open bottom of said frame with said flanges seated on said shoulders, and a pin extending longitudinally from each end of said diffuser panel, said pins being axially aligned, one of said embossments having an elongation extending toward the remote longitudinal edge of said frame, said elongation permitting one of said pins to be moved transversely of said frame into engagement with said one embossment when said other pin is positioned in said other embossment, said embossments each having an upper portion extended toward the adjacent edge of said frame, the upper portions of said embossments permitting said diffuser panel to be shifted laterally of said frame above the level at which said diffuser panel is normally seated in said frame.

3,192,382
AUTOMATIC VEHICLE CONTROL APPARATUS
Leslie R. Allison, Forest Hills, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 24, 1961, Ser. No. 126,037
9 Claims. (Cl. 246—187)



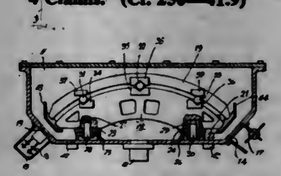
6. A supply circuit for supplying current of a first character from a generator across a control winding responsive only to such current and apparatus for checking that such circuit is intact, said contact and apparatus comprising; first and second resistors so selected that the product of the resistance of the first resistor and the resistance of said control winding equals the product of the resistance of the second resistor and the internal resistance of said generator, such components being connected so that their resistances form a balanced Wheatstone bridge; a source of current of a second character, a first circuit capable of conducting only said current of a second character and connecting said source of current across first opposite junction points of the arms of said bridge, a code following relay having a control winding, a second circuit capable of conducting only said current of a second character and connecting the control winding of said relay across second opposite junction points of the arms of said bridge, a third circuit capable of conducting only said current of a second character and connected to intermittently shunt at a selected code rate one arm of said bridge; and means controlled by said relay for indicating, when the relay is following code at said selected code rate, that said supply circuit is intact.

3,192,383
MASS SPECTROMETER ION COLLECTOR WITH A SECONDARY PARTICLE COLLECTING ELECTRODE EXTENDING OVER THE COLLECTOR
Brian Noel Green, Urmston, Manchester, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Dec. 10, 1962, Ser. No. 243,536
Claims priority, application Great Britain, Dec. 22, 1961, 45,997/61
2 Claims. (Cl. 250—41.9)



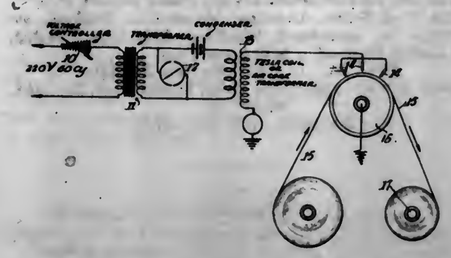
1. A mass spectrometer ion collecting apparatus comprising a collector member including a layer of photosensitive material that is sensitive to ions, an electrode extending over said sensitive layer and spaced therefrom, means for applying to said electrode a potential positive with respect to the potential of said sensitive layer so that said electrode attracts negatively charged secondary particles emitted from the sensitive layer when primary ions strike said sensitive layer, and surfaces to said electrodes defining a slit extending through said electrode to allow the passage of primary ions to said sensitive layer.

3,192,384
MASS SPECTROMETER ELECTROSTATIC ANALYSERS
Edward Willdig, Stretford, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Sept. 11, 1962, Ser. No. 222,840
Claims priority, application Great Britain, Sept. 15, 1961, 33,217/61
4 Claims. (Cl. 250—41.9)



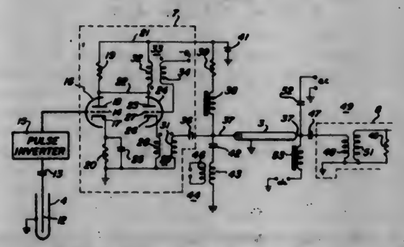
1. A mass spectrometer electrostatic analyser comprising a chamber adapted to be evacuated, two superposed electrostatic deflecting plates located within said chamber and defining a gap between their adjacent surfaces for the passage of an ion beam, means for connecting said deflecting plates respectively to suitable sources of potential so as to produce an electric field between said plates, and means for supporting the upper deflecting plate at intermediate central portions of the ends of the plates from the lower deflecting plate so as to prevent relative movement between the adjacent central regions of the deflecting plates and additional spacing means between the plates adjacent the ends thereof to permit relative longitudinal movement between the remaining adjacent regions of the deflecting plates.

3,192,385
ELECTRICAL DISCHARGE PRODUCING APPARATUS FOR TREATING PLASTIC MATERIALS
Philip Antokal, Chicago, Ill., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 25, 1961, Ser. No. 105,498
6 Claims. (Cl. 250—49.5)



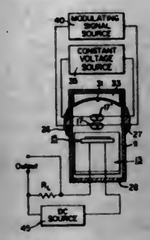
1. Apparatus for treating a non-conductive plastic body to improve the receptivity of a surface thereof to coating material, comprising a pair of spaced electrodes, one of which is grounded, high voltage radio frequency generating means for supplying radio frequency voltage to the non-grounded electrode to produce a discharge between said electrodes, means for moving said plastic body between said electrodes, said high frequency generating means including a non-conductive ring member bearing a plurality of spaced conductors and a conductor arm having terminal portions spaced from the conductors of said ring member for providing spark-gaps therebetween, and means for rotating one of said members concentrically relative to the other.

3,192,386
PULSE TRANSMISSION OVER A LONG CABLE IN THE PRESENCE OF A LOW FREQUENCY POWER
Eric C. Hopkinson, Houston, Tex., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 11,219, Feb. 26, 1960. This application Feb. 27, 1963, Ser. No. 261,951
2 Claims. (Cl. 250—83.3)



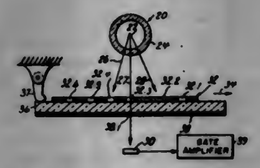
1. A well logging apparatus comprising a radiation detector for producing voltage pulses in response to radioactivity emanations,
a pulse transmitter for producing pulses in response to voltage pulses produced by said radiation detector,
said pulse transmitter having a low impedance output circuit, comprising an inductor and capacitor connected in series,
a pulse receiver having a low impedance input circuit, comprising a capacitor and inductor in series,
a cable interconnecting said circuits,
the inductor and capacitor of said input and output circuits connected in series with said cable,
said inductors having a low impedance to power frequency signals and said capacitors having a high A.C. impedance at power frequency signals.

3,192,387
ELECTRO-OPTICAL DEVICE FOR PRODUCING A MODULATED VOLTAGE
Robert M. Goodman, 7811 Mill Road, Elkins Park, Pa.
Filed Mar. 22, 1961, Ser. No. 97,659
6 Claims. (Cl. 250—217)



5. A circuit comprising: an electro-optical device having a photoconductive cell having an area whose resistance is lowered as a function of visible light incident thereupon, said device also including at least two sources of visible light, said device also including generally tubular means surrounding said cell and said visible light sources, said surrounding means being constructed to be opaque to visible light and also having a pair of apertures therein which are aligned on an axis substantially transverse to the axis of said tubular means, opaque and non-conductive sealing means in said apertures through which conductors are passed to permit the application of voltages to said photoconductive cell and to said light sources; means for applying a bi-directional voltage signal of substantially constant waveform to one of said light sources; means for applying an amplitude modulated voltage signal of lower frequency than said bi-directional signal to the other of said two sources of visible light; and a D.-C. source and a load impedance external to and in series with said cell, said impedance developing an amplitude modulated envelope signal in response to the signals applied to said light sources.

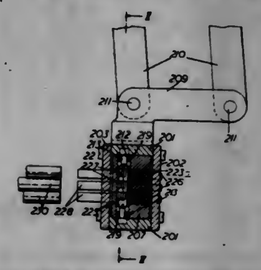
3,192,388
MULTIPLE APERTURE PHOTOSENSITIVE READER
Wu Chen and William L. Poland, Norwalk, Conn., and Herbert Fraser Welsh, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,597
13 Claims. (Cl. 250—219)



1. A stored information reader comprising:
(a) a record member having at least one perforation to store an information datum, the area outside said perforation of said record member being partially opaque;
(b) a radiation source emitting radiation;
(c) a radiation detector means, said record member interposed between said radiation source and said radiation detector means;

(d) a masking means positioned between said record member and said radiation detector means for blocking the passage of leakage radiation through said partially opaque area of said record member, said masking means including at least first and second ports for simultaneously admitting radiation from said radiation source to said radiation detector means via said at least one perforation in said record member in order to sense said information datum.

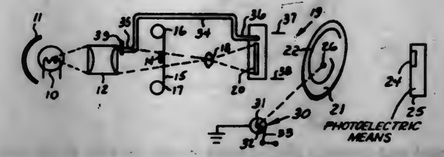
3,192,389
PHOTOELECTRIC FEELER ALIGNMENT DEVICE FOR CHECKING PACKS OF ELONGATED ARTICLES
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Mar. 1, 1962, Ser. No. 176,623
5 Claims. (Cl. 250—222)



1. In a device for checking a pack of elongated articles of the type comprising a plurality of elongated parallel feelers movable in their longitudinal direction, spring means for urging said feelers into a first end position, means for pressing said feelers and said articles against one another thereby to displace feelers against the action of said spring means into a second end position, and means for exerting an effect if at least one of said feelers has not been displaced into said second end position, the combination comprising a light tight housing accommodating said feelers with feeler ends protruding through openings in said housing when said feelers are in said first end position, a portion within said housing of each feeler being thicker than the protruding end of said feeler, a dividing wall between each pair of thickened portions of adjacent feelers, a light source in said housing, and a light sensitive cell in said housing, each thickened portion of said feelers having a light transit slot and each dividing wall having a light transit opening, said light transit slots and light transit openings being aligned with one another when the said feelers are in one of said end positions to form a light path between said light source and said photosensitive cell, said light transit slots and light transit openings being out of alignment when said feelers are in the other one of said end positions, said light path being interrupted when at least one of said feelers is in said other one of said two end positions.

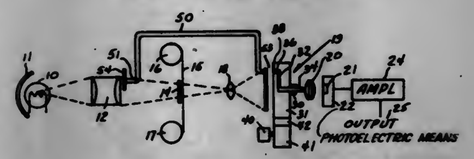
3,192,390
PHOTOSENSITIVE SCANNER WITH AUTOMATIC RANGE CONTROL
Hugh C. Ressler, Flushing, N.Y., assignor to Hogan Faximile Corporation, New York, N.Y.
Filed Jan. 8, 1963, Ser. No. 250,056
4 Claims. (Cl. 250—227)

1. A scanner comprising a light source to illuminate a field to be scanned, an image dissector of the type including a rotatable member, the image dissector positioned to receive light from the scanned field, a photoelectric device positioned to be responsive to light passed by the image dissector, a power supply for the photoelectric device, sampling light means having one end facing the light source and located between the light source and the field of scan, the other end of the sampling light means facing the image dissector within the scanned field, Zener diode, switch means operative with the rotatable member for connecting the Zener diode to the photoelectric device



while it is viewing the sampling light means, a load resistor for the Zener diode, a blocking diode connected in series with the Zener diode, a capacitor charged through the blocking diode, a bleed resistance for the capacitor, and voltage regulating means for the power supply being responsive to the potential of the capacitor, whereby the output of the photoelectric device is regulated by the Zener diode.

3,192,391
PHOTOSENSITIVE FIBER OPTIC SCANNER
Hugh C. Ressler, Flushing, N.Y., assignor to Hogan Faximile Corporation, New York, N.Y.
Filed Jan. 8, 1963, Ser. No. 250,057
7 Claims. (Cl. 250—227)

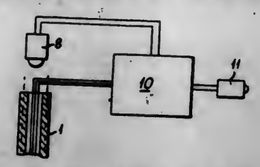


1. A scanner comprising means providing a field to be scanned, a light source positioned to illuminate the field to be scanned, rotatable means having its axis directed towards the field to be scanned, a first optical fiber rotated with the rotating means and having one end directed along the axis of the rotatable means away from the field of scan, the other end of the optical fiber offset from said axis so as to be rotatably carried in a circular path facing the field to be scanned, photoelectric means in light receiving relationship with said one end of the fiber and adapted to provide an electric signal variable in magnitude responsive to light passed through said optical fiber, display means responsive to said electric signal, and a second optical fiber positioned to convey sampling light from the light source to the field to be scanned and positioned facing the circular path of said offset end of said first optical fiber whereby a sample of light from the light source is transmitted to the photoelectric means for each rotation of the first optical fiber as its offset end travels in a circular path.

3,192,392
PHOTOELECTRIC APPARATUS TO DETECT LIQUID LEVEL
William C. Reed, Whitley Bay, Northumberland, England, assignor to The Thermal Syndicate Limited, Wallsend, Northumberland, England, a British company
Filed Mar. 5, 1963, Ser. No. 262,907
Claims priority, application Great Britain, Mar. 29, 1962, 12,056/62
10 Claims. (Cl. 250—227)

6. A liquid detecting device, comprising an elongated transparent tube of uniform cross-section having a wall, an outer surface and an axis, said tube being closed at one

end and having a plurality of grooves formed in said tube spaced from each other and from the closed end of said tube and indenting the outer surface of the said tube, each of said grooves having a median plane normal to the axis of said tube and a reflecting surface converging toward the axis of said tube in a direction toward the

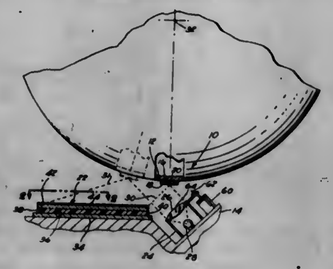


closed end thereof; illuminating means located at the end of the tube remote from the closed end thereof and positioned to direct light along the wall of said tube to impinge on the reflecting surface of each of said grooves; and detection means located at least in part within said tube and positioned to receive light reflected from the reflecting surface of each of said grooves.

3,192,393
OPTICAL PHASE SENSITIVE INCREMENTAL ENCODER

Rolf K. Broderson, Orange, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Jan. 17, 1962, Ser. No. 166,792
7 Claims. (Cl. 250—235)



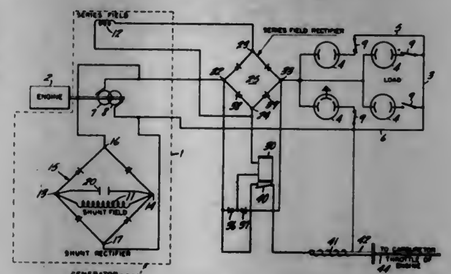
1. An optical encoder comprising a pair of members movable relative to one another, light-sensitive resistor means mounted on one of said members, reflecting means mounted on the other of said members, light beam producing means mounted on said one member for directing a beam of light onto said reflecting means a portion of which is reflected to impinge on said light-sensitive resistor means at a spot thereon, relative movement between said members moving said spot across said light-sensitive resistor to vary the resistance thereof, and dithering means for dithering one of the aforementioned means mounted on said members to move said spot back and forth between two adjacent portions on said light-sensitive resistor means.

3,192,394
GENERATOR AUTOMATIC IDLE CONTROL CIRCUIT

Robert K. Teter, Port Chester, N.Y., assignor to Textron Inc., a corporation of Rhode Island

Filed Feb. 8, 1962, Ser. No. 172,003
5 Claims. (Cl. 290—40)

1. In an electrical circuit having a driven source of electrical current, a load circuit connected to receive current from said source, means including speed control means to cause the current source to be driven at a predetermined operating speed in response to a minimum value of current flow in said load circuit, said speed control means including means to cause the driven current source to be driven at a predetermined idling speed substantially lower than said operating speed in the absence of said minimum current flow in said load circuit, means electrically connected to said source and said load circuit to maintain a substantially constant terminal voltage at said source under variable load conditions comprising, first rectifier means electrically connected to said load circuit capable of passing large load currents without substantial increase in voltage across thereof having A.C. terminals and a preselected threshold voltage, the improvement which comprises a control circuit for actuating said speed control means comprising a sensitive current-responsive means energizable by a minimum current flow

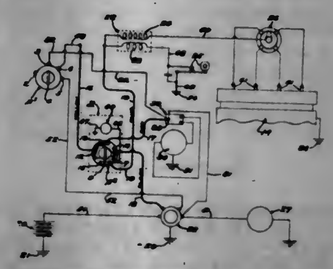


in said load circuit constantly connected in circuit with said load circuit to initiate actuation of said speed control means to cause it to bring the speed at which said source is driven under control of the load current to a given operating speed, means connecting said sensitive current-responsive means with said first rectifier means to respond to load current flowing therein, second rectifier means connected across said A.C. terminals connected for providing direct current to said current-responsive means for energizing it in response to load current flowing through said first rectifier means, and said means connecting said current-responsive means connecting said current-responsive means and said second rectifier means to said first rectifier means in a full wave center tap circuit configuration.

3,192,395
IGNITION SYSTEM USING PLURAL STARTING SWITCHES

Russell J. Langlois, 697 Lafayette Ave., Uniondale, N.Y.

Filed Oct. 11, 1961, Ser. No. 147,395
2 Claims. (Cl. 307—10)

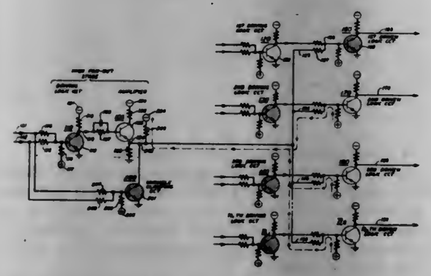


1. In a motor-vehicle ignition system, in combination, ignition components including a battery, a solenoid switch, a transformer coil, a circuit breaker, a distributor and a starter motor; a main ignition circuit including said components; a main key-operated starter-and-ignition switch by which said main circuit is controlled; a second ignition circuit including said components and by-passing said main switch; and a second key-operated starter-and-ignition switch which may be operated to break said main circuit and by which said second circuit may be rendered operative independently of said main switch.

3,192,396
LOGIC SYSTEM

Lawrence Hasdorff, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 31, 1960, Ser. No. 53,303
2 Claims. (Cl. 307—88.5)



1. In combination in a transistor resistor logic system, an amplifier adapted to control a plurality of driven transistor resistor logic circuits, said amplifier comprising an emitter output electrode and a resistive element connected between said emitter electrode and a point of reference potential, a driving transistor resistor logic circuit connected to said amplifier for causing said amplifier to assume a nonconducting condition whenever said driving logic circuit is in a conducting condition and for causing said amplifier to assume a conducting condition whenever said driving logic circuit is in a nonconducting condition, and means connected to the emitter electrode of said amplifier for clamping said electrode only during the nonconducting condition of said amplifier, wherein said means for clamping said emitter electrode comprises a transistor resistor logic circuit whose configuration is identical to that of said driving transistor resistor logic circuit.

3,192,397
BISTABLE CIRCUIT HAVING AN ADJUSTABLE PHASE SHIFTER RESPONSIVE TO OUTPUT SIGNAL

Arthur H. Nethercot, Jr., Hastings on Hudson, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 30, 1960, Ser. No. 72,648
17 Claims. (Cl. 307—88.5)

1. A bistable circuit having two stable states comprising:

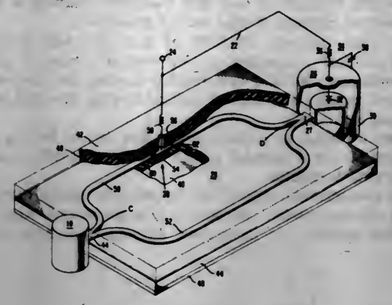
a source of carrier wave energy;

a transmission circuit connected at its one end to said energy source, said transmission circuit having a first and second transmission line;

an adjustable phase shifter disposed in said first line, said phase shifter residing in one of at least two states, said states corresponding to two stable conditions of phase relationship between the carrier wave energy in said lines at the other end of said transmission circuit;

a control circuit connected to said other end of said transmission circuit and responsive to said phase relationships for generating an output capable of residing at either of two stable states corresponding to said phase relationships; and

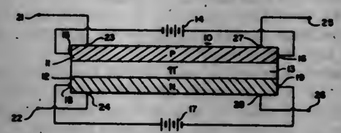
means for coupling said output from said control circuit to said phase shifter for maintaining the condition of carrier wave energy phase relationship present at said control circuit.



3,192,398
COMPOSITE SEMICONDUCTOR DELAY LINE DEVICE

Theodore S. Benedict, Fanwood, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

Filed July 31, 1961, Ser. No. 128,090
10 Claims. (Cl. 307—88.5)



1. A semiconductor signal transmitting device comprising: a first layer of essentially single crystalline semiconductor material of one conductivity type; a second layer of essentially single crystalline semiconductor material of the opposite conductivity type, each of such first and second layers being of substantially elongated configuration and having spaced first and second ends in said elongated configuration; an isolating region interposed between said first and second layers of semiconductor material and affixed thereto; means for establishing an electrical field in each of said first and second layers of semiconductor material at the first and second ends thereof; means for injecting a signal into each of said layers of semiconductor material at the first end thereof and means for removing a signal from each of said layers of semiconductor material at the second end thereof a predetermined time after the injection of the signal.

3,192,399
AMPLIFIER-SWITCHING CIRCUIT EMPLOYING PLURALITY OF CONDUCTING DEVICES TO SHARE LOAD CURRENT

Charles C. Ih, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 11, 1961, Ser. No. 158,260
10 Claims. (Cl. 307—88.5)

1. A switching circuit for providing a large output current comprising:

an output means for said switching circuit;

at least first and second transistors each having an input element,

an output element,

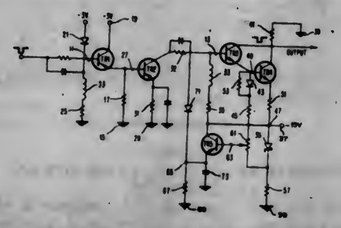
and a control element, said control element forming a junction with said output element and another junction with said input element,

input circuitry means for receiving input signals coupled to the control element of said first transistor; the output element of said first transistor coupled to the control element of said second transistor,

the input elements of each of said first and second transistors connected to said output means of said switching circuit a first resistor having first and second terminals; a second resistor having first and second terminals;

a two terminal non-linear impedance means having its first terminal coupled to the control element of said second transistor,

said two-terminal non-linear impedance means having a voltage-current characteristic as measured from its first terminal to its second terminal which is sub-



stantially identical to the voltage-current characteristic across the control element to output element junction of said second transistor;

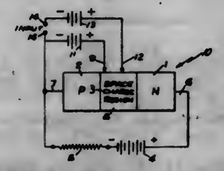
and the second terminal of said two-terminal non-linear impedance means connected to said first terminal of said first resistor;

the output element of said second transistor connected to said first terminal of said second resistor; said second terminal of said first and second resistors being connected to form a common terminal,

said first and second resistors being of equal resistance value,

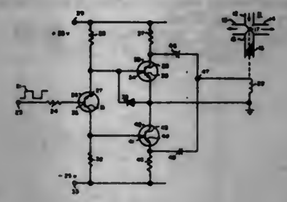
said common terminal adapted to be connected to a potential thereby enabling each of said current devices to share the output current equally.

3,192,400
SEMICONDUCTIVE DEVICES UTILIZING INJECTION OF CURRENT CARRIERS INTO SPACE CHARGE REGIONS
Hermann Statz, Wayland, and Robert A. Pucel, Needham, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Continuation of abandoned application Ser. No. 672,046, July 15, 1957. This application July 2, 1962, Ser. No. 208,177
6 Claims. (Cl. 307—88.5)



1. An electrical translation device comprising a body of semiconductor material having a P–N junction therein, a biasing circuit connected across said junction and operable to establish a space charge region in the vicinity of said junction, injecting means in contact with said space charge region for injecting current carriers into said body, modulating means in contact with said space charge region adjacent said injecting means for modulating the flow of carriers through the space charge region, and load means in said biasing circuit.

3,192,401
TRANSISTOR PULSE GENERATING CIRCUIT OF ALTERNATELY OPPOSITE POLARITIES
John W. Gray, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Sept. 5, 1962, Ser. No. 221,589
8 Claims. (Cl. 307—88.5)



1. A pulse generating circuit, comprising,

two capacitors each having first and second plates,

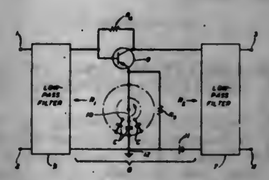
two circuits for charging said capacitors to opposite potentials with respect to a common junction to which said first plate of each capacitor is connected,

two transistors each having an emitter-collector circuit and base terminal,

two circuits each including one of said transistors and each providing a discharge path for one of said capacitors from said second plate through the emitter-collector circuit of the respective transistor and through a load device to said common junction,

and means coupled to the base of each of said two transistors responsive to an input signal for rendering said transistors conductive alternately.

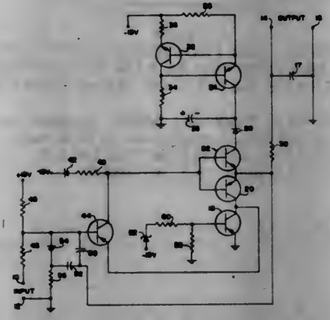
3,192,402
DELAY NETWORK
Irwin W. Sandberg, Springfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 9, 1961, Ser. No. 94,474
4 Claims. (Cl. 307—88.5)



1. A delay network having an input terminal, an output terminal, and a ground terminal and comprising a transistor having a base, a collector, and an emitter, a path from the base to the input terminal, a path from the collector to the output terminal, a resistor of value R_4 connected between the base and the collector, and two impedance paths connected in parallel between the emitter and the ground terminal, one of the parallel paths including a biasing resistor and the other parallel path including N capacitors, each of value C, and means for connecting the capacitors into circuit sequentially and repetitively in a period of time T with a dwell time D for each capacitor, the network being adapted to operate between a resistive input impedance R_1 and a resistive output impedance R_2 and C, D, N, R_1, R_2, and R_4 being so chosen with respect to T and the amplification factor

of the transistor that the network has a substantially constant amplitude characteristic and a substantially constant delay T at all frequencies below $N/2T$.

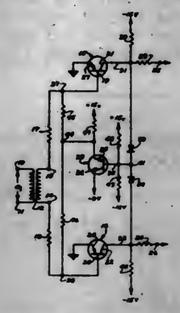
3,192,403
CONTROL LINE DRIVER EMPLOYING OPPOSITE-CONDUCTIVITY-TYPE TRANSISTORS PROVIDING EITHER OF TWO POTENTIALS TO OUTPUT TERMINAL
Sylvan Bernfeld, Shoreview, and Mauritz L. Granberg, Richfield, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,286
12 Claims. (Cl. 307—88.5)



9. A control line driver comprising an input terminal and an output terminal, power supply means for furnishing first and second voltages of different values, first, second, third and fourth transistors, means connecting said first and second transistors in series to provide a low resistance path between said first voltage and said output terminal when said first and second transistors are in a conductive state, means connecting said third transistor to provide a low resistance path between said second voltage and said output terminal when said third transistor is in a conductive state, means normally biasing said second transistor into a non-conductive state, means biasing said first transistor into a conductive state, said first transistor providing a high resistance path when in a non-conductive state, means connecting said fourth transistor to said input terminal for biasing said fourth transistor into a conductive state when a predetermined pulse signal is applied to said input terminal, and means associated with said fourth transistor for causing conduction of said second transistor and non-conduction of said third transistor when said fourth transistor is conductive to provide said low resistive path between aid first voltage and said output terminal.

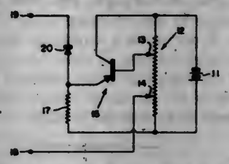
3,192,404
ANTI-SATURATION CIRCUIT FOR READ AMPLIFIER SHAPER
Glenn E. Jenkins, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 8, 1961, Ser. No. 151,047
4 Claims. (Cl. 307—88.5)

1. An anti-saturation circuit for a read amplifier-shaper comprising, first and second transistors, coupling means adapted to connect an input signal source to said first and second transistors, a control transistor, a pair of oppositely poled unidirectional current flow elements serially connected between said first and second transistors and having their adjacent terminals joined together and connected to said control transistor whereby increased output will be fed to said control transistor, said control transistor also being connected to the first and second transistors, whereby said control transistor will control



the amount of input signal each of said first and second transistors will receive.

3,192,405
DIODE BIAS CIRCUIT
Thomas A. Patchell, Havertown, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 19, 1962, Ser. No. 188,625
4 Claims. (Cl. 307—88.5)



3. A diode biasing circuit comprising a diode, a first output terminal connected only to one electrode of said diode, a transistor having a base, emitter and collector electrodes, means connecting said emitter electrode to the other electrode of said diode, a potentiometer having a first end, a second end, a first slider and a second slider, a resistor connected between said emitter electrode and said second end of said potentiometer, a second output terminal, circuit means connecting said second slider to said second output terminal, a pair of energizing terminals arranged to be connected to an energizing source, first circuit means directly connecting said collector electrode and said first end of said potentiometer to one of said energizing terminals and said second end of said potentiometer to the other one of said energizing terminals, and second circuit means connecting said base electrode to said first slider of said potentiometer.

3,192,406
SEMICONDUCTOR COUNTING CIRCUITS USING A DIODE MATRIX
Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 19, 1962, Ser. No. 188,739
10 Claims. (Cl. 307—88.5)

1. A counter circuit including

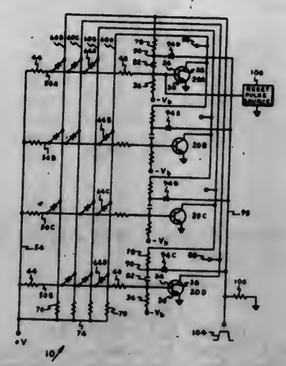
a plurality of counting devices arranged in a series for executing a counting cycle,

each device having an input electrode and an output electrode,

a separate gate coupled to the input electrode of each device,

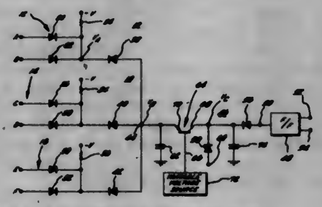
a source of input pulses coupled to each gate and thus to the input electrode of each device for applying the same counting pulses to said devices simultaneously,

a first circuit connection from the output electrode of each device through a diode to the input electrode of every other device whereby as each device is turned on and performs a count registering operation, it holds off all other devices and thereby prevents all other devices from performing a count registering operation,



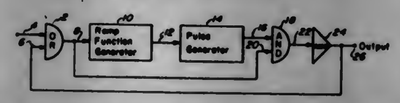
and a second circuit connection from the output electrode of each device through a resistor and a capacitor in series to the input electrode of the next adjacent device in the counting cycle whereby each device, as it performs a counting operation, prebiases another selected gate so that a counting pulse can be applied through said other selected gate to the input electrode of the discharge device associated therewith which may be turned on thereby.

3,192,407
ISOLATION CIRCUIT FOR DIODE SWITCHING ARRAYS
Arnold J. Jorgensen, Duarte, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 29, 1962, Ser. No. 233,569
1 Claim. (Cl. 307—88.5)



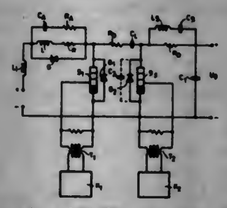
A logical switching system, comprising:
a switching circuit for developing a switching current at its output terminal in response to a predetermined combination of input signals applied to its input terminals, the switching circuit having an effective capacitance at its output that must be charged by the switching current;
a transistor having an emitter-collector circuit and a base terminal, the emitter-collector circuit being connected for series current flow between the output terminal of the switching circuit and an input terminal of a second stage of the switching system;
means including a source of biasing potential connected to the base terminal of the transistor for biasing the transistor to a normally non-conductive state to become conductive in response to the switching current developed at the output terminal of the switching circuit, the transistor when conductive permitting the effective capacitance of the switching circuit to be charged;
and a diode having a first terminal connected to the input terminal of the second stage and a second terminal connected to the source of clock pulses, the diode being arranged for series current flow with the emitter-collector circuit, the source of clock pulses between pulses normally forward biasing the diode when the transistor is conducting to bypass the switching current from the input terminal of the second stage, and the source of clock pulses during a clock pulse back biasing the diode to permit current flow between the second stage and the switching circuit.

3,192,408
PULSE-GENERATOR PROVIDING OUTPUT-PULSE WIDTH DETERMINED BY PAIR OF PRESELECTED VOLTAGE LEVELS OF RAMP FUNCTION SIGNAL
Yohan Cho, Norwood, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 27, 1962, Ser. No. 240,330
9 Claims. (Cl. 307—88.5)



1. A pulse-forming circuit comprising an input signal terminal adapted to receive a step input signal, a ramp function generator, means connecting said input terminal to said ramp function generator so that the latter will be activated to produce a ramp function signal upon the application of a step input signal, a pulse generator connected to the output of said ramp function generator, said pulse generator being adapted to produce an output pulse of a predetermined duration during the time the output of said ramp function generator is active, gating means coupled between the output of said pulse generator and a signal output terminal, means connecting said input signal terminal to said gating means to activate said gating means to pass the output of said pulse generator only so long as the input step signal is present and means connecting said output terminal to said ramp function generator to sustain the activation of the latter when said gating means is activated.

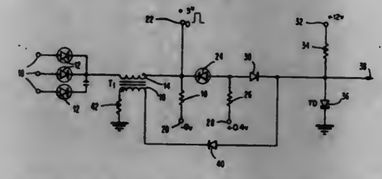
3,192,409
ELECTRONIC DIRECT-CURRENT SWITCH
Erich Rainer, Nurnberg, and Erich Krestel, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Jan. 8, 1963, Ser. No. 250,034
Claims priority, application Germany, Jan. 9, 1962, S 77,471
13 Claims. (Cl. 307—88.5)



1. An electronic switch for operation between a voltage supply and a load, comprising a semiconductor controlled rectifier, firing means for turning on said rectifier,

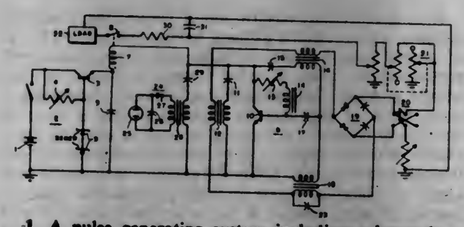
series circuit means including an auxiliary controlled rectifier means and a turn-off capacitor as well as a damping resistor, said series circuit means being connected across said semiconductor controlled rectifier for turning it off, and supply means for said rectifier means including a charging resistor and a series resonant circuit across said charging resistor.

3,192,410
LOGIC CIRCUIT WITH NRZ OPERATION
Woo F. Chow, Horsham Township, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 11, 1963, Ser. No. 257,631
11 Claims. (Cl. 307—88.5)



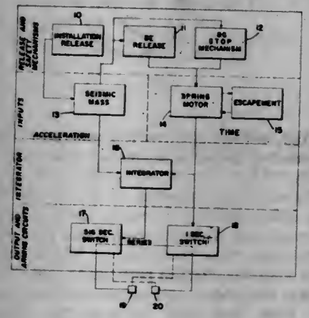
1. A logic circuit in which NRZ operation is effected comprising, input means, transformer means, input coupling diodes exhibiting charge storing capabilities connected between said input means and one terminal of a first winding of said transformer means, a first substantially constant current source connected to a further terminal of said first winding, means for supplying periodic pulses connected to said further terminal of said first winding, a second substantially constant current source, a coupling diode exhibiting charge storing capabilities connected between said further terminal and said second current source, a tunnel diode, a first high-speed-switching isolating diode connected between said coupling diode and said tunnel diode, bias means connected to said tunnel diode to bias said tunnel diode in one of its two stable states, a reference potential source, a second high-speed-switching diode, a second winding of said transformer means connected between said reference source and said second high-speed-switching diode, said second high speed diode being further connected to said tunnel diode, and output means connected to said tunnel diode.

3,192,411
PULSE GENERATOR USING A DUAL FREQUENCY OSCILLATOR TO BOTH DEVELOP AND SWITCH HIGH VOLTAGE
John Byrne, Belford, and William A. Stirrat, Neptune City, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed July 3, 1961, Ser. No. 121,790
7 Claims. (Cl. 307—107)
(Granted under Title 35, U.S. Code (1952), sec. 266)



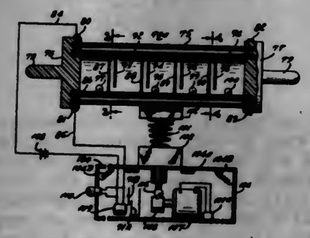
1. A pulse generating system including a low-voltage D.-C. supply, dual frequency oscillator means connected to said D.-C. supply means for providing first and second oscillation signals, voltage multiplying and rectification means coupled to said oscillator, switch means coupled to said oscillator, and a load, said first oscillation signal being supplied to said voltage multiplying and rectification means the output of which is connected to said load through said switch means, said second oscillation signal being used to operate said switch means.

3,192,412
ARMING ACCELEROMETER
Merrick W. Stewart, Orlando, Fla., and Roger K. Smith, Rockville, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 23, 1961, Ser. No. 112,129
5 Claims. (Cl. 307—121)



1. In an accelerometer, a constant speed motor, a pair of switches interconnected to complete an arming circuit, an integrator locked against operation in its rest position and arranged to be released in response to a predetermined low value of acceleration for operation by said motor, means responsive to said motor for closing one of said switches at a predetermined time after the operation of said integrator is initiated, and means responsive to a predetermined velocity as well as an acceleration above said predetermined acceleration for closing the other of said switches.

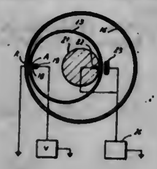
3,192,413
SEMI-AUTOMATIC SIMULATED RACING GAME
Samuel M. Saltzman, 34—42 72nd Ave., Jackson Heights, N.Y.
Filed Dec. 7, 1961, Ser. No. 157,756
7 Claims. (Cl. 307—132)



1. A circuit controller for simulated racing games and the like, comprising a closed housing having a plurality of contact sets carried by the interior wall thereof, at least one freely movable metal ball within the housing, a universally movable flexible support for the housing, at least one handle on said housing for controlling the tilting thereof and thereby controlling the bridging of the contact set by said ball, and in which each contact set is com-

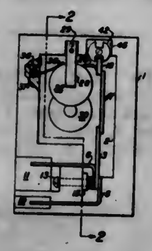
prised of a pair of conductive combs with the teeth of each comb interleaved in spaced relation with the teeth of the other comb and with the interleaved teeth spaced apart so as to be bridged by said ball.

3,192,414
HIGH VOLTAGE, ELECTROSTATIC GENERATORS
Peter U. Reusser, Ridgefield, Conn., assignor to Schlumberger Well Surveying Corp., Houston, Tex., a corporation of Texas
Filed July 23, 1962, Ser. No. 211,811
13 Claims. (Cl. 310—6)



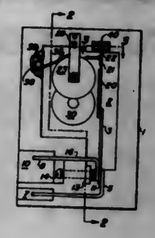
1. A high voltage electrostatic generator comprising a rotor formed of dielectric material; an annular electrode; a generally cylindrical high voltage electrode mounted concentrically within said annular electrode, said high voltage electrode being sized to promote a uniform electric field within the annulus defined between said electrodes; means mounting said rotor eccentrically within said annulus, means for applying charged particles to said rotor adjacent one of said electrodes; and means for removing charged particles from said rotor adjacent the other of said electrodes.

3,192,415
SYNCHRONOUS MOTOR WITH SELF-SET LIMIT CONTROL
Jack E. Duff, North Canton, Ohio, Donald W. Graves, Canoga Park, Calif., and Christian D. Berger, North Canton, Ohio, assignors to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 16, 1963, Ser. No. 295,360
12 Claims. (Cl. 310—8.3)



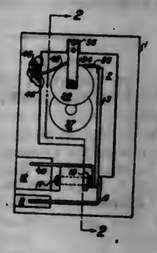
1. A synchronous electric motor having a frame, a ratchet wheel pivotally supported by the frame, a pawl engaging said ratchet wheel, a prime mover of the type which vibrates synchronously with the frequency of an applied energizing alternating current drivingly coupled to said pawl to drive said ratchet wheel, and mechanism for controlling the amplitude of motion of said pawl comprising a stop member movably mounted on said frame and having a pair of oppositely facing stop faces, means movable with said pawl having a pair of oppositely facing contact surfaces each positioned to move toward and away from a separate one of said stop faces as said prime mover vibrates, the clearances between said stop faces and contact surfaces being sufficient to allow movement of said pawl greater than the pitch of a single tooth and less than two teeth on said ratchet wheel without interference by said stop member, the mass of said stop member being sufficient to arrest motion of said pawl on contact between a stop face and a contact surface with insignificant motion of said stop member.

3,192,416
SYNCHRONOUS MOTOR WITH LIMIT CONTROL
Dale C. Gerber, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 16, 1963, Ser. No. 295,359
6 Claims. (Cl. 310—8.6)



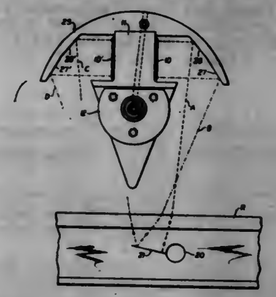
1. A synchronous electric motor comprising a frame, a fine ratchet wheel rotatably supported by said frame, an electrically energized means adapted to vibrate at the frequency of an applied alternating current, a pawl drivingly engaging said ratchet wheel and coupled to be driven by said means, an abutment stop having a slot receiving a part of said vibrating means to limit the excursion of said pawl to the net clearance of said slot, said abutment stop being positioned and secured to said frame with the said part of said vibrating means lying in the approximate center of said slot when said means is not energized.

3,192,417
SYNCHRONOUS ELECTRIC MOTOR
Werner G. Seck, Canton, and Roland J. Knouff, Massillon, Ohio, assignors to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 16, 1963, Ser. No. 295,423
3 Claims. (Cl. 310—8.6)



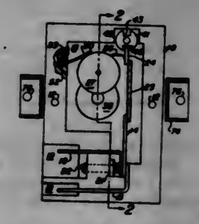
1. A synchronous electric motor comprising a support member, a piezoelectric element having one portion thereof secured to said support member and another unsecured portion which is free to move when said element is electrically stressed, said piezoelectric element comprising a plane body of piezoelectric material having a layer of electrically conductive material secured to opposite faces thereof whereby application of an electrical potential difference between said layers of conductive material will apply an electrical stress to said piezoelectric material causing physical motion of the unsecured portion of said piezoelectric element, a ratchet wheel rotatably mounted on said support member and having ratchet teeth on one surface thereof, a pawl mechanically coupled to the unsecured portion of said piezoelectric element to be reciprocated thereby and drivingly engaged with the ratchet teeth on said wheel, said pawl, piezoelectric element and wheel being so positioned that said pawl moves in a plane substantially normal at the point of pawl contact to a non-tooth bearing surface of the wheel and in a direction to apply a rotating force to an engaged tooth on the wheel, means for applying an alternating potential of predetermined frequency and potential to the said layers of conductive material, means for preventing reverse rotation of said ratchet wheel on the non-driving stroke of said pawl, and said piezoelectric device, pawl and ratchet wheel having dimensions such that the excursion of the pawl is greater than the pitch of one and less than the pitch of two teeth on said ratchet wheel when the piezoelectric device is energized by an alternating potential of said predetermined frequency and potential.

3,192,418
ULTRASONIC TRANSDUCERS
Raymond E. Sansom, New Milford, Conn., assignor, by mesne assignments, to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Feb. 26, 1960, Ser. No. 11,289
6 Claims. (Cl. 310—8.7)



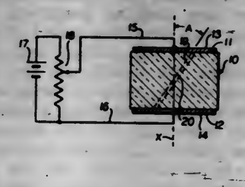
1. An ultrasonic transducer for use in ultrasonically inspecting a test object comprising an element having an energy-emitting face and adapted when energized to generate an ultrasonic beam propagating from said face, and reflector means comprising a plurality of plane reflecting surfaces operatively associated with said face and disposed in the path of said beam, at predetermined different absolute angles to reflect a plurality of essentially discrete beams propagating into the test object in predetermined different directions.

3,192,419
SYNCHRONOUS MOTOR AND MOUNTING
Justice H. Beach, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 16, 1963, Ser. No. 295,424
10 Claims. (Cl. 310—9.1)



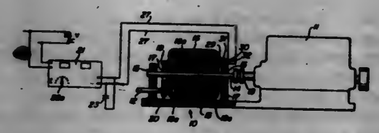
1. A casing and mounting structure for a small vibratory motor comprising a massive housing completely enclosing a vibratory motor having an output shaft projecting from one wall of said housing, a supporting plate for said housing spaced therefrom, a shock absorbing and sound deadening body interposed between said housing and said supporting plate, a U-shaped bracket spanning said housing in spaced relation thereto and having its legs secured to said plate, and a body of sound deadening and shock absorbing material bearing between said housing and the bight portion of said U-shaped bracket, each of said bodies of shock absorbing and sound deadening material being in compression.

3,192,420
ELECTRO-MECHANICAL TRANSDUCERS AND THE FABRICATION THEREOF
John V. Cowan, Danbury, Conn., assignor, by mesne assignments, to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Jan. 26, 1961, Ser. No. 85,103
6 Claims. (Cl. 310—9.5)



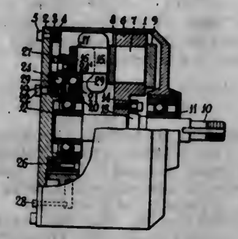
1. An electro-mechanical transducer comprising a piezo-electric element having a pair of substantially parallel surfaces and polarized at least in part to generate mechanical wave energy along an axis disposed at an angle other than ninety degrees relative to said surfaces at the point of origin of said wave energy.

3,192,421
MAGNETOELECTRIC TORQUE CONVERTER WITH VARIABLE SPEED CONTROL
William H. Sayler, 117 West 2nd South, Salt Lake City, Utah
Filed Mar. 2, 1961, Ser. No. 92,914
12 Claims. (Cl. 310—95)



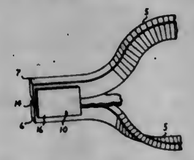
1. A magnetoelectric torque converter, comprising single phase induction motor structure, including a non-excited rotor having a drive shaft adapted for mechanical drive connection with a prime mover, and rotatable field structure having electrically energizable windings and torque output means adapted for mechanical drive connection with a device to be driven; a non-reversible source of variable frequency electric current electrically connected to said windings for exciting the same; and means for varying the frequency of the electric current supplied to said windings by said source, whereby reversible output torque controllable in speed but constant in value is obtainable from said torque output means over a range extending from maximum output speed in one direction, through zero speed, to maximum output speed in the reverse direction, and vice versa.

3,192,422
SPIRAL BEARING SUPPORT
William Kober, Fairport, N.Y., assignor, by mesne assignments, to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 30, 1960, Ser. No. 18,706
20 Claims. (Cl. 310—191)



1. Means supporting a member for rotation about an axis and for translating such rotation into movement of said member along said axis comprising, spiral bearing means having races providing paired grooves of spiral form relative to said axis, multiple balls in said grooves in angular rolling contact with said races, said races including groove defining portions having angular contact with the balls in one of said paired grooves in opposition to the angular contact thereof with the balls in the other of said paired grooves, said groove defining race portions being relatively movable in the direction of said axis to adjust the contact pressure against said balls.

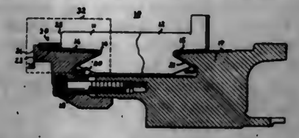
3,192,423
COIL END CONNECTING MEANS FOR SPLIT WINDINGS OF DYNAMOELECTRIC MACHINES
Robert S. Pearson, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 29, 1962, Ser. No. 240,984
5 Claims. (Cl. 310—201)



1. In a dynamoelectric machine including a member having a plurality of slots therein, the combination comprising: preformed conductor elements disposed in said slots adapted to form separate coil sides of an unconnected winding, the conductor elements disposed in predetermined slots being arranged, formed and adapted to provide a coil including paired upper and lower end portions; and an electrically conducting connecting member brazed to said ends so that said conductors form a complete coil, said connecting member comprising a body having oposed open channels therein adapted to receive and orient said ends, each of said open channels having a depth which is less than the height of said conductor to be received thereby so that said conductors extend above the sides of said channels.

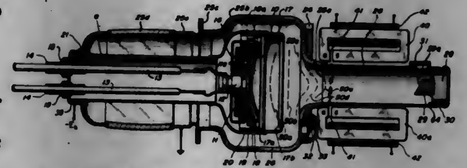
3,192,424
STRING BAND INSULATION SYSTEM FOR COMMUTATORS
Samuel P. Jones, Lawrence Park, Pa., assignor to General Electric Company, a corporation of New York
Filed May 13, 1963, Ser. No. 280,052
10 Claims. (Cl. 310—236)

1. In combination with a commutator, an insulation system for the string band region thereof which comprises: a substratum of a fibrous material disposed over the extending insulation in said string band region; and an outer surface layer having a thickness of at least about 0.025 inch intimately bonded to said substratum and selected from the group consisting of polytetrafluoroethylene, polytrifluorochloroethylene and a copolymer of tetra-



fluoroethylene and hexafluoro propylene, said substratum being arranged to protect the extending insulation from the effects of windage and centrifugal force and exhibiting sufficient tensile strength to overcome the total hoop tensile load due to the insulation, the substratum itself and the outer surface layer.

3,192,425
X-RAY TUBE WITH ADJUSTABLE ELECTRON BEAM CROSS-SECTION
Leigh Curtis Foster, Los Altos, Calif., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,534
4 Claims. (Cl. 313—57)

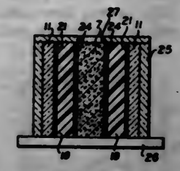


1. An X-ray generator comprising: an electron gun for projecting an electron beam along a given path including an electron emissive cathode located coaxially of said path and a heater for said cathode; an anode structure having a conductive cylindrical portion positioned axially of said path and spaced from said cathode, having an open end facing said cathode, said cylindrical portion having a radius small compared to that of said cathode and supporting at its end remote from said cathode a target portion, constructed of a material which radiates X-rays in response to electron bombardment, disposed across said path; means for establishing a focusing field in the region between said cathode and said cylindrical portion to form electrons emitted from said cathode surface into a converging beam of substantially circular cross section focused on said target and for establishing said cylindrical portion and said target at approximately the same operating potential, the spacing of said target from said open end of said cylindrical portion being greater than the depth of penetration of said focusing field into said anode cylinder; and adjustable magnetic means supported externally of said anode cylinder for establishing a magnetic beam shaping field about the beam path to selectively shape said beam into any of a plurality of predetermined different non-circular beam cross sections at said target.

3,192,426
ELECTROLUMINESCENT CONDENSERS HAVING POROUS ELEMENT
Irving Feuer, New York, N.Y., assignor to Conrad Precision Industries Inc., New York, N.Y., a corporation of New York
Filed July 27, 1962, Ser. No. 212,861
7 Claims. (Cl. 313—108)

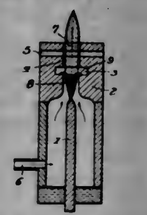
1. An electroluminescent condenser comprising an electrode, a layer of phosphor and dielectric material over

said electrode and an electrode over the layer of phosphor and dielectric, and further comprising a porous



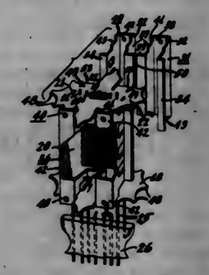
element in communication with said layer of phosphor and dielectric for interchange of material between the layer of phosphor and dielectric and said porous element.

3,192,427
PLASMA FLAME GENERATOR
Masao Sugawara, Taito-ku, Tokyo-to, and Masabu Yamamoto, Odawara-shi, Kanagawa-ken, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed June 19, 1962, Ser. No. 203,622
Claims priority, application Japan, June 19, 1961, 36/21,219
3 Claims. (Cl. 313—231)



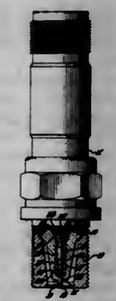
1. A plasma flame generator comprising, in combination, a rod-shaped cathode; an anode enveloping said cathode leaving a space therebetween for the flow of inert gas and for facilitating an electrical discharge; said anode extending above the upper end of said cathode and narrowing thereabove; a nozzle forming the upper extremity of said anode and provided with an annular groove intermediate between said cathode and the outlet of said nozzle; a sample feeding passage disposed near the outlet of said nozzle; and an inlet for an inert gas near the lower end of said anode.

3,192,428
MULTIGRID ELECTRON TUBE AND METHOD OF ASSEMBLY THEREOF
William F. Griffin, Summit, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 25, 1960, Ser. No. 31,600
5 Claims. (Cl. 313—260)



5. An electron tube including a rigid and self-supporting mount assembly comprising a plurality of electrodes, a pair of parallel oppositely disposed spacers mounted on the ends of said electrodes, means for maintaining said spacers in spaced apart parallel relation, and means for fixing the axial positioning of said electrodes with respect to one another, and a multi-part anode engaging the peripheries of said spacers and being supported on said mount assembly thereby, whereby visual inspection and alignment of said electrodes may be obtained prior to assembly of said anode to said spacers.

3,192,429
CENTER ELECTRODE FOR SPARK PLUG
Alfred Candelise, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 8, 1960, Ser. No. 67,961
6 Claims. (Cl. 313—289)

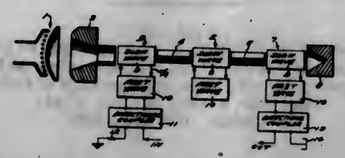


1. A spark plug including a ceramic insulator having a centerbore with an upper section of relatively large diameter and a lower elongated section of reduced diameter, a center electrode spindle coaxially arranged in the lower section of said centerbore having a firing tip portion with one end thereof projecting from the lower end of said insulator and a shank portion projecting upwardly from said firing tip portion, to adjacent the top of said centerbore lower section, and a body of good heat-conducting metal surrounding the shank portion of said spindle and substantially filling the space between the spindle and the insulator, the shank portion of said spindle having upper and lower elongated cylindrical sections of relatively small diameter and an intermediate elongated cylindrical section of a diameter larger than the diameter of said upper and lower sections whereby the amount of said good heat-conducting metal surrounding the intermediate section of said shank portion is small in comparison to the amount of said metal surrounding the upper and lower sections of said shank portion so as to effect improved heat distribution from the spindle to the insulator.

3,192,430
MICROWAVE AMPLIFIER FOR ELECTROMAGNETIC WAVE ENERGY INCORPORATING A FAST AND SLOW WAVE TRAVELING WAVE RESONATOR
Marvin Chodorow, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 29, 1960, Ser. No. 25,744
16 Claims. (Cl. 315—3.5)

1. A microwave electron beam amplifier with improved gain-bandwidth product for amplifying electromagnetic microwave energy interacting with said beam comprising at least one distributed-interaction means with which said beam interacts at least one decoupling region through which said beam passes for decoupling said microwave energy from said beam and preventing transmission of said microwave energy into said decoupling

region, said amplifier having means to prevent self-oscillation, said distributed-interaction means being an extended interaction traveling-wave resonator adapted and arranged to support a traveling electromagnetic wave therein, said traveling wave resonator comprising a first section of slow-wave structure adapted and arranged to support a traveling electromagnetic slow wave for interacting with the electron beam and a second section of fast-wave structure supporting a traveling electromag-



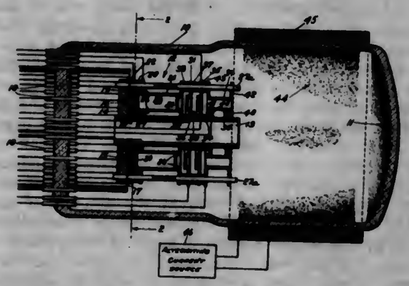
netic wave having a large group velocity compared to the group velocity of said slow wave, said fast wave structure and said first section of slow-wave structure being coupled together at spaced-apart portions thereof and thereby concentrating on a per unit length basis a larger portion of the energy of said traveling electromagnetic wave in said traveling wave resonator in said interacting slow wave structure thereby providing an amplifier having an improved gain bandwidth product.

3,192,431

DEFLECTION SYSTEM FOR CYLINDRICAL BEAM CATHODE RAY TUBE

Robert A. Frykland, deceased, late of Dedham, Mass., by Dorothy H. Frykland, administratrix, Dedham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Continuation of application Ser. No. 226,033, May 12, 1951. This application June 29, 1961, Ser. No. 124,283
11 Claims. (Cl. 315—18)



1. An electron-discharge device comprising means for producing a plurality of electron-beam elements spaced along a curved path, a plurality of grids, each grid being substantially insulated from and controlling one of said electron-beam elements substantially independently of the rest of said plurality of grids, and means for producing motion of said element along said path.

3,192,432

ELECTRON BEAM DEFLECTION YOKE

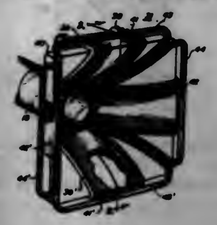
Leroy W. Nero, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 24, 1962, Ser. No. 225,464
10 Claims. (Cl. 315—27)

9. An electron beam deflection yoke for a cathode-ray tube having a screen the geometry of which introduces pin-cushion pattern distortion, said yoke comprising:

a core member of generally cylindrical configuration enclosing a beam-deflection region and flaring from a small diameter at its leading end to a maximum diameter in the direction of its opposite end;

means for producing at said opposite end of said core a deflection field having pin-cushion distortion to cancel said pattern distortion but also tending to



impose undesired focus and convergence effects on the beam of said tube;

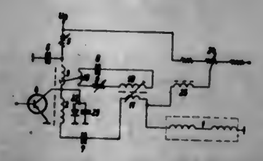
and means for producing a deflection field having barrel type distortion at said leading end of said core for compensating said undesired effects of said first-mentioned deflection field.

3,192,433

CIRCUIT ARRANGEMENT FOR MODIFYING THE DEFLECTION CURRENT WAVEFORM OF TRANSFORMER-COUPLED SCAN GENERATORS

Hans-Dieter Schneider, Gross-Gerau, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Filed Jan. 31, 1963, Ser. No. 255,281
Claims priority, application Germany, Feb. 3, 1962, F 35,909
8 Claims. (Cl. 315—27)



1. In a line deflection circuit for television apparatus including deflection coils and sawtooth scan generator means for providing a substantially sawtooth deflection current in said deflection coils, said sawtooth scan generator means including a scan transformer having winding means connected to said deflection coils, a system for compensating for distortions in the substantially sawtooth deflection current comprising damped resonant circuit means including inductive means and phase inverting coupling means coupled to the scan transformer winding means, and means connecting said inductive means between said deflection coils and said scan transformer winding means, said damped resonant circuit means having an adjustable time constant and frequency.

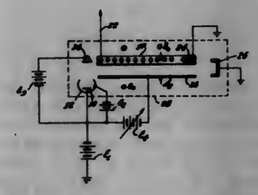
3,192,434

BACKWARD WAVE OSCILLATOR HAVING ANODE-SOLE SPACING OF 0.05 WAVELENGTH

Joseph F. Hull, Redwood City, Calif., assignor to Litton Precision Products, Inc., a corporation of Delaware

Filed Feb. 9, 1960, Ser. No. 7,598
3 Claims. (Cl. 315—39.3)

2. A backward wave oscillator tube for generating wave energy which is continuously adjustable over a relatively wide frequency range, said oscillator comprising: an electron gun including a cathode, means including an associated accelerator electrode for controlling the number of electrons emitted from said cathode, said gun being operable to form and direct an electron beam of substantially constant intensity in a predetermined direction; a delay line having a geometrically periodic structure in the form of a symmetrical interdigital structure for supporting backward traveling wave energy; a sole electrode substantially parallel to said delay line and being spaced therefrom by a distance of at least 5 percent of a wavelength with respect to the center frequency of the operating frequency band of said tube, said sole and delay line forming an electron and electromagnetic wave interaction space therebetween, said interaction space being oriented with respect to said electron gun for receiving said electron beam; a collector electrode at the end of said interaction space remote from said electron gun; means for producing mutually perpendicular unidirectional electric and magnetic fields



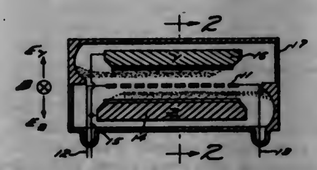
within said interaction space; means for maintaining said cathode at a relatively fixed negative direct current potential with respect to ground; means including a variable potential negative with respect to a cathode potential for varying the intensity of the electric field within said interaction space to provide a variation of the operating frequency over a frequency range in excess of 15 percent of the center frequency of the operating frequency band of said oscillator; means for extracting wave energy from said delay line and means for imposing a variable positive potential upon said accelerator with respect to the cathode potential, said positive potential being variable as a continuous linear function of said electric field gradient.

3,192,435

CROSS FIELDS NONRECIPROCAL ATTENUATOR ELECTRON DISCHARGE DEVICE

Joseph Feinstein, Livingston, and Jerome Drexler, New Providence, N.J., assignors to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey

Filed Mar. 21, 1960, Ser. No. 16,458
19 Claims. (Cl. 315—39.3)



1. An electron discharge device utilizing crossed electric and magnetic fields for the interaction therein comprising an anode structure adapted to propagate a main electromagnetic wave in one direction and other electromagnetic waves; means for applying signal electromagnetic waves to be amplified to said anode structure, means for extracting amplifying signal waves from said anode structure; electrodes positioned adjacent said anode structure for producing an electric field between said anode structure and each of said electrodes; means for producing a first electron stream between said anode structure and one of said electrodes, means for producing a second electron stream between said anode structure and the other of said electrodes, said second electron stream directed in a direction opposite to the direction of said first electron stream; and means establishing the velocity

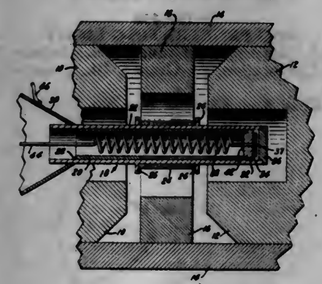
of the oppositely directed electron streams such that one of the electron streams interacts with and amplifies said applied signals electromagnetic wave traveling on said anode structure and the other electron stream interacts with and attenuates only electromagnetic waves moving in a direction on said anode structure opposite to that of the main wave thereby providing a nonreciprocal attenuator for the electron discharge device.

3,192,436

HEATER SWITCHING CATHODE FOR MAGNETRONS

Donald M. Jewart, Williamsport, Pa., assignor, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware

Filed June 2, 1961, Ser. No. 114,350
4 Claims. (Cl. 315—73)



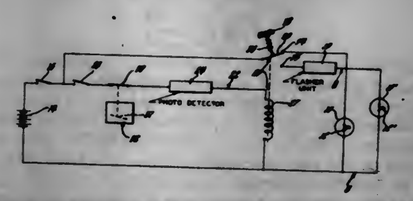
1. A thermionic indirectly heated cathode structure comprising an inner and an outer sleeve in nested relationship and fastened together near adjacent support ends of the sleeves, said sleeves being of metals having different co-efficients of heat expansion, an electrical contact carried by each of the sleeves substantially at their free ends movable between an engaging and non-engaging position relative to one another, a cathode heater within the inner sleeve having one end connected to one of the contacts and the other end extending away from the cathode, and an electrical connection to the second one of the contacts, whereby the heater current may be controlled by the relative thermal expansion of the telescoped sleeves in accordance with the relative positions of said contacts.

3,192,437

PHOTOSENSITIVE REAR WARNING SIGNAL

Carl L. Meyer, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

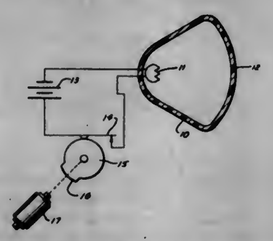
Filed Oct. 18, 1961, Ser. No. 145,882
2 Claims. (Cl. 315—77)



1. In combination with a vehicle having a rearwardly directed lamp and a voltage source, a warning system for indicating to the operator of a succeeding vehicle that he is too close for driving safety and comprising an electromagnetic relay including an armature, a switch having a movable contact and first and second stationary contacts, said movable contact being actuable by said armature, circuit means connecting the movable contact with the

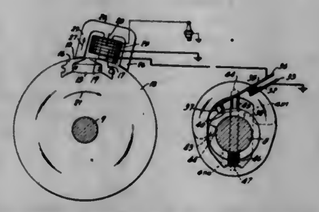
source, circuit means including a flasher unit connecting the first stationary contact with the lamp, circuit means connecting the second stationary contact with the lamp, and light responsive means on said vehicle and positioned to receive light from the headlights of a succeeding vehicle, said light responsive means connected with the source for developing a signal quantity corresponding to the intensity of light received from the headlamps of a succeeding vehicle, the relay actuated switch including a relay coil connected with the light responsive means for energization thereby and for actuating the movable contact so as to selectively connect the movable contact with the first and second stationary contacts to respectively alternately or constantly energize the lamp when the intensity of light received from a succeeding vehicle is respectively above or below a predetermined value.

3,192,438
FOG PENETRATING LIGHT
Marshall P. Deputy, La Grange, Ill., assignor to Fog-Master Corporation, La Grange, Ill., a corporation of Illinois
Filed Aug. 13, 1962, Ser. No. 216,551
4 Claims. (Cl. 315—209)



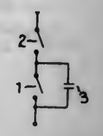
1. The method of penetrating fog with a light beam which comprises directing a light beam through a foggy atmosphere and reducing the intensity of the beam to less than one-half its normal intensity during approximately one-fourth of each of a series of cycles varying in length from about .6 second to about 2.2 seconds.

3,192,439
AUTOMATIC SPARK ADVANCE FOR MAGNETOS
Gerald J. Shaw, Lamar, Mo., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Sept. 1, 1960, Ser. No. 53,510
12 Claims. (Cl. 315—218)



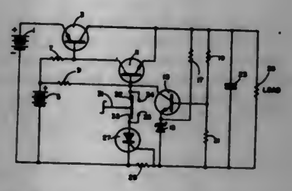
8. In a magneto, means including relatively movable magnet and armature parts for developing at least two peak conditions of rate of flux change in response to relative rotation between said magnet and said armature parts, an ignition circuit including a spark plug, and means for selectively operating said ignition circuit to produce a spark at said plug at times corresponding to the occurrence of said peak conditions of rate of flux change.

3,192,440
LOAD SWITCH WITH PARALLEL CONNECTED CAPACITORS
Paul Baltensperger, Wurenlos, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Sept. 7, 1961, Ser. No. 136,502
Claims priority, application Switzerland, Sept. 16, 1960, 10,495/60
6 Claims. (Cl. 317—11)



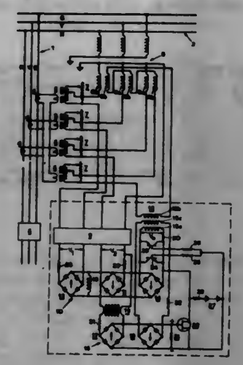
1. In a load switch including a plurality of breaking points arranged electrically in series, each such breaking point being established by the gap between two relatively movable switching contacts, and wherein each such breaking point includes a capacitance in shunt therewith, the improvement wherein at least one breaking point is provided with a capacitor in shunt therewith, the capacitance value of said capacitor indepedently of the potential distribution through the individual breaking points being at least triple the value of the capacitances of the remaining breaking points.

3,192,441
MEANS FOR PROTECTING REGULATED POWER SUPPLIES AGAINST THE FLOW OF EXCESSIVE CURRENTS
Harrison G. Wright, Yorba Linda, Calif., assignor to North American Aviation, Inc.
Filed July 2, 1962, Ser. No. 206,599
18 Claims. (Cl. 317—33)



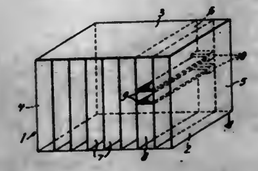
1. In combination:
a series-connected regulator having a first pair of input terminals adapted to be connected to a voltage source and a pair of output terminals adapted to be connected to a load, said regulator having a multistage amplifier whose input is controlled in response to the voltage appearing across said output terminals and whose output is connected in series between said input and output terminals to control the flow of current to said load;
and a silicon controlled rectifier whose anode-cathode circuit is connected, in series with a switch, to the output of the first stage of said amplifier to modify the potentials to the output of said first stage to cause said amplifier to block the flow of current between said input and output terminals when said controlled rectifier conducts at saturation in its anode-to-cathode path, the conrol electrode of said control rectifier being connected to a voltage dividing network in series with said load, thereby to fire said silicon controlled rectifier and cause it to conduct at saturation in response to an overload of current between said input and output terminals.

3,192,442
ELECTRICAL PROTECTIVE RELAY SYSTEMS
Albert Russell Van Cortlandt Warrington and Eugeniusz Antoszewski, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Feb. 26, 1962, Ser. No. 175,766
Claims priority, application Great Britain, Mar. 3, 1961, 7,782/61
9 Claims. (Cl. 317—36)



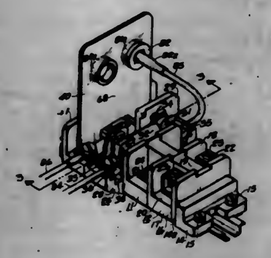
1. An electrical distance relay system for association with one end of a section of a three phase electric power line which is to be protected by the relay system comprising first circuit means connected with the power line at the said end of the section so as to be responsive to the voltages and currents appearing at the said end of the section for producing therefrom a system of signal voltages representative of the phase to neutral voltages appearing simultaneously at the other end of the section, phase sequence component analysing means connected to the first circuit means so as to receive the said system of signal voltages for providing in response thereto voltages representative of the positive, negative, and zero phase sequence components respectively of the said signal voltage system, comparison means connected to the phase sequence component analysing means so as to be responsive to the amplitudes of the said phase sequence component voltages for comparing in response to a first control signal the positive and negative phase sequence component voltages and producing an output signal whenever the amplitude of the negative phase sequence component voltage exceeds that of the positive phase sequence component voltage, and for comparing in response to a second control signal the positive, negative, and zero phase sequence component voltages and producing an output signal whenever the sum of the amplitudes of the negative and zero phase sequence component voltages exceeds that of the positive phase sequence component voltage, discriminating means connected to the phase sequence component analysing means so as to be responsive to the phase sequence component voltages for producing the said first control signal whenever the power line is subjected to a multiphase fault, and for producing the said second control signal whenever the power line is subjected to a single phase fault, and relay means connected to the comparison means so as to be responsive to the output signals of the comparison means for initiating in response to each such output signal a protective function for the section of the power line.

3,192,443
HOUSING STRUCTURE FOR ELECTRONIC COMPONENTS
Arnold Schoufeld, Levittown, and Edwin F. Keyser and John Federigo, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1961, Ser. No. 104,731
1 Claim. (Cl. 317—100)



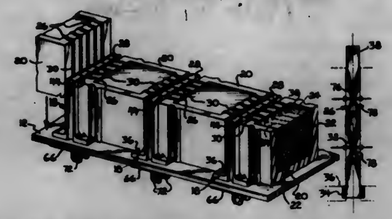
An electronic component storage structure for receiving a plurality of printed circuit boards having electrical contacts comprising a substantially rectangular housing being open on one side and having two horizontal and three vertical walls, a plurality of spaced vertical members suitably mounted on said horizontal walls, a plurality of supporting elements stamped and bent perpendicularly outwardly from each of said vertical members and leaving openings in said vertical members adjacent each of said supporting elements to permit the free circulation of a cooling medium through said rectangular housing, said supporting elements being spaced with respect to each other, a plurality of horizontally extending electrical connectors mounted in a vertical row on the vertical wall facing said open side of said housing, said electrical connectors being disposed to engage said electrical contacts of said printed circuit boards.

3,192,444
MOUNTING MEANS FOR SEMICONDUCTOR DEVICES
Armand G. Mueller, Wauwatosa, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Feb. 13, 1963, Ser. No. 258,327
4 Claims. (Cl. 317—100)



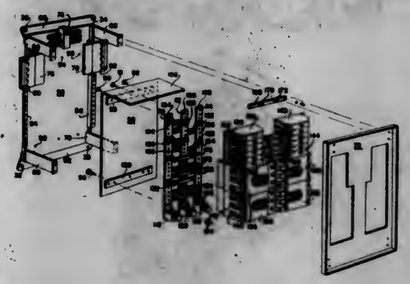
1. A mounting structure for semiconductor devices comprising an insulating mounting block having a base portion and a barrier portion extending perpendicular to the base portion, said base portion an end complementary in shape to an end on a base portion of other insulating mounting blocks for assembly therewith in a row to form a strip of blocks for mounting in assembled relation on a controller, a generally flat metal plate secured to the base portion and extending outwardly therefrom in a plane parallel to the barrier portion and transverse to the longitudinal axis of a row of blocks which are assembled with the mounting block to form said strip of blocks, said plate having means for mounting a semiconductor device thereon in good electrical and heat conducting relation thereto, and means for making an electrical connection to said plate.

3,192,445
MODULE SYSTEM
William R. Evans, Hershey, and Robert C. Swengel, Hellam, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 21, 1960, Ser. No. 16,439
10 Claims. (Cl. 317—101)



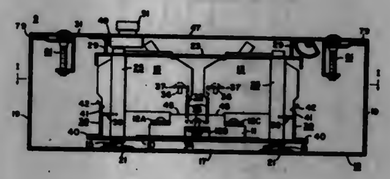
1. An electrical circuit assembly comprising a string of circuit module blocks, opposed rows of regularly spaced contacts on the opposed sides of adjacent module blocks terminating the parametric components of said blocks, a chassis plate, a series of elongated connector blocks detachably mounted side-by-side on said plate snugly receiving a module block laterally between each adjacent pair thereof, each connector block having a series of regularly spaced contacts each slidably engaging and electrically connecting a pair of opposed contacts of said opposed rows upon laterally sliding the module blocks between the pairs of adjacent connector blocks, said blocks carrying the contacts thereof in spaced relation relative to said chassis plate.

3,192,446
DISTRIBUTION PANEL
James F. Meacham, Atlanta, Ga., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 16, 1960, Ser. No. 29,256
6 Claims. (Cl. 317—119)



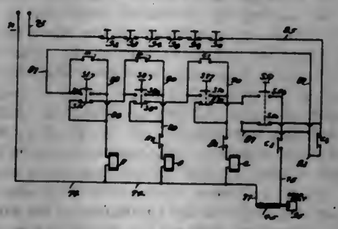
3. The combination of a panelboard and a plurality of circuit breakers mounted thereto; said panelboard comprising a plurality of spaced parallel bus bars, securing means on said bus bars defining a plurality of equally spaced locations a first distance apart along the longitudinal axis of each of said bus bars; a multiphase circuit breaker having a terminal for each of its phases, said terminals being aligned parallel to said first distance and spaced apart by a second distance, which is said first distance multiplied by an integer; conducting means connecting each of said terminals to said securing means of a different one of said bus bars; a first and a second single phase circuit breaker mounted side to side each having a line terminal at one end thereof; said line terminals being spaced apart by a third distance which is greater than said first distance and less than two times said first distance; additional conducting means connecting each of said line terminals to said securing means of a different one of said bus bars.

3,192,447
CIRCUIT BREAKER PANELBOARD
Nicholas Kenyeres, Villanar de Mar, Spain, and Robert G. Anderson, Streetsville, Ontario, Canada, assignors to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada
Filed July 29, 1960, Ser. No. 46,218
8 Claims. (Cl. 317—119)



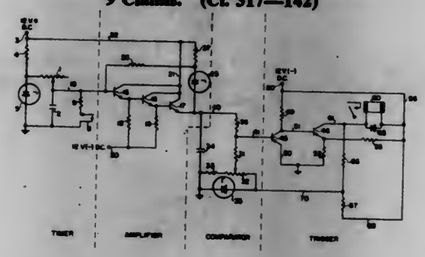
1. A panelboard comprising, in combination, a housing having a back wall and side walls, a base disposed in proximity to the back wall, a shield disposed in a plane generally parallel to the plane of the base, an insulating spacing member disposed between the base and shield, the spacing member having a notch near one end, and means rocking the spacing member in a direction to engage a part of the shield within said notch.

3,192,448
KEYLESS ELECTRIC LOCK
John C. Hevenor, Eldred, Pa.
Filed Feb. 6, 1961, Ser. No. 87,162
4 Claims. (Cl. 317—134)



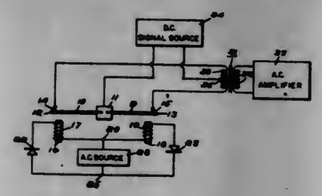
1. An electrical combination control for a lock having an operating member connectable with an energizing circuit, comprising: means providing a source of electrical energy to which said energizing circuit is connected; a plurality of buttons mounted on a keyboard; a plurality of normally closed switches connected in said energizing circuit and operably associated with certain of said buttons, to be opened upon actuation of the associated buttons; a plurality of switch means operably associated with others of said buttons for successive operation to connect said operating member with said source, and having normally open and normally closed contact portions, the normally closed contact portions being connected in series in said energizing circuit; a plurality of relays each connected through the normally open contact portion of at least a portion of said switch means, across said source, and each having a holding contact connected in parallel with said normally open contact portion of the associated switch, the normally open contact portions of successive switch means being connected in said energizing circuit through the normally closed contact portions of the preceding successively operated switch means; and a normally open contact associated with the last of said successive switch means, for connecting said operating member with said energizing circuit.

3,192,449
TIMING CIRCUIT
Peter C. Brockett, Milford, Conn., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,549
9 Claims. (Cl. 317—142)



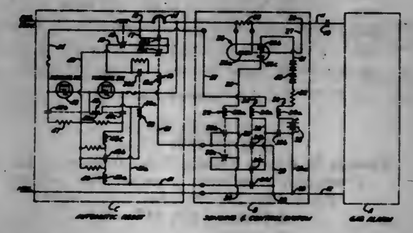
1. A timing circuit including a timing condenser having a charge varying slowly for timing, an amplifier coupled to said condenser to amplify the voltage thereon, said amplifier including a plurality of high gain transistor stages of the emitter follower configuration, each of said stages having a constant base-emitter potential drop, a constant voltage feed-back from the output of said amplifier to the input thereof, the voltage of said feed-back being greater than the total potential drop across said stages, a feed-back impedance in series with said constant voltage feed-back, said impedance and said feed-back being set at a level to maintain base-emitter current flow stability in said amplifier over the operating range thereof as the charge on said condenser varies in timing, and a trigger circuit actuated by the output of said amplifier to respond to an output level corresponding to a predetermined charge level of said timing condenser.

3,192,450
ELECTROMAGNETIC SWITCHES OF THE MAKE-BEFORE-BREAK TYPE
Harry Reifel, Waltham, Mass., assignor to Stevens-Arnold Inc., South Boston, Mass., a corporation of Massachusetts
Filed Aug. 1, 1962, Ser. No. 213,995
4 Claims. (Cl. 317—155.5)



1. An electromagnetic switch comprising a first reed member of magnetic spring metal cantilever supported at one end, fixed contact means at one side of the free end of said member, said free end being normally in contact with said contact means, first electromagnetic means for deflecting said free end out of contact with said contact means, a second reed member of magnetic spring metal cantilever supported at one end, second fixed contact means at one side of the free end of said second member, said free end of said second member being normally in contact with said second contact means, second electromagnetic means for deflecting said free end of said second member out of contact with said second contact means, and means for supplying current pulses of one polarity only to said first electromagnetic means, and for supplying current pulses of the opposite polarity only and having the same frequency as said first mentioned pulses, to said second electromagnetic means.

3,192,451
POWER CIRCUIT CONTROL DEVICE
Daniel Andrew Green, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1960, Ser. No. 74,140
7 Claims. (Cl. 317—157)



1. In a control device which includes a main power circuit having therein a switch controlled by an alarm device, and a circuit breaker normally held closed by a circuit breaker relay, the improvement which comprises:
a load relay arranged in shunt across the conductors of the main power circuit and between the circuit breaker and the alarm device, the load relay being connected to influence operation of the circuit-breaker relay;
a continuity-sensing circuit arranged in shunt across the conductors of the main power circuit and comprising an independent source of current of low voltage and small amperage;
and a no-load-sensing means arranged in one of the conductors of the main power circuit, and having one pair of contacts in the circuit for the load relay and a second pair of contacts in the continuity-sensing circuit;
the parts being so constructed and arranged that when the alarm device opens the switch in the main power circuit the following operations result:
(1) the no-load-sensing means opens the contacts controlling the load relay, thereby causing the opening of the circuit breaker;
(2) the no-load-sensing means closes the contacts controlling the continuity-sensing circuit, thereby impressing a low voltage current of small amperage on the conductors of the main power circuit.

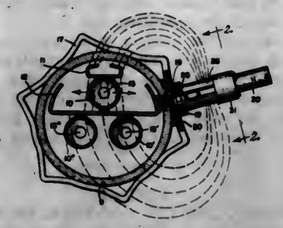
3,192,452
MAGNETIC BEAM POSITIONING DEVICE
John L. Resnick, Elmwood Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,744
7 Claims. (Cl. 317—200)

1. A magnetic device for use with a multiple-beam cathode-ray tube in which electron beams may have de-

partures from desired paths of transit to the screen, said device comprising:

a unitary elongated structure having two spaced magnets oriented such that the ends of said structure are of opposite magnetic polarity;

and means for maintaining said unitary structure on



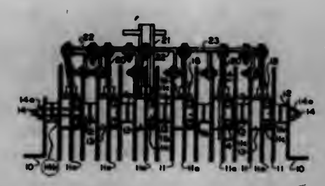
and oriented radially to the neck of said cathode-ray tube and adjustably retaining said poles of said unitary structure selectively in proximity to the path of one electron beam, whereby the position of said poles with respect to the path of said electron beam may be varied to reduce the magnitude of departure of said beam from its desired path of transit.

3,192,453

RECTIFIER STACK

George H. Pohm, Lorain, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio

Filed Aug. 28, 1962, Ser. No. 220,002
1 Claim. (Cl. 317—234)



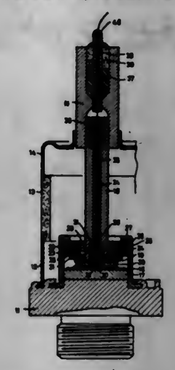
In a rectifier stack assembly of the class described, rectifier modules each comprising a heat conducting first spacer block having a receptacle adapted to removably receive a heat generating member, a plate-like fin positioned on each side of said block, a heat conducting second spacer positioned adjacent to each of said fins outwardly of said block, apertures in each of said block, fin and spacer means, apertured insulating means, insulated clamping rod means, a suitable number of said modules being assembled in clamped relationship with an apertured insulating means between each adjacent pair of modules by extending said insulated clamping rod means through said apertures, auxiliary fin means attached in heat conducting relationship to said first spacer block intermediate said plate-like fins, electrical terminal means attached to the fin means of certain of said modules for connection to A.-C. power, said electrical terminal means adapted to receive in electrically conducting relationship respective electrical leads of heat generating devices located in the remainder of said modules, first conducting means mounted on the rectifier stack and in electrically isolated relationship thereto for receiving in electrically conducting relationship the electrical leads of heat generating devices located in said certain of said modules to provide one pole of a D.-C. output, second conducting means commonly connecting at least one of said fin means of each of said remainder of modules to provide another pole of a D.-C. output.

3,192,454

SEMICONDUCTOR APPARATUS WITH CONCENTRIC PRESSURE CONTACT ELECTRODES

René Rosenheinrich, Ebermannstadt, and Helga Kurnawe, Pretzfeld, Upper Franconia, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, and Erlangen, Germany, a German corporation

Filed Oct. 23, 1962, Ser. No. 232,393
Claims priority, application Germany, Oct. 24, 1961, S 76,393
6 Claims. (Cl. 317—234)



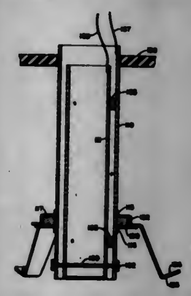
1. An encapsulated semiconductor apparatus comprising a housing, an essentially monocrystalline disc-shaped semiconductor body mounted in said housing having a plurality of zones of different conductance types, one of said zones being annular, an annular alloy electrode on said zone, a second zone centrally located within said first zone, a contact electrode on said second zone, a first current conducting member of hollow cylindrical shape having an annular end and an interior shoulder, resilient means engaging said housing for biasing the annular end against said annular electrode, a second current-conducting member passing through said first current-conducting member past said shoulder and against said contact electrode, and resilient means engaging said shoulder and said contact electrode for pressing said second current-conducting member axially against said contact electrode.

3,192,455

LEVEL GAUGE CAPACITOR WITH ELECTRODES OF DIFFERENT MATERIALS

Raymond L. Bergeson, St. Paul, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Dec. 6, 1960, Ser. No. 74,109
4 Claims. (Cl. 317—247)



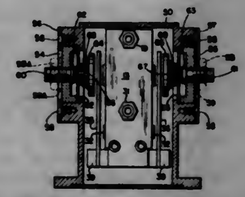
2. A cylindrical capacitor comprising in combination: a first closed cylindrical electrode member having a first length, a first diameter and being comprised of a single material having a first coefficient of thermal expansion; a second closed cylindrical electrode member mounted in concentric relationship with respect to the first electrode member, and having a second length greater than the first length, a second diameter and being comprised of a single material having a second coefficient of thermal expansion greater than the first coefficient of thermal expansion, the first and second coefficients of thermal expansion being such that the rtaio of the first and second diameters changes with temperature in a way to at least partly compensate for the change in the first length with temperature.

3,192,456

VIBRATORY CAPACITORS

Harry Reifel, Waltham, and Gerald Karon, Randolph, Mass., assignors to Stevens-Arnold Inc., Boston, Mass.

Filed Jan. 27, 1961, Ser. No. 85,416
3 Claims. (Cl. 317—250)



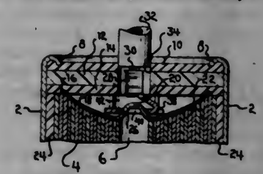
1. A vibratory capacitor comprising a base, a plate of magnetic spring metal supported at one end to said base, the other end of said plate being free, a fixed capacitor plate opposite one side of said free end, electromagnetic means opposite the opposite side of said free end for vibrating said first mentioned plate, a housing around said plates, said electromagnetic means and said base, said housing having a circular opening in one side opposite said fixed plate, an electric insulator supported in said opening, a first coupling capacitor plate having a cylindrical portion opposite to, aligned with, and slightly spaced from said insulator, means supporting said coupling capacitor plate from said housing, a second coupling capacitor plate having a cylindrical portion with a diameter smaller than that of said first mentioned cylindrical portion, within and spaced from said first mentioned cylindrical portion, and means extending through the center of said insulator for supporting said fixed and said second coupling capacitor plates from said insulator and electrically connecting said fixed plate and said second coupling capacitor plate.

3,192,457

ELECTRICAL CONTACT ASSEMBLY FOR ELECTRICAL CONDENSERS

David Robert Crockett, Orpington, and Leslie Harris, Boreham Wood, England, assignors to AMP Incorporated, Harrisburg, Pa.

Filed May 1, 1962, Ser. No. 191,609
Claims priority, application Great Britain, May 11, 1961, 17,165/61
5 Claims. (Cl. 317—260)



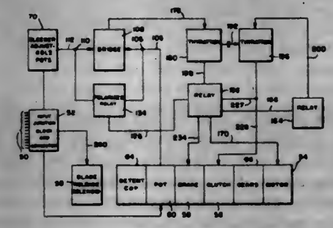
1. An electrical condenser comprising a tubular metallic casing closed at one end, a capacitor body of rolled strip material in the casing, a first set of capacitor plates formed by the material and being in electrical connection with the closed end, a second set of capacitor plates axially displaced from the first set, a metallic dish in electrical connection with the plates of the second set and being disposed between the capacitor body and the other end of the casing, a seal having an aperture therethrough disposed between the dish and the other end of the casing, a curled rim on the other end of the casing having a free edge in engagement with the seal, an electrical connector disposed between the seal and the dish, a ferrule-forming portion on the connector, an electrical wire extending through the aperture of the seal and being secured within the ferrule-forming portion, an annular edge on the dish extending into the seal, said dish having locating means thereon, and a contact portion on the connector, the contact portion lying within the dish and engaging the locating means of said dish to locate the connector relative to the dish.

3,192,458

HIGH SPEED AUTOMATIC SHUTTER MECHANISM AND CONTROL

Theodore W. Batterman and Mathew Pobog, Danville, Ill., assignors to Electric Eye Equipment Company, Danville, Ill., a corporation of Delaware

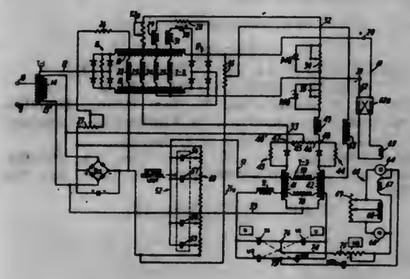
Original application Sept. 30, 1958, Ser. No. 764,331. Divided and this application Sept. 23, 1960, Ser. No. 57,985
11 Claims. (Cl. 318—28)



1. In a device of the character described, and which includes a rotatable shaft whose position it is desired to control; an electric motor adapted for forward and reverse rotation, an electric clutch which when energized will couple the motor to said shaft, and a potentiometer including a rotatable element coupled to said shaft and adapted to provide a voltage the value of which is related to the radial disposition of said shaft; means for controlling the operation of said motor and clutch to rotate said shaft to a pre-determined position, which comprises: a voltage divider, means for tapping into said divider at a position therealong representing said pre-determined position of said shaft, a rectifying bridge having first and second opposite input terminals connected, respectively, to the voltage of said tap and of said rotatable element applied in balancing opposition thereto, a polarized circuit-establishing device connected across balance terminals of said bridge and energized only when there is an unbalance of voltages respectively applied to said opposite terminals and providing an unbalance current the direction of which depends upon the direction of unbalance, a current make-break device having at least two output paths, one of which is directly to said clutch and the other of which is to said motor and having delayed switch means therein, the polarized circuit-establishing device being connected to initiate operation of said make-break device irrespective of polarity of said unbalance current whereby to activate said output paths, and said circuit-establishing device also being connected to said delayed switch means, whereby when said latter means

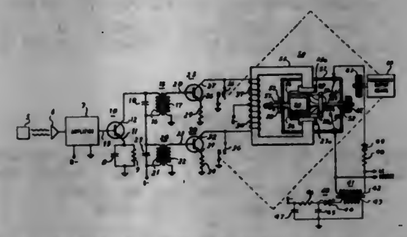
is activated by said make-break device, said motor will be energized, but only after a delay, to rotate in a direction depending upon the polarization of said current, and only so long as there is an unbalance.

3,192,459
LOAD-RESPONSIVE MOTOR GENERATOR FIELD CONTROL CIRCUIT
Paul Richards, Roselle, N.J., and Alfred A. Wolf, York, Pa., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware, and Fidelity Instrument Corporation, York, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1961, Ser. No. 133,471
1 Claim. (Cl. 318—144)



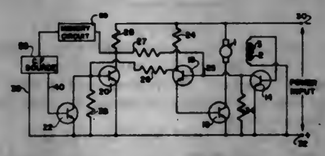
A motor generator field control system comprising first magnetic amplifier means providing an output voltage and including a control winding, means providing a signal representative of the output voltage of the first magnetic amplifier means, reference voltage means producing a reference voltage signal representative of a desired output voltage from the system, bridge network means including second magnetic amplifier means forming two arms of the bridge and having a first control winding responsive to differences between the reference voltage signal and the signal representative of the first magnetic amplifier output voltage, circuit means coupling the output of the bridge network means to the control winding means of the first magnetic amplifier means, a second control winding in the second magnetic amplifier means, means for applying to the second control winding a control signal which varies in accordance with a load driven by a motor of a motor generator set to which the first magnetic amplifier means output voltage is applied, means controlled in accordance with the direction of rotation of the motor to control the direction of application of the control signal to the second control winding of the second magnetic amplifier means, and means for adjusting the magnitude of the control signal applied to the control winding so as to cause the motor to operate at the same speed in both directions with a given load applied in one direction to the motor, including two variable impedance devices connected in series in the circuit means coupling the output of the bridge network means to the control winding means of the first magnetic amplifier means and two unidirectional current conducting devices, one shunting each of the impedance devices, connected in opposed directions in the circuit means, thereby regulating the rate of change of signals applied to the control winding means of the first magnetic amplifier means.

3,192,460
REVERSIBLE D.C. MOTOR WITH AXIALLY SHIFTABLE ROTOR
Robert A. Wolff, La Grange Park, and Reuben C. Carlson, Bensenville, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1961, Ser. No. 105,492
7 Claims. (Cl. 318—300)



7. In combination: receiving means having an input circuit and an output circuit; means for energizing said input circuit responsive to receipt of a control signal having predetermined characteristics, said input circuit upon energization energizing said output circuit; a direct current motor including an armature mounted for both rotational and axial movement; a commutator secured to said armature; a pair of brushes; a source of direct current; an armature circuit including said armature, said brushes, said commutator, said direct current source and interruption means; a field structure for generating a magnetic field traversing said armature; an energizing winding connected in flux producing relationship with said field structure and being included in said output circuit; means for mechanically urging said armature out of said field of said field structure to a position such that said interruption means interrupts said armature circuit; said armature being moved against said means for mechanically urging, upon energization of said field structure by said output circuit, whereby said interruption means completes said armature circuit and said armature is caused to rotate.

3,192,461
PULSE FED MOTOR SYSTEM INCLUDING MEMORY CIRCUIT
Jack C. Hohne, Jr., Tipp City, Ohio, assignor to Globe Industries, Inc., Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 738,776, May 29, 1958. This application Aug. 20, 1962, Ser. No. 221,651
6 Claims. (Cl. 318—318)



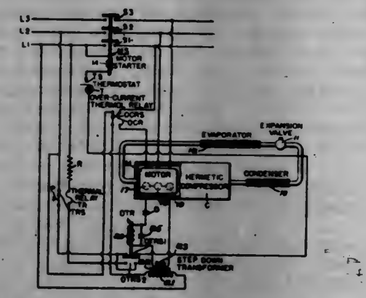
1. A speed control system for applying variable duration power pulses to a motor comprising: an oscillator normally producing pulses at a pre-set rate, a feedback pulse producer generating pulses at a rate corresponding to the motor speed, means for energizing said motor with power pulses having a time duration proportional to the phase difference between said successive oscillator pulses and feedback pulses and for shutting off power for the balance of time duration, a memory circuit responsive to the duration of power pulses exceeding the preset period of said oscillator for delaying the following pulse produced by said oscillator until just after the next succeeding feedback pulse is produced, thereby to controllably vary the frequency and phase of the oscillator produced pulses into synchronism with those of the feedback pulses until the motor has reached a predetermined speed related to the pre-set frequency of the oscillator.

3,192,462
SCR FED MOTOR CONTROL SYSTEM
Robert L. James, Bloomfield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,760
7 Claims. (Cl. 318—345)



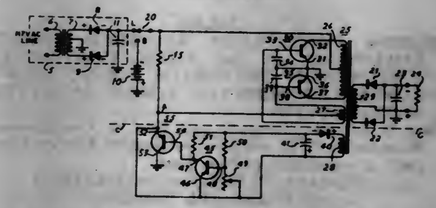
1. A circuit for proportionally controlling the operation of an electric motor from a power source in accordance with a signal, comprising a controlled rectifier connected to the motor and source and having a gating terminal, a pulse forming circuit including a unijunction transistor connected to the gating terminal, a capacitor connected to the unijunction transistor and adapted to discharge through the unijunction transistor for providing pulses, and pedestal means for rapidly charging the capacitor and rider means for slowly charging the capacitor in accordance with the signal in each half cycle of positive anode supply voltage of the controlled rectifier so that the capacitor discharges through the unijunction transistor for providing pulses to the controlled rectifier at a time in each said half cycle corresponding to the amplitude of the signal for rendering the controlled rectified conducting during the remainder of the half cycle to energize the motor in accordance with the signal.

3,192,463
CONTROL CIRCUITS FOR ELECTRIC MOTORS
William K. Kyle, Staunton, Va., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1962, Ser. No. 182,540
12 Claims. (Cl. 318—473)



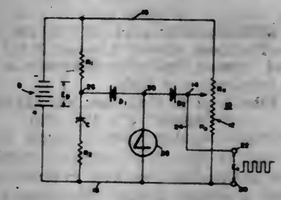
1. A control circuit for an electric motor comprising electric supply connections, a starter for said motor having switching means for connecting said motor to said connections, a thermostat having a switch, a circuit breaker having a normally closed switch which opens when said breaker is connected to said connections and which has to be reclosed manually after it opens, a second normally closed switch, a normally open switch, means including said thermostat switch, when closed, and said closed switches for connecting said starter to said connections, means including said open switch, when closed, and said breaker switch for connecting said breaker to said connections, and means including means responsive to an abnormal condition of said motor for opening said second switch and for closing said open switch when said abnormal condition occurs.

3,192,464
TRANSISTORIZED REGULATED D.C.-D.C. CONVERTER
Arthur R. Johnson, Des Plaines, Ill., and Ove E. Petersen, Holte, Denmark, assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1961, Ser. No. 105,338
6 Claims. (Cl. 321—2)



4. A D.C. to D.C. converter of the type having a pair of transistors connected with their output circuits connected across respective halves of a first winding on a saturable transformer, and their input circuits connected across respective halves of a feedback winding on said transformer, means for energizing said output circuits through said first winding from a source of direct current potential, said transistors being selectively driven conductive and nonconductive responsive to saturation of said transformer to produce an alternating current voltage across said first winding, the improvement comprising; a control winding magnetically coupled to said transformer; a rectifier circuit connected across said control winding for developing a direct current control potential related to the said alternating current potential; a first control transistor arranged to amplify and invert said control potential; a second control transistor having an input circuit coupled to said first control transistor and an output circuit connected in common with said respective halves of said feedback winding whereby variations in the impedance of said second control transistor output circuit are effective to vary the translation characteristics of said pair of transistors, said control potential also supplying operating voltage for said first control transistor.

3,192,465
SQUARE WAVE GENERATOR
Hans Keller, Gundelfingen, Germany, assignor to Clevite Corporation, a corporation of Ohio
Filed Nov. 28, 1962, Ser. No. 240,555
Claims priority, application Germany, Dec. 8, 1961, J 20,982
7 Claims. (Cl. 321—44)



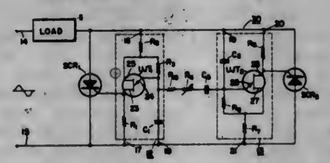
1. A square wave generator comprising: a voltage divider network having first and second ends adapted for connection to respective terminals of a D.-C. voltage source and having an intermediate tap constituting the voltage division point; a pair of asymmetrical resistance devices connected in series with oppositely directed polari-

ties, one terminal of one of said devices being connected to said voltage-divider tap; resistive impedance means connecting the other terminal of the other of said asymmetrical resistance devices to the first end of said voltage divider network; means including a capacitor coupling said other terminal of said other asymmetrical resistance device to the second end of said voltage divider network; and a four-layer diode having one terminal connected between said asymmetrical resistance devices and its other terminal connected to said second end of the voltage divider network.

3,192,466
SILICON CONTROLLED RECTIFIER CIRCUIT EMPLOYING AN R-C PHASE CONTROLLED UNIJUNCTION TRANSISTOR FIRING MEANS CONNECTED DIRECTLY ACROSS AN ALTERNATING SUPPLY

Tage P. Sylvan, Liverpool, and Etto E. Von Zastrow, Skaneateles, N.Y., assignors to General Electric Company, a corporation of New York

Filed Oct. 23, 1961, Ser. No. 146,732
10 Claims. (Cl. 323—22)



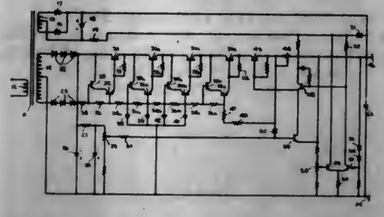
4. A control circuit comprising an alternating current supply, a pair of input terminal leads connected with said alternating current supply, a controlled rectifier having an anode, cathode and gate electrode, said anode and cathode electrodes being connected in circuit across said input terminal leads, a unijunction transistor having a base-one, a base-two and an emitter electrode, said base-one and base-two electrodes being connected in circuit across said input terminal leads, said unijunction transistor being triggered when the emitter voltage reaches a predetermined fractional part of the voltage of the interbase voltage, a capacitor connected in circuit with said emitter electrode and said base-one electrode, circuit means connecting said base-one electrode in circuit with the gate of said controlled rectifier so that when said unijunction transistor is triggered, a firing pulse is supplied to the gate of said controlled rectifier, and a potentiometer connected in circuit with said capacitor and one of said input leads whereby the phase displacement and amplitude of voltage across the capacitor can be varied to cause the emitter voltage of said unijunction transistor to reach said predetermined fractional part of the interbase voltage at a selected point in the half cycle and thereby fire the controlled rectifier.

3,192,467
TRANSISTOR-REGULATED POWER SUPPLY

Albert J. Baracket, Cedar Grove, N.J., assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio

Filed Sept. 5, 1962, Ser. No. 221,460
6 Claims. (Cl. 323—22)

1. A transistor-regulated power supply comprising: a rectifier circuit; a first series regulator transistor having its collector and emitter connected in series with said rectifier circuit; a voltage divider comprising a plurality of resistors connected in parallel with the collector and emitter of said transistor; a second transistor having its base connected to a junction between said resistors to be actuated by voltage changes at said junction, the emitter of said second transistor being connected to the base of said first transistor to control the impedance between said emitter and collector thereof; and a third transistor having its collector connected to the collector of said first transistor to be energized by current from said rectifier circuit and having its base connected to a second junction between resistors of said voltage divider to be actuated

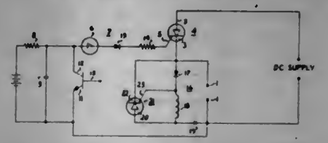


by voltage changes at said second junction, the emitter of said third transistor being connected to the collector of said second transistor to assist in controlling the current through said second transistor to the base of said first transistor.

3,192,468
DIRECT CURRENT CONTROLLED RECTIFIER SYSTEM

James L. Buchanan, John R. Swanson, and William B. Zelina, Erie, Pa., assignors to General Electric Company, a corporation of New York

Filed Nov. 15, 1962, Ser. No. 237,796
10 Claims. (Cl. 323—22)



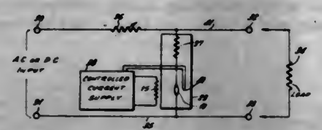
2. In a controlled rectifier system including a solid-state controlled rectifier having an anode, a cathode and a control electrode; a load circuit; means for connecting said load circuit and the anode-cathode elements of said controlled rectifier in series with a source of direct current voltage, and means for applying a gating signal to said control electrode operative to initiate conduction in said controlled rectifier, the combination with said system comprising: commutating circuit means operative to render said controlled rectifier nonconducting a fixed time after initiation of conduction therein, said means including the series combination of rectifying means and a series resonant inductance-capacitance circuit shunting said load circuit, a second solid-state controlled rectifier having an anode, a cathode and a control electrode adapted for discharging said capacitance into said load circuit and reverse biasing said first controlled rectifier, and means for applying the energy stored in said capacitance to said control electrode to initiate conduction in said second controlled rectifier at a time after initiation of conduction in said first controlled rectifier determined by the resonant frequency of said series resonant circuit.

3,192,469
VOLTAGE REGULATOR DEVICE

Meyer Sapoff, West Orange, and Robert M. Oppenheim, Colonia, N.J., assignors to Victory Engineering Corporation, Springfield, N.J., a corporation of Delaware

Filed Apr. 12, 1962, Ser. No. 186,927
6 Claims. (Cl. 323—68)

1. A voltage regulator device comprising, a pair of input terminals for the application of an electrical power supply, a pair of output terminals for connection to a load, a constant voltage circuit connected across the output terminals for maintaining the output voltage constant, said circuit including a resistor and a thermistor in series, said thermistor having a volt-ampere characteristic which includes a negative resistance portion, a sealed envelope containing said thermistor and a gas, an electrical heater

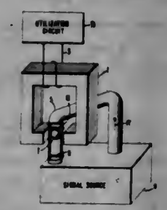


mounted on the outside of the envelope and the resistor for maintaining a constant temperature of the gas in the envelope, a source of electrical power connected to said heater; and connections from the input terminals to the output terminals, one of said connections including a series impedance.

3,192,470
FLUID-TO-ELECTRICAL TRANSDUCER

Walter G. Wadey, Bethesda, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 16, 1962, Ser. No. 209,876
13 Claims. (Cl. 323—89)



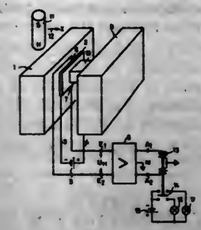
12. A fluid to electrical signal transducer comprising a magnetic core having an aperture in one portion thereof; a source for intermittently emitting fluid signals; means defining a path for fluid flow from said source through said aperture; a movable element the specific gravity of which is greater than the specific gravity of said fluid, said element being disposed within said path defining means and movable to a position in said aperture in response to fluid flowing from said source; means for stopping said movable element in said aperture; and sensing means coupled to said core.

3,192,471
HALL DEVICE TRANSMITTER INCLUDING A FIELD SIGNAL STORING FOIL IN THE MAGNETIC CIRCUIT

Friedrich Kuhrt and Julius Brunner, Nuraberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed July 27, 1961, Ser. No. 127,359
Claims priority, application Germany, Sept. 29, 1960, S 70,629
3 Claims. (Cl. 324—45)

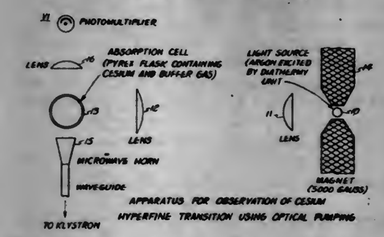
1. A signal transmitter for response to proximity of a magnet, comprising ferromagnetic structure of low-remanence material forming a path for magnetic flux due to proximity of said magnet, said ferromagnetic structure comprising spaced ferromagnetic plates, a Hall plate for generating a Hall voltage signal, said Hall plate being disposed adjacent one of said ferromagnetic plates between said ferromagnetic plates in said flux path and having an input current-supply circuit and Hall voltage output electrodes for providing said Hall-voltage signal between said electrodes, and a bridge member of high-remanence material forming an isthmus in said flux path, said bridge member including a foil of high remanence material adjacent the other of said ferromagnetic plates, said bridge member having one end in contact with said Hall plate and its opposite spaced end in contact with said foil.



3,192,472
ALKALI VAPOR FREQUENCY STANDARD UTILIZING OPTICAL PUMPING

Peter L. Bender, Takoma Park, and Earl C. Beaty, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of Commerce

Filed Apr. 14, 1959, Ser. No. 806,408
13 Claims. (Cl. 324—58.5)

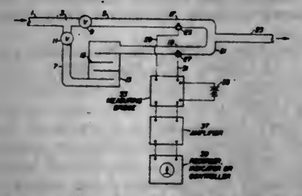


1. In a frequency stabilization system, an improved system for providing an extremely stable precision reference frequency comprising means for irradiating a first nuclear species with light from a source providing substantial intensity at only one hyperfine component of the optical absorption lines in said first nuclear species, means for detecting the occurrence of hyperfine transitions in said first nuclear species which are to the first order independent of a magnetic field, said detecting means comprising means for radiating said first nuclear species with microwave energy and means for monitoring the light absorbed by or scattered by said first nuclear species.

3,192,473
METHOD AND APPARATUS FOR DETECTING CHANGES IN COMPOSITION OF LIQUID FLOWING THROUGH A PIPE LINE

Glenn A. Marsh, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

Filed Dec. 5, 1960, Ser. No. 73,735
13 Claims. (Cl. 324—61)



6. Apparatus for detecting change in composition of liquid flowing through a pipe line consisting of a pair of

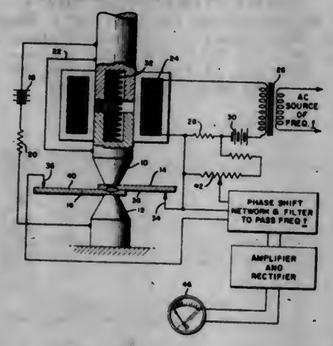
parallel conduits in liquid communication with said line, means connected to one of said conduits for producing a predetermined delay in flow therethrough of liquid having its original composition as compared to flow of liquid of the same composition through the other conduit, throttling valves in the upstream end of said branches, and means for detecting a difference in the same physical property of the liquid, in each of said conduits at substantially the same point downstream of said means for producing delay in flow of liquid whereby said difference indicates a change in liquid composition passing through said pipe line.

3,192,474

METHOD AND APPARATUS FOR DETERMINING THE QUALITY OF A WELD OR SOLDER JOINT BY MEASUREMENT OF THE DYNAMIC RESISTANCE OF THE JOINT

Lloyd B. Cherry, Beaumont, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 30, 1961, Ser. No. 99,573
19 Claims. (Cl. 324—65)



1. The method of testing a metal bonded connection which includes the steps of impressing a cyclically varying pressure on a metal bonded connection, and detecting any variation in the resistance across the connection resulting from the pressure variation.

10. Apparatus for testing a metal bonded connection comprising electrode means adapted to exert a pressure on the metal bonded connection, a source of direct current connected in series with said electrode means to pass a substantially constant current through the connection, means cooperating with said electrode means to produce a cyclical variation in the pressure thereof on the connection, and means for detecting any potential variation across the connection resulting from the pressure variation.

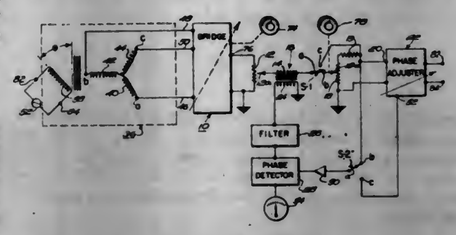
3,192,475

BRIDGE APPARATUS FOR MEASURING THE ELECTRICAL ANGLE OF A ROTATING TRANSFORMER AND INCLUDING DIAGONAL BRANCH NULLING MEANS

Edgar Rice, Wayne, and Stanley Handelman, Emerson, N.J., assignors to Theta Instrument Corporation, East Paterson, N.J.

Filed Mar. 7, 1960, Ser. No. 13,214
11 Claims. (Cl. 324—158)

1. An instrument for measuring the electrical angle of a rotating transformer such as a synchro or the like having a primary winding and a plurality of secondary windings, said instrument comprising, in combination, a bridge, said bridge having a plurality of input terminals and a plurality of impedance arms, means connecting said secondary windings to said input terminals, a pair of contacts connected to said arms, means for varying the position of at least a first one of said contacts to provide step-by-step variations of the electrical angle of said transformer at which there is a null in the bridge output voltage between said contacts, first indicating means responsive to the position of said first contact, a reference source supplying a reference potential, means other than said transformer for varying the output voltage of said bridge independently of the position of said bridge contacts and means for adjusting the difference between said reference voltage and said bridge output voltage as modified by said voltage varying means, second indicating means responsive to the position of said difference adjusting means, and means for comparing said reference voltage with said bridge output voltage as modified by said voltage varying means.

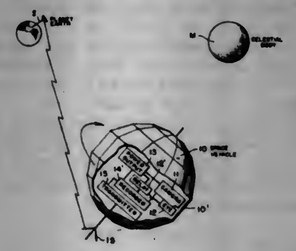


3,192,476

METHOD AND SYSTEM FOR OBTAINING DATA REGARDING THE SURFACES OF CELESTIAL BODIES

Harold D. Nuffer, China Lake, and Richard G. McCarty, Santa Barbara, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Nov. 2, 1962, Ser. No. 235,165
6 Claims. (Cl. 325—15)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a telemetering system for scanning the surface of a light-reflecting body disposed in space and relaying the information thus obtained to a remotely disposed receiver, the combination comprising:

a hollow payload revolving about its own axis and having a scanning window therein for intermittently facing the body during each revolution of the payload;

an operative power supply for the payload;

an operable, light-responsive signal producing scanning means disposed adjacent said window;

a payload signal transmitter;

an endless recording tape;

an information recording station for receiving a portion of said tape;

a recording means connected with said scanning means and located at said recording station including a tape feeding means for intermittently feeding and recording on said tape at a given first rate the signals produced by said scanning means;

an information retrieval station displaced from recording station;

play-back means including a tape feeding means operable at a continuous and substantially reduced second rate for continuously retrieving the intermittently recorded information from the tape and feeding it to said transmitter for continuous transmission;

a tape feeding control system including a reflected light responsive device disposed adjacent said window and connected with a relay circuit arranged between the power-supply and the tape feeding means adapted to be energized in response to light reflected from the body for closing said relay between the tape feeding means and the power-supply for thus intermittently initiating and maintaining an operation of the tape feeding means for that portion of each revolution of the payload during which said window faces said body; and

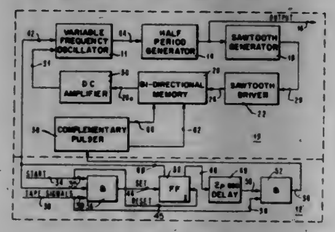
continuously operable means including a continuously operable tape advancing means arranged at the retrieving station for controlling the rate of retrieval of the information so that the information recorded during said portion of each revolution of the payload may be transmitted continuously at a reduced rate substantially throughout a single revolution of the payload.

3,192,477

GATED VARIABLE FREQUENCY OSCILLATOR

Peter I. Prentky, Wappingers Falls, and Harold Zibkoff, Brooklyn, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 13, 1961, Ser. No. 82,478
4 Claims. (Cl. 328—39)



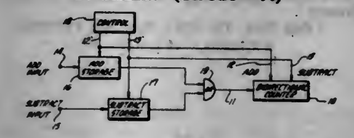
1. In a control circuit for a variable frequency oscillator responsive to magnetic tape signals, an oscillator which is held in its off condition by the application of a positive potential thereto, a bistable element, a connection between said oscillator and said bistable element for delivering a control potential from the latter to the former, a terminal for receiving a steady signal during the reading of magnetic tape record, a connection between said terminal and said bistable element whereby said bistable element is switched to deliver a positive potential to said oscillator, a coincidence circuit, an input connection between said terminal and said coincidence circuit, a second terminal for receiving magnetic tape generated signals, an input connection between said second terminal and said coincidence circuit, a connection between said coincidence circuit and said bistable element whereby said bistable element is switched to deliver a negative potential to said oscillator upon coincidence of signals on said input connections of said coincidence circuit, an input connection from said bistable element to said coincidence circuit whereby said coincidence circuit is deconditioned when its output switches said bistable element, a second coincidence circuit, a connection between said bistable element and said second coincidence circuit for delivering a conditioning potential to said second coincidence circuit when said bistable element is switched by the output of said first coincidence circuit, an input connection between said second coincidence circuit and said second terminal, and an output connection between said second coincidence circuit and an element of said control circuit.

3,192,478

BIDIRECTIONAL COUNTER ADAPTED FOR RECEIVING PLURAL SIMULTANEOUS INPUT SIGNALS

George F. Metz, Goffstown, N.H., assignor to Beckman Instruments, Inc., a corporation of California

Filed Oct. 26, 1962, Ser. No. 233,369
14 Claims. (Cl. 328—44)



1. Apparatus for adapting a bidirectional counter having a counting input to simultaneously accept two inputs representing opposite algebraic signs comprising:

means for generating mutually exclusive clock pulses at first and second outputs thereof,

means connecting said clock pulse generator means to said bidirectional counter for alternately switching said counter to opposite counting modes,

first and second bistable means each having a first input for triggering said bistable means to its first stable state, a second input for triggering said bistable means to its second stable state, and an output for providing an output pulse when said bistable means changes from its first to second stable state,

means for connecting an ADD input terminal to the first input of said first bistable means,

means for connecting a SUBTRACT input terminal to the first input of said second bistable means;

means for connecting the first and second outputs of said clock pulse generator means to respective second inputs of said first and second bistable means, and

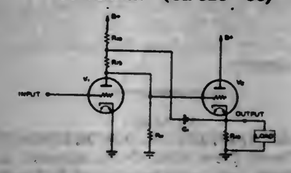
means for connecting the outputs of said first and second bistable means to the counting input of said bidirectional counter.

3,192,479

CATHODE FOLLOWER OUTPUT CIRCUIT

Ferdinand G. von Kummer, Norwalk, Conn., assignor to Sperry Rand Corporation, a corporation of Delaware

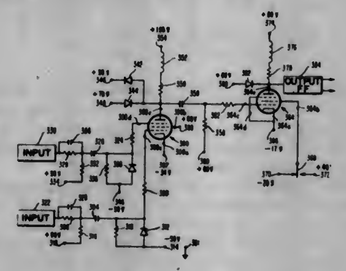
Filed June 20, 1955, Ser. No. 516,375
16 Claims. (Cl. 328—58)



1. An electronic output circuit for driving a capacitive load with a signal comprising a first electron discharge tube having an anode, cathode and control grid, a resistor connected in the cathode circuit of said first tube, said capacitive load being connected across said cathode resistor, a second electron discharge tube having an anode, cathode and control grid, a first resistor connected to the anode of said second tube, a second resistor connected to said first anode resistor and the anode supply of said second tube, coupling means connecting the anode of said

second tube to the grid of said first tube, and unidirectional conductive means connected between said first and second resistors in the anode circuit of said second tube and the cathode of said first tube to provide a conductive path through said second tube when said first tube is cut off by a negative going signal.

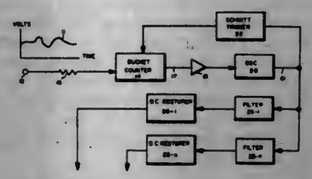
3,192,480
COMPATIBILITY CIRCUIT FOR ACCOMMODATING MACHINES OF DIFFERENT MEMORY STORAGE CAPACITIES EMPLOYING PENTODE AS GATED-AMPLIFIER
James Emmett Clayton, Ambler, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 16, 1961, Ser. No. 152,759
6 Claims. (Cl. 328—91)



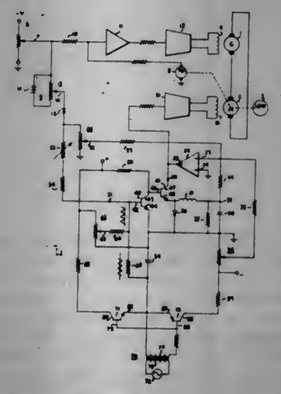
1. In combination,
first pulse producing means characterized by a predetermined cycling period,
second pulse producing means characterized by a different predetermined cycling period,
the cycling periods of said first and second pulse producing means so related that said pulse producing means produce coincident pulses at predetermined times,
first valve means connected to each of said first and second pulse producing means,
said first valve means adapted to reside in a first conduction state until switched to another conduction state by the simultaneous application of pulses by said first and second pulse producing means,
second valve means,
means connecting said first and second valve means together so that the change in conduction state of said first valve means may be sensed by said second valve and output signals selectively produced thereby,
and switching means connected to said second valve means to control the conduction state thereof thereby selectively controlling the production of output signals thereby.

3,192,481
SIGNAL AMPLITUDE DISCRIMINATOR
Ralph M. Pincus, New York, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,372
6 Claims. (Cl. 328—151)

1. A voltage level discriminator comprising,
equating means equating a unidirectional voltage to the frequency of an alternating current having an alternating current input, a direct current input and a direct current output,
means for connecting said direct current input to an independently variable source of direct current voltage,
a high-gain direct current amplifier connected to said direct current output,
an oscillator responsive to the amplifier direct current output for providing an output having a frequency corresponding to the amplifier output,
alternating current constant peak-to-peak feedback means connecting the oscillator output to the alternating current input of said equating means whereby said equating means provides a control output through the amplifier to said oscillator for causing said oscillator frequency to vary as a linear function of the direct current input voltage, and
means responsive to said oscillator output for providing an output at preselected frequencies.

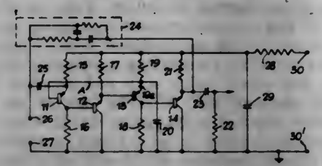


3,192,482
CIRCUIT FOR GENERATING AN INVERSE SIGNAL UTILIZING A MULTIPLIER CIRCUIT
James Long, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 10, 1962, Ser. No. 243,315
7 Claims. (Cl. 328—160)



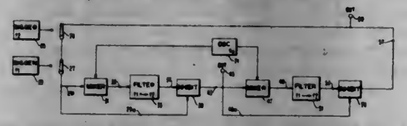
2. A multiplier circuit comprising: first and second switch means each having an effective open and closed operating condition; means arranging said first and second switch means in opposite operating conditions with the operating condition of said first switch means controlling the operating condition of said second switch means; means for applying a first electrical signal to be multiplied to said first switch means tending to change the operating condition thereof; means for applying a second electrical signal to be multiplied to said second switch means; and means for applying a time base signal to said first switch means operative to change the operating condition of said first switch means for a time during the cycle of said time base signal which is linearly proportional to said first electrical signal.

3,192,483
TRANSISTOR AMPLIFIERS INCLUDING D.C. FEEDBACK MEANS
John Somerset Murray, 7 Ranulf Road, London, England
Original application Apr. 30, 1958, Ser. No. 732,017. Divided and this application Apr. 3, 1963, Ser. No. 270,457
Claims priority, application Great Britain, May 2, 1957, 14,029/57
3 Claims. (Cl. 330—19)



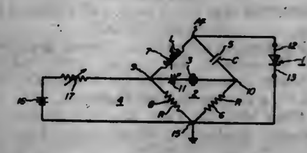
1. A transistor amplifier comprising a grounded-base first stage including a first transistor and collector resistance and emitter resistance therefor together with signal input means connected to the emitter thereof, at least one further, grounded-emitter stage comprising a further transistor and collector resistance and emitter resistance therefor together with signal output means connected to the collector thereof, D.C. conductive signal carrying means connected between the collector of the said first transistor and the base of the said further transistor, and a D.C. conductive feedback means connecting the base of the said first transistor to a point on the emitter resistance for the said further transistor, the said D.C. conductive signal carrying means and D.C. conductive feedback means constituting with the base-emitter path of the said further transistor a D.C. conductive connection extending from the collector to the base of the said first transistor and establishing the base-collector bias thereof and thereby the current level thereof, wherein the total D.C. resistance of the said signal carrying means and of the said feedback means is less than the input impedance which would be present at the base of the said first transistor if said first transistor were connected in a grounded emitter configuration and biased to the same current level.

3,192,484
FREQUENCY FLIP-FLOP
William N. Carroll, Rhinebeck, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 705,290, Dec. 26, 1957. This application Aug. 17, 1959, Ser. No. 835,382
5 Claims. (Cl. 331—39)



5. In combination with means for generating a number of different function signals characterized by respective different frequencies, a logical device having input means, means for selectively coupling said function-signal generating means to said input means, said logical device providing a number of different frequency output signals equal to the number of said function signals and related, respectively, to said different function signals; said logical device including means for generating a constant frequency signal and means for selectively heterodyning each said function signal with said constant frequency signal to provide, a unique output signal of distinct frequency characteristics including, at least, a frequency identical to that of the function signal, means for feeding back said unique output signal, to said input means and means for disconnecting said function signal generating means whereby said unique output signal of a distinct frequency is maintained.

3,192,485
TUNNEL DIODE FREQUENCY CONTROLLED OSCILLATOR
Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,649
11 Claims. (Cl. 331—107)

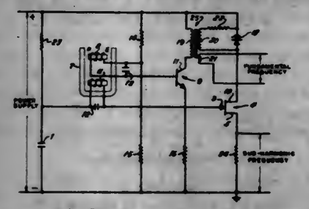


1. A frequency controlled oscillator comprising: a tunnel diode device means coupled to said tunnel diode device and establishing operation therefor in its negative resistance region; a bridge network connected across said tunnel diode device, said network having one current path including a capacitance equivalent to "(C)" farads and a resistance and another current path including an inductance equivalent to "(L)" henries and a resistance, each of said resistances having a value less than the absolute magnitude of the tunnel diode negative resistance; and a series resonant element connected within said bridge network between the junctions of said inductance resistance and capacitance resistance respectively, the values of said inductance and capacitance of said network being selected to provide that the frequency relationship

$$\frac{1}{2\pi\sqrt{LC}}$$

is different from the selected series resonant frequency of said element so that said oscillator output frequency is controlled by the series resonant frequency of said series resonant element and is effected in a predetermined manner by the series resistance thereof.

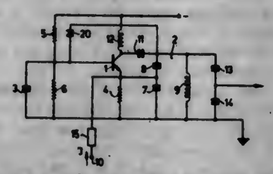
3,192,486
TUNING FORK REFERENCE OSCILLATORS WITH TIME DURATION CONTROL
Winston O. Faith, Garland, Tex., assignor to Varo, Inc.
Filed Oct. 2, 1961, Ser. No. 142,374
2 Claims. (Cl. 331—116)



1. A frequency generator comprising a tuning fork providing an output signal to initiate a pulse at a predetermined time in a cycle, a drive coil to cause the tuning fork to vibrate, a resistor and a capacitor in parallel with a source of direct current to start the frequency generator, the resistor and capacitor having a time constant equal to the time constant of the natural resonance of the tuning fork, a unijunction transistor to sustain oscillation of the tuning fork, said unijunction transistor having its emitter electrode connected between the resistor and capacitor through the ends of the drive coil, the drive coil having both of its ends connected to a tuning capacitor,

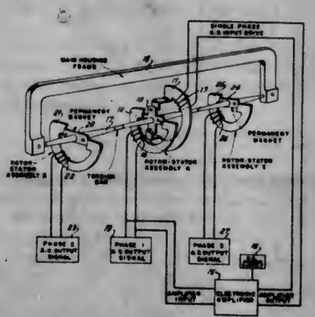
and the unijunction transistor having its base-one electrode connected to ground, a tuning fork output coil, and an NPN transistor for amplifying the signal generated by the output coil, said transistor having its base electrode connected to the output coil, its emitter electrode connected to ground through a bias resistor, and its collector electrode connected to the base-two electrode of the unijunction transistor and a load resistor, the output coil having both of its ends connected to a tuning capacitor.

3,192,487
TRANSISTOR OSCILLATOR CONTROLLABLE IN FREQUENCY
Johannes Noordanus and Marie Marcel Antoine Arnold Ghislain Verstraelen, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 18, 1960, Ser. No. 29,876
Claims priority, application Netherlands, May 23, 1959, 239,492
5 Claims. (Cl. 331—117)



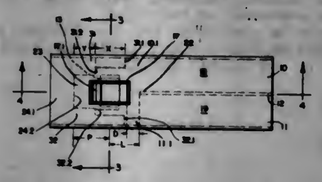
1. An oscillator comprising a transistor having emitter, base and collector electrodes, means providing a bias voltage between said base and emitter electrodes, resonant circuit means connected between said emitter and collector electrodes in a positive feedback arrangement and proportioned to produce oscillations of sufficient amplitude at the collector electrode to cause the total collector current of said transistor to invert its polarity during a portion of each cycle of said oscillations, said bias voltage having a magnitude that permits emitter current in said transistor during only a part of each said cycle, and means for varying said bias voltage whereby the frequency of said oscillations is varied.

3,192,488
MULTIPHASE ELECTROMECHANICAL OSCILLATOR
Winston O. Faith and Robert L. Marcucci, both of Garland, Tex., assignors to Varo, Inc.
Filed Oct. 10, 1961, Ser. No. 144,109
2 Claims. (Cl. 331—154)



1. A multiphase electromechanical oscillator comprising a housing, a torsion spring shaft rigidly secured at its ends within the housing, and a number of rotor-stator assemblies: the first roto-stator assembly, including a rotary inertia wheel having four radiating arms mounted on the torsion spring shaft, permanent magnets disposed in the arms of the rotary inertia wheel, two magnetic pole pieces attached to the housing, electromagnetic coils wound around the magnetic pole pieces, and an electronic amplifier; and the other rotor-stator assemblies each including a permanent magnet mounted on the torsion spring shaft, a magnetic pole piece attached to the housing, and an electromagnetic coil wound around the magnetic pole piece; wherein the output of the electronic amplifier of the first rotor-stator assembly supplies alternating current to one of the electromagnetic coils of the first rotor-stator assembly establishing a magnetic field in the magnetic pole piece which such coil entwines thereby alternately repelling and attracting one of the permanent magnets disposed in the rotary inertia wheel causing the rotary inertia wheel to try to rotate alternately clockwise and counterclockwise as a result of which oscillation is imparted to the other permanent magnet disposed in the rotary inertia wheel and a magnetic field is generated in the other magnetic pole piece of the first rotor-stator assembly which in turn generates an alternating current in the electromagnetic coil entwining said magnetic pole piece which alternating current is used as the input to the electronic amplifier and provides the phase 1 A.C. output signal; and wherein the permanent magnets of the other rotor-stator assemblies being mounted on the torsion spring shaft are each twisted as the rotary inertia wheel of the first rotor-stator assembly rotates so that a rotation of the permanent magnets of the other rotor-stator assemblies delayed in time with respect to the rotation of the rotary inertia wheel of the first rotor-stator assembly is produced and the rotary oscillation of each such permanent magnet generates a magnetic field in the magnetic pole piece of its rotor-stator assembly which in turn generates an alternating current in the electromagnetic coil entwining such magnetic pole piece which alternating current provides another phase A.C. output signal.

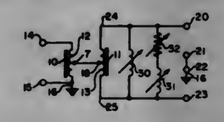
3,192,489
ORTHOGONAL HYBRID T FOR MICROWAVE WAVEGUIDES
Richard M. Walker, Roxbury, and Nicholas P. Kerawala, Arlington, Mass., assignors to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts
Filed Sept. 15, 1961, Ser. No. 138,509
8 Claims. (Cl. 333—11)



1. A waveguide junction comprising first and second parallel rectangular guides having a common narrow wall, a third rectangular guide branchingly connected to one pair of the adjacent non-common coplanar wide walls of said first and second guides at the same ends and electrically communicating with and opening into said first and second guides, said third guide positioned with respect to said first and second guides to propagate only transverse electric waves mutually out-of-phase in said first and second guides, a fourth rectangular guide branchingly connected to the remaining pair of the adjacent non-common coplanar wide walls of said first and second guides at the same said ends and electrically communicating with and opening into said first and second guides, said fourth guide positioned with respect to said first and second guides to propagate only transverse electric waves

mutually in-phase in said first and second guides, said third and fourth guides extending in opposite directions from said ends of said first and second guides along a common axis substantially perpendicular to the axes of said first and second guides, and a common conductive closure for said ends, said common wall terminating a distance away from said closure to provide an open region common to all said guides, said common region being traversed by said common axis, the wide dimension of said common region being progressively reduced, from the termination of said common wall to said closure, to provide that the TE_{02} mode substantially will not propagate in said common region.

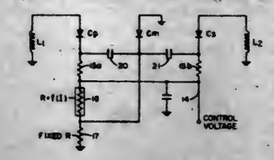
3,192,490
HYBRID NETWORK HAVING INTERCONNECTED CENTER TAPPED AUTOTRANSFORMER WINDINGS
George E. Petts 3rd, Cape St. Claire, and Franklin G. Lee, Catonsville, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1962, Ser. No. 219,067
8 Claims. (Cl. 333—11)



1. A wide band transformer hybrid network comprising, a source of reference potential, an input transformer having a tapped winding, an output transformer having a tapped winding, input means including a pair of terminals connected across the winding of said input transformer with one terminal also connected to said source of reference potential, means connecting the tap of said input transformer to the tap of said output transformer, first output means including a pair of terminals with one terminal connected to said source of reference potential and the second terminal connected to a first portion of the output transformer winding other than the winding tap, second output means including a pair of terminals with one terminal connected to said source of reference potential and the other terminal connected to a second portion of the output transformer other than the winding tap and said first portion, means connected to said output transformer to compensate for the open circuit inductance of said input transformer, and means connected to said output transformer to compensate for the leakage inductance of said input transformer and to balance the resistive portion of the impedance connected to said input transformer.

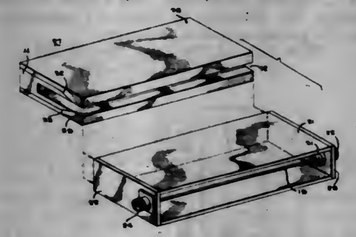
3,192,491
TUNEABLE DOUBLE-TUNED CIRCUITS WITH VARIABLE COUPLING
Robert J. Hesselberth, Rochester, and Floyd A. Koontz, Penfield, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Dec. 6, 1962, Ser. No. 242,663
4 Claims. (Cl. 333—17)

1. In a double-tuned band-pass filter, a tuneable primary circuit including a first condenser, a tuneable secondary circuit including a second condenser, the Q of said circuits being substantially equal, means for varying the capacity of said first and second condensers as a function of frequency in unison for tuning said circuits, a third condenser connected in common with said primary and secondary circuits for coupling said circuits, and means for varying the capacity of said third condenser as a non-linear function of frequency different from said first-named function whereby to vary coefficient of coupling,



K, as said circuits are tuned throughout a predetermined range of frequencies so that the bandpass of said filter remains constant over said range.

3,192,492
VARIABLE DIELECTRIC PHASE SHIFTER
Frank X. Linder, Eau Gallie, Fla., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Apr. 25, 1961, Ser. No. 105,501
8 Claims. (Cl. 333—31)

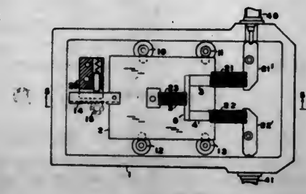


1. A variable microwave phase shifter comprising a pair of mutually insulated elongated conductors, an elongated dielectric material disposed between said conductors, means for coupling microwave energy to said conductors so the energy propagates longitudinally of said conductors, every cross section of said dielectric at right angles to the energy propagation direction gradually varying in width from one predetermined amount to a second predetermined amount between said pair of conductors, said dielectric being translatable at will relative to one of said conductors in the direction at right angles to the direction of energy propagation, the other of said conductors being mounted for translation with the variable width portion of said dielectric relative to said one conductor in the direction at right angles to the direction of energy propagation to simultaneously change the amount of dielectric between said conductors and the relative spacing of the conductors in the same manner and thereby, gradually vary the capacity and inductance between said conductors at every cross section of said dielectric in the same manner in response to translation of said dielectric.

3,192,493
VARIABLE ATTENUATOR
Glyn Bostick, Syracuse, N.Y., assignor to Radar Design Corporation, Syracuse, N.Y.
Filed May 24, 1961, Ser. No. 112,298
4 Claims. (Cl. 333—81)

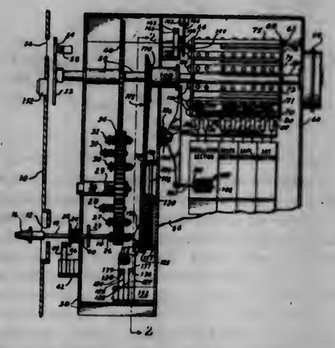
1. A direct reading variable attenuator parallel plate transmission line comprising a flat hollow metal casing, a plate of insulating material slidably mounted in said casing, calibrated knob means connected to move said plate, said plate having input and output resistance portions each equal to a predetermined characteristic load impedance in series and a triangular center shunt resistance portion, input and output brushes adapted to make contact with said input and output resistance portions

and a ground brush mounted in said casing and adapted to make contact with said shunt resistance portion in such manner as to place outside the microwave circuit any unused resistor portion, said resistance portions being shaped



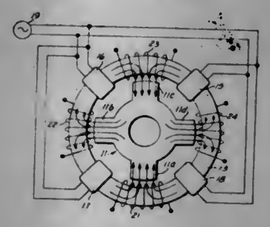
and sized to maintain a predetermined input to output resistance ratio and adjustable calibrated attenuation continuously adjustable to zero attenuation, as said plate is moved relative said brushes.

3,192,494
PRE-SET FINE TUNING
Reuben C. Carlson, Bensenville, and Joseph N. Marchese, Norridge, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 10, 1961, Ser. No. 88,502
2 Claims. (Cl. 334—29)



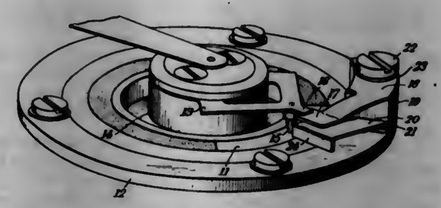
1. In combination; a tuner having a plurality of station tuning positions; a motor drivingly coupled to said tuner; a source of power for said motor; momentary contact switch means connected in circuit with said motor and said source; mechanical detent means urging said tuner into said station tuning positions; a first switch connected in parallel with said momentary contact switch means; a second switch connected in series with the parallel combination of said momentary contact switch means and said first switch; said first switch being normally closed between adjacent station tuning positions and said second switch being normally closed for all positions of said tuner; a common fine tuning circuit, including a variable impedance coupled to said tuner; a movable element varying the value of said variable impedance; means drivingly coupled to said tuner; carrying a plurality of adjustment elements; each of said plurality of adjustment elements corresponding to a respective one of said plurality of station tuning positions and each having first and second adjustment ranges; means sequentially coupling different ones of said plurality of adjustment elements to said movable element and to said first switch, said first switch being opened by said adjustment elements set in said first adjustment range to thereby deenergize said motor and stop said tuner in corresponding ones of said plurality of station tuning positions; said adjustment elements in said second adjustment range maintaining said first switch closed and preventing deenergization of said motor; manually operable means for adjusting said adjustable elements, said second switch being opened only during operation of said manually operable means; and visual means indicating which station tuning position said tuner is in; a third switch controlling energization of said visual means; said third switch being sequentially coupled to said adjustment element to deenergize said visual means only when said adjustment elements are in said second adjustment range.

3,192,495
ELECTROMAGNETIC TRANSDUCERS
Rolf K. Brodersen, Orange, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Nov. 29, 1961, Ser. No. 155,786
10 Claims. (Cl. 336—135)



1. A transducer comprising a stator made entirely of low reluctance material defining a magnetic path, first and second primary windings wound with opposite polarities on said stator around said path, a secondary winding wound on said stator around said path between said first and second primary windings, and a low reluctance member positioned adjadcent to said secondary winding and movably mounted for limited displacement along said secondary winding, said stator and movable member having respective confronting surfaces defining an air gap therebetween, said surfaces being so shaped as to maintain said air gap constant over the entire range of displacement of said movable member.

3,192,496
ELECTRICAL DEVICES
John Leonard Sendles, East Malling, Maidstone, Kent, England, assignor to Short Brothers & Harland Limited, Belfast, Northern Ireland, a British company
Filed Nov. 19, 1963, Ser. No. 324,726
Claims priority, application Great Britain, Nov. 19, 1962, 43,728
4 Claims. (Cl. 338—162)



1. An electrical device comprising an electrically insulating base, a resistance element mounted on said base and provided with at least one terminal, a movable contact member supported by said base and operatively arranged to bear upon and slide with respect to the resistance element, and a supporting arm independent of said resistance element terminals and selectively mounted on said base to support said movable contact member at a predetermined rest position in which it is out of engagement with the resistance element, said supporting arm being positioned in relation to said element to cause said movable contact member upon release from the supporting arm to engage said element at a predetermined intermediate position on the element and to permit said movable contact member upon release from said supporting arm to move throughout the length of the resistance element without further contact with the supporting arm, and means associating with the supporting arm so as to automatically connect the movable contact member to the resistance element when the latter is in the said rest position on the supporting arm so that the continuity of the device can be tested with the movable contact member in the rest position.

3,192,497
GLASS TO METAL SEAL
Harry Bender, Fullerton, Calif., and Harry D. Bajars, Livingston, N.J., assignors, by mesne assignments, to General Mills, Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 28, 1963, Ser. No. 292,212
2 Claims. (Cl. 338—308)



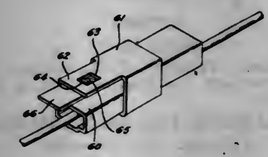
1. An article comprising a length of glass tubing having an adherent metal film over a length of its inside surface adjacent both ends thereof, metal members of cylindrical cross-section closing said ends of said tubing and electrically engaging individual ones of said metal films and hermetically sealed to said tubing by concentric glass to metal seals, an elongated electrically-resistive film adherent to the inner wall of said tubing and electrically bonded at its ends to said metal films to provide a resistive electrical path therebetween, and a layer of solidified solder glass extending over the juncture of each of said members and the adjacent end of said tubing and hermetically sealed to each thereof over regions lying on each side of each said juncture.

3,192,498
CONTACT ADAPTED TO RECEIVE PIN OR PLATE
Herbert E. Ruehlemann, Huntingdon Valley, Pa., assignor to Elco Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 17, 1962, Ser. No. 195,528
5 Claims. (Cl. 339—33)



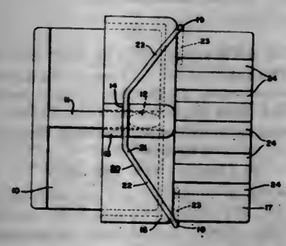
2. A contact comprising a mating section, a body section and a tail section depending therefrom, said mating section including opposed wiping blades, at least one of said wiping blades having formed thereon spaced convex contact projections extending inwardly from the interior surface thereof, said contact projections defining between them an area adapted to receive a pin or a plate, the other wiping blade having contact projections formed thereon, said wiping blades being spaced relatively close to each other so as to be forced apart by said pin or plate whereby a resilient grip is exerted upon said pin or plate, said wiping blades being bifurcated into fingers, each of said fingers including at least one of said contact projections, each of said projections being so shaped as to engage a surface portion of the inserted pin or plate.

3,192,499
SAFETY FASTENING MEANS
Wilson H. West, Madison Heights, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 5, 1961, Ser. No. 80,915
1 Claim. (Cl. 339—91)



An electrical connector comprising telescoping male and female units, male electrical contact means within said female unit axially received in female electrical contact means within said male unit, a locking arm integral with the inner end of said male unit and having a free end extending outwardly beyond said male and female units when said electrical contacts are mated, said locking arm having a detent with a cam surface, an inner wall of said female unit having a shoulder to receive said detent in locking engagement, said male unit being arranged with respect to said female unit to permit said locking arm to be flexed inwardly in a direction generally perpendicular to the direction of mating of said units whereby said detent may be depressed out of engagement with said shoulder to effect separation of said male and female connector units.

3,192,500
SAFETY FASTENING MEANS
Wilson H. West, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Jan. 5, 1961, Ser. No. 80,915. Divided and this application Jan. 16, 1964, Ser. No. 338,207
3 Claims. (Cl. 339—91)



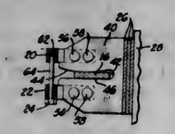
1. A safety connection, comprising, a male connector component of insulating material having a rib extending

longitudinally along one outer side thereof for a predetermined distance, a female connector component of insulating material having a shoulder centrally thereof as well as a longitudinal channel portion transversely cut-out though complementary to said rib at least partly thereof, a resilient fastening means including a primary mounting portion that straddles said female connector component with said shoulder thereof being engaged by said primary mounting portion and including a resilient projecting portion integral with a V-shaped end bent transversely inwardly at a location coinciding with said cut-out of said channel portion, and an inclined abutment carried by said male connector component in a location longitudinally complementary to said rib and said channel portion though located in spaced relation axially to one side of said rib with a transverse groove therebetween, said V-shaped end when located in said cut-out of said channel portion of said female connector component and said transverse groove between said rib and said inclined abutment having an alignment outwardly of each other for interlock engagement of said V-shaped end therebetween.

3,192,501
FUSE CLIP

Rex E. Sturdivan, Fullerton, Calif., assignor to Zinsco Electrical Products, Los Angeles, Calif., a corporation of California

Filed May 20, 1963, Ser. No. 281,636
5 Claims. (Cl. 339—266)



1. In a fuse clip for use in holding a fuse or the like, the combination of:

a plurality of conducting plates located in substantially parallel relationship to each other and spaced from each other along a fuse axis, said plates having aligned open ended slots therein with the slots disposed to receive a fuse conductor moving perpendicular to said fuse axis;

a first coupling member fastened to each of said plates on one side of said slot;

a second coupling member fastened to each of said plates on the other side of said slot; and

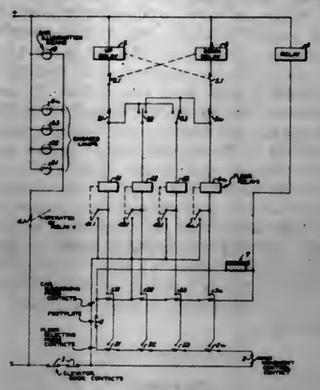
means for bringing said coupling members together clamping the fuse conductor in the slots and closing the open ends thereof.

3,192,502
SIGNALLING ARRANGEMENTS FOR ELEVATORS

Karl Stutz, Hinterbramberg 6, Luzern, Switzerland, and Eduard Zimmermann, Haldengut, Weggis, Switzerland

Filed Nov. 22, 1960, Ser. No. 70,966
Claims priority, application Switzerland, Nov. 25, 1959, 81,146/59
10 Claims. (Cl. 340—21)

1. A signalling arrangement for an elevator having a car adapted for movement between floors, said arrangement comprising: means on each floor for summoning the car to the respective floor, illumination means in said car and visible from outside said car at each of the floors, and means operatively coupled to both said means for periodically energizing the illumination means to cause flashing thereof as said means for summoning the car is

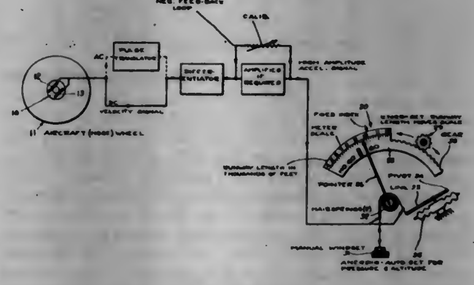


energized at one of said floors and said car is located at said one floor and is empty when summoned.

3,192,503
AIRCRAFT TAKE-OFF FORECAST SYSTEM

Gregor L. Lang, East St., Suffield, Conn.

Filed Feb. 27, 1958, Ser. No. 718,050
14 Claims. (Cl. 340—27)



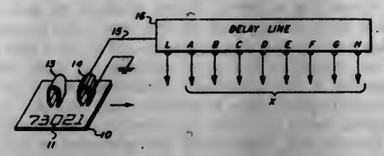
1. In an aircraft, a take-off safety indicating device effective during take-off roll for denoting the ability of the craft to become airborne within the available length of runway comprising, acceleration sensing means for providing a signal varying as a function of the time rate of gain of velocity of the aircraft during take-off roll, means for modifying said signal according to known ambient variables and indicating means responsive to said modified signal for indicating the ability of the craft to become safely airborne.

3,192,504
DETECTION OF LONG WAVESHAPES IN AUTOMATIC SYMBOL READER

George M. Miller, Menlo Park, Calif., assignor to General Electric Company, a corporation of New York

Filed June 23, 1960, Ser. No. 38,288
12 Claims. (Cl. 340—146.3)

1. In apparatus for reading symbols printed on a document in magnetic ink by identifying their distinctive symbol waveshapes, means for detecting that a symbol waveshape has been elongated by extraneous magnetic material adjacent a symbol comprising: a magnetic transducer for producing a waveshape in response to magnetic material passing adjacent thereto; a wave transmission means for receiving and propagating said waveshape therealong and having a length greater than the maximum length of symbol waveshapes, said transmission means being provided with a plurality of symbol waveshape sampling taps for sensing points along said waveshape; a plurality of symbol channels connected to said symbol sampling taps for identifying symbol waveshapes and each channel including an output gate; means for developing

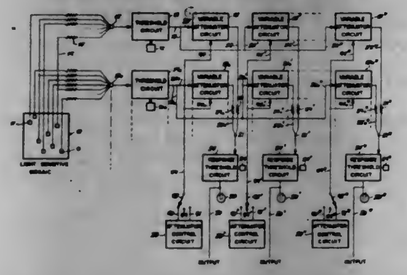


a sample signal in timed relation to the position of said waveshape in said transmission means; means for applying said sample signal to said output gates; a long-waveshape sampling tap in a portion of said transmission means which is normally unoccupied by a symbol waveshape at the moment of occurrence of said sample signal; and a circuit connected to said long-waveshape sampling tap and responsive to a signal thereat to inhibit said gates.

3,192,505
PATTERN RECOGNIZING APPARATUS

Frank Rosenblatt, Ithaca, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York

Filed July 14, 1961, Ser. No. 124,049
6 Claims. (Cl. 340—146.3)

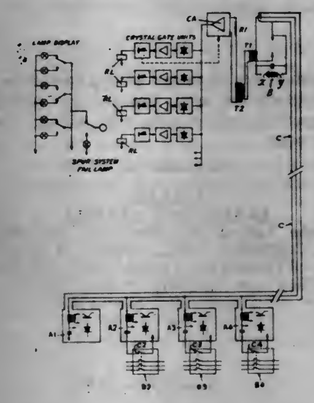


1. In pattern recognizing apparatus, the combination comprising sensor means including elements severally adapted to produce sensor electrical signal outputs when stimulated by a pattern, a plurality of first signal sum points, means conductively connecting said sensor electrical signal outputs to said first signal sum points, so that each of said elements is associated with some one of said first signal sum points but less than all of said elements are associated with a given one of said first signal sum points; a plurality of first threshold circuit means severally operatively associated with said first signal sum points and arranged to compare signal sums from said first signal sum points with a predetermined threshold and operative to transmit a predetermined voltage when the signal sum from the corresponding one of said signal sum points is higher than the associated threshold, a manifold of variable attenuator circuit means operatively associated with each of said first threshold circuit means and arranged to receive said predetermined voltage transmitted thereby and to transmit a variable attenuator electrical signal output, a plurality of second signal sum points corresponding in number to that of variable attenuator circuit means in one of said manifolds thereof, means conductively connecting the variable attenuator electrical signal outputs of one variable attenuator circuit means of each of said manifolds with the corresponding one of said second signal sum points, a plurality of second threshold circuit means severally operatively associated with said second signal sum points and arranged to compare signal sums from said second signal sum points with a predetermined threshold and each operative to transmit an output voltage, and a plurality of selectively operable attenuator control circuit means operatively associated with said variable attenuator circuit means to alter the attenuation thereof.

3,192,506
ELECTRONIC INDICATOR SYSTEM MORE PARTICULARLY FOR USE IN MINES

Christopher Arthur Henn-Collins, London, England, assignor to Sargrove Electronics Limited, Hounslow, England, a British company

Filed Mar. 4, 1960, Ser. No. 12,816
6 Claims. (Cl. 340—171)



1. An electronic indicator system adapted to indicate at a near station "all correct" or "failure" conditions at any one of a number of remote stations, the system comprising crystal transistor oscillatory units each having a frequency different from the others and each coupled to electric control means of apparatus to be monitored at one of the remote stations, the coupling including contacts which, when closed, cause the unit to be inoperative and when open permit the unit to oscillate, thereby rendering the system to "fail safe," means for tuning each unit, a coaxial cable for transmitting the different frequencies of the units to the near station and also for supplying power to the units from the near station, a common amplifier at the near station for amplifying the outputs from the units, a crystal gate filter for each of the units, amplifying and detecting stages for the filters, and indicating means at the near station connected to the output from each filter to indicate "all correct" or "failure" conditions at each of the remote stations.

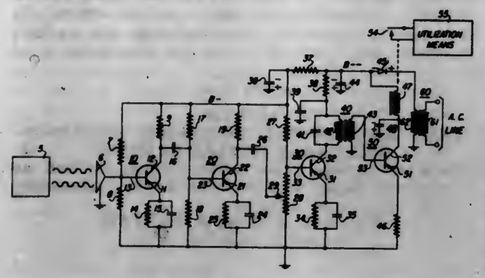
3,192,507
REMOTE CONTROL SYSTEM

Richard A. Sadges, Chicago, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

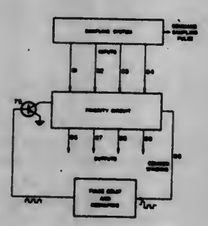
Filed Sept. 11, 1961, Ser. No. 137,135
6 Claims. (Cl. 340—171)

1. A control system responsive to remotely transmitted ultrasonic control signals of particular frequency and predetermined minimum amplitude and duration comprising; receiving means for receiving and converting said control signals into corresponding electrical signals; and amplifying means including an electron valve for amplifying said

electrical signals; supply means supplying energy to said valve, said supply means including a relatively large resistance for providing said electron valve with a characteristic such that its output is decreased with increasing signal amplitude for all signals having amplitudes greater than a predetermined level, whereby said system translates substantially only signals lying within a restricted amplitude range.

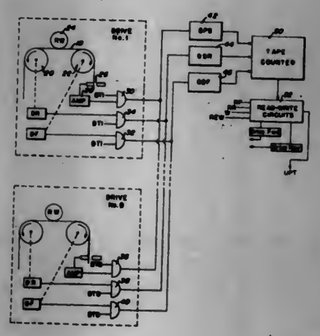


3,192,508
COMPUTING SYSTEM
J. Halcombe Laning, Jr., Stoneham, and Ramon L. Alonso, Cambridge, Mass., assignors to Massachusetts Institute of Technology, a corporation of Massachusetts
Filed Apr. 24, 1961, Ser. No. 105,103
11 Claims. (Cl. 340—172.5)



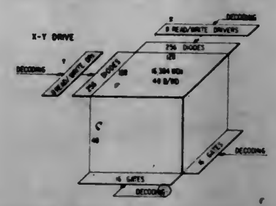
1. In an electronic digital computer of the parallel type which comprises an erasable magnetic core storage matrix, having rows of cores corresponding with the words stored, arranged in columns corresponding to the bits of the words, central registers containing cores similarly arranged in rows and columns wherein said rows are threaded by "write" and "clear" lines which activate selected rows of cores, and wherein said columns are threaded by "sense" and "write" lines by which words in the selected rows are copied, transferred, and combined, in a parallel manner and also comprising a sequence generator associated with the central registers which contains a chain of cores into which a number may be set which has the effect of ordering the sequence generator to produce the elementary "write," "clear" and "sense" orders by which arithmetic operations on numbers in the registers are accomplished, and further comprising a program control unit which directs the program of the computer by sending to the sequence generator the controlling order numbers, and which designates addresses in the memory to or from which words are to go, the improvements which comprise a priority circuit comprising a plurality of substantially identical low-pass pi filter sections in series, the series elements of said sections comprising priority cores including first square-hysteresis-loop magnetic core, a last square-hysteresis-loop magnetic core, a plurality of intermediate square-hysteresis-loop magnetic cores, a first winding on said first core, having a start, an intermediate point, and a termination, connecting means including windings on said intermediate cores joining said intermediate point to said beginning and resistive means joining said tap to a first point of fixed potential, the shunt elements of said sections comprising a first transistor connected emitter to said intermediate point, base to said end, and collector to said first point, and a last transistor connected emitter to said tap, base to said termination and collector to said first point, switching means for momentarily connecting said start to a second point of fixed potential whereby no more than one of said cores is reversed in magnetization, said one being the first in line, having that particular polarization which allows switching by regenerative action between core winding and transistor, and windings linking predetermined ones of said priority cores with predetermined ones of said chain of cores.

3,192,509
ZONE INDICATING AND IDENTIFICATION STORING APPARATUS FOR RECORDING TAPE
Daniel C. Durand, Sudbury, and Patrick R. Nugent, Wellesley, Mass., assignors to Honeywell Inc., a corporation of Delaware
Filed May 16, 1961, Ser. No. 110,498
9 Claims. (Cl. 340—172.5)



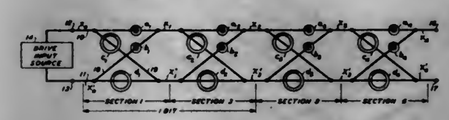
7. In combination, a plurality of tape transports each adapted to reversibly drive a tape past a data transfer head, each tape having markings selectively positioned along the length thereof to define predetermined zones, marking sensing means positioned adjacent the tape in each transport, tape direction of motion sensing means connected to each transport, a single multi-digit zone identification counter connected to all of said tape transports, said counter being adapted to store a previously indicated zone condition and means selectively gating the marking sensing means, and the motion sensing means of each tape transport into the input of said counter in a predetermined sequence with the stored previously indicated zone condition, said counter being stepped to indicate the zone of each tape relative to its data transfer head in said predetermined sequence.

3,192,510
GATED DIODE SELECTION DRIVE SYSTEM
Robert J. Flaherty, Pleasant Valley, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 25, 1961, Ser. No. 112,551
5 Claims. (Cl. 340—174)



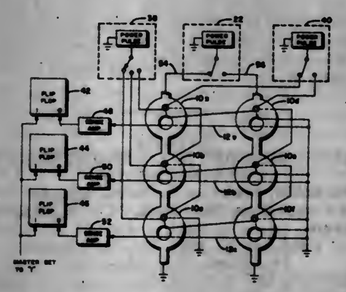
1. A bi-polar read and write current drive system for a magnetic core storage array including a plurality of two-condition cores arranged in rows and columns threaded by coordinate row and column drive lines and wherein the drive lines are divided into a plurality of groups comprising:
(a) a source of positive voltage potential,
(b) a plurality of transistor gate means having on and off positions,
(c) a plurality a first voltage dividing impedance networks having first center terminals therein, each network being connected between the source of positive voltage potential and one of the gate means, and each first center terminal being connected to one end of all of the drive lines in a particular group, each first center terminal being at a first potential when its associated gate is off and at a second potential when its associated gate is on,
(d) a plurality of transistor read driver means having on and off positions,
(e) a plurality of second voltage dividing impedance networks having second center terminals therein, each network being connected between the source of positive voltage potential and one of the read driver means, and each second center terminal being at a first potential when its associated read driver is off and at a second potential when its associated read driver is on,
(f) a plurality of first diodes poled in a first direction, each diode being connected between the other end of one of the drive lines and one of the second center terminals in such a manner that each second center terminal is associated with a corresponding drive line from each group,
(g) a plurality of transistor write driver means having on and off positions,
(h) a plurality of third voltage dividing impedance networks having third center terminals therein, each network being connected between the source of positive voltage potential and one of the write driver means, and each third center terminal being at a first potential when its associated write driver is off and at a second potential when its associated wire driver is on, and
(i) a plurality of second diodes poled in a second direction, each diode being connected between the other end of one of the drive lines and one of the third center terminals in such a manner that each third center terminal is associated with a corresponding drive line from each group, whereby when the gate means of a particular group is on and the read and write drivers of a selected drive line in that group are off current will flow through the selected drive line in a first direction, and when the gate means of a particular group is off and the read and write drivers of a selected drive line in that group are on current will flow through the selected drive line in a second direction.

3,192,511
CONTROLLABLE MAGNETIC STORAGE CIRCUIT
George W. Dick, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 21, 1962, Ser. No. 196,214
30 Claims. (Cl. 340—174)



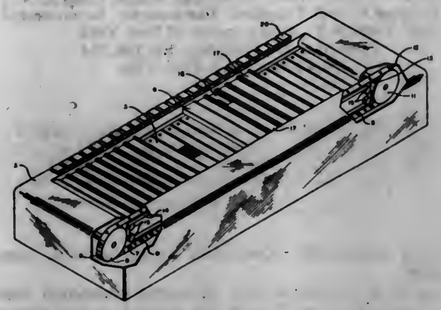
1. A controllable information storage network comprising
an input connection and an output connection conjugately related through said network so that signals applied at either of said connections produce no significant signal at the other of said connections,
two pairs of magnetic elements coupled to one another, each of said elements having two stable conditions of flux remanence between which it may be switched by the application of a properly oriented magnetic field,
means applying to said input connection a signal for generating a magnetic field to switch at least the two elements of one of said pairs of elements to the same one of said stable conditions, and
means applying a magnetic field to an element of each of said pairs to switch such elements to a second one of said stable conditions to generate a signal at said output connection.

3,192,512
NONDESTRUCTIVE READOUT PERMALLOY TRANSFLUXOR MEMORY SYSTEM
Vincent J. Korkowski, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,864
16 Claims. (Cl. 340—174)



1. A nondestructive readout magnetic memory system comprising: a transfluxor type magnetic core having first and second terminal portions; a first aperture; a second aperture effectively smaller than said first aperture; means causing a read current pulse to flow through said core from said first terminal portion to said second terminal portion; and means (including a winding threading said first aperture) for reading information out of said core.

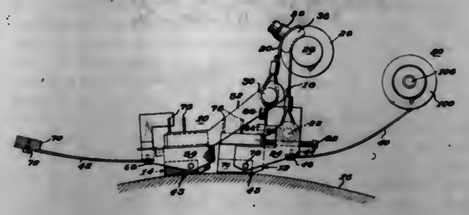
3,192,513
DATA PROCESSING AND DISPLAY SYSTEM
David A. Goldman, Yorktown Heights, John W. Gray and Arthur F. Hayek, Pleasantville, and Ernest Morger, Bedford Village, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Sept. 22, 1960, Ser. No. 57,776
8 Claims. (Cl. 340—174.1)



1. A data processing and display system comprising a plurality of mediums for recording information in a permanent form, a plurality of uniquely coded holders for supporting each of said mediums, a source of information-bearing signals containing at least one of said unique codes, means for scanning the uniquely coded holders and for comparing the scanned holder codes with coded portion of the information-bearing signals, said scanning means including a plurality of magnetic cores, said cores being arranged in a rectangular matrix composed of columns and rows, each of said cores having two substantially symmetric magnetic circuits which share one common element and each having at least one non-common element, said non-common elements being oppositely arranged so that a similar change in flux in both magnetic circuits produces equal and opposite effects in the non-common elements, means for connecting all of the non-common elements in each column in series, means for connecting the common elements in each row in series, distinctively coded means arranged in each row to magnetically alter the characteristics of preselected magnetic circuits in preselected columns, means for applying successive pulses to the series connected common elements in successive rows, means connected to the series connected elements in the columns for comparing the outputs from the columns with a predetermined coded electric signal and means for recording the additional information contained in said information-bearing signals on that medium which is mounted on the uniquely coded holder which compares with the coded portion of the information-bearing signals.

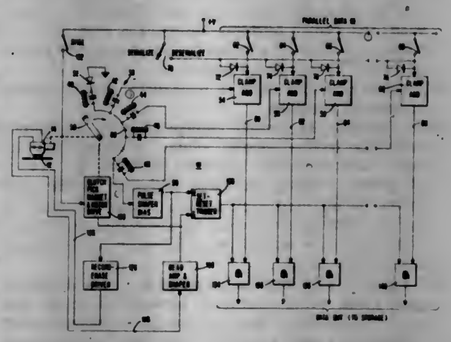
3,192,514
DYNAMIC MEMORY SPAN ADJUSTMENT FOR FLYING HEADS
Allen K. Bailiff, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 14, 1961, Ser. No. 124,129
14 Claims. (Cl. 340—174.1)

1. Mounting and span-adjusting means for positioning cooperating pair of read-write transducer heads with respect to a moving recording surface in a dynamic memory unit wherein said heads are supported on a fluid film between themselves and said surface, said cooperating pair of read-write transducer heads being in registry with a selected recording channel on said recording surface comprising flexible biasing means for each of said transducer heads for biasing each of said heads toward said recording surface and means operating on at least one of the said biasing means to change the bias thereon in such a way as to effect a translation of the transducer head associated therewith across the said recording surface along said recording channel on said fluid film and



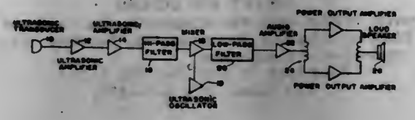
toward or away from the other of said transducer heads, in registry with said selected recording channel, whereby a span adjustment between the two heads of said cooperating pair is provided.

3,192,515
MAGNETIC INFORMATION RECORDING AND REPRODUCTION WITHOUT PRECISE SYNCHRONIZATION REQUIREMENTS
Carl O. Pingry III, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 29, 1962, Ser. No. 183,654
10 Claims. (Cl. 340—174.1)



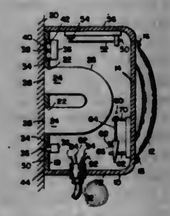
1. In combination, a transducer effective to produce an electrical signal in response to relative movement between said transducer and a magnetized portion of a magnetizable medium, means for producing a series of spaced electrical pulses, means for relating the production of said pulses to the movement of said transducer, a bistable trigger circuit having a pair of inputs and an output and being responsive to electrical pulses applied to respective of said inputs to assume different states of stable equilibrium in each of which a different output potential is produced in the energized condition thereof, means coupling the output of said pulse producing means to one input of said bistable trigger and the output of said transducer to the other input of said bistable trigger to cause pulses produced by said transducer to be effective to establish a first state of said bistable trigger and pulses from said pulse producing means to be effective to establish the other state of said bistable trigger, and means connecting the output of said bistable trigger circuit, at times consisting of times before said pulses are effective to switch said bistable trigger circuit, to means recognizing the state of said bistable trigger circuit as binary data.

3,192,516
VIBRATION DETECTOR
Alan B. Simpkins, Los Altos, and Robert H. Hamilton, Menlo Park, Calif., assignors, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 152,247, Nov. 14, 1961. This application June 25, 1964, Ser. No. 379,441
1 Claim. (Cl. 340—242)



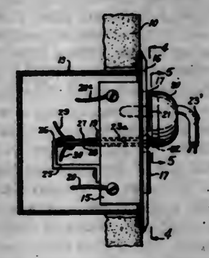
A method for detecting a gas leak in a system surrounded by gas, the method comprising the steps of disposing an ultrasonic transducer in the gas surrounding the system in the vicinity of the leak to pick up ultrasonic mechanical vibrations at about 40,000 cycles per second produced by the leak to generate an A.C. electrical signal from the transducer with a frequency corresponding to the mechanical vibrations, mixing said electrical signal with an electrical oscillation having a frequency which differs from that of the signal by about 3,000 to about 5,000 c.p.s. to generate a beat signal having a frequency of about 3,000 to about 5,000 c.p.s., applying said beat signal to a sonic transducer to generate an audible sound corresponding to said beat signal and to indicate the presence of a leak in the system, aiming the transducer at the system, and moving the transducer along the system while listening for an audible sound which indicates a leak in the system.

3,192,517
BURGLAR ALARM
Isadore Werlin, Medford, Mass., assignor to Bay State Security Corp., Arlington, Mass.
Filed May 11, 1962, Ser. No. 193,976
1 Claim. (Cl. 340—276)



An alarming comprising
a housing having a flat wall adapted to lie in face to face relationship against a flat surface of a wall defining a closure for a region to be protected,
a magnetic coupling device mounted in the housing and having a pair of pole faces in the plane of the outer surface of the flat wall for securing the housing against the wall of the closure,
means defining a pair of openings through the flat wall of the housing,
a pair of microswitches mounted within the housing and each switch biased to open condition, each of the switches having pivotally movable blades within one opening and with the blades oriented substantially perpendicular to one another, said blades being biased to move outwardly of the housing and adapted to be held within the plane of the flat wall of the housing and close the microswitches when said flat wall lies in face to face contact with the flat surface,
a normally closed vibrator switch confined to the housing and opened in response to sudden motion of the housing,
a normally open switch mounted within the housing and closed by tilting of the housing,
a normally closed circuit including the microswitches and the vibrator switch and broken by the opening of any of said switches,
an additional normally closed switch connected in said circuit,
means including a relay energized by the closing of the normally open switch in the housing for opening said additional switch,
and signaling means electrically connected to the circuit for rendering an alarm in response to a change in the condition of said circuit.

3,192,518
ALARM SYSTEM
Michael T. Sliman, 826 W. Capitol Ave., West Sacramento, Calif.
Filed Aug. 13, 1962, Ser. No. 216,497
1 Claim. (Cl. 340—280)

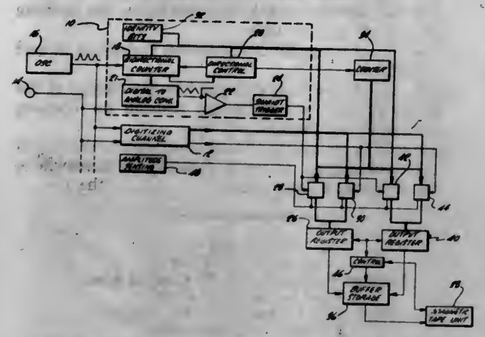


An alarm system of the character described comprising an outlet box which is adapted to be mounted in fixed position in an opening through a wall with the open outer end thereof disposed substantially flush with the outer surface of the wall, an electrical connector secured in fixed position in said outlet box adjacent the open end thereof, a pair of electrical conductors connected to said connector, a face plate, means by which said face plate is removably secured in position closing the open end of said outlet box and the opening in said wall; said means comprising an elongated screw which is inserted through an opening in said face plate and is threaded through an aligned bore in said connector with the inner end of said screw extending out through the rear face of said connector, said screw being provided with an axial bore which extends from end to end thereof; a bracket secured to the rear face of said connector, a pair of normally engaging spring contact arms which are secured to said bracket in axial alignment with the said axial bore in said screw, a pair of electrical conductors by which said contact arms are adapted to be connected to a signalling device; an outlet socket which is carried by said connector and extends out through an opening in said face plate, an outlet plug having a pair of spaced outwardly extending prongs which are adapted to be inserted into a pair of complementary apertures in said socket, a pair of electrical conductors by which said prongs are adapted to be connected to an electrical appliance; an elongated dielectric pin which is secured to and extends outwardly from said plug and is adapted to be inserted through the said axial bore in said screw and between the free ends of said spring contact arms when said prongs are inserted into the said apertures in said socket, thereby separating said spring contact arms and breaking the electrical connection between said arms and said signalling device.

3,192,519
DIGITAL TRANSIENT ANALYZER

Tage Orvar Anderson, Arcadia, Calif., assignor to Consolidated Systems Corporation, Monrovia, Calif., a corporation of California

Filed Oct. 9, 1961, Ser. No. 143,939
10 Claims. (Cl. 340—347)

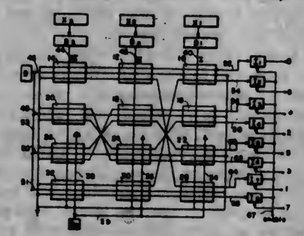


9. A digital transient analyzer for producing digital data in response to a transient input voltage comprising a plurality of digitizing channels, each channel including a digital counter for generating digital signals, a digital-to-analog converter connected to the counter for converting the digital signals generated by the counter to an analog voltage, and comparing means to which the analog voltage from the converter and the input signal are applied for generating an output signal when the analog voltage and input signal are equal in amplitude, means for stepping the counters in synchronism, the counters being in different count conditions whereby the analog voltages in the digitizing channels differ in amplitude at any given instant, and means for transferring the digital signals generated by the counter in any one of the digitizing channels to a common output in response to the output signal from the corresponding channel.

3,192,520
BINARY-TO-DIGITAL TRANSLATION APPARATUS

George F. Marette, Minneapolis, Minn., and Peter Warburton, Haddonfield, N.J., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 13, 1960, Ser. No. 22,045
21 Claims. (Cl. 340—347)

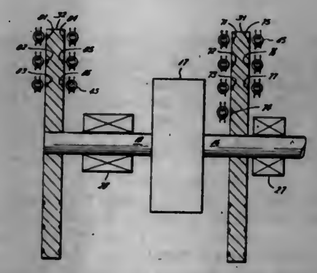


1. Translating apparatus comprising a plurality of magnetic elements capable of being biased, means for biasing a part of said elements differently than the remainder thereof, input means coupled to each element for selectively altering the bias of all said elements in accordance with a word to be translated, means for applying a magnetic field to each element to determine the net bias thereof, and a plurality of output means uniquely coupled to said plurality of elements such that each output means couples in common a different predetermined combination of said elements any of which combinations represents a different predetermined word than any other such combination in accordance with any biasing of the elements in that combination as effected if at all by the first mentioned means, for providing output signals upon application of said magnetic field.

3,192,521
SHAFT ENCODERS

Warren Walter Sullivan, Alexandria, Va., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut

Filed Mar. 10, 1961, Ser. No. 94,846
11 Claims. (Cl. 340—347)



1. A digital encoder comprising in combination, a first rotatable magnetic disk having on each face thereof a binary pattern of coded tracks, a second rotatable magnetic disk having on at least one face thereof another binary pattern of coded tracks, each track delineating a number of discrete permanently magnetized areas defining magnetic flux concentrations of limited arcuate extent emanating from each face; each face being substantially unmagnetized intermediate said areas; a plurality of small reentrant core members, at least one for each track, each member composed of ferromagnetic material having opposite remanent states affording a single gapless magnetic circuit for sensing said magnetized areas; each of said flux concentrations being of sufficient intensity to substantially saturate said material when said core member is within the arcuate extent of a flux concentration; coupling means including a shaft for axially supporting and rotating each of said magnetic disks with the respective coded faces in closely spaced tangential relation to the periphery of each core member; and an excitation winding and a readout winding on each core member for transforming, except when said core member is opposite to one of said magnetized areas, an alternating current applied to said excitation winding into a train of output binary digit signals in said readout winding, induced by the switching of said core member between its opposite remanent states.

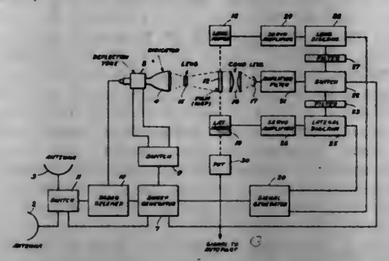
3,192,522
APPARATUS FOR THE AUTOMATIC NAVIGATION AND GUIDANCE OF AN AIRCRAFT OR THE LIKE

Richard Lee Bartner, Canton, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware

Filed Sept. 18, 1951, Ser. No. 247,077
8 Claims. (Cl. 343—7)

8. Apparatus of the type described including a composite radar strip map having separate columns respectfully of longitudinal and lateral reference information of the terrain over which the aircraft is intended to fly, means for producing separate substantially instantaneous radar line images of the terrain along paths extending laterally and longitudinally ahead of the aircraft, means for superimposing a line image over its related column and to substantially the same scale and orientation, means

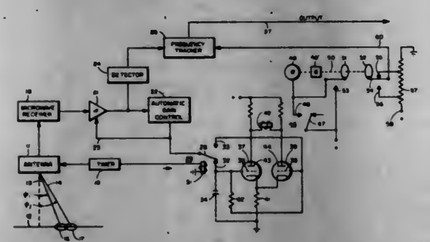
for automatically effecting relative scanning motion between said images and the strip map, means automatically responsive to the relative alignment of the map and images for seeking and maintaining a match between the map and images, and control means responsive to the relative lateral position of the map for controlling the heading and flight path of the aircraft.



3,192,523
DOPPLER NAVIGATOR LAND-WATER CORRECTOR

William B. Lurie, New Rochelle, N.Y., assignor to General Precision, Inc., a corporation of Delaware

Filed Feb. 11, 1960, Ser. No. 8,127
10 Claims. (Cl. 343—8)



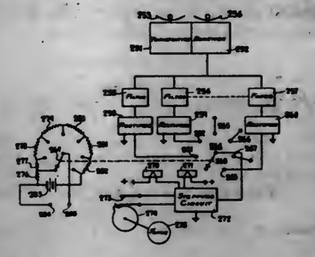
1. A land-water corrector for an airborne Doppler navigational system comprising, microwave means in said system radiating two beams alternately toward the earth and generating from the echo signals thereof two direct-current signal amplitudes representative of the amplitudes of said echo signals, a frequency tracker operated by said echo signals, means securing a difference signal from said two direct-current signals, and means revising said frequency tracker output in accordance with said difference signal.

3,192,524
SPEED MEASURING APPARATUS

Everhard H. B. Bartelink, P.O. Box 425, Concord, N.H.
Original application Feb. 8, 1955, Ser. No. 486,873, now Patent No. 2,999,999. Divided and this application Aug. 11, 1961, Ser. No. 130,911

5 Claims. (Cl. 343—8)

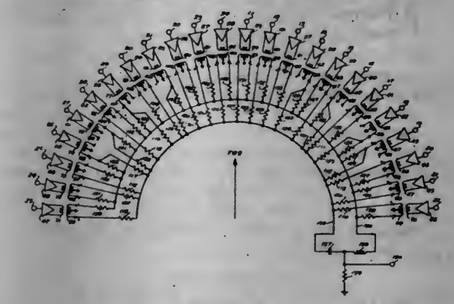
1. Means for indicating the speed of the slowest vehicle on a highway comprising means for measuring the speed of vehicles in a predetermined section of a highway including means for transmitting energy of a predetermined radio frequency, and means for receiving portions of said energy reflected by said vehicles and for providing signals having frequencies which are related to the speeds of the reflecting vehicles; a plurality of means connected to said receiving means for separating said signals according to their frequencies; detecting means for detecting signals at the outputs of said separating means, said detecting means being selectively connectible to said separating means and being operable by said last-mentioned signals to control the connection thereof to said separating means; and means controlled by said detecting means for providing a plurality of different voltages each one of which represents a different connection between said detecting means and said separating means.



3,192,525
RESISTIVE PHASE COMPENSATOR

Layton D. Morgan and Robert D. Strait, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 15, 1962, Ser. No. 230,771
4 Claims. (Cl. 343—100)
(Granted under Title 35, U.S. Code (1952), sec. 266)



3. A resistive multi-beam phase compensating system comprising;

a plurality of energy sensing elements adapted for sensing energy of a given frequency and spatially disposed for each sensing energy from a given direction;

a plurality of transformer means each having a primary and a center-tapped secondary winding, said primary windings being operatively coupled to respective ones of said sensing elements to receive sensed energy from same;

a plurality of sine resistors each having one of its terminals connected to a respective one of said plurality of transformer secondaries and the other of its terminals to a common sine bus means;

said sine resistors each having a value proportional to the sine of the phase angle of the sensed energy received by its respective sensing element;

a plurality of cosine resistors each having one of its terminals connected to a respective one of said plurality of transformer secondaries and the other of its terminals to a common cosine bus means;

said cosine resistors each having a value proportional to the cosine of the phase angle of the sensed energy received by its respective sensing element;

said plurality of sine resistors and said plurality of cosine resistors each being equal in number to said plurality of sensing elements and said plurality of transformer means;

phase shifting means operatively coupled to said sine and cosine bus means to introduce a shift of 90° to a signal on one of said busses relative to signals on the other of said busses;

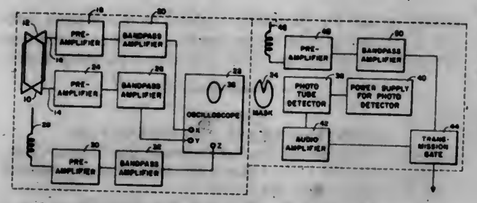
summing means for combining the shifted signals of one bus with those of the other bus.

3,192,526

WAVE-SIGNAL DIRECTION-DETECTING APPARATUS

Verne E. Hildebrand, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 7, 1963, Ser. No. 249,960
5 Claims. (Cl. 343—113)
(Granted under Title 35, U.S. Code (1952), sec. 266)



2. A wave-signal direction-detecting apparatus comprising:

(a) first receiving antenna means for generating signals proportional to the direction and magnitude of received VLF electromagnetic signals,

(b) second receiving antenna means for receiving the same signals as the first antenna means,

(c) signal direction sensing circuit means coupled to said first antenna means for generating an output signal when a signal is incident on said receiving antenna means from a predetermined direction, and

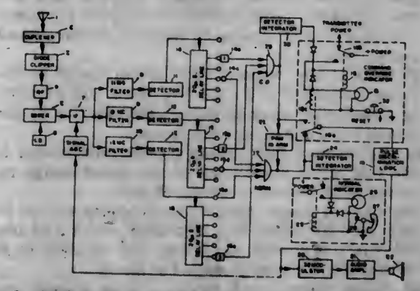
(d) circuit means coupled to said signal sensing means and to said second antenna means and being responsive to the output signal from said signal sensing means to pass a signal received from the second antenna means.

3,192,527

COMMAND OVERRIDE FOR RANDOM ACCESS DISCRETE ADDRESS SYSTEM

William T. Douglas, Jr., and Lawrence W. Mills, Orange County, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland

Filed Feb. 5, 1962, Ser. No. 171,046
9 Claims. (Cl. 343—177)



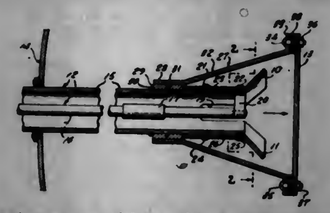
1. An improvement in a communication system of the type wherein each transmitter includes means for generating position modulated pulses from input intelligence, means for address coding said pulses into groups of signals intended for a particular receiver using a plurality of carrier frequencies and a plurality of predetermined relative timed separated signals, means for transmitting said signals to at least one receiver, and wherein each receiver includes means for detecting signals at the several frequencies, means for recognizing the particular relative times of occurrences of the signals intended for that receiver, means for converting the recognized signals into position modulated pulses, means for converting said last positioned modulated pulses into electrical waves representative of the input intelligence, said improvement comprising a decoder at each receiver for recognizing a particular common address coding of said pulses, switching means responsive to said decoder, said switching means serving to disconnect said means for recognizing signals intended for the receiver from the means for converting recognized signals into position modulated pulses and serving to connect said decoder to the means for converting recognized signals into position modulated pulses.

3,192,528

PARABOLIC ANTENNA WITH SPLASH PLATE AND V-SHAPED DIPOLE FEED FOR PATTERN UNIFORMITY

George B. Sleeper, Jr., and John E. Drake, both of Sherburne, N.Y., assignors to Technical Appliance Corporation, Sherburne, N.Y., a corporation of Delaware

Filed Dec. 21, 1961, Ser. No. 161,002
10 Claims. (Cl. 343—909)



2. An antenna comprising a dish-shaped main reflector, and means to illuminate said main reflector with radiant energy and comprising a dipole and auxiliary reflector located at approximately the focus of said main reflector, the arms of said dipole being inclined towards said auxiliary reflector and away from said main reflector.

3,192,529

MULTI-HELIX ANTENNA ON INFLATABLE SATELLITE

Maurice G. Chatelain, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.

Filed Mar. 20, 1961, Ser. No. 97,064
3 Claims. (Cl. 343—844)



2. An antenna, comprising:

an inflatable substantially spherical body of thin, flexible material;

a plurality of radially extending antenna elements mounted in spaced relation on said body;

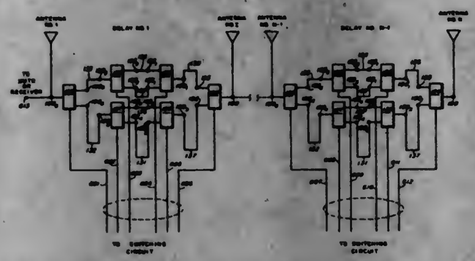
each of said elements consisting of a conical portion integral and inflatable with said body and having a helical conductor thereon; said body having a conductive surface and constituting a ground plane for said elements.

3,192,530

ELECTRONICALLY SCANNED ARRAY WITH DIODE CONTROLLED DELAY NETWORK

Bernard I. Small, San Diego, Calif., assignor to United States of America as represented by the Secretary of the Navy

Filed Oct. 24, 1962, Ser. No. 232,915
2 Claims. (Cl. 343—854)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An electronically-steerable-beam antenna system comprising;

an array of N antenna elements where N is a whole number greater than one,

(*N*–1) delay means connected in series with each other, each of said elements of said array being connected to respective points along said series of delay means,

each of said delay means compising a plurality of different lengths of transmission line paths operatively connected to a plurality of semiconductor diode single-pole-double-throw switches,

said switches being operable to selectively choose one of said plurality of different lengths of transmission line paths whereby the delay introduced by said delay means is varied in accordance with the line length selected, and

radio-frequency terminal means connected to a first element of said array whereby energy appearing at said first element will appear at other array elements subject to increased delay with increased distance from said first element.

3,192,531

FREQUENCY INDEPENDENT BACKUP CAVITY FOR SPIRAL ANTENNAS

Rex E. Cox, Lynchburg, Va., and Myron S. Wheeler, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 12, 1963, Ser. No. 287,451
5 Claims. (Cl. 343—895)



1. A unidirectional antenna system comprising:

a spiral antenna,

a source of energy to be transmitted,

feed means connecting said antenna to said source of energy,

a reflector disposed on one side of and in proximity to said spiral, and

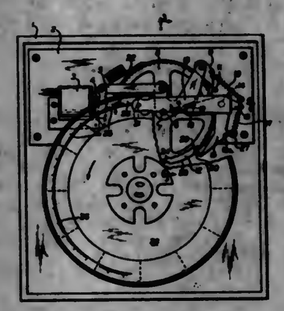
a plurality of absorbing card attenuators positioned radially and symmetrically on said reflector for absorbing radial waves reflected from said reflector.

3,192,532

RECORDING INSTRUMENT

Hans Bruchschmidt, Frankfurt am Main, Germany, assignor to VDO Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed May 8, 1962, Ser. No. 193,104
Claims priority, application Germany, May 12, 1961, V 20,650
4 Claims. (Cl. 346—23)



1. An instrument for recording of strokes performed in cycles or numbers of manufactured pieces of working machines, comprising

a housing,

a base plate mounted in said housing,

a time-responsive rotating diagram disk rotatably mounted in said housing,

a recording arm pivotally secured to said base plate and having a recording head disposed opposite said diagram disk for working recordings on said diagram disk,

operating means including lever members operatively connected with and directly moving said recording arm and causing a swinging movement of the latter in response to impulses fed to said operating means,

abutment means for limiting the swinging movements of said recording arm and including an abutment disk rotatably mounted on said base plate for step-wise advancing movements by said lever members and coordinated to the swinging movement of said recording arm,

said abutment disk having a plurality of cut-outs at its periphery equally spaced apart at predetermined multiples of said swinging movements of said recording arm,

said recording arm having a complementary member engaging the periphery of said abutment disk and said cut-outs of said abutment disk, respectively,

said operating means comprising an electromagnet and an armature cooperating therewith, and said lever members comprise

a double-armed lever pivotally mounted on said base plate on an axis disposed parallel to the rotating axis of said abutment disk, as well as

an intermediate member having a forked portion at one end thereof for loose engagement with said armature and a pivot at the other end thereof for pivotal connection with one arm of said double-armed lever,

a ratchet wheel secured to said abutment disk for joint rotation therewith,

means connected with the other arm of said double-armed lever for controlling the swinging movements of said recording arm so that said double-armed lever with said intermediate member and said controlling means provide the operative connection of said operating means with said recording arm,

said controlling means including a pawl pivotally secured to said other arm of said double-armed lever and cooperating with said ratchet wheel,

first spring means secured to said pawl and said other arm of said double-armed lever and urging said pawl into engagement with said ratchet wheel, and

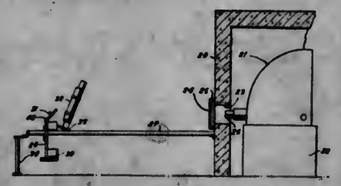
second spring means secured to said one arm of said double-armed lever and said armature and urging the latter from its operative into its inoperative position,

so that said double-armed lever causes a step-wise movement of said ratchet wheel and of said abutment disk in response to the operative cycles of said electromagnet.

3,192,533
APPARATUS FOR STUDYING EXPLOSIONS STEREOSCOPICALLY

Norman R. Zabel, Menlo Park, Calif., and David E. Brink, deceased, late of Palo Alto, Calif., by Virginia M. Brink, executrix, Palo Alto, Calif., assignors to Jet Research Center, Inc., a corporation of Texas

Original application Oct. 23, 1959, Ser. No. 848,476, now Patent No. 3,074,170. Divided and this application June 27, 1962, Ser. No. 213,075
2 Claims. (Cl. 346—107)



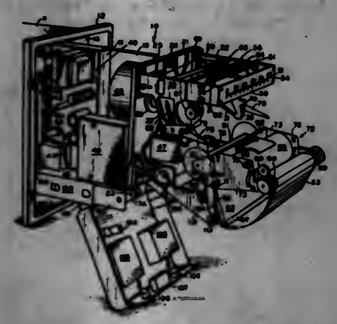
1. Apparatus for making stereo-photographs of the collapsing liner of an exploding shaped charge which comprises: means for mounting a lined shaped explosive charge adapted to be exploded to project a high-velocity jet forwardly along an axis; a pair of plane stereo-object mirrors mounted in front of said charge mounting means at points laterally spaced from said axis and positioned to reflect towards said axis images of the liner of a shaped charge mounted in said mounting means; an optical system having a portion thereof intersected by said axis, said optical system reflecting the images received from said mirrors along substantially parallel, closely spaced paths disposed at a substantial angle to said axis; a camera disposed entirely at one side of said axis and positioned to photograph the images reflected along said parallel paths; means for exploding a shaped charge mounted in said mounting means; and means for operating said camera to photograph the explosion.

3,192,534
INDICATING APPARATUS

Clinton A. Blakeslee, Middlebury, and Nicholas D. Kintzer, Watertown, Conn., assignors to The Bristol Company, Waterbury, Conn., a corporation of Connecticut

Filed Sept. 30, 1963, Ser. No. 310,390
9 Claims. (Cl. 346—145)

1. In an instrument for indicating the value of a variable magnitude, the combination of a base member having first means for receiving a variable signal representative of said magnitude and for providing an output representative of said signal, means for movably supporting said base member relative to a panel structure whereby said base member is selectively movable at will from a rearward position in which said base member is fully seated within said panel structure to progressively further forwardly withdrawn positions until said base member is fully withdrawn from said panel structure, a wall member transversely extending relative to and pivotally connected to said base member and movable therewith, second means carried by said wall member including indicating means responsive to said output for indicating the

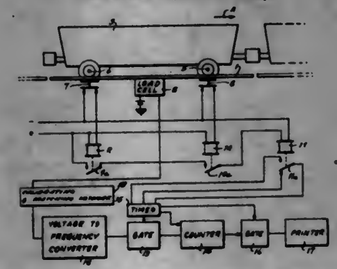


value of said magnitude and a chart assembly cooperating with said indicating means, latching means for releasably securing said wall member in an upstanding position relative to said base member when the latter extends horizontally, means for pivotally connecting said chart assembly to said wall member with said chart assembly extending forwardly relative thereto, and means for maintaining said first and second means in operation when said base member is at least partially withdrawn from its fully seated position.

3,192,535
METHOD AND APPARATUS FOR HIGH SPEED WEIGHING

Robert G. Watson, South Euclid, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Sept. 28, 1962, Ser. No. 226,916
11 Claims. (Cl. 177—1)



1. In apparatus for weighing each of a plurality of massive moving objects, the combination of:

(a) a weighing platform whose vertical position varies with the downward force of the platform and an object supported thereby and which is located so that each of the objects in turn passes over and is supported by the platform;

(b) means for generating a signal representative of the vertical position of the platform; and

(c) means responsive to the positioning of each of the objects on the platform for continuously integrating said signal for a time that includes a plurality of cycles of said signal while each object is on the platform.

DESIGNS

JUNE 29, 1965

201,490
CARD HOLDER

Lewis W. Williams, 6216 Harmony Lane, and Edward J. Pullman, 5454 Anita, both of Dallas, Tex.

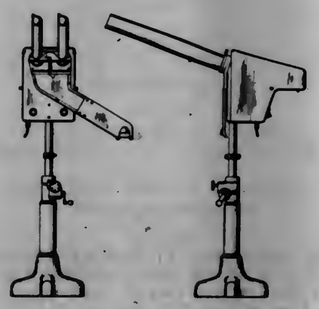
Filed Apr. 2, 1964, Ser. No. 79,323
Term of patent 14 years
(Cl. D1—3)



201,491
BOTTLE CAP FEEDER

William E. Whitchurch, Belvidere, Ill., assignor to Champion Papers Inc., Hamilton, Ohio, a corporation of Ohio

Filed Dec. 19, 1963, Ser. No. 77,865
Term of patent 14 years
(Cl. D2—3)



201,492
PILLOW

Harry L. Jacobson, 5232 Rexford Road, Philadelphia, Pa.

Filed Nov. 16, 1964, Ser. No. 82,612
Term of patent 14 years
(Cl. D3—9)



201,493
LAVATORY

Carl W. Sundberg, Bloomfield Hills, and Richard E. Hitchcock, Birmingham, Mich., assignors to Universal Rundle Corporation, New Castle, Pa., a corporation of Delaware

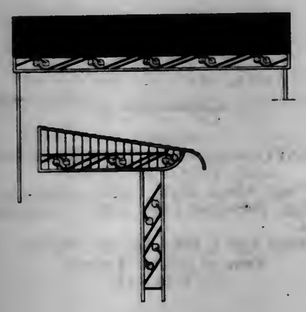
Filed June 19, 1964, Ser. No. 80,491
Term of patent 14 years
(Cl. D4—2)



201,494
AWNING

Joseph Schlager, 2501 S. Kearney St., Denver, Colo.

Filed Apr. 16, 1964, Ser. No. 79,523
Term of patent 14 years
(Cl. D13—1)



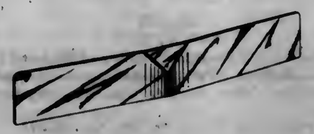
201,495
BRICK COLUMN

Donald J. Dirkse, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 10, 1963, Ser. No. 74,386
Term of patent 14 years
(Cl. D13—4)



201,496
COMBINED VEHICLE WIND AND INSECT DEFLECTOR
Richard R. Stef, 1510 Hedgewood Ave., Anaheim, Calif.
Filed Nov. 19, 1962, Ser. No. 72,526
Term of patent 14 years
(Cl. D14—6)

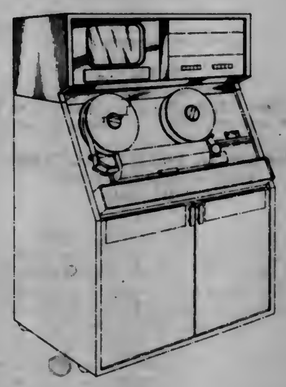


201,497
TABLET
Fred C. Ninger, Livingston, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 81,883
Term of patent 14 years
(Cl. D16—3)

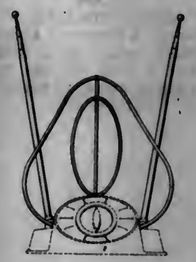




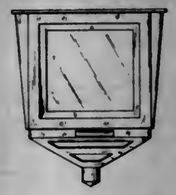
201,498
COMBINED MAGNETIC TAPE RECORDER AND VIDEO MONITOR
Noland E. Vogt, Menlo Park, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 2, 1964, Ser. No. 79,319
Term of patent 14 years
(Cl. D26—14)



201,499
TELEVISION ANTENNA FOR INDOOR USE
Marvin P. Middlemark, 99—05 63rd Drive, Rego Park, New York, N.Y.
Filed July 2, 1964, Ser. No. 80,676
Term of patent 14 years
(Cl. D26—14)



201,500
ILLUMINABLE DISPLAY BOX FOR PHOTOGRAPHIC TRANSPARENCIES
Levi C. Chapiewsky, 116 Commercial St., Bangor, Wis.
Filed July 10, 1962, Ser. No. 70,863
Term of patent 7 years
(Cl. D29—20)



201,501
THREE DIMENSIONAL APPLIQUED WALL-HANGING OR SIMILAR ARTICLE
Norma I. Hovdal, 3644 19th St., San Francisco, Calif.
Filed July 24, 1963, Ser. No. 75,951
Term of patent 14 years
(Cl. D29—23)



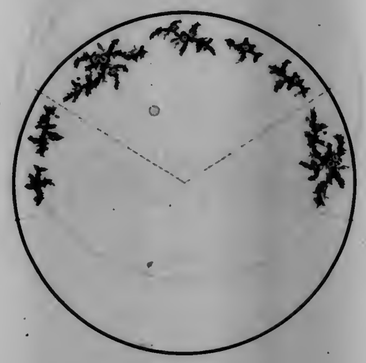
201,502
SHELF BRACKET
John R. Nieman, 72 Colonial Ave., Agawam, Mass.
Filed Dec. 17, 1963, Ser. No. 77,839
Term of patent 14 years
(Cl. D33—3)



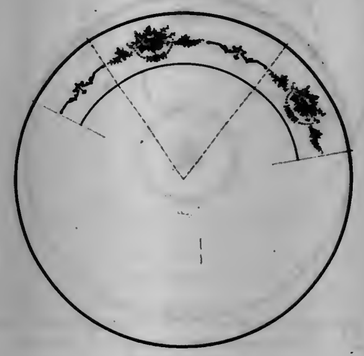
201,503
WATCH DIAL
Joseph P. Mayo, Jr., 2428½ Abercorn St., Savannah, Ga.
Filed Nov. 2, 1964, Ser. No. 82,432
Term of patent 14 years
(Cl. D42—1)



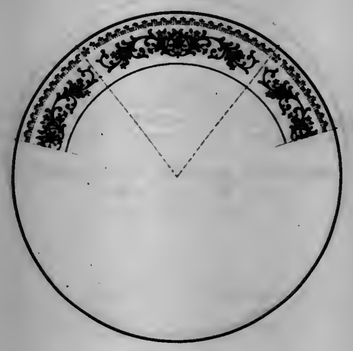
201,504
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,339
Term of patent 7 years
(Cl. D44—15)



201,505
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,340
Term of patent 7 years
(Cl. D44—15)



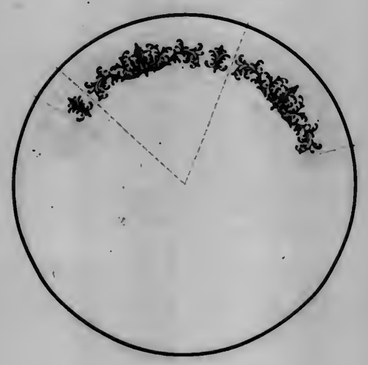
201,506
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,341
Term of patent 7 years
(Cl. D44—15)



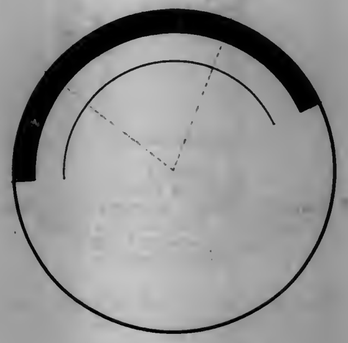
201,507
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,342
Term of patent 7 years
(Cl. D44—15)



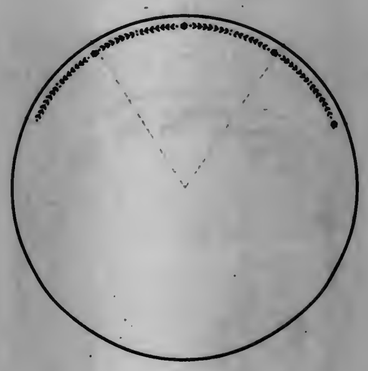
201,508
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,344
Term of patent 14 years
(Cl. D44—15)



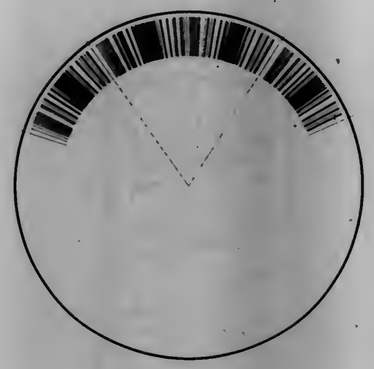
201,509
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,347
Term of patent 14 years
(Cl. D44—15)



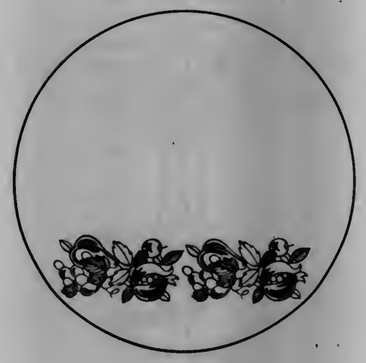
201,510
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,348
Term of patent 7 years
(Cl. D44—15)



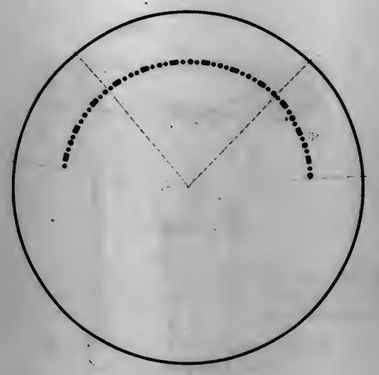
201,511
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,351
Term of patent 7 years
(Cl. D44—15)



201,512
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,352
Term of patent 7 years
(Cl. D44—15)



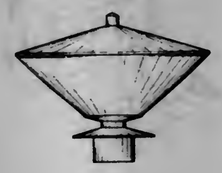
201,513
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 8, 1965, Ser. No. 83,353
Term of patent 7 years
(Cl. D44—15)



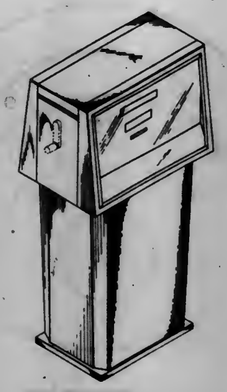
201,514
HOLDER FOR CUPS AND SPOONS OR THE LIKE
Eleanor L. Kutner, 2401 Pennsylvania Ave., Philadelphia, Pa.
Filed Feb. 8, 1965, Ser. No. 83,720
Term of patent 14 years
(Cl. D44—29)



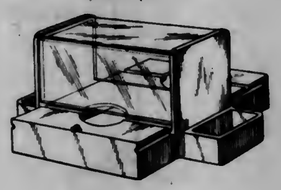
201,515
LUMINAIRE
Myron F. Pettengill, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed Mar. 20, 1964, Ser. No. 79,097
Term of patent 14 years
(Cl. D48—31)



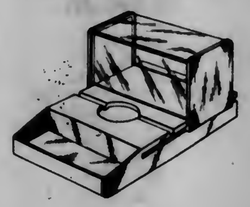
201,516
GASOLINE PUMP HOUSING
Bolling H. Sammett, Jr., 692 Longwood Drive NW., Atlanta, Ga.
Filed Aug. 29, 1963, Ser. No. 76,393
Term of patent 14 years
(Cl. D52—2)



201,517
COMBINED TOOTHPICK DISPENSER AND HOLDER FOR CONDIMENT DISPENSERS
Benjamin A. Hunt, Box 2803, Dallas, Tex.
Filed Feb. 17, 1964, Ser. No. 78,659
Term of patent 14 years
(Cl. D52—2)



201,518
COMBINED TOOTHPICK DISPENSER AND HOLDER FOR CONDIMENT DISPENSERS
Benjamin A. Hunt, Box 2803, Dallas, Tex.
Filed Feb. 17, 1964, Ser. No. 78,660
Term of patent 14 years
(Cl. D52—2)



201,519
CIGARETTE VENDING MACHINE
Walter E. Moore, Bel-Nor, Mo., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed May 4, 1964, Ser. No. 79,798
Term of patent 14 years
(Cl. D52—3)



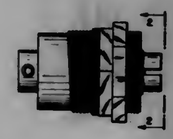
201,520
PLIER WRENCH
Ted Neff, 20975 Shamrock Ave., San Bernardino, Calif.
Filed Mar. 28, 1963, Ser. No. 74,168
Term of patent 14 years
(Cl. D54—13)



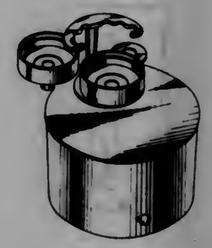
201,521
HAND TOOL FOR PUNCHING, CRIMPING, CUTTING AND THE LIKE
George J. Filia, Shelton, Conn., assignor to Sargent & Company, New Haven, Conn.
Filed Apr. 23, 1963, Ser. No. 74,586
Term of patent 14 years
(Cl. D54—13)



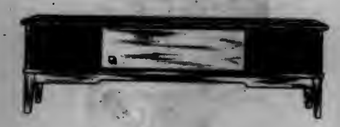
201,522
IN-LINE SLIP CLUTCH
Sol Schwartz, Far Rockaway, and Edward J. Guilbert, Port Washington, N.Y., assignors to Designatronics, Inc., Mineola, N.Y.
Filed Oct. 7, 1963, Ser. No. 76,887
Term of patent 14 years
(Cl. D55—1)



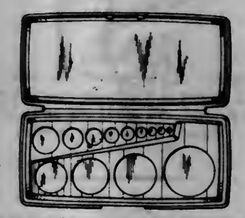
201,523
WAX MELTING HEATER
Walter Ziegelmaier, 17561 State Road 23, South Bend 15, Ind.
Filed Apr. 9, 1964, Ser. No. 79,433
Term of patent 14 years
(Cl. D55—1)



201,524
PHONOGRAPH OR THE LIKE
Frank M. Grunwald, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 18, 1963, Ser. No. 76,624
Term of patent 14 years
(Cl. D56—4)



201,525
CONTAINER FOR A LABORATORY WEIGHT SET
Earl D. Myers, Scotch Plains, N.J., assignor to Ohaus Scale Corporation, Union, N.J., a corporation of New Jersey
Filed June 20, 1963, Ser. No. 75,842
Term of patent 14 years
(Cl. D58—13)



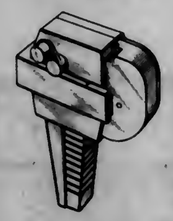
201,526
WASTE RECEPTACLE
Louis J. Martino, Lombard, Wayne E. Moll, Villa Park, and Ralph E. Weimer, Lombard, Ill., assignors to McDonald's System, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 21, 1965, Ser. No. 83,504
Term of patent 14 years
(Cl. D58—17)



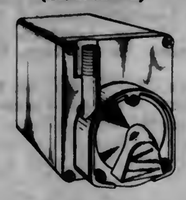
201,527
MOTION PICTURE CAMERA
Norman R. Kubnick, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 2, 1964, Ser. No. 82,875
Term of patent 14 years
(Cl. D61—1)



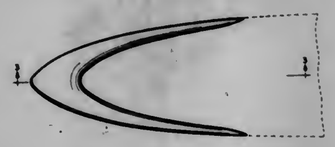
201,528
MOTION PICTURE FILM VIEWER
Otto R. Nemeth, 1001 Colorado Ave., Santa Monica, Calif.
Filed Dec. 28, 1964, Ser. No. 83,185
Term of patent 14 years
(Cl. D61—1)



201,529
ELECTRIC MOTOR DRIVEN CENTRIFUGAL PUMP
Charles B. Faison, Oklahoma City, Okla., assignor to Little Giant Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed Nov. 26, 1963, Ser. No. 77,578
Term of patent 14 years
(Cl. D65—1)



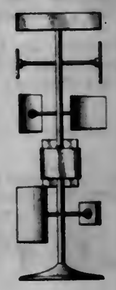
201,530
WATER SKI TIP
Robert L. Sackett, 1233 Shafter St., San Diego, Calif.
Filed Sept. 14, 1964, Ser. No. 81,706
Term of patent 14 years
(Cl. D71—1)



201,531
ALARM SIGNAL UNIT FOR AUTOMOBILE DRIVERS
Terrence J. Mulligan, 404 S. State St., and John K. Morrison, Rte. 1, Box 265X, Bilter Road, both of Aurora, Ill.
Filed Sept. 5, 1963, Ser. No. 76,486
Term of patent 14 years
(Cl. D72—1)



201,532
DISPLAY STAND
Samuel A. Cravotta, 2341 N. Edgewood St., Arlington 1, Va.
Filed Sept. 15, 1964, Ser. No. 81,735
Term of patent 14 years
(Cl. D80—9)



201,533
COMBINED SIGN AND DISPLAY STAND FOR TIRES
Guy L. Huey and Elliott J. Kiss, Massillon, Ohio, assignors to The Massillon-Cleveland-Akron Sign Company, Massillon, Ohio, a corporation of Ohio
Filed May 19, 1964, Ser. No. 80,047
Term of patent 14 years
(Cl. D80—9)



201,534
SERVICE STATION DISPLAY CABINET OR SIMILAR ARTICLE
Joseph A. Winger, Myron R. Cothern, and Murry J. Gammill, Greenwich, Conn., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 79,061
Term of patent 14 years
(Cl. D80—11)



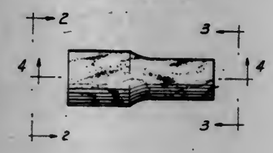
201,535
SERVICE STATION DISPLAY CABINET OR SIMILAR ARTICLE
Joseph A. Winger, Myron R. Cothern, and Murry J. Gammill, Greenwich, Conn., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 79,062
Term of patent 14 years
(Cl. D80—11)



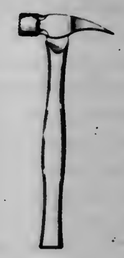
201,536
FIREBOX FOR A SELF-SUPPORTED FIREPLACE
Gerald Leroy Jonas, 689 Kansas St., San Francisco, Calif.
Filed July 29, 1963, Ser. No. 76,030
Term of patent 14 years
(Cl. D81—7)



201,537
CIGAR HOLDER
Edward L. Redford, Elizabeth, N.J., assignor to Beigo International, Roselle, N.J., a partnership
Filed Mar. 25, 1963, Ser. No. 74,097
Term of patent 14 years
(Cl. D85—8)



201,538
HAMMER
William C. Willis, Bellflower, Calif. (820 Edison Bldg., 100 Long Beach Blvd., Long Beach 2, Calif.)
Filed June 19, 1962, Ser. No. 70,602
Term of patent 14 years
(Cl. D94—4)



LIST OF REISSUE PATENTEES

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NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Buzicky, Edmund J., R. E. Johnson, J. R. Hilmanowski, and R. J. Milnar, to Whirlpool Corp. Apparatus for dispensing particulate material. Re. 25,814, 6–29–65, Cl. 222—129.

Hilmanowski, James R.: *See*—
Buzicky, Edmund J., Johnson, Hilmanowski, and Milnar. Re. 25,814.

Johnson, Robert E.: *See*—
Buzicky, Edmund J., Johnson, Hilmanowski, and Milnar. Re. 25,814.

Kearney and Trecker Corp.: *See*—
Morgan, Mark. Re. 25,812.

Milnar, Russell J.: *See*—
Buzicky, Edmund J., Johnson, Hilmanowski, and Milnar. Re. 25,814.

Morgan, Mark (by Kearney and Trecker Corp., assignee). Automatic machine tool. Re. 25,812, 6–29–65, Cl. 77—4.

Radiant Pen Corp.: *See*—
Shea, Warren. Re. 25,813.

Shea, Warren, to Radiant Pen Corp. Display ball-point pen. Re. 25,813, 6–29–65, Cl. 40—334.

Shell Oil Co.: *See*—
Tieman, Charles H., and Stiles. Re. 25,811.

Stiles, Alan R.: *See*—
Tieman, Charles H., and Stiles. Re. 25,811.

Tieman, Charles H. and A. R. Stiles (by Shell Oil Co., assignee). Preparation of vinyl esters of phosphorus acids useful as insecticides. Re. 25,811, 6–29–65, Cl. 260—461.

Whirlpool Corp.: *See*—
Buzicky, Edmund J., Johnson, Hilmanowski, and Milnar. Re. 25,814.

LIST OF PLANT PATENTEES

Swim, Herbert C., and O. L. Weeks, to O. L. Weeks, doing business under the trade name and style of Weeks Wholesale Rose Grower. Rose plant. 2,542, 6–29–65, Cl. 24.

Weeks, O. L.: *See*—
Swim, Herbert C., and Weeks. 2,542.

Weeks Wholesale Rose Grower: *See*—
Swim, Herbert C., and Weeks. 2,542.

LIST OF DESIGN PATENTEES

Ampex Corp.: *See*—
Vogt, Noland E. 201,498.

Belgo International: *See*—
Redford, Edward L. 201,537.

Bell & Howell Co.: *See*—
Kubnick, Norman R. 201,527.

Champion Papers Inc.: *See*—
Whitehurch, William E. 201,491.

Chaplewsky, Levi C. Illuminable display box for photographic transparencies. 201,500, 6–29–65, Cl. D29—20.

Cothern, Myron R.: *See*—
Winger, Joseph A., Cothern, and Gammill. 201,534.
Winger, Joseph A., Cothern, and Gammill. 201,535.

Cravotta, Samuel A. Display stand. 201,532, 6–29–65, Cl. D80—9.

Designatronics, Inc.: *See*—
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Dirkse, Donald J., to The Dow Chemical Co. Brick column. 201,495, 6–29–65, Cl. D13—4.

Dow Chemical Co., The: *See*—
Dirkse, Donald J. 201,495.

Faison, Charles B. to Little Giant Corp. Electric motor driven centrifugal pump. 201,529, 6–29–65, Cl. D65—1.

Filia, George J., to Sargent & Co. Hand tool for punching, crimping, cutting and the like. 201,521, 6–29–65, Cl. D54—13.

Gammill, Murry J.: *See*—
Winger, Joseph A., Cothern, and Gammill. 201,534.
Winger, Joseph A., Cothern, and Gammill. 201,535.

General Electric Co.: *See*—
Grunwald, Frank M. 201,524.
Pettengill, Myron F. 201,515.

Grunwald, Frank M., to General Electric Co. Phonograph or the like. 201,524, 6–29–65, Cl. D56—4.

Guilbert, Edward J.: *See*—
Schwartz, Sol, and Guilbert. 201,522.

Hitchcock, Richard E.: *See*—
Sundberg Carl W., and Hitchcock. 201,493.

Hovdal, Norma I. Three dimensional appliqued wall-hanging or similar article. 201,501, 6–29–65, Cl. D29—23.

Huey, Guy L., and E. J. Kies, to The Massillon-Cleveland-Akron Sign Co. Combined sign and display stand for tires. 201,533, 6–29–65, Cl. D80—9.

Hunt, Benjamin A. Combined toothpick dispenser and holder for condiment dispenser. 201,517, 6–29–65, Cl. D52—2.

Hunt, Benjamin A. Combined toothpick dispenser and holder for condiment dispensers. 201,518, 6–29–65, Cl. D52—2.

Jacobson, Harry L. Pillow. 201,492, 6–29–65, Cl. D9—9.

Jonas, Gerald L. Firebox for a self-supported fireplace. 201,536, 6–29–65, Cl. D61—7.

Kies, Elliott J.: *See*—
Huey, Guy L., and Kies. 201,533.

Kubnick, Norman R., to Bell & Howell Co. Motion picture camera. 201,527, 6–29–65, Cl. D61—1.

Kutner, Eleanor L. Holder for cups and spoons or the like. 201,514, 6–29–65, Cl. D44—29.

Little Giant Corp.: *See*—
Faison, Charles B. 201,529.

Martino, Louis J., W. E. Moll, and R. E. Weimer, to McDonald's System, Inc. Waste receptacle. 201,526, 6–29–65, Cl. D58—17.

Massillon-Cleveland-Akron Sign Co., The: *See*—
Huey, Guy L., and Kies. 201,533.

Masuda, Shigeru. Plate or similar article. 201,504, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,505, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,506, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,507, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,508, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,509, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,510, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,511, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,512, 6–29–65, Cl. D44—15.

Masuda, Shigeru. Plate or similar article. 201,513, 6–29–65, Cl. D44—15.

Mayo, Joseph P., Jr. Watch dial. 201,503, 6–29–65, Cl. D42—1.

McDonald's System, Inc.: *See*—
Martino, Louis J., Moll, and Weimer. 201,526.

Middlemark, Marvin P. Television antenna for indoor use. 201,499, 6–29–65, Cl. D26—14.

Moll, Wayne E.: *See*—
Martino, Louis J., Moll, and Weimer. 201,526.

Moore, Walter E., to Universal Match Corp. Cigarette vending machine. 201,519, 6–29–65, Cl. D52—3.

Morrison, John K.: *See*—
Mulligan, Terrence J., and Morrison. 201,531.

Mulligan, Terrence J., and J. K. Morrison. Alarm signal unit for automobile drivers. 201,531, 6–29–65, Cl. D72—1.

Myers, Earl D., to Ohaus Scale Corp. Container for a laboratory weight set. 201,525, 6–29–65, Cl. D58—13.

Neff, Ted. Plier wrench. 201,520, 6–29–65, Cl. D54—13.

Nemeth, Otto R. Motion picture film viewer. 201,528, 6–29–65 Cl. D61—1.

Nieman, John R. Shelf bracket. 201,502, 6–29–65, Cl. D33—3.

Ninger, Fred C., to Warner-Lambert Pharmaceutical Co. Tablet. 201,497, 6–29–65, Cl. D16—3.

Ohaus Scale Corp.: *See*—
Myers, Earl D. 201,525.

Pettengill, Myron F., to General Electric Co. Luminaire. 201,515, 6–29–65, Cl. D48—31.

Pullman, Edward J.: *See*—
Williams, Lewis W., and Pullman. 201,490.

Redford, Edward L., to Belgo International. Cigar holder. 201,537, 6–29–65, Cl. D85—8.

Sackett, Robert L. Water ski tip. 201,530, 6–29–65, Cl. D71—1.

Sargent & Co.: *See*—
Filia, George J. 201,521.
Sasnett, Bolling H., Jr. Gasoline pump housing. 201,516, 6–29–65, Cl. D52—2.
Schlager, Joseph. Awning. 201,494, 6–29–65, Cl. D13—1.
Schwartz, Sol, and E. J. Guilbert, to Designatronics, Inc. In-line slip clutch. 201,522, 6–29–65, Cl. D55—1.
Stef, Richard R. Combined vehicle wind and insect deflector. 201,496, 6–29–65, Cl. D14—6.
Sundberg, Carl W., and R. E. Hitchcock, to Universal Rundle Corp. Lavatory. 201,493, 6–29–65, Cl. D4—2.
Texaco Inc.: *See*—
Winger, Joseph A., Cothern, and Gammill. 201,534.
Winger, Joseph A., Cothern, and Gammill. 201,535.
Universal Match Corp.: *See*—
Moore, Walter E. 201,519.
Universal Rundle Corp.: *See*—
Sundberg, Carl W., and Hitchcock. 201,493.
Vogt, Noland E., to Ampex Corp. Combined magnetic tape recorder and video monitor. 201,498, 6–29–65, Cl. D26—14.
Warner-Lambert Pharmaceutical Co.: *See*—
Ninger, Fred C. 201,497.
Weimer, Ralph E.: *See*—
Martino, Louis J., Moll, and Weimer. 201,526.
Whitehurch, William E., to Champion Papers Inc. Bottle cap feeder. 201,491, 6–29–65, Cl. D2—3.
Williams, Lewis W., and E. J. Pullman. Card holder. 201,490, 6–29–65, Cl. D1—3.
Willis, William C. Hammer. 201,538, 6–29–65, Cl. D94—4.
Winger, Joseph A., M. R. Cothern, and M. J. Gammill, to Texaco Inc. Service station display cabinet or similar article. 201,534, 6–29–65, Cl. D80—11.
Winger, Joseph A., M. R. Cothern, and M. J. Gammill, to Texaco Inc. Service station display cabinet or similar article. 201,535, 6–29–65, Cl. D80—11.
Ziegelmaier, Walter. Wax melting heater. 201,523, 6–29–65, Cl. D55—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 29TH DAY OF JUNE, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AEL Food Automation Division, Inc.: *See*—
Hawley, George F., Murphy, Moulder, Miller, and Crane. 3,191,857.
Hawley, George F., Murphy, Moulder, Miller, and Crane. 3,191,749.
Scherr, Robert E., Moulder, Hawley, and Buettner. 3,191,858.
AMP Inc.: *See*—
Cobaugh, Robert F. 3,191,281.
Crockett, David R., and Harris. 3,192,457.
Demler, Henry W. 3,191,464.
Evans, William R., and Swoagel. 3,192,445.
Sitz, Gilbert C. 3,191,411.
Aalpoel, Marten C.: *See*—
Maas, Henricus J., and Aalpoel. 3,191,473.
Abbott Laboratories: *See*—
Doanimos, George H. 3,192,252.
Freiberg, Leslie A. 3,192,236.
Freifelder, Morris, and Kurath. 3,192,237.
Abernethy, Ira A., to United States Ceramic Tile Co. Ceramic wall tile assembly. 3,192,097, 6–29–65, Cl. 161—38.
Abolins, Andrew, to Strick Trailers, a Division of Fruehauf Trailer Co. Harness for trailer clearance lights. 3,192,377, 6–29–65, Cl. 240—8.2.
Achterhof, Marvin, M. O. Futterman, N. L. Havens, and J. F. Whorter, to The Eagle-Picher Co. Homogenized cross linked polyurethanes. 3,192,185, 6–29–65, Cl. 260—75.
Acker, Norman J., to Sunbeam Equipment Corp. Transfer mechanism for heat-treating apparatus. 3,191,919, 6–29–65, Cl. 266—4.
Adam, Vaclav, to Vyskumny a skusobnailetecky ustav. Apparatus for shaping hollow members. 3,191,417, 6–29–65, Cl. 72—126.
Adamec, Oswald T. Devices for solar distillation. 3,192,133, 6–29–65, Cl. 202—234.
Adams, Alonzo T.: *See*—
Kueck, Darwin R., Adams, and Froning. 3,192,053.
Adams, Arley. Modified flight conveyor for oily metal cuttings. 3,191,758, 6–29–65, Cl. 198—174.
Adams, Charles H., to Monsanto Co. Arresting systems. 3,191,890, 6–29–65, Cl. 244—110.
Adams, Dolphus H. Gun rest. 3,191,826, 6–29–65, Cl. 224—5.
Adams, Herbert L., III, to General Motors Corp. Gearless differential. 3,191,458, 6–29–65, Cl. 74—650.
Adams, Russell. Bilge pump. 3,191,538, 6–29–65, Cl. 103—70.
Adcock, Frederick A., to The Raleigh Industries Ltd. and Isle of Man. Pedals. 3,191,457, 6–29–65, Cl. 74—594.4.
Adler, Franklin P., to Pullman Inc. Movable bulkhead. 3,191,846, 6–29–65, Cl. 105—376.
Adler, Franklin P., to Pullman Inc. Split side wall railway car. 3,191,847, 6–29–65, Cl. 105—378.
Adler, Franklin P., to Pullman Inc. Door assembly for open side railway cars. 3,191,549, 6–29–65, Cl. 105—376.
Adler, Franklin P., W. Van Der Sluys, and J. E. Candlin, Jr., deceased (by First National Bank of Lansing, administrator), to Pullman Inc. Railway car construction. 3,191,548, 6–29–65, Cl. 105—378.
Adler, Franklin P., and J. E. Candlin, Jr., deceased (by First National Bank of Lansing, administrator), to Pullman Inc. Railway car construction. 3,191,550, 6–29–65, Cl. 105—404.
Admiral Corp.: *See*—
Carlson, Reuben C. 3,192,239.
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Aeroquip Corp.: *See*—
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Stryker, Seymour F. 3,191,720.
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Air Reduction Co., Inc.: *See*—
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Airsun Corp.: *See*—
Kamaika, Lawrence T. 3,191,926.
Akerman, Ivan E. R.: *See*—
Lowler, Erik, and Akerman. 3,191,854.
Akkerman, Antony M., H. Kofman, J. F. Michels, and G. de Vries, to Nederkandsche Combinatie voor Chemische Industrie, N.V. 5-phenyl-5-(2-pyrazyl)-hydantoin. 3,192,211, 6–29–65, Cl. 260—250.
Aldrich, Joseph J.: *See*—
Cooper, James, Jr., and Aldrich. 3,192,011.
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Alexander, Ford I. Control of well pipe rotation and advancement. 3,191,683, 6–29–65, Cl. 166—178.
Algatt, George E., and W. G. Otto, to Western Electric Co. Inc. Apparatus for finishing lamps. 3,192,006, 6–29–65, Cl. 316—37.
Allander, Claes, to Svenska Flaktfabriken, Aktiebolaget. Method of uniformly moistening paper and like hygroscopic web material. 3,191,312, 6–29–65, Cl. 34—13.
Allen, Edward L., to Ingersoll-Rand Co. Wire wrapper bit. 3,191,579, 6–29–65, Cl. 242—7.
Allen, Herbert, to Cameron Iron Works, Inc. Check valve having movably mounted head and seat. 3,191,619, 6–29–65, Cl. 137—527.4.
Allen, John C., Jr.: *See*—
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Allison, Leslie R., to Westinghouse Air Brake Co. Automatic vehicle control apparatus. 3,192,382, 6–29–65, Cl. 246—187.
Allred, Charles M., to United States of America, Commerce. Signal-level comparing system. 3,192,872, 6–29–65, Cl. 235—193.
Almquist, Vernon C., to Armour and Co. Egg packaging. 3,192,050, 6–29–65, Cl. 99—177.
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American Thermocatalytic Corp.: *See*—
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Ames Atomium, Inc.: *See*—
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Amic, John J., Sr. Foil plate dispensing mechanism. 3,191,804, 6–29–65, Cl. 221—213.
Amsted Industries Inc.: *See*—
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Somers, John D. 3,191,971.
Anaconda Wire and Cable Co.: *See*—
Ege, Sigud. 3,191,874.
Anderson, Arne H., and J. E. Wachtel, to Hamilton Mfg. Co. Table and bench assembly. 3,191,991, 6–29–65, Cl. 297—159.
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Anderson, Malcolm G., and J. S. Hawkes, to The Goodyear Tire & Rubber Co. Safety tire and valve therefor. 3,191,654, 6-29-65, Cl. 152—341.

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Anderson, Tage O., to Consolidated Systems Corp. Digital transient analyzer. 3,192,519, 6-29-65, Cl. 340—347.

Andresen, Raymond H., to Gits Bros. Mfg. Co. Rotary seal with supporting sleeve. 3,191,945, 6-29-65, Cl. 277—65.

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Gee, Paul Y. C., and Andress. 3,192,160.

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Ashton, Ernest W. S. 3,191,230.

Antokal, Philip, to E. I. du Pont de Nemours and Co. Electrical discharge producing apparatus for treating plastic materials. 3,192,885, 6-29-65, Cl. 250—49.5.

Antoszewski, Eugeniusz: *See*—
Van Cortlandt Warrington, Albert R., and Antoszewski. 3,192,442.

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Arabian, Karekin G., and J. C. Muyres, to Shell Oil Co. Wax composition and sheet materials coated therewith. 3,192,062, 6-29-65, Cl. 106—270.

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Fisher, Joseph D. 3,192,115.

Armstrong, David E., and G. P. Roeser, said Armstrong assor. to Horace T. Potts Co. Multi-layer lubrication utilising encapsulating coating. 3,191,286, 6-29-65, Cl. 29—424.

Arnold, Paul L., and W. A. Montgomery, to United States Pipe and Foundry Co. Casting apparatus. 3,191,249, 6-29-65, Cl. 22—82.

Arnts, Robert W., and A. Britich, to Ingersoll-Rand Co. Attachment for connecting a stub shaft to a drive shaft. 3,191,976, 6-29-65, Cl. 287—52.05.

Asadorian, Arthur A., to The Dow Chemical Co. Tribrominated dialkyl benzenes. 3,192,272, 6-29-65, Cl. 260—650.

Asaka, Urataro, and K. Osaki, to Kabushiki Kaisha Honda Gijutsu Kenkyusho. High pressure fuel injection apparatus for internal combustion engines. 3,191,812, 6-29-65, Cl. 222—250.

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Ashurkoff, Peter, to General Motors Corp. Press-fitting apparatus. 3,191,279, 6-29-65, Cl. 29—200.

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August, Pablo. Mixer, particularly a concrete mixer. 3,191,914, 6-29-65, Cl. 259—160.

Ault, Waldo C., and A. Eisner, to United States of America, Agriculture. Process for addition of arylthiols, phenols and phenyl ethers to unsaturated fatty acids. 3,192,239, 6-29-65, Cl. 260—399.

Austin, William C.: *See*—
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Ayata, Edward M. Stair climbing wheel chair. 3,191,953, 6-29-65, Cl. 280—5.22.

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Bagnell, Kenneth H. Therapeutic chair. 3,191,594, 6-29-65, Cl. 128—24.

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Baker Equipment Engineering Co. Inc.: *See*—
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Ballase, John T., and B. J. Freedman, to General Dynamics Corp. Welding flux. 3,192,077, 6-29-65, Cl. 148—26.

Baltensperger, Paul, to Brown, Boveri & Cie, Aktiengesellschaft. Load switch with parallel connected capacitors. 3,192,440, 6-29-65, Cl. 317—11.

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Banks, Joseph E. Method of forming hollow concrete bodies. 3,192,292, 6-29-65, Cl. 264—32.

Baracket, Albert J., to Diamond Power Specialty Corp. Transistor-regulated power supply. 3,192,467, 6-29-65, Cl. 323—22.

Baranauckas, Charles F., and R. L. K. Carr, to Hooker Chemical Corp. Process for removing non-terminal halogens from saturated perhalocarbons. 3,192,274, 6-29-65, Cl. 260—653.5.

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Barthel, Karl, to Schnellpressenfabrik Aktiengesellschaft Heidelberg. Successive interruption for letterpress printing machines. 3,191,529, 6-29-65, Cl. 101—184.

Bartlett, Jeffrey H., S. B. Lippincott, and L. A. Mikeska, to Esso Research and Engineering Co. Cyclo-organo compounds of phosphorus. 3,192,162, 6-29-65, Cl. 252—46.6.

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Basset, Jacques. Two stage fluid compressing devices. 3,191,883. 6-29-65, Cl. 60—54.5.

Batchelor, Clyde S., and W. E. Jensen, to Raybestos-Manhattan, Inc. Friction mechanism with fiber composition lining and mating metal layer. 3,191,734, 6-29-65, Cl. 192—68.

Bates, William F., and R. A. Malott, to Shell Oil Co. Method of drilling and locating an underwater well. 3,191,695, 6-29-65, Cl. 175—5.

Batterman, Theodore W., and M. Pobog, to Electric Eye Equipment Co. High speed automatic shutter mechanism and control. 3,192,458, 6-29-65, Cl. 318—28.

Battista, Orlando A., and G. T. Smith, to FMC Corp. Cellulose crystallites radiopaque media. 3,192,118, 6-29-65, Cl. 167—95.

Bauer, Peter, to Sperry Rand Corp. "And" gate. 3,191,611, 6-29-65, Cl. 137—61.5.

Baum, Lloyd. Tooth filling material. 3,191,303, 6-29-65, Cl. 32—15.

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Bayer, A. J., Co.: *See*—
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Baynham, John W., and F. J. Harris, to Scottish Agricultural Industries Ltd. Manufacture of granular fertilisers. 3,192,034, 6-29-65, Cl. 71—64.

Beach, Justice H., to The Hoover Co. Synchronous motor and mounting. 3,192,419, 6-29-65, Cl. 310—9.1.

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Beckman, Ronald, and F. J. Foyster, to Herman Miller, Inc. Furniture panel. 3,192,099, 6-29-65, Cl. 161—43.

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Beckwith, Edwin L., to Beckwith-Arden Inc. Scabbard fitting. 3,191,825, 6-29-65, Cl. 224—2.

Beerend, Ray F., and H. C. Needle, to Basic Food Materials Inc. Method of assuring homogeneity of dry food additive mixtures. 3,192,055, 6-29-65, Cl. 99—222.

Behnke, John M., to Nopco Chemical Co. Wax-polyethylene paper coating emulsions containing solubilised proteins. 3,192,172, 6-29-65, Cl. 260—8.

Beitchman, Burton D., and W. E. Erner, to Air Products and Chemicals, Inc. Preparation of stretchable polyurethane castings using a cocatalyst system of an epoxy alkane and a bicyclic amine. 3,192,187, 6-29-65, Cl. 260—77.5.

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Bender, Harry, and H. D. Bajars, to General Mills, Inc. Glass to metal seal. 3,192,497, 6-29-65, Cl. 338—308.

Bender, Lloyd F. Milk line releaser and washer apparatus. 3,191,576, 6-19-65, Cl. 119—14.07.

Bender, Peter L., and E. C. Beaty, to United States of America, Commerce. Alkali vapor frequency standard utilizing optical pumping. 3,192,472, 6-29-65, Cl. 324—58.5.

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Henn, William, and Teitelbaum. 3,192,374.
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Benedict, Theodore S., to Merck & Co., Inc. Composite semiconductor delay line device. 3,192,398, 6-29-65, Cl. 307—88.5.

Bennett, David, to Modern Millinery Box Corp. Bottom center-fold erectable hat box containing an oval hat platform. 3,191,764, 6-29-65, Cl. 206—8.

Bennett Respiration Products, Inc.: *See*—
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Bennett, Richard R. Charcoal grill. 3,191,591, 6-29-65, Cl. 126—25.

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Benson, Walter E., and J. M. Lindsley, to J. M. Nash Co., Inc. Gun case. 3,191,652, 6-29-65, Cl. 150—52.

Berg, Arthur A., to Berg Mfg. & Sales Co. Safety check valve. 3,191,620, 6-29-65, Cl. 137—551.

Berg Mfg. & Sales Co.: *See*—
Berg, Arthur A. 3,191,620.

Berger, Christian D.: *See*—
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Bergeson, Raymond L., to Honeywell Inc. Level gauge capacitor with electrodes of different materials. 3,192,455, 6-29-65, Cl. 317—247.

Bergstrom, Roland F., and R. C. Nelson, to Shell Oil Co. Lubricating compositions containing a detergent copolymer and an alkaline earth petroleum sulfonate-trialkyl amine complex. 3,192,158, 6-29-65, Cl. 252—32.4.

Bernatt, Joseph, and O. B. Alsaker, to James E. Kearney Corp. Disconnect type of electric switch. 3,192,332, 6-29-65, Cl. 200—48.

Bernfeld, Sylvan, and M. L. Granberg, to Sperry Rand Corp. Control line driver employing opposite-conductivity-type transistors providing either of two potentials to output terminal. 3,192,403, 6-29-65, Cl. 307—88.5.

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Beurtheret, Charles A. E., to Campagnie Francaise Thomson-Houston. Oscillation generating system. 3,192,354, 6-29-65, Cl. 219—10.77.

Beyer, Stanley J., and J. A. Priest, to General Electric Co. Air conditioning unit including corrosion inhibiting means. 3,191,401, 6-29-65, Cl. 62—250.

Beyers, Marvin E., and J. W. Carter, to Caterpillar Tractor Co. Blade stabiliser for motor grader. 3,191,924, 6-29-65, Cl. 37—156.

Bidwell, Howard, 50% to R. Bidwell. Apparatus for treating paper stocks. 3,191,676, 6-29-65, Cl. 241—296.

Bidwell, Howard, 50% to R. Bidwell. Apparatus for treating paper stocks. 3,191,677, 6-29-65, Cl. 241—296.

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Bidwell, Howard. 3,191,677.

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Biel, John H., to Colgate-Palmolive Co. Phenylcyclopropyl amides. 3,192,229, 6-29-65, Cl. 260—326.3.

Biel, John H., to Colgate-Palmolive Co. Antisecretory, analgetic, muscle relaxant diaryl piperazine derivatives. 3,192,112, 6-29-65, Cl. 167—65.

Biehl, John H., and J. E. Robertson, to Colgate-Palmolive Co. Therapeutic aryl and thienyl hydroxylamines. 3,192,110, 6-29-65, Cl. 167—65.

Bieschke, Hillard J., to Knox Mfg. Co. Projection screen. 3,191,663, 6-29-65, Cl. 160—24.

Bird, Forrest M., and H. L. Pohndorf. Respirator. 3,191,596, 6-29-65, Cl. 128—29.

Birum, Gail H., to Monsanto Co. 2,2-bis(halomethyl)-1,3-propylenebis(phosphorodihalidates) and halogenated diphosphate esters thereof. 3,192,242, 6-29-65, Cl. 260—461.

Bissinger, William E., to Pittsburgh Plate Glass Co. Stabilisation of methylchloroform. 3,192,273, 6-29-65, Cl. 260—652.5.

Black, Lloyd V., to Pittsburgh Plate Glass Co. Apparatus for bending glass sheets with intermediate finger support. 3,192,029, 6-29-65, Cl. 65—289.

Blackstone Corp.: *See*—
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Blakeslee, Clinton A., and N. D. Kintner, to The Bristol Co. Indicating apparatus. 3,192,534, 6-29-65, Cl. 346—145.

Blaw-Knox Co.: *See*—
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Blomquist, George B., Jr., to Swift Spinning Mills, Inc. Automatic stop for cards. 3,191,236, 6-29-65, Cl. 19—.25.

Blueberry Equipment, Inc.: *See*—
Jones, Paul F., McKibben, Thompson, and Graham. 3,191,772.

Bodine, Albert G. Sonic pump impeller. 3,191,537, 6-29-65, Cl. 103—43.

Bodine, Albert G., Jr. Fluid driven mechanical oscillator. 3,191,911, 6-29-65, Cl. 259—1.

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Boersma, Sipko L.: *See*—
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Bogenberger, Esther E. Toilet seat attachment. 3,191,198, 6-29-65, Cl. 4—251.

Böhner & Kohle: *See*—
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Bolger, James W., to Rexall Drug and Chemical Co. N-(aminoalkyl)-endo-perhydro-4,7-methanoisoindoles. 3,192,228, 6-29-65, Cl. 260—319.

Bolt, Richard R., to American Can Co. Method and apparatus for forming metal articles. 3,191,422, 6-29-65, Cl. 72—344.

Bonetti, Giovanni A., C. B. De Savigny, C. Michalski, and R. Rosenthal, to The Atlantic Refining Co. Method for preparing nitronitrites and dinitroparaffins from alpha-olefins. 3,192,248, 6-29-65, Cl. 260—467.

Bonnetti, Giovanni A., and R. Rosenthal, to The Atlantic Refining Co. Method for conversion of 1,2-dinitroparaffins to 1-nitroolefins. 3,192,271, 6-29-65, Cl. 260—644.

Bonnett, Daniel W., to Koppers Co., Inc. High and low burner gun flue coke oven with waste gas recirculation and decarbonising air. 3,192,134, 6-29-65, Cl. 202—241.

Bonnetti, Giovanni A., and R. Rosenthal, to Atlantic Refining Co. Method for conversion of 1,2-dinitroparaffins to 1-nitroolefins. 3,192,271, 6-29-65, Cl. 260—644.

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Underwood, Herbert N., and Dietrich. 3,191,264.
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Boscott, Ronald J., J. Augstein, W. C. Austin, and C. A. Bartram, to Chas. Pfizer & Co., Inc. N-substituted methoxyphenoxyethylamines. 3,192,253. 6-29-65, Cl. 260—501.

Bostick, Glyn, to Radar Design Corp. Variable attenuator. 3,192,493, 6-29-65, Cl. 333—81.

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Bowen Tools, Inc.: *See*—
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Bowles, Ronald E. Passive pure fluid component. 3,191,623, 6-29-65, Cl. 137—613.

Boyce, William C., to United States of America, Air Force. Arm restraint. 3,191,994, 6-29-65, Cl. 297—411.

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Bracken, Arthur, and C. C. Wilton-Davies, to The British Oxygen Co., Ltd. Gas mixtures containing nitrous oxide. 3,192,108, 6-29-65, Cl. 167—52.

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Bradley, Douglas: *See*—
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Braham, James V. Feed lot conveyor system. 3,191,581, 6-29-65, Cl. 119—52.

Brahler, Dean I. Internal combustion engine. 3,191,584, 6-29-65, Cl. 123—50.

Brahm, Charles B., to United Aircraft Corp. Feedback integrating system. 3,192,371, 6-29-65, Cl. 235—183.

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Brandmair, Franz, E. Kolbe, and W. Kunser, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for purifying aqueous hydrochloric acid. 3,192,128, 6-29-65, Cl. 202—46.

Brandt, Herbert, to Apparatebau Rothemuhle, Dr. Brandt & Co. Regenerative fluid heater. 3,191,666, 6-29-65, Cl. 165—4.

Brandt, Mahlon W., to Dorr-Oliver Inc. Method and apparatus system for continuously washing and drying solid combustible material. 3,192,068, 6-29-65, Cl. 134—25.

Bready, John W. and W. M. System and method for the rectification and clarification of waste water. 3,192,155, 6-29-65, Cl. 210—44.

Bready, William M.: *See*—
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Brenneman, James C. Method for erecting a Christmas tree. 3,191,266, 6-29-65, Cl. 29—150.

Brennan, George A., and E. S. Prichard, to Challenge-Cook Bros., Inc. Hydraulic power system. 3,191,961, 6-29-65, Cl. 260—61.

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Brewer, William A. Airfoils for rotary lawn mower. 3,191,371, 6-29-65, Cl. 56—295.

Brietzke, Adrian P., to Northern Engraving and Mfg. Co. Screw-type conveyor system. 3,191,762, 6-29-65, Cl. 198—213.

Brill, John L., and E. F. Isard, to E. I. du Pont de Nemours and Co. Prepolymerisation process. 3,192,184, 6-29-65, Cl. 260—75.

Brils, Ralph J. Safety swing seat. 3,191,932, 6-29-65, Cl. 272—65.

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Brink, Virginia M.: *See*—
Zabel, Norman R., and Brink. 3,192,533.

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Brkich, Alexander: *See*—
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Brockett, Peter C., to Laboratory for Electronics, Inc. Timing circuit. 3,192,449, 6-29-65, Cl. 317—142.

Brodersen, Rolf K., to General Precision Inc. Optical phase sensitive incremental encoder. 3,192,393, 6-29-65, Cl. 250—235.

Brodersen, Rolf K., to General Precision Inc. Electromagnetic transducers. 3,193,495, 6-29-65, Cl. 336—135.

Brok, Wilhelm F.: *See*—
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Lloyd, James E., and Brooks. 3,192,010.

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Brown, Boveri & Cie, Aktiengesellschaft: *See*—
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Brown, Horace D.: *See*—
Sarett, Lewis H., and Brown. 3,192,226.

Brown, Horace D., and L. H. Sarett, to Merck & Co., Inc. Anthelmintic compositions and method of using same. 3,192,108, 6-29-65, Cl. 167—53.

Brown, Horace D., and L. H. Sarett, to Merck & Co., Inc. N-acyl-2-halophenyl benzimidazoles. 3,192,227, 6-29-65, Cl. 260—309.2.

Brown, Kenneth R., and C. L. Crawford, to Ferranti, Ltd. Comparator gauges. 3,191,311, 6-29-65, Cl. 33—169.

Brown, Lemual G. Grille or screen. 3,191,729, 6-29-65, Cl. 189—62.

Brown, Norman F., to Otis Engineering Corp. Gravity operated Kelly foot valve. 3,191,905, 6-29-65, Cl. 251—149.5.

Brown, Northrop, and W. E. Grigsby, to E. I. du Pont de Nemours and Co. Stabilization of polyoxymethylene. 3,192,182, 6-29-65, Cl. 260—67.

Brown, Robert M., R. Lavine, W. Coleman, and M. E. Levin. Fluoridation apparatus. 3,191,868, 6-29-65, Cl. 239—315.

Brown Steel Tank Co.: *See*—
Brown, Walter V. 3,191,541.

Brown, Walter V., to Brown Steel Tank Co. Rotary fluid device. 3,191,541, 6-29-65, Cl. 105—136.

Brownstein, George: *See*—
Rubinstein, William C., and Brownstein. 3,192,813.

Bruchschmidt, Hans, to VDO Tachometer Werke Adolf Schindling G.m.b.H. Recording instrument. 3,192,532, 6-29-65, Cl. 346—23.

Brunner, Julius: *See*—
Kuhrt, Friedrich, and Brunner. 3,192,471.

Brunner, Julius, and F. Kuhrt, to Siemens-Schuckertwerke Aktiengesellschaft. Device for measuring torque on shafts. 3,191,434, 6-29-65, Cl. 73—136.

Brunswick Corp.: *See*—
Uecker, Donald F. 3,191,935.
Vaughen, John V., and Wilson. 3,192,084.

Brutting, Eugen. Soccer shoe with ball control surface. 3,191,321, 6-29-65, Cl. 36—2.5.

Bryant, Edward T.: *See*—
Farquhar, Melville T., Nagle, and Bryant. 3,192,818.

Buchanan, James L., J. R. Swanson, and W. B. Zelina, to General Electric Co. Direct current controlled rectifier system. 3,192,468, 6-29-65, Cl. 323—22.

Bucourt, Robert: *See*—
Nomine, Gerard, and Bucourt. 3,192,267.

Budney, Henry S.: *See*—
Budney, Michael P., H. S. and T. W., and Sacsawa. 3,191,461.

Budney, Michael P., H. S. and T. W., and M. F. Sacsawa, to Atlantic Machine Tool Works, Inc. Jig borer. 3,191,461, 6-29-65, Cl. 77—4.

Budney, Thaddeus W.: *See*—
Budney, Michael P., H. S. and T. W., and Sacsawa. 3,191,461.

Buehler Corp., The: *See*—
Lerwick, Howard P., and Engel. 3,191,881.

Buettner, John H.: *See*—
Scherr, Robert E., Moulder, Hawley, and Buettner. 3,191,858.

Bundy Tubing Co.: *See*—
Knox, David E. 3,191,290.

Bunting, Ernest V., to Massey-Ferguson Inc. Automatic draft control and compensating system for tractors. 3,191,687, 6-29-65, Cl. 172—9.

Bunting, William W., Jr., R. Meagher, K. G. Swayne, and J. P. Work, to E. I. du Pont de Nemours and Co. Yarn-handling method. 3,191,831, 6-29-65, Cl. 225—4.

Burg, Marion, to E. I. du Pont de Nemours and Co. Diazothioether heterocyclic compounds. 3,192,194, 6-29-65, Cl. 260—141.

Burgarella, John P., and M. S. Dietz, to Polaroid Corp. Photographic apparatus. 3,191,511, 6-29-65, Cl. 95—10.

Burger, Friedhelm: *See*—
Junghanns, Paul, Frede, and Burger. 3,191,248.

Burgess, Stanley E. G., and R. C. Furlord. Convertible and nesting commercial crab trap. 3,191,338, 6-29-65, Cl. 43—102.

Burke, William O., to National Lock Co. Sectional cooler latch. 3,191,244, 6-29-65, Cl. 20—92.4.

Burndy Corp.: *See*—
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Burr, Bessie F. Contact thimble device. 3,191,824, 6-29-65, Cl. 223—101.

Burroughs Corp.: *See*—
Jorgensen, Arnold J. 3,192,407.
Somlyody, Arpad. 3,192,406.

Burt, Harold R.: *See*—
Campbell, H. Albert, Jr., and Burt. 3,191,881.

Burtner, Richard L., to Goodyear Aerospace Corp. Apparatus for the automatic navigation and guidance of an aircraft or the like. 3,192,522, 6-29-65, Cl. 343—7.

Burton, Robert E. Separation of colloidal solids from liquids. 3,192,154, 6-29-65, Cl. 210—3.

Butler, Charlie C., and C. O. Kellett, to Loom Products Co., Inc. Jack stick and strap assembly for looms. 3,191,635, 6-29-65, Cl. 139—88.

Butter, George N., to Commercial Solvents Corp. Stabilised formaldehyde solutions. 3,192,268, 6-29-65, Cl. 260—606.

Byrne, John, and W. A. Stirrat, to United States of America, Army. Pulse generator using a dual frequency oscillator to both develop and switch high voltage. 3,192,411, 6-29-65, Cl. 307—107.

Cahill, Joseph A.: *See*—
Connor, James E., Jr., and Cahill. 3,192,151.

Caiger, Donald: *See*—
Merrall, Granville T., and Caiger. 3,192,173.

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Cain, William A., Jr., to Elgen Mfg. Corp. Apparatus to secure a flexible strip to metal strips. 3,191,283, 6-29-65, Cl. 153—1.

Cal-Dak Co., The: *See*—
Zierhut, Clarence D. 3,191,554.

Cale, Albert D., Jr.: *See*—
Lunsford, Carl D., and Cale. 3,192,206.
Lunsford, Carl D., and Cale. 3,192,207.
Lunsford, Carl D., and Cale. 3,192,209.
Lunsford, Carl D., and Cale. 3,192,210.
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Lunsford, Carl D., and Cale. 3,192,280.

California Pellet Mill Co.: *See*—
Keefe, James T. 3,191,227.

California Research Corp.: *See*—
Goulding, Robert IA, Jr., and Tanner. 3,192,109.
Horne, George H., and Ludwig. 3,191,671.
Ludwig, Milton. 3,191,888.

Callahan Mining Corp.: *See*—
Lariviere, Romeo G. 3,192,088.
Smart, Charles H. 3,191,631.

Callery Chemical Co.: *See*—
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Marshall, Mervin D. 3,192,217.

Cameron Iron Works, Inc.: *See*—
Allen, Herbert. 3,191,619.

Campbell, George C.: *See*—
Fuqua, Lloyd T., Campbell, and Pryor. 3,191,455.

Campbell, George C. L.: *See*—
Campbell, George C. L., Rogers, and Campbell. 3,191,818.
Moorhouse, William J., Rogers, and Campbell.

Campbell, H Albert, Jr., and H. R. Burt, to K.W.F. Industries, Inc. Magnetic tape feed assembly for tape recorders. 3,191,881, 6-29-65, Cl. 242—55.13.

Campbell, John W., to Babcock & Wilcox Ltd. Nuclear reactor core construction. 3,192,130, 6-29-65, Cl. 176—50.

Canadian Patents and Development Ltd.: *See*—
Christopher L., Smialowski, Connock, and Vogel-Fischer, Christopher L., Smialowski, Connock, and Vogel-fanger. 3,191,842.

Canadian Westinghouse Co., Ltd.: *See*—
Kenyeres, Nicholas, and Anderson. 3,192,447.

Candelise, Alfred, to General Motors Corp. Center electrode for spark plug. 3,192,429, 6-29-65, Cl. 313—289.

Candlin, James E., Jr.: *See*—
Adler, Franklin P., Van Der Sluys, and Candlin. 3,191,548.
Adler, Franklin P., and Candlin. 3,191,550.

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Canon Camera Co., Inc.: *See*—
Matsui, Yoshiya. 3,191,497.

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Feuer, Irving. 3,192,426.

Caracristi, Virginius Z.: *See*—
Schuss, Jack A., and Caracristi. 3,191,658.

Cargill, Inc.: *See*—
Wilson, Samuel G., Olson, and Tweet. 3,192,061.

Carlson, Frederick G., and R. J. Brandt. Distance measuring device. 3,191,310, 6-29-65, Cl. 33—141.

Carlson, Reuben C.: *See*—
Wolff, Robert A., and Carlson. 3,192,460.

Carlson, Reuben C., to Admiral Corp. Combination switch and relay. 3,192,339, 6-29-65, Cl. 200—87.

Carlson, Reuben C., and J. N. Marcheee, to Admiral Corp. Pre-set fine tuning. 3,192,494, 6-29-65, Cl. 334—29.

Carlson Tool & Machine Co.: *See*—
Peterson, Harold C. 3,191,478.

Carmack, Allen H., and J. W. De Frees. Phototypographic apparatus. 3,191,510, 6-29-65, Cl. 6.

Carpenter Steel Co., The: *See*—
Goda, Kermit J., Jr., and Gross. 3,192,039.
Goda, Kermit J., Jr., and Gross. 3,192,040.

Carr, Russell L. K.: *See*—
Baranauckas, Charles F., and Carr. 3,192,274.

Carrier Corp.: *See*—
Martin, William C., Jr., and Rush. 3,191,863.
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Carroll, William N., to International Business Machines Corp. Frequency flip-flop. 3,192,484, 6-29-65, Cl. 331—39.

Carter, John W.: *See*—
Beyers, Marvin E., and Carter. 3,191,324.

Carter, Ralph B., Co.: *See*—
Davenport, Robert W. 3,191,539.

Carter, Roger C., Jr., to Hartford Steel Ball Co. Split cone ball bearing. 3,192,002, 6-29-65, Cl. 308—193.

Casco Products Corp., The: *See*—
Horwitt, Laurence G., and Krenke. 3,192,343.

Casella Lighting Co.: *See*—
De Garmo, Ralph G. M. 3,192,379.

Castro, Bernard, to Castro Convertible Corp. Protective covering for bedding in a convertible sofa-bed. 3,191,198, 6-29-65, Cl. 5—320.

Castro Convertible Corp.: *See*—
Castro, Bernard. 3,191,198.

Caterpillar Tractor Co.: *See*—
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Catto, Charles: *See*—
Levin, Herman, and Catto. 3,191,821.

Caulkins, James M.: *See*—
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Cavicchi, Warren A.: *See*—
Newton, Albert E., and Cavicchi. 3,191,865.

Cayot, Lynn B., to Commonwealth Co. Golf bag stand. 3,191,900, 6-29-65, Cl. 248—96.

Cech, Edward T., Sr., to W. Kaiser. Fixture for making cams. 3,191,501, 6-29-65, Cl. 90—13.9.

Celanese Corp. of America: *See*—
MacLean, Alexander F., and Stautsenberger. 3,192,256.

Cerych, John Z., and A. L. Kilbanoff, to National Research Corp. Coating. 3,192,064, 6-29-65, Cl. 117—100.

Chalberg, Wilmot C. Portable shoeshine heel clamp. 3,191,209, 6-29-65, Cl. 15—267.

Challen, Henry D., and D. R. Cooper, to Taylor & Challen Ltd. Coining presses. 3,191,525, 6-29-65, Cl. 101—4.

Challender, Ronald S., J. M. Laithwaite, W. T. Lawton, and J. J. Griffiths, to United Kingdom Atomic Energy Authority. Nuclear reactor systems. 3,192,121, 6-29-65, Cl. 176—60.

Challenge-Cook Bros., Inc.: *See*—
Brennan, George A., and Prichard. 3,191,961.
Prichard, Evan S. 3,191,963.

Chalmers, James C. Toy rocket launcher. 3,191,342, 6-29-65, Cl. 46—74.

Chambers, Harry D., to Eaton Axles Ltd. Vehicle suspension systems. 3,191,964, 6-29-65, Cl. 280—124.

Chambers, Howard S., to The Panghorn Corp. Blasting wheel construction. 3,191,346, 6-29-65, Cl. 51—9.

Chang, Joseph J.: *See*—
Matcovich, Thomas J., and Chang. 3,192,370.

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Whitmoyer, Clarence W., Wiley, and Chang. 3,192,107.

Chapman, George C., to Owens-Illinois Glass Co. Apparatus for forming glass. 3,192,028, 6-29-65, Cl. 65—199.

Chapman, Zeph S. Cushioned support for headset. 3,192,326, 6-29-65, Cl. 179—178.

Chase Brass & Copper Co. Inc.: *See*—
Cooper, James, Jr., and Aldrich. 3,192,011.

Chatelain, Maurice G., to The Ryan Aeronautical Co. Multihelix antenna on inflatable satellite. 3,192,529, 6-29-65, Cl. 343—844.

Chemical Construction Corp.: *See*—
Kurpit, Stanley S., Mavrovic, and Saffian. 3,191,916.
Willett, Howard P. 3,191,870.

Chen, William K.-W., to American Machine & Foundry Co. Electrodialysis apparatus for fluid treatment. 3,192,148, 6-29-65, Cl. 204—301.

Chen, Wu, W. L. Poland, and H. F. Welsh, to Sperry Rand Corp. Multiple aperture photosensitive reader. 3,192,388, 6-29-65, Cl. 250—219.

Cheney, Adelbert W., to Sperry Rand Corp. Instruction counter with sequential address checking means. 3,192,362, 6-29-65, Cl. 235—153.

Cherry, Lloyd B., to Texas Instruments Inc. Method and apparatus for determining the quality of a weld or solder joint by measurement of the dynamic resistance of the joint. 3,192,474, 6-29-65, Cl. 324—65.

Chicago Bridge & Iron Co.: *See*—
Johnson, Paul R. 3,191,921.
Maher, James B., and Mair. 3,191,395.

Chicago Machinery Laboratory, Inc.: *See*—
McCain, William B., and Cosgrove. 3,191,925.

Chidsey, Francis A., Jr., to Container Corp. of America. Apparatus for gluing overwrapped portions of wrap-around bottle carrier cartons. 3,191,353, 6-29-65, Cl. 53—48.

Chieger, George, to Fruehauf Corp. Meat rail support beam for refrigerated trucks. 3,191,985, 6-29-65, Cl. 296—28.

Chitwood, Henry C.: *See*—
Sousa, Anthony A., Chitwood, and Durden. 3,192,103.

Cho, Yohan, to Honeywell Inc. Pulse-generator providing output-pulse width determined by pair of preselected voltage levels of ramp function signal. 3,192,408, 6-29-65, Cl. 307—88.5.

Chodorow, Marvin, to Varian Associates. Microwave amplifier for electromagnetic wave energy incorporating a fast and slow wave traveling wave resonator. 3,192,490, 6-29-65, Cl. 316—3.5.

Chollet, Helene M. M. J.: *See*—
Lewis, Gordon M., and Wibault. 3,191,886.

Chow, Woo F., to Sperry Rand Corp. Logic circuit with NRZ operation. 3,192,410, 6-29-65, Cl. 307—88.5.

Christensen, Robert S., and L. C. Pierscinski. Adjustable stilt construction. 3,191,931, 6-29-65, Cl. 272—70.1.

Christian, Joseph N., and H. A. Jones, to Oneida Ltd. Method of making a knife. 3,191,460, 6-29-65, Cl. 76—104.

Chrysler Corp.: *See*—
Jominy, Walter E., and Roy. 3,192,073.
Sturtevant, Mark J., and Wellbaum. 3,191,988.

Churchill, George R., to George R. Churchill Co., Inc. Buffing wheel. 3,191,208, 6-29-65, Cl. 15—230.17.

Churchill, George R., Co., Inc.: *See*—
Churchill, George R. 3,191,208.

Clark, Everett M.: *See*—
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Clayton, James E., to Sperry Rand Corp. Compatibility circuit for accommodating machines of different memory storage capacities employing pentode as gated-amplifier. 3,192,450, 6-29-65, Cl. 328—91.

Clevite Corp.: *See*—
Gibbons, James F. 3,192,320.
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Close, Myron J., and J. V. Vold, to United States Rubber Co. Semiautomatic liner inserting machine and method. 3,192,087, 6-29-65, Cl. 156—126.

Coastal Interchemical Co.: *See*—
Kapar, Charles. 3,192,224.

Cobaugh, Robert F., to AMP Inc. Apparatus for making electrical connections. 3,191,281, 6-29-65, Cl. 29—203.

Cocca, Theodore F., to Raytheon Co. Method of fusing material and the like. 3,192,081, 6-29-65, Cl. 148—177.

Cochran, Chudleigh B., to C. C. Brown. Hydraulically-actuated well packers. 3,191,682, 6-29-65, Cl. 166—120.

Cochran, Leslie L., W. Weigler, J. C. Nelson, and H. L. Bidout, to Sperry Rand Corp. Fast multiply system. 3,192,366, 6-29-65, Cl. 235—164.

Coe, David G., to E. I. du Pont de Nemours and Co. Azostyryl cationic dyes. 3,192,195, 6-29-65, Cl. 260—156.

Coen, Aldo L. Method of making loudspeaker field structure. 3,191,421, 6-29-65, Cl. 72—329.

Cohen Co., Ltd.: *See*—
Ohishi, Sakae. 3,191,424.

Cohen, Neal B., and T. D. Reader, to Sperry Rand Corp. Tape feeding apparatus. 3,191,837, 6-29-65, Cl. 226—118.

Cole, Thomas M., to Federal Pacific Electric Co. High interrupting capacity circuit breakers with electrodynamic latch release. 3,192,344, 6-29-65, Cl. 200—116.

Coleman, William: *See*—
Brown, Robert M., Lavine, Coleman, and Levin. 3,191,868.

Colgate-Palmolive Co.: *See*—
Biel, John H. 3,192,112.
Biel, John H. 3,192,229.
Biel, John H., and Robertson. 3,192,110.

Collar, Rolland W., to Lear Siegler, Inc. Quick connect tube coupling having locking means with visual indicator. 3,191,972, 6-29-65, Cl. 285—93.

Collins, Bernard W.: *See*—
Hosegood, Samuel B., Collins, and Harper. 3,192,119.

Combustion Engineering, Inc.: *See*—
Schuss, Jack A., and Caracristi. 3,191,658.

Comer, Edward W., and J. C. Gerard, to Ethicon, Inc. Glove. 3,191,187, 6-29-65, Cl. 2—167.

Comerer, Elwyn D., to General Motors Corp. Mounting for refrigerating apparatus. 3,191,897, 6-29-65, Cl. 248—26.

Commercial Solvents Corp.: *See*—
Butter, George N. 3,192,268.
Hodge, Edward B. 3,192,163.

Commissariat a L'Energie Atomique: *See*—
Costes, Didier, and Lebey. 3,192,123.

Common Market Associates Inc.: *See*—
Spalazzi, Alessandro, and Morgante. 3,191,806.

Commonwealth Co.: *See*—
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Commonwealth of Australia, The: *See*—
Metcalfe, Kenneth A., and Wright. 3,192,043.

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Beurtheret, Charles A. E. 3,192,354.

Compagnoni, Anthony F., to American Brake Shoe Co. Digging tooth with nut and bolt connecting means. 3,191,323, 6–29–65, Cl. 37—142.

Comstock, Alfred E. Molded egg carton. 3,191,844, 6–29–65, Cl. 229—2.5.

Congdon, George L., to Plastocon Corp. Swivel type furniture-supporting glide. 3,191,213, 6–29–65, Cl. 16—42.

Conklin, George W.: *See*—
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Conlon, Willard S. Revolving slide and cone storage hopper. 3,191,736, 6–29–65, Cl. 193—1.

Conner, James L. Traction system for automotive devices utilizing reaction torque to improve traction. 3,191,711, 6–29–65, Cl. 180—71.

Connock, Sidney H. G.: *See*—
Fischer, Christopher L., Smialowski, Connock, and Vogelgangor. 3,191,842.

Connor, James E., Jr., and J. A. Cahill, to The Atlantic Refining Co. Removal of metallic impurities from cracking catalysts. 3,192,151, 6–29–65, Cl. 208—120.

Conry, Dale E., to Dover Corp. Elevator car. 3,191,721, 6–29–65, Cl. 187—1.

Consolidated Packaging Corp.: *See*—
Nowicki, Casimir W., and Lockwood. 3,191,839.

Consolidated Systems Corp.: *See*—
Anderson, Tage O. 3,192,519.

Consortium für Elektrochemische Industrie G.m.b.H.: *See*—
Freiesleben, Werner. 3,192,275.

Container Corp. of America: *See*—
Childsey, Francis A., Jr. 3,191,353.
Desmond, John D. 3,191,846.

Continental Aviation and Engineering Corp.: *See*—
Hieroch, Frederick A. 3,191,377.

Continental Can Co., Inc.: *See*—
Linderith, Lambert S., Jr. 3,191,233.
Maier, Curtis E. 3,191,291.
McElroy, Robert K., and Lawler. 3,191,354.
Scott, Harry A., and Uncapher. 3,191,475.

Continental Oil Co.: *See*—
Hackett, Homer L. 3,191,640.
Schroeder, Carl E., and Cullen. 3,191,568.

Control Data Corp.: *See*—
Rabinow, Jacob. 3,191,490.

Cook, Gordon H., to The Rank Organisation Ltd. Optical objectives of variable focal length of the zoom type and control means therefor. 3,191,496, 6–29–65, Cl. 88—57.

Cooke Engineering Co.: *See*—
Duff, Alan A. 3,191,813.

Coombe, Douglas C. Boating. 3,191,569, 6–29–65, Cl. 114—102.

Cooper, Belton Y., and C. M. Luna, to United States Pipe and Foundry Co. Centrifugal casting apparatus. 3,191,245, 6–29–65, Cl. 22—65.

Cooper, Christopher N., to Kemwell A.G. Heat treatment of welds. 3,192,080, 6–29–65, Cl. 148—127.

Cooper, Denis R.: *See*—
Challen, Henry D., and Cooper. 3,191,525.

Cooper, James, Jr., and J. J. Aldrich, to Chase Brass & Cooper Co. Inc. Process for producing high purity rhenium compounds. 3,192,011, 6–29–65, Cl. 23—22.

Cooprider, Rex C.: *See*—
Corsette, Douglas F., and Cooprider. 3,191,814.

Coordes, John E., to United States of America, Army. Articulating heavy equipment transporter. 3,191,962, 6–29–65, Cl. 280—81.

Copeland, Bernard L., and S. Wallack, to Basic-Witz Furniture Industries, Inc. Display apparatus. 3,191,320, 6–29–65, Cl. 35—53.

Coproducts Corp.: *See*—
Hillier, Stanley. 3,191,521.

Corcoran, John W., to Beckman & Whitley, Inc. Quick acting shutter. 3,191,516, 6–29–65, Cl. 95—59.

Cordell, Carl R., Jr. Fishing lure and method of making the same. 3,191,336, 6–29–65, Cl. 43—42.24.

Cordiano, Ettore, to Fiat Societa per Azioni. Hydraulic braking system for vehicles. 3,191,999, 6–29–65, Cl. 303—22.

Cornell, Hampton G., to Esso Research and Engineering Co. Temperature control in hydrodealkylation. 3,192,281, 6–29–65, Cl. 260—672.

Cornell Aeronautical Laboratory, Inc.: *See*—
Rosenblatt, Frank. 3,192,505.

Corsette, Douglas F., and R. C. Cooprider, to The Drackett Co. Liquid dispenser. 3,191,814, 6–29–65, Cl. 222—384.

Cortland Corset Co., Inc.: *See*—
Wanish, Charles K. 3,191,601.

Cosgrove, James F.: *See*—
McCain, William B., and Cosgrove. 3,191,925.

Costes, Didier, and J. Lebey, to Commissariat a l'Energie Atomique. Nuclear reactor control device. 3,192,123, 6–29–65, Cl. 176—86.

Cott, Georges, and R. G. Schmidt, to Reliure Industrielle S.T.D. Binding for loose sheets, incuding pivotal open links. 3,191,605, 6–29–65, Cl. 129—10.

Cottrell, Warren C., and F. H. P. Schuck. Carousel mechanism. 3,191,930, 6–29–65, Cl. 272—31.

Courtney, Watson L., to Westinghouse Electric Corp. Refrigerant reversal valves. 3,191,627, 6–29–65, Cl. 137—625.29.

Coven, Monroe J., and C. C. Moss, to Monarch Wine Co., Inc. Hood for bottle stopper. 3,191,790, 6–29–65, Cl. 215—33.

Cowan, Frank. Weed pick-up attachment for mowing machines. 3,191,369, 6–29–65, Cl. 56—25.4.

Cowan, John V., to Automation Industries, Inc. Electromechanical transducers and the fabrication thereof. 3,192,420, 6–29–65, Cl. 310—9.5.

Cowie, William J., to Transparent Packing Ltd. Apparatus for applying a tear strip to plastic tubing. 3,191,507, 6–29–65, Cl. 93—1.

Cox, Rex E., and M. S. Wheeler, to United States of America, Navy. Frequency independent backup cavity for spiral antennas. 3,192,531, 6–29–65, Cl. 343—895.

Craft, Harland A., to Outboard Marine Corp. Carburetor. 3,191,585, 6–29–65, Cl. 123—119.

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Craig, Paul N., and C. L. Zirkle, to Smith Kline & French Laboratories. Trifluoromethylthioxanthene and -xanthene derivatives. 3,192,204, 6–29–65, Cl. 260—240.

Crane Co.: *See*—
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Crane, Robert F.: *See*—
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Hawley, George F., Murphy, Moulder, Miller, and Crane. 3,191,749.

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Crawford, George H., Jr., D. E. Rice, and D. R. Yarlan, to Minnesota Mining and Mfg. Co. Chemical process for making halogenated compounds. 3,192,246, 6–29–65, Cl. 260—466.

Crawford, George H., Jr., D. E. Rice, and D. R. Yarlan, to Minnesota Mining and Mfg. Co. Aliphatic halogen-containing omega nitroso acyl nitrites. 3,192,247, 6–29–65, Cl. 260—466.

Crawford, George H., Jr., D. E. Rice, and D. R. Yarlan, to Minnesota Mining and Mfg. Co. Aliphatic halogen-containing omega nitroso carboxylic acids. 3,192,260, 6–29–65, Cl. 260—539.

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Crosby, Alton L., M. S. De Lucia, S. J. Gartner, and H. D. Losey, to Sylvania Electric Products Inc. Method and apparatus for manufacture of electrodes. 3,191,637, 6–29–65, Cl. 140—71.5.

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Cunning, Thomas G., and J. M. Caulkins, to T. G. and G. H. Cunning, jointly. Method for spray coating fruit and vegetables. 3,192,052, 6–29–65, Cl. 99—168.

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Dalton, Frank E. Apparatus for mounting bearing assemblies on a shaft. 3,191,259, 6–29–65, Cl. 29—201.

Danon, David. Microtome. 3,191,477, 6–29–65, Cl. 83—267.

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Daugherty, Jesse. In-process inspection apparatus. 3,191,294, 6–29–65, Cl. 29—568.

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David, Louis F. Metal panel and its application in an anti-blast barrier in particular for airports. 3,191,728, 6–29–65, Cl. 189—82.

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Davies, Ben, and T. W. Smoot, Harbison-Walker Refractories Co. Refractories and methods of manufacture therefor. 3,192,058, 6–29–65, Cl. 106—57.

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Davock, Alfred M., and D. C. Manning, to United States of America, Navy. Tank turret trainer. 3,191,817, 6–29–65, Cl. 35—25.

De Angelis, George. Method and apparatus for drawing three dimensional views of objects. 3,191,807, 6–29–65, Cl. 33—77.

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De Francis, Dominick J., J. M. Fooks, and L. T. Staats, Sr. Apparatus for stapling sheets into pads. 3,191,838, 6–29–65, Cl. 227—7.

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Deputy, Marshall P., to Fog-Master Corp. Fog penetrating light. 3,192,438, 6–29–65, Cl. 315—209.

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Dippel, Cornelis J., and H. Jonker, to North American Philips Co., Inc. Method of manufacturing external, electrically conductive noble-metal layers on non-metallic, electrically non-conductive supports. 3,192,137, 6–29–65, Cl. 204—38.

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Dodge, Robert W. Demountable cab construction for a tractor with a front-mounted implement or tool. 3,191,712, 6–29–65, Cl. 180—89.

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Drinkwater, Donald J., and J. R. Grout, to Mine and Smelter Supply Co. Disintegrators. 3,191,874, 6–29–65, Cl. 241—185.

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Daus, William, deceased; T. Daus, F. X. Clarke, and D. H. Kane, executors. Threaded fastening device. 3,191,485, 6-29-65, Cl. 85—1.

Daus, William, deceased; T. Daus, F. X. Clarke, and D. H. Kane, executors. Implement for operating fastening devices. 3,191,649, 6-29-65, Cl. 145—50.

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Gray, Allan P., and D. E. Heitmeier, to Neisler Laboratories, Inc. Phenylhydroxynikylpyrimidine compounds. 3,192,216, 6–29–65, Cl. 260—256.4.
Gray, John W., to General Precision, Inc. Transistor pulse generating circuit of alternately opposite polarities. 3,192,401, 6–29–65, Cl. 307—88.5.
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Goldman, David A., Gray, Hayek, and Morger. 3,192,513.
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Gray, Tommy L., to General Electrodynamics Corp. Weighing apparatus. 3,191,701, 6–29–65, Cl. 177—209.
Green, Brian N., to Associated Electrical Industries Ltd. Mass spectrometer ion collector with a secondary particle collecting electrode extending over the collector. 3,192,383, 6–29–65, Cl. 250—41.9.
Green, Daniel A., to Mine Safety Appliances Co. Power circuit control device. 3,192,451, 6–29–65, Cl. 317—157.
Green, James W. Ornamental watch, portrait and plaque stand. 3,191,901, 6–29–65, Cl. 248—116.
Green, William G. Survey apparatus. 3,191,713, 6–29–65, Cl. 181—.5.
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Grenier, Aime J., to Texas Instruments Inc. Center pivoted armature electromagnetic switching mechanisms. 3,192,340, 6–29–65, Cl. 200—87.
Grevich, John J., and S. D. Denker, to Doughboy Industries, Inc. Trimming apparatus with divergent scrap removal. 3,191,474, 6–29–65, Cl. 83—107.
Griffin, Mickey E. Sofa-bunk bed. 3,191,194, 6–29–65, Cl. 5—9.
Griffin, William F., to Radio Corp. of America. Multigrid electron tube and method of assembly thereof. 3,192,428, 6–29–65, Cl. 313—260.
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Goda, Kermit J., Jr., and Gross. 3,192,040.
Grossnietsch, Horst, H. Kaltenhauser, and O. Hense, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for removing nitric oxide from gases containing unsaturated hydrocarbons. 3,192,009, 6–29–65, Cl. 23—2.
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Guarnaschelli, Stephen. Pipe coupling with flexible sealing lip. 3,191,973, 6–29–65, Cl. 285—110.
Guier, William. Golf club including soft metal to lock grooved shaft end to head. 3,191,936, 6–29–65, Cl. 273—80.2.
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Gust, George A.: *See*—
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Gustafson, Manfred W., to Fagersta Bruks Aktiebolag. Metal cutting tool with adjustable chip breaker. 3,191,262, 6–29–65, Cl. 29—96.
Gutowski, Thad A., and G. R. Sontag, to Milprint, Inc. Reinforced commodity container. 3,191,849, 6–29–65, Cl. 229—55.
Gwyn, Childress B., Jr., to Talon, Inc. Method of making an electrical contact. 3,191,272, 6–29–65, Cl. 29—155.55.
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Gwyn, Childress B., Jr., and F. R. Farnham, to Talon, Inc. Method of making an electrical contact. 3,191,274, 6–29–65, Cl. 29—155.55.
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Hall, Fred V., to B. Walker. Device for controlling the hydrocarbon evaporation losses from automotive vehicles. 3,191,587, 6–29–65, Cl. 123—136.
Hall, George W., G. C. Harper, Jr., and F. W. Songer, to Pittsburgh-Des Moines Steel Co. Method of making large diameter accordion type expansion joints. 3,191,287, 6–29–65, Cl. 29—454.
Hall, Kenneth J., to Crompton & Knowles Corp. Means for forming selvages in looms. 3,191,634, 6–29–65, Cl. 139—54.
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Hamm, Douglas W., to Muskegon Piston Ring Co. Piston ring. 3,191,947, 6–29–65, Cl. 277—139.
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Hann, Melvin M., and R. L. Power, to Sundstrand Corp. Pump or motor device. 3,191,543, 6–29–65, Cl. 103—162.
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Hasdorff, Lawrence, to Bell Telephone Laboratories, Inc. Logic system. 3,192,396, 6–29–65, Cl. 307—88.5.
Hastings, Sam H., and P. S. Viles, to Esso Research and Engineering Co. Method of methylating and aromatizing cyclohexenes. 3,192,278, 6–29–65, Cl. 260—668.
Haucke, Manfred, L. Bahrke, H. J. Kopineck, and H. Hoff, to Hoesch Aktiengesellschaft. Desulfurization method. 3,192,037, 6–29–65, Cl. 75—55.
Haus, Joachim, to Siemens-Schuckertwerke Aktiengesellschaft. Device for mounting semiconductor rods in apparatus for crucible-free zone melting. 3,191,924, 6–29–65, Cl. 269—156.
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Hawley, George F., H. W. Murphy, J. E. Moulder, J. H. Miller, and R. F. Crane, to AEL Food Machinery Division, Inc. Automatic alignment and input feeding machinery for confectionery articles. 3,191,749, 6–29–65, Cl. 198—30.
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Haywood, Paul N., to Stewart-Warner Corp. Method and apparatus for generating oil mist. 3,191,718, 6–29–65, Cl. 184—1.
Heard, Charles B., Jr., to Western Electric Co., Inc. Device for measuring the temperature of a continuously advancing strand. 3,191,437, 6–29–65, Cl. 73—339.
Hebden, Donald, and K. Hartley, to United Kingdom Atomic Energy Authority. Liquid-liquid contacting apparatus. 3,192,019, 6–29–65, Cl. 23—270.5.
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Hendry, James W., to Borg-Warner Corp. Injection molding machine and process for plasticizing plastic material. 3,192,299, 6–29–65, Cl. 264—329.
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Hevenor, John C. Keyless electric lock. 3,192,448, 6–29–65, Cl. 317—134.
Hey, Arie, J. Brouwer, and A. B. Ottow, to Lever Bros. Co. Method of sealing a container. 3,192,091, 6–29–65, Cl. 156—247.
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High, Roy V., Jr., to Esso Research and Engineering Co. Process for purification of thiophosphoric acid esters. 3,192,244, 6–29–65, Cl. 260—461.
Hildebrand, Verne E., to United States of America, Navy. Wave-signal direction-detecting apparatus. 3,192,526, 6–29–65, Cl. 343—113.
Hill, Isaac C. Multi-purpose corrugator. 3,191,690, 6–29–65, Cl. 172—772.
Hill, John, to National Transistor Mfg. Co., a division of International Telephone and Telegraph Co. Apparatus for assembling semi-conductor devices. 3,191,280, 6–29–65, Cl. 29—203.
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Hiltner, Luther G., to The Electrada Corp. Reinforced gasket. 3,191,950, 6–29–65, Cl. 277—180.
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Hirst, Archie J., to Metalastik Ltd. Railway vehicles. 3,191,551, 6–29–65, Cl. 105—454.
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Hiyama, Kazuo. Mobile scaffold. 3,191,717, 6–29–65, Cl. 182—131.
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Haucke, Manfred, Bahrke, Kopineck, and Hoff. 3,192,-037.
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Holm, Luther E., to Holm's Mfg Co. Head and knee rest operating drives for hospital beds and the like. 3,191,196, 6–29–65, Cl. 5—68.
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Holzer, Walter. Gear operating device. 3,191,454, 6–29–65, Cl. 74—472.
Holzer, Walter. Electrically driven time switch mechanism. 3,192,330, 6–29–65, Cl. 200—38.

Holzer, Walter K. J. Push-button or key actuated switch, particularly for controlling tool machines. 3,192,327, 6–29–65, Cl. 200—5.
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Hoover, Wayne, and G. R. Rippel, to Esso Research and Engineering Co. Production of liquid copolymers of diolefins and other unsaturated monomers. 3,192,279, 6–29–65, Cl. 260—669.
Hopfeld, Fred P., to Grand Specialties Co. Load tilting mechanism for industrial truck. 3,191,788, 6–29–65, Cl. 214—701.
Hopkinson, Eric C., to Dresser Industries, Inc. Pulse transmission over a long cable in the presence of a low frequency power. 3,192,386, 6–29–65, Cl. 250—83.3.
Hopson, William B., III, to Jet Research Center, Inc. Gas discharge apparatus. 3,191,533, 6–29–65, Cl. 102—24.
Horberg, Charles, Jr., to Paramount Textile Machinery Co. Linear electrical switching control unit. 3,192,349, 6–29–65, Cl. 200—153.
Horberg, Charles, Jr., to Paramount Textile Machinery Co. Sealed electrical switching control unit using linear cam actuator. 3,192,350, 6–29–65, Cl. 200—153.
Horne, George H., and M. Ludwig, to California Research Corp. Pipeline heating system. 3,191,671, 6–29–65, Cl. 165—84.
Horwitt, Laurence G., and V. G. Krenke, to The Casco Products Corp. Quick-acting switch having movable contact means pivotally mounted adjacent the input contact. 3,192,343, 6–29–65, Cl. 200—113.
Hosegood, Samuel B., B. W. Collins, and C. Harper, to United Kingdom Atomic Energy. Device for servicing nuclear reactors. 3,192,119, 6–29–65, Cl. 176—30.
Hottenroth, Frederick W. and H. D. Jacoby, to Z. Z. Corp. Charcoal starter. 3,191,556, 6–29–65, Cl. 110—1.
Houston, William L., Jr., and J. B. Anderson, to Phillips Petroleum Co. Process for isomerization of hexanes. 3,192,-286, 6–29–65, Cl. 260—683.73.
Hoven, Wilhelm, to Garbe, Lahmeyer & Co., A.G. Sintered metal article. 3,191,453, 6–29–65, Cl. 74—432.
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Howlett, Charles L., to Huron Portland Cement Co. Dual cargo ship. 3,191,998, 6–29–65, Cl. 302—52.
Hubby, Laurence M., to Texaco Inc. Gas lift control system. 3,191,681, 6–29–65, Cl. 166—52.
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Stillman, Jerome I., and Scapple. 3,191,267.
Hughes, Kenneth D. Metering pump. 3,191,542, 6–29–65, Cl. 103—162.
Huhn, Raymond A., to Setco Industries, Inc. Attachment mounting means for a boring mill ram. 3,191,349, 6–29–65, Cl. 51—241.
Hull, Joseph F., to Litton Precision Products, Inc. Backward wave oscillator having anode-sole spacing of 0.05 wavelength. 3,192,434, 6–29–65, Cl. 315—39.3.
Humphrey, John G., to General Electric Co. Automatic gain control circuit with optimum delayed and amplified A.G.C. for R.F. stage. 3 192,316. 6–29–65, Cl. 178—7.3.
Hunt, David A., to United States of America, Atomic Energy Commission. Membrane double wall interconnected pressure vessel. 3,191,792, 6–29–65, Cl. 220—3.
Hunt, Geoffrey H., to Minister of Aviation, in her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland. Oscillating gyroscopic device. 3,191,-443, 6–29–65, Cl. 73—505.
Hunter Douglas International (Quebec) Ltd.: *See*—
Hurkmans, Josefus C. 3,191,664.
Hurkmans, Josefus C., to Hunter Douglas International (Quebec) Ltd. Locking device for lift means, such as for example lift cords or lift tapes of a Venetian blind, a curtain or the like. 3,191,664, 6–29–65, Cl. 160—173.
Hurley, Gerald I. Rifle bolt and sleeve for a receiver having an oval bore 3,191,331, 6–29–65, Cl. 42—16.
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Ih, Charles C., to Sperry Rand Corp. Amplifier-switching circuit employing plurality of conducting devices to share load current. 3,192,399, 6–29–65, Cl. 307—88.5.
Ikai, Minoru, and K. Arashi, to Shin-Mitsubishi Jukogyo Kabushiki Kaisha. Spoiler. 3,191,887, 6–29–65, Cl. 244—42.
Ingeborg Schwachula, K.G., Firma: *See*—
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Allen, Edward L. 3,191,879.
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Italiano, Lawrence, to National Die and Button Mold Co., Inc. Apparatus for applying nail heads to fabrics and the like. 3,191,840, 6–29–65, Cl. 227—114.
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Jackson, Thomas S., to Expandolite, Inc. Container. 3,191,-791, 6–29–65, Cl. 217—25.5.
Jacobson, Leo V., and B. W. Taylor. Amusement and educational device for selectively displaying pictures behind a transparent container containing loose, shiftable pieces. 3 191,340, 6–29–65, Cl. 46—37.
Jacobson, Ralph S. Strawberry picking thimbles. 3,191,302, 6–29–65, Cl. 30—298.
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Jagiello, Leonard T., to United States of America, Navy. Method of casting solid propellant rocket motors. 3,192,-289, 6–29–65, Cl. 264—3.
James, Frazier N., Sr., and A. F. Osburn, said Osburn assor to said James. Vending machine. 3,191,737, 6–29–65, Cl. 194—4.
James, Robert L., to The Bendix Corp. SCR fed motor control system. 3,192 462, 6–29–65, Cl. 318—345.
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Jewart, Donald M., to Litton Industries, Inc. Heater switching cathode for magnetrons. 3,192,436, 6–29–65, Cl. 315—73.
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Johanson, Carl E., to The Bendix Corp. Altitude sensing apparatus. 3,191,439, 6–29–65, Cl. 73—387.
Johnson, Alfred H., to International Business Machines Corp. Method of forming and pulling contact terminals into an electrical receptacle. 3,191,271. 6–29–65. Cl. 29—155.55.
Johnson, Arthur R., and O. E. Petersen, to Admiral Corp. Transistorized regulated D.C.-D.C. converter. 3,192,464, 6–29–65. Cl. 321—2.
Johnson, Charles M., and J. E. Lowder, to Johnson Mfg. Co. Earth scraper with pivoted conveyor. 3,191,322, 6–29–65, Cl. 37—8.
Johnson, Dale E., A. E. Hert, and H. H. Sakel. Automatic vehicle temperature control. 3,191,669, 6–29–65, Cl. 165—25.
Johnson, Edward H., to The American Warming & Ventilating, Inc. Damper blades and means for pivoting same. 3,191,241, 6–29–65, Cl. 20—62.
Johnson, Fred M. Method of extracting alkali metals. 3 192,038, 6–29–65, Cl. 75—66.
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Ray, Frederick C. 3,191,893.
Johnston, Richard A. Composite milk package. 3,191,810, 6–29–65, Cl. 222—183.
Jominy, Walter E., and A. Roy, to Chrysler Corp. Method of making oxidation resistant and ductile iron base aluminum alloys. 3,192,073, 6–29–65, Cl. 148—3.
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Jones, Paul F., H. E. McKibben, R. S. Thompson, and E. C. S. Graham, to Blueberry Equipment, Inc. Machine for sizing articles including blueberries. 3,191,772, 6–29–65, Cl. 209—102.
Jones, Richard S., and D. J. Hardy, to Hovercraft Development Ltd. Vehicles for travelling over water. 3,191,705, 6–29–65, Cl. 180—7.
Jones, Roy D., R. F. Parks, and A. Gorze, to Steel Heddle Mfg. Co. Tension device. 3,191,885, 6–29–65, Cl. 242—154.
Jones, Samuel P., to General Electric Co. String band insulation system for commutators. 3,192,424, 6–29–65, Cl. 310—236.
Jones, Verne W.: *See*—
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Jones, William C., to Westinghouse Electric Corp. Finned heat exchangers. 3,191,670, 6–29–65, Cl. 165—76.
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Jordan, Harold O. W., and H. C. Rosenfeld, to The Machlett Laboratories, Inc. Vidicon target having areas of different conductance. 3,192,067, 6–29–65, Cl. 117—212.
Jorgensen, Arnold J., to Burroughs Corp. Isolation circuit for diode switching arrays. 3,192,407, 6–29–65, Cl. 307—88.5.
Jorgensen, George W., to Graphic Arts Technical Foundation. Automatic dampener control for a rotary lithographic press. 3,191,528, 6–29–65, Cl. 101—148.
Jorgensen, William H. Machine tool turret having multiple tools. 3,191,260, 6–29–65, Cl. 29—26.
Joyce, Ronald S., to Pittsburgh Activated Carbon Co. Removal of hydrogen sulfide from water. 3,192,156, 6–29–65, Cl. 210—63.
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Juergens, William A. Apparatus for mounting peripherally flanged appliances. 3,191,191, 6–29–65, Cl. 4—187.
Jungbanns, Paul, H. Frede, and F. Burger, to Wilh. Engstfeld, Firma. Machine for casting of metal work pieces in permanent molds. 3,191,248, 6–29–65, Cl. 22—79.
K.W.F. Industries, Inc.: *See*—
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Kaatz, Herbert W., and L. Tobacman, to Randolph Mfg. Co. Mechanical carbon parts. 3,191,852, 6–29–65, Cl. 230—152.
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Kalbfleisch, Adolphe W., to R. E. Weber and A. W. Kalbfleisch, trustees. Bowling pin and ball conveying and separating apparatus. 3,191,933, 6–29–65, Cl. 273—43.
Kalbfleisch, Adolphe W., to R. E. Weber and A. W. Kalbfleisch, trustees. Bowling pin storage and distributing apparatus. 3,191,934, 6–29–65, Cl. 273—43.
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Deus, William. 3,191,485.
Deus, William. 3,191,649.
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Kanter, Jerome J., A. F. Lahr, and K. Haefner, to Crane Co. Corrosion resistant steels. 3,192,041, 6–29–65, Cl. 75—130.5.
Kapar, Charles, to Coastal Interchemical Co. Aminomethyl oxazolines and process of preparing same. 3,192,224, 6–29–65, Cl. 260—307.
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Karge, Maxwell R., Jr.; 12½% to W. Thomson, and 12½% to J. R. Schovee. Bearing assembly. 3,192,001, 6–29–65, Cl. 308—185.
Karmas, George, and I. Scheer, to Ortho Pharmaceutical Corp. 3-thioketals of pregnadiene and method of preparation thereof. 3,192,202, 6–29–65, Cl. 260—239.5.
Karon, Gerald: *See*—
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Kelman, LeRoy R., and O. L. Kruger, to United States of America, Atomic Energy Commission. Fuel element for a nuclear reactor having stack of thin fuel wafers submerged in liquid metal. 3,192,122, 6–29–65, Cl. 176—72.
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Fields, Thomas L., Wilkinson, and Kende. 3,192 250.
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Kennard, Kenneth C., and F. J. Russell, to Eastman Kodak Co. Photographic silver halide emulsions sensitized with thioether and developer combinations. 3,192,046, 6–29–65, Cl. 96—95.
Kennedy, Edwin C., to General Electric Co. Refrigeration system including charge checking means. 3,191,397, 6–29–65, Cl. 62—125.
Kenyeres, Nicholas, and R. G. Anderson, to Canadian Westinghouse Co., Ltd. Circuit breaker panelboard. 3,192,447, 6–29–65, Cl. 317—119.
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Kesslin, George, A. C. Flisik, and R. Bradshaw, to Kay-Fries Chemicals, Inc. Preparation of diarylacetonitriles and their ring substituted derivatives. 3,192,245, 6–29–65, Cl. 260—465.
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Kikuchi, Isamu, to Fuji Spinning Co., Ltd. Helical cutter for textile fibers. 3,191,479, 6–29–65, Cl. 83—672.

Kimmel, Albert L., to Marsh Steel & Aluminum Co. Phosphate treatment composition for iron and steel products. 3,192,075, 6–29–65, Cl. 148—6.16.
Kindorf, Orlan C. Pipe hanger. 3,191,899, 6–29–65, Cl. 248—62.
King, Douglas T., and C. Frendock, to The Wilcolator Co. Thermostatic fuel control and flame height regulating valve. 3,191,863, 6–29–65, Cl. 236—99.
Kinley, Myron M. Method and apparatus for setting liners in tubing. 3,191,677, 6–29–65, Cl. 166—14.
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Kirkpatrick, Robert E. Bunk feeder. 3,191,753, 6–29–65, Cl. 198—64.
Kirkwood, Creal E., and B. M. Moroney. Multi-port valve. 3,191,628, 6–29–65, Cl. 137—625.43.
Kitano, Senjin. Apparatus for winding wire on the core of stationary induction means. 3,191,878, 6–29–65, Cl. 242—4.
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Korkowski, Vincent J., to Sperry Rand Corp. Nondestructive readout permalloy transfluxor memory system. 3,192,512, 6–29–65, Cl. 340—174.
Kowal, Michael H., to The Mead Corp. Bottle carriers. 3,191,800, 6–29–65, Cl. 220—115.
Krahulec, Fred, to Warwick Electronics Inc. Spindle adapter. 3,191,941, 6–29–65, Cl. 274—10.
Krapcho, John, to Olin Mathieson Chemical Corp. Aminoalkyl anilides. 3,192,213, 6–29–65, Cl. 260—253.
Krapcho, John, to Olin Mathieson Chemical Corp. Basic anilide derivatives. 3,192,214, 6–29–65, Cl. 260—253.
Krapcho, John, to Olin Mathieson Chemical Corp. O-diamidobenzene derivatives. 3,192,215, 6–29–65, Cl. 260—253.
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Kruck, Ralph E. Control of vaporization of solidified hydrocarbon fuel or the like. 3,191,593, 6–29–65, Cl. 126—44.
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Kueck, Darwin R., A. T. Adams, and L. L. Froning, to The Rath Packing Co. Process for canned meat. 3,192,053, 6–29–65, Cl. 99—187.
Kuehn, Howard E., to Farrel-Birmingham Co., Inc. Calender rolls. 3,191,263, 6–29–65, Cl. 29—121.
Kuhl, Otto A., and A. B. Oltmann, to United States of America, Atomic Energy Commission. Food irradiator and method. 3,192,054, 6–29–65, Cl. 99—214.
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Kurpit, Stanley S., I. Mavrovic, and S. J. Saffian, to Chemical Construction Corp. Apparatus for separating pure ammonia gas from a mixed off-gas stream. 3,191,916, 6–29–65, Cl. 261—148.
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Kuster, Rene. Dispensers, particularly for liquids or pastes. 3,191,820, 6–29–65, Cl. 222—490.
Kyle, William K., to Westinghouse Electric Corp. Control circuits for electric motors. 3,192,463, 6–29–65, Cl. 318—473.
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Ladendorf, Jack S., to American Heller Corp. Solid boring apparatus. 3,191,463, 6–29–65, Cl. 77—58.
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La Forest, James J., to General Electric Co. EHV transmission line and shield assembly. 3,192,310, 6–29–65, Cl. 174—127.
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Lambuth, Alan L., to Monsanto Co. Process for the preparation of epoxide modified adhesive compositions. 3,192,171, 6–29–65, Cl. 260—7.
Landgraf, Walter D. Adding machine spool. 3,191,741, 6–29–65, Cl. 197—175.
Landgren, Clarence R., to Esso Research and Engineering Co. Preferred method for supplying reactants to a resonating shock tube machine. 3,192,280, 6–29–65, Cl. 260—679.
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Meissner, William E., and Lane. 3,191,360.
Lang, Gregor L. Aircraft take-off forecast system. 3,192,503, 6–29–65, Cl. 340—27.
Langlois, Russell J. Ignition system using plural starting switches. 3,192,395, 6–29–65, Cl. 307—10.
Langrell, Richard G. Hand truck. 3,191,786, 6–29–65, Cl. 214—370.
Laning, J Halcombe, Jr., and R. L. Alonso, to Massachusetts Institute of Technology. Computing system. 3,192,508, 6–29–65, Cl. 340—172.5.
Lansky, Zdenek J., and K. W. Leibfritz, to Parker-Hannifin Corp. Sealed joint and gasket therefor. 3,191,949, 6–29–65, Cl. 277—168.
Lariviere, Romeo G., to Callahan Mining Corp. Method and apparatus for continuously forming reinforced flexible hose. 3,192,088, 6–29–65, Cl. 156—143.
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Mann, John P., Wright, and Larson. 3,191,974.
Lasch, Cecil A., Jr., B. J. Speransky, and J. J. Whitman, to Electroglas, Inc. Multiple point bonding apparatus. 3,192,358, 6–29–65, Cl. 219—85.
Lasting, Walter. Automatic nail dispenser. 3,191,802, 6–29–65, Cl. 221—191.
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Ledeen, Howard. 3,191,506.
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Loebel, Frederick A., and Letner. 3,192,131.
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Hey, Arie, Brouwer, and Ottow. 3,192,091.
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Lewis, Dallas B. Conveyor loading and unloading system. 3,191,750, 6-29-65, Cl. 198—31.
Lewis, Gordon M., M. H. M. J. Wibault, deceased (by M. O. M. J. Wibault, P. A. M. J. Wibault, M. R. Wibault, H. M. M. J. Chollet, G. C. R. M. J. Wibault, M. M. J. Locoge, M. O. M. J. Robine, and P. L. Robin, executors), to Bristol Siddeley Engines Ltd. Gas turbine jet propulsion engine units for aircraft and also jet propelled aircraft. 3,181,886, 6-29-65, Cl. 244—23.
Leyshon, David W., W. A. Lutz, R. H. Oliver, and H. H. Oltmann, to Dorr-Oliver Inc. Manufacture of phosphoric acid. 3,192,014, 6-29-65, Cl. 23—165.
Licata, Joseph G. Cigarette extinguisher. 3,191,608, 6-29-65, Cl. 131—256.
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Gessner, Karl-Ludwig. 3,192,348.
Lichko, Ivan P., V. M. Kamensky, and K. A. Dery, to Kievski Mashinostroiteiny sovod "Bolshevik," Centrifugal beet cutter. 3,191,650, 6-29-65, Cl. 146—165.
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Easton, Nelson R., and Dillard. 3,192,208.
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Lind, Orbie E., Jr., to Mansfield Industries, Inc. Exposure condition indication and warning. 3,191,512, 6-29-65, Cl. 95—11.
Lindberg Engineering Co.: *See*—
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Lindenau, Walter K. Measuring and lining tool. 3,191,308, 6-29-65, Cl. 33—87.
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Linderith, Lambert S., Jr., to Continental Can Co., Inc. Flow control apparatus. 3,191,233, 6-29-65, Cl. 18—30.
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Kagley, William H. 3,191,894.
Lindsley, James M.: *See*—
Benson, Walter E., and Lindsley. 3,191,662.
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Lithold, Inc.: *See*—
Dougan, Douglas S., and Menzel. 3,191,489.
Little, Lambert R.: *See*—
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Jewart, Donald M. 3,192,486.
Litton Precision Products, Inc.: *See*—
Hull, Joseph F. 3,192,434.
Lizotte, Edgar G.: *See*—
Smuss, Teddy F., Lizotte, and Frechette. 3,191,740.
Lloyd, James E., and L. H. Brooks, to United Kingdom Atomic Energy Authority. Production of uranium dioxide. 3,192,-010, 6-29-65, Cl. 23—14.5.
Lober Friedrich: *See*—
Schmidt, Karl-Ludwig, Muller, Scheurlen, and Lober. 3,192,170.
Locke, David R., to Sperry Rand Corp. Cutter head attachment means. 3,191,296, 6-29-65, Cl. 30—34.2.
Locke, David R., to Sperry Rand Corp. Means for securing cutter head units to a mounting plate. 3,191,298, 6-29-65, Cl. 30—43.92.
Locke, David R., to Sperry Rand Corp. Mount for cutter drive member. 3,191,299, 6-29-65, Cl. 30—43.92.
Locke, David R., to Sperry Rand Corp. Guide means for inner cutter of a dry shaver. 3,191,300, 6-29-65, Cl. 30—43.92.
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Nowicki, Casimir W., and Lockwood. 3,191,839.
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Lewis, Gordon M., and Wibault. 3,191,886.
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Loebel, Frederick A., and G. F. Letner, to Aqua-Chem, Inc. Multi-stage flash evaporator with removable stages. 3,192,-131, 6-29-65, Cl. 202—173.
Loewy Engineering Co. Ltd., The: *See*—
Fernbach, Hans R. 3,191,410.
Logan, Burl L., to Walking Stick Radiators Inc. Insertable slag trap adapter for automobile radiator. 3,191,672, 6-29-65, Cl. 165—119.
Logemann, Heino: *See*—
Mielke, Karl-Heins, Logemann, Pieper, Dunwald, and Becker. 3,192,176.
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Lombard Corp.: *See*—
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Long, James, to General Electric Co. Circuit for generating an inverse signal utilizing a multiplier circuit. 3,192,482, 6-29-65, Cl. 328—160.
Lonza Ltd.: *See*—
Pehn, Walter. 3,192,300.
Loom Products Co., Inc.: *See*—
Butler, Charlie C., and Kellett. 3,191,635.
Lo Presti, Roy F., to Goodman Mfg. Co. Suspension assemblies for flexible belt conveyors. 3,191,759, 6-29-65, Cl. 198—192.
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Lorbacher, Alton G. Outdoor cooking grill. 3,191,592, 6-29-65, Cl. 126—25.
Lord, John G., to The Shoup Voting Machine Corp. Voting machine with card punch mechanism. 3,191,859, 6-29-65, Cl. 235—50.
Lorenz, John W., to The Trane Co. Air conditioning system and pump controls therefor. 3,191,667, 6-29-65, Cl. 165—22.
Lorenz, John W., to The Trane Co. Pump control system. 3,191,668, 6-29-65, Cl. 165—22.
Losee, Kathryn A., and J. Bernstein, to Olin Mathieson Chemical Corp. N,O-dicarbamoylhydroxylamines. 3,192,-261, 6-29-65, Cl. 260—545.
Lowe, Charles T. Musical instrument. 3,191,480, 6-29-65, Cl. 84—318.
Lowery, Charley. Walking beam safety switch. 3,192,336, 6-29-65, Cl. 200—61.48.
Lowes, Fred J., Jr., to The Dow Chemical Co. Bacteriostatic compositions of acrylonitrile polymers and 2,4-dihydroxybenzophenone. 3,192,180, 6-29-65, Cl. 260—45.95.
Lowler, Erik, and I. E. R. Akerman, to Atlas Copco Aktiebolag. Compressor units. 3,191,654, 6-29-65, Cl. 230—205.
Lowry, Beatrice N. Portable collapsible health bath. 3,191,-190, 6-29-65, Cl. 4—177.
Lucas, Imre. Automatic maps. 3,191,326, 6-29-65, Cl. 40—65.
Ludwig, Georg, to Wagener & Co. Maschinenfabrik. Hydraulic system for platen press. 3,191,524, 6-29-65, Cl. 100—269.
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Lund, Walter L. Tire changer for spoked wheels. 3,191,-667, 6-29-65, Cl. 157—1.24.
Lunde, Ervin L., to Armour and Co. Apparatus for directing the fall of stunned animals. 3,191,220, 6-29-65, Cl. 17—1.
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Nordberg, Robert C., and Lunn. 3,192,026.

Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. 4-(omega-aminoalkyl)-3,3 disubstituted-N-hydrocarbon-2-pyrrolidinones and corresponding 2-thionpyrrolidinones. 3,192,206, 6-29-65, Cl. 260—243.
Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. Aminoalkyl esters of 4-carboxyalkyl-2-pyrrolidinones and 4-carboxyalkyl-2-thionpyrrolidinones. 3,192,-207, 6-29-65, Cl. 260—243.
Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. Amino acid esters of 4-hydroxyalkyl-2-pyrrolidinones and 4-hydroxyalkyl-2-thionpyrrolidinones. 3,192,-209, 6-29-65, Cl. 260—247.1.
Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. 4-(omega-substituted alkyl)-3,3-disubstituted-1-substituted-2-pyrrolidinones and 4-(omega-substituted alkyl) - 3,3 - disubstituted - 1 - substituted-2-thionpyrrolidinones. 3,192,210, 6-29-65, Cl. 260—247.2.
Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. 4-(omega-substituted alkyl)-3,3-disubstituted-1-substituted-2-pyrrolidinones and 4-(omega-substituted alkyl) - 3,3 - disubstituted - 1 - substituted-2-thionpyrrolidinones and productions thereof. 3,192,221, 6-29-65, Cl. 260—295.
Lunsford, Carl D., and A. D. Cale, Jr., to A. H. Robins Co., Inc. Process for producing 1,3,3-tri-substituted-4-(β-hsloethyl)-2-pyrrolidinone. 3,192,230, 6-29-65, Cl. 260—326.5.
Lurie, William B., to General Precision, Inc. Doppler navigator land-water corrector. 3,192,523, 6-29-65, Cl. 343—8.
Lush, John R., to Fansteel Metallurgical Corp. Electrical contact disc. 3,192,351, 6-29-65, Cl. 200—166.
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Jordan, Harold O. W., and Rosenfeld. 3,192,067.
Robbins, Charles D. 3,192,135.
MacLean, Alexander F., and A. L. Stautzenberger, to Celanese Corp. of America. Process for making peracids by the oxidation of aldehydes. 3,192,256, 6-29-65, Cl. 260—502.
MacSorley, Olin L., to International Business Machines Corp. Binary multiplier for skipping a string of seros or ones. 3,192,363, 6-29-65, Cl. 235—164.
MacSorley, Olin L., to International Business Machines Corp. Binary divider. 3,192,364, 6-29-65, Cl. 235—164.
Maddox, V. Harold, and E. F. Godefroi, to Parke, Davis & Co. Process for producing certain new 1-phenylcyclohexyl amine compounds. 3,192,219, 6-29-65, Cl. 260—293.
Maddox, William K., to Halliburton Co. Pump valve. 3,191,-617, 6-29-65, Cl. 137—516.29.
Magruder, Gaylord H. Furrowing and finishing unit. 3,191,-578, 6-29-65, Cl. 119—20.
Maher, James B., and J. Mair, to Chicago Bridge & Iron Co. Apparatus for storing liquefied gas near atmospheric pressure. 3,191,395, 6-29-65, Cl. 62—54.
Maier, Curtis E., to Continental Can Co., Inc. Art of producing very thin steel and like sheets in wide strips. 3,191,291, 6-29-65, Cl. 29—527.
Mainardi, Marcus N.: *See*—
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Mainardi, Pompey and M. N. Stereoscopic image-projecting system and method for alignment of image. 3,191,493, 6-29-65, Cl. 88—26.
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Malm, John G., I. Sheft, H. H. Claassen, and C. L. Chernick, to United States of America, Atomic Energy Commission. Xenon hexafluoride and method of making. 3,192,016, 6-29-65, Cl. 23—205.
Malmquist, Robert D. Ball surfacing machine. 3,191,468, 6-29-65, Cl. 82—12.
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Maltner, Wolfgang, to Heinrich Maltner, G.m.b.H. Tool for bleeding a fuel containing member. 3,191,641, 6-29-65, Cl. 141—98.
Mann, John P., B. Wright, and C. C. Larson, to FWD Corp. Hose swivel attachment for rolling fluid transporters. 3,191,974, 6-29-65, Cl. 285—158.
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Davock, Alfred M., and Manning. 3,191,317.
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Marette, George F., and P. Warburton, to Sperry Rand Corp. Binary-to-digital translation apparatus. 3,192,520, 6-29-65, Cl. 340—347.
Marforio, Nerino, to Virginio Rimoldi & C. S.p.A. Attaching trimming strips to knitted articles. 3,191,560, 6-29-65, Cl. 112—197.
Margoni, Aldo. Mailbox signal. 3,191,855, 6-29-65, Cl. 232—35.
Marino, Nicholas A., to Sears, Roebuck and Co. Adjustable garment. 3,191,603, 6-29-65, Cl. 128—506.
Marsh, Glenn A., to The Pure Oil Co. Method and apparatus for detecting changes in composition of liquid flowing through a pipe line. 3,192,473, 6-29-65, Cl. 324—61.
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Kimmel, Albert L. 3,192,075.
Marsh, Walter H. W., W. B. Strait, and M. E. Laidig, to The Singer Co. Zigzag mechanism for sewing machines. 3,191,-559, 6-29-65, Cl. 112—158.
Marshall, Mervin D., to Callery Chemical Co. Preparation of amine-boranes. 3,192,217, 6-29-65, Cl. 260—290.
Martin, Janice K., to Shell Oil Co. Isomerisation process. 3,192,285, 6-29-65, Cl. 260—683.73.
Martin, Le Roy L., to Bartelt Engineering Co., Inc. Packaging machine. 3,191,745, 6-29-65, Cl. 198—25.
Martin, Lynn W. Method of powering a precession toy. 3,191,341, 6-29-65, Cl. 46—65.
Martin, Robert F. Snake-proof trousers and the like. 3,191,-185, 6-29-65, Cl. 2—22.
Martin, Robert W., and E. H. Jamrog, to General Motors Corp. Engine preservation method and apparatus. 3,191,575, 6-29-65, Cl. 118—317.
Martin, Ronald G. J., P. Stanwell, and H. E. Davies, to The Plessey Co. Ltd. Electric motors. 3,191,270, 6-29-65, Cl. 29—155.53.
Martin, William C., Jr., and H. S. Rush, to Carrier Corp. Apparatus for treating air. 3,191,363, 6-29-65, Cl. 55—257.
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Martins, Joseph G., to Shawinigan Resins Corp. Vinyl alcohol polymer compositions plasticised with certain trialkyl phosphates. 3,192,177, 6-29-65, Cl. 260—30.6.
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Bunting, Ernest V. 3,191,687.
Matcovich, Thomas J., and J. J. Chang, to Sperry Rand Corp. Adding circuit using thin magnetic films. 3,192,370, 6-29-65, Cl. 235—176.
Matea, Edmund M., to General Motors Corp. Process for encapsulating transistors. 3,191,268, 6-29-65, Cl. 29—155.5.
Matsui, Yoshiya, to Canon Camera Co., Inc. Catadioptric optical system of large relative aperture. 3,191,497, 6-29-65, Cl. 88—57.
Mattern, Paul D. Dental matrix clamp or retainer. 3,191,-304, 6-29-65, Cl. 32—63.
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Mayorov, Anatoly N.: *See*—
Stroganov, Ivan V., and Mayorov. 3,191,589.
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McBride, William E., to Design Products Corp. Transfer apparatus. 3,191,746, 6-29-65, Cl. 198—20.
McBroom, Elmer W. Furniture guard. 3,191,811, 6-29-65, Cl. 222—192.
McCain, William B., and J. F. Cosgrove, to Chicago Machinery Laboratory, Inc. Signature machines. 3,191,925, 6-29-65, Cl. 270—56.
McCarty, Richard G.: *See*—
Nuller, Harold D., and McCarty. 3,192,476.
McClay, Alexander W., Jr. Sculling support for an oar. 3,191,203, 6-29-65, Cl. 9—26.
McClellan, Herbert L., and D. E. Huss, to The National Machinery Co. Method and apparatus for forming sockethead cap-screw blanks. 3,191,204, 6-29-65, Cl. 10—24.
McCord, Georgie P., to United States Rubber Co. Molded article, especially a tubeless tire valve stem assembly. 3,191,-655, 6-29-65, Cl. 152—427.
McCloskey, Albert R., to The Heim Universal Corp. Method of making self-aligning bearings. 3,191,265, 6-29-65, Cl. 29—149.5.
McCormick, James B., to Ames Atomium, Inc. Anti-roll device. 3,191,476, 6-29-65, Cl. 63—100.
McCornack, Clark W. Convertible-top window structure. 3,191,989, 6-29-65, Cl. 296—145.
McCormodale, Wilmer E., Jr., to Sun Oil Co. Method of preparing a slow release urea fertiliser. 3,192,033, 6-29-65, Cl. 71—28.
McCullough, Richard C. Adjustable antenna mounting. 3,191,898, 6-29-65, Cl. 248—43.
McDowall, Charles J., to General Motors Corp. Torque responsive clutch with limited torque in one direction and unlimited torque in the opposite direction. 3,191,752, 6-29-65, Cl. 192—48.
McElroy, Robert K., and F. P. Lawler, to Continental Can Co., Inc. Vacuum capping machine and components thereof. 3,191,354, 6-29-65, Cl. 53—90.
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Reifel, Harry, to Stevens-Arnold Inc. Electromagnetic switches of the make-before-break type. 3,192,450, 6-29-65, Cl. 317—155.5.
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Ressler, Hugh C., to Hogan Faximile Corp. Photosensitive fiber optic scanner. 3,192,391, 6-29-65, Cl. 250—227.
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37	3,192,030	37	3,192,361	42	3,191,389	42	3,192,386	45	3,192,521	48	3,191,652
	3,192,031		3,192,369		3,191,390		3,192,474		3,192,531		3,191,667
	3,192,032		3,192,370		3,191,397		3,192,486	46	3,191,194		3,191,668
	3,192,033		3,192,377		3,191,416		3,192,488		3,191,338		3,191,673
	3,192,039		3,192,382		3,191,427	43	3,191,198		3,191,380		3,191,708
	3,192,040		3,192,387		3,191,450		3,191,199		3,191,387		3,191,719
	3,192,058		3,192,399		3,191,526		3,191,426		3,19 8400		3,191,762
	3,192,059		3,192,405		3,191,533		3,191,481		3,191,648		3,191,787
	3,192,074		3,192,410		3,191,563		3,191,594		3,191,662		3,191,848
	3,192,105		3,192,423		3,191,570		3,191,775		3,191,699		3,191,919
	3,192,107		3,192,424		3,191,590		3,191,783		3,192,003		3,191,929
	3,192,118		3,192,436		3,191,613		3,191,960		3,192,171		3,191,954
	3,192,126		3,192,443		3,191,619		3,192,421		3,192,304		3,191,974
	3,192,127		3,192,445		3,191,678	45	3,191,203	47	3,191,371		3,191,991
	3,192,129		3,192,448		3,191,681		3,191,320		3,191,754		3,192,087
	3,192,134		3,192,451		3,191,682		3,191,399		3,192,276		3,192,096
	3,192,141		3,192,468		3,191,698		3,191,510		3,192,277		3,192,110
	3,192,149		3,192,480		3,191,701		3,191,627	48	3,191,193		3,192,112
	3,192,151		3,192,482		3,191,738		3,191,674		3,191,196		3,192,131
	3,192,156		3,192,498		3,191,826		3,191,724		3,191,213		3,192,132
	3,192,161	38	3,192,249		3,191,827		3,191,736		3,191,238		3,192,155
	3,192,187	39	3,191,284		3,191,889		3,191,813		3,191,242		3,192,164
	3,192,195		3,191,337		3,191,905		3,191,818		3,191,260		3,192,229
	3,192,204		3,191,635		3,191,981		3,192,206		3,191,294		3,192,232
	3,192,212		3,191,885		3,191,994		3,192,207		3,191,351		3,192,287
	3,192,217	41	3,191,186		3,192,062		3,192,209		3,191,418		3,192,311
	3,192,239		3,191,420		3,192,192		3,192,210		3,191,474		3,192,352
	3,192,293		3,191,558		3,192,256		3,192,221		3,191,530		3,192,444
	3,192,312		3,191,737		3,192,269		3,192,230		3,191,545	49	3,191,690
	3,192,314		3,192,359		3,192,278		3,192,305		3,191,576	53	3,191,459
	3,192,328	42	3,191,190		3,192,281		3,192,357		3,191,585		3,191,866
	3,192,335		3,191,322		3,192,286		3,192,463		3,191,632		

DESIGN PATENTS

4	201,496	6	201,521	12	201,531	29	201,505	29	201,513	35	201,529
	201,498		201,534	13	201,523		201,506		201,525	37	201,492
	201,501		201,535	20	201,502		201,507		201,537		201,514
	201,520	10	201,503	21	201,493		201,508	31	201,499	42	201,490
	201,528		201,516		201,495		201,509		201,522		201,517
	201,530	12	201,491	24	201,519		201,510		201,524		201,518
	201,536		201,526	29	201,497		201,511	32	201,515	45	201,532
	201,538		201,527		201,504		201,512	34	201,533	48	201,500
5	201,494										

PLANT PATENTS

4	2,542

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

June 29, 1965 Volume 815 Number 5

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Adherence of U.S.S.R. to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective July 1, 1965, of the Union of Soviet Socialist Republics to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 17, 1965.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406(c) (COCA-COLA in script), The Coca Cola Company, Nutrient or tonic beverages; Reg. No. 47,120, same, Tonic beverages and syrups for the manufacture of such beverages; Reg. No. 238,145(c) (COCA-COLA), same, Beverages and syrups for the manufacture of such beverages; Reg. No. 238,146(c) (COCA-COLA in script), same; Reg. No. 415,755(c) (COKE), same, Non-alcoholic malt less beverages and the syrups for making such beverages, filed Apr. 14, 1965, D.C., M.D. Pa. (Scranton), Doc. 8908, *The Coca-Cola Co.* v. *Cloverleaf Diner.* Same, filed Apr. 22, 1965, D.C., M.D. Pa. (Scranton), Doc. 8913, *The Coca-Cola Company* v. *Wolfe's Diner, Inc. et al.* Same, filed Apr. 27, 1965, D.C., S.D.N.Y., Doc. 65/1268, *The Coca-Cola Co.* v. *Blarney Rose.* Same, Doc. 65/1269, *The Coca-Cola Co.* v. *Beefburger Hall et al.* Consent judgment; defendants enjoined May 21, 1965.

Reg. No. 22,406(b); Reg. No. 238,145(b); Reg. No. 238,146(b); Reg. No. 415,755(b), filed Apr. 27, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–446, *The Coca-Cola Company* v. *Old Country Road Diner, Inc.* Judgment for injunction May 18, 1965.

Reg. No. 47,120. (See Reg. No. 22,406(c).)

Reg. No. 69,530 (VOGUE), The Vogue Company, Weekly magazine; Reg. No. 125,542, same, Semimonthly publication; Reg. No. 340,618 (VOGUE INCORPORATING VANITY FAIR), The Conde Nast Publications, Inc., same; Reg. No. 295,272 (CHARM in script), Street & Smith Publications, Inc., Periodical publication; Reg. No. 467,430 (GLAMOUR), The Conde Nast Publications, Inc., Monthly magazine; Reg. No. 496,695 (CHARM), Street & Smith Publications, Inc., Periodical publication; Reg. No. 503,282 (GLAMOUR), The Conde Nast Publications, Inc., Monthly magazine; Reg. No. 504,606

CONDITION OF TRADEMARK APPLICATIONS AS OF APRIL 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,093
Date of oldest new application	Sept. 21, 1964
Date of oldest amended application	August 17, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-21-64	9-17-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	10-6-64	10-1-64
Renewals (All Classes)	4-12-65	4-26-65
Sec. 12 (c) Publications (All Classes)	4-14-65	-------

Applications filed during the month of April 1965—2,447

Registrations Issued	398—No. 791,609 to No. 792,006
Renewals Issued	71

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

(VOGUE), same, Magazine published twenty times yearly; Reg. No. 716,497 (GLAMOUR INCORPORATING CHARM), same, Monthly publication, filed Feb. 28, 1965, D.C., S.D.N.Y., Doc. 65/550, *The Condé Nast Publications, Inc.* v. *Beauty Secrets, Inc. et ano.*

Reg. No. 195,542. (See Reg. No. 69,530.)

Reg. No. 202,145. (See Reg. No. 22,406.)

Reg. No. 202,146. (See Reg. No. 22,406.)

Reg. No. 340,613. (See Reg. No. 69,530.)

Reg. No. 395,572. (See Reg. No. 69,530.)

Reg. No. 407,439. (See Reg. No. 69,530.)

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 430,665. (See Reg. No. 69,530.)

Reg. No. 502,322. (See Reg. No. 69,530.)

Reg. No. 504,692. (See Reg. No. 69,530.)

Reg. No. 505,174 (BURROUGHS), Burroughs Adding Machine Company, Electrical appliances—namely, electric motors, interference eliminators, radio filters, condensers, circuit protectors, and parts thereof; Reg. No. 512,295, same, Business machines—namely, adding machines, listing machines, calculating machines, etc.; 800,909, R. L. Bard, ELECTRICALLY OPERATED ADDING MACHINES; 1,969,114, Sjoholm and Brisbois, RADIO INTERFENCE ELIMINATOR; 2,000,200, Orr and Sands, MAGNETIC DEFLECTION MEANS FOR ELECTRON DISCHARGE DEVICES; 2,719,226, I. L. Auerbach, BINARY COMPUTATION CIRCUIT; 2,721,265, Fan and Kuchinsky, MULTI-POSITION BEAM LUBE, filed Oct. 24, 1961, D.C. Conn. (New Haven), Doc. 9009, *Burroughs Corporation* v. *Burroughs Electronics, Inc.* Stipulation for dismissal Jan. 31, 1962.

Reg. No. 512,295. (See Reg. No. 505,174.)

Reg. No. 716,497. (See Reg. No. 69,530.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.106.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 155,761. Uinta Oil Refining Company, Salt Lake City, Utah. Filed Oct. 23, 1962.

GALAXY

Class 15—Oils and Greases

For Gasoline.

Class 101—Advertising and Business

For Services in Connection With the Retail Sale of Gasoline.

First use May 1, 1962.

SN 158,683. Koppers Company, Inc., Pittsburgh, Pa. Filed Dec. 6, 1962.

EARCO

Class 12—Construction Materials

For Emulsified Asphalt Roof Coating, and Protective Asphaltic Coating To Quiet and Provide a Non-Skid Surface on Metals, Such as on the Inside of Metal Boats.

Class 16—Protective and Decorative Coatings

For Coal Tar Paint as a Protective Coating for Steel and Concrete Surfaces.

First use prior to Apr. 29, 1952.

SN 177,021. Ex-Cell-O Corporation, Detroit, Mich. Filed Sept. 16, 1963.

PURE-PAK

Owner of Reg. Nos. 571,160, 573,077, and 643,551.

Class 100—Miscellaneous

For Leasing of Machines for Forming, Filling, Closing, and Sealing Paper Milk Containers.

First use on or about Sept. 20, 1934.

Class 103—Construction and Repair

For Maintenance and Repair of Machines for Forming, Filling, Closing, and Sealing Paper Milk Containers.

First use on or about Sept. 20, 1934.

Class 107—Education and Entertainment

For Field and Resident Instruction in the Operation and Maintenance of Machines for Forming, Filling, Closing, and Sealing Paper Milk Containers.

First use on or about June 1, 1946.

SN 177,367. Arnold D. Palmer, Cleveland, Ohio. Filed Sept. 19, 1963.

ARNIE'S ARMY

Class 22—Games, Toys, and Sporting Goods

For Toy-Type Periscopes for Viewing Sporting Events.

SN 185,714. Plus Gas Company Ltd., London, England. Filed Jan. 30, 1964.

PLUS-GAS

Owner of British Reg. No. 714,371, dated Jan. 28, 1953; and U.S. Reg. No. 751,142.

Class 6—Chemicals and Chemical Compositions

For Compound for Application to Corroded Metal Surfaces Prior to Painting.

Class 15—Oils and Greases

For Non-Corrosive Cutting Fluid.

Class 16—Protective and Decorative Coatings

For Fluid for Protecting Bright Surfaces Against Corrosion.

SN 191,894. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Apr. 23, 1964.

DELACOULE

Owner of Japanese Reg. Nos. 484,697 and 589,889, dated Apr. 10, 1962, and June 16, 1962, respectively.

Class 1—Raw or Partly Prepared Materials

For Imitation Leather and Nylon Coated Fabrics for the Manufacture of Baggage, Upholstery, Shoe Uppers and Cushions.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Nylon Coated Fabrics for the Manufacture of Table Covers, Book Covers, Outer Clothing, Stoles, and Toys.

SN 190,125. The Singer Company, New York, N.Y. Filed Aug. 3, 1964.

PANORAMIC

Owner of Reg. Nos. 418,327, 772,266, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receivers and Power Supplies.

Class 26—Measuring and Scientific Appliances

For Frequency Sources, Oscillators, and Swept Frequency Sources and Indicators.

First use as early as Dec. 31, 1940.

SN 200,682. Dr. I. Kahn, Dr. Philip Lester (partnership), Garden Grove, Calif. Filed Aug. 26, 1964.



Class 26—Measuring and Scientific Appliances

For Eye Glasses, Contact Lenses, and Cases for Eye Glasses.
First use June 16, 1959, on cases for eye glasses.

Class 29—Brooms, Brushes, and Dusters

For Eye Glass Cleaning Cloths.
First use July 1959.

SN 210,739. Joseph Buegeleisen Company, Southfield, Mich. Filed Jan. 27, 1965.

Buco

Owner of Reg. Nos. 500,900 and 502,920.

Class 19—Vehicles

For Motorcycle Accessories—Namely, Visors, Face Shields, Windshields, Mirrors, Fabric Covers, Fender Flaps, and Light Reflectors.

Class 26—Measuring and Scientific Appliances

For Goggles.

First use 1946.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 172,356. The Winnsboro Granite Corporation, Rion, S.C. Filed July 2, 1963.

WINNSBORO

For Granite.
First use 1874.

SN 185,987. Copolymer Rubber & Chemical Corporation, Baton Rouge, La. Filed Feb. 4, 1964.

HY CIS

For Crude Synthetic Rubber.
First use on about Nov. 29, 1963.

SN 191,234. Vynatherm, Inc., Nixon, N.J. Filed Mar. 31, 1964.

VYNATHERM

For Thermoplastic Film and Sheeting Material.
First use Mar. 16, 1964.

SN 191,644. Nixon-Baldwin Chemicals Inc., Nixon, N.J. Filed Apr. 14, 1964.

ORIEX

For Biaxially Oriented Vinyl Film and Sheeting Material.
First use Apr. 7, 1964.

SN 192,545. Armour and Company, Chicago, Ill. Filed May 4, 1964.

SYMPHONY

For Leather.
First use Nov. 6, 1963.

SN 194,277. L. E. Carpenter & Company, Wharton, N.J. Filed May 26, 1964.

VICRA

Owner of Reg. No. 435,903.
For Vinyl Coated Fabrics Useful in the Manufacture of Shoes.
First use Apr. 27, 1964.

SN 196,204. Shell Oil Company, New York, N.Y. Filed June 22, 1964.

VV

For Vinyl Monomers, Used in Polymers and Copolymers Produced by Emulsion, Solution, Bulk or Suspension Polymerization Techniques, for Application in Latex Paints, Adhesives, Polishes, Textile Coatings, Paper Coatings, Solution Polymers, and Plastic.
First use May 28, 1964.

SN 196,542. National Pumicite Development Corporation, Lincoln, Nebr. Filed June 26, 1964.

PUMITEX

For Expanded Volcanic Ash and Expanded Complete Shattered Lava.
First use on or about Mar. 1, 1962.

SN 197,247. Arbor Acres Farm, Inc., Glastonbury, Conn. Filed July 7, 1964.



The representation of the chicken is disclaimed apart from the mark shown. Owner of Reg. Nos. 708,576 and 713,316.
For Live Poultry, Baby Chicks, and Hatching Eggs.
First use Mar. 9, 1964; on or about May 25, 1961, as to "Arbor Acres Queen."

SN 197,312. Mitsubishi Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed July 7, 1964.

SHINKOLITE

Owner of Japanese Reg. No. 535,258, dated Apr. 6, 1959; and U.S. Reg. Nos. 594,048 and 759,447.
For Synthetic Resin Moulding Materials Used in Industry and Chemicals for Industrial Purposes, Particularly Synthetic Resin Monomer.

SN 199,866. John Adkins, d.b.a. John Adkins & Sons, Coalville, Utah. Filed Aug. 14, 1964.

BLACKWILLOW

For Mink Fur Pelts.
First use May 7, 1964.

SN 204,608. W. R. Grace & Co., New York, N.Y., assignee of Rudy-Patrick Seed Company, Kansas City, Mo. Filed Oct. 22, 1964.

988

For Field Seed.
First use July 1962.

SN 204,609. W. R. Grace & Co., New York, N.Y., assignee of Rudy-Patrick Seed Company, Kansas City, Mo. Filed Oct. 22, 1964.

788

For Field Seed.
First use July 1959.

SN 209,025.National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 29, 1964.

USI

Owner of Reg. No. 410,809.
For Polyolefin Resins.
First use April 1955.

SN 210,977. The Ohio Leather Company, Girard, Ohio. Filed Jan. 29, 1965.

BENGALESE

For Leather.
First use May 2, 1964.

SN 210,978. The Ohio Leather Company, Girard, Ohio. Filed Jan. 29, 1965.

CANDLELIGHT

For Leather.
First use Dec. 4, 1959.

SN 211,058. General Mills, Inc., Minneapolis, Minn. Filed Feb. 1, 1965.

SPLINTERS

For Vegetable Gums for Industrial Purposes.
First use Nov. 6, 1964.

SN 211,478. Surpass Leather Company, Philadelphia, Pa. Filed Feb. 5, 1965.

BELLEEK

For Shoe Leather.
First use June 7, 1961.

SN 211,572. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Feb. 5, 1965.

HYBON

For Glass Fibers.
First use at least as early as Nov. 17, 1964.

SN 211,801. Eclipse Sleep Products, Inc., Brooklyn, N.Y. Filed Feb. 11, 1965.

MARKPRUF

Owner of Reg. No. 675,760.
For Imitation Leather Covering for Studio Couches, Upholstered Chairs, Convertible Beds, and Hollywood Headboards.
First use Jan. 2, 1958.

SN 212,102. Emba Mink Breeders Association, Racine, Wis. Filed Feb. 16, 1965. COLLECTIVE MARK.

ROVALIA

For Mink Fur Pelts.
First use Jan. 26, 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 189,426. Atlantic Products Corporation, Trenton, N.J. Filed Mar. 24, 1964.

KING'S LANCERS

For Hand Luggage.
First use Mar. 11, 1964.

SN 206,299. Shwayder Brothers, Inc., Denver, Colo. Filed Nov. 16, 1964.

JETPAK

For Luggage.
First use Oct. 16, 1964.

SN 206,963. Platt Luggage, Inc., Chicago, Ill. Filed Nov. 25, 1964.

JETAWAY

For Luggage, Attaché and Brief Cases.
First use Apr. 2, 1963.

SN 207,217. Justin Leathergoods Company, Fort Worth, Tex. Filed Dec. 1, 1964.

EXPAND-O-FOLD

For Billfolds.
First use July 1, 1964.

SN 207,285. Since 1963 Crescent Corporation, d.b.a. Crescent Corporation, New York, N.Y. Filed Dec. 1, 1964.

FAST-FLITE

For Luggage.
First use Oct. 18, 1964.
Subj. to Intf. with SN 211,111.

SN 207,581. Suzanne Designs, Inc., New York, N.Y. Filed Dec. 4, 1964.



For Ladies' Handbags.
First use June 22, 1964.

SN 211,111. M. Smith Co., Inc., Philadelphia, Pa. Filed Feb. 1, 1965.

FIRST FLITE

For Luggage.
First use Sept. 18, 1963.
Subj. to Intf. with SN 207,285.

Class 5—Adhesives

SN 207,801. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Dec. 9, 1964.

RIB-A-TAC

For Rubber Vulcanizing Cement.
First use Nov. 17, 1964.

SN 207,824. Miller Studio, Inc., New Philadelphia, Ohio. Filed Dec. 9, 1964.

magic-mounts

For Adhesive Fasteners for Mounting Objects on Walls.
First use Oct. 12, 1964.

Class 6—Chemicals and Chemical Compositions

SN 149,209. Rhein-Chemie G.m.b.H., Heidelberg, Germany. Filed July 17, 1962.

AKTIPLAST

Owner of German Reg. No. 973,451, dated Sept. 4, 1953.
For Peptising Agents; Emulsions; Dispersing Agents; Plastifying Agents; Stabilising Agents; Solvents for Oils, Greases, Rubber Substitutes, Plastifying Agents, Peptising Agents, Rubber, Plastic Materials, and Adhesive Substances; Solutions Containing Chemical Agents Having Corrosion-Preventing and Lubricating Actions; Chemical Additives to Lubricating Oils and Greases and to Mineral Oils; Metal Oxides; Metal Carbonates; Metal Silicates; and Metal Sulfates.

SN 157,036. Morton Salt Company, Chicago, Ill., assignee, by mesne assignment, of Adcote Chemicals, Inc., Elk Grove Village, Ill. Filed Nov. 13, 1962.

ADCOTE

Owner of Reg. No. 749,280.
For Chemical Compositions Useful in Pickling Baths for Metal.
First use at least as early as 1951.

SN 178,183. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 1, 1963.

WORTAID

For Protein-Coagulating Agent for Wort in the Kettle.
First use during the year 1948.

SN 191,959. Special Chemicals Corporation, Ossining, N.Y. Filed Apr. 24, 1964.



For Chemical Composition for Use in Preparing Baths for Chemically Producing Surface Color Change on Ferrous Metals.
First use Apr. 6, 1954.

SN 191,960. Special Chemicals Corporation, Ossining, N.Y. Filed Apr. 24, 1964.



Owner of Reg. No. 380,209.
For Chemical Composition for Use in Preparing Baths for Chemically Producing Tarnish-Resistant, Lustrous, and Surface Color Change Reaction Coatings on Ferrous Metals, Copper and Its Alloys as Brass, and Such Metal Plated Surfaces.
First use Jan. 3, 1946.

SN 193,407. Radiant Wash Solution Corp., Buffalo, N.Y. Filed May 13, 1964.

PRESTO

Owner of Reg. No. 467,181.
For Fabric Softener.
First use on or about Nov. 15, 1963.

SN 200,695. B. T. Babbitt, Inc., New York, N.Y. Filed Aug. 27, 1964.



Owner of Reg. Nos. 184,245 and 264,746.
For Lye (Caustic Soda).
First use 1958.

SN 203,010. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Sept. 30, 1964.

HETDIENE

Owner of Reg. Nos. 464,060 and 589,148.
For Chemicals and Chemical Compositions Suitable as Chemical Intermediates.
First use August 1964.

SN 207,855. American Cyanamid Company, Wayne, N.J. Filed Dec. 10, 1964.

CYANAFLEX

Owner of Reg. Nos. 587,090, 705,129, and others.
For Antioxidant.
First use Nov. 17, 1964.

SN 207,903. Potter-McCune Company, McKeesport, Pa. Filed Dec. 10, 1964.

JUS-RITE

Owner of Reg. No. 661,261.
For Bleach (Sodium Hypochlorite Solution), Liquid Starch for Laundry Purposes, and Ammonia.
First use April 1950.

SN 207,913. Standard Chemical Products, Inc., Hoboken, N.J. Filed Dec. 10, 1964.

STANDAMUL

For Emulsifiers and Wetting Agents.
First use October 1963.

SN 207,914. Standard Chemical Products, Inc., Hoboken, N.J. Filed Dec. 10, 1964.

STANDAFOME

For Foaming Agent for Shampoos and Bath Soaps.
First use June 1964.

SN 208,378. G. C. Murphy Company, McKeesport, Pa. Filed Dec. 17, 1964.

TRIPLE ///CHECK

Owner of Reg. No. 780,805.
For Anti-Freeze Compositions.
First use Aug. 13, 1964.

SN 208,517. Amchem Products, Inc., Ambler, Pa. Filed Dec. 21, 1964.

THITROL

For Herbicides.
First use May 4, 1964.

SN 208,557. Eastman Kodak Company, Rochester, N.Y. Filed Dec. 21, 1964.

EKTAMATIC

Owner of Reg. Nos. 504,050, 770,573, and others.
For Photographic Processing Chemicals.
First use Oct. 9, 1964.

SN 208,588. Kingsley Packer, d.b.a. Nanogens, Watsonville, Calif. Filed Dec. 21, 1964.

NANOGEN

For Analytical-Standard Chemical-Solutions.
First use Sept. 4, 1964.

SN 208,809. Bristol-Myers Company, New York, N.Y. Filed Dec. 24, 1964.

BRISTRONIC

For Desiccant.
First use Sept. 22, 1964.

SN 208,812. Ciba Limited, Basel, Switzerland. Filed Dec. 24, 1964.

CIBATEX

Owner of Swiss Reg. No. 110,252, dated Apr. 10, 1945.
For Chemical Preparations for Use in Textile, Leather, Paper, and Plastic Industries, Dyestuffs and Coloring Matters.

SN 209,036. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 29, 1964.

U.S.I.

Owner of Reg. No. 410,869.
For Denatured Alcohol, Acetone, Amyl Alcohol, Butanol, Butyl Acetate, Ethyl Acetate, Ethylene, Ethyl Ether, Titanium Tetrachloride and Zirconium Oxide.
First use June 1933 on denatured alcohol.

SN 209,068. Shulton, Inc., Clifton, N.J. Filed Dec. 30, 1964.

ANOPLEX

For Electroplating Compound for Manufacturing Purposes Only.
First use Nov. 17, 1964.

SN 209,288. Metacomet, Incorporated, Hawthorne, N.J. Filed Jan. 4, 1965.

METABLEND

For Photographic Chemicals.
First use September 1964.

SN 209,289. Metacomet, Incorporated, Hawthorne, N.J. Filed Jan. 4, 1965.

METALITH

For Photographic Chemicals.
First use September 1964.

SN 209,290. Metacomet, Incorporated, Hawthorne, N.J. Filed Jan. 4, 1965.

METAMAT

For Photographic Chemicals.
First use September 1964.

SN 209,291. Metacomet, Incorporated, Hawthorne, N.J. Filed Jan. 4, 1965.

METAMIX

For Photographic Chemicals.
First use September 1964.

SN 214,225. Acme Markets, Inc., Philadelphia, Pa. Filed Mar. 16, 1965.



For Starch, Fabric Softener, and Bleach.
First use Mar. 31, 1964.

Class 7 — Cordage

SN 216,999. Berkley & Company, Inc., Spirit Lake, Iowa. Filed Apr. 21, 1965.

SUN-GLO

For Fluorescent Rope.
First use December 1962.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 153,202. Olin Mathieson Chemical Corporation, East Alton, Ill. Filed Sept. 14, 1962.



The wording "Kant-Splash" is disclaimed when used apart from the trademark. Owner of Reg. Nos. 159,784, 706,173, and others.
For Rifle and Pistol Cartridges.
First use on or about Sept. 1, 1960.

SN 153,203. Olin Mathieson Chemical Corporation, East Alton, Ill. Filed Sept. 14, 1962.



The words "Super Kant-Splash" are disclaimed when used apart from the trademark. Owner of Reg. Nos. 159,784, 706,173, and others.
For Rifle and Pistol Cartridges.
First use on or about Sept. 1, 1960.

SN 194,712. Explosive Technology, Inc., Santa Clara, Calif. Filed Jan. 16, 1964.

TECHBOLT

For Explosive Bolts.
First use Oct. 27, 1961.

SN 200,631. Charles Daly, Inc., Elmsford, N.Y. Filed Aug. 26, 1964.



For Shotguns.
First use Aug. 15, 1963.

Class 10 — Fertilizers

SN 194,311. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed May 26, 1964.

PENAR

For Plant Growth Regulator.
First use Apr. 15, 1964.

SN 202,635. The Borden Company, New York, N.Y., assignee of Smith-Douglass Company Incorporated, Norfolk, Va. Filed Sept. 24, 1964.

SMITH-DOUGLASS PUTS THE GO IN GROW

Owner of Reg. No. 594,095.
For Fertilizer.
First use Feb. 20, 1963.

SN 203,410. Tennessee Corporation, New York, N.Y. Filed Dec. 17, 1964.

MON-A-MON

For Fertilizer.
First use on or about Sept. 1, 1964.

SN 203,469. Love Wood Products Co., Diboll, Tex. Filed Dec. 18, 1964.

DURA-GRO

For Organic Mulch and Soil Conditioner.
First use on or before Sept. 18, 1964.

SN 203,736. Gray Chemical, Inc., Gloucester, Mass. Filed Dec. 23, 1964.



For Plant Food.
First use Mar. 27, 1961.

SN 209,027. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 29, 1964.



Owner of Reg. No. 410,809.
For Liquid Fertilizer.
First use 1955.

SN 209,188. McKenzie Fuel Company, Tacoma, Wash. Filed Dec. 31, 1964.

BEAUTIBARK

For Ground Whole Bark Mulch.
First use Dec. 4, 1964.

Class 12 — Construction Materials

SN 172,486. Habitat, Inc., New York, N.Y. Filed July 5, 1963.

TREXILOY

Owner of Reg. Nos. 766,687, 785,036, and others.
For Aluminum, Plastic, Wood, and Other Structural Materials Ready To Be Sized and/or Shaped and Used in the Fabrication of Furniture and in the Interior Decor of Commercial and Residential Buildings.
First use on or about June 25, 1963.

SN 180,453. The Sheffield Corporation, Dayton, Ohio. Filed Nov. 4, 1963.

COTEMP

For Wall Panels Used in Fabricating Environmental Enclosures.
First use Oct. 29, 1963.

SN 182,853. American Metal Climax, Inc., New York, N.Y. Filed Dec. 11, 1963.

PERMANODIC

For Aluminum Building Components—Namely, Doors and Frames, Vestibules and Entrances, Wall Facing Panels and Curtain Walls, Windows, Sun Control Louvers, Canopies, and Accessory Hardware Having a Color Surface Finish.
First use Oct. 28, 1963.

SN 195,965. Porta-Kamp Manufacturing Co., Inc., Houston, Tex. Filed June 18, 1964.

PORTA-KAMP

Owner of Reg. No. 689,828.
For Buildings—Namely, Completely Assembled Buildings, Skid-Mounted Buildings, and Prefabricated, Foldable Portable Buildings and Trailer Adapter Kits for Said Buildings To Permit Them To Be Moved on Wheels.
First use Nov. 16, 1955.

SN 199,044. Fibre Glass-Evercoat Company, Inc., Cincinnati, Ohio. Filed Aug. 3, 1964.

ChemTraz

For Resin Matrix Mixes for Use in the Construction of Terrazzo Floors.
First use Sept. 17, 1963.

SN 209,780. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Jan. 12, 1965.

KORUNDAL XD

For High Alumina Brick.
First use Mar. 22, 1960.

SN 200,788. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Jan. 12, 1965.

KORUNDAL

For High Alumina Brick.
First use August 1944.

SN 210,077. The Burns & Russell Company of Baltimore City, Baltimore, Md. Filed Jan. 18, 1965.

Spectra-Lite

Owner of Reg. Nos. 504,146, 776,039, and others.
For Plastic Faced Masonry Blocks.
First use Nov. 30, 1964.

SN 210,375. Southwestern Portland Cement Company, Los Angeles, Calif. Filed Jan. 21, 1965.

Plasgun

For Portland Cement Product for Plastering Purposes.
First use on or about Dec. 30, 1963.

SN 210,481. Southwestern Portland Cement Company, Los Angeles, Calif. Filed Jan. 22, 1965.

Plasmor

For Portland Cement Product for Masonry and Plastering Purposes.
First use on or about Dec. 23, 1963.

SN 210,612. Southern Safety Tread Co., Inc., Roanoke, Va. Filed Jan. 25, 1965.

STAIRMATE

For Stair Treads, Nosings and Thresholds.
First use May 25, 1963.

SN 210,689. Boise Cascade Corporation, Boise, Idaho. Filed Jan. 26, 1965.

TRU-PLY

For Mill-Stamped Plywood Panel for Sheathing.
First use Sept. 25, 1964.

SN 210,671. Jaime Colom Grau, Tarrasa, Barcelona, Spain. Filed Jan. 26, 1965.

GRADHERMETIC

Owner of Spanish Reg. No. 242,227, dated Apr. 5, 1961.
For Doors, Door Frames, Windows, Window Frames, Jalousies, Louvers Used in Construction as a Permanent Part of a Building, Shutters, and Parts and Fittings Therefor; and Gutters and Drainspouts.

SN 211,215. United States Plywood Corporation, New York, N.Y. Filed Feb. 2, 1965.

NOVOWOOD

Owner of Reg. Nos. 442,389, 677,212, and others.
For Lumber and Wood Products, i.e., Particle Board With or Without Decorative Faces.
First use Jan. 9, 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 190,970. Stevens Burt Company, Highland Park, N.J. Filed Nov. 12, 1963.

ALL-ANGLE

For Toilet Plungers.
First use Apr. 15, 1954.

SN 204,066. Rixson Inc., Franklin Park, Ill. Filed Oct. 15, 1964.



For Builders' Hardware—Namely, Door Closers of the Floor, Overhead and Door Installed Types, Door Checks, Door Holders and Stays, Door Hinges and Pivots, and Thresholds.
First use Sept. 1, 1964.

SN 208,522. Avisun Corporation, Philadelphia, Pa. Filed Dec. 21, 1964.

OLEFOAM

Owner of Reg. Nos. 766,928 and 769,066.
For Resin Pipe.
First use Dec. 2, 1964.

SN 208,568. Graber Manufacturing Company, Inc., Middleton, Wis. Filed Dec. 21, 1964.

ELEGANCE

For Drapery Hardware Including Drapery Rods, Poles, Tubing and Track, Ornamental Ends, Brackets, Supports, Pole Rings, Slides, and Cord Pulleys.
First use on or about Sept. 25, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 209,023. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 29, 1964.

U.S.I.

Owner of Reg. No. 410,999.
For Titanium Sponge, Zirconium Chunklets, and Titanium and Zirconium in Powdered Form.
First use 1957.

Class 15—Oils and Greases

SN 187,903. Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Mar. 4, 1964.

KERR-McGEE

Owner of Reg. No. 688,905.
For Gasoline, Lubricants, Fuel Oil, and Diesel Fuel.
First use Feb. 1, 1946.

SN 211,704. Candle-Lite Inc., Cincinnati, Ohio. Filed Feb. 10, 1965.

TERRAZZO

For Candles.
First use Jan. 22, 1965.

Class 18—Medicines and Pharmaceutical Preparations

SN 169,488. Societe dite: Recherches Pharmaceutiques et Scientifiques, Paris, France. Filed May 22, 1963.

ACDRILE

Owner of French Reg. No. 500,221, dated Nov. 20, 1961 (Seine); Natl. Inst. No. 174,296.
For Pharmaceutical Preparations of Thio-Amino Acid for Use in the Treatment of Respiratory Ailments, Chronic Rheumatism, and Arthrosis.

SN 194,097. Richardson-Merrell Inc., New York, N.Y. Filed May 15, 1964.

A+

Owner of Reg. No. 706,551.
For Antacid Tablet.
First use Mar. 7, 1960.

SN 194,576. Chem. Pharm. Laboratorium "Pharmonta" Dr. et Mr. G. Fischer, Gratwein, Steiermark, Austria. Filed June 1, 1964.

„MONTANA"
HAUSTROPFEN

The Spanish word "Montana" means "mountain"; the German word "Haustropfen" means "house drop." Priority claimed under Sec. 44(d) on Austrian application filed Jan. 15, 1964; Reg. No. 52,145, dated Mar. 26, 1964.
For Medical Preparations for the Treatment of Stomach Disorders, Cramps of Any Kind, Headaches and Flatulence.

SN 196,653. Merck & Co., Inc., Rahway, N.J. Filed June 19, 1964.

FLOXAID BF

Owner of Reg. No. 663,703.
For Veterinary Preparation Containing Antibiotics and Vitamins for Use in Promoting Growth and Protecting Against Disease.
First use April 1964.

SN 196,654. Merck & Co., Inc., Rahway, N.J. Filed June 19, 1964.

FLOXAID AWP

Owner of Reg. No. 663,703.
For Veterinary Preparation Containing Antibiotics and Vitamins for Use in Promoting Growth and Protecting Against Disease.
First use April 1964.

SN 200,356. Kay Pharmacal Company, Tulsa, Okla. Filed Aug. 21, 1964.

CAL-C-BATE

For Calcium Gluconate and Calcium Ascorbate for Parenteral Administration for Calcium or Vitamin C Deficiencies.
First use Aug. 12, 1957.

SN 200,357. Kay Pharmacal Company, Tulsa, Okla. Filed Aug. 21, 1964.

KAYTRATE

For Pentaerythritol Tetranitrate in Tablet and Capsule Form for Oral Administration To Control Angina Pectoris.
First use Apr. 14, 1955.

SN 201,520. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 9, 1964.

BREAK

For Tablet Restraining the Desire To Use Tobacco.
First use June 15, 1964.

SN 202,501. Plough, Inc., Memphis, Tenn. Filed Sept. 28, 1964.

SOLARCAINE

Owner of Reg. No. 584,375.
For Medicated Preparations for the Relief of Sunburn, Minor Cuts, Burns, Skin Irritations, Insect Bites, Detergent Hands, Cold Sores, and Fever Blisters.
First use June 15, 1949.

SN 202,722. Medichemie A.G., Basel, Switzerland. Filed Sept. 8, 1964.

MEQUALON

For Hypnotic and Sedative Preparation.
First use Nov. 1, 1962; in commerce Aug. 20, 1964.

SN 205,042. Crinos Industria Farmacobiologica S.p.A., Villaguardia, Como, Italy. Filed Oct. 29, 1964.

ATEROID

Owner of Italian Reg. No. 137,512, dated May 18, 1957.
For Extracted Heparinoid of High Clearing and Anti-Cholesterolemic Activity.

SN 205,441. N.V. Philips-Duphar, Amsterdam, Netherlands. Filed Nov. 3, 1964.

DUPHALAC

Owner of Dutch Reg. No. 116,461, dated Sept. 3, 1953; and U.S. Reg. Nos. 654,984 and 707,999.
For Pharmaceutical Product—Namely, a Regulator of the Bowel Movement and the Intestinal Flora.

SN 205,899. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Nov. 9, 1964.

WHIT-VIM

For Antibiotic-Vitamin Feed Supplement for Use in Animal Rations.
First use on or about Feb. 26, 1953.

SN 205,917. Bristol-Myers Company, New York, N.Y. Filed Nov. 10, 1964.

BRISLOX

Owner of Reg. No. 779,867.
For Antacid Preparation.
First use July 31, 1964.

SN 207,714. Hales & Hunter Co., Chicago, Ill. Filed Dec. 8, 1964.

PIONEER HUB

Owner of Reg. Nos. 679,114, 737,466, and 737,467.
For Medicated Feeds and Feed Concentrates for Dairy and Beef Cattle, Hogs, and Poultry.
First use July 11, 1964.

SN 207,823. Miles Laboratories, Inc., Elkhart, Ind. Filed Dec. 9, 1964.

FOCUS

For Analgesic Preparation.
First use on or before Oct. 29, 1964.

SN 207,923. Veterinary Sales Associates, Inc., Westwood, Kans. Filed Dec. 10, 1964.

VSA

For Veterinary Pharmaceutical Preparations.
First use Sept. 8, 1964, on oxytocin injection.

SN 208,846. Person & Covey, Inc., Glendale, Calif. Filed Dec. 24, 1964.

P_2E_1

For Ophthalmic Solution.
First use Apr. 1, 1962.

SN 210,600. Ted Robinson, d.b.a. Brown-Vaughan Company, North Bergen, N.J. Filed Jan. 25, 1965.

FOOT ICE

The drawing is lined for blue.
For Medicated Preparation for Relief of Hot or Tired Feet.
First use June 1962.

SN 210,699. Rexall Drug and Chemical Company, d.b.a. Riker Laboratories, Los Angeles, Calif. Filed Jan. 26, 1965.

AMETENSE

For Pre-Menstrual Tension Tablet.
First use Mar. 27, 1958.

SN 211,389. Schering Corporation, Bloomfield, N.J. Filed Feb. 4, 1965.

CELESTAMYD

For Corticosteroid Ophthalmic Preparation.
First use on or about Nov. 19, 1964.

SN 211,635. The Dietene Company, Minneapolis, Minn. Filed Feb. 9, 1965.

REFLEX

For Rectal Suppository Used for Relief of Constipation.
First use Jan. 14, 1965.

SN 211,666. Organon Inc., West Orange, N.J. Filed Feb. 9, 1965.

STIPTANON

For Medicinal Preparation for the Control of Bleeding.
First use Jan. 29, 1965.

SN 211,714. The Dow Chemical Company, Midland, Mich. Filed Feb. 10, 1965.

VYNOC

For Bovine Virus Diarrhea Vaccine.
First use July 24, 1964.

SN 211,991. Delta Drug Corporation, Jacksonville, Fla. Filed Feb. 15, 1965.

VAGACREME

For Pharmaceutical Preparation Used in Control of Superficial Infections of the Exocervix, Vagina and Vulva, and for Prevention or Control of Infection Following Cauterization of the Servix or Other Similar Surgical Procedures.
First use Sept. 23, 1964.

SN 212,039. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Feb. 15, 1965.

ANDANTE

For Delayed Action Central Nervous System Depressants.
First use Nov. 11, 1964.

SN 212,245. R.J.M. Corporation, Chester, Pa. Filed Feb. 17, 1965.



For Medicinal Skin Paste for the Temporary Relief of Diaper Rash, Prickly Heat, Minor Bed Sores, Chafing and Minor Skin Irritations.
First use Oct. 6, 1964.

SN 212,363. The Upjohn Company, Kalamazoo, Mich. Filed Feb. 18, 1965.

NEOMIX PLUS

Owner of Reg. Nos. 715,319 and 776,070.
For Medicinal Preparation for the Prevention and Treatment of Bacterial Enteritis in Animals.
First use Jan. 22, 1965.

SN 212,364. The Upjohn Company, Kalamazoo, Mich. Filed Feb. 18, 1965.

DEPO-TAB

Owner of Reg. Nos. 515,760, 719,570, and others.
For Tablets Containing Medicaments Which Provide Sustained Release Action.
First use June 10, 1964.

SN 212,485. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Feb. 23, 1965.

SEBO-DERM

For Scalp Lotion for the Treatment of Inflammatory Dermatitis.
First use Nov. 3, 1964.

SN 212,486. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Feb. 23, 1965.

BARSEB

For Scalp Lotion for Use in the Treatment of Inflammatory Dermatitis.
First use Nov. 3, 1964.

SN 212,487. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Feb. 23, 1965.

FREESEB

For Scalp Lotion for Use in the Treatment of Inflammatory Dermatitis.
First use Nov. 3, 1964.

SN 212,730. Bristol-Myers Company, New York, N.Y. Filed Feb. 25, 1965.

TETREX-TUSS

Owner of Reg. No. 651,667.
For Antibiotic Preparation.
First use July 28, 1964.

SN 212,732. Bristol-Myers Company, New York, N.Y. Filed Feb. 25, 1965.

BENTENSIN

For Antihypertensive Agent.
First use Oct. 8, 1964.

SN 212,733. Bristol-Myers Company, New York, N.Y. Filed Feb. 25, 1965.

BRISTENSIN

For Antihypertensive Agent.
First use Oct. 8, 1964.

SN 212,881. Thompson Medical Company, Inc., New York, N.Y. Filed Feb. 25, 1965.

PRUNITIN

For Pharmaceutical Preparation for Relief of Constipation.
First use March 1954.

SN 212,891. Lemmon Pharmacal Company, Sellersville, Pa. Filed Feb. 26, 1965.

BEVITONE

Owner of Reg. No. 320,443.
For Pharmaceutical Preparation Useful in the Treatment of Iron Deficiency Anemias.
First use December 1962.

SN 214,915. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Mar. 24, 1965.

400

For Analgesics and Vitamin Preparations.
First use on or about Mar. 9, 1965.

Class 20 — Linoleum and Oiled Cloth

SN 183,483. Unokichi Takai, Kofu-shi, Yamanashi-ken, Japan. Filed Dec. 23, 1963.

ALADDIN

For Floor or Wall-Coverings of Thermoplastic Material Having a Pile-Like Surface.
First use Dec. 31, 1960; in commerce Oct. 15, 1962.

SN 210,067. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Jan. 18, 1965.

BEACON HILL

For Vinyl Flooring.
First use Nov. 9, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 118,649. Brunswick Corporation, Chicago, Ill. Filed Apr. 26, 1961.

PIN FINDER

For Electrically Operated Intelligence Communicating Apparatus for Use With the Game of Bowling and Functioning To Aid in the Play and Scoring in Bowling by Indicating Whether the Bowler Is Throwing His First or His Second Ball, the Number of Pins Knocked Down by Each Ball Rolled, and the Relative Position of the Pins That Remain Standing.
First use Feb. 16, 1961.

SN 180,187. Ferro Corporation, Cleveland, Ohio. Filed Oct. 30, 1962.

FIRESTIK

For Sheathed Electric Heating Elements for Use in Igniting Charcoal.
First use Jan. 19, 1960.

SN 207,074. National Presto Industries, Inc., Eau Claire, Wis. Filed Nov. 27, 1964.

Owner of Reg. Nos. 703,792, 776,926, and others.
For Electric Beverage Makers and Servers, Can Openers, Knife Sharpeners, and Toasters.
First use July 22, 1964.

SN 207,159. Smithcraft Corporation, Chelsea, Mass. Filed Nov. 30, 1964.

FORCAST

For Incandescent Lighting Fixtures for Use in Commercial and Industrial Installations.
First use Oct. 27, 1964.

SN 207,684. Erich Haussermann, Uberlingen, Germany. Filed Dec. 7, 1964.

NOVOFON

For Telephones.
First use Nov. 28, 1963; in commerce Dec. 4, 1963.

Class 22—Games, Toys, and Sporting Goods

SN 149,173. Ed-U-Cards Manufacturing Corporation, Long Island City, N.Y. Filed July 17, 1962.

MR. KNOW-IT-ALL

For Equipment or Apparatus Sold as a Unit for Playing a Board, Card, or Similar Type Parlor Game.
First use September 1961.

SN 149,287. Herter's Inc., Waseca, Minn. Filed July 18, 1962.

HUDSON BAY

For Sleeping Bags for Outdoors or Campers' Use, Outdoor Mattresses for Use With Sleeping Bags or for Outdoor or Campers' Use, and Waders for Sportsmen.
First use May 1, 1962.

SN 172,612. Jacoby-Bender, Inc., Brooklyn, N.Y. Filed July 11, 1963.



No claim of exclusive right is made to "Eyes" for the goods recited. The drawing is lined for red and blue, but color is not claimed as a feature of the mark.
For Doll's Eyes.
First use Apr. 8, 1954.

SN 172,613. Jacoby-Bender, Inc., Brooklyn, N.Y. Filed July 11, 1963.



No claim of exclusive right is made to "Eyes" for the goods recited.
For Doll's Eyes.
First use Apr. 8, 1954.

SN 196,622. James W. Dyer, Alexandria, Va. Filed July 24, 1964.

JUMPIN JUPITER SPACE WAND

The word "Wand" is disclaimed apart from the mark as shown.
For Toy Consisting of a Stick With Propellers on One End.
First use July 20, 1964.

SN 202,220. Harold Barah and Alexander Barah (joint owners), d.b.a. Educational Skills Development, Buena Park, Calif. Filed Sept. 21, 1964.

MATH-MATH-MIX

For Equipment Sold as a Unit for Playing an Educational Mathematical Game.
First use July 1, 1964.

SN 203,104. Mattel, Inc., Hawthorne, Calif. Filed Oct. 1, 1964.

DEE-DEE

For Child's Doll.
First use Sept. 28, 1964.

SN 204,456. J. de Beer & Son, Albany, N.Y. Filed Oct. 21, 1964.

DOUBLE-PLAY

For Softballs.
First use on or about Aug. 3, 1964.

SN 204,491. Monogram Models, Inc., Morton Grove, Ill. Filed Oct. 21, 1964.

TIGER

Owner of Reg. No. 582,643.
For Assembly Kits for Model Racing Cars and Accessories Therefor.
First use July 29, 1964.

SN 205,170. Edward R. Davis, d.b.a. E. R. Davis & Sons Co., Sperry, Okla. Filed Oct. 30, 1964.

PUTT-A-ROO

For Golf Putting Practice Devices.
First use Aug. 15, 1964.

SN 206,046. Larami Corporation, Philadelphia, Pa. Filed Nov. 12, 1964.



For Dolls.
First use June 1964.

SN 206,141. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Nov. 13, 1964.

ENDURA

Golf Clubs.
First use Sept. 26, 1964.

SN 206,568. Richard A. Onanian, d.b.a. Advanced Ideas Co., Arlington, Mass. Filed Nov. 19, 1964.

FACTS-IN-FIVE

For Equipment Sold as a Unit for Playing a Word Quiz Game.
First use on or about Nov. 2, 1964.

SN 206,738. Mil-Mac Hawaii, Hilo, Hawaii. Filed Nov. 23, 1964.

ALOHA DICE

No claim of exclusive right is made to the word "Dice" for the goods recited.
For Equipment for Playing a Dice Game.
First use Sept. 23, 1964.

SN 207,026. De Luxe Reading Corporation, Elizabeth, N.J. Filed Nov. 27, 1964.

SUGAR 'N SPICE

For Doll Outfits.
First use Oct. 21, 1964.

SN 207,624. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1964.

TATTERS

For Doll.
First use Nov. 16, 1964.

SN 207,877. The Garcia Corporation, Teaneck, N.J. Filed Dec. 10, 1964.

FINLANDIA

For Artificial Fishing Lures.
First use at least as early as Nov. 11, 1963.

SN 208,243. Craft Liner Corporation, Selma, Ala. Filed Dec. 16, 1964.

SILVER SPRINGS

For Water Skis.
First use June 5, 1964.

SN 208,474. Mattel, Inc., Hawthorne, Calif. Filed Dec. 18, 1964.

T-BONE

For Doll.
First use Dec. 3, 1964.

SN 208,475. Mattel, Inc., Hawthorne, Calif. Filed Dec. 18, 1964.

JET-CODER

For Toy Decoding Kit.
First use Dec. 4, 1964.

SN 208,585. Brunswick Corporation, Chicago, Ill. Filed Dec. 21, 1964.

PERMALEVEL

For Billiard Table Beds.
First use Aug. 20, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 185,494. Cambridge Thermionic Corporation, Cambridge, Mass. Filed Jan. 28, 1964.

MAGCENTRIC

For Magnetic Bearings.
First use Jan. 15, 1964.

SN 195,494. Aktiebolaget Penta Utombordsmotorer, Stockholm, Sweden. Filed June 12, 1964.

PENTA

Owner of Swedish Reg. No. 68,152, dated Mar. 4, 1944.
For Outboard Motors and Parts of Outboard Motors.

SN 201,309. Maremont Corporation, Chicago, Ill. Filed Sept. 4, 1964.

TWISTOMATIC

Owner of Reg. No. 759,626.
For Textile Machinery—Namely, Twister Frames.
First use Apr. 22, 1964.

SN 201,983. Viler Engineering Corporation, Los Angeles, Calif. Filed Sept. 15, 1964.

STUBBY

For Pressure Applying Devices for Holding Work Pieces Against Cutting Tool Thrusts—Namely, Spring Plungers.
First use Apr. 22, 1964.

Class 26—Measuring and Scientific Appliances

SN 177,389. The Decker Corporation, Bala-Cynwyd, Pa. Filed Sept. 19, 1963.

decker

For Ionization Transducers and Apparatus Embodying Said Ionization Transducers and Including Differential Pressure Meters, Differential Pressure Sensors, Differential Vacuum Tube Voltmeters and Meters to Measure Temperature or Pressure or Other Variable To Be Measured; Communication Apparatus Embodying Light Modulators; Comparator Micrometers; Rotor Micrometers; and Dynamic Balancing Machines.
First use on or about Oct. 1, 1951.

SN 178,351. Chemtrol Corporation, Stamford, Conn. Filed Oct. 4, 1963.

COLORCADE

For Photographic Film—Namely, Color Movie Film and Color Reversal Film.
First use May 29, 1962.

SN 201,298. Norton Company, Worcester, Mass. Filed Sept. 4, 1964.

TELESIZE

For Electronic Digital Work Sizer for Machine Tools.
First use Mar. 2, 1964.

SN 204,580. Victory Engineering Corporation, Springfield, N.J. Filed Oct. 21, 1964.

MICRO BEAD

For Thermistors.
First use October 1962.

Class 28—Jewelry and Precious-Metal Ware

SN 214,140. Marvella, Inc., New York, N.Y. Filed Mar. 15, 1965.

DYNASTY

For Jewelry.
First use in or about June 1959.

SN 214,892. Waltham Watch Company, Chicago, Ill. Filed Mar. 17, 1965.

FACET-FLAME

For Diamonds, Diamond Rings, Gift Rings, and Diamond Jewelry.
First use Mar. 3, 1965.

Class 29—Brooms, Brushes, and Dusters

SN 205,548. Stevens-Hepner Company, Limited, Port Elgin, Ontario, Canada. Filed Nov. 4, 1964.

TRADE MARK KEYSTONE BRAND REGISTERED

Priority claimed under Sec. 44(d) on Canadian application filed May 9, 1964; Reg. No. 133,348, dated Dec. 4, 1964. No claim is made to the exclusive use of the words "Brand" or "Trade Mark Registered" apart from the mark.
For Brushes, Brooms, and Whisks, and Handles Therefor, and Brush and Comb Sets.

Class 31—Filters and Refrigerators

SN 188,206. Diamond Alkali Company, Cleveland, Ohio. Filed Mar. 9, 1964.

DAXAN

For Tank-Type Unit for Use in the Chemical Sanitising of Water.
First use Feb. 25, 1964.

Class 32—Furniture and Upholstery

SN 203,643. Cabinet Specialties, Inc., Houston, Tex. Filed Oct. 9, 1964.

C S I Maple Wood

The words "Maple" and "Wood" are disclaimed apart from the mark as shown.
For Kitchen and Bathroom Furniture.
First use Aug. 9, 1963.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 207,869. Dayco Corporation, Dayton, Ohio. Filed Dec. 10, 1964.

COM-PAK

For Fluid Conveying Hose.
First use Nov. 5, 1964.

SN 211,029. Borg-Warner Corporation, Chicago, Ill. Filed Feb. 1, 1965.

THINLINE X

For Mechanical Seals and Parts Thereof for Replacement and Repair.
First use on or prior to Jan. 6, 1965.

Class 37—Paper and Stationery

SN 198,620. Zaetler and Zaetler, Long Beach, Calif. Filed July 27, 1964.

ZAT-SHEET

For Pressure Sensitive Acetate Sheets for Use as Label Stock or Art Work and Nonpressure Sensitive Sheets.
First use on or about June 4, 1964.

SN 203,942. Cooks' Inc., Blackwood, N.J. Filed Oct. 14, 1964.

E-Z SLIDE

Owner of Reg. No. 598,302.
For Transparent Protecting Envelopes for Cards, Tickets, Records and Similar Articles.
First use Oct. 19, 1951.

SN 207,707. Dartmouth Marketing Co., Inc., Skokie, Ill. Filed Dec. 8, 1964.

SPRING TIME

For Toilet Tissue.
First use Nov. 13, 1964.

SN 211,380. Plastic Sales and Service, Inc., Seattle, Wash. Filed Feb. 4, 1965.

VIVIGARD

For Plastic Folders.
First use on or about Feb. 6, 1961.

SN 215,082. S. S. Kresge Company, Detroit, Mich. Filed Mar. 26, 1965.

GK

For Ballpoint Pens.
First use on or before Aug. 1, 1964.

Class 38—Prints and Publications

SN 135,290. Norcross, Inc., New York, N.Y. Filed Jan. 5, 1962.

INFORMAL

For Greeting Cards.
First use Dec. 8, 1961.

SN 172,423. Short Story International, Inc., New York, N.Y. Filed July 3, 1963.

Short Story
INTERNATIONAL

For Monthly Magazine.
First use June 14, 1963.

SN 186,469. Norcross, Inc., New York, N.Y. Filed Feb. 11, 1964.

PASTEL PARCHMENT

Owner of Reg. No. 775,378.
For Greeting Cards and Greeting Card Folders.
First use Oct. 16, 1963.

SN 188,835. American Quarter Horse Association, Amarillo, Tex. Filed Mar. 17, 1964.

THE QUARTER HORSE JOURNAL

Owner of Reg. No. 433,144.
For Monthly Magazine.
First use September 1948.

SN 194,184. Hutton Publishing Company, Inc., Manhasset, N.Y. Filed May 25, 1964.

MP sf

For Trade Catalogues Pertaining to Heating, Plumbing, Cooling, and Other Mechanical Equipment.
First use May 1, 1963.

SN 197,367. The Corporation Trust Company, New York, N.Y. Filed July 8, 1964.



The words "In the Incorporation, Qualification and Statutory Representation of Corporations," and "Deal With and Act for Lawyers Exclusively" are disclaimed apart from the mark as shown, without any intention of relinquishing any common law, copyright or other rights therein. Owner of Reg. Nos. 712,535 and 718,290.
For Books and Periodical Publications.
First use June 1961.

SN 200,908. Celebrity Publications, Ltd., New York, N.Y. Filed Aug. 31, 1964.

teen pix ALBUM

The drawing is lined for the color red.
For Picture Magazine for Teenagers.
First use July 15, 1964.

SN 201,689. Topflight Corporation, York, Pa. Filed Sept. 10, 1964.

REMARK

For Printed Pressure-Sensitive Labels Each Having a Removable Portion Covering Pressure-Sensitive Adhesive Attaching Means on the Rear Face and a Writing Surface on the Front Face for Affixing to Items Concerning Which Data Is To Be Written Upon Said Front Face.
First use Aug. 18, 1964.

SN 204,088. Mid-Co Photo Service, Inc., d.b.a. Star Studio Labs, Wichita, Kans. Filed Sept. 17, 1964.

STAR-BRITE

For Colored Prints.
First use May 1964.

SN 204,805. The Standard Printing Company of Hannibal, Missouri, Hannibal, Mo. Filed Oct. 19, 1964.

"INTRA-VUE"

For Advertising Material for Others, Such as, Booklets, Brochures, Catalogues, Magazine Inserts, and Fliers.
First use Sept. 22, 1964.

SN 205,067. Lebhar-Friedman Publications, Inc., New York, N.Y. Filed Oct. 29, 1964.

MERCHANTIPS

For Annual Booklet.
First use Aug. 26, 1963.

SN 205,184. International Textbook Company, Scranton, Pa. Filed Oct. 30, 1964.



For Books, Textbooks, Self-Testing Devices, and Pamphlets.
First use 1962.

SN 205,277. General Electric Company, Schenectady, N.Y. Filed Nov. 2, 1964.

crosslinks

For Periodic Technical Service Bulletin.
First use Oct. 8, 1964.

SN 205,470. Sunshine Art Studios, Inc., Springfield, Mass. Filed Nov. 3, 1964.

OXFORD FINE ART SERIES

Without waiver of common law rights, applicant disclaims the use of the words "Fine Arts Series" except in the precise relation and association in which they appear in the drawing.
For Greeting Cards.
First use on or about Feb. 1, 1964.

SN 205,720. O. O. Reesel, d.b.a. Woodrow Wilson Co., Corona Del Mar, Calif. Filed Nov. 6, 1964.

PICK-A-PRIZE

For Cards To Be Used by Others in Promoting the Sale of Their Goods Through a Customer Participation Game.
First use July 25, 1963.

SN 206,372. Opec, Inc., Newark, N.J. Filed Nov. 17, 1964.

33/THE MAGAZINE OF METALS PRODUCING

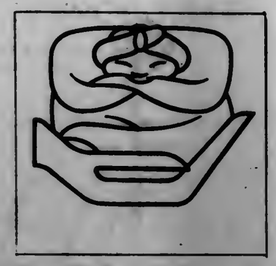
No registration rights are claimed for the expression "The Magazine of Metals Producing" apart from the mark as shown.
For Magazine.
First use November 1963.

SN 206,727. The Horn Book, Inc., Boston, Mass. Filed Nov. 23, 1964.

THE HORN BOOK MAGAZINE

No claim is made to any exclusive right to use the word "Magazine" apart from the mark as shown.
For Magazine Devoted to Children's Books and Reading Published Periodically.
First use 1924.

SN 206,762. Travelers Directory Service, Inc., Winston-Salem, N.C. Filed Nov. 23, 1964.



For Combination Place Mat, Map and Directory.
First use Mar. 1, 1964.

SN 208,072. W. R. Grace & Co., New York, N.Y. Filed Dec. 14, 1964.

CATALAGRAM

For Periodic Bulletin Containing Information About Catalysts.
First use July 1959.

SN 208,196. Jewish Federation of Camden County, Cherry Hill, N.J. Filed Dec. 15, 1964.

VOICE

For Newspaper Published Periodically.
First use Sept. 19, 1941.

SN 208,763. Osborne, Kemper, Thomas, Inc., Cincinnati, Ohio. Filed Dec. 23, 1964.

Regal

For Calendars and Greeting Cards.
First use Dec. 4, 1964.

SN 208,913. General Features Corporation, New York, N.Y. Filed Dec. 28, 1964.

BOWLING AT ITS BEST

Owner of Reg. No. 767,601.
For Syndicated Newspaper Column.
First use Nov. 24, 1963.

SN 208,965. Herbert A. Ireland, d.b.a. Prospector Research Services, Waltham, Mass. Filed Dec. 28, 1964.

JOB *prospector*

For Monthly Periodical Business Newsletter.
First use March 1964.

SN 208,977. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Dec. 28, 1964.

CLEARWATER PRINTS

For Periodical in the Nature of a Magazine.
First use on or about June 1, 1940.

SN 209,037. Marshall Rosenshine, d.b.a. HM, Hebrew Modern, Boulder, Colo. Filed Dec. 29, 1964.

QUIP TIP

For Greeting Cards.
First use on or before Nov. 12, 1964.

SN 209,046. Marshall Rosenshine, d.b.a. HM, Hebrew Modern, Boulder, Colo. Filed Dec. 29, 1964.

QUOTE NOTE

For Greeting Cards.
First use on or before Nov. 12, 1964.

Class 39 — Clothing

SN 180,443. Petite Cheri California Originals, Los Angeles, Calif. Filed Nov. 4, 1963.



Applicant disclaims any rights in the word "Petite" apart from the mark as shown.
For Children's Swimwear.
First use Sept. 12, 1963.

SN 180,790. Teenform, Inc., New York, N.Y. Filed Nov. 8, 1963.

STRETCH DREAM

The word "Stretch" is disclaimed apart from the mark as shown.
For Brassieres.
First use Sept. 16, 1963.

SN 181,362. The Juvenile Shoe Corporation of America, Aurora, Mo. Filed Nov. 18, 1963.

Quiet-Flex

For Shoes and Shoe Soles.
First use Oct. 28, 1963.

SN 181,744. Bali Brassiere Co., Inc., New York, N.Y. Filed Nov. 22, 1963.

MORE-SO

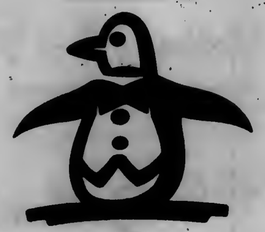
For Brassieres.
First use Sept. 1, 1963.

SN 194,621. Kinney Shoe Corporation, New York, N.Y. Filed June 1, 1964.

canVees

For Shoes for Men, Women, and Children.
First use May 12, 1964.

SN 194,637. Munsingwear, Inc., Minneapolis, Minn. Filed June 1, 1964.



Owner of Reg. Nos. 673,912 and 677,017.
For Men's and Boys' Socks.
First use Jan. 25, 1960.

SN 198,128. Capriel, Inc., New York, N.Y. Filed July 20, 1964.

CAPRION

Owner of Reg. No. 753,011.
For Women's Coats, Jackets, Dresses, Skirts, and Blouses.
First use Apr. 24, 1964.

SN 198,293. Reliance Manufacturing Company, New York, N.Y. Filed July 21, 1964.

HOMETIMERS

For Sleep and Lounging Pajamas, and Smoking Jackets for Men and Women.
First use June 15, 1964.

SN 203,654. R. D. Durham & Son, Inc., Fort Payne, Ala. Filed Oct. 9, 1964.

DEBBIE AND FREDDIE

For Infants' and Children's Socks.
First use July 1959.

SN 205,710. Marjorie Montgomery of California, Los Angeles, Calif. Filed Nov. 6, 1964.



For Women's, Juniors', and Misses' Clothing—Namely, Dresses, Skirts, Sweaters, Blouses, Jackets, Suits, Coats, Bathing Suits, Shorts and Halter Sets, Shifts, Shorts, Slacks, and Beachwear.
First use Oct. 20, 1964.

SN 206,202. Weldon Pajamas, Inc., New York, N.Y. Filed Nov. 13, 1964.

FRENCH NIGHTER

Owner of Reg. Nos. 338,481, 560,192, and others.
For Men's, Women's, and Children's Pajamas and Underwear.
First use Sept. 25, 1964.

SN 206,688. Better Made Headwear Co., Inc., New York, N.Y. Filed Nov. 23, 1964.

BUCKET

For Headwear.
First use Mar. 5, 1962.

SN 206,982. United States Rubber Company, New York, N.Y. Filed Nov. 25, 1964.

Aqua Florals

Owner of Reg. No. 725,665.
For Bathing Caps.
First use Aug. 28, 1964.

SN 207,546. Aldens Holding Corporation, Chicago, Ill., assignee of Aldens, Inc., Chicago, Ill. Filed Dec. 7, 1964.

JOY-EASE

For Women's and Misses' Shoes.
First use Feb. 1, 1941.

SN 207,725. Kabro of Houston Inc., Houston, Tex. Filed Dec. 8, 1964.

JERI ROSE

The mark is fanciful.
For Ladies' Dresses and Suits.
First use April 1959.

SN 208,201. Kops Brothers, Inc., New York, N.Y. Filed Dec. 15, 1964.

FANCY THAT

For Women's Foundation Garments.
First use Dec. 4, 1964.

SN 208,337. Caressa, Inc., Miami, Fla. Filed Dec. 17, 1964.
For Shoes.

Hu-mmm
SO YOUNG

First use Oct. 2, 1964.

SN 208,706. Wembley, Inc., New Orleans, La. Filed Dec. 22, 1964.

DECOREL

For Men's Neckwear.
First use Oct. 9, 1964.

SN 208,794. Wohl Shoe Company, St. Louis, Mo. Filed Dec. 23, 1964.

BOOTALINOS

For Ladies' and Misses' Shoes, Made of Leather, Rubber, Fabric, or Combinations Thereof.
First use June 30, 1964.

SN 208,943. Maro Industries, Inc., Thomasville, N.C. Filed Dec. 28, 1964.

BOAT & SKI

For Hosiery.
First use Dec. 18, 1964.

SN 208,945. Maro Industries, Inc., New York, N.Y. Filed Dec. 28, 1964.

SEA & SKI

For Hosiery.
First use Dec. 18, 1964.

SN 208,958. Penron Associated Hosiery Mills, Inc., High Point, N.C. Filed Dec. 28, 1964.

TIGER PAW

For Hosiery.
First use Aug. 11, 1964.

SN 208,975. Levi Strauss & Co., San Francisco, Calif. Filed Dec. 28, 1964.

MR. LEVI'S

Owner of Reg. Nos. 250,265, 775,412, and others.
For Garments, Particularly Trousers.
First use Sept. 1, 1963; Apr. 14, 1927, as to "Levi's."

SN 209,016. The Kramer Company, New York, N.Y. Filed Dec. 29, 1964.

Pilot

Owner of Reg. Nos. 155,739, 701,886, and 705,625.
For Women's and Misses' Blouses, Sweaters, and Skirts.
First use on or about Nov. 26, 1920.

SN 209,083. Glengarry Sportswear, Inc., Norristown, Pa. Filed Dec. 30, 1964.

GLENTRAN

For Women's Knitted Suits, Sweaters, and Dresses.
First use Nov. 16, 1964.

SN 211,243. Joseph Bancroft & Sons Company, New York, N.Y. Filed Feb. 3, 1965.

RED RIBBON

For Women's Hosiery.
First use on or about Oct. 1, 1964.

SN 213,001. Frank & Meyer Neckwear Company, St. Louis, Mo. Filed Mar. 1, 1965.

PRE-FIX

For Men's Neckwear—Namely, Neckties, Mufflers, and Scarves.
First use Feb. 3, 1965.

SN 214,658. Kops Bros., Inc., New York, N.Y. Filed Mar. 22, 1965.

FANCY THIS

For Women's Foundation Garments.
First use Mar. 11, 1965.

Class 40—Fancy Goods, Furnishings, and Notions

SN 141,898. Sta-Rite Ginnie Lou, Inc., Shelbyville, Ill. Filed Apr. 9, 1962.

CUSHION-TIP

Owner of Reg. Nos. 584,423 and 644,805.
For Brush Curlers.
First use Jan. 10, 1962.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 187,041. Plastic Jewel Parts Corp., New York, N.Y. Filed Feb. 19, 1964.

BEAD-O-RAMA

For Curtains, Draperies, and Hangings Comprising Strings of Beads.
First use Jan. 1, 1964.

SN 193,461. F. W. Woolworth Co., New York, N.Y. Filed May 11, 1964.

YOUR SYMBOL OF QUALITY

Primstyle

The words "Your Symbol of Quality" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 665,430, 696,667, and 768,234.

For Packaged Piece Goods of Wool, Cotton, Silk, Synthetic Fabric, and Combinations Thereof.

First use Mar. 3, 1964.

SN 211,646. Harry Hirshberg Company, Inc., Haverhill, Mass. Filed Feb. 9, 1965.

DYNAWEAVE

For Fabric Material for the Manufacture of Footwear.

First use Jan. 25, 1965.

SN 211,662. Kenneth Mills, Walhalla, S.C. Filed Feb. 9, 1965.

Debonaire

For Cotton Thermal Blankets.

First use Nov. 1, 1963.

Class 44—Dental, Medical, and Surgical Appliances

SN 199,103. The Procter & Gamble Company, Cincinnati, Ohio. Filed Aug. 3, 1964.

SURE

Owner of Reg. Nos. 509,117 and 713,279.

For Tampons.

First use May 26, 1964.

SN 210,679. International Latex Corporation, Dover, Del. Filed Jan. 26, 1965.

SURETAM

For Tampons.

First use Jan. 20, 1965.

SN 210,716. Abco Dealers, Inc., New York, N.Y. Filed Jan. 27, 1965.

Lite Touch

For Surgical Examination Gloves.

First use on or about Dec. 11, 1964.

SN 210,959. Johnson & Johnson, d.b.a. Vetco, New Brunswick, N.J. Filed Jan. 29, 1965.

Vetco

For Surgical Needles, Sutures, and Ligatures.

First use Oct. 26, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 180,954. Pure Spring (Canada) Limited, Ottawa, Ontario, Canada. Filed Nov. 12, 1963.

BRIO CHINOTTO

Applicant makes no claim to exclusive rights in the word "Chinotto," except in the combination shown and without prejudice to applicant's common-law rights. The Italian word "Brio" means "vivacious," and the Italian word "Chinotto" means "a type of fruit similar to an orange." Owner of U.S. Reg. Nos. 681,210 and 681,570.

For Soft Drink Beverages and Extracts and Concentrates for Making Same.

First use October 1955; in commerce October 1955.

Class 46—Foods and Ingredients of Foods

SN 108,744. Burger Chef Systems, Inc., Indianapolis, Ind. Filed Nov. 21, 1960.

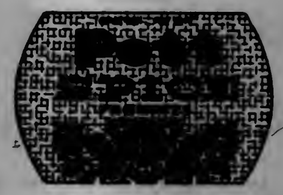
BURGER CHEF

Applicant disclaims the word "Burger." Owner of Reg. Nos. 617,945, 668,872, and 673,795.

For Ready-To-Eat Hamburger Sandwiches.

First use May 1, 1957.

SN 144,187. Harry M. Pett, d.b.a. Pett Spice Products, Atlanta, Ga. Filed May 9, 1962.



The drawing is lined for "Brown" and "Yellow." The descriptive wording "Spice Products" is disclaimed apart from the mark as shown.

For Spices Sold to Food Processors Only.

First use on or about Jan. 2, 1959.

SN 148,089. Sourdough Jack's Inc., San Francisco, Calif. Filed June 29, 1962.

SOURDOUGH JACK'S KITCHEN

For Bakery Goods—Namely, Wheat Bread and White Bread.

First use Apr. 21, 1962.

SN 148,090. Sourdough Jack's Inc., San Francisco, Calif. Filed June 29, 1962.

SOURDOUGH JACK'S

For Bakery Goods—Namely, Wheat Bread and White Bread.

First use Apr. 21, 1962.

SN 148,091. Sourdough Jack's Inc., San Francisco, Calif. Filed June 29, 1962.



The drawing is lined for the color red. The portrait identifies "Jack Mabee," a living individual, whose consent is of record.

For Bakery Goods—Namely, Wheat Bread and White Bread.

First use Apr. 21, 1962.

SN 157,045. Bak-Kraft Corporation, Ltd., Los Angeles, Calif. Filed Nov. 13, 1962.

R'REAL

For Bread Mix To Be Used by Bakers in Making Finished Bakery Products.

First use on or before Oct. 12, 1962.

SN 172,016. Superior Brands, Incorporated, New York, N.Y. Filed June 27, 1963.

DO-KARE

For Ingredient for Wheat Flour Consisting of Lactic Acid Culture, Milk Solids, Calcium Lactate and Stearate Emulsifier.

First use July 18, 1961.

SN 172,174. General Nutrition Corporation, d.b.a. Natural Sales Company, Pittsburgh, Pa. Filed July 1, 1963.



The drawing is lined for green and brown. The word "Brand" is disclaimed apart from its use with the mark.

For Salt Seasoning; Shelled Mixed Nuts; Peanut, Cashew, Sunflower, Sesame, and Almond Butters; Breakfast Cereals; Candy, Candy, Fruit and Nut, and Yeast Bars; Macaroons, Honey Whip, Table and Flavored Food Syrups; Salad Dressings; Pudding Dessert Powders; Sunflower Seed Meal and Kernels; Cherry, Blackberry, and Raspberry Juices; Natural Fruit Drink Concentrates; Sesame Seed, Yellow Corn, and Coconut Meal; Toasted Soybeans; Dried Figs, Prunes and Dates.

First use Nov. 20, 1962.

SN 179,373. Unox Naamloze Vennootschap, Oss, Netherlands. Filed Oct. 18, 1963.

UNISNAC

Priority claimed under Sec. 44(d) on Dutch application filed May 10, 1963; Reg. No. 148,267, dated June 17, 1963.

For Luncheon Meat, Pork Luncheon Meat, Corned Beef, Corned Mutton, Brisket, Ham, Pressed Pork, Jellied Veal, Veal and Ham Galantine, Hamburgers, Frankfurters, Sausages, Minced Chicken, Minced Beef Loaf, All Being Canned, Vacuum Packed in Plastics, Frozen or in the Form of Fresh Cut; Game and Poultry Canned or Frozen, Canned Meat Pies, Ready To Eat Meals Consisting of Potatoes, Rice, Spaghetti, Vegetables, Beans and Meat, All Being Canned or Frozen.

SN 181,031. General Equipment Manufacturing and Sales, Inc., Indianapolis, Ind. Filed Nov. 13, 1963.



For Ice Cream and Candy.

First use June 1, 1963.

SN 183,602. Grace, Kennedy & Co. (Canada) Ltd., Montreal, Quebec, Canada. Filed Dec. 26, 1963.

FOR TABLES
GRACE
AROUND THE WORLD

The words "For Tables Around the World" and the word "Brand" are disclaimed apart from the mark shown. Owner of Canadian Reg. No. 122,313, dated May 26, 1961.

For Canned Sausages, Canned Fruits, Canned Vegetables, Canned Fruit Juices, and Frozen Meats.

SN 184,984. King Candy Company, Fort Worth, Tex. Filed Jan. 20, 1964.

ROYAL MINTS

No registration rights are claimed for the word "Mints" apart from the mark as shown.
For Candy.
First use at least as early as the spring of 1933.

SN 185,359. City Smoked Fish Co., Detroit, Mich. Filed Jan. 27, 1964.

MA COHEN'S

The trademark is not the name of a living individual.
For Smoked and Pickled Fish and Pickles.
First use 1956.

SN 190,134. Wise Potato Chip Company, Berwick, Pa. Filed Apr. 1, 1964.

Bakon Delites

The drawing is lined for blue. The word "Bakon" is disclaimed apart from the mark as shown.
For Fried Pork Rind.
First use Feb. 26, 1964.

SN 190,222. Ralston Purina Company, St. Louis, Mo. Filed Mar. 30, 1964.

GOURMET

For Frozen Fresh Dressed Turkeys.
First use June 26, 1963.

SN 190,296. Stewart's Inc., Rye, N.Y. Filed Apr. 3, 1964.

FLAVORITE

For Monosodium Glutamate Incorporated as an Ingredient in Potato Chips.
First use July 15, 1963.

SN 191,702. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed Apr. 21, 1964.

CINNAMINT

For Chewing Gum.
First use Apr. 8, 1964.

SN 192,033. Henderson's Portion Pak, Inc., Coral Gables, Fla. Filed Apr. 27, 1964.

thrifty CHEF PAK

No claim of exclusive right is made to the word "Pak" apart from the mark as shown.
For Processed Beef and Veal Patties in Fresh and Frozen Form.
First use Dec. 16, 1963.

SN 193,190. Mead Johnson & Company, Evansville, Ind. Filed May 11, 1964.

NURSETTE

For Simulated Breast Milk Formula in a Disposable Dispenser.
First use on or prior to Apr. 16, 1964.

SN 193,584. Safe-T Pacific Company, Redwood City, Calif. Filed May 15, 1964.

CRAZY CUPS

Applicant disclaims the exclusive right to the word "Cups" except when used as part of the mark as shown. Owner of Reg. Nos. 680,877 and 758,513.
For Bakery Products—Namely, Cups for Ice Cream and Other Comestibles.
First use May 22, 1958.

SN 193,682. Los Angeles Nut House, d.b.a. L.A. Nut House, Los Angeles, Calif. Filed May 18, 1964.

LA-NUT

For Potato Chips, Dried Fruit, Shelled Nuts, Unshelled Nuts, Peanut Butter, and Candies.
First use on or about June 29, 1932.

SN 194,717. Flavmor Food Products Corp., Appleton, Wis. Filed June 2, 1964.

FLAVMOR

P.S.

For All-Purpose Food Seasoning.
First use Apr. 27, 1964.

SN 194,985. The Kroger Co., Cincinnati, Ohio. Filed June 5, 1964.

ORANGE-MELS

For Candy.
First use at least as early as Mar. 18, 1964.

SN 194,986. The Kroger Co., Cincinnati, Ohio. Filed June 5, 1964.

STRAWBERRY SHORTCAKE

For Candy.
First use at least as early as Mar. 18, 1964.

SN 195,433. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

PICK OF THE HARVEST

For Candy.
First use June 1, 1964.

SN 195,464. Super Food Services, Inc., Chicago, Ill. Filed June 11, 1964.

TABLE TREAT

Owner of Reg. No. 653,842.
For Food Products—Namely, Canned Vegetables, Canned Pork and Beans, Sandwich Spread, Salad Dressing, Mayonnaise, Tomato Catsup, and Margarine.
First use Aug. 2, 1956.

SN 195,779. Fritzsche Brothers, Inc., New York, N.Y. Filed June 16, 1964.

EST 1871

Owner of Reg. Nos. 62,432 and 770,198.
For Imitation Citrus Oils for Food Flavoring Purposes; Citrus Oils for Food; Spice Flavorings for Food; Food Flavoring Extracts; Flavorings for Food, Confectionery and Dessert Products; Flavoring Oils and Falvoring Agents for Food; Fruit and Imitation Fruit Flavors for Food; Chemical Compounds and Chemical Preparations for Flavoring Food Products; and Aromatic Additives for Use in the Manufacture of Foods.
First use June 7, 1963.

SN 196,357. Comunidad San Francisco-Curimon, Valparaiso, Chile. Filed June 24, 1964.

CURISOL

For Fresh Fruit.
First use January 1963; in commerce February 1963.

SN 196,794. Lucca Packing Company of California, Inc., d.b.a. Superba Packing Co., Ltd., San Francisco, Calif. Filed June 30, 1964.

SUPERBA

Owner of Reg. No. 643,674.
For Canned Garbanzos, Canned Mushroom Gravy, Canned Raviolis, Canned Spaghetti Sauce, and Canned Kidney Beans.
First use Sept. 1, 1919.

SN 198,647. Great Southwest Wholesale Fish & Oyster Company, Fort Worth, Tex. Filed July 28, 1964.

ZUIDER ZEE

For Food and Fish Products—Namely, Breaded Shrimp.
First use Mar. 14, 1964.

SN 198,800. Alginate Industries Limited, Strand, London, England. Filed July 30, 1964.

CARLA

Owner of British Reg. Nos. 823,550 and 823,551, dated July 28, 1961.
For Powder Mix for Making Instant Desserts.

SN 199,200. Huston Research Corporation, Miami, Fla. Filed Aug. 4, 1964.

BOW & ARROW

For Jellies, Preserves, Relishes, and Peanut Butter.
First use July 9, 1964.

SN 199,821. The Griffith Laboratories, Inc., Chicago, Ill. Filed Aug. 13, 1964.

CARDALETTE

For Imitation Cardamon.
First use Aug. 9, 1943.

SN 199,822. The Griffith Laboratories, Inc., Chicago, Ill. Filed Aug. 13, 1964.

MEGOLETTE

For Imitation Nutmeg.
First use May 20, 1943.

SN 200,216. Universal Foods Corporation, Milwaukee, Wis. Filed Aug. 19, 1964.

UF

Owner of Reg. Nos. 759,789, 759,790, and 763,227.
For Chocolate Syrup.
First use July 22, 1964.

SN 200,534. Arthur's of Southport, Inc., Southport, Conn. Filed Aug. 25, 1964.

GOLDEN APPLES

For Candy.
First use on or about July 20, 1964.

SN 200,598. Sigman Meat Company, Inc., Denver, Colo. Filed Aug. 25, 1964.

TOP DOG

No claim is made to the word "Dog" apart from the mark as shown.
For Wieners.
First use May 19, 1963.

SN 200,844. S. Gumpert Co., Inc., Jersey City, N.J. Filed Aug. 28, 1964.

THUNDERBIRD

For Fudge Syrup To Be Used as Dessert Topping.
First use Aug. 14, 1964.

SN 200,895. Henry P. Garia, d.b.a. H. P. Garia Co., Salinas, Calif. Filed Aug. 31, 1964.

Sproutie

For Fresh Lettuce.
First use May 9, 1964.
Subj. to Intf. with SN 204,812.

SN 201,061. Paul F. Beich Company, Bloomington, Ill. Filed Sept. 2, 1964.

PECAN PETE

No exclusive claim is made to the word "Pecan" apart from the mark as shown. Owner of Reg. No. 389,990.
For Candy.
First use Dec. 20, 1940.

SN 201,254. Sioux Honey Association, Cooperative, d.b.a. Reitz & Brew, Summerfield, Fla. Filed Sept. 1, 1964.

REITZ

For Honey.
First use as early as 1940.

SN 201,257. Sioux Honey Association, Cooperative, d.b.a. Reitz & Brew, Summerfield, Fla. Filed Sept. 1, 1964.

GOLDEN-GLO

For Honey.
First use as early as 1935.

SN 201,542. Peter Paul, Inc., Naugatuck, Conn. Filed Sept. 9, 1964.

MOUNDettes

Owner of Reg. No. 162,388.
For Candy.
First use Aug. 11, 1964.

SN 201,728. National Biscuit Company, New York, N.Y. Filed Sept. 11, 1964.

MERRY MAKERS

For Biscuits and Crackers.
First use Aug. 18, 1964.

SN 201,955. Leo and Robert Meyer (partnership), d.b.a. Meyer Tomatoes, King City, Calif. Filed Sept. 14, 1964.

Sophisticated Lady

For Fresh Tomatoes.
First use July 13, 1964.

SN 201,966. Shur-Gro Liquifeed of Garden City, Inc., Garden City, Kans. Filed Sept. 14, 1964.

SHUR-GRO

For Cattle Feed Supplement.
First use Aug. 31, 1964.

SN 202,837. Sullivan Packing Company, Rockledge, Fla. Filed Sept. 21, 1964.

VICTORY GROVES

For Indian River Fresh Oranges, Grapefruit, Tangerines, Tangelos, Temples, and Murcotts.
First use prior to 1900.

SN 202,865. General Mills, Inc., Minneapolis, Minn. Filed Sept. 22, 1964.

MEXICASSEROLE

For Hot Dish Mixes, Consisting Principally of Macaroni, Dehydrated Vegetables, and Flavoring Ingredients.
First use June 18, 1964.

SN 202,639. Stokely-Van Camp, Inc., Columbus, Ohio. Filed Sept. 24, 1964.

CERTI-BLEND

For Vegetable Shortening for Use as a Vegetable Oil Base Ingredient in Dessert Topping and in Coffee Whitener.
First use Apr. 9, 1965.

SN 202,261. Abba-Fyrtornet AB, Stockholm, Sweden. Filed Oct. 5, 1964.

KINGLI

For Canned Herring.
First use June 10, 1964; in commerce June 10, 1964.

SN 202,226. The Quaker Oats Company, Chicago, Ill. Filed Oct. 5, 1964.

LEMON SQUASH

The term "Lemon" is disclaimed apart from the mark as shown.
For Cookies.
First use Nov. 4, 1957.

SN 202,541. Tasty Mates Company, Camden, N.J. Filed Oct. 7, 1964.

Tasty-Mates

Owner of Reg. No. 726,312.
For Bottled Fruit Food Drinks in the Following Flavors; Pineapple-Orange, Pineapple-Grapefruit, Grapefruit-Lemon, and Raspberry-Lemon.
First use Apr. 28, 1961; Oct. 7, 1960, as to "Tasty-Mates."

SN 202,606. Standard Brands Incorporated, New York, N.Y. Filed Oct. 9, 1964.

CLINLO

Owner of Reg. No. 701,946 and others.
For Low Conversion Corn Syrup for Food Applications.
First use July 20, 1964.

SN 203,027. James H. Black Company, Streator, Ill. Filed Oct. 14, 1964.

SALA-CAL

For Salad Dressings.
First use Oct. 5, 1964.

SN 203,028. James H. Black Company, Streator, Ill. Filed Oct. 14, 1964.

FLAVOR-CAL

For Salad Dressings.
First use Oct. 5, 1964.

SN 204,212. 368 Washington St., Inc., New York, N.Y. Filed Oct. 19, 1964.

MR. SPROUT

The word "Sprout" is disclaimed apart from the mark as shown.
For Fresh Brussel Sprouts.
First use March 1962.
Subj. to Intf. with SN 200,925.

SN 204,787. Wm. H. Floyd, d.b.a. Wm. H. Floyd & Co., and Del Rosa Canning Company, South Pasadena, Calif. Filed Oct. 26, 1964.

DEL VALLE

"Del Valle" is translated to mean "of the valley."
For Canned Foods—Namely, Olives, Tomato Paste, and Tuna.
First use Oct. 20, 1964.

SN 204,900. General Wholesale Grocers Inc., Guttenberg, N.J. Filed Oct. 27, 1964.

ZAPATICO

For Rice.
First use May 1, 1964.

SN 206,611. Dietary Desserts Corporation of America, Great Neck, N.Y. Filed Nov. 20, 1964.

STY-LO-ETTE

For Powder for Making Diet Beverages.
First use Nov. 2, 1964.

SN 207,170. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Nov. 30, 1964.

NUTTY AWARDS

For Chewing Gum.
First use Sept. 14, 1964.

SN 207,510. The B. Manischewitz Company, Newark, N.J. Filed Dec. 4, 1964.

MAN-OH

For Matzo Crackers.
First use Oct. 19, 1964.

SN 207,612. Land O'Lakes Creameries, Inc., Minneapolis, Minn. Filed Dec. 7, 1964.

CHEDDEASE

For Spray Process Cheese Product Resulting From the Removal of Moisture From Natural Aged Cheddar Cheese and Buttermilk.
First use Oct. 22, 1964.

SN 208,184. Frigid Food Products, Incorporated, Detroit, Mich. Filed Dec. 15, 1964.

HAPPY TIME

For Canned Plums, Dark Sweet Cherries, Red Sour Pitted Cherries, Apple Sauce, and Blueberries.
First use Aug. 19, 1955.

SN 208,262. Leavenworth Fruit Co., Leavenworth, Wash. Filed Dec. 16, 1964.



JOLLY BEAR

No claim is made to the representation of the apple.
For Fresh Deciduous Fruits.
First use Oct. 26, 1964.

SN 208,264. George A. Lucas & Sons, Delano, Calif. Filed Dec. 16, 1964.

GALS

For Fresh Grapes.
First use on or about Aug. 20, 1958.

SN 208,559. Norris L. Enloe, Chandler, Ariz. Filed Dec. 21, 1964.

NOMA

For Fresh Grapes.
First use July 19, 1964.

SN 208,915. General Mills, Inc., Minneapolis, Minn. Filed Dec. 28, 1964.

SIX-SHOOTER

For Ready To Eat Breakfast Cereal.
First use Dec. 1, 1964.

SN 209,117. Stauffer Chemical Company, New York, N.Y. Filed Dec. 30, 1964.

LEVAIR
SODIUM ALUMINUM PHOSPHATE

The words "Sodium Aluminum Phosphate" are disclaimed other than as shown in the mark.

For Sodium Aluminum Phosphate as a Leavening Ingredient Used in the Manufacture of Self-Rising Flour, Prepared Baking Mixes, Refrigerated Biscuits, Pancake and Waffle Mixes, Donut Mixes, Frozen Yeast Rolls, Cake Mixes, Baking Powders, Bread, Yeast Leavened Products or as an Additive for Meats and Cheese.

First use Dec. 11, 1964.

SN 209,243. Diamond Walnut Growers, Inc., Stockton, Calif. Filed Jan. 4, 1965.

CALWAL

For Walnuts in the Shell.
First use on or about Jan. 1, 1940.

SN 209,835. Big Kernel Pet Foods, Inc., Chicago, Ill. Filed Jan. 13, 1965.

K

For Pet Food—Namely, Food for Dogs, Cats, Hamsters, Birds, Fish, and Turtles.
First use Oct. 1, 1960.

Class 47—Wines

SN 206,670. Weibel Incorporated, d.b.a. Weibel Champagne Vineyards, Mission San Jose, Calif. Filed Nov. 20, 1964.

Weibel

Owner of Reg. No. 412,497.
For Wines, Sparkling Wines, Champagnes, and Vermouth.
First use 1907.

Class 49—Distilled Alcoholic Liquors

SN 167,140. John Gross & Co., Baltimore, Md. Filed Apr. 19, 1963.

ABERDEEN ANGUS

Applicant disclaims the descriptive term "Aberdeen" with reference to the mark "Aberdeen Angus."
For Scotch Whisky.
First use July 27, 1962.

SN 176,317. "Rolimpex" Centrala Handlu Zagranicznego, Warsaw, Poland. Filed Sept. 4, 1963.



The exclusive use of the words "Distilled From Grain—Eighty Proof" and "Vodka" are disclaimed apart from the trademark as a whole. The lining on the drawing does not represent color. The wording appearing beneath the term "Krakus" in the drawing of the subject mark reads "Distilled From Grain—Eighty Proof." Owner of Polish Reg. No. 43,779, dated Apr. 29, 1963; and U.S. Reg. No. 757,016.
For Vodka.

SN 203,433. Schenley Distillers, Inc., New York, N.Y. Filed Oct. 6, 1964.

PARK & TILFORD

Owner of Reg. Nos. 329,573, 647,604, and others.
For Whiskies, Blended Scotch Whisky, Blended Canadian Whiskey, Gin, Brandy, and Vodka.
First use in or about the year 1850.

SN 206,890. Virgin Islands Rum Industries, Ltd., Frederiksted, St. Croix, Virgin Islands. Filed Nov. 17, 1964.

OLD ST. CROIX

Owner of Reg. No. 321,815.
For Rum.
First use Jan. 1, 1880.

SN 209,029. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 29, 1964.

U.S.I.

Owner of Reg. No. 410,809.
For Ethyl Alcohol.
First use Jan. 5, 1921.

Class 50—Merchandise Not Otherwise Classified

SN 172,796. M. G. Arts, Inc., Milwaukee, Wis. Filed July 11, 1963.

ROLL-EZY

For Portable Safety Step Ladders and Platforms.
First use on or before Jan. 1, 1959, on step ladders.

SN 174,728. R. D. Werner Co., Inc., Greenville, Pa. Filed Aug. 8, 1963.

TOOL-TRA-TOP

For Ladders and Accessories Therefor.
First use June 1958.

SN 178,627. Muller Merchandising Company, Wayland, Mass. Filed Oct. 9, 1963.

MAIL-ME-A-PARTY

For Party Merchandise—Namely, Party Favors, Hats, and Cups.
First use Sept. 15, 1963.

SN 197,429. Printing Plate Supply Co., Chicago, Ill. Filed July 8, 1964.

COLOR-LINE

For Laminated Printing Plate Bases and Component Parts Therefor.
First use in or about July 1954.

SN 201,018. C.B.K. Enterprises, Inc., New York, N.Y. Filed Sept. 1, 1964.

IDENTO SHIELD

Applicant disclaims the word "Shield" apart from the mark as shown.
For Decorative Shield or Plate.
First use on or about May 13, 1964.

SN 206,965. Red Spot Paint and Varnish Co., Inc., Evansville, Ind. Filed Nov. 25, 1964.

Elegant Touch Antiquing

No claim is made to the word "Antiquing" apart from the mark as shown.
For Paint Kit, Including Paint Brush, Enamel, Glaze, Steel Wool, Sand Paper, Cheesecloth, Stir Sticks, and Complete Instruction Booklet.
First use Oct. 28, 1964.

SN 207,207. Don C. Glassie, Jr., d.b.a. Ski Ventures, Alexandria, Va. Filed Dec. 1, 1964.

HILL GROOMER

For Sled-Like Vehicle Having a Serrated Blade for Controlling the Same in Snow and Used Principally as a Means for Rescue.
First use Oct. 23, 1964.

SN 210,677. Hydroponics, Inc., Indianapolis, Ind. Filed Jan. 26, 1965.

ETERNAL SPRING

For Hydroponic Seed Bed Units Consisting of an Enclosure With a Tier of Vertically Spaced Seed Supports and an Irrigating System Periodically To Moisten the Seed Beds With a Nutrient-Bearing Fluid.
First use Dec. 12, 1964.

SN 213,632. R. D. Werner Co., Inc., Greenville, Pa. Filed Mar. 8, 1965.

MINI-MITE

For Step Stools.
First use July 13, 1964.

SN 213,757. The Buxbaum Company, Canton, Ohio. Filed Mar. 10, 1965.

BABY INSIDE

For Floor Mat Comprising Carpeting Bonded to a Rubber Base.
First use Feb. 5, 1965.

SN 215,169. Braco Engraving Company, St. Louis, Mo. Filed Mar. 29, 1965.

CURVEX

For Rubber Printing Plates.
First use Sept. 29, 1964.

Class 51—Cosmetics and Toilet Preparations

SN 167,348. Universal Oil Products Company, Des Plaines, Ill. Filed Apr. 22, 1963.

FLEUROMA

Owner of Reg. No. 537,262.
For Essential Oils, Perfume Oils, and Perfume Bases.
First use Jan. 31, 1958.

SN 167,353. Laboratoires Sauter S.A., Geneva, Switzerland. Filed Apr. 23, 1964.

POLO

Owner of Swiss Reg. No. 161,618, dated June 5, 1956.
For Cosmetic Products.

SN 187,174. Colgate-Palmolive Company, New York, N.Y. Filed Feb. 21, 1964.

DEOCIN

Owner of Reg. No. 670,366.
For Neomycin Sulfate Used as an Ingredient in Deodorants.
First use May 1962.

SN 190,626. Les Parfums Robert Piguet Societe Anonyme, Paris, France. Filed Apr. 8, 1964.

CRAVACHE

The French word "Cravache" is defined as "a flexible rod or twig used by horseback riders as a whip." Owner of French Reg. No. 474,890, dated Sept. 3, 1958 (Seine); Natl. Inst. No. 112,819.
For Perfumes, Toilet Waters, Cosmetic Oils, Bath Oils, Hair Oils, Hair Lotions, and Dentifrices.

SN 194,036. Chesebrough-Pond's Inc., New York, N.Y. Filed May 22, 1964.

BLACK WATCH

Owner of Reg. No. 764,430.
For Medicated Shaving Cream.
First use May 6, 1964.

SN 194,540. Unique Laboratories Incorporated, Chicago, Ill. Filed May 26, 1964.

CURLNIQUE

For Curl Setting Lotion.
First use Apr. 24, 1964.

SN 197,690. Faberge, Inc., New York, N.Y. Filed July 13, 1964.

VAN GOGH SUNFLOWER

Owner of Reg. No. 757,881.
For Lipsticks and Nail Polish.
First use on or about Mar. 15, 1960.

SN 199,662. Elisabeth of Sweden, Haledon, N.J. Filed Aug. 11, 1964.

le chaton

The French name "Le Chaton" means "kitten" or "little kitten."
For Perfume, Cologne, Face Powder, Talcum Powder, Rouge, Toilet Water, Brilliantine, Face Lotion, Cold Cream, Skin Cream, and Bath Salts.
First use Dec. 15, 1962.

SN 199,866. Clairol Incorporated, New York, N.Y. Filed Aug. 14, 1964.

MISS CLAIROL

Owner of Reg. Nos. 302,899, 786,536, and others.
For Hair Spray.
First use June 10, 1964.

SN 200,037. Jay D. Silberman, Stamford, Conn. Filed Aug. 17, 1964.

BON JOUR

The English translation of the mark "Bon Jour" is "good day."
For Underarm Deodorant.
First use Aug. 11, 1964.

SN 200,405. Hazel Bishop Inc., Union, N.J. Filed Aug. 24, 1964.

SUDDEN CHANGE

For Wrinkle-Smoothing Cosmetic.
First use Apr. 9, 1964.

SN 203,152. Marian Bialac, Inc., New York, N.Y. Filed Oct. 2, 1964.

P.A.B.A.

For Cosmetics—Namely, a Face and Neck Cream Serving as a Firming Agent, Mild Stimulant and a Facial Mask.
First use Mar. 18, 1958.

SN 203,872. Ivo M. Lechner Italian Labs., Ltd., Long Island City, N.Y. Filed Oct. 13, 1964.

DEMIPERL

For Nail Polish.
First use on or about Oct. 5, 1964.

SN 204,542. Haver Arif, d.b.a. Marc Arif, Neuilly-sur-Seine, France. Filed Oct. 22, 1964.

EXCENTRIC

Owner of French Reg. No. 425,836, dated Jan. 22, 1956 (Seine); Natl. Inst. No. 4,667.
For Perfumes, Toilet Water, Rouge, Lipsticks, Face Powder, Talcum Powder, Cosmetic Skin Creams and Lotions, Nail Polish, Bath Salts, Brilliantines, and Dentifrices.

SN 205,819. Holland-Rantos Company, Inc., New York, N.Y. Filed Nov. 9, 1964.

HR
HOLLAND-RANTOS

Owner of Reg. Nos. 290,475, 757,438, and others.
For Nail Polish Remover Pads.
First use Oct. 23, 1964.

SN 205,827. Ethel Rogell Lewis and Seymour Phillips, executors of the estate of Arnold L. Lewis, deceased, Los Angeles, Calif. Filed Nov. 9, 1964.



The drawing is lined for the color pink. Owner of Reg. No. 651,002.
For Preparation for Hair Styling in Wave and Curl Setting; Men's and Children's Hair Trainer.
First use May 10, 1956.

SN 205,894. Weldon Pajamas, Inc., New York, N.Y. Filed Nov. 9, 1964.

FRENCH NIGHTER

For Perfume.
First use Sept. 24, 1964.

SN 206,031. The Grand Union Company, East Paterson, N.J. Filed Nov. 12, 1964.

GRAND WAY

Owner of Reg. No. 731,944.
For Hair Spray.
First use on or about Aug. 1, 1963.

SN 206,501. Avon Products, Inc., New York, N.Y. Filed Nov. 19, 1964.

WINKIN', BLINKIN' AND NOD

For Baby Set Containing Lotion, Cream or Powder.
First use Oct. 19, 1964.

SN 206,540. Hands and Heart Products, Columbus, Ohio. Filed Nov. 19, 1964.

Hands and Heart

For Hand Cream.
First use Aug. 1, 1964.

SN 206,714. The Gillette Company, Boston, Mass. Filed Nov. 26, 1964.

HAPPY FACE

For Cologne, Talcum Powder, Shaving Cream, and After Shave Lotion.
First use Oct. 21, 1964.

SN 210,272. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 21, 1965.

APPEAL

Owner of Reg. No. 715,553.
For Hair Spray and Wave Set.
First use Nov. 30, 1964.

SN 213,933. Avon Products, Inc., New York, N.Y. Filed Mar. 12, 1965.

FALLING IN LOVE

For Cologne, Cologne Mist, Perfume, Perfume Oil, Solid Perfume, Dusting Powder, Cream Sachet and Powder Sachet.
First use Mar. 5, 1957, on cologne.

SN 215,595. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 2, 1965.

APPEAL

Owner of Reg. No. 716,563.
For Denture Cleanser.
First use Jan. 20, 1965.

Class 52—Detergents and Soaps

SN 183,960. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 3, 1964.

STRONGER THAN DIRT

For Cleaner, Cleanser, and Detergent.
First use Nov. 4, 1963.

SN 193,073. Jar-Vel, Inc., St. Paul, Minn. Filed Apr. 28, 1964.

BAR-B KLEEN

No claim of exclusive right is made to "Kleen" for the goods recited apart from the mark.
For Barbecue Grill Cleaner.
First use Mar. 16, 1964.

SN 198,479. Irving Products Co., Chicago, Ill. Filed July 24, 1964.

D·O
DRAIN OPENER

Applicant disclaims the words "Drain Opener."
For Liquid Composition for Dissolving and/or Eliminating Clogging Material in Drains, Traps, and the Like.
First use Dec. 6, 1963.

SN 200,866. Purex Corporation, Ltd., Lakewood, Calif. Filed Aug. 28, 1964.

VALUE PACK

The descriptive word "Pack" is disclaimed apart from the mark as shown.
For Deodorant Soap.
First use July 21, 1964.

SN 206,241. Abco, Inc., McKeesport, Pa. Filed Oct. 5, 1964.

CREME-EEZ

For Antiseptic Hand Soap Containing Lanolin.
First use Oct. 19, 1959.

SN 208,621. Synco Products, Inc., d.b.a. Synco Chemical Products, Kansas City, Mo. Filed Oct. 8, 1964.

HI-FLO

For Cleaner for Containers and Equipment in the Dairy Industry.
First use 1955.

SN 208,623. Synco Products, Inc., d.b.a. Synco Chemical Products, Kansas City, Mo. Filed Oct. 8, 1964.

J 440

For General Purpose Cleaning Composition.
First use 1962.

SN 203,626. Synco Products, Inc., d.b.a. Synco Chemical Products, Kansas City, Mo. Filed Oct. 8, 1964.

SPRAY-OFF

For Sprayable Car Wash Compound.
First use September 1961.
Subj. to Intf. with SN 205,754.

SN 203,628. Synco Products, Inc., d.b.a. Synco Chemical Products, Kansas City, Mo. Filed Oct. 8, 1964.

VAMP

For Sudsing Cleaner and Detergent for Tile, Porcelain, and Surfaces of All Kinds.
First use July 1952.

SN 204,826. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 26, 1964.

GAY ROMANCE

For Toilet Soaps.
First use March 1956.

SN 205,701. S. S. Kresge Company, Detroit, Mich. Filed Nov. 6, 1964.

Kmart

Owner of Reg. No. 743,912.
For Detergent for Laundry Use.
First use June 9, 1964.

SN 205,754. Ivo D. Mills, d.b.a. I.D.M. Industries, Centerville, Utah. Filed Nov. 6, 1964.

SPRA-OFF

For Inorganic All-Purpose Cleaner.
First use November 1963.
Subj. to Intf. with SN 203,626.

SN 206,118. Almar Chemical Products, Inc., Middle Village, N.Y. Filed Nov. 13, 1964.

INJUN SOLV

For Exterior Cleaner for Automobile Motors and Other Machinery.
First use Aug. 31, 1964.

SN 206,376. The Procter & Gamble Company, Cincinnati, Ohio. Filed Nov. 17, 1964.

BLIZZARD

For Household Sudsing Cleaner, Cleanser and Detergent.
First use Aug. 7, 1964.

SN 207,904. Potter-McCune Company, McKeesport, Pa. Filed Dec. 10, 1964.

JUS-RITE

Owner of Reg. No. 661,261.
For Foaming Household Cleanser and Liquid Household Detergent.
First use Apr. 15, 1950.

SN 207,925. Veterinary Sales Associates, Inc., Westwood, Kans. Filed Dec. 10, 1964.

VSA

For Combined Lubricant, Antiseptic, Deodorant, and Detergent Preparation for Veterinary Use.
First use Sept. 11, 1964.

SN 208,877. Alconox, Inc., New York, N.Y. Filed Dec. 28, 1964.

LIQUI-NOX

For Cleaning and Detergent Compound for General Laboratory Glassware, Hospital and Surgical Instruments, Glassware, and Equipment, Industrial Parts, and Processing Equipment.
First use Oct. 28, 1964.

SN 210,273. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 21, 1965.

APPEAL

Owner of Reg. No. 715,593.
For Hair Shampoo.
First use Nov. 30, 1964.

SN 210,598. Roberts and Porter, Inc., Chicago, Ill. Filed Jan. 25, 1965.

NU-LIFE

For Solvent Compositions for Cleaning and Removing Ink and Ink Oil Vehicles From Blankets and Other Components and Portions of Printing Presses.
First use December 1949.

SN 213,934. Avon Products, Inc., New York, N.Y. Filed Mar. 12, 1965.

FALLING IN LOVE

For Toilet Soap.
First use Feb. 26, 1965.

SN 214,515. Consolidated Foods, Inc., Nashua, N.H. Filed Mar. 19, 1965.

ELEGANT

Owner of Reg. No. 567,087.
For Detergents Adapted for Industrial and Household Usage.
First use May 1953.
Subj. to Intf. with SN 209,196.

SERVICE MARKS

Class 100 — Miscellaneous

SN 135,953. Bruno B. Bak, d.b.a. Golden Hour-Glass, Glenview, Ill. Filed Jan. 17, 1962.

Golden Hour-Glass

For Undertaking Services.
First use September 1960.

SN 167,244. Family Service Association of America, New York, N.Y. Filed Apr. 22, 1963.

STRENGTH TO FAMILIES UNDER STRESS

For Marriage and Family Counseling and Auxiliary Social Work Services.
First use at least as early as Mar. 8, 1963.

SN 167,245. Family Service Association of America, New York, N.Y. Filed Apr. 22, 1963.

For Marriage and Family Counseling and Auxiliary Social Work Services.
First use at least as early as Mar. 8, 1963.

SN 175,041. Dobbs Houses, Inc., Memphis, Tenn. Filed Aug. 23, 1963.

Dobbs House

For Restaurant Services.
First use May 1941.

SN 182,541. Numerical Control Corporation, San Diego, Calif. Filed Dec. 2, 1963.

N/C

The drawing is lined for red. Owner of Reg. Nos. 759,138 and 770,168.
For Consulting Engineering, Design and Development Services for Electrical, Mechanical, and Pneumatic Machines, Controls, and Devices.
First use October 1961.

Class 101 — Advertising and Business

SN 166,099. Information Handling Services, Inc., Denver, Colo. Filed Apr. 4, 1963.

VSMF

The drawing is lined for blue, but no claim is made to color.
For Product Data, Design Specification, and Advertising Space Allocation, Cataloging and Index Services for Vendors, Buyers, Advertisers, and Publishers.
First use Nov. 15, 1962.

SN 173,541. ALD, Inc., Chicago, Ill. Filed July 23, 1963.

ALD

Owner of Reg. Nos. 641,032, 647,437, and others.
For Planning and Installing Automatic Coin-Operated Dry Cleaning and Laundry Installations for Others and for Rendering Technical Assistance to Operators of Laundry and Dry Cleaning Stores in the Fields of Store Planning, Purchasing, Advertising, Promotion, Service and Repair, and Financial Guidance.
First use Mar. 20, 1947.

SN 178,424. Saml Dodsworth Printing and Stationery Co., Kansas City, Kans. Filed Oct. 7, 1963.

LITHMBOSS

For Printing Services.
First use Aug. 30, 1963.

SN 184,899. Dinner Host, Inc., Falls Church, Va. Filed Jan. 20, 1964.



The waiter depicted in the drawing is not the portrait of a living individual.

For Services Involving Promoting Restaurant Business of Others by Selling Membership to the Public Whereby Members Get Reduced Rates at Member Restaurants.

First use during May 1963.

SN 188,083. Decision Systems, Inc., Teaneck, N.J. Filed Mar. 6, 1964.



Applicant disclaims the term "Decision Systems" apart from the mark as shown.

For Programming Services for Computers, Including Engineering Services in the Selection and Operation of Computers and Related Data Processing Equipment.

First use Mar. 3, 1964.

Class 102 — Insurance and Financial

SN 183,547. American Republic Insurance Company, Des Moines, Iowa. Filed Dec. 26, 1963.

LifeGuarded Protection

Applicant disclaims exclusive right to the use of the word "Protection" apart from the mark as shown.

For Underwriting of Hospital, Surgical, and Medical Insurance.

First use Dec. 10, 1963.

SN 186,833. First and Merchants National Bank, Richmond, Va. Filed Feb. 17, 1964.



For Banking Services.

First use at least as early as Dec. 18, 1963.

SN 200,178. The Guardian Life Insurance Company of America, New York, N.Y. Filed Aug. 19, 1964.

YOUR GUARDIAN FOR LIFE

Owner of Reg. No. 701,996.

For Life Insurance, Accident Insurance, and Annuities.

First use on or about Jan. 30, 1964.

SN 201,737. Protected Home Mutual Life Insurance Company, Sharon, Pa. Filed Sept. 11, 1964.



Applicant disclaims the words "Protecting Lives Since 1886" apart from the mark as shown.

For Promotion, Underwriting, and Sale of Life Insurance.

First use July 7, 1964.

SN 202,895. American Republic Insurance Company, Des Moines, Iowa. Filed Sept. 29, 1964.



The drawing is lined for the color blue, but no claim is made to color.

For Underwriting of Hospital, Surgical, and Medical Insurance.

First use Sept 8. 1964.

SN 205,317. Monumental Life Insurance Company, Baltimore, Md. Filed Nov. 2, 1964.



Owner of Reg. No. 730,941.

For Underwriting Life, Accident, Health, and Sickness Insurance.

First use Sept. 21, 1964.

SN 205,318. Monumental Life Insurance Company, Baltimore, Md. Filed Nov. 2, 1964.



Owner of Reg. No. 730,941.

For Underwriting Life, Accident, Health, and Sickness Insurance.

First use Sept. 21, 1964.

SN 205,951. Medi-Card, Inc., Boston, Mass. Filed Nov. 10, 1964.

Medi/card

For Credit Financing of Hospital, Physicians' and Dentists' Charges for Consumer Medical Care.

First use Nov. 5, 1964.

Class 105 — Transportation and Storage

SN 175,656. The Greater Iowa Corporation, Des Moines, Iowa. Filed Aug. 23, 1963.



For Leasing of Vehicles and Heavy Equipment, Said Heavy Equipment Including Semi-Truck Tractors and Trailers Therefor.

First use on or about Sept. 28, 1961.

SN 200,808. Admiral Travel Service, Inc., Philadelphia, Pa. Filed Aug. 28, 1964.

Admiral

For Travel Agency Services.

First use Jan. 1, 1958.

Class 106 — Material Treatment

SN 178,832. Chemtrol Corporation, Stamford, Conn. Filed Oct. 4, 1963.

COLORCADE

For Photographic Film Processing.

First use May 29, 1962.

SN 193,859. Crown Drug Company, Kansas City, Mo. Filed May 20, 1964.

ZIP

For Photographic Processing Services.

First use July 23, 1962.

Subj. to Intf. with SN 190,802 and SN 195,324.

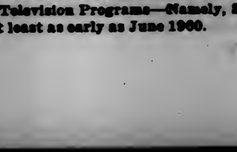
SN 204,689. Merrill Manufacturing Corporation, Merrill, Wis. Filed Oct. 23, 1964.

MERRILL

For Custom Metal Forming and Treatment.

First use May 1963.

SN 204,690. Merrill Manufacturing Corporation, Merrill, Wis. Filed Oct. 23, 1964.

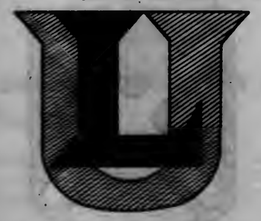


For Custom Metal Forming and Treatment.

First use May 1963.

Class 107 — Education and Entertainment

SN 181,654. Loyola University, Chicago, Ill. Filed Nov. 21, 1963.



The drawing is lined for shading only.

For Educational Services, Particularly at the College Preparatory and University Levels.

First use on or about Apr. 1, 1959.

SN 185,080. The F. & M. Schaefer Brewing Co., Brooklyn, N.Y. Filed Jan. 21, 1964.



For Entertainment Services Rendered Through the Medium of Radio and Television Programs—Namely, Sports Programs.

First use at least as early as June 1960.

SN 188,277. Allan B. Segal, Oceanside, N.Y. Filed Mar. 9, 1964.

YOUTH & MUSIC

For Title of Radio Program.
First use Oct. 16, 1963.

SN 200,929. Theodore Granik, Washington, D.C. Filed Aug. 31, 1964.

ALL AMERICA WANTS TO KNOW

For Title of a Television and Radio Program—Namely, a Documentary Study and Report on Issues of National Concern Wherein Distinguished and Knowledgeable Individuals Are Featured in Interviews and Discussions About the Subject Matter Under Consideration.
First use July 30, 1961.

COLLECTIVE MEMBERSHIP MARKS

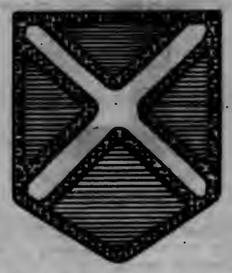
Class 200

SN 180,084. Thomas A. Fitzgerald, d.b.a. National Vagabonds, Warren, Ohio. Filed Oct. 30, 1963.



The drawing is lined for red and blue.
For Indicating Membership in Applicant's Association.
First use Aug. 20, 1963.

SN 208,854. St. Andrew's Society of the State of New York, New York, N.Y. Filed Dec. 24, 1964.



The drawing is lined for blue and gold.
For Indicating Membership in the Society.
First use March 1961.

SN 210,333. National Board of Young Men's Christian Associations, New York, N.Y. Filed Jan. 21, 1965.



Owner of Reg. Nos. 659,629 and 668,795.
For Indicating Membership in Applicant's Association.
First use in or about 1896.

SN 210,378. Standardized Sanitation Systems, Inc., San Francisco, Calif. Filed Jan. 21, 1965.



For Indicating Membership in Applicant.
First use December 1961.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

791,609. BARLEY BLOOM (DESIGN). American Tansul Company. SN 166,245. Pub. 4–13–65. Filed 4–8–63.

791,610. TUPAN. Tupan Corporation. SN 183,714. Pub. 4–13–65. Filed 12–27–63.

791,611. TENNECO AND DESIGN. Tenneco Corporation. SN 191,629. Pub. 4–13–65. Filed 4–20–64.

791,612. SHIELD (DESIGN). Tenneco Corporation. SN 191,630. Pub. 4–13–65. Filed 4–20–64.

791,613. CROSSFIRE. Muldisco Limited. SN 192,931. Pub. 4–13–65. Filed 5–7–64.

791,614. EXCEL AND DESIGN. Excel Seed Company. SN 195,291. Pub. 4–13–65. Filed 6–10–64.

791,615. ACE HIGH. Alabama Charcoal Company. SN 197,048. Pub. 4–13–65. Filed 7–6–64.

791,616. BARON. Alabama Charcoal Company. SN 197,049. Pub. 4–13–65. Filed 7–6–64.

Class 2—Receptacles

791,617. CARVEL. Thomas Carvel. MULTIPLE CLASS (Classes 2 and 46). SN 187,474. Pub. 4–13–65. Filed 2–26–64.

791,618. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,122. Pub. 4–13–65. Filed 5–11–64.

791,619. UAP AND DESIGN. United Aircraft Products, Inc. SN 195,190. Pub. 4–13–65. Filed 6–3–64.

791,620. SILVER-OLEUM. Berg Vault Company. SN 197,062. Pub. 4–13–65. Filed 7–6–64.

791,621. GREENETREE. E. Greene and Company, Inc. SN 197,563. Pub. 12–15–64. Filed 7–10–64.

791,622. ROASTAINER. Diamond National Corporation. SN 199,725. Pub. 4–13–65. Filed 8–12–64.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

791,623. JEWEL MESH. Evans-Aristocrat Industries, Inc., assignee, by mesne assignments, of Philip Florin, Inc. SN 143,225. Pub. 4–13–65. Filed 4–27–62.

791,624. IMPERIAL AND DESIGN. United States Trunk Company, Inc. SN 155,449. Pub. 4–13–65. Filed 10–18–62.

Class 4—Abrasives and Polishing Materials

791,625. BASY STREET. S.A.R.L. dite: La Johnson Francaise. SN 176,269. Pub. 4–13–65. Filed 8–30–63.

Class 5—Adhesives

791,626. SHOPPER'S FAIR. Mangel Stores Corporation. SN 151,942. Pub. 4–16–65. Filed 8–27–62.

791,627. RAMPOXY. Olin Mathieson Chemical Corporation. SN 196,549. Pub. 4–13–65. Filed 6–26–64.

Class 6—Chemicals and Chemical Compositions

791,628. DE-PESTER. Thompson-Hayward Chemical Company, by merger of Agricultural Chemicals, Inc. SN 137,412. Pub. 3–23–65. Filed 2–7–62.

791,629. WAH CHANG AND DESIGN. Wah Chang Corporation. MULTIPLE CLASS (Classes 6 and 14). SN 170,135. Pub. 4–13–65. Filed 5–31–63.

791,630. A AND DESIGN. Alfa Inorganics, Inc. SN 182,294. Pub. 2–16–65. Filed 12–3–63.

791,631. DRIDOL. Armour and Company. SN 184,781. Pub. 4–13–65. Filed 1–17–64.

791,632. MODERN LIVING. Aerosol Specialties, Inc. MULTIPLE CLASS (Classes 6, 16, and 52). SN 185,182. Pub. 4–13–65. Filed 1–23–64.

791,633. TRE-JARNAIRE. Maradel Products, Inc. SN 185,609. Pub. 4–13–65. Filed 1–29–64.

791,634. PHOSPHOLEUM. Monsanto Company. SN 192,500. Pub. 4–13–65. Filed 5–1–64.

791,635. KORE. King Research, Inc. SN 193,015. Pub. 4–13–65. Filed 5–6–64.

791,636. CHURCO. Churchill Chemical Company. SN 193,115. Pub. 4–13–65. Filed 5–11–64.

791,637. ANIMERT. N.V. Philips-Duphar. SN 193,568. Pub. 4–13–65. Filed 5–15–64.

791,638. COPPERSOL. Allied Chemical Corporation. SN 194,339. Pub. 4–13–65. Filed 5–27–64.

791,639. XALIFIN. Giorgio Rialdi, d.b.a. Laboratori Vevy. SN 196,713. Pub. 4–13–65. Filed 6–29–64.

Class 8—Smokers' Articles, Not Including Tobacco Products

791,640. CLASSICS EMBLEM (DESIGN). General Classics, Incorporated. MULTIPLE CLASS (Classes 8 and 28). SN 205,582. Pub. 4–13–65. Filed 11–5–64.

Class 10—Fertilizers

791,641. AGLIME. Texas Agricultural Limestone Association. SN 158,399. Pub. 4–13–65. Filed 12–3–62.

791,642. FAFARD AND DESIGN. Conrad Fafard, Inc. SN 192,994. Pub. 4–13–65. Filed 5–8–64.

Class 12—Construction Materials

791,643. 4–X. Chas. Pfizer & Co., Inc. SN 165,818. Pub. 4–13–65. Filed 4–1–63.

791,644. TIMBERWELD MFG. AND DESIGN. Timberweld Mfg. Co. SN 171,832. Pub. 4–13–65. Filed 6–24–63.

791,645. SPRAY DON AND DESIGN. Sprayon Insulation & Acoustics, Inc. SN 180,618. Pub. 4–13–65. Filed 11–6–63.

791,646. MISCELLANEOUS DESIGN. Bird & Son, Inc. SN 188,309. Pub. 4–13–65. Filed 12–30–63.

791,647. RRR ETC. AND DESIGN. Resin Research & Development Corporation. SN 187,334. Pub. 4-13-65. Filed 2-24-64.

791,648. POLARIB. Aluminum Company of America. SN 188,410. Pub. 4-13-65. Filed 3-11-64.

791,649. TIRAMIC. Independent Sales Company. SN 189,304. Pub. 4-13-65. Filed 3-23-64.

791,650. TIGACLAD II. Weyerhaeuser Company. SN 189,044. Pub. 4-13-65. Filed 3-25-64.

791,651. PLIA-F-LEX. National Gypsum Company. SN 189,921. Pub. 4-13-65. Filed 3-30-64.

791,652. CRESTLINE. Doughboy Industries Inc. SN 190,902. Pub. 4-13-65. Filed 4-13-64.

791,653. SSL. Owens-Corning Fiberglas Corporation. SN 193,036. Pub. 4-13-65. Filed 5-8-64.

791,654. SELECT A COLOR. Alside, Inc. SN 196,254. Pub. 4-13-65. Filed 5-12-64.

791,655. CROWN ALUMINUM AND CROWN DESIGN. Crown Aluminum Industries Corporation. SN 193,758. Pub. 4-13-65. Filed 5-19-64.

791,656. CROWN ALUMINUM AND DESIGN OF THE LETTER W. Crown Aluminum Industries Corporation. SN 193,759. Pub. 4-13-65. Filed 5-19-64.

791,657. ESC DOOR MASTER AND DESIGN. Doormaster Corporation. SN 195,288. Pub. 4-13-65. Filed 6-10-64.

791,658. TIMBORIZED. United States Borax & Chemical Corporation. SN 195,568. Pub. 4-13-65. Filed 6-12-64.

791,659. POL-ARO. Hexcel Products Inc. SN 196,156. Pub. 4-13-65. Filed 6-22-64.

791,660. PLASTEEL. Lumaside, Inc. SN 202,098. Pub. 4-13-65. Filed 9-17-64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

791,661. POLYVON. George Angus & Company Limited. MULTIPLE CLASS (Classes 13, 28, and 35). SN 155,227. Pub. 4-13-65. Filed 10-16-62.

791,662. SWING TAP. Henry Valve Company. SN 173,913. Pub. 4-13-65. Filed 7-29-63.

791,663. AUTOVALVE. Continental Industries, Inc. SN 177,969. Pub. 11-10-64. Filed 9-30-63.

791,664. MCM. Phelps-Dodge Aluminum Products Corporation, assignee of McNair Metal Products, Inc. SN 185,802. Pub. 4-13-65. Filed 1-31-64.

791,665. VACU-PLUS. The Babcock & Wilcox Company. SN 189,533. Pub. 4-13-65. Filed 3-25-64.

791,666. SM AND DESIGN. Samuel Moore and Company. SN 190,820. Pub. 4-13-65. Filed 4-10-64.

791,667. E-Z STUFF CLAMP. Armour and Company. SN 191,743. Pub. 4-13-65. Filed 4-22-64.

791,668. AERONUT. The Allen Manufacturing Company. SN 192,873. Pub. 4-13-65. Filed 5-7-64.

791,669. AEROSCREW. The Allen Manufacturing Company. SN 192,874. Pub. 4-13-65. Filed 5-7-64.

791,670. IMPERIAL. C.S.C. Corporation. SN 198,713. Pub. 1-12-65. Filed 7-29-64.

791,671. STERLING. John Sterling Corporation. SN 200,601. Pub. 4-13-65. Filed 8-25-64.

791,672. NAJET. National Jet Drill Company. SN 200,957. Pub. 4-13-65. Filed 8-31-64.

791,673. CO-AX. National Jet Drill Company. SN 200,958. Pub. 4-13-65. Filed 8-31-64.

791,674. NJC. National Jet Drill Company. SN 200,959. Pub. 4-13-65. Filed 8-31-64.

791,675. SEEFORE CORPORATION 4C. Seefore Corporation. SN 200,961. Pub. 4-13-65. Filed 8-31-64.

791,676. KILCO. Kilgannon Company. SN 203,770. Pub. 4-13-65. Filed 10-12-64.

791,677. "SOAPY-JO." G. Ropate Corp. SN 204,098. Pub. 4-13-65. Filed 10-15-64.

Class 14—Metals and Metal Castings and Forgings

791,629. (See Class 6 for this trademark.)

791,678. ARTAC. Acindar Industria Argentina de Aceros Sociedad Anonima. SN 182,546. Pub. 4-13-65. Filed 7-29-63.

791,679. HI-120. Westinghouse Electric Corporation. SN 189,642. Pub. 4-13-65. Filed 3-25-64.

791,680. CUBE-ALLOY. Handy & Harman. SN 199,825. Pub. 4-13-65. Filed 8-13-64.

791,681. CF AND DESIGN. American Nickeloid Company. SN 207,778. Pub. 4-13-65. Filed 12-9-64.

Class 15—Oils and Greases

791,682. MASSEY-FERGUSON. Massey-Ferguson Limited. SN 196,458. Pub. 4-13-65. Filed 6-25-64.

791,683. BIO. Bayou State Oil Corporation. SN 204,748. Pub. 4-13-65. Filed 10-26-64.

Class 16—Protective and Decorative Coatings

791,632. (See Class 6 for this trademark.)

791,684. PATIQUE AND DESIGN. Salmon Products, Inc. SN 191,608. Pub. 4-13-65. Filed 4-20-64.

791,685. PLY-TONE. Marketing and Development Corporation. SN 195,125. Pub. 4-13-65. Filed 6-8-64.

791,686. CITY-KOTE. The Valspar Corporation. SN 202,971. Pub. 4-13-65. Filed 9-29-64.

Class 17—Tobacco Products

791,687. GRENADIER. The American Tobacco Company. SN 203,451. Pub. 4-13-65. Filed 10-7-64.

791,688. COLONY. The American Tobacco Company. SN 203,453. Pub. 4-13-65. Filed 10-7-64.

Class 18—Medicines and Pharmaceutical Preparations

791,689. PROMOR. Marion Laboratories, Inc. (Delaware corporation), assignee of Marion Laboratories, Inc. (Missouri corporation). SN 182,345. Pub. 4-13-65. Filed 12-4-63.

791,690. RAPIQUA. Merck & Co., Inc. SN 190,018. Pub. 4-13-65. Filed 3-31-64.

791,691. VIGIL. Alberto-Culver Company. SN 193,433. Pub. 4-13-65. Filed 5-14-64.

791,692. DERMO-FLO. Deron, Inc. SN 194,283. Pub. 4-13-65. Filed 5-26-64.

791,693. LOBELATE. Southwestern Drug Corporation, d.b.a. Brooke Laboratories. SN 194,330. Pub. 2-23-65. Filed 6-26-64.

791,694. CHRONCAP. H. R. Cenci Pharmacal Co., d.b.a. H. R. Cenci & Co., Inc., H. R. Cenci & Company Pharmaceutical Laboratories, Inc., and H. R. Cenci & Co. SN 195,762. Pub. 4-13-65. Filed 6-16-64.

791,695. PROVET. American Home Products Corporation. SN 202,731. Pub. 2-23-65. Filed 9-28-64.

791,696. QUESTRAN. Mead Johnson & Company. SN 203,317. Pub. 2-23-65. Filed 10-5-64.

791,697. DILASCOPE. Barnes-Hind Laboratories. SN 203,727. Pub. 2-23-65. Filed 10-12-64.

Class 19—Vehicles

791,698. ISO. Iso S.p.A. Automotoveicoli. SN 182,331. Pub. 4-13-65. Filed 6-30-64.

791,699. BARRACUDA. Chrysler Corporation. SN 192,270. Pub. 4-13-65. Filed 4-29-64.

791,700. PERFECT CIRCLE. Perfect Circle Corporation. SN 195,892. Pub. 4-13-65. Filed 6-17-64.

791,701. CORSA. General Motors Corporation. SN 196,029. Pub. 4-13-65. Filed 6-19-64.

791,702. AWARD. Shore-Calnevar, Inc. SN 202,048. Pub. 4-13-65. Filed 9-16-64.

791,703. B AND DESIGN. Fleetwood Enterprises, Inc. SN 202,141. Pub. 4-13-65. Filed 9-18-64.

791,704. STALLION. Hello Aircraft Corporation. SN 202,371. Pub. 4-13-65. Filed 9-22-64.

791,705. SPORTSMAN'S SPECIAL. Del Rey Industries, Inc. SN 202,781. Pub. 4-13-65. Filed 9-28-64.

Class 20—Linoleum and Oiled Cloth

791,706. CARPET-CHEX. Carpet Chex, Inc. SN 176,069. Pub. 4-13-65. Filed 8-30-63.

Class 21—Electrical Apparatus, Machines, and Supplies

791,707. OPTIKON. Nuclear Data, Inc. SN 171,794. Pub. 4-13-65. Filed 6-25-63.

791,708. "REMEMBER, YOU'RE NEVER MORE THAN A FEW FEET AWAY FROM A PRODUCT OF ITW." Illinois Tool Works Inc. SN 176,195. Pub. 4-13-65. Filed 9-3-63.

791,709. CAVITRON. Compagnie Francaise Thomson-Houston. SN 183,966. Pub. 11-24-64. Filed 1-3-64.

791,710. K AND DESIGN. Kent Corporation. SN 187,020. Pub. 4-13-65. Filed 2-19-64.

791,711. K. Kent Corporation. SN 187,021. Pub. 4-13-65. Filed 2-19-64.

791,712. GOLDEN DOLPHIN. Coordinated Sales, Inc. SN 193,126. Pub. 4-13-65. Filed 5-11-64.

791,713. FAIRCON AND DESIGN. Fairchild Camera and Instrument Corporation. SN 193,543. Pub. 4-13-65. Filed 5-15-64.

791,714. DESKMASTER. Dictaphone Corporation. SN 195,377. Pub. 4-13-65. Filed 6-11-64.

791,715. CINEMOTION AND DESIGN. National Screen Service Corporation. SN 196,185. Pub. 4-13-65. Filed 6-22-64.

791,716. THIOKOL. Thiokol Chemical Corporation. SN 196,317. Pub. 4-13-65. Filed 6-23-64.

791,717. OMEGA-TRON AND DESIGN. Clinton-Augis Company. SN 199,967. Pub. 4-13-65. Filed 8-17-64.

791,718. FLEXIPAD. McGraw-Edison Company. SN 200,012. Pub. 4-13-65. Filed 8-17-64.

Class 22—Games, Toys, and Sporting Goods

791,719. MILLE BORNES. Parker Brothers, Inc. SN 156,515. Pub. 4-13-65. Filed 11-2-62.

791,720. SCAT CAR. American Machine & Foundry Company. SN 181,511. Pub. 4-13-65. Filed 11-20-63.

791,721. PLASTICANT. Franken-Plastik Gesellschaft mit beschrankter Haftung. SN 184,371. Pub. 4-13-65. Filed 1-10-64.

791,722. TRAV-L-BINGO. C. Scott Blakeslee, d.b.a. C. Scott Blakeslee & Associates. SN 194,880. Pub. 4-13-65. Filed 1-20-64.

791,723. PAR-BAG. Atlantic Products Corporation. SN 185,103. Pub. 4-13-65. Filed 1-22-64.

791,724. SL MCINC CANADA. St. Lawrence Manufacturing Company, Inc. SN 189,505. Pub. 4-13-65. Filed 3-24-64.

791,725. BASSURED. George W. Wilkins, Jr. SN 189,837. Pub. 4-13-65. Filed 3-26-64.

791,726. PERKY. M.G.M. Sales Inc. SN 192,047. Pub. 4-13-65. Filed 4-27-64.

791,727. PERKY PERT. M.G.M. Sales Inc. SN 192,048. Pub. 4-13-65. Filed 4-27-64.

791,728. PERKETTE. M.G.M. Sales Inc. SN 192,049. Pub. 4-13-65. Filed 4-27-64.

791,729. NATURE BABIES. R. Dakin & Company, by change of name from R. Dakin & Company-Importers. SN 192,156. Pub. 4-13-65. Filed 4-28-64.

791,730. PADDLE POOL. Doughboy Industries, Inc. SN 193,140. Pub. 4-13-65. Filed 5-11-64.

791,731. FULL FORCE. Parisian Novelty Company. SN 193,205. Pub. 4-13-65. Filed 5-11-64.

791,732. DETONATOR. Parisian Novelty Company. SN 193,206. Pub. 4-13-65. Filed 5-11-64.

791,733. WIGGLE WALKERS. Bernell N. Boswell, d.b.a. Imperial Products Manufacturing Co. SN 193,743. Pub. 4-13-65. Filed 5-19-64.

791,734. PLAYBOY. HMH Publishing Co. Inc. (Delaware corporation), by merger and change of name from HMH Publishing Co., Inc. (Illinois corporation). SN 193,952. Pub. 4-13-65. Filed 5-21-64.

791,735. PLAS-TA-FLEX AND DESIGN. Harry V. Day, d.b.a. Plas-Ta-Flex Tackle Co. SN 194,450. Pub. 4-13-65. Filed 5-27-64.

791,736. SQUABBIT. Edward S. Larson, Jr. SN 194,992. Pub. 4-13-65. Filed 6-5-64.

791,737. SPIN GOLF. Argentine C. Zapolski, d.b.a. Spinner Golf Co. SN 195,034. Pub. 4-13-65. Filed 6-5-64.

791,738. DIS-KIT AND DESIGN. George Beck, d.b.a. Regina Products. SN 195,498. Pub. 4-13-65. Filed 6-12-64.

791,739. THE GOLDEN EIGHT BALL AND DESIGN. Championship Billiards Corporation. SN 195,515. Pub. 4-13-65. Filed 6-12-64.

791,740. BIG EYED DUKE. Ron Dunham Tackle Inc. SN 197,269. Pub. 4-13-65. Filed 7-7-64.

791,741. MAXPLY. Dunlop Tire and Rubber Corporation. SN 197,270. Pub. 4-13-65. Filed 7-7-64.

791,742. TIP-O-MATIC T AND DESIGN. Tip-O-Matic, Inc. SN 197,444. Pub. 4-13-65. Filed 7-8-64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

791,661. (See Class 13 for this trademark.)

791,743. DART. J. Wiss & Sons Co. SN 149,790. Pub. 5-7-63. Filed 7-25-62.

791,744. CLEANLINE. Controlled Environment Equipment Corporation, assignee of Controlled Environment, Inc. MULTIPLE CLASS (Classes 23, 26, and 50). SN 170,522. Pub. 4-13-65. Filed 6-7-63.

791,745. SELECTRA. Selectra Inc. SN 175,133. Pub. 4-13-65. Filed 8-15-63.

791,746. "REMEMBER YOU'RE NEVER MORE THAN A FEW FEET AWAY FROM A PRODUCT OF ITW." Illinois Tool Works Inc. SN 176,196. Pub. 4-13-65. Filed 9-3-63.

791,747. MULTI-DRIVE POWER ETC. AND DESIGN. Raymond P. Schmelts. SN 185,161. Pub. 4-13-65. Filed 1-22-64.

791,748. MAGNAPUMP. David P. Litzenberg, d.b.a. Litzenberg Engineering Co. SN 189,908. Pub. 4-13-65. Filed 3-30-64.

791,749. PORT-A-CRANE. Walker J. Atwell, d.b.a. Port-A-Crane Co. SN 192,661. Pub. 4-13-65. Filed 5-5-64.

791,750. PERFECT CIRCLE. Perfect Circle Corporation. SN 195,893. Pub. 4–13–65. Filed 6–17–64.

791,751. WILHELMSBURGER W. Wilhelmsburger Maschinenfabrik Hinrichs & Sohn. SN 197,925. Pub. 4–13–65. Filed 6–15–64.

791,752. SHIP TUG AND DESIGN. A. C. Hoyle Company. SN 199,062. Pub. 4–13–65. Filed 8–3–64.

791,756. CHEMPLENISHER. Pennsalt Chemicals Corporation. SN 199,387. Pub. 4–13–65. Filed 8–6–64.

791,754. CAB-O-SEAL. Cabot Corporation. SN 201,572. Pub. 4–13–65. Filed 9–10–64.

791,755. MIRA-MARKER. Mira-Pak, Inc. SN 201,723. Pub. 4–13–65. Filed 9–11–64.

791,756. SCOTSMAN (DESIGN). Scottish Tool, Die & Metal Products Company. SN 202,711. Pub. 4–13–65. Filed 9–25–64.

791,757. CI AND DESIGN. Harry S. Clark, d.b.a. Clark Industries. SN 202,985. Pub. 4–13–65. Filed 9–30–64.

791,758. C–8 AND DESIGN. Crompton & Knowles Corporation. SN 203,581. Pub. 4–13–65. Filed 10–8–64.

791,759. C–9 AND DESIGN. Crompton & Knowles Corporation. SN 203,582. Pub. 4–13–65. Filed 10–8–64.

791,760. TRI-MATIC. The J. B. Knight Co., Inc., assignee of J. B. Knight Company. SN 203,593. Pub. 4–13–65. Filed 10–8–64.

791,761. NELLY BEE. Nelly B. Boyer. SN 203,633. Pub. 4–13–65. Filed 9–14–64.

791,762. PAVECRETER. Construction Machinery Company. SN 203,648. Pub. 4–13–65. Filed 10–9–64.

791,763. TRASHMASTER. Construction Machinery Company. SN 203,651. Pub. 4–13–65. Filed 10–9–64.

791,764. CAROLINA. Oneida Ltd. SN 203,797. Pub. 4–13–65. Filed 10–12–64.

791,765. JANUS. A. W. Faber-Castell Pencil Co., Inc. SN 203,952. Pub. 4–13–65. Filed 10–14–64.

791,766. CONFADYE. Tubular Textile Machinery Corporation. SN 204,617. Pub. 4–13–65. Filed 10–22–64.

Class 24 — Laundry Appliances and Machines

791,767. "PROSPER-CREASE." Ametek, Inc. SN 208,223. Pub. 4–13–65. Filed 12–16–64.

Class 25 — Locks and Safes

791,768. SENTINEL. J. Austin Smith & Son, d.b.a. Sentinel Lockers. SN 198,092. Pub. 4–13–65. Filed 7–17–64.

791,769. S AND DESIGN. Master Lock Company. SN 198,758. Pub. 4–13–65. Filed 7–29–64.

Class 26 — Measuring and Scientific Appliances

791,744. (See Class 28 for this trademark.)

791,770. MISCELLANEOUS DESIGN. Eastman Kodak Company. SN 175,982. Pub. 4–13–65. Filed 8–29–63.

791,771. SIMPLEX. Lengor, Incorporated. SN 176,983. Pub. 4–13–65. Filed 9–13–63.

791,772. N.I.L.—AGAFOR. National Instrument Laboratories, Inc. SN 178,469. Pub. 4–13–65. Filed 10–7–63.

791,773. ENETRON. Marshall Laboratories. SN 181,908. Pub. 4–13–65. Filed 11–26–63.

791,774. TECAM. Techne (Cambridge) Limited. SN 187,990. Pub. 4–13–65. Filed 6–3–64.

791,775. DRAINAC. Bolton-Emerson, Inc. SN 189,542. Pub. 4–13–65. Filed 3–25–64.

791,776. ACCURON. Zappone Industries, Inc. SN 190,476. Pub. 10–13–64. Filed 4–6–64.

791,777. PUPILENTES. Pupilentes, S.A. SN 191,075. Pub. 4–13–65. Filed 4–14–64.

791,778. DATANET. General Electric Company. SN 191,164. Pub. 4–13–65. Filed 4–15–64.

791,779. MEMO. General Aniline & Film Corporation. SN 191,762. Pub. 4–13–65. Filed 4–22–64.

791,780. SERO-BLOCK. Precision Scientific Company. SN 192,748. Pub. 4–13–65. Filed 5–5–64.

791,781. SERO-SHAKE. Precision Scientific Company. SN 192,749. Pub. 4–13–65. Filed 5–5–64.

791,782. LAC-TAB. Dundee Laboratories, Inc. SN 194,152. Pub. 4–13–65. Filed 5–25–64.

791,783. TELEBAR. Birns & Sawyer Cine Equipment Co., Inc. SN 195,056. Pub. 4–13–65. Filed 6–8–64.

791,784. H HONEYWELL AND DESIGN. Honeywell Inc. SN 196,784. Pub. 4–13–65. Filed 6–30–64.

791,785. JENOPTIK AND DESIGN. Jenoptik Jena G.m.b.H. SN 197,586. Pub. 4–13–65. Filed 7–10–64.

791,786. COMPUTALL. Carter Zelesnik. SN 198,689. Pub. 4–13–65. Filed 7–28–64.

791,787. JJ (DESIGN). Jenoptik Jena G.m.b.H. SN 198,957. Pub. 4–13–65. Filed 7–31–64.

791,788. DIGITUBE. Baird-Atomic, Inc. SN 199,952. Pub. 4–13–65. Filed 8–17–64.

791,789. PROGRAMASTER. M. H. Rhodes, Inc. SN 200,382. Pub. 4–13–65. Filed 8–21–64.

791,790. STIR JACK. Precision Scientific Company. SN 200,479. Pub. 4–13–65. Filed 8–24–64.

791,791. V22. William R. Weaver, d.b.a. W. R. Weaver Co. SN 200,991. Pub. 4–13–65. Filed 8–31–64.

791,792. KALVAR AND DESIGN. Kalvar Corporation. SN 202,374. Pub. 4–13–65. Filed 9–22–64.

791,793. R7 AND DESIGN. Rodell Manufacturing Company. SN 202,629. Pub. 4–13–65. Filed 9–24–64.

791,794. AVVENTURA. Airequipt Inc. SN 202,656. Pub. 4–13–65. Filed 9–25–64.

791,795. BAIA. Baia Corporation. SN 202,667. Pub. 4–13–65. Filed 9–25–64.

791,796. FIBRON. Rabone Chesterman Limited. SN 202,962. Pub. 4–13–65. Filed 9–29–64.

791,797. STRIP-SEIS. Mandrel Industries, Inc. SN 203,015. Pub. 4–13–65. Filed 9–30–64.

791,798. UOC. Universal Optical Company Inc. SN 203,040. Pub. 4–13–65. Filed 9–30–64.

791,799. BARRY B CONTROLS AND DESIGN. Barry Wright Corporation. SN 203,079. Pub. 4–13–65. Filed 10–1–64.

791,800. TUPPERWARE. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 203,117. Pub. 4–13–65. Filed 10–1–64.

791,801. AUD-X. Educational Developmental Laboratories, Inc. SN 203,489. Pub. 4–13–65. Filed 10–7–64.

791,802. EMBASSY. World-Wide Office Equipment Corporation. SN 203,552. Pub. 4–13–65. Filed 10–7–64.

791,803. WORLD-WIDE. World-Wide Office Equipment Corporation. SN 203,553. Pub. 4–13–65. Filed 10–7–64.

791,804. MILGO AND DESIGN. Milgo Electronic Corporation. SN 203,880. Pub. 4–13–65. Filed 10–13–64.

Class 27 — Horological Instruments

791,805. ERISMANN-SCHINZ TRISHOCK AND DESIGN. Erismann-Schinz S.A. SN 198,259. Pub. 4–13–65. Filed 7–21–64.

791,806. ERISMANN-SCHINZ MONOREX AND DESIGN. Erismann-Schinz S.A. SN 198,260. Pub. 4–13–65. Filed 7–21–64.

791,807. CHARGER. Bearus Watch Company, Inc. SN 207,940. Pub. 4–13–65. Filed 12–11–64.

Class 28 — Jewelry and Precious-Metal Ware

791,640. (See Class 8 for this trademark.)

791,808. STAR OF SIAM AND DESIGN. Star of Siam. SN 202,859. Pub. 12–29–64. Filed 9–28–64.

Class 30 — Crockery, Earthenware, and Porcelain

791,809. SALEM SWIRL AND DESIGN. The Salem China Company. SN 188,146. Pub. 4–13–65. Filed 3–6–64.

Class 31 — Filters and Refrigerators

791,810. ICE-O-MATIC. Mile High Equipment Company. SN 155,933. Pub. 1–28–64. Filed 10–25–62.

791,811. GUEST KING AND DESIGN. Ice All-O-Matic Mfg., Inc. SN 202,152. Pub. 4–13–65. Filed 9–18–64.

Class 32 — Furniture and Upholstery

791,812. THE FILEX LINE AND DESIGN. Smead Manufacturing Company, assignee of The Dunleavy Company. SN 35,638. Pub. 1–26–65. Filed 8–16–57.

791,813. AS YOU TRAVEL ASK US AND DESIGN. The American Oil Company. MULTIPLE CLASS (Classes 32 and 38). SN 192,123. Pub. 4–13–65. Filed 4–27–64.

791,814. VERSA-TOP. Van-Top Inc. SN 192,960. Pub. 4–13–65. Filed 5–7–64.

791,815. ADELPHI. Yatron Bros., Inc. SN 203,712. Pub. 4–13–65. Filed 10–9–64.

791,816. BUCKSTAFF. The Buckstaff Company. SN 203,859. Pub. 4–13–65. Filed 10–13–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

791,817. FLEXITORCH. Falstrom Company. SN 171,867. Pub. 4–13–65. Filed 6–26–63.

791,818. TRANS-AIRE. Wayne Cooling Equipment Corp. SN 176,132. Pub. 4–13–65. Filed 8–30–63.

791,819. EUREKAMATIC. Welding Equipment & Supply Co. SN 176,412. Pub. 4–13–65. Filed 9–5–63.

791,820. IBW ETC. AND DESIGN. The International Boiler Works Co. SN 179,232. Pub. 4–13–65. Filed 10–17–63.

791,821. CENTRI MASTER. Acme Engineering and Manufacturing Corporation. SN 180,989. Pub. 4–13–65. Filed 11–13–63.

791,822. RIDGOLATOR. Klauer Manufacturing Company. SN 181,247. Pub. 4–13–65. Filed 11–15–63.

791,823. SILVER STRIPE ENCIRCLING A POT (DESIGN). Alon Processing, Inc. SN 183,867. Pub. 4–13–65. Filed 1–2–64.

791,824. RED STRIPE ENCIRCLING A POT (DESIGN). Alon Processing, Inc. SN 183,868. Pub. 4–13–65. Filed 1–2–64.

791,825. ADJUSTI-FLO. Dry Manufacturing Company. SN 187,012. Pub. 4–13–65. Filed 2–13–64.

791,826. THERMO-PRIDE. Thermo-Products, Inc. SN 188,816. Pub. 4–13–65. Filed 3–16–64.

791,827. B ETC. AND DESIGN. Baltimore Aircoil Company, Inc. SN 190,863. Pub. 4–13–65. Filed 4–13–64.

791,828. SHRINK BOX. Roll-O-Sheets, Inc. SN 192,079. Pub. 4–13–65. Filed 4–27–64.

791,829. MISCELLANEOUS DESIGN. Eutectic Welding Alloys Corporation. SN 193,646. Pub. 4–13–65. Filed 5–18–64.

791,830. ALASKAIR. Dynamic Vending Corporation. SN 194,158. Pub. 4–13–65. Filed 5–25–64.

791,831. DEARBORN. Dearborn Stove Company. SN 204,144. Pub. 4–13–65. Filed 10–16–64.

791,832. DEARBORN AND DESIGN. Dearborn Stove Company. SN 204,145. Pub. 4–13–65. Filed 10–16–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

791,661. (See Class 13 for this trademark.)

791,833. EASY VAC. Air Reduction Company, Incorporated. SN 181,602. Pub. 12–15–64. Filed 11–21–63.

791,834. PERFLON. Perfect Circle Corporation. SN 192,613. Pub. 4–13–65. Filed 5–4–64.

791,835. DURA-JET. The General Tire & Rubber Company. SN 201,413. Pub. 4–13–65. Filed 9–8–64.

791,836. DAYLOK. Dayco Corporation. SN 201,826. Pub. 4–13–65. Filed 9–14–64.

791,837. DAY-JET. Dayco Corporation. SN 202,242. Pub. 4–13–65. Filed 9–21–64.

791,838. THORO-TUBE. Dayco Corporation. SN 202,244. Pub. 4–13–65. Filed 9–21–64.

791,839. THOROCIDIC. Dayco Corporation. SN 202,245. Pub. 4–13–65. Filed 9–21–64.

791,840. DAY-SPRAY. Dayco Corporation. SN 202,246. Pub. 4–13–65. Filed 9–21–64.

791,841. DAYFLEX. Dayco Corporation. SN 202,247. Pub. 4–13–65. Filed 9–21–64.

791,842. THORO-LITE. Dayco Corporation. SN 202,248. Pub. 4–13–65. Filed 9–21–64.

791,843. THORO-WELD. Dayco Corporation. SN 202,249. Pub. 4–13–65. Filed 9–21–64.

Class 36 — Musical Instruments and Supplies

791,844. GARDISK. BSR Limited. SN 180,172. Pub. 4–13–65. Filed 1–22–65.

791,845. BLACK DIAMOND. National Musical String Co. SN 196,896. Pub. 4–13–65. Filed 7–1–64.

791,846. ONE THOUSAND AND ONE O-T-O. Clinton H. Forsman, d.b.a. Melody Shop. SN 199,857. Pub. 4–13–65. Filed 8–6–64.

791,847. METROPOLITAN. Grand Piano Company, Inc. SN 199,670. Pub. 4–13–65. Filed 8–11–64.

791,848. EMBASSY. Dejur-Amsco Corporation. SN 199,974. Pub. 4–13–65. Filed 8–17–64.

Class 37 — Paper and Stationery

791,849. THE FILEX LINE AND DESIGN. Smead Manufacturing Company, assignee of The Dunleavy Company. SN 35,639. Pub. 1–26–65. Filed 8–16–57.

791,850. FILEX. Smead Manufacturing Company, assignee of The Dunleavy Company. SN 35,640. Pub. 2–2–65. Filed 8–16–57.

791,851. FASSON. Avery Products Corporation, by change of name from Avery Adhesive Products, Inc. SN 176,618. Pub. 4–13–65. Filed 9–10–63.

791,852. MR. SKETCH INSTANT WATER COLOR WICK TIP AND DESIGN. Sanford Ink Company. SN 182,660. Pub. 4–13–65. Filed 12–9–63.

791,853. MR. SKETCH. Sanford Ink Company. SN 182,662. Pub. 4–13–65. Filed 12–9–63.

791,854. MAJOR ACCENT WICK TIP COLOR AND DESIGN. Sanford Ink Company. SN 182,663. Pub. 4–13–65. Filed 12–9–63.

791,855. AZALEA. Gulf States Paper Corporation. SN 192,717. Pub. 4–13–65. Filed 5–5–64.

791,856. GREENETREE. E. Greene and Company, Inc. SN 197,564. Pub. 2–16–65. Filed 7–10–64.

791,857. TRIAD. Groveton Papers Company. SN 199,469. Pub. 4–13–65. Filed 8–7–64.

791,858. DOREE. International Paper Company. SN 199,568. Pub. 4–13–65. Filed 8–10–64.

791,859. TURKEY. International Paper Company. SN 199,569. Pub. 4–13–65. Filed 8–10–64.

791,860. JAMESTOWN. Union Bag-Camp Paper Corporation. SN 201,247. Pub. 4–13–65. Filed 9–3–64.

791,861. PHOTODEX. Acme Visible Records, Inc. SN 201,501. Pub. 4–13–65. Filed 9–9–64.

791,862. MULTAC. Acme Visible Records, Inc. SN 201,505. Pub. 4–13–65. Filed 9–9–64.

791,863. WRITE AND SEE. Meredith Publishing Company. SN 201,718. Pub. 4–13–65. Filed 9–11–64.

791,864. LIFE O' THE PARTY. Beach Products, Inc. SN 202,350. Pub. 4–13–65. Filed 9–22–64.

791,865. BEACH BRITE. Beach Products, Inc. SN 202,351. Pub. 4–13–65. Filed 9–22–64.

Class 38 — Prints and Publications

791,818. (See Class 32 for this trademark.)

791,866. THE BOOK SOCIETY. American Heritage Publishing Co., Inc. SN 154,325. Pub. 4–13–65. Filed 10–2–62.

791,867. CHEMI SCOPE AND DESIGN. Armour Hess Chemicals Limited. SN 161,753. Pub. 4–13–65. Filed 1–16–63.

791,868. FINGERTIP FACTS. Kirban Associates, Inc. SN 166,907. Pub. 4–13–65. Filed 4–17–63.

791,869. MATERIAL HANDLING ENGINEERING DIRECTORY & HANDBOOK. Pittsburgh Railways Company, assignee of The Industrial Publishing Corporation. SN 169,933. Pub. 4–13–65. Filed 5–29–63.

791,870. THE PLAIN TRUTH. Ambassador College. SN 192,541. Pub. 4–13–65. Filed 5–4–64.

Class 39 — Clothing

791,871. STRIPE DESIGN. Vanity Fair Mills, Inc. SN 172,262. Pub. 4–13–65. Filed 7–1–63.

791,872. WIDE, WIDE WORLD IMPORTS. Wembley, Inc. SN 185,468. Pub. 4–13–65. Filed 1–27–64.

791,873. FABRICO. Fabrico Manufacturing Corporation. SN 186,242. Pub. 4–13–65. Filed 2–10–64.

791,874. HUNTER HAIG. Palm Beach Company. SN 187,206. Pub. 4–13–65. Filed 2–21–64.

791,875. COUNTRY AIRE. Simon & Mogilner. SN 187,346. Pub. 4–13–65. Filed 2–24–64.

791,876. PRINCESS ROYALE. International Nutria Marketing Association. SN 187,754. Pub. 4–13–65. Filed 3–2–64.

791,877. MIASETTE. Aileen, Inc. SN 188,171. Pub. 4–13–65. Filed 3–9–64.

791,878. DOROTHY FIELDS. A. G. Fields & Co., Inc. SN 194,694. Pub. 4–13–65. Filed 6–1–64.

791,879. BUTTE KNIT. Jonathan Logan, Inc. SN 195,230. Pub. 4–13–65. Filed 6–9–64.

791,880. MOGORA-AIRE. Sewell Manufacturing Company. SN 196,817. Pub. 4–13–65. Filed 6–30–64.

791,881. MILES SHOO-FLIES. Melville Shoe Corporation. SN 198,288. Pub. 4–13–65. Filed 7–21–64.

791,882. X-PRESS. Hicks-Ponder Co. SN 198,843. Pub. 4–13–65. Filed 7–30–64.

791,883. VARI-DUCTOR. Pied Piper Shoe Co. SN 199,919. Pub. 4–13–65. Filed 8–14–64.

791,884. CANTERBURY LOGO (DESIGN). Canterbury Belts, Ltd. SN 201,369. Pub. 4–13–65. Filed 9–8–64.

791,885. WHISTLERS AND DESIGN. Saul Bros. & Block, Inc. SN 201,473. Pub. 4–13–65. Filed 9–8–64.

791,886. MR. SIZALL. Po Mel Hats Inc. SN 201,735. Pub. 4–13–65. Filed 9–11–64.

791,887. MAGICARE. The Enro Shirt Company, Inc. SN 201,930. Pub. 4–13–65. Filed 9–15–64.

791,888. TOMAR. Glensder Corporation. SN 201,935. Pub. 4–13–65. Filed 9–15–64.

791,889. ORPACA. Harriss Covington Hosiery Mills. SN 201,937. Pub. 4–13–65. Filed 9–15–64.

791,890. CAPE FARE AND DESIGN. Bladen Manufacturing Company. SN 202,353. Pub. 4–13–65. Filed 9–22–64.

791,891. STEPETTES. Musebeck Shoe Company, Inc. SN 202,613. Pub. 4–13–65. Filed 9–24–64.

791,892. LEELITE. Lee Begman, Inc. SN 202,672. Pub. 4–13–65. Filed 9–25–64.

791,893. MISTY HARBOR. Misty Harbor Ltd. SN 202,831. Pub. 4–13–65. Filed 9–28–64.

791,894. DINNER BELLE. White Swan Uniforms, Inc. SN 202,881. Pub. 4–13–65. Filed 9–28–64.

791,895. BORRONI. Damon Creations, Inc. SN 203,260. Pub. 4–13–65. Filed 10–5–64.

791,896. ALLECOTT. Atlas Underwear Corporation. SN 203,561. Pub. 4–13–65. Filed 10–8–64.

791,897. TERGAL-OR. Societe Rhodiaceta. SN 204,014. Pub. 4–13–65. Filed 10–14–64.

791,898. TRIM SIR. Stedman Manufacturing Company. SN 204,021. Pub. 4–13–65. Filed 10–14–64.

791,899. PLAY AGE. Union Knitting Mills, Inc. SN 204,322. Pub. 4–13–65. Filed 10–19–64.

Class 40 — Fancy Goods, Furnishings, and Notions

791,900. MISS MAJORETTE. Bennington Brush Co., Inc. SN 195,065. Pub. 4–13–65. Filed 6–8–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

791,901. SAFRE. Morris Metzger & Sons, Inc. SN 192,414. Pub. 4–13–65. Filed 4–30–64.

791,902. CREPETTE. J. P. Stevens & Co., Inc. SN 197,517. Pub. 4–13–65. Filed 7–9–64.

791,903. BRIARGAB. Burlington Industries, Inc. SN 198,710. Pub. 4–13–65. Filed 7–29–64.

791,904. BRIGHT CLOUD. Burlington Industries, Inc. SN 198,712. Pub. 4–13–65. Filed 7–29–64.

791,905. GRAND VINO. Burlington Industries, Inc. SN 198,829. Pub. 4–13–65. Filed 7–30–64.

791,906. NELLY BEE. Nelly E. Boyer. SN 203,634. Pub. 4–13–65. Filed 9–14–64.

791,907. DOUBL-ON. Ack-Ti-Lining, Inc. SN 203,916. Pub. 4–13–65. Filed 10–14–64.

791,908. "LIGHTCLIFFE." John Atkinson & Sons Sowerby Bridge, Limited. SN 203,922. Pub. 4–13–65. Filed 10–14–64.

791,909. "PEYTON." John Atkinson & Sons Sowerby Bridge, Limited. SN 203,924. Pub. 4–13–65. Filed 10–14–64.

791,910. TERGAL-OR. Societe Rhodiaceta. SN 204,015. Pub. 4–13–65. Filed 10–14–64.

Class 43 — Thread and Yarn

791,911. LES CARIATIDES. Compagnie Francaise de Bonneterie, Societe Anonyme. SN 199,031. Pub. 4–13–65. Filed 8–3–64.

791,912. TERGAL-OR. Societe Rhodiaceta. SN 204,016. Pub. 4–13–65. Filed 10–14–64.

Class 44 — Dental, Medical, and Surgical Appliances

791,913. COLAGYN. Smith Laboratory, Inc. SN 134,689. Pub. 4–13–65. Filed 12–26–61.

791,914. ORTHOMATRIX. Orthomatrix, Inc. SN 186,268. Pub. 4–13–65. Filed 2–7–64.

791,915. MINI-VIAL. Baxter Laboratories, Inc. SN 199,166. Pub. 4–13–65. Filed 8–4–64.

Class 46 — Foods and Ingredients of Foods

791,617. (See Class 2 for this trademark.)

791,916. BUCKEYE. Cole Associates, Ltd., d.b.a. Buckeye Food Products. SN 142,617. Pub. 4–13–65. Filed 4–19–62.

791,917. DANA AND DESIGN. United Meat Packers Ltd. A.m.b.A., d.b.a. Andelsslagteriernes Konserveseksport A.m.b.A. SN 145,422. Pub 4–13–65 Filed 5–24–62

791,918 WHOPPABURGER. Southern Enterprises, Inc., d.b.a. The Whopper-Burger Shop. SN 153,602. Pub. 2–9–65. Filed 9–20–62.

791,919. B–1. Nebraska Consolidated Mills Company. SN 155,430. Pub. 4–13–65. Filed 10–18–62.

791,920. JACOBI AND DESIGN. Wilson-Jacobi, Inc., d.b.a. Jacobi. SN 157,030. Pub. 4–13–65. Filed 11–9–62.

791,921. MONARCH SOVEREIGN BRAND AND DESIGN. Monarch Provision Company. SN 164,737. Pub. 4–13–65. Filed 3–15–63.

791,922. VIKING. Shurfine Foods, Inc. SN 164,777. Pub. 4–13–65. Filed 3–15–63.

791,923. MRS. SMITH'S AND DESIGN. Mrs. Smith's Pie Company. SN 171,190. Pub. 4–13–65. Filed 6–17–63.

791,924. ORIGINAL PEPE'S SLOPPY JOE'S AND DESIGN. Pepe's, Inc. SN 171,567. Pub. 4–13–65. Filed 6–21–63.

791,925. BALANCED. Balanced Foods, Inc. SN 171,742. Pub. 4–13–65. Filed 6–25–63.

791,926. TWO-BOBS AND DESIGN. Goulden's Seafoods, Inc. SN 174,766. Pub. 4–13–65. Filed 8–9–63.

791,927. HEIRLOOM SQUARES. Paul F. Beich Company. SN 179,858. Pub. 4–13–65. Filed 10–28–63.

791,928. PINNACLE. The Borden Company. SN 182,460. Pub. 6–16–64. Filed 12–6–63.

791,929. TSP. General Mills, Inc. SN 183,836. Pub. 4–13–65. Filed 12–31–63.

791,930. KINGBLOSSOM. Valley Evaporating Company. SN 185,747. Pub. 4–13–65. Filed 1–27–64.

791,931. BEAR MOUNTAIN CUB. T. Apkarian & Sons, d.b.a. T. Apkarian & Sons, Inc. SN 187,814. Pub. 4–13–65. Filed 3–2–64.

791,932. CAROLINA. River Brand Rice Mills, Inc. SN 188,918. Pub. 4–13–65. Filed 3–17–64.

791,933. FULFIL. Mead Johnson & Company. SN 189,336. Pub. 4–13–65. Filed 3–23–64.

791,934. DIET-50 AND DESIGN. Sunrise Home Juices, Inc. SN 190,211. Pub. 4–13–65. Filed 4–2–64.

791,935. CLARK AND DESIGN. Philip Morris Incorporated, d.b.a. Clark Gum Co. SN 191,706. Pub. 4–13–65. Filed 4–21–64.

791,936. DELICIOUSLY DIFFERENT DOLLY MADISON. Dolly Madison Foods, Inc. SN 192,807. Pub. 4–13–65. Filed 5–6–64.

791,937. EL PASEO. Early California Foods, Inc., assignee of Pacific Olive Company, d.b.a. Pacific Olive Co. SN 194,212. Pub. 4–13–65. Filed 5–25–64.

791,938. FANCY FREE. Pet Milk Company. SN 194,513. Pub. 4–13–65. Filed 5–28–64.

791,939. DAIRY BARN STORES. Dairy Barn Stores, Inc. SN 194,580. Pub. 4–13–65. Filed 6–1–64.

791,940. FRESHVILLE. J. M. Jones Co. SN 194,618. Pub. 4–13–65. Filed 6–1–64.

791,941. HUMAN (DESIGN). Stonier Baking Co., d.b.a. Stonier's. SN 194,677. Pub. 4–13–65. Filed 6–1–64.

791,942. RIO-MOCCA. Giulite Coutinho. SN 194,960. Pub. 4–13–65. Filed 6–5–64.

791,943. SUPERIOR AND DESIGN. Superior Tea & Coffee Co. SN 195,738. Pub. 4–13–65. Filed 6–15–64.

791,944. MAISONETTE. Carter Products, Inc. SN 196,108. Pub. 4–13–65. Filed 6–22–64.

791,945. DAIRY BARN STORES AND DESIGN. Dairy Barn Stores, Inc. SN 196,630. Pub. 4–13–65. Filed 6–29–64.

791,946. POUR LE ROI AND COAT OF ARMS DESIGN. Windswept. SN 196,752. Pub. 4–13–65. Filed 6–29–64.

Class 47 — Wines

791,947. MISTER TWISTER. E. & J. Gallo Winery. SN 170,897. Pub. 4–13–65. Filed 6–13–63.

Class 49 — Distilled Alcoholic Liquors

791,948. RANAC. Empire Liquor Corporation. SN 186,066. Pub. 4–13–65. Filed 2–5–64.

791,949. PARLIAMENT ROYAL. Empire Liquor Corporation. SN 186,935. Pub. 4–13–65. Filed 2–18–64.

Class 50 — Merchandise Not Otherwise Classified

791,744. (See Class 23 for this trademark.)

791,950. HOOK N' LOOP AND DESIGN. Charles Mayer Studios, Inc. SN 124,367. Pub. 4–13–65. Filed 7–20–61.

791,951. STRAWBERY BANKE. Guild of Strawbery Banke, Inc. SN 160,177. Pub. 4–13–65. Filed 1–4–63.

791,952. FASSON. Avery Products Corporation, by change of name from Avery Adhesive Products, Inc. SN 176,615. Pub. 4–13–65. Filed 9–10–63.

791,953. CARLENE AND DESIGN. Carlan Products, Inc. SN 199,965. Pub. 4–6–65. Filed 8–17–64.

791,954. SUNLINE. Wilma E. Landau, d.b.a. Sunline Home Products Co. SN 200,005. Pub. 4–6–65. Filed 8–17–64.

Class 51 — Cosmetics and Toilet Preparations

791,955. CREME FLOAT. Turner Hall Corporation, assignee of New Jersey Turner Hall Corporation. SN 161,899. Pub. 4–13–65. Filed 2–1–63.

791,956. SO CLEAR. Helene Curtis Industries, Inc. SN 170,045. Pub. 4–13–65. Filed 5–31–63.

791,957. MEND. Summit Laboratories, Inc., d.b.a. Aljean Products Co. SN 183,338. Pub. 6–30–64. Filed 12–20–63.

791,958. 12 BORE. Sterwin AG. SN 192,225. Pub. 4–13–65. Filed 4–28–64.

791,959. PLAY-SAFE. Carter Products, Inc. SN 192,858. Pub. 4–13–65. Filed 4–30–64.

791,960. HENO DE PRAVIA. Perfumeria Gal, S.A. SN 194,214. Pub. 4–13–65. Filed 5–25–64.

791,961. ZONETTES. Chemway Corporation. SN 195,846. Pub. 4–13–65. Filed 6–17–64.

Class 52 — Detergents and Soaps

791,832. (See Class 6 for this trademark.)

791,962. THE LIQUID SNAKE. Advance Chemical Company. SN 159,934. Pub. 4–13–65. Filed 12–31–62.

791,963. CRAZY FOAM. Aerosol Corporation of America. SN 180,696. Pub. 4–13–65. Filed 11–8–63.

791,964. GLASS MAGIC. Economics Laboratory, Inc. SN 193,459. Pub. 4–13–65. Filed 5–14–64.

791,965. HENO DE PRAVIA. Perfumeria Gal, S.A. SN 194,215. Pub. 4–13–65. Filed 5–25–64.

791,966. DY-D-SUDS. Pharyno] Corporation. SN 195,964. Pub. 4–13–65. Filed 6–18–64.

791,967. AUTO VU. The Barcolene Company. SN 196,598. Pub. 4–13–65. Filed 6–29–64.

791,968. BRITEX. Britex Corporation. SN 196,842. Pub. 4–13–65. Filed 7–1–64.

Service Marks

Class 100 — Miscellaneous

791,969. TENDERBEST. Tenderbest Corporation. SN 167,167. Pub. 4–13–65. Filed 11–13–62.

791,970. ALA CREPE BRETONNE AND DESIGN. Specialites Josette et Louis Inc. SN 166,512. Pub. 4–13–65. Filed 4–10–63.

791,971. KLEEN-LEEN. Kleen-Leen, Inc. SN 191,565. Pub. 4–13–65. Filed 4–20–64.

791,972. QUALITY COURTS. Quality Courts Motels, Inc. SN 193,986. COLLECTIVE MARK. Pub. 4–13–65. Filed 5–21–64.

Class 101 — Advertising and Business

791,973. CUMULATIVE CUE TECHNIQUE. Chilton Company. SN 137,328. Pub. 4–13–65. Filed 2–6–62.

791,974. ARROW DESIGN. Reactions, Inc. SN 161,202. Pub. 4–13–65. Filed 1–22–63.

791,975. FINAST. First National Stores, Inc. SN 167,462. Pub. 4–13–65. Filed 4–24–63.

791,976. PRO. Pro Hardware, Inc. SN 168,965. Pub. 4–13–65. Filed 5–15–63.

791,977. AYRES. L. S. Ayres and Company. SN 179,854. Pub. 4–13–65. Filed 10–28–63.

791,978. MPA AND DESIGN. Perceptive Management Associates, Inc. SN 180,530. Pub. 4–13–65. Filed 11–5–63.

791,979. ATI AND DESIGN. Auto-Transcript Institute, Inc. SN 182,154. Pub. 4–13–65. Filed 12–2–63.

791,980. CIRCLE AND TRIANGLE (DESIGN). Michigan Typesetting Company. SN 186,465. Pub. 4–13–65. Filed 2–11–64.

791,981. RECTANGULAR DESIGN. Walhimer Agency, Inc. SN 189,280. Pub. 4–13–65. Filed 3–20–64.

791,982. MT CO. INC. AND DESIGN. Midland Title Co., Inc. SN 195,426. Pub. 4–13–65. Filed 6–11–64.

Class 102 — Insurance and Financial

791,983. WELLS FARGO BANK AND DESIGN. Wells Fargo Bank. SN 155,357. Pub. 4–13–65 Filed 10–17–62.

791,984. STANDARD & POOR'S. Standard & Poor's Corporation. SN 164,189. Pub. 4–13–65. Filed 3–7–63.

791,985. MEDI CHECK AND DESIGN. American Physicians Insurance Company. SN 170,447. Pub. 4–13–65. Filed 6–6–63.

791,986. MINUTE-MONEY. The Hunterdon County National Bank of Flemington, N.J. SN 192,914. Pub. 4–13–65. Filed 5–7–64.

791,987. GI AND DESIGN. Georgia International Life Insurance Company. SN 193,950. Pub. 4–13–65. Filed 5–21–64.

791,988. MISCELLANEOUS DESIGN. The First Lake County National Bank. SN 195,895. Pub. 4–13–65. Filed 6–11–64.

Class 103 — Construction and Repair

791,989. GRAVER. Union Tank Car Company. SN 188,806. Pub. 4–13–65. Filed 3–9–64.

791,990. B. Binswanger Glass Co. SN 192,464. Pub. 4–13–65. Filed 5–1–64.

791,991. APCOA. Auto Painting Corporation of America. SN 195,198. Pub. 4–13–65. Filed 6–9–64.

Class 105 — Transportation and Storage

791,992. MATSON TERMINALS INC. AND DESIGN. Matson Terminals, Inc. SN 197,735. Pub. 4–13–65. Filed 7–13–64.

Class 106 — Material Treatment

791,993. GRAVER AND DESIGN. Union Tank Car Company. SN 190,128. Pub. 4–13–65. Filed 4–1–64.

Class 107 — Education and Entertainment

791,994. THE WORLD TOMORROW. Ambassador College. SN 192,542. Pub. 4–13–65. Filed 5–4–64.

791,995. THE INSTITUTE OF LIFETIME LEARNING ETC. AND DESIGN. Institute of Lifetime Learning. SN 193,789. Pub. 4–13–65. Filed 5–19–64.

791,996. PAX CULTURA AND DESIGN. Nicholas Roerich Museum. SN 194,640. Pub. 4–13–65. Filed 6–1–64.

Collective Membership Mark

Class 200

791,997. FAIA. The American Institute of Architects. SN 193,615. Pub. 4–13–65. Filed 5–18–64.

Certification Mark

Class A — Goods

791,998. IBMA. The Independent Battery Manufacturers of America, Inc. SN 162,262. Pub. 4–13–65. Filed 2–7–63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

791,999. Owens-Illinois Glass Company, Toledo, Ohio. SN 188,656. Filed 3–13–64.

KIMBLE

Class 12—Construction Materials

For Glass Building Block.

Class 21—Electrical Apparatus, Machines, and Supplies

For Glass Insulators, Cathode-Ray Tube Envelopes and Glass Components for Electronic Use.

Class 26—Measuring and Scientific Appliances

For Scientific Laboratory Glassware—Namely, Burets, Condensers, Extraction Apparatus, Boiling and Distilling Flasks, Sintered Glass Filters, Ground Joints, Pipettes, Stopcocks, Graduated Cylinders, Glass Rod, Vials, Ampuls, Culture Dishes, Erlenmeyer Flasks, Test and Culture Tubes, Centrifuge Tubes, Beakers, Weighing Bottles, Armored Glass Pipe, Fittings and Couplings and Glass Tubing.

Class 33—Glassware

For Glass Containers—Namely, Bottles and Jars.

Class 44—Dental, Medical, and Surgical Appliances

For Hospital and Pharmaceutical Glassware—Namely, Syringe Cartridges Sold Empty.

First use Jan. 11, 1963.

SECTION 2

Class 12 — Construction Materials

791,999. See Section 1 (Combined Certificate).

Class 16 — Protective and Decorative Coatings

792,000. The Martin-Senour Company, Chicago, Ill. SN 189,332. Filed P.R. 3–23–64; Am. S.R. 5–5–65.

Provincial

The drawing is lined for light brown or tan and this color is claimed as a feature of the mark.

For Kit for Refinishing Furniture Containing Two Cans of Paint, Two Brushes, Sandpaper, Wiping Cloth, and an Instruction Book.

First use Mar. 4, 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

791,999. See Section 1 (Combined Certificate).

Class 26 — Measuring and Scientific Appliances

791,999. See Section 1 (Combined Certificate).

Class 27 — Horological Instruments

792,001. Thomas J. Geary, Jr., Cumberland, N.C. SN 212,522. Filed P.R. 2–28–65; Am. S.R. 5–11–65.

GEARY

For Watches.

First use July 1960.

Class 32 — Furniture and Upholstery

792,002. New York Feather Co., Inc., Brooklyn, N.Y. SN 204,995. Filed P.R. 10–28–64; Am. S.R. 5–5–65.

PERFECT BLEND

For Pillows and Cushions.

First use February 1964.

Class 33 — Glassware

791,999. See Section 1 (Combined Certificate).

Class 34 — Heating, Lighting, and Ventilating Apparatus

792,003. Albert C. Arrand, d.b.a. Designer Line, Andover, Mass. SN 144,087. Filed P.R. 5–6–63; Am. S.R. 5–6–65.

DECOR-GRATE

For Fireplace Grates.

First use at least as early as Nov. 3, 1960.

792,004. Wall Colmonoy Corporation, Detroit, Mich. SN 161,927. Filed P.R. 2-1-63; Am. S.R. 1-28-65.

FUSEWELDER

For Metal Application Torch for Applying Self-Fluxing Alloys.
First use Dec. 14, 1962.

Class 39 — Clothing

792,005. Moran Shoe Company, Carlyle, Ill. SN 160,114. Filed P.R. 4-4-63; Am. S.R. 4-30-65.

WEE FOOT FASHIONS

The word "Fashions" is disclaimed apart from the composite mark. Owner of Reg. Nos. 305,669 and 741,339.
For Infants' and Children's Shoes, Boots, and Slippers.
First use Mar. 14, 1963.

Class 44 — Dental, Medical, and Surgical Appliances

791,999. See Section 1 (Combined Certificate).

792,006. The Scholl Mfg. Co., Inc., Chicago, Ill. SN 182,667. Filed P.R. 12-9-63; Am. S.R. 3-18-65.

TOE-FIT

For Corn Pads.
First use Dec. 5, 1963.

TRADEMARK REGISTRATIONS RENEWED

44,628. GILT EDGE. Cl. 35. 7-18-05.
45,264. CAPUDINE. Cl. 18. 8-8-05.
46,582. E & W. Cl. 39. 8-22-05.
46,604. E & W. Cl. 39. 9-26-05.
47,028. REPRESENTATION OF ROOSTER AND HORN (DESIGN). Cl. 42. 10-17-05.
47,305. BUTTER CREAMS. Cl. 46. 10-31-05.
194,481. THE FORMALITY. Cl. 39. 1-27-25.
194,578. LINERITE. Cl. 23. 2-3-25.
195,382. FIXED FOCUS. Cl. 21. 2-24-25.
196,140. SLIP EASY. Cl. 15. 3-10-25.
197,116. MEADOWBROOK AND DESIGN. Cl. 39. 4-7-25.
197,614. RUNWEL. Cl. 35. 4-21-25.
198,187. EUCARBON. Cl. 18. 5-5-25.
198,200. SAL-TROUT. Cl. 22. 5-5-25.
198,205. LASTWORD. Cl. 22. 5-5-25.
198,746. REPRESENTATION OF ELEPHANT (DESIGN). Cl. 4. 5-26-25.
198,763. CLINCHER. Cl. 22. 5-26-25.
198,764. BULL DOG. Cl. 22. 5-26-25.
199,096. PAL-O-MINE. Cl. 22. 6-2-25.
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200,130. SKIPPER. Cl. 17. 6-23-25.
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202,864. CELAKAP. Cl. 5. 9-8-25.
203,900. E-Z-OFF. Cl. 22. 9-29-25.
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413,594. "DYRITE." Cl. 37. 5-1-45.
413,802. CARTIER. Cl. 3. 5-15-45.
413,820. TRAVELERS. Cl. 46. 5-15-45.
413,957. REPRESENTATION OF A LAMB (DESIGN). Cl. 39. 5-22-45.
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413,933. EYE GLORY. Cl. 44. 5-22-45.
414,055. ANTARA. Cl. 38. 5-22-45.
414,295. CARTIER. Cl. 22. 6-5-45.
414,433. CARTIER. Cl. 33. 6-5-45.
414,434. CARTIER. Cl. 33. 6-12-45.
414,435. CARTIER. Cl. 3. 6-12-45.
414,438. NASSAU TROPICS AND DESIGN. Cl. 39. 6-12-45.
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414,604. CARTIER. Cl. 37. 6-19-45.
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415,320. PHILCO. Cl. 34. 8-7-45.
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416,141. VIBRADAMP. Cl. 26. 8-28-45.
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416,233. EUCARBON. Cl. 18. 9-4-45.
416,404. DECIMATIC. Cl. 26. 9-11-45.
416,420. BROWNIE. Cl. 2. 9-11-45.
416,421. REPRESENTATION OF A BROWNIE. Cl. 2. 9-11-45.
417,086. TRANSCONTINENTAL. Cl. 39. 10-16-45.
417,195. REALCRAFT. Cl. 39. 10-16-45.

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Section 8

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678,261. CCA CONE CASE. Cl. 2.
678,262. MELDALE. Cl. 2.
678,267. PARALON. Cl. 2.
678,273. PAY MATES. Cl. 3.
678,274. EASY PICK'N. Cl. 3.
678,277. DUNCO AND GROTESQUE OF MALE. Cl. 4.
678,284. CLARON. Cl. 6.
678,300. KINGSMARK. Cl. 6.
678,302. PLYMOUTH SURGE LINE. Cl. 7.
678,311. LONGLINE. Cl. 11.
678,317. CHEM-BOND. Cl. 12.
678,318. AMARLITE LOOKS BETTER . . . . LONGER AND DESIGN. Cl. 12.
678,319. BEAR BRAND PORTLAND CEMENT AND DESIGN. Cl. 12.

678,320. RIVERSIDE PORTLAND CEMENT AND DESIGN. Cl. 12.
678,323. PARKO-LOK. Cl. 13.
678,327. MH BLISS ETC. AND DESIGN. Cl. 14.
678,337. CUATRO VEGAS. Cl. 17.
678,339. TREND. Cl. 17.
678,343. ROWACHOL. Cl. 18.
678,347. RBI. Cl. 19.
678,351. DURAGLAS. Cl. 19.
678,352. RECORDA-MIRROR. Cl. 19.
678,356. EVER-GLO ETC. AND DESIGN. Cl. 21.
678,358. LUMI-PEND. Cl. 21.
678,362. SOLITAN. Cl. 21.
678,366. U.S. ROYAL SENIORS. Cl. 22.
678,367. CAST-HOPPER. Cl. 22.
678,368. QUALITOY. Cl. 22.
678,369. DIZZY DECOY. Cl. 22.
678,370. LI'L RASKAL. Cl. 22.
678,374. TOPP AND DESIGN. Cl. 22.
678,375. PFLUEGER MARS. Cl. 22.
678,379. GESTELITH. Cl. 23.
678,381. TYPHOON. Cl. 23.
678,386. SILVERY MOON. Cl. 23.
678,390. SANI-FAX. Cl. 23.
678,393. MOTO-MAC ETC. AND DESIGN. Cl. 23.
678,394. ABC LIFETIME AND DESIGN. Cl. 23.
678,397. FLAVOR-BAR. Cl. 23.
678,398. EPCO. Cl. 23.
678,405. KAUTEX. Cl. 23.
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678,417. DESIGN OF CIRCLE ETC. Cl. 26.
678,420. LIVING LENS. Cl. 26.
678,421. MELTIME. Cl. 26.
678,424. EN-TRONIC. Cl. 26.
678,427. A-M. Cl. 29.
678,431. EMPRESS. Cl. 30.
678,432. KWIK-KOLD AND DESIGN. Cl. 31.
678,436. ZIMETS AND DESIGN. Cl. 32.
678,437. LAZI-ANN DREAMBED. Cl. 32.
678,439. PCH ETC. AND DESIGN. Cl. 34.
678,441. SAF-E-FIRE. Cl. 34.
678,444. VEE-JAY AND DESIGN. Cl. 36.
678,449. PANAMA AND DESIGN. Cl. 36.
678,454. BIJOU AND DESIGN. Cl. 36.
678,458. LAMI-TOP. Cl. 37.
678,469. DEB'S. Cl. 37.
678,477. ADVANTAGE. Cl. 38.
678,482. AMATEUR SCIENTIST. Cl. 38.
678,487. LADY HAMILTON. Cl. 39.
678,493. MONGREL GLACE. Cl. 39.
678,495. BOB MARTIN BOWLER AND DESIGN. Cl. 39.
678,500. DREEM-TOTS. Cl. 39.
678,501. DREEM-TOES. Cl. 39.
678,505. MEDOS AND DESIGN. Cl. 39.
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678,520. MANEUVER. Cl. 39.
678,524. WOOLENS FROM FRANCE INC. AND DESIGN. Cl. 42.
678,525. SKORT. Cl. 42.
678,528. COUPE DE VILLE. Cl. 42.
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678,565. ANTWERP TOWER AND DESIGN. Cl. 46.
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678,576. HAWAIIAN CHEF. Cl. 46.
678,580. KILTIE AND DESIGN. Cl. 46.
678,582. SPECIAL D. Cl. 46.
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678,589. PIMPINIA. Cl. 46.
678,594. PHYLLIS HONEY KIST AND DESIGN. Cl. 46.
678,597. TOP-O. Cl. 46.
678,605. ARAQUILA. Cl. 47.
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678,616. KERALITH AND DESIGN. Cl. 50.
678,619. FRESH READY ROLL-ON AND DESIGN. Cl. 51.
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678,629. THERNO-FOAM. Cl. 52.
678,632. MIRACLE. Cl. 52.
678,642. PURE-SURE FAST FLUSH. Cl. 52.
678,646. YOUR TRASH IS OUR CASH. Cl. 100.
678,650. SOHIO-MATIC. Cl. 101.
678,651. HEALTHSURANCE. Cl. 102.
678,652. PROMO-LIFE. Cl. 103.
678,656. ETCHRITE. Cl. 106.
678,657. ANOTHER CHANCE Cl. 107.
678,660. CARS & PARTS AND DESIGN. Cl. 38.
678,661. THE PUNCHED CARD MACHINE ACCOUNTING AND DATA PROCESSING SEMI-ANNUAL. Cl. 38.

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232,228. FASTUSOL. Cl. 6. 9-6-27. General Dyestuff Corporation. General Aniline & Film Corporation, New York, N.Y. Amended to appear:

FASTUSOL

431,620. CRUSADER. Cl. 15. 7-29-47. Crusader Candle Co., Inc., Brooklyn, N.Y. Corrected: In the certificate lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, after "Co." , *Inc.* should be inserted.

592,190. WOOD-METAL. Cl. 32. 7-6-54. Wood-Metal Industries, Inc., Kreamer, Pa. Corrected: In the statement, column 1, line 5, "Formica" should be deleted and *laminated plastic* should be inserted.

635,925. WOOD-METAL AND DESIGN. Cl. 32. 10-16-56. Wood-Metal Industries, Inc., Kreamer, Pa. Corrected: In the statement, column 1, line 4, "Formica" should be deleted and *laminated plastic* should be inserted.

646,505. WOOD-MODE. Cl. 32. 6-4-57. Wood-Metal Industries, Inc., Kreamer, Pa. Corrected: In the statement, column 1, line 4, "Formica" should be deleted and *laminated plastic* should be inserted.

662,715. FOR THOSE WHO DEMAND THE FINEST. Cl. 32. 6-3-58. Wood-Metal Industries, Inc., Kreamer, Pa. Corrected: In the statement, column 1, line 4, "Formica" should be deleted and *laminated plastic* should be inserted.

678,127. POSTA-TISER. Cl. 38. 5-5-59. Curtis 1000 Incorporated, West Hartford, Conn. Corrected: In the statement, column 1, line 1, "1000," should be deleted and *1000* should be inserted.

687,712. FASTREAT. Cl. 106. 11-3-59. Hanes Dye and Finishing Company, Winston-Salem, N.C. Amended: In the statement, column 2, lines 1 through 3, the description of goods is deleted and *The after-treatment of cotton cloth of others which has been dyed in commercial colors to improve fastness to bleeding* is inserted.

688,753. MURZ. Cl. 31. 11-24-59. Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. Corrected: In the statement, column 1, line 1, "Electrical" should be deleted and *Electric* should be inserted.

693,875. MOR-COUNT. Cl. 37. 3-1-60. Puritan Stationery Company, Inc., Philadelphia, Pa. Corrected: In the statement, column 1, line 1, "Stationary" should be deleted and *Stationery* should be inserted.

714,407. COLORGRADE. Cl. 37. 4-25-61. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Corrected: In the statement, column 1, line 1, before "Castell" *Faber-* should be inserted.

716,227. CARVEL. Cl. 46. 5-30-61. Thomas Carvel, Yonkers, N.Y. Corrected: In the statement, column 2, line 4, "1959" should be deleted and *1949* should be inserted.

753,352. SHAMROCK. Cl. 37 7-23-63. Eversharp, Inc., doing business as Shick Safety Razor Company, Milford, Conn. Corrected: In the statement, column 1, line 3 should be deleted and *Webster Road, Milford, Conn.* should be inserted.

769,570. SHAMROCK DESIGN. Cl. 37. 5-12-64. Eversharp, Inc., doing business as Schick Safety Razor Company, Milford, Conn. Corrected: In the statement, column 1, line 3 should be deleted and *Webster Road, Milford, Conn.* should be inserted.

784,847. SCHICK. Cl. 37. 2-9-65. Eversharp, Inc., doing business as Schick Safety Razor Company, Milford, Conn. Corrected: In the statement, column 1, line 3 should be deleted and *Webster Road, Milford, Conn.* should be inserted.

785,172. HYDRA-PAK. Cl. 28. 2-16-65. Tangyes Limited, Birmingham, England. Corrected: In the statement, column 2, line 3, "Apr. 7" should be deleted and *Apr. 17* should be inserted.

786,219. CANOE DANA AND DESIGN. Cl. 51. 3-2-65. Les Parfums de Dana, Inc., doing business as Dana, New York, N.Y. Corrected: In the statement, column 1, line 1, "Le" should be deleted and *Les* should be inserted.

786,449. GIRL TALK. Cl. 39. 3-9-65. Oxford Manufacturing Co., Inc., doing business as Maxon Shirt Company Division, Greenville, S.C. Corrected: In the statement, column 1, after line 2, *doing business as Maxon Shirt Company Division, 333 N. Pleasantburg Drive* should be inserted.

787,107. BC. Cl. 23. 3-23-65. The Black Clawson Company, Hamilton, Ohio. Corrected: In the statement, column 1, lines 11 and 12, "clippers" should be deleted and *chippers* should be inserted and in column 2, line 20 after "strainers," *and* should be inserted.

788,125. ROTO-VAK. Cl. 23. 4-13-65. Blaw-Knox Company, Pittsburgh, Pa. Corrected: In the statement, column 2, line 2, after "uum" *evaporators* should be inserted.

788,516. STEMCO. Cl. 35. 4-20-65. Stemco Manufacturing Company, Inc., Longview, Tex. Corrected: In the statement, column 2, line 1, after "Oil" *and* should be inserted.

788,573. ALL PURPOSE. Cl. 44. 4-20-65. Acme Protection Equipment Co., by change of name and assignment from Acme Protection Equipment Company, South Haven, Mich. Corrected: In the statement, column 1, line 1, "Company" should be deleted and *Co.* should be inserted.

788,793. SOUTHERN STAR. Cl. 46. 4-27-65. Klarer of Kentucky, Incorporated, Louisville, Ky. Corrected: In the statement, column 2, line 4 should be deleted.

788,867. THE GOLD COIN PLAN. Cl. 102. 4-27-65. Withers, Price and Co., Inc., Charlotte, N.C. Corrected: In the statement, column 1, line 1, "Whithers" should be deleted and *Withers* should be inserted.

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JUNE 29, 1965

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Ack-Ti-Lining, Inc., New York, N.Y. 791,907, pub. 4-13-65. Cl. 42.
Acme Engineering and Mfg. Corp., Muskogee, Okla. 791,821, pub. 4-13-65. Cl. 84.
Acme Visible Records, Inc., Croset, Va. 791,861, pub. 4-13-65. Cl. 37.
Acme Visible Records, Inc., Croset, Va. 791,862, pub. 4-13-65. Cl. 37.
Addicks, R. C., and Associates: *See*—
Addicks, R. C.
Addicks, R. C., d.b.a. R. C. Addicks and Associates, Ottawa, Ill. 678,651, canc. Cl. 102.
Advance Chemical Co., San Francisco, Calif. 791,962, pub. 4-13-65. Cl. 52.
Aerosol Corp. of America, Clifton, N.J. 791,963, pub. 4-13-65. Cl. 52.
Aerosol Specialties, Inc., Bridgeport, Conn. 791,632, pub. 4-13-65. Multiple Class (Classes 6, 16, and 52).
Agricultural Chemicals, Inc.: *See*—
Thompson-Hayward Chemical Co.
Aileen, Inc., New York, N.Y. 791,877, pub. 4-13-65. Cl. 39.
Aimcee Wholesale Corp.: *See*—
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Air Reduction Co., New York, N.Y. 791,883, pub. 12-15-64. Cl. 35.
Airequipt Inc., New Rochelle, N.Y. 791,794, pub. 4-13-65. Cl. 26.
Alabama Charcoal Co., Westville, Okla. 791,615, pub. 4-13-65. Cl. 1.
Alabama Charcoal Co., Westville, Okla. 791,616, pub. 4-13-65. Cl. 1.
Alberto-Culver Co., Melrose Park, Ill. 791,691, pub. 4-13-65. Cl. 18.
Aldens, Inc.: *See*—
Chicago Mail Order Co.
Alfa Inorganics, Inc., Beverly, Mass. 791,630, pub. 2-16-65. Cl. 6.
Aljean Products Co.: *See*—
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Allen Mfg. Co., The, Hartford, Conn. 791,668, pub. 4-13-65. Cl. 13.
Allen Mfg. Co., The, Hartford, Conn. 791,669, pub. 4-13-65. Cl. 13.
Allied Chemical Corp., New York, N.Y. 791,638, pub. 4-13-65. Cl. 6.
Allyn Chemical Co., Cleveland, Ohio. 678,284, canc. Cl. 6.
Alon Processing, Inc., Pittsburgh, Pa. 791,823, pub. 4-13-65. Cl. 34.
Alon Processing, Inc., Pittsburgh, Pa. 791,824, pub. 4-13-65. Cl. 34.
Alside, Inc., Akron, Ohio. 791,654, pub. 4-13-65. Cl. 12.
Altman, B., & Co., New York, N.Y. 197,116, ren. 6-29-65. Cl. 39.
Aluminum Co. of America, Pittsburgh, Pa. 791,648, pub. 4-13-65. Cl. 12.
Ambassador College, Pasadena, Calif. 791,870, pub. 4-13-65. Cl. 38.
Ambassador College, Pasadena, Calif. 791,994, pub. 4-13-65. Cl. 107.
American Art Metals Co., Atlanta, Ga. 678,318, canc. Cl. 12.
American Cement Corp., Los Angeles, Calif. 678,319, canc. Cl. 12.
American Cement Corp., Los Angeles, Calif. 678,320, canc. Cl. 12.
American Chewing Products Corp., Newark, N.J. 413,820, ren. 6-29-65. Cl. 46.
American Heritage Publishing Co., Inc., New York, N.Y. 791,866, pub. 4-13-65. Cl. 38.
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American Home Products Corp., New York, N.Y. 791,695, pub. 2-23-65. Cl. 18.
American Institute of Architects, The, Washington, D.C. 791,997, pub. 4-13-65. Cl. 200.
American Machine & Foundry Co., New York, N.Y. 678,416, canc. Cl. 26.
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American Nickeloid Co., Peru, Ill. 791,681, pub. 4-13-65. Cl. 14.
American Oil Co., The, Chicago, Ill. 791,813, pub. 4-13-65. Multiple Class (Classes 32 and 38).
American Physicians Insurance Co., Baton Rouge, La. 791,985, pub. 4-13-65. Cl. 102.
American Tansul Co., Las Vegas, Nev. 791,609, pub. 4-13-65. Cl. 1.
American Tobacco Co., The, New York, N.Y. 791,687, pub. 4-13-65. Cl. 17.
American Tobacco Co., The, New York, N.Y. 791,688, pub. 4-13-65. Cl. 17.
Ametek, Inc., New York, N.Y. 791,767, pub. 4-13-65. Cl. 24.
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United Meat Packers, Ltd., A.m.b.A.
Angus, George, & Co., Ltd., Newcastle-upon-Tyne 1, England. 791,661, pub. 4-13-65. Multiple Class (Classes 13, 23, and 35).
Apkarian & Sons, Inc.: *See*—
Apkarian, T., & Sons.
Apkarian, T., & Sons, d.b.a. T. Apkarian & Sons, Inc., Reedley, Calif. 791,931, pub. 4-13-65. Cl. 46.
Armour and Co., Chicago, Ill. 791,631, pub. 4-13-65. Cl. 6.
Armour and Co., Chicago, Ill. 791,667, pub. 4-13-65. Cl. 13.
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Arthur, J. C., Jr., d.b.a. Arthur Farms, Glendale, Ariz. 678,572, canc. Cl. 46.
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Atkinson, John, & Sons Sowerby Bridge, Ltd., Sowerby Bridge, England. 791,909, pub. 4-13-65. Cl. 42.
Atlantic Products Corp., Trenton, N.J. 791,723, pub. 4-13-65. Cl. 22.
Atlas Supply Co., Springfield, N.J. 416,185, ren. 6-29-65. Cl. 6.
Atlas Underwear Corp., Piqua, Ohio. 791,896, pub. 4-13-65. Cl. 39.
Atwell, Walker J., d.b.a. Port-A-Crane Co., San Diego, Calif. 791,749, pub. 4-13-65. Cl. 23.
Auto Painting Corp. of America, Oak Park, Ill. 791,991, pub. 4-13-65. Cl. 103.
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Ayres, L. S., and Co., Indianapolis, Ind. 791,977, pub. 4-13-65. Cl. 101.
BSR Ltd., Stafford, England. 791,844, pub. 4-13-65. Cl. 36.
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Bala Corp., Jackson, Mich. 791,795, pub. 4-13-65. Cl. 26.
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Beach Products, Inc., Kalamazoo, Mich. 791,865, pub. 4-13-65. Cl. 37.
Beck, George, d.b.a. Regina Products, Boulder, Colo. 791,738, pub. 4-13-65. Cl. 22.
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Belch, Paul F., Co., Bloomington, Ill. 791,927, pub. 4-13-65. Cl. 46.
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Benrus Watch Co., Inc., New York, N.Y. 791,807, pub. 4-13-65. Cl. 27.
Berg Vault Co., St. Louis, Mo. 791,620, pub. 4-13-65. Cl. 2.
Berger, Herman, d.b.a. Standard Pharmaceutical Co., to Standard Pharmaceutical Co., Inc., New York, N.Y. 416,233, ren. 6-29-65. Cl. 18.
Bernan Steel Inc., New York, N.Y. 678,437, canc. Cl. 32.
Bijou Records, Inc., New York, N.Y. 678,454, canc. Cl. 36.

Binswanger Glass Co., Richmond, Va. 791,990, pub. 4–13–65. Cl. 103.
Bird & Son, Inc., East Walpole, Mass. 791,646, pub. 4–13–65. Cl. 12.
Birns & Sawyer Cine Equipment Co., Inc., Hollywood, Calif. 791,783, pub. 4–13–65. Cl. 26.
Bittner, Gus, Fairview, Sewell, N.J. 678,646, canc. Cl. 100.
Black Clawson Co., Hamilton, Ohio. 787,107, cor. Cl. 23.
Blackstone Cigar Co.: *See*— Waitt & Bond, Inc.
Bladen Mfg. Co., Dublin, N.C. 791,890, pub. 4–13–65. Cl. 39.
Blakeslee, Scott, & Associates: *See*— Blakeslee, C. Scott.
Blakeslee, C. Scott, d.b.a. Scott Blakeslee & Associates, Grand Rapids, Mich. 791,722, pub. 4–13–65. Cl. 22.
Blaw-Knox Co., Pittsburgh, Pa. 788,125, cor. Cl. 23.
Bliss, E. W., Co., Pittsburgh, Pa. 678,327, canc. Cl. 14.
Bolton-Emerson, Inc., Lawrence, Mass. 791,775, pub. 4–13–65. Cl. 26.
Boreva Sportswear Co., Chicago, Ill. 678,525, canc. Cl. 42.
Borden Co., The, New York, N.Y. 791,928, pub. 6–16–64. Cl. 46.
Borneo Sumatra Trading Co. of California, Inc., San Francisco, Calif. 678,589, canc. Cl. 46.
Boswell, Bernell N., d.b.a. Imperial Products Mfg. Co., Provo, Utah. 791,733, pub. 4–13–65. Cl. 22.
Boyer, Nelly E., Hickory, N.C. 791,761, pub. 4–13–65. Cl. 23.
Boyer, Nelly E., Hickory, N.C. 791,906, pub. 4–13–65. Cl. 42.
Britex Corp., Boston, Mass. 791,968, pub. 4–13–65. Cl. 52.
Brooke Laboratories: *See*— Southwestern Drug Corp.
Brown Steel Tank Co., Minneapolis, Minn. 416,420, ren. 6–29–65. Cl. 2.
Brown Steel Tank Co., Minneapolis, Minn. 416,421, ren. 6–29–65. Cl. 2.
Buckeye Food Products: *See*— Cole Associated.
Buckstaff Co., The, Oshkosh, Wis. 791,816, pub. 4–13–65. Cl. 32.
Burlington Industries, Inc.: *See*— Cluett, Peabody & Co., Inc. Earl & Wilson. Sarfert Hosiery Mills, Inc.
Burlington Industries, Inc., New York, N.Y. 791,903, pub. 4–13–65. Cl. 42.
Burlington Industries, Inc., New York, N.Y. 791,904, pub. 4–13–65. Cl. 42.
Burlington Industries, Inc., New York, N.Y. 791,905, pub. 4–13–65. Cl. 42.
C.S.C. Corp., Fort Wayne, Ind. 791,670, pub. 1–12–65. Cl. 18.
Cabot Corp., Boston, Mass. 791,754, pub. 4–13–65. Cl. 23.
Canterbury Belts, Ltd., New York, N.Y. 791,884, pub. 4–13–65. Cl. 39.
Capudine Chemical Co., Raleigh, N.C., to Capudine, Inc., Miami, Fla. 45,264, ren. 6–29–65. Cl. 18.
Capudine, Inc.: *See*— Capudine Chemical Co.
arlan Products, Inc., Brooklyn, N.Y. 791,953, pub. 4–6–65. Cl. 50.
Carpet Chex, Inc., Akron, Ohio. 791,706, pub. 4–13–65. Cl. 20.
Cars and Parts Co.: *See*— Horn, Don.
Carter Products, Inc., New York, N.Y. 791,944, pub. 4–13–65. Cl. 46.
Carter Products, Inc., New York, N.Y. 791,959, pub. 4–13–65. Cl. 51.
Cartier, Inc., New York, N.Y. 413,802, ren. 6–29–65. Cl. 3.
Cartier, Inc., New York, N.Y. 414,295, ren. 6–29–65. Cl. 22.
Cartier, Inc., New York, N.Y. 414,433, ren. 6–29–65. Cl. 33.
Cartier, Inc., New York, N.Y. 414,434, ren. 6–29–65. Cl. 33.
Cartier, Inc., New York, N.Y. 414,435, ren. 6–29–65. Cl. 3.
Cartier, Inc., New York, N.Y. 414,604, ren. 6–29–65. Cl. 37.
Cartier, Inc., New York, N.Y. 414,605, ren. 6–29–65. Cl. 33.
Cartier, Inc., New York, N.Y. 415,184, ren. 6–29–65. Cl. 26.
Carvel, Thomas, Yonkers, N.Y. 716,227, cor. Cl. 46.
Carvel, Thomas, Yonkers, N.Y. 791,617, pub. 4–13–65. Multiple Class (Classes 2 and 46).
Cenci, H. R., & Co.: *See*— Cenci, H. R., Pharmacal Co.
Cenci, H. R., & Co., Inc.: *See*— Cenci, H. R., Pharmacal Co.
Cenci, H. R., & Co. Pharmaceutical Laboratories, Inc.: *See*— Cenci, H. R., Pharmacal Co.
Cenci, H. R., Pharmacal Co., d.b.a. H. R. Cenci & Co., Inc., H. R. Cenci & Co. Pharmaceutical Laboratories, Inc., and H. R. Cenci & Co., Fresno, Calif. 791,694, pub. 4–13–65. Cl. 18.
Championship Billiards Corp., Grand Rapids, Mich. 791,739, pub. 4–13–54. Cl. 22.
Charleston Hosiery Mills, Cleveland, Tenn. 678,505, canc. Cl. 39.
Charleston Metallic Packing Co., Charleston, S.C., to Raybestos-Manhattan, Inc., Passaic, N.J. 44,628, ren. 6–29–65. Cl. 35.
Chemway Corp., Wayne, N.J. 791,961, pub. 4–13–65. Cl. 51.
Chesterman, Rabone, Ltd., Birmingham, England. 791,796, pub. 4–13–65. Cl. 26.
Chicago Mail Order Co., to Aldens, Inc., Chicago, Ill. 415,805, ren. 6–29–65. Cl. 38.
Chilton Co., Philadelphia, Pa. 791,973, pub. 4–13–65. Cl. 101.
China Fashions Inc., New York, N.Y. 678,262, canc. Cl. 2.
Chrysler Corp., Detroit, Mich. 791,699, pub. 4–13–65. Cl. 19.
Churchill Chemical Co., Galesburg, Ill. 791,636, pub. 4–13–65. Cl. 6.
Ciba Corp.: *See*— Ciba Co., Inc.
Ciba Co., Inc., to Ciba Corp., New York, N.Y. 413,583, ren. 6–29–65. Cl. 6.
Clark, Harry S., d.b.a. Clark Industries, Delaware, Ohio. 791,757, pub. 4–13–65. Cl. 23.
Clark Industries: *See*— Clark, Harry S.
Clinton-Augie Co., Canoga Park, Calif. 791,717, pub. 4–13–65. Cl. 21.
Coast Mfg. & Supply Co., Livermore, Calif. 202,864, ren. 6–29–65. Cl. 5.
Cole Associated, d.b.a. Buckeye Food Products, Columbus, Ohio. 791,916, pub. 4–13–65. Cl. 46.
Colonial Art Co., Inc., Westfield, Mass. 678,487, canc. Cl. 39.
Columbia Broadcasting System, Inc.: *See*— Columbia Recording Corp.
Columbia Recording Corp., Bridgeport, Conn., to Columbia Broadcasting System, Inc., New York, N.Y. 413,805, ren. 6–29–65. Cl. 36.
Columbine Import Co.: *See*— Fukuhara, James T.
Compagnie Francaise Thomson-Houston, Haussmann, Paris, France. 791,709, pub. 11–24–64. Cl. 21.
Compagnie Francaise de Bonneterie, Madeleine, Paris, France. 791,911, pub. 4–13–65. Cl. 43.
Construction Machinery Co., Waterloo, Iowa. 791,762, pub. 4–13–65. Cl. 23.
Contsiner Corp. of America, Chicago, Ill. 678,261, canc. Cl. 2.
Continental Industries, Inc., Tulsa, Okla. 791,663, pub. 11–10–64. Cl. 13.
Construction Machinery Co., Waterloo, Iowa. 791,763, pub. 4–13–65. Cl. 23.
Controlled Environment Equipment Corp., Whitman, from Controlled Environment, Inc., Needham, Mass. 791,744, pub. 4–13–65. Multiple Class (Classes 23, 26, and 50).
Controlled Environment, Inc.: *See*— Controlled Environment Equipment Corp.
Cooper-Bessemer Corp., The, Mount Vernon, Ohio. 678,424, canc. Cl. 26.
Coordinated Sales, Inc., Chicago, Ill. 791,618, pub. 4–13–65. Cl. 2.
Coordinated Sales, Inc., Chicago, Ill. 791,712, pub. 4–13–65. Cl. 21.
Cope Bros. & Co., Ltd., Liverpool and London, England, to Cope & Lloyd (Overseas), Ltd., London, England. 200,129, ren. 6–29–65. Cl. 17.
Cope Bros. & Co., Ltd., Liverpool and London, England, to Cope & Lloyd (Overseas), Ltd., London, England. 200,130, ren. 6–29–65. Cl. 17.
Cope & Lloyd (Overseas), Ltd.: *See*— Cope Bros. & Co., Ltd.
Cornell-Dubilier Electric Corp., South Plainfield, N.J. 678,362, canc. Cl. 21.
Coutinho, Giulite, Rio de Janeiro, Brazil. 791,942, pub. 4–13–65. Cl. 46.
Crompton & Knowles Corp., Worcester, Mass. 791,758, pub. 4–13–65. Cl. 23.
Crompton & Knowles Corp., Worcester, Mass. 791,759, pub. 4–13–65. Cl. 23.
Crown Aluminum Industries Corp., Pittsburgh, Pa. 791,655, pub. 4–13–65. Cl. 12.
Crown Aluminum Industries Corp., Pittsburgh, Pa. 791,656, pub. 4–13–65. Cl. 12.
Crusader Candle Co., Inc., Brooklyn, N.Y. 431,620, cor. Cl. 15.
Crump, B. T., Co., Inc., Richmond, Va. 678,612, canc. Cl. 50.
Curriculum Materials Corp., Jackson, Miss. 678,632, canc. Cl. 52.
Curtis, Helene, Industries, Inc., Chicago, Ill. 791,956, pub. 4–13–65. Cl. 51.
Curtis 1000 Inc., West Hartford, Conn. 678,127, cor. Cl. 38.
Dailey, Charles R., d.b.a. Decoy Mfg. Co., Brantford, Ontario, Canada. 678,369, canc. Cl. 22.
Dairy Barn Stores, Inc., East Northport, N.Y. 791,939, pub. 4–13–65. Cl. 46.
Dairy Barn Stores, Inc., East Northport, N.Y. 791,945, pub. 4–13–65. Cl. 46.
Dakin, R., & Co.-Importers: *See*— Dakin, R., & Co.
Dakin, R., & Co., from R. Dakin & Co.-Importers, San Francisco, Calif. 791,729, pub. 4–13–65. Cl. 22.
Damon Creations, Inc., New York, N.Y. 791,895, pub. 4–13–65. Cl. 39.
Dana: *See*— Les Parfums de Dana, Inc.
Dato Hosiery Co. Inc., Philadelphia, Pa. 678,500, canc. Cl. 39.
Dato Hosiery Co. Inc., Philadelphia, Pa. 678,501, canc. Cl. 39.
David, John, Inc.: *See*— David, John.
David, John, to John David, Inc., New York, N.Y. 194,431, ren. 6–29–65. Cl. 39.
Davies, Clyde A., d.b.a. Factory Direct Buyers Cooperative, Salt Lake City, Utah. 678,394, canc. Cl. 23.
Day, Harry V., d.b.a. Plas-Ta-Flex Tackle Co., Bountiful, Utah. 791,735, pub. 4–13–65. Cl. 22.
Dayco Corp., Dayton, Ohio. 791,836–43, pub. 4–13–65. Cl. 35.
Dearborn Stove Co., Dallas, Tex. 791,831, pub. 4–13–65. Cl. 34.
Dearborn Stove Co., Dallas, Tex. 791,832, pub. 4–13–65. Cl. 34.

Decoy Mfg. Co.: *See*— Dailey, Charles R.
De Jur-Amsco Corp., Long Island City, N.Y. 791,848, pub. 4–13–65. Cl. 36.
Delica Laboratories, Inc., Chicago, Ill., to American Home Products Corp., New York, N.Y. 202,190, ren. 6–29–65. Cl. 51.
Delmonico Foods, Inc., Louisville, Ky. 678,582, canc. Cl. 46.
De Long Hook and Eye Co., The, Philadelphia, Pa., to Scovill Mfg. Co., Waterbury, Conn. 200,547, ren. 6–29–65. Cl. 13.
Del Rey Industries, Inc., Elkhart, Ind. 791,705, pub. 4–13–65. Cl. 19.
Deron, Inc., Roseto, Pa. 791,692, pub. 4–13–65. Cl. 18.
Designer Line: *See*— Arrand, Albert C.
Diamond National Corp., New York, N.Y. 791,622, pub. 4–13–65. Cl. 2.
Dictaphone Corp., Bridgeport, Conn. 791,714, pub. 4–13–65. Cl. 21.
Direct Reproduction Corp., New York, to Direct Reproduction Corp., Brooklyn, N.Y. 413,275, ren. 6–29–65. Cl. 37.
Direct Reproduction Corp., New York, to Direct Reproduction Corp., Brooklyn, N.Y. 413,594, ren. 6–29–65. Cl. 37.
Dixie Wax Paper Co., Dallas, Tex. 678,458, canc. Cl. 37.
Dolly Madison Foods, Inc., Philadelphia, Pa. 791,936, pub. 4–13–65. Cl. 46.
Doormaster Corp., Cranston, R.I. 791,657, pub. 4–13–65. Cl. 12.
Doughboy Industries, Inc., New Richmond, Wis. 791,652, pub. 4–13–65. Cl. 12.
Doughboy Industries, Inc., New Richmond, Wis. 791,730, pub. 4–13–65. Cl. 22.
Dry Mfg. Co., Winters, Tex. 791,825, pub. 4–13–65. Cl. 34.
Dundee Laboratories, Inc., Omaha, Nebr. 791,782, pub. 4–13–65. Cl. 26.
Dunleavy Co., The: *See*— Smead Mfg. Co.
Dunlop Tire and Rubber Corp., Buffalo, N.Y. 791,741, pub. 4–13–65. Cl. 22.
Dunn, William P., Milwaukee, Wis. 678,277, canc. Cl. 4.
Duraclean Co.: *See*— Marshall, Irl.
Duracraft Boats, Inc., Monticello, Ark. 678,351, canc. Cl. 19.
Dynamic Vending Corp., New York, N.Y. 791,830, pub. 4–13–65. Cl. 34.
Earl & Wilson, Troy, N.Y., to Burlington Industries, Inc., Greensboro, N.C. 45,582, ren. 6–29–65. Cl. 39.
Earl & Wilson, Troy, N.Y., to Burlington Industries, Inc., Greensboro, N.C. 46,604, ren. 6–29–65. Cl. 39.
Earl & Wilson, to Cluett, Peabody & Co., Inc., Troy, N.Y., to Burlington Industries, Inc., Greensboro, N.C. 200,121, ren. 6–29–65. Cl. 39.
Early California Foods, Inc., Los Angeles, Calif., from Pacific Olive Co., d.b.a. Pacific Olive Co., Visalia, Calif. 791,987, pub. 4–13–65. Cl. 46.
Eastman Kodak Co., Rochester, N.Y. 791,770, pub. 4–13–65. Cl. 26.
Economics Laboratory, Inc., St. Paul, Minn. 791,964, pub. 4–13–65. Cl. 52.
Economy Auto Stores, Inc., Atlanta, Ga. 678,393, canc. Cl. 23.
Edsbyns Industri Aktiebolag, Edsbyn, Sweden. 678,381, canc. Cl. 23.
Educational Developmental, Huntington, N.Y. 791,801, pub. 4–13–65. Cl. 26.
Ekco Products Co., Chicago, Ill., 678,652, canc. Cl. 103.
Empire Liquor Corp., Bronx, N.Y. 791,948, pub. 4–13–65. Cl. 49.
Empire Liquor Corp., Bronx, N.Y. 791,949, pub. 4–13–65. Cl. 49.
Enro Shirt Co., Inc., The, Louisville, Ky. 791,887, pub. 4–13–65. Cl. 39.
Enterprise Mfg. Co., The, to Pfueger Corp., Akron, Ohio. 198,200, ren. 6–29–65. Cl. 22.
Enterprise Mfg. Co., The, to Pfueger Corp., Akron, Ohio. 198,205, ren. 6–29–65. Cl. 22.
Enterprise Mfg. Co., The, to Pfueger Corp., Akron, Ohio. 198,763, ren. 6–29–65. Cl. 22.
Enterprise Mfg. Co., The, to Pfueger Corp., Akron, Ohio. 198,764, ren. 6–29–65. Cl. 22.
Enterprise Mfg. Co., The, to Pfueger Corp., Akron, Ohio. 199,096, ren. 6–29–65. Cl. 22.
Enterprise Mfg. Co., The, to Pfueger Corp., Akron, Ohio. 203,900, ren. 6–29–65. Cl. 22.
Enterprise Mfg. Co., The, Akron, Ohio. 678,375, canc. Cl. 22.
Episcopal Radio-TV Foundation, Inc., Atlanta, Ga. 678,657, canc. Cl. 107.
Erismann-Schins S.A., La Neuveville, Bern, Switzerland. 791,805, pub. 4–13–65. Cl. 27.
Erismann-Schins S.A., La Neuveville, Bern, Switzerland. 791,806, pub. 4–13–65. Cl. 27.
Etablissements Steiner Freres Societe Anonyme, Paris, France. 678,529, canc. Cl. 42.
Etched Products Corp., Long Island City, N.Y. 678,656, canc. Cl. 106.
Eutectic Welding Alloys Corp., Flushing, N.Y. 791,829, pub. 4–13–65. Cl. 34.
Evans-Aristocrat Industries, Inc., from Philip Florin, Inc., New York, N.Y. 791,623, pub. 4–13–65. Cl. 2.
Eversharp, Inc., d.b.a. Schick Safety Razor Co., Milford, Conn. 753,852, cor. Cl. 37.
Eversharp, Inc., d.b.a. Schick Safety Razor Co., Milford, Conn. 769,670, cor. Cl. 37.
Eversharp, Inc., d.b.a. Schick Safety Razor Co., Milford, Conn. 784,647, cor. Cl. 37.
Excel Seed Co., Plainview, Tex. 791,614, pub. 4–13–65. Cl. 1.
Exchange Parts Co. of Fort Worth, Fort Worth, Tex. 678,398, canc. Cl. 23.
Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 714,407, cor. Cl. 37.
Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 791,765, pub. 4–13–65. Cl. 23.
Fabrex Corp., New York, N.Y. 678,528, canc. Cl. 42.
Fabrico Mfg. Corp., Chicago, Ill. 791,878, pub. 4–13–65. Cl. 39.
Factory Direct Buyers Cooperative: *See*— Davies, Clyde A.
Fafard, Conrad, Inc., Agawam, Mass. 791,642, pub. 4–13–65. Cl. 10.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 791,713, pub. 4–13–65. Cl. 21.
Falstrom Co., Passaic, N.J. 791,817, pub. 4–13–65. Cl. 34.
Fields, A. G., & Co., Inc., Jackson Heights, N.Y. 791,878, pub. 4–13–65. Cl. 39.
Firestone Tire & Rubber Co., The, Akron, Ohio. 201,751, ren. 6–29–65. Cl. 35.
First Lake County National Bank, The, Libertyville, Ill. 791,988, pub. 4–13–65. Cl. 102.
First National Stores, Inc., Somerville, Mass. 791,975, pub. 4–13–65. Cl. 101.
Fisher Scientific Co., Pittsburgh, Pa. 416,141, ren. 6–29–65. Cl. 26.
Flavor Bar, Inc., New York, N.Y. 678,397, canc. Cl. 23.
Fleetwood Enterprises, Inc., Riverside, Calif. 791,703, pub. 4–13–65. Cl. 19.
Florin, Philip, Inc.: *See*— Evans-Aristocrat Industries, Inc.
Forsman, Clinton H., d.b.a. Melody Shop, Robstown, Tex. 791,846, pub. 4–13–65. Cl. 36.
Fort Howard Paper Co., Green Bay, Wis. 199,850, ren. 6–29–65. Cl. 37.
Foxboro Co., The, Foxboro, Mass. 413,969, ren. 6–29–65. Cl. 26.
Frankel, Edward T., New York, N.Y. 201,284, ren. 6–29–65. Cl. 38.
Franken-Plastik Gesellschaft mit beschrankter Haftung, Furth, Bavaria, Herrnstrasse, Germany. 791,721, pub. 4–13–65. Cl. 22.
Friedberg-Grunauer Co., Inc., San Francisco, Calif. 678,469, canc. Cl. 37.
Fukuhara, James T., d.b.a. Columbine Import Co., Englewood, Colo. 678,374, canc. Cl. 22.
Gallo, E. & J., Winery, Modesto, Calif. 678,605, canc. Cl. 47.
Gallo, E. & J., Winery, Modesto, Calif. 791,947, pub. 4–13–65. Cl. 47.
Geary, Thomas J., Jr., Cumberland, N.C. 792,001. Cl. 27.
General Aniline & Film Corp., New York, N.Y. 414,055, ren. 6–29–65. Cl. 38.
General Aniline & Film Corp., New York, N.Y. 791,779, pub. 4–13–65. Cl. 26.
General Classics, Inc., Chicago, Ill. 791,640, pub. 4–13–65. Multiple Class (Classes 8 and 28).
General Dyestuff Corp., General Aniline & Film Corp., New York, N.Y. 232,223. Am. 7(d). Cl. 6.
General Electric Co., Phoenix, Ariz. 791,778, pub. 4–13–65. Cl. 26.
General Mills, Inc., Minneapolis, Minn. 791,929, pub. 4–13–65. Cl. 46.
General Motors Corp., Detroit, Mich. 791,701, pub. 4–13–65. Cl. 19.
General Tire & Rubber Co., The, Akron, Ohio. 678,614, canc. Cl. 50
General Tire & Rubber Co., The, Akron, Ohio. 678,616, canc. Cl. 50.
General Tire & Rubber Co., The, Akron, Ohio. 791,835, pub. 4–13–65. Cl. 35.
George, Beck: *See*— Regina Products.
Georgia International Life Insurance Co., Atlanta, Ga. 791,987, pub. 4–13–65. Cl. 102.
Gestetner Ltd., London, England. 678,379, canc. Cl. 23.
Gibbons, J. T., Inc., New Orleans, La. 678,585, canc. Cl. 46.
Gillie Associates, Inc., Detroit, Mich. 678,661, canc. Cl. 38.
Glenader Corp., New York, N.Y. 791,888, pub. 4–13–65. Cl. 39.
Golub, Simon, & Sons, Inc.: *See*— Associated Grocers, Inc.
Goodrich, B. F., Co., The, Akron, Ohio. 194,578, ren. 6–29–65. Cl. 23.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 678,252, canc. Cl. 1.
Gossard, H. W., Co., The, Chicago, Ill. 678,520, canc. Cl. 39.
Goulden's Seafoods, Inc., Toledo, Ohio. 791,926, pub. 4–13–65. Cl. 46.
Grand Piano Co., Inc., Morganton, N.C. 791,847, pub. 4–13–65. Cl. 36.
Greene, E., and Co., Inc., Brooklyn, N.Y. 791,621, pub. 12–15–64. Cl. 2.
Greene, E., and Co., Inc., Brooklyn, N.Y. 791,856, pub. 2–16–65. Cl. 37.
Greene, Tweed & Co., Inc.: *See*— Greene, Tweed & Co.
Greene, Tweed & Co., New York, N.Y., to Greene, Tweed & Co., Inc., North Wales, Pa. 197,614, ren. 6–29–65. Cl. 35.
Griggs, Nelson M., d.b.a. The Science League, Boyds, Md. 678,482, canc. Cl. 38.
Groveton Papers Co., Groveton, N.H. 791,857, pub. 4–13–65. Cl. 37.
Guild of Strawbery Banke, Inc., Portsmouth, N.H. 791,951, pub. 4–13–65. Cl. 50.
Gulf States Paper Corp., Tuscaloosa, Ala. 791,855, pub. 4–13–65. Cl. 37.
HMH Publishing Co., Inc., from HMH Publishing Co., Inc., Chicago, Ill. 791,734, pub. 4–13–65. Cl. 22.

Hagen, Reinold, Hangelar Ueber Siegburg, Germany. 678,405, canc. Cl. 23.
Hall, Turner Corp., New York, N.Y., from New Jersey Turner Hall Corp., Bridgeport, Conn. 791,955, pub. 4–13–65. Cl. 51.
Handy & Harman, New York, N.Y. 791,680, pub. 4–13–65. Cl. 14.
Hanes Dye and Finishing Co., Winston-Salem, N.C. 687,712. Am. 7(d). Cl. 106.
Harriss Covington Hosiery Mills, High Point, N.C. 791,889, pub. 4–13–65. Cl. 39.
Hawthorn-Mellody Farms Dairy, Inc., Chicago, Ill. 678,569, canc. Cl. 46.
Hello Aircraft Corp., Bedford, Mass. 791,704, pub. 4–13–65. Cl. 19.
Henry Valve Co., Melrose Park, Ill. 791,662, pub. 4–13–65. Cl. 13.
Hexcel Products, Inc., Berkeley, Calif. 791,659, pub. 4–13–65. Cl. 12.
Hicks-Ponder Co., El Paso, Tex. 791,882, pub. 4–13–65. Cl. 39.
Hobart Mfg. Co., The, Troy, Ohio. 201,898, ren. 6–29–65. Cl. 21.
Home Service Co.: *See*—
Marshall, Irl.
Honey-Kist Fruits, Inc., Chicago, Ill. 678,594, canc. Cl. 46.
Honeywell Inc., Minneapolis, Minn. 791,784, pub. 4–13–65. Cl. 26.
Horn, Don, d.b.a. Cars and Parts Co., Memphis, Tenn. 678,660, canc. Cl. 38.
Hoyle, A. C., Co., Iron Mountain, Mich. 791,752, pub. 4–13–65. Cl. 23.
Hunterdon County National Bank of Flemington, The, Flemington, N.J. 791,986, pub. 4–13–65. Cl. 102.
Ice All-O-Matic Mfg., Inc., Murray, Utah. 791,811, pub. 4–13–65. Cl. 31.
Illinois Tool Works, Inc., Chicago, Ill. 791,708, pub. 4–13–65. Cl. 21.
Illinois Tool Works, Inc., Chicago, Ill. 791,746, pub. 4–13–65. Cl. 23.
Imperial Knife Associated Companies, Inc., Providence, R.I. 678,386, canc. Cl. 23.
Imperial Products Mfg. Co.: *See*—
Boswell, Bernell N.
Independent Battery Manufacturers of America, Inc., The, Largo, Fla. 791,998, pub. 4–13–65. Cl. A.
Independent Sales Co., Minneapolis, Minn. 791,649, pub. 4–13–65. Cl. 12.
Industrial Publishing Corp., The: *See*—
Pittsburgh Railways Co.
International Boiler Works Co., East Stroudsburg, Pa. 791,820, pub. 4–13–65. Cl. 34.
International Nutria Marketing Association, Watonga, Okla. 791,876, pub. 4–13–65. Cl. 39.
International Packers Ltd., Chicago, Ill. 678,560, canc. Cl. 46.
International Paper Co., New York, N.Y. 791,858, pub. 4–13–65. Cl. 37.
International Paper Co., New York, N.Y. 791,859, pub. 4–13–65. Cl. 37.
International Steel Wool Corp., Springfield, Ohio. 198,746, ren. 6–29–65. Cl. 4.
Institute of Lifetime Learning, Washington, D.C. 791,995, pub. 4–13–65. Cl. 107.
Iso S.p.A. Automotoveicoli, Bresso, Milan, Italy. 791,698, pub. 4–13–65. Cl. 19.
Jacobi: *See*—
Wilson-Jacobi, Inc.
Jenoptik Jena G.m.b.H., Jena, Germany. 791,785, pub. 4–13–65. Cl. 26.
Jenoptik Jena G.m.b.H., Jena, Germany. 791,787. pub. 4–13–65. Cl. 26.
Jones, J. M., Co., Champaign, Ill. 791,940, pub. 4–13–65. Cl. 46.
Kalvar Corp., New Orleans, La. 791,792, pub. 4–13–65. Cl. 26.
Kemperdick, Rugard, & Co., Pora, near Cologne, Rhine, Germany. 678,568, canc. Cl. 46.
Kendall, Edythe, Inc., New York, N.Y. 678,856, canc. Cl. 21.
Kent Corp., Princeton, N.J. 791,710, pub. 4–13–65. Cl. 21.
Kent Corp., Princeton, N.J. 791,711, pub. 4–13–65. Cl. 21.
Kilgannon Co., Houston, Tex. 791,676, pub. 4–13–65. Cl. 13.
King Research, Inc., Brooklyn, N.Y. 791,635, pub. 4–13–65. Cl. 6.
Kingsford Co., Iron Mountain, Mich. 678,256, canc. Cl. 1.
Kinsey Chemical Corp., The, New Haven, Conn. 678,317, canc. Cl. 12.
Kirban Associates, Inc., Glenside, Pa. 791,868, pub. 4–13–65. Cl. 38.
Klarer of Kentucky, Inc., Louisville, Ky. 788,793, cor. Cl. 46.
Klauer Mfg. Co., Dubuque, Iowa. 791,822, pub. 4–13–65. Cl. 34.
Kleen-Leen, Inc., Liberty, Ind. 791,971, pub. 4–13–65. Cl. 100.
Knight, J. B., Co.: *See*—
Knight, J. B., Co., Inc., The.
Knight, J. B., Co., Inc., The, from J. B. Knight Co., Brownfield, Tex. 791,760, pub. 4–13–65. Cl. 23.
Kwik-Arc, Inc., Maple Heights, Ohio. 678,421; canc. Cl. 26.
Kwik-Kold of America, Inc., Las Vegas, Nev. 678,432, canc. Cl. 31.
Laboratori Vevy: *See*—
Rialdi, Giorgio.
Landau, Wilma E., d.b.a. Sunline Home Products Co., Brooklyn, N.Y. 791,954, pub. 4–6–65. Cl. 50.
Larson, Edward S., Jr., Libertyville, Ill. 791,736, pub. 4–13–65. Cl. 22.
Lengor, Inc., Annapolis, Md. 791,771, pub. 4–13–65. Cl. 26.
Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. 786,219, cor. Cl. 51.
Liberty & Co. Ltd., London, England. 412,538, ren. 6–29–65. Cl. 39.
Litzenberg, David P., d.b.a. Litzenberg Engineering Co., Meadowbrook, Pa. 791,748, pub. 4–13–65. Cl. 23.
Litzenberg Engineering Co.: *See*—
Litzenberg, David P.
Living Lens, Inc., Boston, Mass. 678,420, canc. Cl. 26.
Logan, Jonathan, Inc., North Bergen, N.J. 791,879, pub. 4–13–65. Cl. 39.
Lumaside, Inc., Milwaukee, Wis. 791,660, pub. 4–13–65. Cl. 12.
M.G.M. Sales, Inc., Upper Darby, Pa. 791,726–8, pub. 4–13–65. Cl. 22.
MacDonald, William, & Sons (Biscuits) Ltd., Glasgow, Scotland. 678,580, canc. Cl. 46.
Mandrel Industries, Inc., Houston, Tex. 791,797, pub. 4–13–65. Cl. 26.
Mangel Stores Corp., New York, N.Y. 791,626, pub. 4–13–65. Cl. 5.
Maradel Products, Inc., Farmingdale, N.Y. 791,633, pub. 4–13–65. Cl. 6.
Marion Laboratories, Inc., from Marion Laboratories, Inc., Kansas City, Mo. 791,689, pub. 4–13–65. Cl. 18.
Marketing and Development Corp., Chicago, Ill. 791,685, pub. 4–13–65. Cl. 16.
Marshall, Irl, d.b.a. Home Service Co., to Duraclean Co., Deerfield, Ill. 414,651, ren. 6–29–65. Cl. 52.
Marshall Laboratories, Torrance, Calif. 791,773, pub. 4–13–65. Cl. 26.
Martin, Bob, Bowling Shirt Co., The, Detroit, Mich. 678,495, canc. Cl. 39.
Martin-Senour Co., The, Chicago, Ill. 792,000. Cl. 16.
Massey-Ferguson, Ltd., Toronto, Ontario, Canada. 791,682, pub. 4–13–65. Cl. 15.
Master Lock Co., Milwaukee, Wis. 791,769, pub. 4–13–65. Cl. 25.
Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. 688,753, cor. Cl. 31.
Matson Terminals, Inc., San Francisco, Calif. 791,992, pub. 4–13–65. Cl. 105.
Mayer, Charles Studios, Inc., Akron, Ohio. 791,950, pub. 4–13–65. Cl. 50.
Maxon Shirt Co.: *See*—
Oxford Mfg. Co., Inc.
Mead Johnson & Co., Evansville, Ind. 791,696, pub. 2–23–65. Cl. 18.
Mead Johnson & Co., Evansville, Ind. 791,933, pub. 4–13–65. Cl. 46.
Melody Shop: *See*—
Forsman, Clinton H.
Melville Shoe Corp., New York, N.Y. 791,881, pub. 4–13–65. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 791,690, pub. 4–13–65. Cl. 18.
Meredith Publishing Co., Des Moines, Iowa. 791,863, pub. 4–13–65. Cl. 37.
Metzger, Morris, & Sons, Inc., New York, N.Y. 791,901, pub. 4–13–65. Cl. 42.
Michaels, Stern & Co., Inc., Rochester, N.Y. 417,086, ren. 6–29–65. Cl. 39.
Michigan Typesetting Co., Detroit, Mich. 791,980, pub. 4–13–65. Cl. 101.
Midland Title Co., Inc., Milwaukee, Wis. 791,982, pub. 4–13–65. Cl. 101.
Mile High Equipment Co., Denver, Colo. 791,810, pub. 1–28–64. Cl. 31.
Milgo Electronic Corp., Miami, Fla. 791,804, pub. 4–13–65. Cl. 26.
Miniature Incandescent Lamp Corp., now by change of name Tung-Sol Lamp Works, to Tung-Sol Electric, Inc., Newark, N.J. 195,382, ren. 6–29–65. Cl. 21.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 678,541, canc. Cl. 44.
Mira-Pak, Inc., Houston, Tex. 791,755, pub. 4–13–65. Cl. 23.
Misty Harbor Ltd., North Bergen, N.J. 791,893, pub. 4–13–65. Cl. 39.
Monarch Provision Co., Inc., Chicago, Ill. 791,921, pub. 4–13–65. Cl. 46.
Monsanto Co., St. Louis, Mo. 791,634, pub. 4–13–65. Cl. 6.
Moore, Samuel, and Co., Mantua, Ohio. 791,666, pub. 4–13–65. Cl. 13.
Moran Shoe Co., Carlyle, Ill. 792,005. Cl. 39.
Morrell, John, & Co., Ottumwa, Iowa. 415,906, ren. 6–29–65. Cl. 46.
Morris, Philip, Inc., New York, N.Y. 791,935, pub. 4–13–65. Cl. 46.
Morrison Steel Products, Inc., Buffalo, N.Y. 678,439, canc. Cl. 34.
Mrs. Smith's Pie Co., Pottstown, Pa. 791,923, pub. 4–13–65. Cl. 46.
Muldisco Ltd., Toronto, Ontario, Canada. 791,613, pub. 4–13–65. Cl. 1.
Musebeck Shoe Co., Inc., Oconomowoc, Wis. 791,891, pub. 4–13–65. Cl. 39.
McGraw-Edison Co., Elgin, Ill. 791,718, pub. 4–13–65. Cl. 21.
McNair Metal Products, Inc.: *See*—
Phelps-Dodge Aluminum Products Corp.
N.V. Koninklijke Kamper Emaillefabrieken Voorheen H. Berk & Zoon, Kampen, Netherlands. 678,441, canc. Cl. 34.
N.V. Philips-Duphar, Amsterdam, Netherlands. 791,637, pub. 4–13–65. Cl. 6.
Naamloze Maatschappij Levensmiddelenbedrijf Zwan-Societe Anonyme les Produits Alimentaires Zwan, Schoten-near-Antwerp, Belgium. 678,505, canc. Cl. 46.

National Gypsum Co., Buffalo, N.Y. 791,651, pub. 4–13–65. Cl. 12.
National Instrument Laboratories, Inc., Rockville, Md. 791,772, pub. 4–13–65. Cl. 26.
National Jet Drill Co., Lavale-Cumberland, Md. 791,672–4, pub. 4–13–65. Cl. 13.
National Musical String Co., New Brunswick, N.J. 791,845, pub. 4–13–65. Cl. 36.
National Screen Service Corp., New York, N.Y. 791,715, pub. 4–13–65. Cl. 21.
Nebraska Consolidated Mills Co., Omaha, Nebr. 791,919, pub. 4–13–65. Cl. 46.
New Jersey Turner Hall Corp.: *See*—
Hall, Turner Corp.
New York Feather Co., Inc., Brooklyn, N.Y. 792,002. Cl. 32.
Nicholas Roerich, Museum, New York, N.Y. 791,996, pub. 4–13–65. Cl. 107.
Northrop Aircraft, Inc., Beverly Hills, Calif. 678,417, canc. Cl. 26.
Nuclear Data, Inc., Madison, Wis. 791,707, pub. 4–13–65. Cl. 21.
Olin Mathieson Chemical Corp., New York, N.Y. 791,627, pub. 4–13–65. Cl. 5.
Oneida Ltd., Oneida, N.Y. 791,764, pub. 4–13–65. Cl. 23.
Optical Service Corp., New York, to Bausch & Lomb, Inc., Rochester, N.Y. 201,695, ren. 6–29–65. Cl. 26.
Ordway, A. P., & Co., to A. P. Ordway & Co., New York, N.Y. 201,653, ren. 6–29–65. Cl. 18.
Orthomatrix, Inc., Fort Dodge, Iowa. 791,914, pub. 4–13–65. Cl. 44.
Overton, J. L.: *See*—
Overton, John L.
Overton, John L., d.b.a. J. L. Overton, Seattle, Wash. 678,352, canc. Cl. 19.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 791,653, pub. 4–13–65. Cl. 12.
Owens-Illinois Glass Co., Toledo, Ohio. 791,999. Multiple Class (Classes 12, 21, 26, 33, and 44).
Oxford Mfg. Co., Inc., d.b.a. Maxon Shirt Co. Division, Greenville, S.C. 786,449, cor. Cl. 39.
Pacific Olive Co.: *See*—
Early California Foods, Inc.
Palm Beach Co., Portland, Maine. 791,874, pub. 4–13–65. Cl. 39.
Panama Artists, Inc., Coral Gables, Fla. 678,449, canc. Cl. 36.
Parisian Novelty Co., Chicago, Ill. 791,731, pub. 4–13–65. Cl. 22.
Parisian Novelty Co., Chicago, Ill. 791,732, pub. 4–13–65. Cl. 22.
Parker Bros., Inc., Salem, Mass. 791,719, pub. 4–13–65. Cl. 22.
Parker-Hannifin Corp., Cleveland, Ohio. 678,323, canc. Cl. 13.
Pennsalt Chemicals Corp., Philadelphia, Pa. 791,753, pub. 4–13–65. Cl. 23.
Pepe's, Inc., Mount Clements, Mich. 791,924, pub. 4–13–65. Cl. 46.
Perceptive Management Associates, Inc., Cleveland, Ohio. 791,978, pub. 4–13–65. Cl. 101.
Perfect Circle Corp., Hagerstown, Ind. 791,700, pub. 4–13–65. Cl. 19.
Perfect Circle Corp., Hagerstown, Ind. 791,750, pub. 4–13–65. Cl. 23.
Perfect Circle Corp., Hagerstown, Ind. 791,834, pub. 4–13–65. Cl. 35.
Perfumeria Gal, S.A., Madrid, Spain. 791,960, pub. 4–13–65. Cl. 51.
Perfumeria Gal, S.A., Madrid, Spain. 791,965, pub. 4–13–65. Cl. 52.
Pet Milk Co., St. Louis, Mo. 791,938, pub. 4–13–65. Cl. 46.
Pfizer, Chas., & Co., Inc., New York, N.Y. 791,643, pub. 4–13–65. Cl. 12.
Pflueger Corp.: *See*—
Enterprise Mfg. Co., The.
Pharynol Corp., Chicago, Ill. 791,966, pub. 4–13–65. Cl. 52.
Phelps-Dodge Aluminum Products Corp., New York, N.Y., from McNair Metal Products, Inc., Murphysboro, Ill. 791,664, pub. 4–13–65. Cl. 13.
Philco Corp., to Philco Corp., Philadelphia, Pa. 415,320, ren. 6–29–65. Cl. 34.
Pied Piper Shoe Co., Wausau, Wis. 791,883, pub. 4–13–65. Cl. 39.
Pioneer Industries, Inc., Darby, Pa. 678,273, canc. Cl. 2.
Pittsburgh Railways Co., Pittsburgh, Pa., from The Industrial Publishing Corp., Cleveland, Ohio. 791,869, pub. 4–13–65. Cl. 38.
Plas-Ta-Flex Tackle Co.: *See*—
Day, Harry V.
Plastic Productions Co., Redwood City, Calif. 678,267, canc. Cl. 2.
Plymouth Cordage Co., Plymouth, Mass. 678,302, canc. Cl. 7.
Po Mel Hats Inc., New York, N.Y. 791,886, pub. 4–13–65. Cl. 39.
Por Larranaga, Fabrica de Tabacos, S.A., Havana, Cuba. 678,337, canc. Cl. 17.
Port-A-Crane Co.: *See*—
Atwell, Walker J.
Precision Scientific Co., Chicago, Ill. 791,780, pub. 4–13–65. Cl. 26.
Precision Scientific Co., Chicago, Ill. 791,781, pub. 4–13–65. Cl. 26.
Precision Scientific Co., Chicago, Ill. 791,790, pub. 4–13–65. Cl. 26.
Pro Hardware, Inc., Larchmont, N.Y. 791,976, pub. 4–13–65. Cl. 101.
Prym, William, Inc., Dayville, Conn. 414,455, ren. 6–29–65. Cl. 40.
Prym, William, Inc., Dayville, Conn. 414,657, ren. 6–29–65. Cl. 37.
Publicker Industries Inc., Philadelphia, Pa. 678,629, canc. Cl. 52.
Pupilentes S.A., Mexico City, Mexico. 791,777, pub. 4–13–65. Cl. 26.
Pure Oil Co., The, Chicago, Ill. 678,642, canc. Cl. 32.
Puritan Stationery Co., Inc., Philadelphia, Pa. 693,875, cor. Cl. 37.
Quality Courts Motels, Inc., Daytona Beach, Fla. 791,972, pub. 4–13–65. Cl. 100.
Reactions, Inc., Kennebank, Mo. 791,974, pub. 4–13–65. Cl. 101.
Resin Research & Development Corp., Fort Worth, Tex. 791,647, pub. 4–13–65. Cl. 12.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 791,800, pub. 4–13–65. Cl. 26.
Rhodes, M. H., Inc., Hartford, Conn. 791,789, pub. 4–13–65. Cl. 26.
Rialdi, Giorgio, d.b.a. Laboratori Vevy, Genoa, Italy. 791,639, pub. 4–13–65. Cl. 6.
River Brand Rice Mills, Inc., Houston, Tex. 791,932, pub. 4–13–65. Cl. 46.
Riverside Chemical Co., Inc., North Tonawanda, N.Y. 196,140, ren. 6–29–65. Cl. 15.
Rodell Mfg. Co., San Francisco, Calif. 791,798, pub. 4–13–65. Cl. 26.
Rogers Peat Co., to Rogers Peat Co., New York, N.Y. 413,957, ren. 6–29–65. Cl. 39.
Roll-O-Sheets, Inc., St. Louis, Mo. 791,828, pub. 4–13–65. Cl. 34.
Ron Dunham Tackle, Inc., Southfield, Mich. 791,740, pub. 4–13–65. Cl. 22.
Ropate, G., Corp., Boston, Mass. 791,677, pub. 4–13–65. Cl. 13.
Rowa-Wagner K.G. Arzneimittelfabrik, Bensberg, near Koln, Germany. 678,343, canc. Cl. 15.
Rund Mfg. Co., Kalamazoo, Mich. 678,390, canc. Cl. 22.
S.A.R.L. dite: La Johnson Francaise, Saint-Denis, Seine, France. 791,625, pub. 4–13–65. Cl. 4.
St. Lawrence Mfg. Co., Inc., Giffard, Quebec, Canada. 791,724, pub. 4–13–65. Cl. 22.
Salem China Co., The, Salem, Ohio. 791,809, pub. 4–13–65. Cl. 30.
Salmon Products, Inc., Newton, Iowa. 791,684, pub. 4–13–65. Cl. 16.
Salter, John L., to Woodward Baldwin & Co., Inc., New York, N.Y. 47,028, ren. 6–29–65. Cl. 42.
Sanford Ink Co., Bellwood, Ill. 791,852–4, pub. 4–13–65. Cl. 37.
Sarfert Hosiery Mills, Inc., Philadelphia, Pa., to Burlington Industries, Inc., Greensboro, N.C. 415,548, ren. 6–29–65. Cl. 39.
Saul Bros. & Block, Inc., Atlanta, Ga. 791,885, pub. 4–13–65. Cl. 39.
Sawyer's Inc., d.b.a. Tru-Vue Co., Portland, Oreg. 678,368, canc. Cl. 22.
Schick Safety Razor Co.: *See*—
Eversharp, Inc.
Schmelts, Raymond P., Osgood, Ind. 791,747, pub. 4–13–65. Cl. 22.
Science League, The: *See*—
Griggs, Nelson M.
Scottish Tool, Die & Metal Products Co., Cleveland, Ohio. 791,756, pub. 4–13–65. Cl. 23.
Scovill Mfg. Co.: *See*—
De Long Hook and Eye Co., The.
Scripto, Inc., Atlanta, Ga. 678,300, canc. Cl. 6.
Scripto, Inc., Atlanta, Ga. 678,311, canc. Cl. 11.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 678,619, canc. Cl. 51.
Seefore Corp., San Jose, Calif. 791,675, pub. 4–13–65. Cl. 13.
Selectra, Inc., Chicago, Ill. 791,745, pub. 4–13–65. Cl. 23.
Sentinel Lockers: *See*—
Smith, J. Austin, & Son.
Sewell Mfg. Co., Bremen, Ga. 791,880, pub. 4–13–65. Cl. 39.
Shann, Grace, d.b.a. Gail Chemical Co., New York, N.Y., to C. P. Baker & Co., Philadelphia, Pa. 413,517, ren. 6–29–65. Cl. 52.
Shore-Calnevar, Inc., Paramount, Calif. 791,702, pub. 4–13–65. Cl. 19.
Shurfine Foods, Inc., Northlake, Ill. 791,922, pub. 4–13–65. Cl. 46.
Sierra Precision, Inc., Monrovia, Calif. 678,247, canc. Cl. 19.
Silvray Lighting, Inc., New York, N.Y. 678,358, canc. Cl. 21.
Simon & Mogilner, Birmingham, Ala. 791,875, pub. 4–13–65. Cl. 39.
Siris, A. J., Products Corp., New York, N.Y. 678,274, canc. Cl. 3.
Smead Mfg. Co., Hastings, Minn., from The Dunleavy Co., Waltham, Mass. 791,512, pub. 1–26–65. Cl. 37.
Smead Mfg. Co., Hastings, Minn., from The Dunleavy Co., Waltham, Mass. 791,540, pub. 1–26–65. Cl. 37.
Smead Mfg. Co., Hastings, Minn., from The Dunleavy Co., Waltham, Mass. 791,550, pub. 2–2–65. Cl. 37.
Smith, J. Austin, & Son, d.b.a. Sentinel Lockers, Londonville, Ohio. 791,768, pub. 4–13–65. Cl. 25.
Smith Laboratory, Inc., Kansas City, Mo. 791,913, pub. 4–13–65. Cl. 44.
Societe Anonyme du Gant Jonquet, Millau, Aveyron, France. 678,493, canc. Cl. 39.
Societe Rhodiaceta, Paris, France. 791,897, pub. 4–13–65. Cl. 39.
Societe Rhodiaceta, Paris, France. 791,910, pub. 4–13–65. Cl 42.
Societe Rhodiaceta, Paris, France. 791,912, pub. 4–13–65. Cl. 48.
Southern Enterprises, Inc., d.b.a. The Whopper-Burger Shop, Hopewell, Va. 791,918, pub. 2–9–65. Cl. 46.

Southwestern Drug Corp., d.b.a. Brooke Laboratories, Dallas, Tex. 791,693, pub. 2–23–65. Cl. 18.
Specialties Josette et Louis, Inc., Ste-Adele-en-Bas, Quebec, Canada. 791,970, pub. 4–13–65. Cl. 100.
Spinner Golf Co.: *See*—
Zapolske, Argentine C.
Spinos, James T., Co.: *See*—
Spinos, James T.
Spinos, James T., d.b.a. James T. Spinos Co., Somerville, Mass. 678,545, canc. Cl. 46.
Sprayon Insulation & Acoustics, Inc., Newark, N.J. 791,645, pub. 4–13–65. Cl. 12.
Standard & Poor's Corp., New York, N.Y. 791,984, pub. 4–13–65. Cl. 102.
Standard Brands Inc., New York, N.Y. 678,597, canc. Cl. 46.
Standard Gage Co., Inc., Poughkeepsie, N.Y. 416,404, ren. 6–29–65. Cl. 26.
Standard Oil Co., The, Cleveland, Ohio. 678,650, canc. Cl. 101.
Standard Pharmaceutical Co., Inc.: *See*—
Berger, Herman.
Trenka, Franz.
Star of Siam, Lakewood, Calif. 791,808, pub. 12–29–64. Cl. 28.
Stedman Mfg. Co., Asheboro, N.C. 791,898, pub. 4–13–65. Cl. 39.
Stemco Mfg. Co., Inc., Longview, Tex. 788,516, cor. Cl. 35.
Stephano Bros., Philadelphia, Pa. 678,339, canc. Cl. 17.
Sterling, John, Corp., Richmond, Ill. 791,671, pub. 4–13–65. Cl. 13.
Sterwin AG, Zug, Switzerland. 791,958, pub. 4–13–65. Cl. 51.
Stevens, J. P., & Co., Inc., New York, N.Y. 791,902, pub. 4–13–65. Cl. 42.
Stonier's: *See*—
Stonier Baking Co.
Stonier Baking Co., d.b.a. Stonier's, Long Island City, N.Y. 791,941, pub. 4–13–65. Cl. 46.
Summit Laboratories, Inc., d.b.a. Aljean Products Co., Indianapolis, Ind. 791,957, pub. 6–30–64. Cl. 51.
Sumner's Ty. Phoo Tea Ltd., to Ty. Phoo Tea Ltd., Birmingham, England. 200,960, ren. 6–29–65. Cl. 46.
Sunline Home Products Co.: *See*—
Landau, Wilma F.
Sunrise Home Juices, Inc., Far Rockaway, N.Y. 791,934, pub. 4–13–65. Cl. 46.
Superior Tea & Coffee Co., Chicago, Ill. 791,943, pub. 4–13–65. Cl. 46.
Tangyes Ltd., Birmingham, England. 785,172, cor. Cl. 23.
Taylor, Hilliman W., Chicago, Ill. 678,367, canc. Cl. 22.
Techne (Cambridge) Ltd., Duxford, England. 791,774, pub. 4–13–65. Cl. 26.
Tenderbest Corp., Cleveland, Ohio. 791,969, pub. 4–13–65. Cl. 100.
Tenneco Corp., Houston, Tex. 791,612, pub. 4–13–65. Cl. 1.
Texas Agricultural Limestone Association, Bryan, Tex. 791,641, pub. 4–13–65. Cl. 10.
Thermo-Products, Inc., North Judson, Ind. 791,826, pub. 4–13–65. Cl. 34.
Thiokol Chemical Corp., Bristol, Pa. 791,716, pub. 4–13–65. Cl. 21.
Thompson-Hayward Chemical Co., Kansas City, Kans., from Agricultural Chemicals, Inc., Llano, Tex. 791,628, pub. 3–23–65. Cl. 6.
Timberweld Mfg. Co., Columbus, Mont. 791,644, pub. 4–13–65. Cl. 12.
Tip-O-Matic, Inc., Abilene, Tex. 791,742, pub. 4–13–65. Cl. 22.
Trenka, F., Chemisch-Pharmaceutische Fabrik: *See*—
Trenka, Franz.
Trenka, Franz, d.b.a. F. Trenka Chemisch-Pharmazeutische Fabrik, Vienna, Austria, to Standard Pharmaceutical Co., Inc., New York, N.Y. 198,187, ren. 6–29–65. Cl. 18.
Trugman-Nash, Inc., New York, N.Y. 678,552, canc. Cl. 46.
Tru-Vue Co.: *See*—
Sawyer's Inc.
Tubular Textile Machinery Corp., Woodside, N.Y. 791,766, pub. 4–13–65. Cl. 23.
Tung-Sol Electric, Inc.: *See*—
Miniature Incandescent Lamp Corp.
Tung-Sol Lamp Works.
Tupan Corp., Clinton, Conn. 791,610, pub. 4–13–65. Cl. 1.
Tupperware: *See*—
Rexall Drug and Chemical Co.
Ty. Phoo Tea Ltd.: *See*—
Sumner's Ty. Phoo Tea Ltd.
Union Bag-Camp Paper Corp., New York, N.Y. 791,860, pub. 4–13–65. Cl. 37.
Union Knitting Mills, Inc., Schuylkill Haven, Pa. 791,899, pub. 4–13–65. Cl. 39.
Union Tank Car Co., Chicago, Ill. 791,989, pub. 4–13–65. Cl. 103.
Union Tank Car Co., Chicago, Ill. 791,993, pub. 4–13–65. Cl. 106.
United Aircraft Products, Inc., Dayton, Ohio. 791,619, pub. 4–13–65. Cl. 2.
United Meat Packers Ltd., A.m.b.A., d.b.a. Andelsslagteriernes Konserveseksport A.m.b.A., Glostrup, near Copenhagen, Denmark. 791,917, pub. 4–13–65. Cl. 46.
United Mills Corp.: *See*—
United Mills.
United Mills, to United Mills Corp., Mount Gilead, N.C. 417,195, ren. 6–29–65. Cl. 39.
United States Borax & Chemical Corp., Los Angeles, Calif. 791,658, pub. 4–13–65. Cl. 12.
United States Rubber Co., New York, N.Y. 678,366, canc. Cl. 22.
United States Rubber Co., New York, N.Y. 678,535, canc. Cl. 43.
United States Trunk Co., Inc., Fall River, Mass. 791,624, pub. 4–13–65. Cl. 3.
Universal Optical Co. Inc., Providence, R.I. 791,798, pub. 4–13–65. Cl. 26.
Valley Evaporating Co., Yakima, Wash. 791,930, pub. 4–13–65. Cl. 46.
Valspar Corp., The, Rockford, Ill. 791,686, pub. 4–13–65. Cl. 16.
Vanity Fair Mills, Inc., Reading, Pa. 791,871, pub. 4–13–65. Cl. 39.
Van-Top, Inc., Holstein, Iowa. 791,814, pub. 4–13–65. Cl. 32.
Varney, Inc., Miami, Fla. 678,370, canc. Cl. 22.
Vee-Jay Records, Inc., Chicago, Ill. 678,444, canc. Cl. 36.
Wah Chang Corp., New York, N.Y. 791,629, pub. 4–13–65. Multiple Class (Classes 6 and 14).
Waimanalo Ko-Ko Co., Hilo, Territory of Hawaii. 678,576, canc. Cl. 46.
Waitt & Bond, Inc., Newark, N.J., to The Blackstone Cigar Co., Scranton, Pa. 415,225, ren. 6–29–65. Cl. 17.
Walhimer Agency, Inc., West Haven, Conn. 791,981, pub. 4–13–65. Cl. 101.
Wall Colmonoy Corp., Detroit, Mich. 792,004. Cl. 34.
Wayne Cooling Equipment Corp., Brooklyn, N.Y. 791,818, pub. 4–13–65. Cl. 34.
Weaver, W. R., Co.: *See*—
Weaver, William R.
Weaver, William R., d.b.a. W. R. Weaver Co., El Paso, Tex. 791,791, pub. 4–13–65. Cl. 26.
Weco Products Co., Chicago, Ill. 678,623, canc. Cl. 51.
Welding Equipment & Supply Co., Detroit, Mich. 791,819, pub. 4–13–65. Cl. 34.
Wells Fargo Bank, San Francisco, Calif. 791,983, pub. 4–13–65. Cl. 102.
Wembley, Inc., New Orleans, La. 791,872, pub. 4–13–65. Cl. 39.
Westinghouse Electric Corp., Pittsburgh, Pa. 791,679, pub. 4–13–65. Cl. 14.
Weyerhaeuser Co., Tacoma, Wash. 791,650, pub. 4–13–65. Cl. 12.
White Swan Uniforms, Inc., New York, N.Y. 791,894, pub. 4–13–65. Cl. 39.
Whopper-Burger Shop, The: *See*—
Southern Enterprises, Inc.
Wilhelmsburger Maschinenfabrik Hinrichs & Sohn, Geesthacht, near Hamburg, Germany. 791,751, pub. 4–13–65. Cl. 23.
Wilkins, George W., Jr., Odessa, Tex. 791,725, pub. 4–13–65. Cl. 22.
Wilson-Jacobi, Inc., d.b.a. Jacobi, Syosset, N.Y. 791,920, pub. 4–13–65. Cl. 46.
Windswept, Portland, Maine. 791,946, pub. 4–13–65. Cl. 46.
Winett, Ralph, & Co., Inc., Chicago, Ill. 678,519, canc. Cl. 39.
Wiss, J., & Sons Co., Newark, N.J. 791,743, pub. 5–7–63. Cl. 23.
Withers, Price and Co., Inc., Charlotte, N.C. 788,867, cor. Cl. 102.
Wood-Metal Industries, Inc., Kreamer, Pa. 592,190, cor. Cl. 32.
Wood-Metal Industries, Inc., Kreamer, Pa. 662,716, cor. Cl. 32.
Wood-Metal Industries, Inc., Kreamer, Pa. 635,925, cor. Cl. 32.
Wood-Metal Industries, Inc., Kreamer, Pa. 646,505, cor. Cl. 32.
Woodward Baldwin & Co., Inc.: *See*—
Salter, John L.
Woolens From France, Inc., New York, N.Y. 678,524, canc. Cl. 42.
World-Wide Office Equipment Corp., Los Angeles, Calif. 791,803, pub. 4–13–65. Cl. 26.
Wright, Barry, Corp., Watertown, Mass. 791,799, pub. 4–13–65. Cl. 26.
Wunderle, Ph., Inc.: *See*—
Wunderle, Philip.
Wunderle, Philip, to Ph. Wunderle, Inc., Philadelphia, Pa. 47,305, ren. 6–29–65. Cl. 46.
Yatron Bros., Inc., West Lawn, Reading, Pa. 791,815, pub. 4–13–65. Cl. 32.
Zapolske, Argentine C., d.b.a. Spinner Golf Co., Hawthorne, Calif. 791,737, pub. 4–13–65. Cl. 22.
Zappone Industries, Inc., Spokane, Wash. 791,776, pub. 10–13–64. Cl. 26.
Zelesnik, Carter, Longport, N.J. 791,786, pub. 4–13–65. Cl. 26.
Zimet Co.: *See*—
Zimet, Sanford M.
Zimet, Sanford M., d.b.a. Zimet Co., Brooklyn, N.Y. 678,436, canc. Cl. 32.

U.S. GOVERNMENT PRINTING OFFICE: 0—1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
June 22, 1965 Volume 815 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of May 1965

Examiner affirmed	223
Examiner affirmed in part	31
Examiner reversed	64
Total	318

Expediting Papers Relating to Appeals

In order to expedite the handling and processing of all papers relating to appeals, it is essential that all such documents include the Group Number to which the application is assigned, as well as the Appeal Number and Serial Number.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

May 8, 1965.

International Convention for the Protection of Industrial Property

Adherence of U.S.S.R. to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective July 1, 1965, of the Union of Soviet Socialist Republics to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 17, 1965.

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,849,932, R. Marogg, METHOD AND APPARATUS FOR MAKING FILTER RODS, decided Jan. 21, 1965, Interference No. 89,920, claims 7 and 15.

Patent No. 2,897,972, M. M. Cannon, SEPARATOR, decided Jan. 21, 1964, Interference No. 92,389, claim 3.

Patent No. 2,928,977, W. Roth and R. E. Grande, INCANDESCENT LAMP, decided Feb. 23, 1965, Interference No. 92,123, claim 1.

Patent No. 2,988,543, K. Meyer, E. Jacob and S. Sommer, PROCESS FOR THE TREATMENT OF POLY-OLEFINS, decided Feb. 15, 1965, Interference No. 92,645, claim 7.

Patent No. 3,002,713, P. A. Noxon, J. E. Taylor and J. Jarvis, AIRCRAFT CONTROL SYSTEM, decided May 7, 1965, Interference No. 93,115, claims 9 and 10.

Patent No. 3,010,157, E. P. Cisek, METHOD FOR PREPARING MOLDINGS OF FOAMED THERMOPLASTIC RESINS, decided Apr. 30, 1965, Interference No. 93,036, claims 1 and 2.

Patent No. 3,016,194, L. S. Bensky and D. L. Nettleton, DIGITAL COMPUTING SYSTEM, decided May 12, 1965, Interference No. 93,523, claims 2, 3, 4, 6, 7, 8, 10, 11, 12 and 14.

Patent No. 3,047,832, S. T. Deakin, ELECTRICAL SOCKET CONTACTS, decided May 12, 1965, Interference No. 93,369, claim 1.

Patent No. 3,085,136, R. L. Boyles, TIME SWITCH, decided Apr. 13, 1965, Interference No. 94,071, claims 1, 2 and 3.

Patent No. 3,087,727, R. H. Watterlohn, BOWLING BALL, decided Apr. 30, 1965, Interference No. 93,880, claim 8.

Adjudicated Patents

(C.A. Okla.) Fearon Patent No. 2,308,361 (250—83.6), for WELL LOGGING METHOD AND DEVICE. Claims 2 and 3 *Held* valid and infringed. *McCullough Tool Co.* v. *Well Surveys, Inc.*, 343 F. 2d 381; 145 USPQ 6.

(C.A. Md.) Collison Patent No. 2,494,229 (206—47), for BONE SURGERY. Claims 1 and 3 *Held* invalid. *Collison Surgical Engineering Co.* v. *Murray-Baumgartner Surgical Instrument Co., Inc.*, 343 F. 2d 162; 145 USPQ 1.

(C.A. Okla.) Swift Patent No. 2,554,844 (73—152), for CASING COLLAR LOCATOR. Claims 1 to 6 *Held* valid and infringed. *McCullough Tool Co.* v. *Well Surveys, Inc.*, 343 F. 2d 381; 146 USPQ 6.

(C.A.N.Y.) Fleisher Patent No. 2,624,162 (51—249), for AUTOMATIC SHARPENER FOR STRAIGHT KNIFE CLOTH CUTTING MACHINES, *Held* invalid. *Beaver Cloth Cutting Machines, Inc.* v. *H. Maimin Co. Inc.*, 343 F. 2d 442; 145 USPQ 109.

(C.A. Okla.) Pringle, Roulston and Brownell Patent No. 2,686,266 (250—71.5), for IMPROVEMENTS IN RADIATION DETECTORS. Claims 1, 2, 5 to 10, 13, 14, and 20 to 22 *Held* valid and infringed. *McCullough Tool Co.* v. *Well Surveys, Inc.*, 343 F. 2d 381; 145 USPQ 6.

(C.A. Okla.) Bender Reissue Patent No. 23,226 (250—83.6), for SUBSURFACE PROSPECTING DEVICE. Claims 14 to 16, 19 and 20 *Held* valid and infringed. *Id.*

New Applications Received During April 1965

Patents	7918
Designs	504
Plant Patents	9
Reissues	18
Total	8449

Issue—June 22, 1965

Patents	1268	No. 3,189,917 to No.	3,191,184, incl.
Designs	64	No. 201,426 to No.	201,489, incl.
Plant Patents	8	No. 2,539 to No.	2,541, incl.
Reissues	8	No. 25,803 to No.	25,810, incl.
Total	1348		

Patents Available for Licensing

ACCUMULATIVE NASA PATENT LIST No. 9

In accordance with the provisions of 14 C.F.R. § 1245.200 et seq., and 42 U.S.C. 2457(g) (1958), the National Aeronautics and Space Administration is prepared to grant royalty-free licenses, of the types specified, under the following patents.

Applications for licenses should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, D.C., 20546.

Patents available for exclusive, revocable, royalty-free licensing (67)

2,898,889. MECHANICALLY-LIMITED ELECTRICALLY OPERATED HYDRAULIC VALVE SYSTEM FOR AIRCRAFT CONTROLS.
2,906,307. TWO COMPONENT BEARING.
2,926,128. TEMPERATURE REDUCING COATING FOR METALS SUBJECT TO FLAME EXPOSURE.
2,934,331. APPARATUS FOR MAKING A METAL SLURRY PRODUCT.
2,940,259. ROCKET PROPELLANT INJECTOR.
2,944,316. PROCESS OF CASTING HEAVY SLIPS.
2,945,667. FLEXIBLE SEAL FOR VALVES.
2,956,772. LIQUID-SPRAY COOLING METHOD.
2,971,837. HIGH TEMPERATURE NICKEL-BASE ALLOY.
2,974,925. EXTERNAL LIQUID-SPRAY COOLING OF TURBINE BLADES.
2,984,785. RUNWAY LIGHT.
2,991,671. WIRE GRID FORMING APPARATUS.
2,991,961. JET AIRCRAFT CONFIGURATION.
2,996,212. SELF SUPPORTING SPACE VEHICLE.
2,997,274. TURBO-MACHINE BLADE VIBRATION DAMPER.
3,001,363. SPHERICAL SOLID-PROPELLANT ROCKET MOTOR.
3,001,395. AIR FRAME DRAG BALANCE.
3,001,739. AERIAL CAPSULE EMERGENCY SEPARATION DEVICE.
3,004,735. PARTICLE DETECTION APPARATUS.
3,005,061. HIGH INTENSITY HEAT AND LIGHT UNIT.
3,005,339. WIND TUNNEL AIRSTREAM OSCILLATING APPARATUS.
3,008,229. PROCESS FOR APPLYING A PROTECTIVE COATING FOR SALT BATH BRAZING.
3,010,372. FOLDING APPARATUS.
3,011,760. TRANSPIRATION COOLED TURBINE BLADE MANUFACTURED FROM WIRES.
3,012,400. NOZZLE.
3,012,407. INSULATING STRUCTURE.
3,016,698. ELECTRO-THERMAL ROCKET.
3,016,863. HYDROFOIL.
3,022,672. DIFFERENTIAL PRESSURE CELL.
3,024,659. MAGNETICALLY CENTERED LIQUID COLUMN FLOAT.
3,028,122. LANDING ARRANGEMENT FOR AERIAL VEHICLES.
3,028,126. THREE AXIS CONTROLLER.
3,028,128. REENTRY VEHICLE LEADING EDGE.
3,038,077. INFRARED SCANNER.
3,038,175. SURVIVAL COUCH.
3,041,587. ANGULAR MEASUREMENT SYSTEM.
3,041,924. MOTION PICTURE CAMERA FOR OPTICAL PYROMETRY.
3,045,424. METHOD FOR CONTINUOUS VARIATION OF PROPELLANT FLOW AND THRUST IN PROPULSIVE DEVICES.
3,049,876. ANNULAR ROCKET MOTOR AND NOZZLE CONFIGURATION.
3,053,484. VARIABLE SWEEP WING CONFIGURATION.
3,057,597. MODIFICATION AND IMPROVEMENTS TO COOLED BLADES.
3,059,220. APPARATUS FOR COUPLING A PLURALITY OF UNGROUNDED CIRCUITS TO A GROUNDED CIRCUIT.
3,063,291. HIGH VACUUM CONDENSER TANK FOR ION ROCKET ENGINES.
3,064,933. VARIABLE SWEEP WING AIRCRAFT.
3,068,658. VENTING VAPOR APPARATUS.
3,069,123. INSTRUMENT SUPPORT WITH PRECISE LATERAL ADJUSTMENT.
3,070,330. ATTITUDE AND PROPELLANT FLOW CONTROL SYSTEM AND METHOD.
3,070,349. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,070,407. AIR BEARING.
3,072,574. GAS LUBRICANT COMPOSITIONS.
3,076,065. HIGH-SPEED LOW-LEVEL ELECTRICAL STEPPING SWITCH.
3,077,599. COLLAPSIBLE LOOP ANTENNA FOR SPACE VEHICLE.
3,079,113. VEHICLE PARACHUTE AND EQUIPMENT JETTISON SYSTEM.
3,080,711. PENSHAPE EXHAUST NOZZLE FOR SUPERSONIC ENGINE.
3,083,611. MULTI-LOBAR SCAN HORIZON SENSOR.
3,084,421. REINFORCED METALLIC COMPOSITES.
3,085,165. ULTRA-LONG MONOSTABLE MULTIVIBRATOR EMPLOYING BISTABLE SEMICONDUCTOR SWITCH TO ALLOW CHARGING OR TIMING CIRCUIT.
3,087,692. VARIABLE-SPAN AIRCRAFT.
3,088,441. VALVE ACTUATOR.
3,090,212. SANDWICH PANEL CONSTRUCTION.
3,090,580. SPACE AND ATMOSPHERIC REENTRY VEHICLE.
D187,350. AIRCRAFT.
D187,351. AIRCRAFT.
D187,352. AIRCRAFT.
D187,353. AIRCRAFT.
D193,454. AIRCRAFT.

Patents available for nonexclusive, revocable, royalty-free license (99)

3,093,000. CHECK VALVE ASSEMBLY FOR A PROBE.
3,093,346. SPACE CAPSULE.
3,098,630. ANNULAR SUPERSONIC DECELERATOR OR DROGUE.
3,100,294. TIME-DIVISION MULTIPLEXER.
3,100,990. TWO-PLANE BALANCE.
3,102,948. ELECTRIC ARC WELDING.
3,104,079. VARIABLE-GEOMETRY WINGED REENTRY VEHICLE.
3,104,082. VARIABLE SWEEP AIRCRAFT WING.
3,105,515. PRESSURE REGULATING SYSTEM.
3,106,603. HIGH VOLTAGE CABLE.
3,108,171. RADIANT HEATER HAVING FORMED FILAMENTS.
3,110,318. SLOSH SUPPRESSING DEVICE AND METHOD.
3,112,672. UMBILICAL SEPARATOR FOR ROCKETS.
3,115,630. REFLECTOR SPACE SATELLITE.
3,118,100. ELECTRIC BATTERY AND METHOD OF OPERATING THE SAME.
3,119,232. ROCKET ENGINE.
3,120,101. CHANNEL TYPE SHELL CONSTRUCTION FOR ROCKET ENGINE AND THE LIKE.
3,120,361. LANDING ARRANGEMENT FOR AEROSPACE VEHICLE.
3,120,738. IGNITION SYSTEM FOR MONOPROPELLANT COMBUSTION DEVICES.
3,121,309. SPHERICALLY SHAPED ROCKET MOTOR.
3,122,000. APPARATUS FOR TRANSFERRING CRYOGENIC LIQUIDS.
3,122,096. APPARATUS AND METHOD FOR CONTROL OF A SOLID FUELED ROCKET VEHICLE.
3,122,885. INJECTOR FOR BIPROPELLANT ROCKET ENGINES.
3,123,248. EXPULSION BLADDER EQUIPPED STORAGE TANK STRUCTURE.
3,127,157. MULTIPLE BELLEVILLE SPRING ASSEMBLY.
3,128,380. VARIABLE FREQUENCY MAGNETIC MULTIVIBRATOR.
3,128,845. DESPIN WEIGHT RELEASE.
3,130,940. HEAT SHIELD.
3,132,342. ANTENNA SYSTEM USING PARASITIC ELEMENTS AND TWO DRIVEN ELEMENTS AT [illegible]

3,132,476. THRUST VECTOR CONTROL APPARATUS.
3,132,479. UNIVERSAL RESTRAINER AND JOINT.
3,132,903. SLIT REGULATED GAS JOURNAL BEARING.
3,135,089. DECOMPOSITION UNIT.
3,135,090. ROCKET MOTOR SYSTEM.
3,136,123. ROCKET ENGINE INJECTOR.
3,137,082. CHARACTER INDICATING DISPLAY DEVICE.
3,138,837. METHOD OF MAKING FIBER REINFORCED METALLIC COMPOSITES.
3,139,725. STEERABLE SOLID PROPELLANT ROCKET MOTOR.
3,140,728. HIGH PRESSURE FOURWAY VALVE.
3,141,340. GRAVITY DEVICE.
3,141,769. METHOD OF PRODUCING POROUS TUNGSTEN IONIZERS FOR ION ROCKET ENGINES.
3,141,932. SWITCHING MECHANISM WITH ENERGY STORAGE MEANS.
3,143,321. FRANGIBLE TUBE ENERGY DISSIPATION.
3,144,219. MANNED SPACE STATION.
3,144,999. PROPELLANT BLADE LOADING CONTROL.
3,147,422. ELECTRONIC MOTOR CONTROL SYSTEM.
3,149,897. PRINTED CABLE CONNECTOR.
3,150,329. VARIABLE FREQUENCY MAGNETIC COUPLED MULTIVIBRATOR.
3,150,337. FOAM GENERATOR.
3,152,344. LIFE PRESERVER.
3,155,992. LIFE RAFT.
3,156,090. ION ROCKET.
3,157,529. BONDED SOLID LUBRICANT COATING.
3,158,172. HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE.
3,158,336. ASSEMBLY FOR RECOVERING A CAPSULE.
3,158,764. TWO-FLUID MAGNETHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRIC POWER CONVERSION.
3,159,967. VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL.
3,160,825. TEMPERATURE COMPENSATING MEANS FOR CURITY RESONATOR OF AMPLIFIER.
3,160,950. METHOD AND APPARATUS FOR SHOCK PROTECTION.
3,162,012. FORMED METAL RIBBON WRAP.
3,163,935. MECHANICAL COORDINATE CONVERTER.
3,164,222. NON-REUSABLE KINETIC ENERGY ABSORBER.
3,164,369. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,165,356. SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS.
3,166,834. CATALYST BED REMOVING TOOL.
3,167,426. NICKEL-BASE ALLOY.
3,168,827. AIRPLANE TAKE-OFF PERFORMANCE INDICATOR.
3,169,001. AIRCRAFT WHEEL SPRAY DRAG ALLEVIATOR.
3,169,613. ELASTIC UNIVERSAL JOINT.
3,169,725. ERECTABLE MODULAR SPACE STATION.
3,170,286. INJECTOR VALVE DEVICE.
3,170,290. LIQUID ROCKET SYSTEM.
3,170,295. PROPELLANT TANK PRESSURIZATION SYSTEM.
3,170,324. AERODYNAMIC MEASURING DEVICE.
3,170,471. INFLATABLE HONEYCOMB.
3,170,486. TWO-COMPONENT VALVE ASSEMBLY.
3,170,605. EJECTION VALVE.
3,170,657. LANDING ARRANGEMENT FOR AERIAL VEHICLE.
3,170,660. PARACHUTE GLIDER.
3,170,773. REINFORCED METALLIC COMPOSITES.
3,171,060. PLASMA ACCELERATOR.
3,171,081. IONIZATION VACUUM GAUGE.
3,172,097. BINARY TO BINARY-CODED-DECIMAL CONVERTER.
3,173,246. COLLOID PROPULSION METHOD AND APPARATUS.
3,173,251. APPARATUS FOR IGNITING SOLID PROPELLANTS.
3,174,278. CONTINUOUSLY OPERATING INDUCTION PLASMA.
3,174,279. ROCKET THRUST CHAMBER.
3,174,827. PRODUCTION OF HIGH PURITY SILICON CARBIDE.
3,175,789. LANDING PAD ASSEMBLY FOR AEROSPACE VEHICLES.
3,176,222. APPARATUS HAVING COAXIAL CAPACITOR STRUCTURE FOR MEASURING FLUID DENSITY.
3,176,499. HIGH TEMPERATURE TESTING APPARATUS.
3,176,933. THERMAL CONTROL OF SPACE VEHICLES.
3,177,933. THERMAL SWITCH.
3,178,883. ATTITUDE CONTROL FOR SPACECRAFT.
3,180,264. COUPLING FOR LINEAR SHAPED CHARGE.
3,180,587. ATTITUDE ORIENTATION OF SPIN-STABILIZED SPACE VEHICLES.
3,181,821. SPACECRAFT SOFT LANDING SYSTEM.
D198,249. SWEPT WING ASSEMBLY.

Erratum

In the OFFICIAL GAZETTE, March 16, 1965, vol. 812, under "List of Patentees," p. xix, second column, after line 13, insert "Salyer, Ival O., and A. S. Kenyon, to Monsanto Company. Stabilization of crystalline polymers with thiobis-dialkyl phenols. 3,173,890, 3-16-65, Cl. 260—45.95."; p. xiii, second column, after line 17, insert "Kenyon, Allen S.: *See*—Salyer, Ival O., and Kenyon. 3,173,890."; and p. xvi, first column, after line 73, insert "Salyer, Ival O., and Kenyon. 3,173,890."

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